



Rotary actuators for ball valves

GQD..9A

for ball valves VA..61.. / VB..61.. and VA..60.. / VB..60..

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 control ball valves, internally threaded connections (VAI61.. and VBI61..) or externally threaded connections (VAG61.. and VBG61..), DN15 to DN25
- For open/close ball valves 2-port and changeover ball valves 3-port, internally threaded connections (VAI60.. and VBI60..) or externally threaded connections (VAG60.. and VBG60..), DN15 to DN25
- 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:

VA..61.. / VB..61..
2-port- and 3-port
control ball valves

Control ball valves with:						GQD..9A	
internal threads ¹⁾	Rp	external threads ²⁾	G..B	k _{vs} [m ³ /h]	DN	Δp _{max}	Δp _s
–	–	VAG61.15..	G 1 B	1...6.3	15	350	1400
VAI61.15..	Rp ½"	–	–	1...10	15		
VAI61.20..	Rp ¾"	VAG61.20..	G 1 ¼ B	4...10	20		
VAI61.25..	Rp 1"	VAG61.25..	G 1 ½ B	6.3...16	25		
–	–	–	–	–	–		
VBI61.15..	Rp ½"	VBG61.15..	G 1 B	1.6...6.3	15		
VBI61.20..	Rp ¾"	VBG61.20..	G 1 ¼ B	4...6.3	20		
VBI61.25-10	Rp 1"	VBG61.25-10	G 1 ½ B	10	25		

¹⁾ Data sheet N4211

²⁾ Data sheet N4212

VA..60.. / VB..60..
open/close 2-port
and
changeover ball valves
3-port

Ball valves with:						GQD..21.9A	
internal threads ³⁾	Rp	external threads ⁴⁾	G..B	k _{vs} [m ³ /h]	DN	Δp _{max}	Δp _s
–	–	VAG60.15-9	G 1 B	9	15	350	1400
VAI60.15-15	Rp ½"	–	–	15	15		
–	–	VAG60.20-17	G 1 ¼ B	17	20		
VAI60.20-22	Rp 1"	–	–	22	20		
VAI60.25-22	Rp 1"	VAG60.25-22	G 1 ½ B	22	25		
–	–	–	–	–	–		

Ball valves with:						GQD..21.9A	
internal threads ³⁾	Rp	external threads ⁴⁾	G..B	k _{vs} [m ³ /h]	DN	Δp _{max}	Δp _s
VBI60.15-5L	Rp 1/2"	–	–	5	15	350	
VBI60.20-9L	Rp 1"	–	–	9	20		
VBI60.25-9L	Rp 1"	–	–	9	25		
–	–	VBG60.15-8T	G 1 B	8	15		
VBI60.15-12T	Rp 1/2"	–	–	12	15		
–	–	VBG60.20-13T	G 1 1/4 B	13	20		
VBI60.20-16T	Rp 1"	–	–	16	20		
–	–	VBG60.25-13T	G 1 1/2 B	13	25		
VBI60.25-16T	Rp 1"	–	–	16	25		

³⁾ Data sheet N4213

⁴⁾ Data sheet N4214

Notes

Additional information on rotary actuators is available in document N4605.

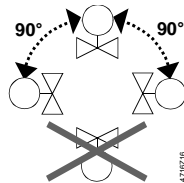
Mounting

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:

Type	Document	Stock no.
GQD..9A	M4659	74 319 0716 0
VAI61 / VBI61..	M4211	74 319 0647 0
VAG61 / VBG61..	M4212	74 319 0922 0
VAI60.. / VBI60..	M4213	74 319 0883 0
VAG60.. / VBG60..	M4214	74 319 0923 0

Orientation



Cables must be easily accessible.

Commissioning

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

Disposal



WARNING

Tensioned return spring

Opening the actuator housing can release the tensioned return spring resulting in flying parts that may cause injury.

- Do not open the actuator body.



The device is considered electrical and electronic equipment for disposal in terms of the applicable European Directive and may not be disposed of as domestic garbage.

- Dispose of the device through channels provided for this purpose.
- Comply with all local and currently applicable laws and regulations.

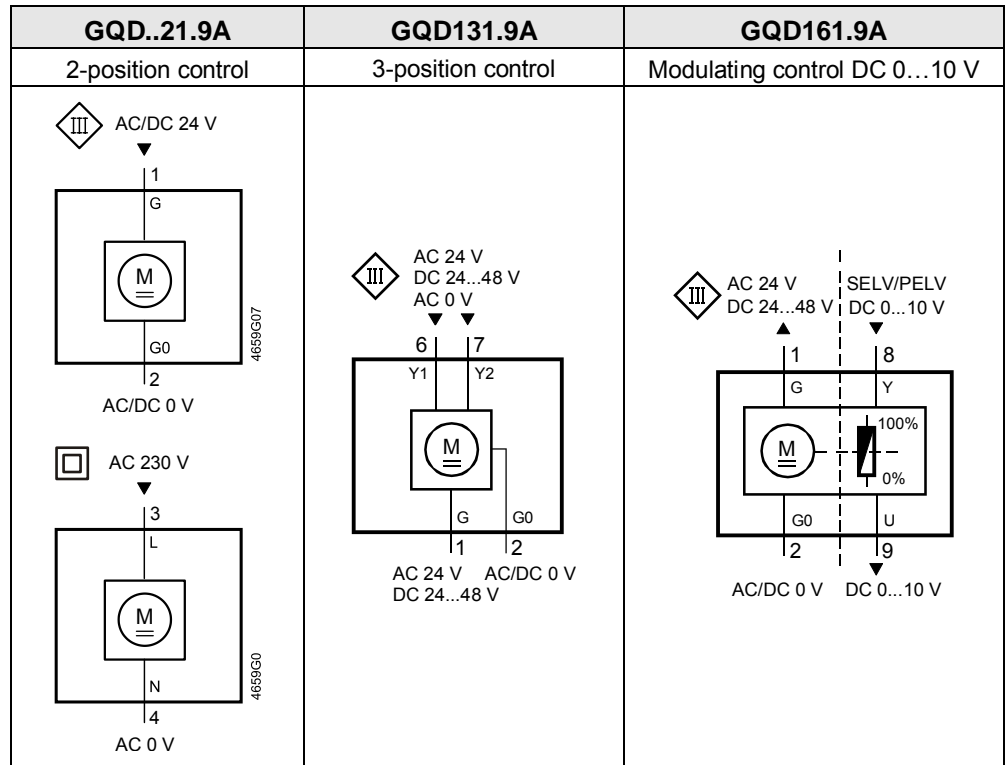
Technical data GQD..9A

⚠ 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	6.5 VA / 4.5 W
	Holding	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	10 VA / 4.5 W
	Holding	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)	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	IEC 60721-3-3 / IEC 60721-3-2
	Climatic Conditions	Class 3K5 / Class 2K3
	Temperature	-32...+55 °C / -32...+70 °C
	Humidity (non-condensing)	< 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 (Application)	For residential, commercial and industrial environments
	EU Conformity (CE)	A5W00004364 ¹⁾
	RCM Conformity	A5W00004365 ¹⁾
	Product environmental declaration ²⁾	CM2E4604E ¹⁾
	Weight	Without packaging:
	GQD121.9A	0,66 kg
	GQD321.9A	0,67 kg
	GQD131.9A	0.67 kg
	GQD161.9A	0.68 kg

¹⁾ The documents can be downloaded from <http://siemens.com/bt/download>

²⁾ The product environmental declaration contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).

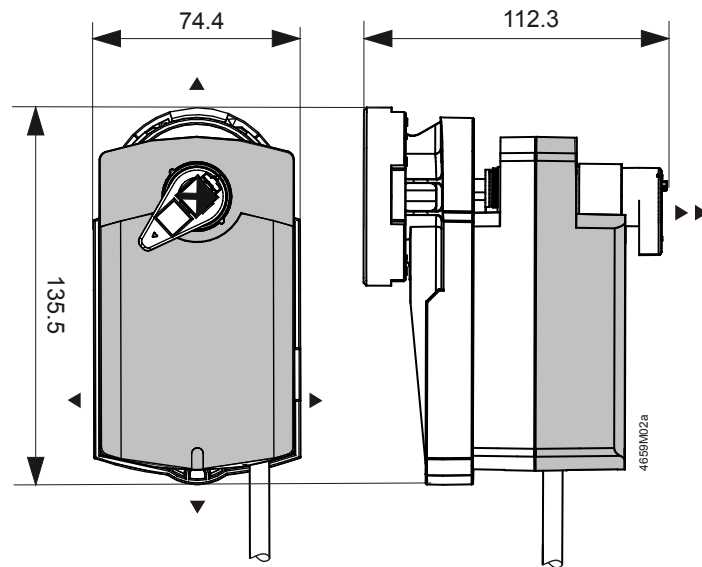
Internal diagrams



Cable designations

Connection	Cable				Meaning
	Code	No.	Color	Abbr.	
Rotary actuators AC 24 V	G	1	red	RD	System potential AC 24 V / DC 24...48 V
DC 24...48 V	G0	2	black	BK	System neutral
	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 AC 230 V	L	3	brown	BN	Line 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.