VA9104 Series Electric Non-Spring Return Valve Actuators Catalog Page

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LIT-1900354

Description

Figure 1: VA9104 Series Electric Non-Spring Return Valve Actuator



The VA9104 Series Actuators are direct-mount, non-spring return electric valve actuators that operate on AC 24 V or 100 to 240 V power. Use these synchronous motors or stepper motors (for line voltage models) driven actuators to provide accurate positioning on Johnson Controls® VG1000 Series DN15, DN20, and DN25 (1/2, 3/4, and 1 in.) ball valves in HVAC applications.

The VA9104 Series Electric Non-Spring Return Actuators provide a running torque of 35 lb · in (4 N · m). The nominal travel time is 60 seconds at 60 Hz for 90° of rotation.

Refer to the *VA9104 Series Electric Non-Spring Return Valve Actuators Product Bulletin (LIT-12011050)* for important product application information.

Features

- 35 dBA maximum audible noise rating
- Synchronous drive
- 100,000 cycle rating
- Direct mounting with single screw
- Manual override
- Plenum cable or screw terminal electrical connections
- 3/8 in. flexible metal conduit connector on VA9104-xxA-2S Models
- Available weather shield for field mounting
- Optional M9000-561 Thermal Barrier
- 5-year warranty

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Repair information

If the VA9104 Series Electric Non-Spring Return Valve Actuator fails to operate within its specifications, replace the unit. For a replacement electric actuator, contact the nearest Johnson Controls representative.

Selection chart

Table 1: Selection chart

Code number	Rotation time For 90°	Power requirement		Power consumption		Input signal			Position feedback	Electrical connection		
	Power on – running (seconds)	24 VAC + 25%/-20% at 50/60 Hz	85 to 265 V at 50/60 Hz	Amperage: running	VA rating, transformer sizing	Floating point without timeout	On/off and floating point with timeout	0 (2) to 10 VDC0 (4) to 20 mA (with 500 ohm resistor)	0 (2) to 10 VDC	[1]	[2]	M3 screw terminals (require a slotted screwdriver)
VA9104-AGA-2S	60 s at 60 Hz 72 s at 50 Hz	X			2.3	X				X		
VA9104-AGA-3S	60 s at 60 Hz 72 s at 50 Hz	X			2.3	X						X
VA9104-GGA-2S	60 s at 60 Hz 72 s at 50 Hz	X			2.9			X	X	X		
VA9104-GGA-3S	60 s at 60 Hz 72 s at 50 Hz	X			2.9			X				X
VA9104-IGA-2S	60 s at 60 Hz 72 s at 50 Hz	X			3.0		X			X		
VA9104-IGA-3S	60 s at 60 Hz 72 s at 50 Hz	X			3.0		X					X
VA9104-IUA-2S	60 s at 60 Hz 60 s at 50 Hz		X	0.07 A	7.5		X				X	

1 48 in. (1.2 m) UL 444 Type CMP Plenum Rated Cable With 19 AWG (0.75 mm^2) Conductors and 0.25 in. (6 mm) Ferrule Ends and Connector for 3/8 in. (9.5 mm) Flexible Metal Conduit

2 48 in. (1.2 m) with 18 AWG (1.02mm) conductors and connector for 3/8 in. (9.5 mm) flexible metal conduit

Accessories

Table 2: Accessories

Code number	Description
M9000-342	Weather shield kit for VG1000 Series ball application of VA9104, VA9203, VA9208, and VA9308/9310 Series Electric Non-Spring Return Actuators (quantity 1)
M9000-561	Thermal barrier kit for M9000-560 Ball Valve Linkages. Extends the VA9104, VA9203, VA9208, and VA9308/9310 Series Electric Non-Spring Return Actuators applications to include low-pressure steam (quantity 1)
M9000-700	Universal Ball Valve Linkage (quantity 1)

Technical specifications

Table 3: VA9104 Series Electric Non-Spring Return Valve Actuators

Specification	Code	Description
Power requirements	VA9104-xxx-xS	AC 24 V +25%/-20% at 50/60 Hz, 2.3 VA (-AGA), 2.9 VA (-GGA), 3.0 VA (-IGA) Supply, Class 2 or Safety Extra-Low Voltage (SELV)
	VA9104-IUA-xS	AC 100 to 240 V (-15%/+10%) at 50/60 Hz, 0.07 A running, and 7.5 VA supply
Control type	VA9104-AGA-xS	Floating control without timeout
	VA9104-GGA-xS	Proportional control
	VA9104-IxA-xS	Floating or on/off control with timeout

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Table 3: VA9104 Series Electric Non-Spring Return Valve Actuators

Specification	Code	Description
Control signal	VA9104-AGA-xS	AC 24 V +25%/-20% at 50/60 Hz, Class 2 or SELV without timeout
	VA9104-GGA-xS	DC 0 (2) to 10 V or 0 (4) to 20 mA with field-furnished 500 ohm resistor
	VA9104-IGA-xS	AC 24 V +25%/-20% at 50/60 Hz, Class 2 or SELV with timeout
	VA9104-IUA-xS	AC 100 to 240V -15%/+10% at 50/60 Hz, and 7.5 VA supply
Control input impedance	VA9104-GGA-xS	Voltage Input: 200,000 ohm Current input: 500 ohm with field-furnished 500 ohm resistor
Running torque		35 lb · in (4 N · m)
Travel time	VA9104-xGA-xS	60 seconds at 60 Hz (72 seconds at 50 Hz) for 90° of rotation
	VA9104-IUA-2S	60 seconds for 90° of rotation
Rotation range		93° ± 3°, CW or CCW
Cycles		100,000 full stroke cycles; 2,500,000 repositions at rated running torque
Audible noise rating		35 dBA at 39-13/32 in. (1 m) maximum
Electrical connections	VA9104-xxA-2S	48 in. (1.2 m) UL 444 Type CMP plenum rated cable with 18 AWG (1.02 mm^2) connector for 3/8 in. (9.5 mm) flexible metal conduit.
	VA9104-xGA-3S	M3 screw terminals (requires a slotted screwdriver)
	VA9104-IUA-2S	48 in. (1.2 m) with 18 AWG (1.02 mm) conductors and connector for 3/8 in. (9.5 mm) flexible metal conduit.
Enclosure	VA9104-xxA-2S	NEMA 2, IP42
	VA9104-xGA-3S	NEMA 1, IP40
Ambient conditions	Operating	-4°F to 140°F (-20°C to 60°C); 90% RH maximum, noncondensing
	Storage	-40°F to 185°F (-40°C to 85°C); 90% RH maximum, 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
Compliance	United States	UL Listed, CCN XAPX, File 27734 Plenum rated, UL2043, suitable for use in other environmental spaces (plenums) in accordance with section 300.22.(c) of the National Electrical Code
	Canada	cUL Listed, CCN XAPX7, File 27734 Plenum Rated Per CSA 22.2 No. 236/UL 1995, Heating and Cooling Equipment
	Europe	Johnson Controls declares that this product is in compliance with the essential requirements and other relevant provisions of the EMC Directive 2004/108/EC and the Low Voltage Directive 2006/95/EC.
	Australia and New Zealand	C-Tick Mark, Australia/NZ Emissions Compliant
Shipping weight		1.25 lb (0.55 kg)

⚠ WARNING

This product is made of copper alloy, which contains lead. The product is therefore not to be used on drinking water.

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⚠ WARNING

This product can expose you to chemicals including lead, which is known to the State of California to cause cancer, birth defects, or other reproductive harm. For more information, go to www.P65Warnings.ca.gov.

⚠ WARNING

WARNING: BRASS MAY CONTAIN LEAD

To fulfill our obligations towards Article 33, in accordance to the European REACH Regulation No 1907/2006 EC, we hereby inform you that this article contains the following Substances of Very High Concern mentioned on the Candidate list: Lead

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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