



Rotary actuators for ball valves

GQD..9A

for ball valves VAI61.. and VBI61..

AC 24 V / DC 24...48 V

Electromotoric rotary actuators for 3-position and modulating control, with spring return for fail-safe function, pre-wired with 0.9 m long connection cable.

Comment

This data sheets provides a quick overview of the rotary actuators. See data sheet GQD..1, document number CE2N4605en_02 for detailed information on safety, engineering notes, mounting and commissioning rotary actuators.

Use

- For 2-port and 3-port threaded ball valves from DN15 to DN20.
- Suitable for use with modulating controllers (DC 0...10 V) or 3-position controllers.
- For plants where the rotary actuator must move to the zero position during power failure (fail-safe function).

Type summary

| | GQD131.9A | GQD161.9A |
|--|-----------|-----------|
| Operating voltage AC 24 V / DC 24...48 V | X | X |
| 3-position | X | |
| Positioning signal Y DC 0...10 V | | X |
| Position indication U = DC 0...10 V | | X |

Functions

| Type | GQD131.9A | GQD161.9A |
|------------------------------------|---|---|
| Control type | 3-position control | Modulating control |
| Rotary direction | NC (normally closed) ball valve | NC (normally closed) ball valve |
| | Positioning signal on Y1 – Counter-clockwise rotation – Ball valve opens Positioning signal on Y2 – Clockwise rotation – Ball valve closes | 0...10 V "counter-clockwise" Flow = 0% at Y = 0 V Flow = 100% at Y = 10 V |
| | NO (normally open) ball valve | NO (normally open) ball valve |
| | Positioning signal on Y1 – Clockwise rotation – Ball valve closes Positioning signal on Y2 – Counter-clockwise rotation – Ball valve opens | 0...10 V "clockwise" Flow = 100% at Y = 0 V Flow = 0% at Y = 10 V |
| Spring return | On power failure or when the operating voltage is switched off, the spring return moves the ball valve to its mechanical zero position. | |
| Position indication: Mechanical | Rotary angle position indication via position indicator / manual lever. | |

Equipment combinations

The rotary actuators are suitable for operating the following Siemens 2- and 3-port ball valves:

| VAI61.. | | VBI61.. | | Rp | DN | PN | GQD..9A | | Data sheet |
|------------|-------------------------------------|------------|-------------------------------------|---------|----|------|-------------------|-----------------|------------|
| Type | k _{vs} [m ³ /h] | Type | k _{vs} [m ³ /h] | | | | Δp _{max} | Δp _s | |
| VAI61.15.. | 1...10 | VBI61.15.. | 1.6...6.3 | Rp 1/2" | 15 | PN40 | 350 | 1400 | N4211 |
| VAI61.20.. | 4...10 | VBI61.20.. | 4...6.3 | Rp 3/4" | 20 | | 350 | | |

Notes

Additional information on rotary actuators is available in document N4605.

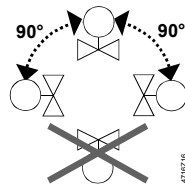
Marginal notes

Both ball valve and rotary actuator can easily be assembled at the mounting location. Neither special tools nor adjustments are required.

The rotary actuator comes with Mounting Instructions 74 319 0716 0.

The ball valves come with mounting instructions 74 319 0647 0.

Orientation



Cables must be easily accessible.

Commissioning

When commissioning the system, check both wiring and rotary actuator functions.

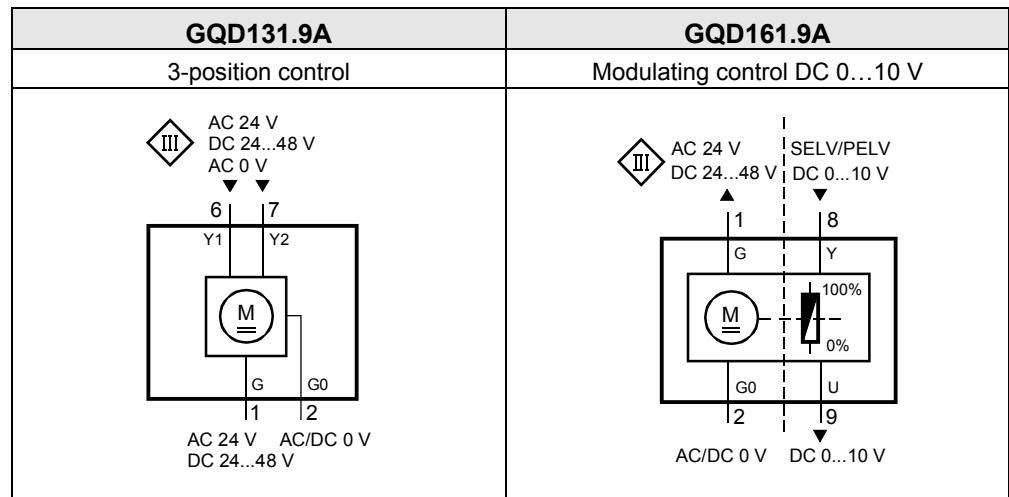
Technical data GQD..9A

| | | |
|--|---|------------------------------|
| ⚠ Supply voltage AC 24 V DC 24...48 V (SELV / PELV) | Operating voltage AC / frequency | AC 24 V ± 20 % ; 50 / 60 Hz |
| | Operating voltage DC | DC 24...48 V ± 20 % |
| | Power consumption | |
| – GQD131.9A: | Actuator running | 4 VA / 2.5 W |
| | Holding | 3 VA / 1.5 W |
| – GQD161.9A: | Actuator running | 4.5 VA / 3 W |
| | Holding | 3.5 VA / 2 W |
| Functional data | Nominal torque | 2 Nm |
| | Nominal rotary angle / max. rotary angle | 90° / 95 ± 2° |
| | Runtime for 90° rotary angle (motor operation) | 30 s |
| | Closing time with spring return (on power failure) | 15 s |
| Positioning signal for GQD131.9A | Switching current (at AC 24 V / DC 24...48 V) for Open/Close | > AC/DC 8 mA |
| Positioning signal for GQD161.9A | Input voltage Y (wires 8-2) | DC 0...10 V |
| | Max. permissible input voltage | DC 35 V |
| Position indication for GQD161.9A | Output voltage U (wires 9-2) | DC 0...10 V |
| | Max. output current | DC ± 1 mA |
| Connection cable | Cross-section | 0.75 mm ² |
| | Standard length | 0.9 m |
| Degree of protection | As per EN 60 529 (see M4659) | IP40 |
| Protection class | Insulation class | EN 60730 |
| | AC 24 V / DC 24...48 V | III |
| Environmental conditions | Operation / Transport | EN 60721-3-3 / EN 60721-3-2 |
| | Temperature | -32...+55 °C / -32...+70 °C |
| | Humidity (non-condensing) | < 95 % r.h. / < 95 % r.h. |
| Standards and directives | Product safety | EN 60730-2-14 |
| | Automatic electrical controls for household and similar use | (Type 1) |
| | Electromagnetic compatibility (EMC) | |
| | Immunity | IEC/EN 61000-6-2 |
| | Emissions | IEC/EN 61000-6-3 |
| | CE Conformity | |
| | Electromagnetic compatibility | 2004/108/EC |
| | Low voltage directive | 2006/95/EC |
| | C ^{N474} C-tick conformity | |
| | Australian EMC Framework | Radio Communication Act 1992 |
| Radio Interference Emission Standard | AS / NZS 3548 | |
| Weight | Without packaging: | |
| | GQD131.9A | 0.67 kg |
| | GQD161.9A | 0.68 kg |

Disposal

See document N4605 and the environmental declaration for information on environmental compatibility and device disposal.

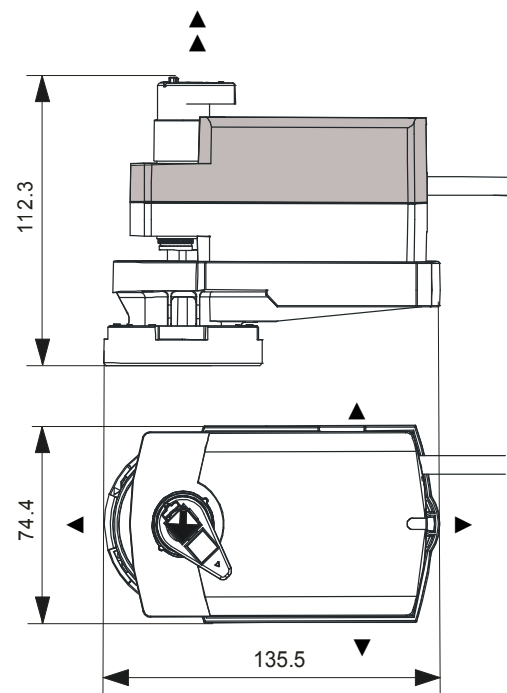
Internal diagrams



Cable designations

| Connection | Cable | | | | Meaning |
|------------------|-------|-----|--------|-------|---|
| | Code | No. | Color | Abbr. | |
| Rotary actuators | G | 1 | red | RD | System potential AC 24 V / DC 24...48 V |
| AC 24 V | G0 | 2 | black | BK | System neutral |
| DC 24...48 V | Y1 | 6 | purple | VT | Positioning signal AC 0 V, AC 24 V / DC 24...48 V "Counter-clockwise" N.C. |
| | Y2 | 7 | orange | OG | Positioning signal AC 0 V, AC 24 V / DC 24...48 V "Clockwise" N.C. |
| | Y | 8 | gray | GY | Positioning signal DC 0...10 V |
| | U | 9 | rose | PK | Position indication DC 0...10 V |

Dimensions



- ▲ = >100 mm Min. clearance from ceiling or wall for mounting, connection,
 ▲▲ = >200 mm operation, maintenance, etc.