

VA9104-xGA-2S, VA9104-xGA-3S Series

Electric Non-Spring Return Valve Actuators

Description

The VA9104 Series Actuators are direct-mount, non-spring return electric valve actuators that operate on AC 24 V power. Use these synchronous motor-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 Heating, Ventilating, and Air Conditioning (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 (72 seconds at 50 Hz) for 90° of rotation.

Refer to the *VA9104-xGA-2S and VA9104-xGA-3S Series Electric Non-Spring Return Valve Actuators Product Bulletin (LIT-12011050)* for important product application information.

Features

- 35 dBA nominal audible noise rating — meets the audible noise requirements for open ceiling environments: whisper quiet operation will not disturb building occupants
- synchronous drive — provides a constant rotation time that is independent of the load
- 100,000 cycle rating — provides years of trouble-free service
- direct mounting with single screw — reduces installation time and cost
- manual override — allows for manual positioning of the valve, independent of a power supply
- plenum cable or screw terminal electrical connections — make wiring quick and easy while allowing for ceiling plenum applications
- 3/8 in. flexible metal conduit connector on VA9104-xGA-2S models — simplifies installation and field wiring
- available weather shield for field mounting — follows NEMA 4X IP66 specifications
- optional M9000-561 thermal barrier — extends the fluid temperature range to 284°F (140°C) or 15 psig saturated steam
- 5-year warranty — protects the consumer investment



**VA9104 Series
 Electric Non-Spring Return Actuator on a
 VG1000 Series Ball Valve**

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

Code Number	Rotation Time For 90°	Power Requirement	Power Consumption	Input Signal			Position Feedback	Electrical Connection	
	Power On – Running (Seconds)			On/Off and Floating Point Without Timeout	On/Off and Floating Point With Timeout	0 (2) to 10 VDC 0 (2) to 20 mA (with 500 ohm Resistor)		0 (2) to 10 VDC	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
VA9104-AGA-2S	60 s at 60 Hz 72 s at 50 Hz	X	2.1	X				X	
VA9104-AGA-3S	60 s at 60 Hz 72 s at 50 Hz	X	2.1	X					X
VA9104-GGA-2S	60 s at 60 Hz 72 s at 50 Hz	X	2.1			X	X	X	
VA9104-GGA-3S	60 s at 60 Hz 72 s at 50 Hz	X	2.1			X			X
VA9104-IGA-2S	60 s at 60 Hz 72 s at 50 Hz	X	2.1		X			X	
VA9104-IGA-3S	60 s at 60 Hz 72 s at 50 Hz	X	2.1		X				X

The performance specifications are nominal and conform to acceptable industry standards. For applications at conditions beyond these specifications, consult the local Johnson Controls office. Johnson Controls, Inc. shall not be liable for damages resulting from misapplication or misuse of its products. © 2011 Johnson Controls, Inc. www.johnsoncontrols.com

Electric Non-Spring Return Valve Actuators (Continued)

Accessories (Order Separately)

Code Number	Description
M9000-200	Commissioning Tool that Provides a Control Signal to Drive 24 V On/Off, Floating, Proportional, and/or Resistive Electric Actuators
M9000-341	Weather Shield Kit for VG1000 Series Ball application of VA9104, M(VA) 9203, and M(VA)9208 Series Electric Non-Spring Return Actuators (quantity 1)
M9000-551	Mounting Hardware Replacement Kit (quantity 1)
M9000-561	Thermal Barrier Kit for M9000-551 and M9000-560 Ball Valve Linkages. Extends the VA9104, M(VA) 9203, and M(VA)9208 Series Electric Non-Spring Return Actuators applications to include low pressure steam (quantity 1).

Technical Specifications

VA9104-xGA-2S, -3S Series Electric Non-Spring Return Valve Actuators		
Power Requirements		AC 24 V +25%/-20% at 50/60 Hz, 2.1 VA Supply, Class 2 or Safety Extra-Low Voltage (SELV)
Control Type	VA9104-AGA-xS	Floating Control without Timeout
	VA9104-GGA-xS	Proportional Control
	VA9104-IGA-xS	Floating or On/Off Control with Timeout
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
Control Input Impedance	VA9104-GGA-xS	Voltage Input: 200,000 ohms Current Input: 500 ohms With Field Furnished 500 ohm Resistor
Running Torque		35 lb-in (4 N·m)
Travel Time		60 Seconds at 60 Hz (72 Seconds at 50 Hz) 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 Nominal at 39-13/32 in. (1 m)
Electrical Connections	VA9104-xGA-2S	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.
	VA9104-xGA-3S	M3 Screw Terminals (Requires a Slotted Screwdriver)
Enclosure	VA9104-xGA-2S	NEMA 2, IP42
	VA9104-xGA-3S	NEMA 1, IP40
Ambient Conditions	Operating	-4 to 140°F (-20 to 60°C); 90% RH Maximum, Noncondensing
	Storage	-20 to 150°F (-29 to 66°C); 90% RH Maximum, Noncondensing
Fluid Temperature Limits (Actuator and Valve Assembly)	VG12x1 and VG18x1 Series	23 to 203°F (-5 to 95°C)
	VG12x5 and VG18x5 Series	-22 to 212°F (-30 to 100°C)
	VG12x5 and VG18x5 Series With M9000-561 Thermal Barrier Installed	-22 to 284°F (-30 to 140°C) water; 15 psig (103 kPa) at 250°F (121°C) Saturated Steam
Compliance	United States	UL Listed, CCN XAPX, File E27734; to UL 60730-1A: 2003-08, Ed. 3.1, Automatic Electrical Controls for Household and Similar Use; and UL 60730-2-14: 2002-02, Ed. 1, Part 2 Particular Requirements for Electric Actuators
	Canada	UL Listed, CCN XAPX7, File E27734; to UL 60730-1:02-CAN/CSA: July 2002, 3rd Ed., Automatic Electrical Controls for Household and Similar Use; and CSA C22.2 No. 24-93 Temperature Indicating and Regulating Equipment
	Europe	CE Mark – Johnson Controls, Inc., declares that this product is in compliance with the essential requirements and other relevant provisions of the EMC Directive 2004/108/EC and 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)

