

**Modulating rotary actuator with fail-safe for ball valves**

- Torque motor 20 Nm
- Nominal voltage AC/DC 24 V
- Control modulating 0.5...10 V
- Position feedback 0.5...10 V
- Deenergised open (NO)
- PWIS/LABS-compliant according to VDMA 24364


**Technical data**

<b>Electrical data</b>	Nominal voltage	AC/DC 24 V
	Nominal voltage frequency	50/60 Hz
	Nominal voltage range	AC 19.2...28.8 V / DC 21.6...28.8 V
	Power consumption in operation	5.5 W
	Power consumption in rest position	3 W
	Power consumption for wire sizing	8.5 VA
	Connection supply / control	Cable 1 m, 4x 0.75 mm <sup>2</sup>
	Parallel operation	Yes (note the performance data)
<b>Functional data</b>	Torque motor	20 Nm
	Torque fail-safe	20 Nm
	Operating range Y	0.5...10 V
	Input impedance	100 kΩ
	Position feedback U	0.5...10 V
	Position feedback U note	Max. 0.5 mA
	Position accuracy	±5%
	Direction of motion motor	Y = 0 (0 V = A – AB = 0%)
	Direction of motion fail-safe	Deenergised NO, valve open (A – AB = 100%)
	Direction of motion note	for valves with L-bore (A – AB = 0%)
	Manual override	by means of hand crank and locking switch
	Running time motor	90 s / 90°
	Running time fail-safe	<20 s @ -20...50°C / <60 s @ -30°C
	Sound power level, motor	45 dB(A)
Position indication	Mechanical	
Service life	Min. 60'000 fail-safe positions	
<b>Safety data</b>	Protection class IEC/EN	III, Safety Extra-Low Voltage (SELV)
	Power source UL	Class 2 Supply
	Degree of protection IEC/EN	IP54
	Degree of protection NEMA/UL	NEMA 2
	Enclosure	UL Enclosure Type 2
	EMC	CE according to 2014/30/EU
	Certification IEC/EN	IEC/EN 60730-1 and IEC/EN 60730-2-14
	UL Approval	cULus according to UL60730-1A, UL60730-2-14 and CAN/CSA E60730-1 The UL marking on the actuator depends on the production site, the device is UL-compliant in any case

**Technical data**

<b>Safety data</b>	PWIS/LABS-conformity	According to VDMA 24364 (test class C1) Approved for use in zone II Cleaning with low-pressure plasma treatment
	Type of action	Type 1.AA
	Rated impulse voltage supply / control	0.8 kV
	Pollution degree	3
	Ambient humidity	Max. 95% RH, non-condensing
	Ambient temperature	-30...50°C [-22...122°F]
	Storage temperature	-10...40°C [14...104°F]
	Servicing	maintenance-free
<b>Weight</b>	Weight	2.2 kg

**Safety notes**


- This device has been designed for use in stationary heating, ventilation and air-conditioning systems and must not be used outside the specified field of application, especially in aircraft or in any other airborne means of transport.
- Outdoor application: only possible in case that no (sea) water, snow, ice, insolation or aggressive gases interfere directly with the device and that it is ensured that the ambient conditions remain within the thresholds according to the data sheet at any time.
- Only authorised specialists may carry out installation. All applicable legal or institutional installation regulations must be complied with during installation.
- The device may only be opened at the manufacturer's site. It does not contain any parts that can be replaced or repaired by the user.
- Cables must not be removed from the device.
- The device contains electrical and electronic components and must not be disposed of as household refuse. All locally valid regulations and requirements must be observed.
- PWIS/LABS-conformity is guaranteed as long as the packaging is unopened. Once the PWIS/LABS-compliant packaging has been opened, the proper handling of the products is the responsibility of the customer. PWIS/LABS-conformity of unopened products is guaranteed for a period of one year after cleaning, provided they are handled properly, professionally and cleanly. Proof of proper, professional and clean handling is the responsibility of the purchaser. Ensure that the required cleanliness of the products is maintained. Do not touch the products with bare hands. Belimo accepts no liability for the consequences resulting from the contamination of a product caused by the customer.

**Product features**

<b>Operating mode</b>	The actuator is connected with a standard control signal 0...10 V. The actuator moves the valve to the operating position at the same time as tensioning the return spring. The valve is turned back to the fail-safe position by spring force when the supply voltage is interrupted.
<b>Simple direct mounting</b>	Simple direct mounting on the ball valve with only one screw. The mounting orientation in relation to the ball valve can be selected in 90° steps.
<b>Manual override</b>	By using the hand crank the valve can be operated manually and engaged with the locking switch at any position. Unlocking is carried out manually or automatically by applying the operating voltage.
<b>Adjustable angle of rotation</b>	Adjustable angle of rotation with mechanical end stops.

**Electrical installation**

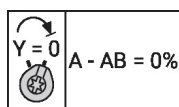
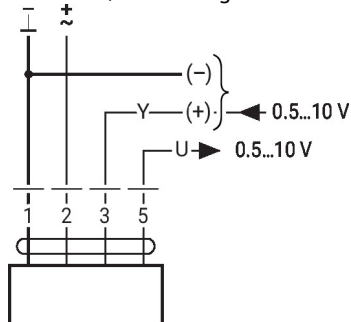
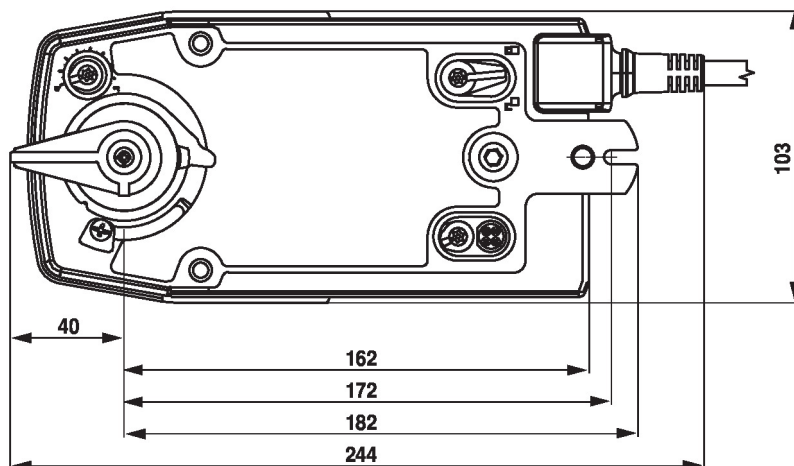
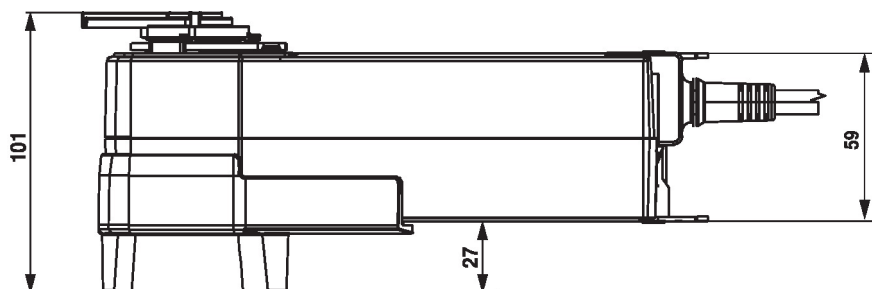

- **Supply from isolating transformer.**
- **Parallel connection of other actuators possible. Observe the performance data.**

**Electrical installation**
**Wire colours:**

- 1 = black
- 2 = red
- 3 = white
- 5 = orange

**Wiring diagrams**

AC/DC 24 V, modulating


**Dimensions**

**Further documentation**

- The complete product range for water applications
- Data sheets for ball valves
- Installation instructions for actuators and/or ball valves
- General notes for project planning