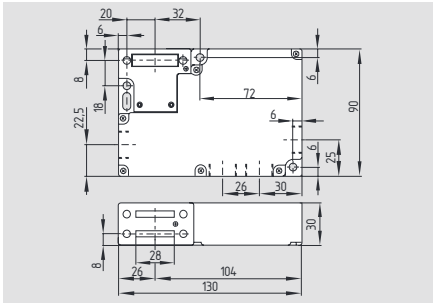


Solenoid interlocks

AZM 161



- Interlock with protection against incorrect locking
- Thermoplastic enclosure
- 6 contacts
- Manual release, emergency exit or emergency release
- Long life
- Double insulated □
- High holding force 2,000 N
- Large wiring compartment
- Power to unlock/power to lock principle
- Screw terminals or cage clamps or connector
- 4 cable entries M16
- EX version available
- AS-Interface Safety at Work available, see chapter 5

Approvals



Ordering details

AZM 161 ①-②③K④-⑤-⑥⑦

No.	Option	Description
①	CC	Cage clamp
	SK	Screw terminals
	ST	Connector M12
②	11/03 *	1NO/4NC with connector
	11/12 *	2NO/3NC with connector
	12/03 *	1NO/5NC
	12/11 *	2NO/3NC with connector
	12/12	2NO/4NC
③	R	Latching force 5 N
		Latching force 30 N
④		Power to unlock
	A	Power to lock

Technical data

Standards: IEC/EN 60947-5-1;
EN ISO 13849-1;
EN 1088; BG-GS-ET-19

Enclosure: glass-fibre reinforced thermoplastic, self-extinguishing

Actuator and locking bolt: stainless steel 1.4301

Protection class: IP67 to EN 60529

Contact material: silver

Contact type: change-over contact with double break, type Zb, with galvanically separated contact bridges

Switching principle: ⊖ IEC 60947-5-1
slow action, NC contacts with positive break

Connection: screw terminals or cage clamps or connector

Cable type: flexible

Cable section: min. 0.25 mm²
max. 1.5 mm²
(incl. conductor ferrules)

Cable entry: 4 x M16

U_{imp}:
- screw terminals or cage clamps: 4 kV
- connector, 4-pole: 2.5 kV
- connector, 8-pole: 0.8 kV

U_i:
- screw terminals or cage clamps, connector, 4-pole: 250 V
- connector, 8-pole: 60 V

I_{the}:
- screw terminals or cage clamps: 6 A
- connector, 4-pole: 4 A
- connector, 8-pole: 2 A

Utilisation category: AC-15, DC-13

I_e/U_e:
- connector, 4-pole: 4 A / 230 VAC
2.5 A / 24 VDC

- connector, 8-pole: 2 A / 60 VDC

Max. fuse rating: 6 aGg D-fuse

Positive break travel: 10 mm

Positive break force: 10 N for each NC contact fitted

U_s: 24 VAC/DC, 110/230 VAC, 50/60Hz

Technical data

Magnet: 100% ED

Power consumption: max. 10 W

Ambient temperature: -25 °C ... +60 °C

Mechanical life: > 1 million operations

F_{max}: 2,000 N

Latching force: 30 N for ordering suffix R

Classification:

Standards: EN ISO 13849-1

B_{10d} (NC): 2,000,000

Mission time: 20 years

$$MTTF_d = \frac{B_{10d}}{0,1 \times n_{op}} \quad n_{op} = \frac{d_{op} \times h_{op} \times 3600 \text{ s/h}}{t_{cycle}}$$

Ordering details

AZM 161 ①-②③K④-⑤-⑥⑦

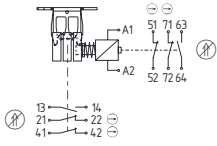
No.	Option	Description
⑤	ED	Manual release lateral on cover-side
	EU	at the rear
	T	Emergency exit lateral
	TD	on cover-side
	TU	at the rear
⑥	N	Emergency release
	024	U _s 24 VAC/DC
⑦	110/230	U _s 110/230 VAC
	G*	without LED with LED

* only with 24 VAC/DC possible!

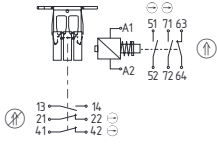
Solenoid interlocks

Contact variants

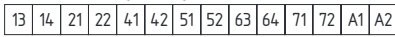
Power to unlock



Power to lock

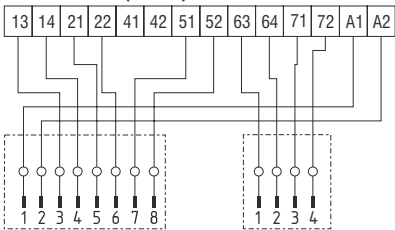


2 NO / 4 NC (12/12)



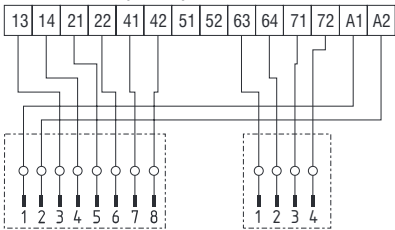
Connector

2 NO / 3 NC (12/11)



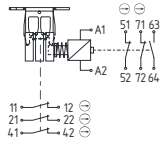
Connector

2 NO / 3 NC (11/12)

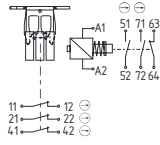


Contact variants

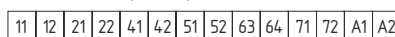
Power to unlock



Power to lock

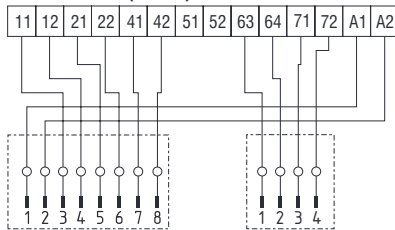


1 NO / 5 NC (12/03)



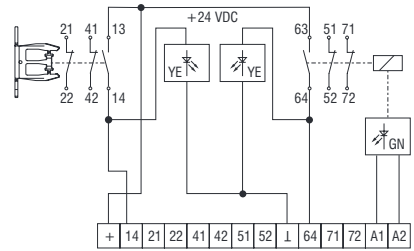
Connector

1 NO / 4 NC (11/03)



Contact variants with LED

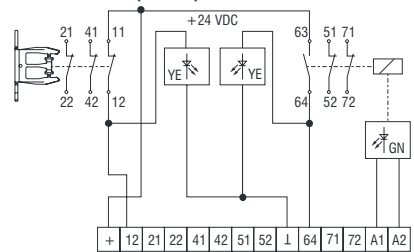
2 NO / 4 NC (12/12)



Legend

- 14 safety guard open / LED on
- + +24 VDC
- ⊥ 0 VDC
- 64 unlocked / LED on

1 NO / 5 NC (12/03)



Legend

- 12 safety guard closed / LED on
- + +24 VDC
- ⊥ 0 VDC
- 64 unlocked / LED on

Note

At least one magnetic contact with positive break \ominus must be integrated in the safety circuit.

Contact variants show de-energised condition with actuator inserted (0 in switch travel diagram).

Note

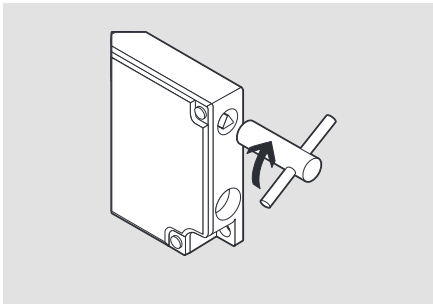
Interlocks with power to lock principle may only be used in special cases after a thorough evaluation of the accident risk, since the guarding device can immediately be opened on failure of the electrical power supply or when the main switch is opened.

Note

The contacts with LED are shown in closed and locked condition.

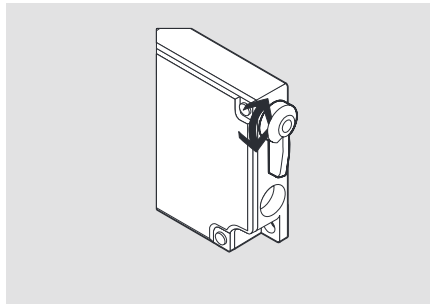
Solenoid interlocks

AZM 161..-12/12...



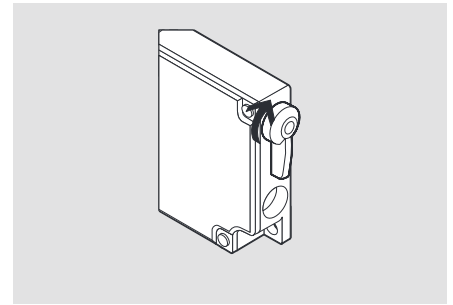
- **Manual release**
- For manual release using M5 triangular key, available as accessory
- For maintenance, setting-up, etc.

AZM 161..-12/12...T



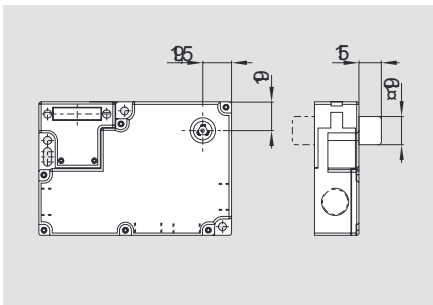
- **Emergency exit**
- For cases of danger
- Actuation from within the hazardous area

AZM 161..-12/12...N



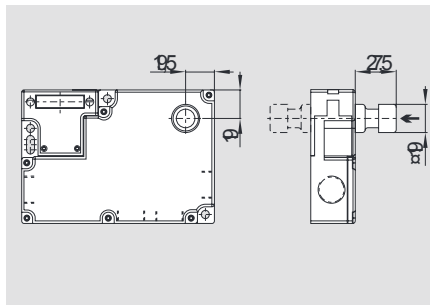
- **Emergency release**
- For cases of danger
- Mounting only outside the guarded area

AZM 161..-12/12...E.



- **Manual release**
- For manual release using M5 triangular key, available as accessory
- For maintenance, setting-up, etc.
- Cover-side fitting (ordering suffix **ED**) or rear fitting (ordering suffix **EU**) enabled

AZM 161..-12/12...T.



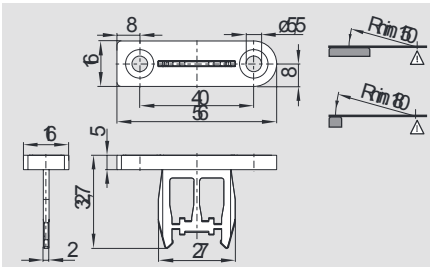
- **Emergency exit**
- The emergency exit is used if an already locked dangerous area needs to be evacuated
- Emergency exit by pressing the red push-button
- Reset by pulling on the red push-button
- Cover-side fitting (ordering suffix **TD**) or rear fitting (ordering suffix **TU**) enabled

Note

Combining the manual release and the emergency exit in different mounting directions is only possible with the following combination:
ED/TU and TD/EU

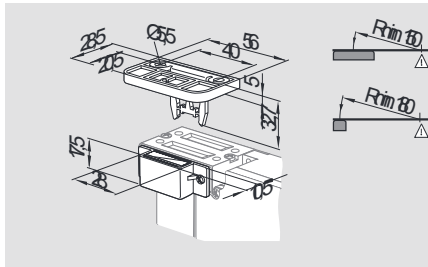
Solenoid interlocks

System components



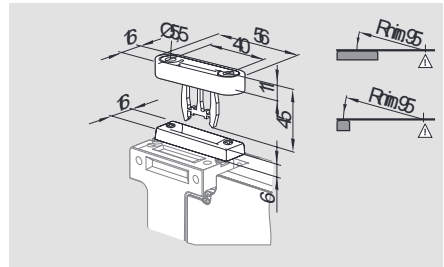
Straight actuator B1

System components

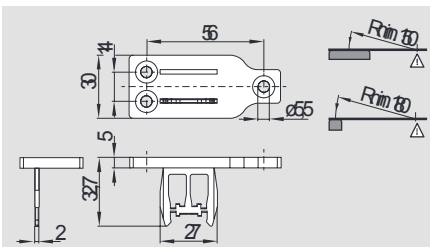


Actuator with magnetic latch B1-1747

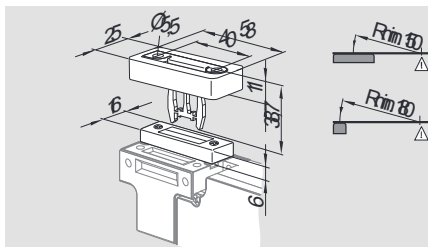
System components



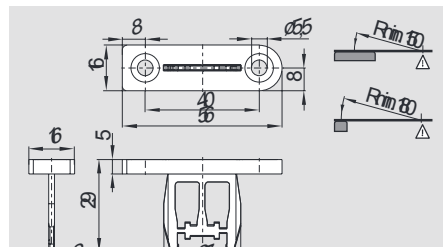
Actuator with centering guide B6-2177



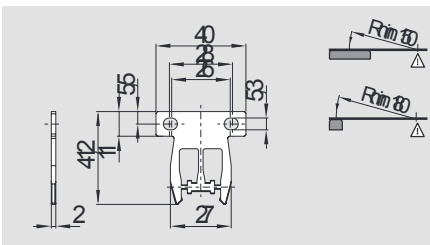
Straight actuator B1E



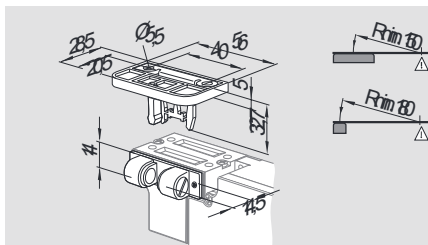
Actuator with slot lip-seal B1-2024



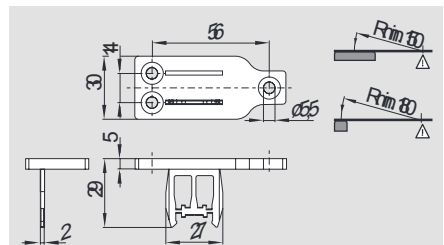
Shortened straight actuator B1S



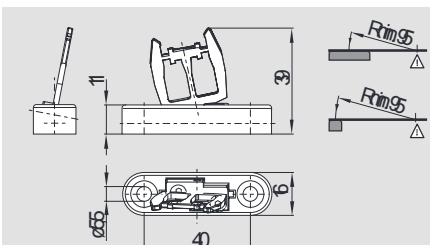
Straight actuator B1F



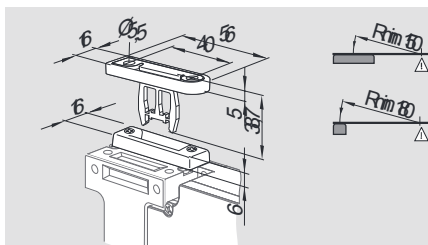
Actuator with ball latch B1-2053



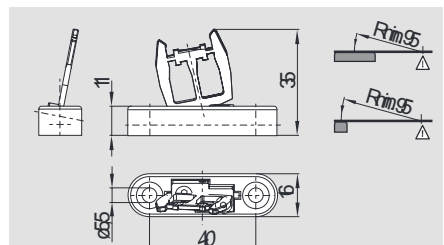
Shortened straight actuator B1ES



Flexible actuator B6



Actuator with centering guide B1-2177



Shortened angled actuator B6S

Ordering details

Straight actuator
Straight actuator
Straight actuator
Flexible actuator

AZM 161-B1
AZM 161-B1E
AZM 161-B1F
AZM 161-B6

Straight actuator
with magnetic latch
with slot lip-seal
with ball latch
with centering guide

AZM 161-B1-1747
AZM 161-B1-2024
AZM 161-B1-2053
AZM 161-B1-2177

Ordering details

Flexible actuator
with centering guide
Shortened straight actuator
Shortened straight actuator
Shortened angled actuator

AZM 161-B6-2177
AZM 161-B1S
AZM 161-B1ES
AZM 161-B6S