

## 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, -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 with integral connector for 3/8 in. (10 mm) flexible metal conduit or screw terminal electrical connections make wiring quick and easy while allowing for ceiling plenum applications



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

### Selection Charts

#### VA9104-xGA-2S, -3S Series Electric Non-Spring Return Valve Actuators

Code Number	Control Type	Input Signal	Power Requirements	Electrical Connections
VA9104-AGA-2S	Floating without timeout	AC 19.2 to 30 V, 50/60 Hz	AC 24 V at 50/60 Hz, 2.3 VA	48 in. (1.2 m) 18 AWG UL CMP Plenum Cable with integral connector for 3/8 in. (10 mm) flexible metal conduit
VA9104-AGA-3S				M3 Screw Terminals
VA9104-GGA-2S	Proportional	DC 0 (2) to 10 V, or (0) 4 to 20 mA <sup>1</sup>	AC 24 V at 50/60 Hz, 3.6 VA	48 in. (1.2 m) 18 AWG UL CMP Plenum Cable with integral connector for 3/8 in. (10 mm) flexible metal conduit
VA9104-GGA-3S				M3 Screw Terminals
VA9104-IGA-2S	Floating or On/Off with timeout	AC 19.2 to 30 V, 50/60 Hz	AC 24 V at 50/60 Hz, 3.0 VA	48 in. (1.2 m) 18 AWG UL CMP Plenum Cable with integral connector for 3/8 in. (10 mm) flexible metal conduit
VA9104-IGA-3S				M3 Screw Terminals

1. Milliamp input requires field furnished 500 ohm resistor.

#### VA9104-xGA-2S, -3S Accessories (Order Separately)

Code Number	Description
M9000-550	Mounting Hardware Replacement kit
M9000-200	Commissioning Tool that Provides a Control Signal to Drive 24 V On/Off, Floating, Proportional, and/or Resistive Electric Actuators

**VA9104-xGA-2S, -3S Series Electric Non-Spring Return Valve Actuators (Continued)**

**Technical Specifications**

VA9104-xGA-2S, -3S Series Electric Non-Spring Return Valve Actuators		
<b>Power Requirements</b>		AC 24 V +25%/-20% at 50/60 Hz, 2.1 VA Supply, Class 2 or Safety Extra-Low Voltage (SELV)
<b>Control Type</b>	VA9104-AGA-xS	Floating Control without Timeout <sup>1</sup>
	VA9104-GGA-xS	Proportional Control
	VA9104-IGA-xS	Floating or On/Off Control with Timeout
<b>Input Signal</b>	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
<b>Motor Input Impedance</b>	VA9104-AGA-xS	200 ohms Nominal
<b>Control Input Impedance</b>	VA9104-GGA-xS	Voltage Input: 200,000 ohms Current Input: 500 ohms with Field Furnished 500 ohm Resistor
<b>Running Torque</b>		35 lb-in (4 N-m)
<b>Travel Time</b>		60 Seconds at 60 Hz (72 Seconds at 50 Hz) for 90° of Rotation
<b>Rotation Range</b>		93° ±3°, CW or CCW
<b>Cycles</b>		100,000 Full Stroke Cycles; 2,500,000 Repositions at Rated Running Torque
<b>Audible Noise Rating</b>		35 dBA Nominal at 39-13/32 in. (1 m)
<b>Electrical Connections</b>	VA9104-xGA-2S	48 in. (1.2 m) 18 AWG UL CMP Plenum Cable with 1/4 in. (6 mm) Stripped Wire Leads with integral connector for 3/8 in. (10 mm) flexible metal conduit
	VA9104-xGA-3S	M3 Screw Terminals
<b>Enclosure</b>	VA9104-xGA-2S	NEMA 2, IP42
	VA9104-xGA-3S	NEMA 1, IP40
<b>Ambient Conditions</b>	<b>Operating</b>	-4 to 140°F (-20 to 60°C); 90% RH Maximum, Noncondensing
	<b>Storage</b>	-20 to 150°F (-29 to 66°C); 90% RH Maximum, Noncondensing
<b>Fluid Temperature Limits (Actuator and Valve Assembly)</b>	<b>Water</b>	VG1241 and VG1841 Series Valves: 23 to 203°F (-5 to 95°C) VG1245 and VG1845 Series Valves: -22 to 212°F (-30 to 100°C)
	<b>Steam</b>	Not Rated for Steam Service
<b>Compliance</b>	<b>North America</b>	UL Listed, File E27734, CCN XAPX (United States) and XAPX7 (Canada) Actuator Housing is Plenum Rated per CSA C22.2 No. 236/UL 1995, Heating and Cooling Equipment.
	<b>European Union</b>	CE Mark, EMC Directive 89/336/EEC
	<b>Australia and New Zealand</b>	C-Tick Mark, Australia/NZ Emissions Compliant
<b>Shipping Weight</b>		1.25 lb (0.55 kg)

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