Linear actuator for 2-way and 3-way globe valves

- Actuating force 1000 N
- Nominal voltage AC/DC 24 V
- Control 3-point
- NV24-3 with cable connection
- NV24-3-T with terminal connection
- Brackets and adapter sets for third-party valves as accessories (UNV-..)

Technical data

Electrical data

<table>
<thead>
<tr>
<th>Nominal voltage</th>
<th>AC 24 V, 50/60 Hz / DC 24 V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal voltage range</td>
<td>AC 19.2 … 28.8 V / DC 21.6 … 28.8 V</td>
</tr>
<tr>
<td>Power consumption Operation For wire sizing</td>
<td>1.5 W @ nominal force 3 VA</td>
</tr>
<tr>
<td>Connection NV24-3 NV24-3-T</td>
<td>Cable 1 m, 3 x 0.75 mm² Terminal connection</td>
</tr>
<tr>
<td>Parallel operation</td>
<td>Yes (note performance data for supply!)</td>
</tr>
</tbody>
</table>

Functional data

| Actuating force Closing force Inhibiting force | 1000 N 800 N |
| Manual override | With hexagon socket screw key, temporary |
| Nominal stroke | 20 mm |
| Actuating time | 7.5 s/mm or 3.75 s/mm, selectable |
| Sound power level | ≤35 dB (A) |
| Position indication | Mechanical 5 … 20 mm stroke |

Safety

| Protection class | III Safety extra-low voltage |
| Degree of protection | IP54 |
| EMC | CE according to 2004/108/EC |
| Mode of operation | Type 1 (EN 60730-1) |
| Rated impulse voltage | 0.33 kV (EN 60730-1) |
| Control pollution degree | 3 (EN 60730-1) |
| Ambient temperature | 0 … +50°C |
| Non-operating temperature | −40 … +80°C |
| Ambient humidity | 95% r.h., non-condensating (EN 60730-1) |
| Maintenance | Maintenance-free |

Dimensions / Weight

| Dimensions | See «Dimensions» on page 4 |
| Weight | approx. 1.5 kg with bracket UNV-002 (without valve) |

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.
- The device does not contain any parts that can be replaced or repaired by the user.
- The device contains electrical and electronic components and is not allowed to be disposed of as household refuse. All locally valid regulations and requirements must be observed.
Product features

Mode of operation
The actuator is activated with a 3-point signal.

Installation on Belimo valves
If a combination of actuator and BELIMO globe valve is ordered, then one UNV-002 bracket is included in the scope of delivery.

If an actuator is ordered without Belimo globe valve, then the UNV-002 bracket (see «Accessories») must also be ordered.

Installation on third-party valves
Prior to installation on a third-party valve, a suitable bracket UNV-.. (see «Accessories») must first be screwed to the actuator. The adapter set integrated therein is comprised of a valve neck adapter and a valve stem adapter. The valve neck adapter, together with a clamping strap on the bracket, makes possible simple installation of the actuator on the valve neck. The valve stem adapter is mounted on the valve stem. The actuator spindle can be coupled to the valve stem with the valve stem coupling.

The actuator can be rotated by 360° on the valve neck.

Retrofit actuators NV..-R are also available which are equipped with a Retrofit bracket and which can be used with corresponding ZNV-.. (adapter set) for valves from a wide array of manufacturers.

Manual override
The stroke can be adjusted in a voltage-free state by using a hexagon socket screw key (5 mm), which is plugged into the actuator at the top. If the hexagonal key is turned in a clockwise direction, then the actuator spindle will extend from the actuator housing (pushing) and maintain the position until a nominal voltage is applied (the controller has first priority).

Functional reliability
The actuator is protected against short circuits, polarity reversal and overloading.

Position indication
The stroke is indicated mechanically on the bracket. The stroke range adjusts itself automatically.

Combination valve/actuator
Refer to the Belimo valve documentation for suitable valves, their permitted media temperatures and closing pressures.

Accessories

Description

Mechanical accessories
Brackets and adapter sets UNV-.. see www.belimo.eu/retrofit

Electrical installation

Wiring diagram

Notes
• Connect via safety isolation transformer.
• Parallel connection of other actuators possible.

Cable colours:
1 = black
2 = red
3 = white
Functions

Alignment of the operating elements

The terminals for the cable connection and the operating element S1 are located under the cover of the actuator.

By setting slide switch S1 it is possible to configure the actuator very simply on site to suit actual requirements.

- S1.1 Actuating time
- S1.2 Valve closing point

Functional description

<table>
<thead>
<tr>
<th>Function</th>
<th>Description</th>
<th>Switch</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actuating time</td>
<td>The running time for full stroke varies as a function of the nominal stroke. (The running time for a 20 mm stroke and the standard actuating time is 150 s).</td>
<td>S1.1</td>
</tr>
<tr>
<td>Standard 1)</td>
<td>Actuating time 7.5 s/mm OFF</td>
<td></td>
</tr>
<tr>
<td>fast</td>
<td>Actuating time 3.75 s/mm ON</td>
<td></td>
</tr>
<tr>
<td>Valve closing point</td>
<td>Closing point with linear spindle retracted or extended.</td>
<td>S1.2</td>
</tr>
<tr>
<td>up 2)</td>
<td>The actuator spindle is retracted into the actuator and the valve stem is extended from the fitting.</td>
<td></td>
</tr>
<tr>
<td>down 3)</td>
<td>The linear spindle is extended from the actuator and the valve stem is retracted into the fitting.</td>
<td></td>
</tr>
</tbody>
</table>

1) Factory settings
2) Standard setting for valves H4..B, H5..B, H6..N, H6..R, H7..N, H7..R, H7..X..-S2 and H7..Y..-S2
3) Standard setting for valves H6..S, H6..SP and H6..X..-S(P)2

3-point control

<table>
<thead>
<tr>
<th>Symbols</th>
<th>Actuating time</th>
<th>Closing point</th>
<th>Actuating time standard</th>
<th>Actuating time fast</th>
<th>Closing point up</th>
<th>Closing point down</th>
<th>Relay contact (Y1)</th>
<th>Relay contact (Y2)</th>
<th>Linear spindle moves</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7.5 s/mm</td>
<td>S1.1</td>
<td>S1.2</td>
<td>0</td>
<td>0</td>
<td>stops</td>
<td>stops</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.75 s/mm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note

The actuator spindle direction can also be reversed by inverting the Y1 and Y2 wires.
NV24-3(-T) Linear actuator for globe valves, AC/DC 24 V, 1000 N

Dimensions [mm]

- 55
- 110
- 72
- 205
- 205
- 72

Further documentation
- Overview of brackets and adapter sets on www.belimo.eu/retrofit
- Complete overview «The complete product range of water solutions»
- Data sheets for globe valves
- Installation instructions for actuators and/or globe valves, respectively
- Notes for project planning (hydraulic characteristic curves and circuits, installation regulations, commissioning, maintenance, etc.)
- Specification texts

www.belimo.eu
Products no longer available
H6..S / H6..SP max. 150°C
H4..B / H5..B max. 120°C
H6..N / H7..N max. 120°C
H6..R / H7..R max. 120°C
H6..X..-S2 max. 150°C
H7..X..-S2 max. 200°C *
H7..Y..-S2 max. 200°C *

Products no longer available