BELIMO

Technical data sheet DGR24A-MF-7

Parameterisable rotary actuator for butterfly valves with mounting flange ISO 5211-F07

- **Torque 60 Nm**
- **Nominal voltage AC/DC 24 V**
- **Control: modulating DC 0 ... 10 V or variable**
- **Position feedback DC 2 ... 10 V or variable**

Technical data

Electrical data

Nominal voltage	AC 24 V, 50/60 Hz / DC 24 V
Nominal voltage range	AC 19.2 ... 28.8 V / DC 21.6 ... 28.8 V
Power consumption In operation	9 W @ nominal torque
At rest	3 W
For wire sizing	14 VA
Connection	2 x cable 1 m, 4 x 0.75 mm²

Functional data	Factory settings	Variable	Setting
Torque (nominal torque)	Min. 60 Nm @ nominal voltage		
Control Control signal Y	DC 0 … 10 V, input impedance 100 kΩ	Open-close / 3-point (only AC), modulating (DC 0 ... 32 V)	.....
Operating range	DC 2 ... 10 V	Starting point DC 0.5 ... 30 V End point DC 2.5 ... 32 V	.....
Position feedback (Measuring voltage U)	DC 2 ... 10 V, max. 0.5 mA	Starting point DC 0.5 ... 8 V End point DC 2.5 ... 10 V	.....
Position accuracy	±5%		
Manual override	Not allowed		
Running time	150 s / 90°∢		
Sound power level	max. 45 dB (A) (without butterfly valve)		
Position indication	Mechanical, pluggable		

Safety

Protection class	**III** Safety extra-low voltage UL Class 2 Supply
Degree of protection	IP54 in any mounting position NEMA 2, UL Enclosure Type 2
EMC	CE in accordance with 2004/108/EU
Certification	Certified to IEC/EN 60730-1 and IEC/EN 60730-2-14 cULus according to UL 60730-1A and UL 60730-2-14 and CAN/CSA E60730-1:02
Mode of operation	Type 1
Rated impulse voltage	0.8 kV
Control pollution degree	3
Ambient temperature	+0° ... +50°C
Non-operating temperature	–40° ... +80°C
Ambient humidity	95% r.h., non-condensating
Maintenance	Maintenance-free

Dimensions / Weight

Dimensions	See «Dimensions» on page 4
Weight	Approx. 5 kg

Safety notes

- **The actuator has been designed for use in stationary heating, ventilation and air conditioning systems and is not allowed to be used outside the specified field of application, especially in aircraft or in any other airborne means of transport.**
- **It may only be installed by suitably trained personnel. Any legal regulations or regulations issued by authorities must be observed during assembly.**
- **Because of the fact that it is mandatory that the two actuators run in synchronised fashion, no synchronisation is permitted to be carried out. Accordingly it is not permitted**
  - **to press the gear disengagement push-button when the actuator is carrying voltage,**
  - **to actuate the direction of rotation switch or**
  - **to adjust the end stops (0 ... 90°◁).**
- **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.**
- **The cable must not be removed from the device.**
- **The device contains electrical and electronic components and is not allowed to be disposed of as household refuse.**

Product features

Application

The actuator is used together with the BELIMO butterfly valve D6.. or other valves with the following mechanical specifications:
– Square stem head, WAF 17 mm, for form-fit attachment of the rotary actuator
– Hole circle (d = 70 mm) for assembly with the butterfly valve
Adapters for other stem head dimensions available on request.

Mode of operation

The actuator is controlled with a standard modulating signal of DC 0 ... 10 V and travels to the position defined by the control signal. Measuring voltage U serves for the electrical display of the actuator position 0 ... 100% and as slave control signal for other actuators.

Parameterisable actuators

The factory settings cover the most common applications. Input and output signals and other parameters can be altered with the the BELIMO PC-Tool, MFT-P.

Simple direct mounting

Simple direct mounting on a butterfly valve with ISO 5211-F07 mounting flange.
The mounting position in relation to the butterfly valve can be selected in 90° steps◁.

High functional reliability

The actuator is overload proof, requires no limit switches and automatically stops when the end stop is reached.

Restrictions

Because of the fact that it is mandatory that the two actuators run in synchronised fashion, neither a manual synchronisation nor an adaption is permitted to be carried out (see also «Safety notes»).
But it is possible to alter the following signals with the BELIMO Service Tool, MFT-P:
– Input signal (Y) in the master actuator
– Output signal (U5) in the slave actuator

Accessories

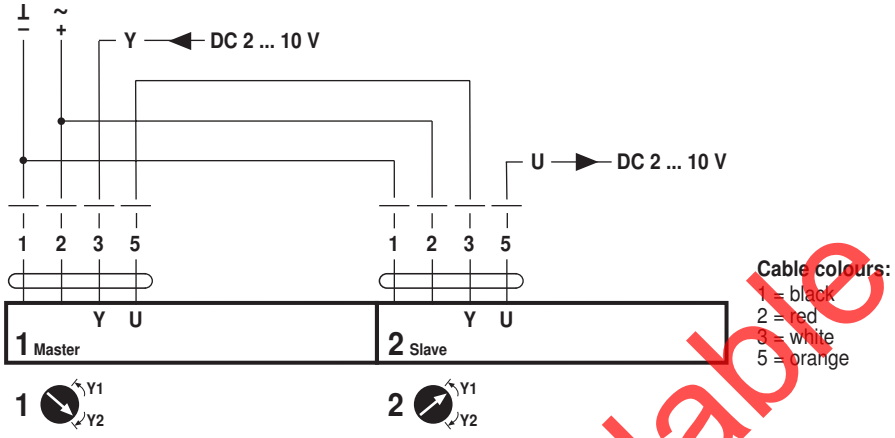
Electrical accessories

Description	Data sheet
Auxiliary switch S..A..	T2 - S..A..
Feedback potentiometer P..A..	T2 - P..A..
BELIMO PC-Tool MFT-P	T2 - MFT-P

Electrical installation

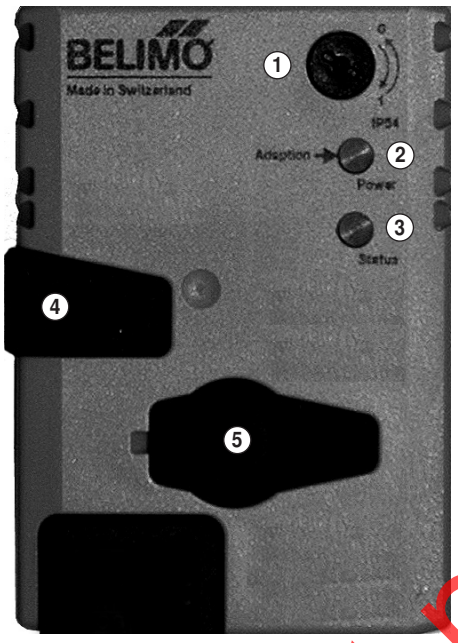
Piggyback operation wiring diagram
(mechanically coupled actuators)

Notes
- Connect via safety isolation transformer.
- Direction of rotation switch is covered.
  Factory setting: Direction of rotation Y2
- Two actuators are connected in master-slave operation.
- Master-Slave operation is permitted only on one fixed axis.
- Sequence control to another DGR actuator is not permitted.



Direction of rotation

Operating controls and indicators



Caution
In accordance with the information under «Safety notes» and «Restrictions», no operating controls may be actuated.

① **Direction of rotation switch**
Switching over: Direction of rotation changes

② **Push-button and green LED display**
Off: No voltage supply or fault
On: In operation
Press button: Switches on angle of rotation adaptation followed by standard operation

③ **Push-button and yellow LED display**
Off: Standard operation
On: Adaptation or synchronising process active
Press button: No function

④ **Gear disengagement switch**
Press button: Gear disengaged, motor stops, manual override possible
Release button: Gear engaged, synchronisation starts, followed by standard operation

⑤ **Service plug**
For connecting parameterising and service tools

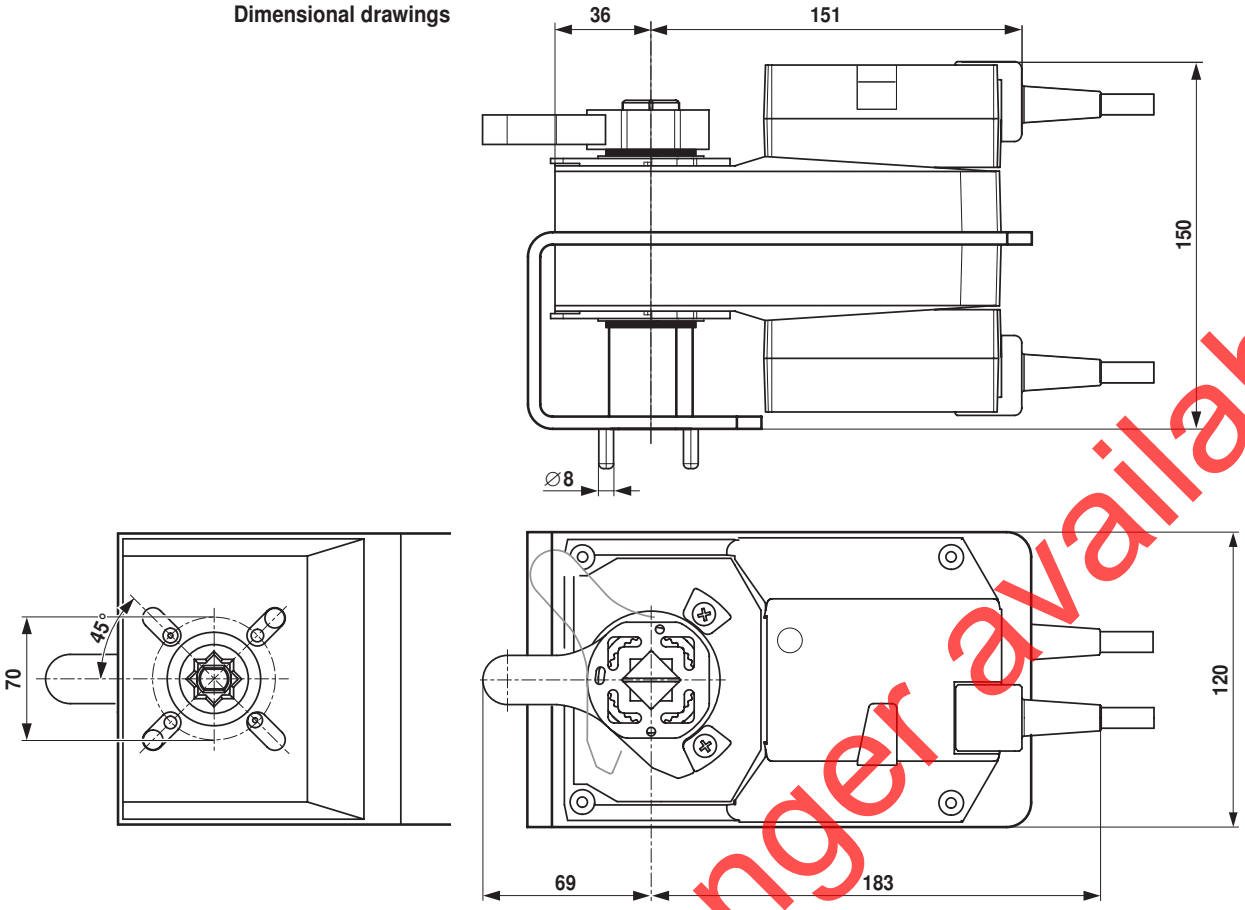
Check voltage supply connection

a) ② Off and ③ On
b) ② Blinking and ③ Blinking

} Check the supply connections.
Possibly ⊥ and ~ are swapped over.

Dimensions [mm]

Dimensional drawings



Further documentations

- Overview Valve-actuator combinations
- Data sheets for butterfly valves
- Installation instructions for actuators and/or butterfly valves, respectively
- Notes for project planning (hydraulic characteristic curves and circuits. installation regulations. commissioning. maintenance etc.)