

# AKF 113S: Rotary actuator with spring return and positioner

## How energy efficiency is improved

Torque-dependent cut-off facility for efficient usage of energy

## Features

- For actuation of 2- and 3-way ball valves
- For controllers with a continuous output (0...10 V)
- Returns to the starting position in the event of a power failure or the activation of a safety device
- Electronic torque-dependent cut-off
- Direction of rotation can be selected during fitting



AKF113SF122

## Technical data

Power supply		
Power supply 24 V~		±20%, 50...60 Hz
Power supply 24...48 V=		±20%
Power consumption during operation		3.5 W, 5 VA
Power consumption when idle		2.5 W, 2.5 VA

Parameters		
Positioner	Positioning signal y	0...10 V, $R_i = 100 \text{ k}\Omega$
	Positional feedback signal	0...10 V (0...100%)
	Admissible load	> 10 kN
	Starting point $U_0$	0 V
	Control span $\Delta U$	10 V
	Switching range $X_{sh}$	0.2 V
	Torque and holding torque	7 Nm
	Angle of rotation	Max. 95°
	Power cable	0.9 m, 4 × 0.75 mm <sup>2</sup> (fixed to housing)
	Running time for 90° motor	90 s
	Running time for 90° spring	15 s

Ambient conditions		
Admissible ambient temperature		−32...55 °C
Admissible ambient humidity		< 95% rh

Construction		
Weight		1.3 kg
Housing		Two-piece
Housing material		Cast aluminium

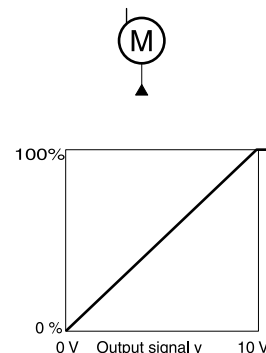
Standards and directives		
Type of protection		IP 54 as per EN 60529
Protection class		III as per IEC 60730
CE conformity as per	EMC directive 2004/108/EC	EN 61000-6-2, EN 61000-6-3

Overview of types	
Type	Properties
AKF113SF122	Rotary actuator with spring return and positioner

Accessories	
Type	Description
0510240001	Assembly kit for VKR/BKR ball valves as spare part and as accessory for rotary actuators ASF 112, 113 from index B

## Description of operation

The built-in positioner controls the positioning motor depending on the controller's output signal y. When the positioning signal is increasing, the coupling piece turns to the 90° position (scale on actuator) until the power-dependent cut-off. In the two end positions (limit stop due to angle-of-rotation limit, max. angle of rotation of 95° reached) or in the case of an overload, the torque-dependent cut-off is



activated (no limit switches). If the power is cut off or is switched off by a safety device at connection 2 (cable = red), the motor releases the gear unit so that the spring turns the coupling piece back to the 0° position. The direction of rotation for the safety function is determined by how the actuator is mounted on the control ball valves. A signal converter is required for the reverse direction of operation.

### Intended use

This product is only suitable for the purpose intended by the manufacturer, as described in the “Description of operation” section.

All related product documents must also be adhered to. Changing or converting the product is not admissible.

## Engineering and fitting notes

The electronic concept enables the parallel operation of multiple control ball valves with different torques. However, it must be ensured that the operating voltage is within the required tolerance range. The actuators must not be mechanically connected. The actuator can be fitted in any position apart from suspended, and can be plugged directly onto the control ball valves of types VKR and BKR and fixed by means of the mounting kit.

No auxiliary switches or potentiometers can be installed subsequently.

The angle of rotation can be limited to between  $0^\circ$  and  $90^\circ$  in  $5^\circ$  stages.

Note! The housing must not be opened - risk of injury due to return spring.

### Additional technical data

The two-part section of the housing (must not be opened) contains the brushless DC motor, the electronic control unit and the positioner, the maintenance-free gear unit with the anti-blocking function and the return spring.

The actuator can be turned and locked into any position using the hex spanner supplied (see MV 505820). The gear unit is released again by unlocking it mechanically or by connecting the operating voltage.

## Power consumption

Type	Running time [s]	Status	Active power P [W]	Apparent power S [VA]
AKF113F122	90	Operation	3.5	5.0
		Standstill	2.5	2.5

## Outdoor installation

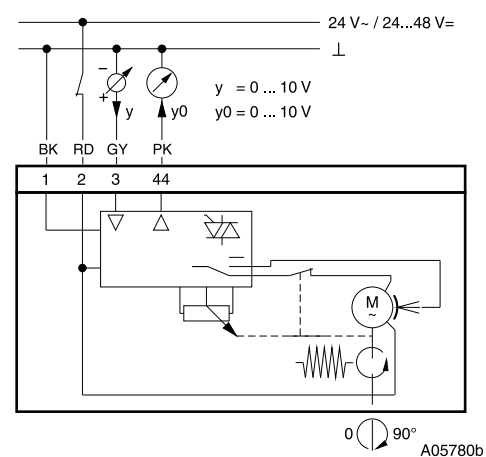
If installed outside of buildings, the devices must be additionally protected from the weather.

## Disposal

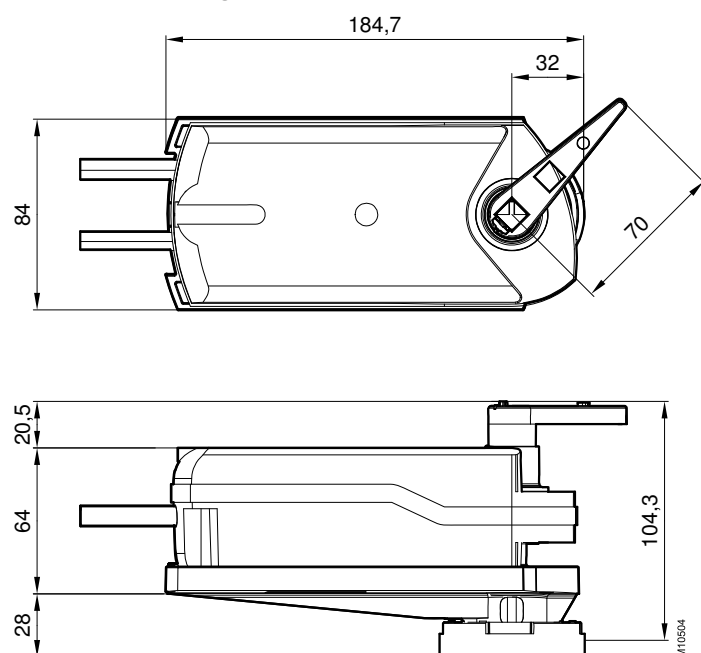
When disposing of the product, observe the currently applicable local laws.

More information on materials can be found in the Declaration on materials and the environment for this product.

### Connection diagram



## Dimension drawing



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