

AKF 113S: Rotary drive with spring return and positioner

How energy efficiency is improved

Torque related cut-off for efficient energy use.

Areas of application

For operating 2-way and 3-way control ball valves, for example. For controllers with continuous output (0...10 V).

Characteristics

- Return to original position in the event of power failure or activation of a safety device
- Electronic torque-dependent shut-off using stops in the device
- Direction of rotation changed by installing the other way round

Technical description

- Two-piece housing made from cast light alloy with motor, gearbox, return spring, control electronics and positioner
- Also supplied: Installation kit for fitting to ball valves of type VKR and BKR, hex spanner for manual adjustment or spring winding, and position indication
- Connecting cable 0,9 m long, 4× 0,75 mm², fixed to housing



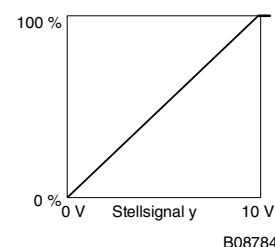
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Type	Running time for 90°		Torque Nm	Holding torque Nm	Voltage	Weight kg
	Motor s	Spring s				
AKF 113S F122	90	15	7	7	24 V~ / 24...48 V=	1,3

Positioner			fixed to		
Control voltage	0...10 V, R _i = 100 kΩ		Starting point U ₀	0 V	
Position feedback signal	0...10 V (0...100%)		Control span ΔU	10 V	
Perm. load	> 10 kΩ		Switching range X _{sh}	0,2 V	
Supply voltage	24 V~ ± 20%, 50/60 Hz 24...48 V= ± 20%		Protection class	IP 42 acc. to EN 60529	
Power consumption	3,5 W 5 VA		See installation instructions	IP 54	
Rotation angle	max. 95°		Protection class	III acc. to IEC 60730	
Perm. ambient temperature	-32...55 °C		Connection diagram	A05780	
Perm. ambient humidity:	< 95% rh		Dimensioned drawing	M10504	
			Fitting instructions	P100002659	
			Declaration on materials and the environment	MD 51.373	



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Accessories

05210240001 Mounting kit for ball valves VKR/BKR as spare part and as accessory for rotary drives ASF 112 and 113 from index B, MV P100002479

Function

The installed positioner controls the servo motor depending on the control output signal y . As the output signal increases, the coupling sleeve rotates to the 90° position (scale on drive) until the load-dependent shut-off occurs. The torque-dependent shut-off mechanism is activated in both final positions (stop caused by reclining rotation limit, maximum rotation angle of 95° reached) or in the event of overloading (not a limit switch). If the power fails or the equipment is shut off by a safety device at connection 2 (cable = red) the motor releases the gearbox so that the coupling sleeve is rotated back to the 0° position by the spring. The direction of rotation for the safety function is determined by appropriate actuator positioning on the control ball valves. A signal converter is required for the other direction of travel.

Engineering and fitting notes

The electronic system allows several control ball valves to operate in parallel with different torques. However, it must be ensured that the operating voltage is within the required tolerance. The drives must not be mechanically coupled. The drive can be installed in any position (but must not be suspended), can be directly fitted to control ball valves of type VKR and BKR and is fixed in position using the installation kit.

No auxiliary relays or potentiometers can be retrofitted.

The rotation angle can be limited to a range of 0° to 90° in steps of 5°.

Attention! The housing must not be opened, risk of injury from return spring.

Outdoor installation. We recommend that the equipment is provided with additional protection from the weather if it is installed outside.

Additional specifications

The two-piece housing part (must not be opened) contains a brushless DC motor, the control electronics and the positioner, a maintenance-free non-blocking gearbox and a re-adjusting spring. The drive can be rotated to any position using the provided hex spanner and locked in position (see MV 505820). The gearbox is released again by means of mechanical unlocking or applying the operating voltage.

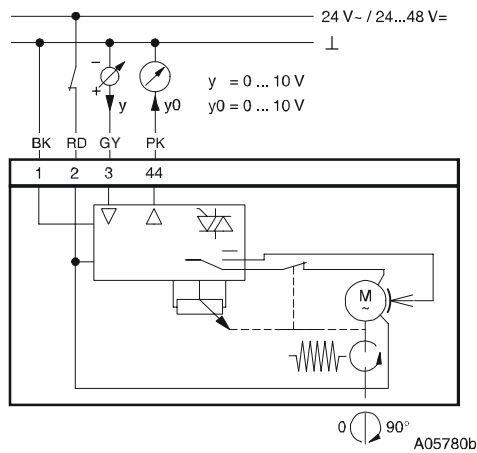
Power consumption:

Type	Running time s	Condition	active power P W	apparent power S VA
AKF 113S F122	90	Operation	3,5	5,0
		Stationary	2,5	2,5

CE - Conformity

EMC directive 2004/108/EC
 EN 61000-6-2
 EN 61000-6-3

Connection diagram



Dimension drawing

