

## 2.1

# Solenoid interlocks AZM 160 range

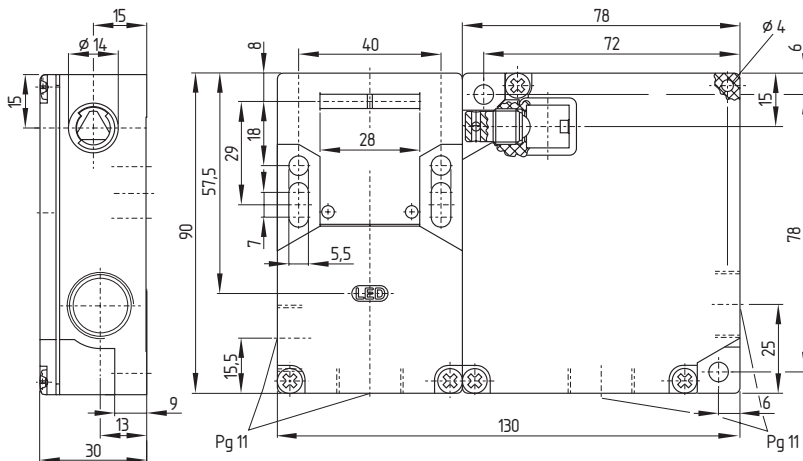


### Features

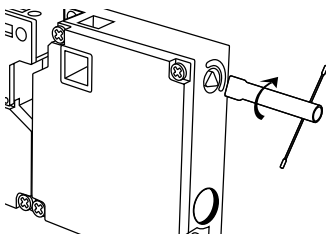
- Thermoplastic enclosure
- Manual / Emergency release
- Long life
- Double insulated □
- High holding force 2,000 N
- Adjustable ball latch up to 150 N
- 30 N latching force
- Wiring compartment
- Actuation on de-energisation or energisation
- 4 cable entries
- Mounting holes in base

### Voltage variants

- 24 VAC/DC
  - 110 VAC
  - 230 VAC
- Always state required supply voltage when ordering

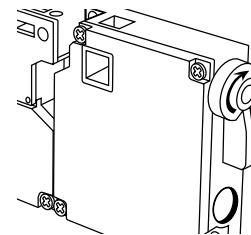


### Manual release



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

### Emergency release



- For cases of danger
- Fitting only within the guarded area

### Info

To safeguard up to Control Category 3 to EN 954-1, the Safety System Package No. 13 can be used. This comprises an AES 1235 guard door monitor, an AZS 2305 fail-safe delay timer, an AZM 160-23ypk, an AZM 160-B1S actuator, a Pg cable gland and safety screws with unidirectional screwdriver slot.

### Approvals

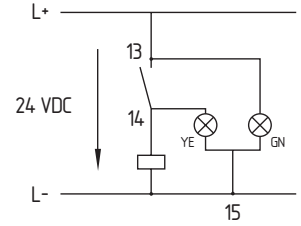
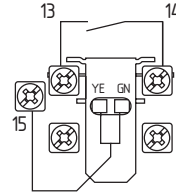


## 2. Solenoid interlocks

### 2.1 AZM 160 range



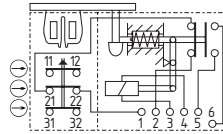
**LED version** Protected against incorrect polarity and voltage spikes, ordering suffix G24



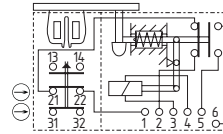
**Info** Further variants not shown here are available on enquiry. The applicable ordering suffix is added at the end of the part number of the solenoid interlock.

- Available with 5 N latching force, ordering suffix -2254
- With M 16 x 1.5 cable entry, ordering suffix -M16
- With gold-plated contacts (0.3 µm), ordering suffix -1637

#### Actuation on de-energisation



**1 NO**  
**4 NC**



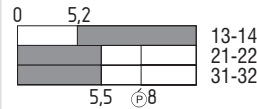
**2 NO**  
**3 NC**

#### Contacts/ Switch travel



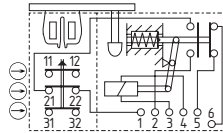
**AZM 160-14yrpk**  
**AZM 160-14yrpkn**

With manual release  
With emergency release

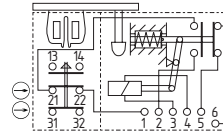


**AZM 160-23yrpk**  
**AZM 160-23yrpkn**

#### Actuation on energisation

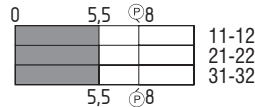


**1 NO**  
**4 NC**



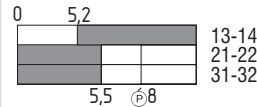
**2 NO**  
**3 NC**

#### Contacts/ Switch travel



**AZM 160-14yrpka**  
**AZM 160-14yrpkana**

With manual release  
With emergency release



**AZM 160-23yrpka**  
**AZM 160-23yrpkana**

#### Notes

Circuit diagrams show de-energised condition with actuator inserted (0 in switch travel diagram). Interlocks with actuation on energisation 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. Actuators must be ordered separately. A selection of suitable actuators can be found in 2.3.

**2.**  
**2.3**

**Solenoid interlocks**  
**Actuators**

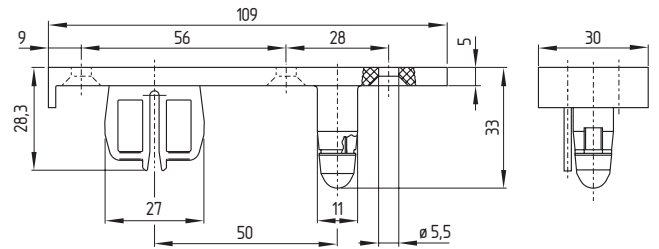


**Straight actuator AZM 160-B1S**

- On hinged guards, minimum actuating radius 150 mm



- The axis of the hinge should be 5 mm above the top edge of the solenoid interlock and in the same plane

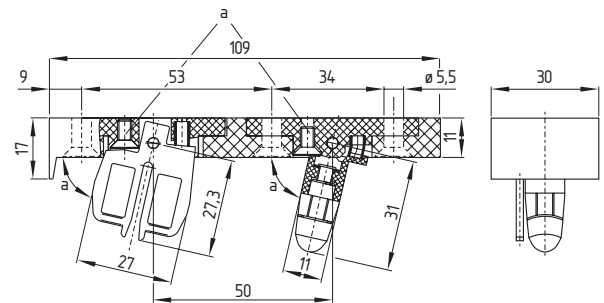


**Adjustable actuator AZM 160-B2S**

- Adjustable actuator for very small actuating radii.
- On hinged guards, minimum actuating radius 150 mm at 90° to the plane of the actuator
- Similarly, minimum actuating radius 95 mm in line with the plane of the actuator, adjustable using an hexagonal key wrench 2.5 mm A/F (a)
- Holding force 1,000 N



- The axis of the hinge should be 11 mm above the top edge of the solenoid interlock and in the same plane



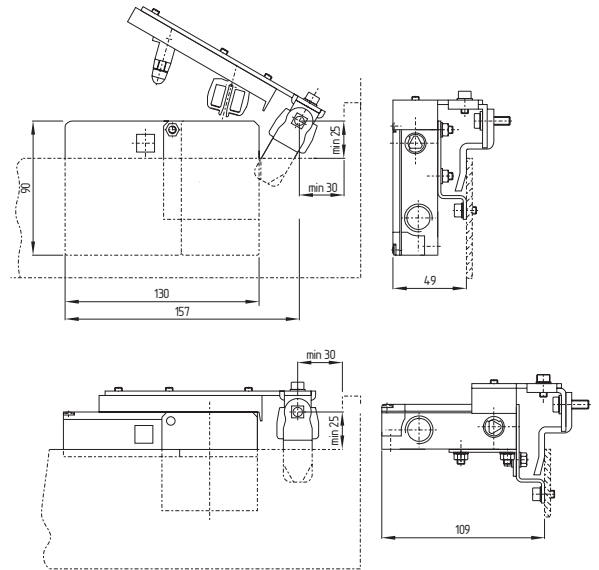
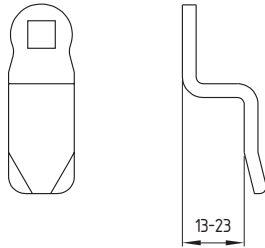
**2.**  
**2.3**

**Solenoid interlocks**  
**Actuators**



**Adjustable actuator AZM 160-B7 with fastening mechanism**

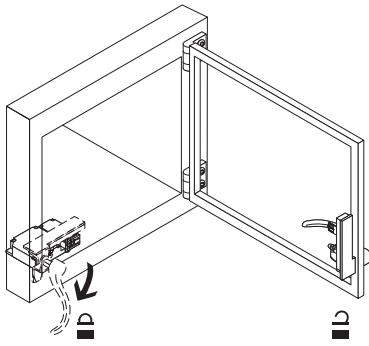
- To stabilize the holding of hoods and doors which can easily be distorted
- Suitable for use in switchgear cabinet
- For doors hinged on the right or left-hand side
- This actuator is supplied in kit form



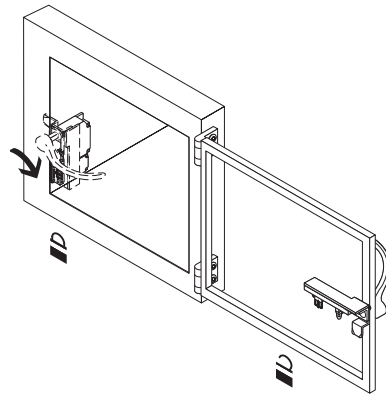
**Note** The fastening catch is not included in the included in delivery.

**Fitting** • Inside the guarded area

- Horizontal

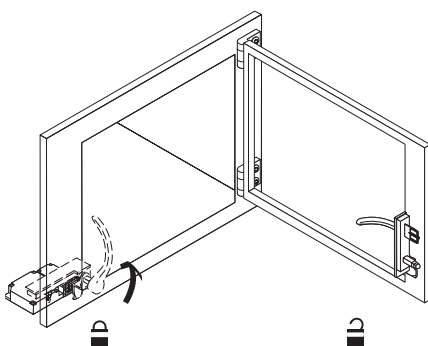


- Vertical

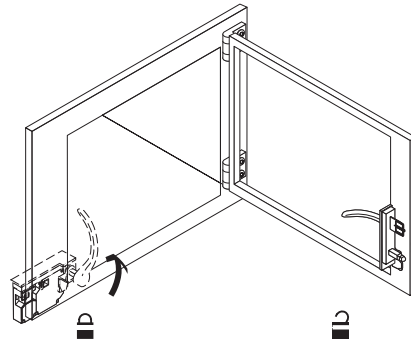


**Fitting** • Outside the guarded area

- Horizontal



- Vertical

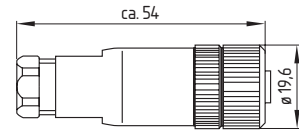


**2.**  
**2.4**

**Solenoid interlocks**  
**Accessories**

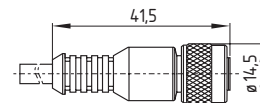


**Connector plug M 12 x 1 for AZM 160-ST with connector**



- Straight connector plug
- A-coding: Part number Series 713
- B-coding: Part number Series 715

**Connector plug M 12 x 1 for AZ 160-ST with connector**



- Straight connector plug with pre-wired cable
- Cable 5 m long
- Conductors: 4 x 0.75 mm<sup>2</sup>
- A-coding: Part number Series 763
- B-coding: Part number Series 766



### Tamperproof screws



**Screw lengths**

Countersunk-head screws with unidirectional slots

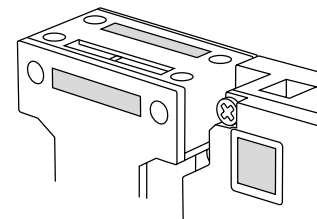
- M 5 x 12, Id. No.: 402 530 3000
- M 5 x 16, Id. No.: 402 530 3001
- M 5 x 20, Id. No.: 402 530 3002

Supplied in sets of 2 screws

- To mount the actuator
- Higher protection against tampering with interlock
- Protect against unauthorised removal of actuator
- Available in various lengths

### Slot sealing plug AZ 15/16-1476

- To cover unused actuator slots
- For protection against the ingress of coarse dirt
- Simple clip-in fitting
- Quantity required: 3 per interlocking device



## 2. Solenoid interlocks

### 2.35 Technical data



	AZM 160 AZM 160i	AZM 160-ST AZM 160i-ST	AZM 161	AZM 170 AZM 170i AZM 170 SK
Standards:	IEC/EN 60947-5-1/DIN VDE0660-200; EN 1088; BG-GS-ET-19			
Enclosure material:	Glass-fibre reinforced thermoplastic, self-extinguishing			
Actuator and latching bolt:	Stainless steel 1.4301			
Protection class:	IP 65		IP 67	
	to IEC/EN 60529/DIN VDE 0470-1			
Contact material:	Silver			
Contact type:	Changeover with double break Zb or 2 NC or 3 NC or 4 NC contacts, with galvanically separated contact bridges			
Switching system:	⊖ IEC 60947-5-1; ⊕ BG-GS-ET-19; slow action, NC contacts with positive break			
Termination:	Screw terminals for max. 2.5 mm <sup>2</sup> cables (including conductor ferrules)	Connector M 12 x 1, four pole	Screw terminals or cage clamps max. 1.5 mm <sup>2</sup> (incl. conductor ferrules)	Cut clamp terminals (IDC method) 0.75 ... 1.0 mm <sup>2</sup> flexible Ordering suffix SK: Screw terminals 1.5 mm <sup>2</sup> flexible
Rated impulse withstand voltage $U_{imp}$ :	4 kV			
Rated insulation voltage $U_i$ :	250 V			
Thermal test current rating $I_{th}$ :	10 A			
Utilisation category:	AC-15		AC-15; DC-13	AC-15
Rated operating current/voltage $I_e/U_e$ :	2 A/230 V		2.5 A/24 VDC; 4 A/230 VAC	4 A/230 V
Max. fuse rating:	6 A (slow blow)			
Positive break travel:	8 mm		8.8 mm	11 mm
Positive break force:	10 N for each NC contact fitted (depending on the setting of the ball latch)			17 N for each NC contact fitted
Solenoid duty rating:	Continuous operation			
Rated control voltage $U_s$ :	24 VAC/DC or 110 VAC/DC, 50 Hz or 230 VAC/DC, 50 Hz		24 VAC/D or 110 VAC/DC, 50/60 Hz or 230 VAC/DC, 50/60 Hz	
Consumption:	Max. 10 W			
Ambient temperature:	- 25 °C ... + 60 °C			
Mechanical life:	> 1 million operations			
Holding force $F_{max.}$ :	2,000 N		1,000 N	
Holding force of integral ball latch:	0 ... 150 N (adjustable)		None	
Latching force:	30 N for Ordering Suffix r			

