



**AZM 010N**

AZM 010N actuator is supplied with bayonet nut (adaptor) to suit VZH valves

### Features

- Control signal 0-10 Vdc
- Power supply 24 V
- Stroke 4.5 mm
- Regulation 30 seconds per mm
- Spring force 115 N
- Normally Closed (NC)
- Position indicator
- Including adaptor M30x1.5 to suit VZH valves
- Length of cable 2 m

### Description

For controllers with a continuous output 0-10 Vdc.

For activating valves of the VZH-series with thread M30x1.5.

Fitted to valve with bayonet nut M30x1.5.

Can be fitted in any position between the vertical and the horizontal.

Power cable 2 meters in length fixed to the housing.

### Technical data

Control signal	0-10 Vdc
Power supply	24 V 50/60 Hz (+20%)
Power consumption during operation	2 W
Activation power	approx. 5W / 5VA
Activation current	250 mA
Max operating temperature	+100°C
Operating temperature	0°C to +50°C
Storage and transport temperature	-25°C to +70°C
Humidity	< 85% rH (without condensation)
Protection type	IP54 (EN 60730-1, -2, 14)
Protection class	III (EN 60730-1)
Stroke length	4.5 mm
Regulation	30 seconds per mm
Spring force	115 N
Weight	150 g
Cable length	2 m

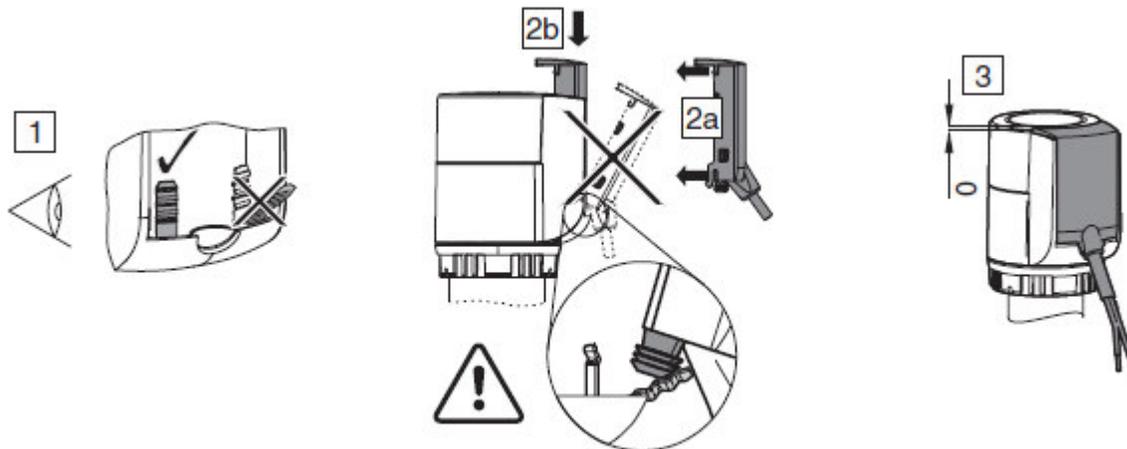
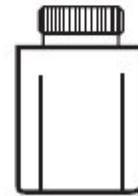
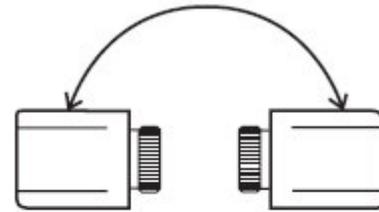
### Ordering

Type no.	Description
<b>AZM 010N</b>	Actuator, 0-10 Vdc control signal with M30x1.5 adaptor for VZH valves

**Installation**

Before working on the device shut off the power.

- The connection may be made only by an authorized person.
- The connection must be made according to the wiring diagram.
- The device is intended for connection to fixed cables in closed and dry rooms.
- When installing, make sure that voltage-carrying lines, power supply and relay connection lines, do not come into contact with low-voltage cables, such as sensor wires (minimum distance of 4 mm at base insulated conductors).
- Provide sufficient protection against independent release of all connecting conductors according to EN60730, part 1 requirements.
- Note the VDE 0100, EN 60730, Part 1, and the rules of the local power company.
- If the device does not work, first check the correct connection and the power supply.
- Incorrect connection may damage the actuator! Damage caused by incorrect connection and / or improper handling will not be covered by the warranty!



**Installation of the Valve**

The flow direction must be in accordance with the arrow on the valve body.

Avoid installing the actuating drive below the valve spindle axis.

Drops of water might penetrate the actuating drive and impair its functioning.

### Installation of the Actuator

First screw the bayonet nut to the valve and tighten with 2 N.

Then fit the actuator to the valve, using no force.

Three grooves on the actuator ring indicate the correct position opposite the three ribs on the bayonet nut.

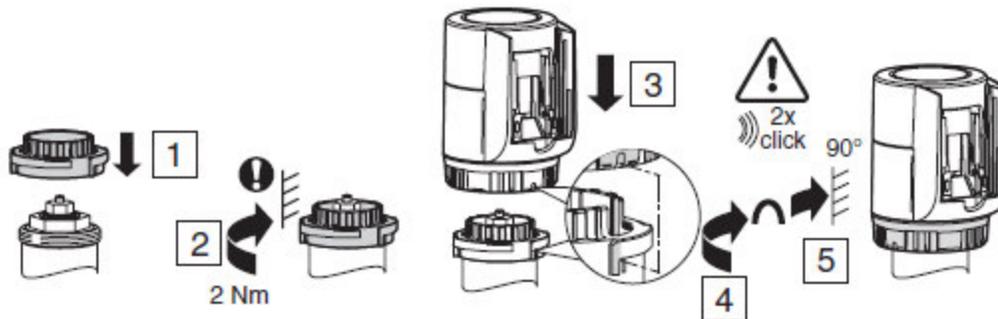
Turn the bayonet ring clockwise until a click is heard.

The valve plug is pre-tensioned.

When a second click is heard, the actuator is operable.

This position is the safety position to prevent slackening caused by vibrations.

Whilst the bayonet nut is being rotated, the actuator adapts itself to the closing dimension of the valve.



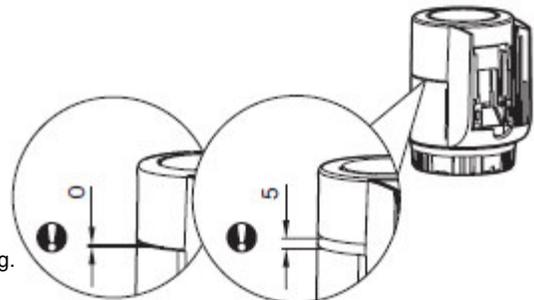
### Position indicator

The cover acts as the largest-possible position indicator.

It is visible in all directions and is noticeable in dark installation locations.

The cover rises and the grey stroke part becomes visible.

At full stroke, the cover stands up to 5 mm above the upper edge of the plug.



### Operation

The actuator has an electrically heated, overload-protected expansion element that transfers its stroke directly to the attached valve.

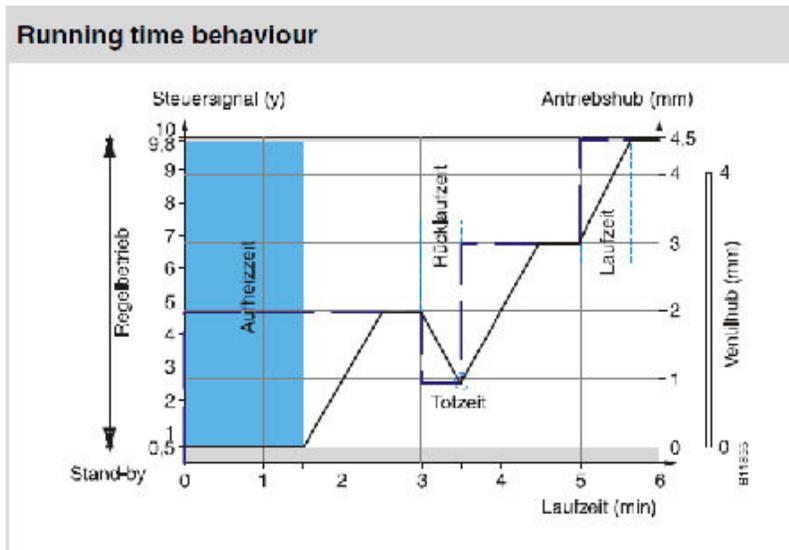
It operates silently and requires no maintenance.

If the heating element is switched on from cold (ambient temperature of approx. 21 °C), the valve starts to open after a pre-heating time of about 2.4 minutes and has performed a stroke of 4.5 mm after a further approx. 2.7 minutes.

When the actuator is regulating, it moves to the desired stroke position as a function of control voltage  $y$ .

A movement (warm-up) of 1 mm in approx. 30 s is carried out: the stroke is monitored by an inductive sensor.

The closing procedure is chronologically almost symmetrical to the opening procedure, whereby the expansion element cools down and the valve is closed by means of a spring.



### Stand-by mode

The actuator changes to stand-by mode as soon as the control voltage falls below 0.5 V (in direction of operation 1) or exceeds 9.5 V (in direction of operation 2).

### Running time (preparation)

When cold, the actuator requires a warming-up period of about 2.4 min.

The same time is also needed when the actuator has been in stand-by mode for over 6 min.

The actuator is then ready for regulation.

### Running time (regulation)

When the actuator is in regulating mode, the stroke of 4.5 mm is attained in approx. 2.7 min. A change of 1 mm stroke (warm-up) can be achieved within about 30 seconds.

The running time depends on how long the actuator stays in one position before the position is changed.

Depending on the setting of DIP switch 1 (see 'DIP switch settings'), the continuous actuator can be used as a 0...10 V (direction of operation 1) or a 10...0 V (direction of operation 2).

The control signal is then assigned linearly to the set stroke.

The integrated positioner controls the actuator in accordance with the command signal y.

The continuous actuator positions the valve, and as soon as the position has been attained, it stops.

When the plug-in module is inserted, the actuator adopts the factory settings for the electric zero point.

The initial position detection (calibration) is carried out as soon as the actuator attains the stand-by mode for the first time.

This takes into account the mechanical zero point and the positional tolerances between the positional plate and the coil on the printed circuit board.

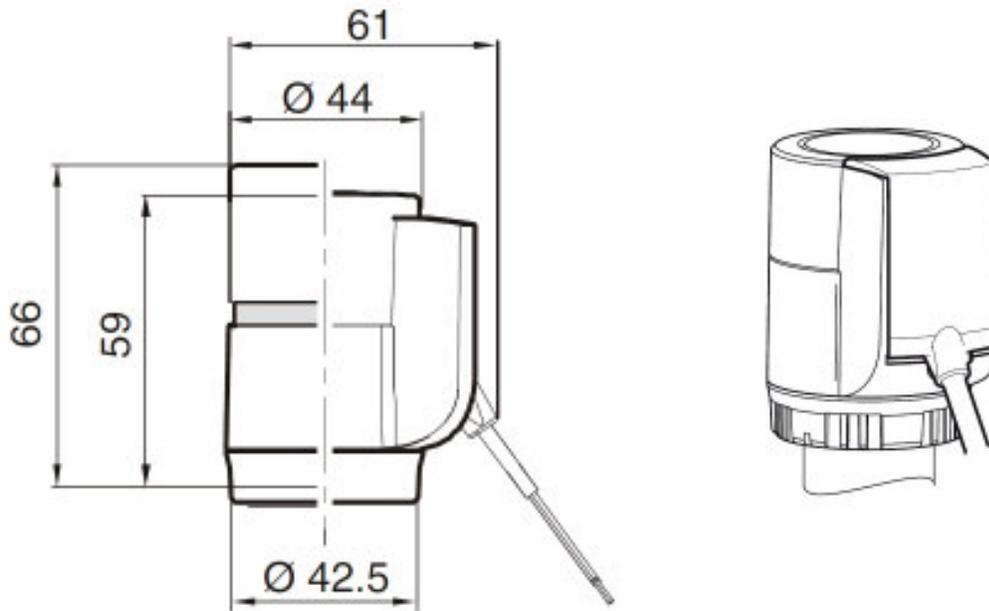
This sets the current position as the new zero point.

Because of the accuracy of the sensor, it is not necessary to make any adjustments across the stroke range.

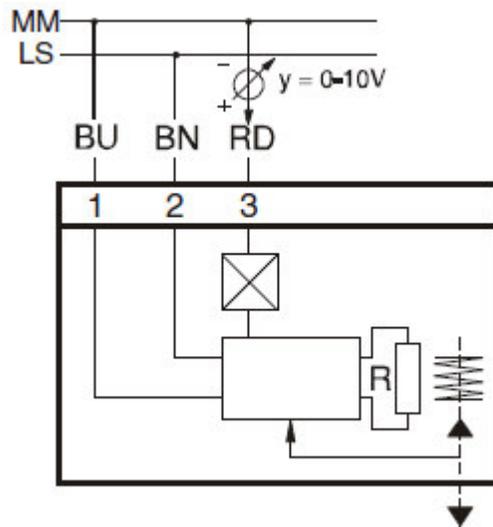
## DIP switch settings

Switch 1	Off	0...10 V	Direction of action 1
	On	10...0 V	Direction of action 2
Switch 2	Off	Stroke 4.5 mm	
	On	Stroke 3 mm	
Switch 3	Off	Split range off	
	On	Split range on	
Switch 4	Off	0...4.5 V = 0...100%	Switches to 4.5...0 V = 0...100% when switch 1 is at 'on'
	On	5.5...10 V = 0...100%	Switches to 10...5.5 V = 0...100% when switch 1 is at 'on'
Switch 3	Off	2...10 V = 0...100%	Switches to 10...2 V = 0...100% when switch 1 is at 'on'
Switch 4	On		

**Dimensions**



**Wiring**



We reserve the right to make changes in our products without any notice which may effect the accuracy of the information contained in this leaflet.