



EN Operating instructions.pages 1 to 8
Original

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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 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.

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

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 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.

1.5 Warning about misuse



In case of inadequate or improper use or manipulations of the component, personal hazards or damage to machinery or plant components cannot be excluded.

1.6 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

This operating instructions manual applies to the following types:

AZ/AZM201-B30-1T234-5

No.	Option	Description
①	L	Door hinge on left-hand side
	R	Door hinge on right-hand side
②	A	For mounting outside
	I	mounting inside
③	G1	with doorhandle
	G2	with rotating knob
④	P1	with emergency exit
	P20	with emergency exit metal *
	P25	with emergency exit inset handle *
	P30/P31	with locking rod *
⑤		without lockout tag
	SZ	with lockout tag *

* Only for mounting outside



The actuator unit AZ/AZM201-B30... is intended exclusively for combination with the AZ/AZM201 series basic component.



Only if the information described in this operating instructions manual are realised correctly, the safety function and therefore the compliance of the entire system with the Machinery Directive is maintained.

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 Purpose

In conjunction with the solenoid interlock or switch, the actuator unit is suitable for hinged safety guards. The safety guard can be opened and closed from outside by turning the door-handle.

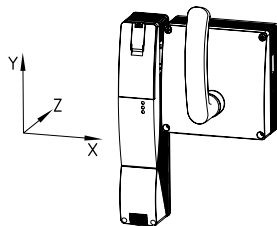


Holding force F_{max}	Holding force F_{Zh}
- mounting outside 2,600 N	- mounting outside 2,000 N
- mounting inside 1,300 N	- mounting inside 1,000 N

The actuator is pulled into the actuator unit by a spring. The actuator unit with emergency exit is used to open the safety guard inside the hazardous area. By actuating the emergency exit, the safety guard can be opened from within the hazardous area without the need for unlocking the solenoid interlock. The safety guard cannot be locked from inside. On accessible protective equipment, the lockout tag prevents persons from being inadvertently being trapped. When entering the hazardous area, each member of the operating or service team fixes a lock to the lockout tag to prevent the locking of the safety guard and therefore any inadvertent machine start.

Actuator unit play

- X = ± 1.5 mm
- Y = ± 5.0 mm
- Z = ± 1.0 mm



3. Mounting

3.1 General mounting instructions

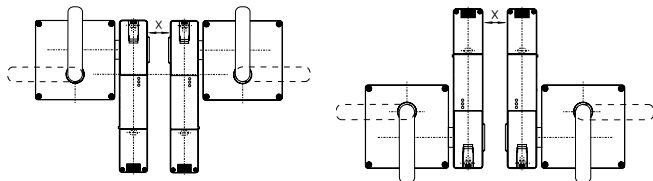


The installation may only be carried out by authorised personnel.

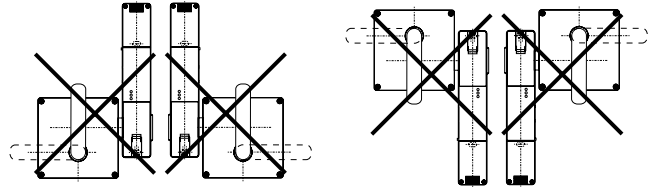
Minimum distance X between two devices: 100 mm

For ergonomic reasons, a vertical handle position is recommended when closed.

Admissible mounting set-up



Inadmissible mounting set-up



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

3.2 Representation of installation options

Actuators AZ/AZM201-B30 are available for either exterior or interior installation.

For outdoor use, the safety switchgear AZ/AZM201 is placed outside the hazardous area, for indoor use it is placed within the hazardous area.

		Mounting outside		Mounting inside	
With emergency exit	Right hinged door				
	Left hinged door				
Without emergency exit	Right hinged door				
	Left hinged door				



The minimum radius of the door when mounting outside is 400 mm, mounting inside 700 mm.

Assumptions:

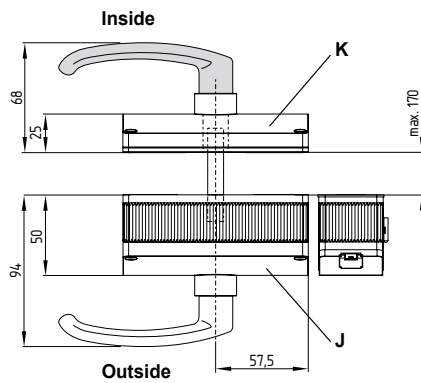
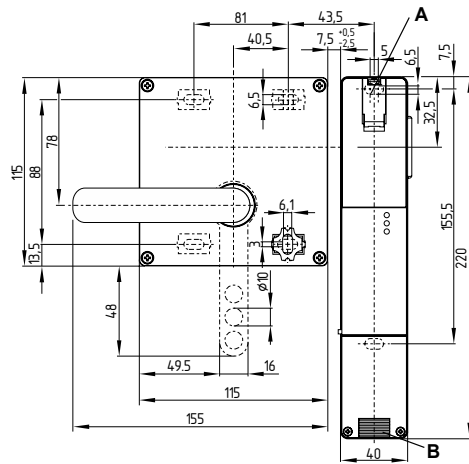
- 40 mm Profile
- Distance between solenoid interlock and actuator unit 7.5 mm
- Use standard hinge for 40 mm profile

Dimensions

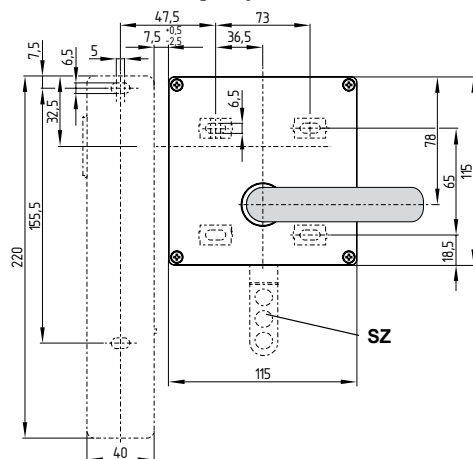
All measurements in mm.

Mounting outside

**AZM201 with actuator unit
outside the hazardous area**

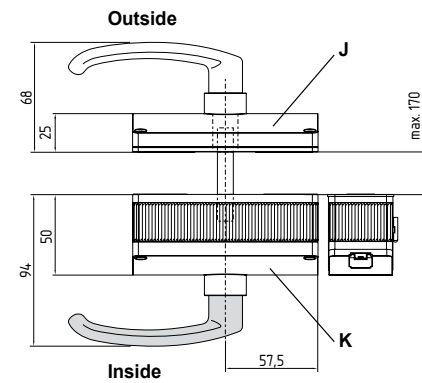
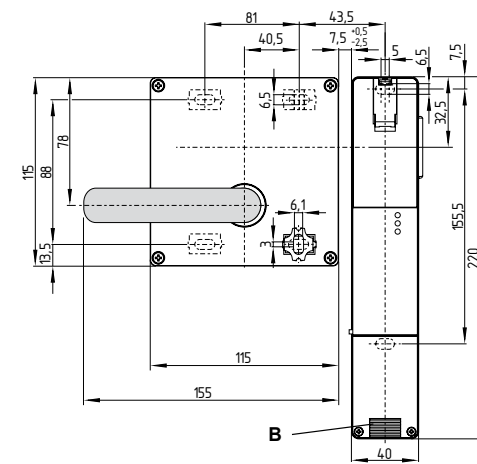


Interior view: Emergency exit P1

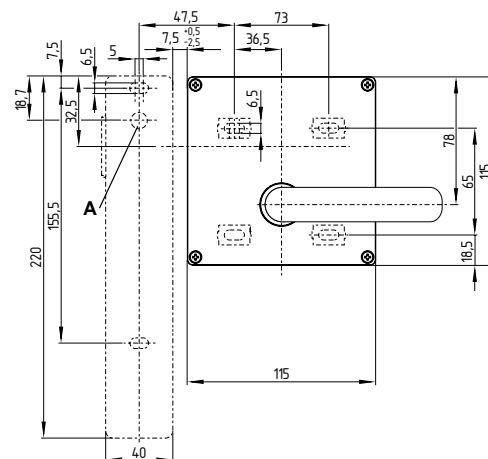


Mounting inside

**AZM201 with emergency exit P1
within the hazardous area**



Exterior view: Actuator unit with door handle

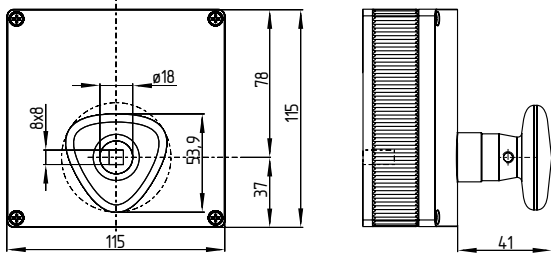


Key

- A = Manual release
- B = Cable entry M20 x 1.5
- J = Actuator unit with door-handle G1
- K = Emergency exit P1
- SZ = Lockout tag (optional, ordering suffix -SZ)

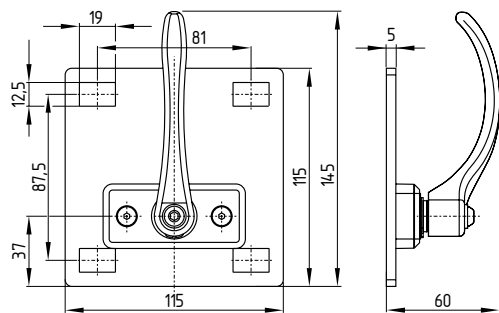
Instead of the door handle G1 a rotating knob G2 can be optionally be used.

Rotating knob G2

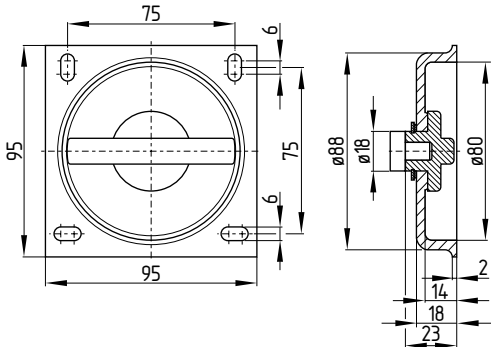


Instead of the emergency exit P1 the following emergency exits can be used for outdoor assembly.

Emergency exit (metal) P20



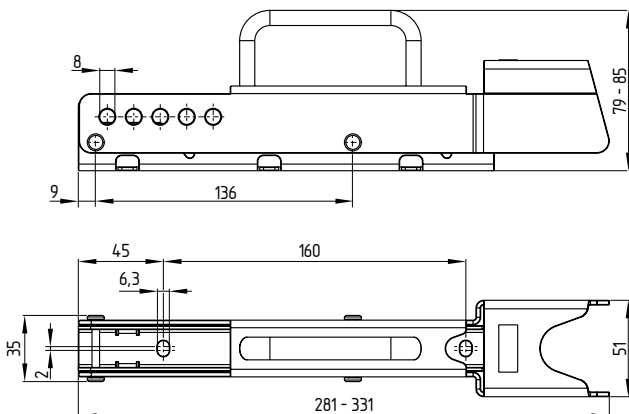
Emergency exit inset handle (Metal) P25



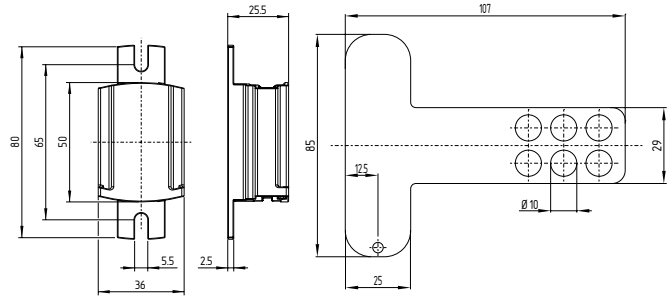
Accessories: Lockout tags

The lockout tags SZ 200 and SZ201-1 are optional as additional lockout tags for indoor and outdoor assembly are available.

Lockout tag SZ 200



Lockout tag SZ201-1



3.3 Sequence of the steps

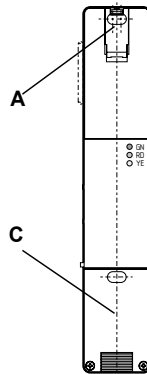
The following work instructions are valid for both indoor and outdoor assembly. If there are any differences with the versions these are indicated with notes or additional sketches.

Step 1

To free mounting holes unscrew the cover C for the wiring compartment and open flap A for the manual release.

To be observed:

- For **exterior installation**: Actuation of manual release (beneath flap) with triangular key (included in delivery)
- For **interior installation**: Actuation of manual release from the rear using a long triangular key (accessory TZ-96, ordering code 101175265).



Step 2

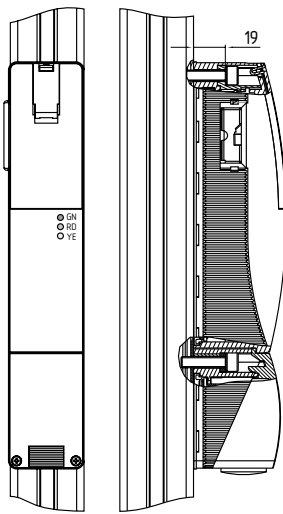
Enclosure of safety switchgear AZ/AZM201 mounted flush with doorpost.

- For **mounting inside**: An additional access hole **Z** $\geq \text{Ø}10$ mm is necessary for the manual release to allow external access.

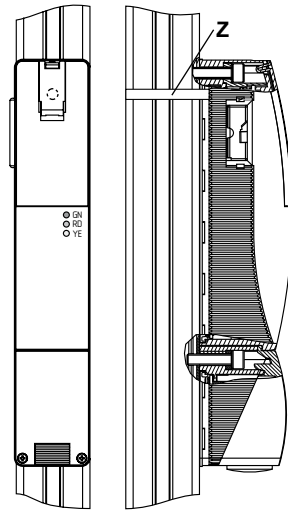
To be observed:

- Screws: M6
- Max. tightening torque for safety switchgear = 8 Nm, cover screw = 0.7 ... 1 Nm (Torx T10)
- Wall thickness of the device 19 mm
- Washers ISO 7089 - 6 (included in delivery)
- For applications with strong vibrations, please observe the screws are correctly secured.

Mounting outside



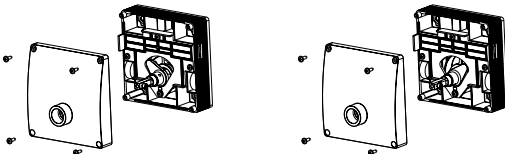
Mounting inside



Mounting tolerance
- horizontal: ± 2.5 mm

Step 3

- For **mounting outside**: Unscrew the cover of the actuator unit
- For **mounting inside**: Unscrew the cover of the emergency exit P1

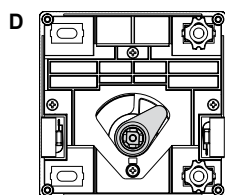
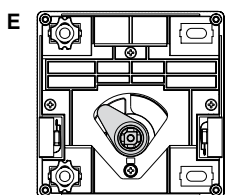


Step 4

Insert sliding blocks (included in delivery with actuator unit AZ/AZM) as shown.

To be observed:

- Observe the alignment (notch) of the sliding blocks
- E = Left hinged door
- D = Right hinged door

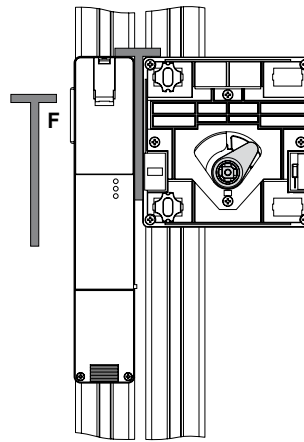


Step 5

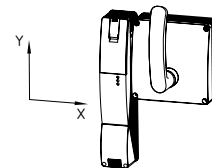
- For **mounting outside**: Fit the actuator unit to the doorpost by means of the spacer **F**: (7,5 mm)
- For **mounting inside**: Fit the emergency exit P1 to the doorpost by means of the spacer **F**: (7,5 mm)

To be observed:

- Actuator unit or emergency exit completely retracted
- Distance between solenoid interlock and actuator unit or emergency exit = 7.5 +0.5/-2.5 mm
- Fix the enclosure onto a flat surface by means of 2 screws M6
- Tightening torque = 8 Nm
- Wall thickness of the device 8 mm (see step 11)
- Washers ISO 7089 - 6 (included in delivery)
- For applications with strong vibrations, please observe a proper securing of the screws

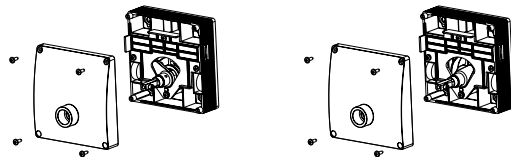


Tolerance
X = ± 1.5 mm
Y = ± 5.0 mm



Step 6

- For **mounting outside**: Mount the cover on the actuator unit
 - For **mounting inside**: Mount the cover on the emergency exit P1
- To be observed:**
- Actuator unit or emergency exit completely retracted



Step 7

- For **mounting outside**: Fit the door-handle
- For **mounting inside**: Fit the emergency exit handle

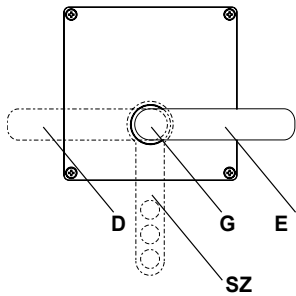
To be observed:

- Mount the door handle or emergency release P1
- **D** = for left hinged doors
- **E** = for right hinged door
- **G** = Hexagonal screw A/F 3 with screw-lock (included in delivery)
- For outdoor installation without emergency exit continue to paragraph 17

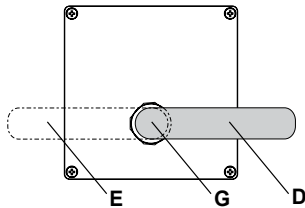


Sticker included in delivery of lockout tag.

Mounting outside



Mounting inside



Handle position horizontal when open.

Step 8

If an emergency exit is available, cut square tube **H** at length. De-burr the cut sides.

To be observed:

- Max. door leaf thickness $S = 170$ mm
- Length of sawn off square rod **H**

Mounting outside

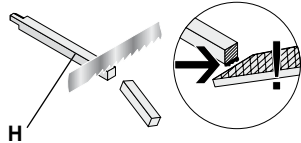
- P1: $L = S + 22 - 2$ mm
 P20: $L = S + 28$ mm
 P25: $L = S + 24$ mm
 P30/P31: $L = S + 50$ mm

Mounting inside

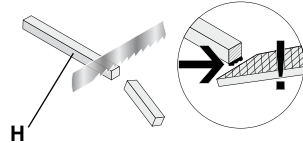
- P1: $L = S + 22 - 2$ mm

- Through-hole for square tube **H** $\varnothing 16$ mm

Mounting outside



Mounting inside

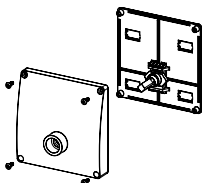


- For mounting outside and assembly with
 - emergency exit P20 continue from paragraph 14
 - emergency exit P25 continue from paragraph 15
 - locking linkage P30 or P31 continue from paragraph 16

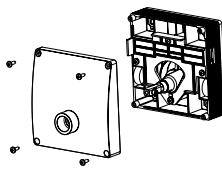
Step 9

- For **mounting outside**: Unscrew the cover of the emergency exit P1
- For **mounting inside**: Unscrew the cover of the actuator unit

Mounting outside



Mounting inside

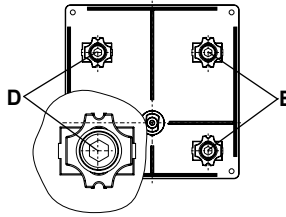


Step 10

Insert sliding blocks as shown (included in delivery)

To be observed:

- Observe the alignment (notch) of the sliding blocks
- **D** = for left hinged door
- **E** = for right hinged door



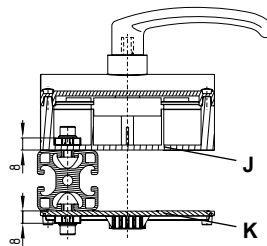
Step 11

- For **mounting outside**: Fit the bottom plate of the emergency exit **P1** to the door
- For **mounting inside**: Fit the bottom plate of the actuator unit to the door

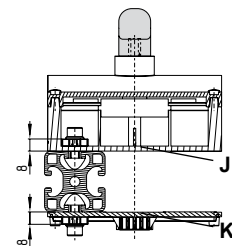
To be observed:

- Actuator completely in **J** (actuator unit or emergency exit unit) retracted
- Arrange both the emergency exit and the actuator unit parallel
- Screws M6
- Tightening torque = 8 Nm
- Wall thickness of the device 8 mm
- Washers ISO 7089 - 6 (included in delivery)
- For applications with strong vibrations, please ensure the screws are correctly secured.

Mounting outside



Mounting inside



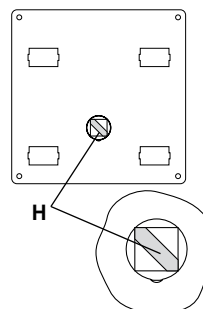
Step 12

- For **mounting outside**: Insert square rod **H** in the backside of the actuator unit
- For **mounting inside**: Insert square rod **H** in the backside of the emergency exit P1

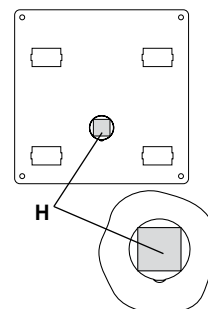
To be observed:

- For **mounting outside**: Insert chamfer of square into emergency exit or insert cut side of square into actuator unit. Position of the chamfer as shown, when actuator unit is actuated.

Mounting outside

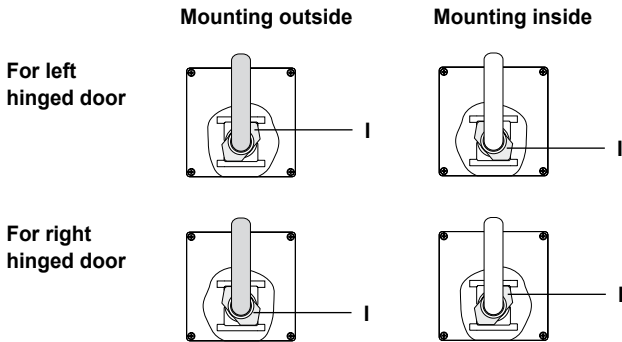


Mounting inside



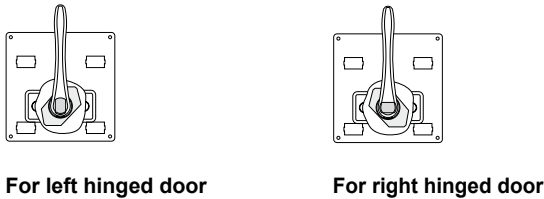
Step 13

- For **mounting outside**: Fit the cover and the handle onto the emergency exit
- For **mounting inside**: Fit the cover and the handle onto the actuator unit
- To be observed:**
- Position of the driving shaft I as shown, when actuator unit is actuated
- Functional test of the emergency exit handle: 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.
- After successful assembly continue from paragraph 17



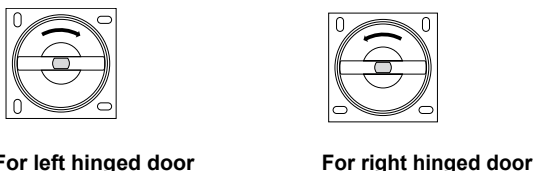
Step 14 – Mounting emergency exit P20

- Only for mounting outside!**
Fit emergency exit P20 to the door.
- To be observed:**
- Observe the position of the slotted hole
 - Actuator completely inserted into the actuator unit J
 - Emergency exit P20 parallel to actuator unit J
 - Screws: M6
 - Tightening torque = 8 Nm
 - Wall thickness of the device 8 mm
 - Washers ISO 7089 - 6 (included in delivery)
 - For applications with strong vibrations, please observe a proper securing of the screws
 - After the assembly of the emergency exit P20, proceed with step 17



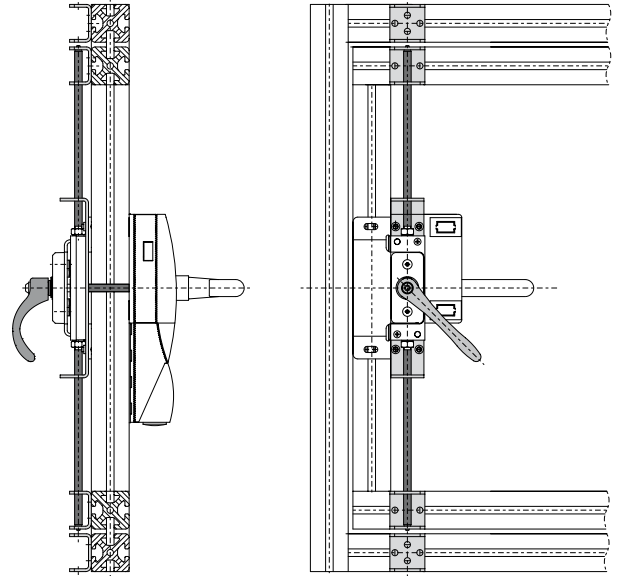
Step 15 – Mounting emergency exit P25

- Only for mounting outside!**
Fit emergency exit P25 to the door.
- To be observed:**
- Observe the position of the slotted hole
 - Actuator completely inserted into the actuator unit J
 - Emergency exit P25 parallel to actuator unit J
 - Screws: M6
 - Tightening torque = 8 Nm
 - Wall thickness of the device 8 mm
 - For applications with strong vibrations, please observe a proper securing of the screws
 - After the assembly of the emergency exit P25, proceed with step 17



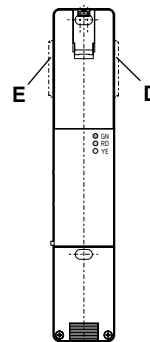
Step 16 – Mounting of the P30 or P31 locking rod

- Only for mounting outside!**
Fit the locking rod without emergency exit P30 either with emergency exit P31.
- To be observed:**
- See operating instructions AZ/AZM201-B30-P30/P31



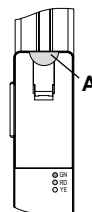
Step 17

- Clip the dust-proof flap in the unused side.
- To be observed:**
- D = for left hinged door
 - E = for right hinged door




Step 18

- After being put into operation, the manual release must be secured by installing the seal, which is included in delivery.
- For **mounting outside**: Seal the cover of the manual release **A**
 - For **mounting inside**: Secure the access hole for the auxiliary release **A** with a seal



4.1 Set-up checklist



Checklist

Set-up and maintenance

Checking safety door handle system AZ/AZM201
Within the scope of commissioning and regular maintenance of the machine, the following items of the safety door-handle system, consisting of AZ/AZM201, the corresponding actuator unit and the emergency exit must be checked and inspected by a specialist:

1. Fixation:
All fixing screws installed and tightened with the specified torque

2. Distance:
Distance 7.5 +0.5/-2.5 mm between safety switchgear AZ/AZM201 and actuator unit must be adhered to.

3. Emergency Exit
After locking, the correct closing of the door must be checked.
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
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.

4. Sticker emergency exit handle (included in delivery):
The sticker is visibly attached.

5. Dust shield cap:
Check tight fitting of the dust-proof flap

6. Functional testing:
The enabling signal is only transmitted to the safety circuit,
if the actuator is within range of the solenoid interlock and locked.

LED	STATUS
green	Operating voltage
yellow	Actuator inserted (and locked for AZM201)
flashes yellow	Actuator inserted and not locked (only for AZM201)
red	Error

7. Cover for manual release:
Access cover or access hole is sealed (only for AZM201).

Date / Signature:

