VA9300 Series Electric Non-Spring Return Valve Actuators Catalog Page

Description

Figure 1: VA9310 Series Electric Non-Spring Return Actuator



The VA9300 Series Electric Non-Spring Return Actuators are direct mount actuators for valves with ISO Flange mounting such as the VG1000 Series Valves.

The series provides Automatic Signal Input Detection which allows automatic recognition of input signals for on/off, floating, and proportional control.

An optional line voltage auxiliary switch kit can be field installed to indicate an end-stop position or perform switching functions within the selected rotation range. The VA9300 Actuators also feature a NEMA 4X weathershield for applications in harsh environments.

Refer to the *VA9300 Series Electric Non-Spring Return Actuators Product Bulletin (LIT-12012265)* for important product application information.

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Features

- Automatic signal input detection, on/off, floating, and proportional control with adjustable span and offset
- Line voltage on/off and floating models
- High speed on/off and floating models
- Easy conversion to valve operation—same actuator used for dampers or valves
- Optional accessory kit
- Backward compatible auxiliary switch kits and auxiliary potentiometer
- Self-calibrating input signal to adjust stroke
- Electronic stall detection
- Microprocessor-controlled brushless DC motor
- Mode configuration switches
- Integral cables with colored and numbered conductors
- Optional integral 1/2 in. (13 mm) threaded conduit connectors
- Plenum-rated models
- Small footprint
- M9106, M9109, and M9108 series actuators replacement
- Position indicator handle
- Same weathershield as M9203 and M9208 series actuators
- NEMA5/IP54 enclosure
- Underwriters laboratories Inc.® (UL), CE Mark, and RCM compliance
- Manufactured under international standards organization (ISO) 9001 quality control standards
- 100,000 cycles and 2.5 million repositions
- 5-year warranty

Repair information

If the VA9300 Series Electric Non-Spring Return Valve Actuator fails to operate within its specifications, replace the unit. For a replacement actuator, contact the nearest Johnson Controls® representative.

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Selection chart

Table 1: Selection chart

Code number		Rotation time for 90°	Power supply		Input signal			Position feedback					Electrical connection		Auxiliary switches	
	Torque lb•in. (N•m)	Running (seconds)	AC/DC 24 V	AC 85 to 264 V	On/off	Floating	Proportional DC 0 (2) to 10 V (with adjustable span)	DC 0 (2) to 10 V	140 Ω	1 k Ω	2 k Ω	10 k Ω	120 in. (3 m) plenum cable	48 in. (1 m) halogen free cable	1 x SPDT, AC 3 (0.5) A, 240 V	2 x SPDT, 3 (0.5) A, AC 240 V
VA9308-AGA-xZ	70 (8)	8	X		X	X			X[1]	X[1]	X[1]	X[1]	X		X[1]	X[2]
VA9308-AUA-xZ	70 (8)	8		X	X	X			X[1]	X[1]	X[1]	X[1]		X	X[2]	X[2]
VA9310-AUA-x	90 (10)	35		X	X	X			X[1]	X[1]	X[1]	X[1]		X	X[2]	X[2]
VA9310-GUA-x	90 (10)	35		X			X	X[3]	X[1]	X[1]	X[1]	X[1]		X	X[2]	X[2]
VA9310-HGA-x	90 (10)	35	X		X	X	X	X[2]	X[1]	X[1]	X[1]	X[1]	X		X[2]	X[2]
VA9320-AUA-x	180 (20)	90		X	X	X			X[1]	X[1]	X[1]	X[1]		X	X[2]	X[2]
VA9320-GUA-x	180 (20)	90		X			X	X[3]	X[1]	X[1]	X[1]	X[1]		X	X[2]	X[2]
VA9320-HGA-x	180 (20)	90	X		X	X	X	X[2]	X[1]	X[1]	X[1]	X[1]	X		X[2]	X[2]
VA9335-AUA-x	310 (35)	150		X	X	X			X[1]	X[1]	X[1]	X[1]		X	X[2]	X[2]
VA9335-GUA-x	310 (35)	150		X			X	X[3]	X[1]	X[1]	X[1]	X[1]		X	X[2]	X[2]
VA9335-HGA-x	310 (35)	150	X		X	X	X	X[3]	X[1]	X[1]	X[1]	X[1]		X	X[2]	X[2]

1 With optional external feedback potentiometer kit (M9300-140, M9300-1K, M9300-2K, or M9000-10K).
2 With optional external auxiliary switch kit (M9300-1 or M9300-2).
3 Feedback is available when 0 (2) to 10 V proportional input is used.

Code number	Description
M9000-342	NEMA 4X, IP66/67 weathershield kit for VG1000 Series Ball application of VA9104, VA9300, VA9203, and VA9208 Series Electric Actuators (quantity 1)
M9000-343	NEMA 4X, IP66/67 weathershield for 2 1/2 in. to 6 in. VG1000 Series Ball Valve application of VA9320 and VA9335 Series Electric Actuators
M9000-561	Thermal barrier kit, extends the VA9104, VA9300, VA9203, and VA9208 Series Electric Actuators applications to include low pressure steam
M9000-700	Universal Ball Valve Linkage Kit
M9300-1	External auxiliary switch kit (one single-pole, double-throw)
M9300-2	External auxiliary switch kit (two single-pole, double-throw)
M9300-100	Threaded conduit adapters for 1/2 in. electrician's fittings (quantity 5)
M9300-140	External auxiliary feedback potentiometer 140k ohm

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Code number	Description
M9300-1K	External auxiliary feedback potentiometer 1k ohm
M9300-2K	External auxiliary feedback potentiometer 2k ohm
M9310-10K	External auxiliary feedback potentiometer 10k ohm
M9310-600	Coupler kit for transformation from VA9308 to M9308 and from VA9310 to M9310 Series Actuators
M9320-600	Coupler kit for transformation to 9320 Series Actuators

VA9300 dimensions

Figure 2: VA9300 Series Electric Non-Spring Return Actuator and Valve Dimensions (with optional M9000-561 Thermal Barrier)

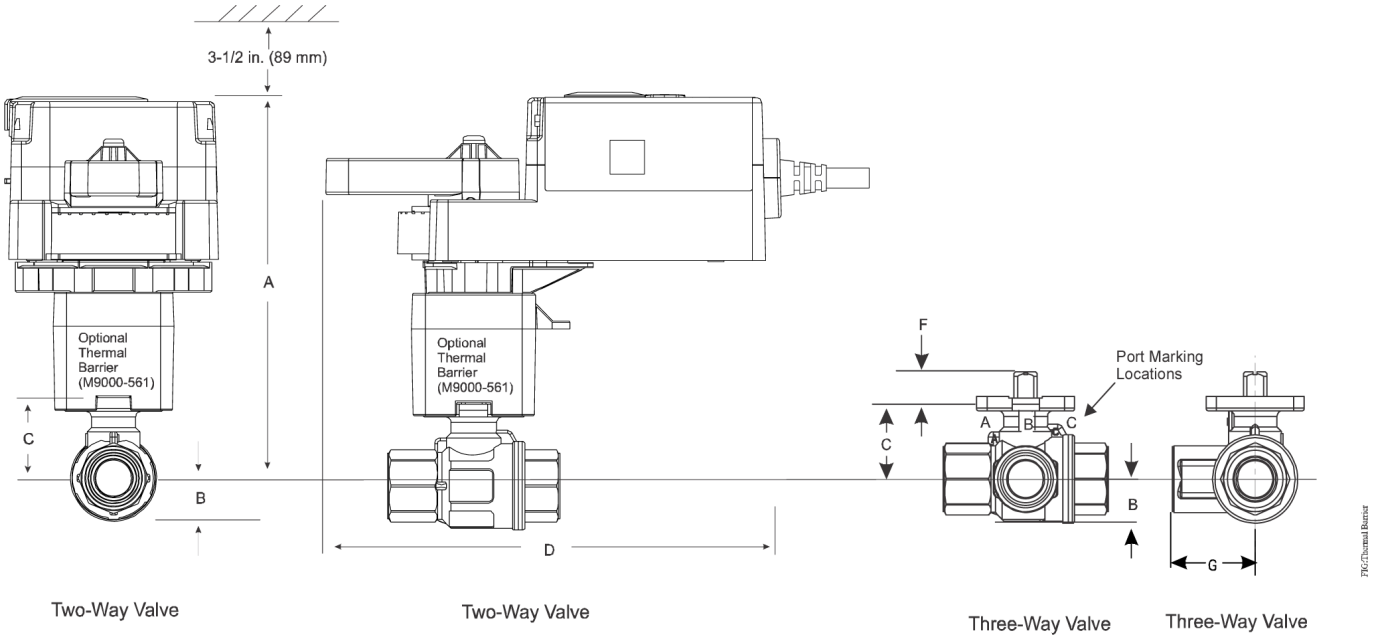


Table 2: VA9300 Actuated VG1241, VG1245, VG1841, and VG1845 Series Ball Valve Dimensions, in. (mm)

Valve Size, in. (DN)	A (with Thermal Barrier)	A (without Thermal Barrier)	B	C	D	E	F	G
1/2 (DN15)	5-3/4 (146)	4-3/8 (111)	21/32 (17)	1-7/32 (31)	6-13/32 (163)	2-33/64 (64)	11/32 (9)	1-1/4 (32)
3/4 (DN20)	5-3/4 (146)	4-3/8 (111)	21/32 (17)	1-7/32 (31)	6-13/32 (163)	2-51/64 (71)	11/32 (9)	1-13/32 (36)
1 (DN25)	5-13/16 (148)	4-7/16 (113)	3/4 (19)	1-5/16 (33)	6-13/32 (163)	3-13/32 (87)	11/32 (9)	1-45/64 (43)
1-1/4 (DN32)	6-1/4 (159)	4-7/8 (124)	1-1/32 (26)	1-23/32 (44)	6-13/32 (163)	3-15/16 (100)	11/32 (9)	1-31/32 (50)
1-1/2 (DN40)	6-13/32 (163)	5-1/32 (128)	1-1/8 (29)	1-7/8 (48)	6-13/32 (163)	4-21/64 (110)	11/32 (9)	2-11/64 (55)
2 (DN50)	6-5/8 (168)	5-1/4 (133)	1-15/32 (37)	2-1/16 (53)	6-13/32 (163)	4-27/32 (123)	11/32 (9)	2-27/64 (62)

Figure 3: VA9300 Series Electric Non-Spring Return Actuator and Valve Dimensions(with Optional M9000-561 Thermal Barrier and M9300-2 Switch Kit)

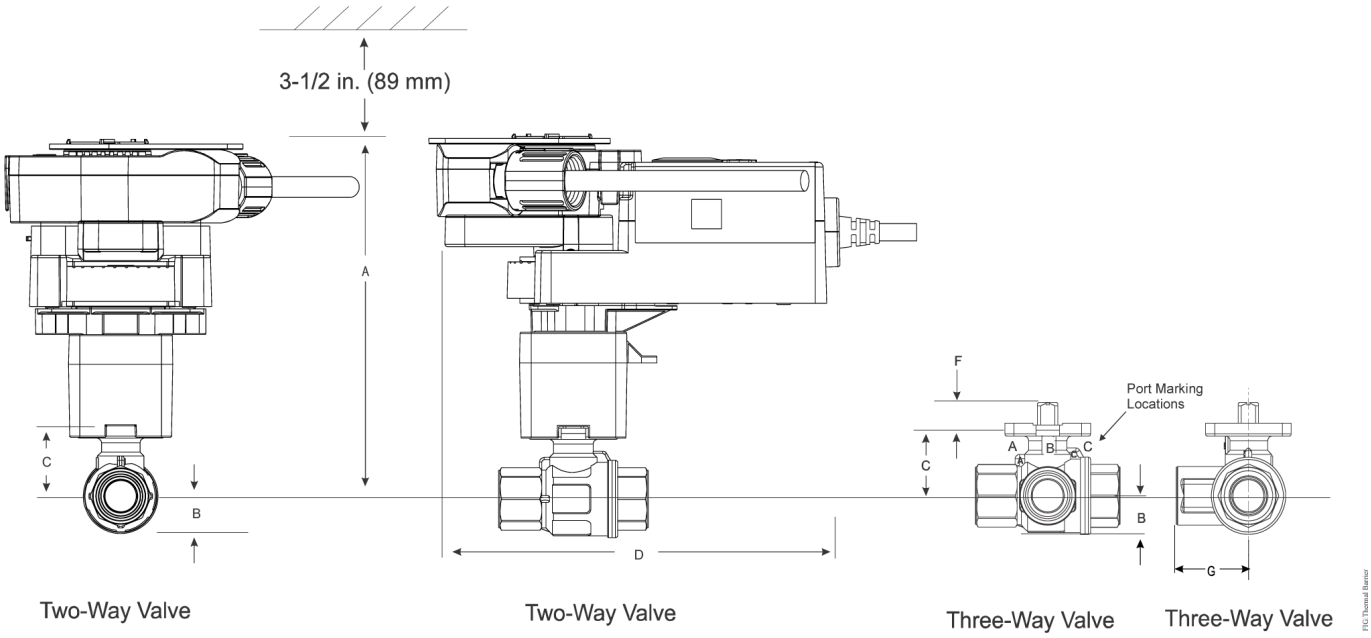


Table 3: VA9300 Actuated VG1241, VG1245, VG1841, and VG1845 Series Ball Valve Dimensions (with Optional M9000-561 Thermal Barrier and M9300-2 Switch Kit)

Valve Size, in. (DN)	A (with Thermal Barrier)	A (without Thermal Barrier)	B	C	D	E	F	G
1/2 (DN15)	6-3/25 (155.7)	4-3/4 (120.7)	21/32 (17)	1-7/32 (31)	6-21/32 (169)	2-33/64 (64)	11/32 (9)	1-1/4 (32)
3/4 (DN20)	6-3/25 (155.7)	4-3/4 (120.7)	21/32 (17)	1-7/32 (31)	6-21/32 (169)	2-51/64 (71)	11/32 (9)	1-13/32 (36)
1 (DN25)	6-1/5 (157.7)	4-21/25 (122.7)	3/4 (19)	1-5/16 (33)	6-21/32 (169)	3-13/32 (87)	11/32 (9)	1-45/64 (43)
1-1/4 (DN32)	6-16/25 (168.7)	5-1/4 (133.7)	1-1/32 (26)	1-23/32 (44)	6-21/32 (169)	3-15/16 (100)	11/32 (9)	1-31/32 (50)
1-1/2 (DN40)	6-4/5 (172.7)	5-3/7 (137.7)	1-1/8 (29)	1-7/8 (48)	6-21/32 (169)	4-21/64 (110)	11/32 (9)	2-11/64 (55)
2 (DN50)	6 (177.2)	5-5/8 (142.7)	1-15/32 (37)	2-1/16 (53)	6-21/32 (169)	4-27/32 (123)	11/32 (9)	2-27/64 (62)

Technical specifications

Table 4: VA9308-AxA-xZ and VA9310-AUA-x Series Electric Non-Spring Return Actuators

Product description	**VA9308-AGA-xZ:** Floating and on/off mode	**VA9308-AUA-xZ:** Floating and on/off mode	**VA9310-AUA-x:** Floating and on/off mode
Power requirements	AC 24 V ±20% at 50/60 Hz, Class 2 (North America) or SELV (Europe), 12.7 VA running.DC 24 V ±10% Class 2 (North America) or SELV (Europe), 5.7 W running.	Nominal AC 120 V at 60 Hz: 0.11 A running	Nominal AC 120 V at 60 Hz: 0.04 A running
Transformer sizing requirements	≥13 VA	—	—
Input signal/adjustments	AC 19.2 V to 28.8 V at 50/60 Hz or DC 24 V ±10% Class 2 (North America) or SELV (Europe)	AC 100 V to 240 V (AC 85 V to 264 V) at 50/60 Hz	
Rotation range	Mechanically limited to 95° ±3°		
Rotation time for 90° of travel	8 seconds, constant at all operating conditions		35 seconds, constant at all operating conditions

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Table 4: VA9308-AxA-xZ and VA9310-AUA-x Series Electric Non-Spring Return Actuators

Cycles	60,000 full stroke cycles; 1,500,000 repositions	100,000 full stroke cycles; 2,500,000 repositions
Audible noise	<45 dBA at 0 lb·in to 70 lb·in (8 N·m) load, at a distance of39-13/32 in. (1m)	<35 dBA at 39-13/32 in. (1m)
Electrical connections	120 in. (3.05 m) UL 444 type CMP plenum rated cable with 19 AWG (0.75 mm^2) conductors and 0.25 in.(6 mm) ferrule ends	48 in. (1.2 m) halogen free cable with 18 AWG (0.82 mm^2) conductors and 0.25 in. (6mm) ferrule ends
Conduit connections	1/2 in. NPSM (13 mm) threaded conduit connectors with M9300-100 Conduit Connector(optional with the VA9308-AGA-2Z)	
Ambient conditions	**Operating:** -22°F to 140°F (-30°C to 60°C), 95% RH, noncondensing **Storage:** -40°F to 185°F (-40°C to 85°C), 95% RH, noncondensing	
Fluid temperature limits(actuator and valve assembly)	**VG12x1 and VG18x1 Series:** 23°F to 203°F (-5°C to 95°C) **VG12x5 and VG18x5 Series:** -22°F to 212°F (-30°C to 100°C) **VG12x5 and VG18x5 Series with M9000-561 Thermal Barrier Installed:** -22°F to 284°F (-30°C to 140°C) water; 15 psig (103 kPa) at 250°F (121°C) saturated steam	
Enclosure	IP54/NEMA 5	
Shipping weight	2 lb (0.9 kg)	
Compliance CE	**United States:** UL Listed, CCN XAPX, File E27734; to UL 60730-1: Automatic Electrical Controls for Household and Similar Use, Part 1; and UL 60730-2-14: Part 2, Particular Requirements for Electric Actuators. Plenum Rated (UL 2043). Suitable for use in Other Environmental Air Space (Plenum) in accordance with section 300.22 (c) of the National Electrical Code. **Canada:** UL Listed, CCN XAPX7, File E27734; to CAN/CSA E60730-1:02: Automatic Electrical Controls for Household and Similar Use, Part 1; and CAN/CSA-E60730-2-14, Particular Requirements for Electric Actuators.	
	Europe: CE Mark—Johnson Controls declares that this product is in compliance with the essential requirements and other relevant provisions of the EMC Directive and the Low Voltage Directive.	
	Australia and New Zealand: RCM Mark, Australia/NZ Emissions Compliant	

Patents

Patents: https://jcipat.com

Product warranty

This product is covered by a limited warranty, details of which can be found at www.johnsoncontrols.com/buildingswarranty.

Single point of contact

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