



Rotary actuators for ball valves

GQD..9A

for ball valves VAI61.. / VBI61.. and VAI60.. / VBI60..

AC 24 V / DC 24...48 V / AC 230 V

- Electromotoric rotary actuators with spring return for fail-safe function
- For 2-position , 3-position and modulating control
- 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 control ball valves from DN15 to DN20 (VAI61.. and VBI61..).
- For open/close ball valves 2-port and changeover ball valves 3-port, internally threaded connections DN15 to DN25 (VAI60.. and VBI60..).
- Suitable for use with modulating controllers (DC 0...10 V), 3-position controllers or 2-position controllers
- For plants where the rotary actuator must move to the zero position during power failure (fail-safe function).

Type summary

	GQD121.9A	GQD321.9A	GQD131.9A	GQD161.9A
Operating voltage AC 24 V / DC 24...48 V	X		X	X
Operating voltage AC 230 V		X		
Control type 2-position	X	X		
Control type 3-position			X	
Positioning signal Y DC 0...10 V				X
Position indication U = DC 0...10 V				X

Functions

Type	GQD..21.9A	GQD131.9A	GQD161.9A
Control type	2-position control	3-position control	Modulating control
Rotary direction for mounting on ball valve	NC (normally closed) ball valve	NC (normally closed) ball valve	NC (normally closed) ball valve
	Switch on operating voltage: – Actuator opens (counter-clockwise) Switch off operating voltage: – Actuator closes with spring (clockwise)	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
	See the mounting instructions M4659 for other switchings.		
Emergency position (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 manual lever as a position indicator.		

Equipment combinations

The rotary actuators are suitable for operating the following Siemens ball valves:

VAI61.. / VBI61..
2-port- and 3-port
control ball valves

Type	k_{vs} [m ³ /h]	Rp	DN	PN	GQD..9A		Data sheet
					Δp_{max}	Δp_s	
VAI61.15..	1...10	Rp 1/2"	15	PN40	350	1400	N4211
VAI61.20..	4...10	Rp 3/4"	20				
VBI61.15..	1.6...6.3	Rp 1/2"	15				
VBI61.20..	4...6.3	Rp 3/4"	20				

VAI60.. / VBI60..
open/close 2-port
and
changeover ball valves
3-port

Type	k_{vs} [m ³ /h]	Rp	DN	PN	GQD..21.9A		Data sheet
					Δp_{max}	Δp_s	
VAI60.15-15	15	Rp 1/2"	15	PN40	350	1400	N4213
VAI60.20-22	22	Rp 1"	20				
VAI60.25-22	22	Rp 1"	25				
VBI60.15-5L	5	Rp 1/2"	15				
VBI60.20-9L	9	Rp 1"	20				
VBI60.25-9L	9	Rp 1"	25				
VBI60.15-12T	12	Rp 1/2"	15				
VBI60.20-16T	16	Rp 1"	20				
VBI60.25-16T	16	Rp 1"	25				

Notes

Additional information on rotary actuators is available in document N4605.

Mounting

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

The rotary actuator is supplied with Mounting Instructions M4659 (74 319 0716 0).

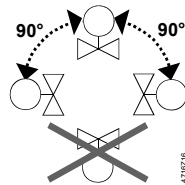
The ball valve:

– VAI61.. / VBI61.. is supplied with mounting instructions M4211 (74 319 0647 0),

the ball valve:

– VAI60.. / VBI60.. is supplied with mounting instructions M4213 (74 319 0883 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 ± 15 %
	Power consumption	
	– GQD121.9A: Actuator running Holding	6.5 VA / 4.5 W 6.5 VA / 2.5 W
⚠ Supply voltage AC 230 V	Operating voltage AC / frequency	AC 230 V ± 10 %; 50 / 60 Hz
	Power consumption	
	– GQD321.9A: Actuator running Holding	10 VA / 4.5 W 7 VA / 3 W
	Functional data	Nominal torque
	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) Max. permissible input voltage	DC 0...10 V DC 35 V
Position indication for GQD161.9A	Output voltage U (wires 9-2) Max. output current	DC 0...10 V DC ± 1 mA
Connection cable	Cross-section Standard length	0.75 mm ² 0.9 m
Degree of protection	As per EN 60 529 (see M4659)	IP40
Protection class	Insulation class AC 24 V / DC 24...48 V	EN 60730 III
Environmental conditions	Operation / Transport Temperature Humidity (non-condensing)	IEC 60721-3-3 / IEC 60721-3-2 -32...+55 °C / -32...+70 °C < 95 % r.h. / < 95 % r.h.

Standards and directives

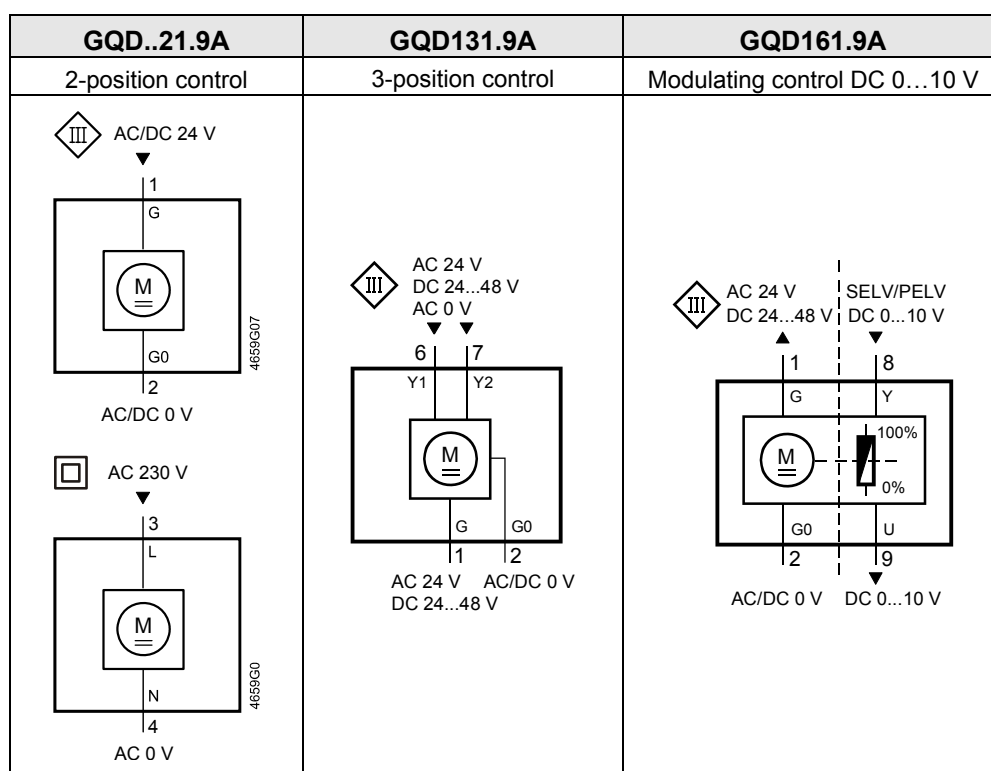
Product standards

Automatic electrical controls for household and similar use	EN 60730-2-14 (Mode of operation, Type 1)
Electromagnetic compatibility (EMC)	
Immunity	IEC 61000-6-2
Emissions	IEC 61000-6-3
CE conformity	
EMC directive	2004/108/EC
Low voltage directive	2006/95/EC
C-Tick conformity	
Emissions	AS/NZS 61000-6-3

Weight

Without packaging:	
GQD121.9A	0,66 kg
GQD321.9A	0,67 kg
GQD131.9A	0,67 kg
GQD161.9A	0,68 kg

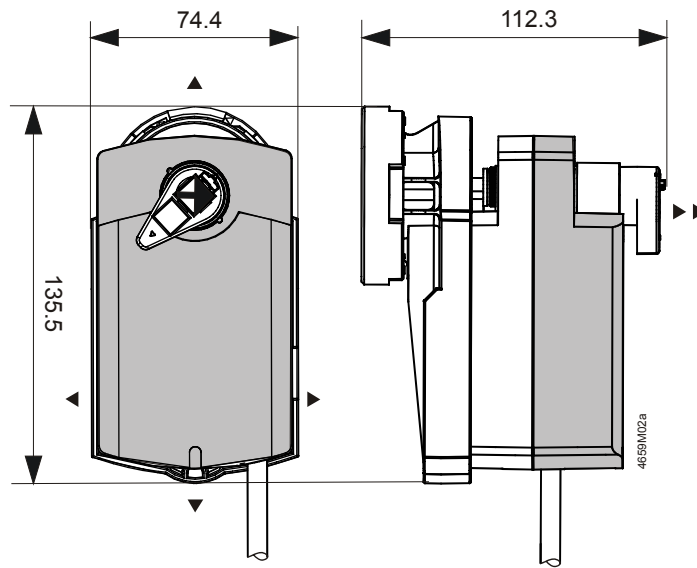
Internal diagrams



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
Rotary actuators	L	3	brown	BN	Line AC 230 V
AC 230 V	N	4	blue	BU	Neutral

Dimensions



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

