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CATALOG KỸ THUẬT · JOHNSON CONTROLS

Van bi điều khiển VG1000

van bi nổi ren 2 ngã, 3 ngã · DN15–DN50 · PN40

VG1000 Johnson Controls – van bi điều khiển nổi ren DN15–DN50, PN40, Kvs 1–63, 2 ngã và 3 ngã, đĩa đặc tính, dùng động cơ VA9104, VA9310, VA9203.

Mã: VG1000 · Hãng: Johnson Controls · Hotline: 093 797 2339

dlk.com.vn/vg1000-johnson-controls-van-bi-dieu-khien.html



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VG1000 Series Threaded Control Ball Valves & Actuators

Introduction

DN15...50, PN40

VG1000 series ball valves Series Ball Valves are designed to regulate the flow of hot or chilled water in response to the demand of a controller in HVAC systems. The ball valves could be directly mounted with Johnson Controls VA9100 / VA9300 non-spring return actuators or VA9200 spring return actuators for on/off, floating, or proportional control.

Features

- Built-in Amodel flow characterizing disk to realize precise flow control
- Variety of Kvs per size to cover all load conditions
- Blowout-proof stem and double O-ring seals to ensure a leak-free seal and safety
- Reinforced PTFE seats to provide better wear resistance



DN15-DN50

Ordering Information

VG	1	X	X	X	XX	-X
VG	Valve					
	1	Ball Valve				
		2	Two-way			
		8	Three-way			
			0	BSPP threaded connection		
				5	Stainless steel trim and stem	
					XX	Valve size
						-X
						Identification code

Common product models are listed below. For more product models, please consult the Johnson Controls sales representatives.



Ball Valve & Actuator

Ordering Information

Size (mm)	Characterizing Disk	Control Port (Kvs)	Bypass Port (Kvs)	Two-way	Three-way
DN15	Y	1.0	0.6	VG1205AD-N	VG1805AD-N
		1.6	1.0	VG1205AE-N	VG1805AE-N
		2.5	1.6	VG1205AF-N	VG1805AF-N
		4.0	2.5	VG1205AG-N	VG1805AG-N
		6.3	4.0	VG1205AL-N	VG1805AL-N
	N	10	5.0	VG1205AN-N	VG1805AN-N
DN20	Y	4.0	2.5	VG1205BG-N	VG1805BG-N
		6.3	4.0	VG1205BL-N	VG1805BL-N
	N	10	5.0	VG1205BN-N	VG1805BN-N
DN25	Y	6.3	4.0	VG1205CL-N	VG1805CL-N
		10	5.0	VG1205CN-N	VG1805CN-N
	N	16	8.0	VG1205CP-N, VG1205CP-C	VG1805CP-N
DN32	Y	10	6.3	VG1205DN-N	VG1805DN-N
		16	10	VG1205DP-N, VG1205DP-C	VG1805DP-N
	N	25	12.5	VG1205DR-N, VG1205DR-C	VG1805DR-N
DN40	Y	16	10	VG1205EP-N	VG1805EP-N
		25	16	VG1205ER-N, VG1205ER-C	VG1805ER-N
	N	40	20	VG1205ES-N, VG1205ES-C	VG1805ES-N
DN50	Y	25	16	VG1205FR-N	VG1805FR-N
		40	25	VG1205FS-N, VG1205FS-C	VG1805FS-N
	N	63	31.5	VG1205FT-N, VG1205FT-C	VG1805FT-N

Selection Table

	Ball Valve		Actuator	Max. Close-off Pressure
Two-way	DN15	VG1205Ax-x	VA9104	1378kPa
			VA9310	
			VA9203	
	DN20	VG1205Bx-x	VA9104	
			VA9310	
			VA9203	
	DN25	VG1205Cx-x	VA9104	
			VA9310	
			VA9203	
	DN32	VG1205Dx-x	VA9104 ^①	
			VA9310	
			VA9208	
Three-way	DN15	VG1805Ax-x	VA9104	1378kPa
			VA9310	
			VA9203	
	DN20	VG1805Bx-x	VA9104	
			VA9310	
			VA9203	
	DN25	VG1805Cx-x	VA9104	
			VA9310	
			VA9203	
	DN32	VG1805Dx-x	VA9310	
			VA9208	
			VA9208	
	DN40	VG1805Ex-x	VA9310	500kPa
			VA9208	
			VA9208	
	DN50	VG1205Fx-x	VA9104 ^①	1378kPa
			VA9310	
			VA9208	

①: Only applicable to VG1205xx-N and VG1205xx-C valves.

1. VA9104 and VA9300 Series Actuators are non-spring return, and VA9203 and VA9208 Series Actuators are spring return.

2. VA9104, VA9300, VA9203 and VA9208 have a maximum fluid temperature limit of 100°C unless used with the M9000-561 thermal barrier.

3. To avoid excessive wear or drive time on the motor for VA9104, use a controller and/or software that provides a timeout function to remove the signal at the end of rotation (stall). The IGx and SSx models have an auto shutoff function to avoid excessive wear or drive time on the motor.

Ball Valve & Actuator

Technical Specifications

- Rated pressure: PN40
 - Medium: Chilled/hot water; glycol solution (max concentration 50%)
 - Medium temperature: -10 – 120 °C
 - Flow characteristics: Two-way: equal percentage
Three-way: equal percentage for control port, and linear for bypass port
 - Leakage: control port: $\leq 0.01\%$ Kvs (ANSI Class IV IEC 60534-4)
bypass port: $\leq 1\%$ Kvs
 - Valve-pipe connection: BSPP (Rp, ISO7/1)
 - Storage temperature: -10 – 65 °C, no condensation
- Materials
Body: forged brass
Stem: stainless steel
Trim: stainless steel
Seats: reinforced PTFE, with EPDM O-ring backing
Characterizing disk: AMODEL® AS-1145HS Polyphthalamide Resin

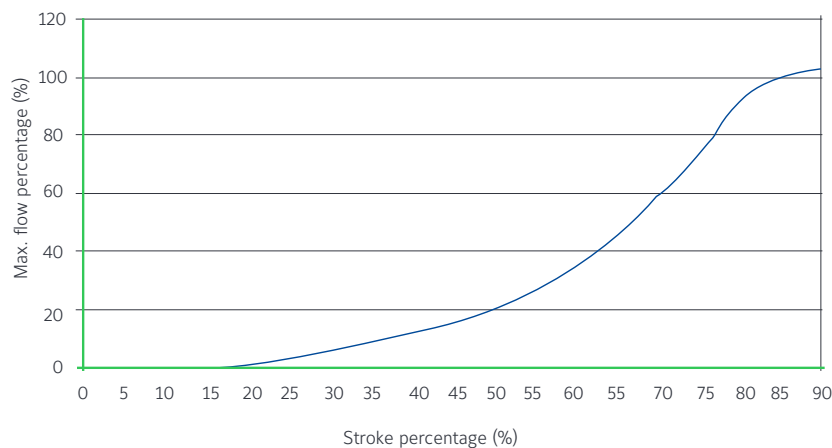


Fig1: Flow characteristics curve

Typical Applications of VG12xx /18xx Ball Valves

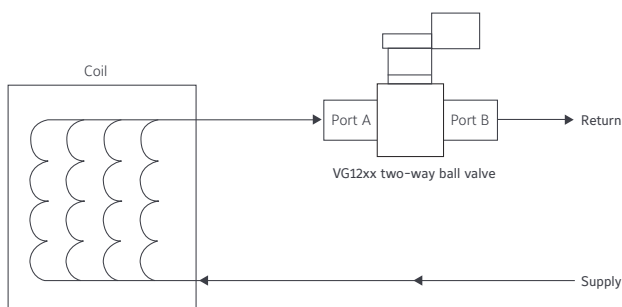


Fig2: Typical two-way valve application

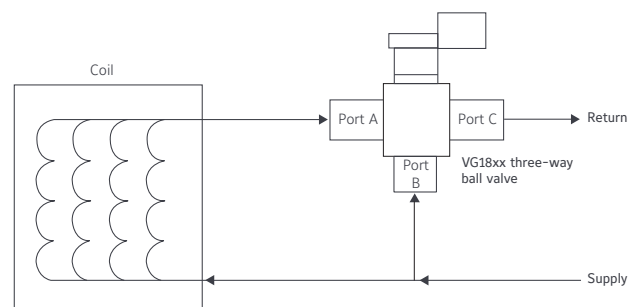


Fig3: Typical three-way valve application

Note: Recommend to mount the valve downstream from the coil to minimize head transfer to the actuator.

Check the valve carefully prior to restart after off season or long down-time to avoid any torque increase arising from shut down and application problems.

Before installing an electric actuator in the field, rotate the valve stem several times to eliminate the torque built up due to long-term storage.

VA9104 Series Non-Spring Return Rotary Electric Actuators

Model #	Rated torque	Power supply	Control type	Feedback signal	Rotation time for 90° (s)	Electrical connection
VA9104-AGA-1S	4Nm	24VAC	Floating		60s (60Hz) 72s (50Hz)	1.2m cable
VA9104-AGA-3S		24VAC	Floating			M3 screw terminals
VA9104-IGA-1S		24VAC	On/off or floating (with timeout)			1.2m cable
VA9104-IGA-3S		24VAC	On/off or floating (with timeout)			M3 screw terminals
VA9104-IUA-1S		85-256VAC	On/off or floating (with timeout)			1.2m cable
VA9104-GGA-1S		24VAC	O(2) - 10VDC or O(4) - 20mA (with field-furnished 500 ohm resistor)	O(2)-10VDC		1.2m cable
VA9104-GGA-3S		24VAC	O(2) - 10VDC or O(4) - 20mA (with field-furnished 500 ohm resistor)			M3 screw terminals

Note: For more information, refer to the VA9104 Series Electric Actuators Product Bulletin.

VA9310 Non-Spring Return Rotary Electric Actuator

Model #	Rated torque	Power supply	Control type	Feedback signal	Rotation time for 90° (S)	Auxiliary switch
VA9310-AUA-3	10 Nm	100- 240 VAC	On/off or floating		90	M9300-2 or M9300-1 ^②
VA9310-HGA-3	10 Nm	24 VAC/VDC	On/off or floating or O(2) - 10VDC	O(2)-10VDC ^①	90	

Notes: For more information, refer to the M/VA9310 Series Actuators Product Bulletin.

① Applicable to only control type of O(2)-10VDC.

② Auxiliary switch needs to be ordered separately. M9300-2 = 2 SPDT, M9300-1 = 1 SPDT.

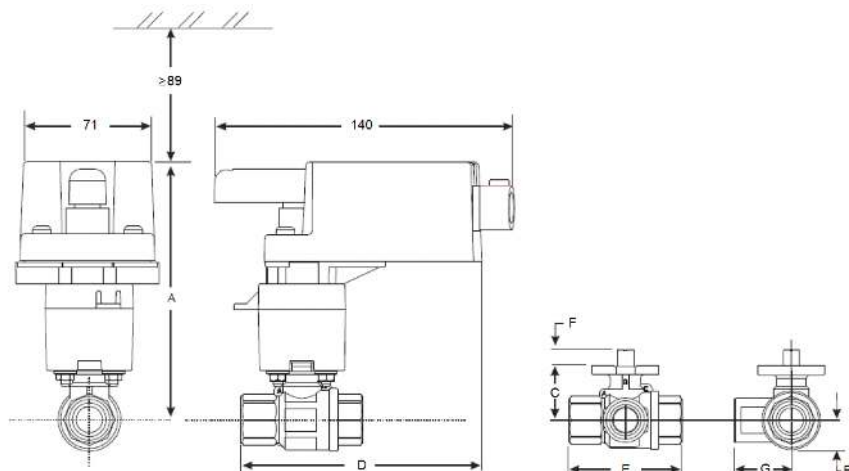
VA920x Spring Return Rotary Electric Actuators

Model #	Rated torque	Power supply	Control type	Feedback signal	Power-on rotation time for 90° (S)	Spring return time (S)	Auxiliary switch
VA9203-AGA-1Z	3 Nm	24 VAC/VDC	Floating or On/off		90	16	—
VA9203-AGB-1Z	3 Nm	24 VAC/VDC	Floating or On/off		90	16	1 SPDT
VA9203-BUA-1	3 Nm	100-230 VAC	On/off		53-71	22	—
VA9203-BUB-1	3 Nm	100-230 VAC	On/off		53-71	22	1 SPDT
VA9203-BGA-1	3 Nm	24 VAC/VDC	On/off		53-71	22	—
VA9203-BGB-1	3 Nm	24 VAC/VDC	On/off		53-71	22	1 SPDT
VA9203-GGA-1Z	3 Nm	24 VAC/VDC	O(2)-10VDC	O-10VDC	90	16	—
VA9203-GGB-1Z	3 Nm	24 VAC/VDC	O(2)-10VDC	O-10VDC	90	16	1 SPDT
VA9208-AGA-1	8 Nm	24 VAC/VDC	Floating or On/off		150	22	
VA9208-AGC-1	8 Nm	24 VAC/VDC	Floating or On/off		150	22	2 SPDT
VA9208-BDA-1	8 Nm	230 VAC	On/off		53-71	21	
VA9208-BDC-1	8 Nm	230 VAC	On/off		53-71	21	2 SPDT
VA9208-BGA-1	8 Nm	24 VAC/VDC	On/off		53-71	21	
VA9208-BGC-1	8 Nm	24 VAC/VDC	On/off		53-71	21	2 SPDT
VA9208-GGA-1	8 Nm	24 VAC/VDC	O(2)-10VDC	O-10VDC	150	22	
VA9208-GGC-1	8 Nm	24 VAC/VDC	O(2)-10VDC	O-10VDC	150	22	2 SPDT

For more information, refer to the VA9203 Series Actuators Product Bulletin or the VA9208 Series Actuators Product Bulletin.

Ball Valve & Actuator

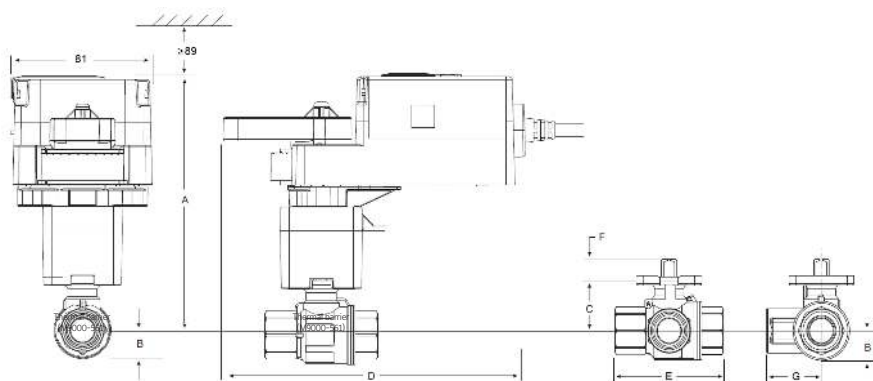
Assembly Dimensions 1 (VG1205/1805 + VA9104 Series Actuators) (mm)



Valve Size	Actuator	A without thermal barrier	A with thermal barrier	B	C	D	E	F	G
DN15	VA9104	98	135	17	31	129	67	9	33
DN20	VA9104	98	135	17	31	133	75	9	38
DN25	VA9104	100	137	19	33	141	92	9	46
DN32	VA9104	111	146	26	44	150	109	9	54
DN40	VA9104	115	150	29	48	155	119	9	59
DN50	VA9104	120	155	37	53	165	139	9	74

Note: The M9000-561 thermal barrier is not included in the standard offering and needs to be ordered separately.

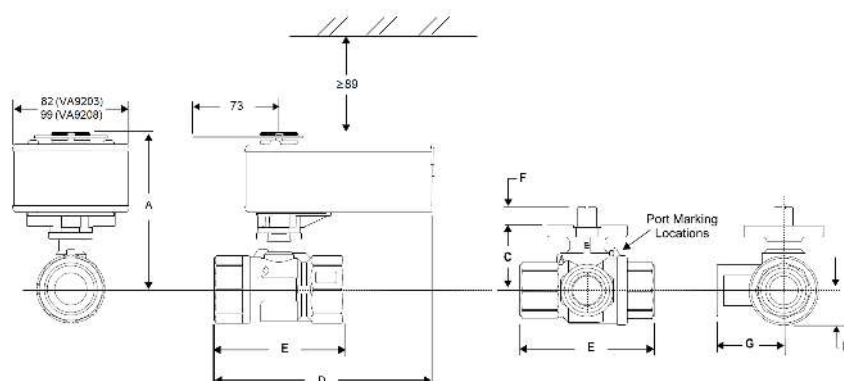
Assembly Dimensions 2 (VG1205/1805 + VA9310 Series Actuators) (mm)



Valve size	Actuator	A without thermal barrier	A with thermal barrier	B	C	D	E	F	G
DN15	VA9310	121	146	17	31	169	67	9	33
DN20	VA9310	121	146	17	31	169	75	9	38
DN25	VA9310	123	148	19	33	169	92	9	46
DN32	VA9310	134	159	26	44	169	109	9	54
DN40	VA9310	138	163	29	48	169	119	9	59
DN50	VA9310	143	168	37	53	169	139	9	74

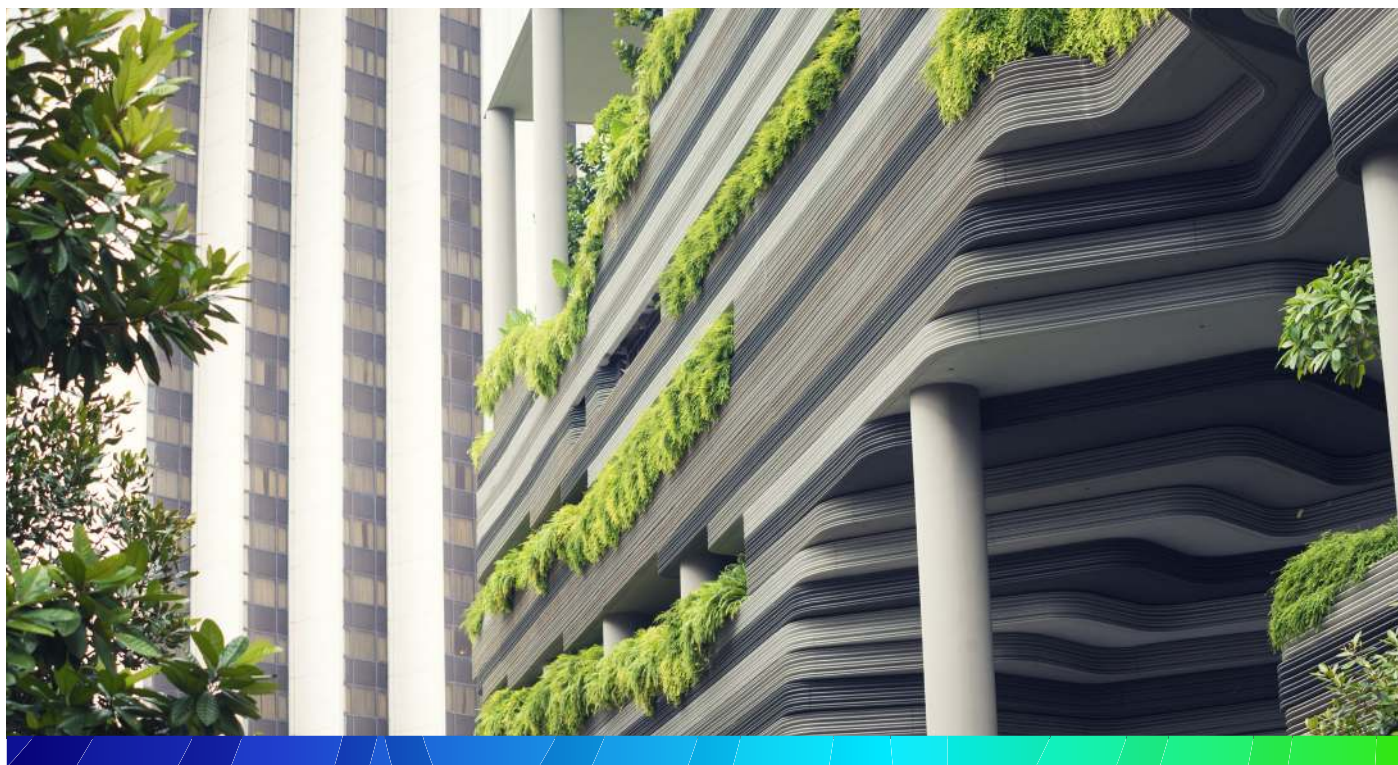
Note: The M9000-561 thermal barrier is not included in the standard supply, and needs to be ordered separately.

Assembly Dimensions 3 (VG1205/1805 + VA9203/9208 Series Actuators) (mm)



Valve size	Actuator	A without thermal barrier	A with thermal barrier	B	C	D	E	F	G
DN15	VA9203	117	152	17	31	167	67	9	33
DN20	VA9203	117	152	17	31	171	75	9	38
DN25	VA9203	119	154	19	33	180	92	9	46
DN32	VA9208	195	235	26	44	184	109	9	54
DN40	VA9208	200	240	29	48	189	119	9	59
DN50	VA9208	204	244	37	53	195	139	9	74

Note: The M9000-561 thermal barrier is not included in the standard offering and needs to be ordered separately.





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