Code No. LIT-1900125
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VA-4233 Series Electric Valve Actuators

Description

VA-4233 Series Electric Valve Actuators use a stepper motor to accurately position control valves in HVAC applications. In the event of a power failure, a spring in the actuator automatically returns the valve to the full stem-up position. These direct-mount, spring-return electric actuators provide a minimum 61 lb (271 N) force output for floating, on/off, or proportional control, and can be easily field mounted or ordered factory coupled to Johnson Controls® 1/2 through 1-1/4 in. VG7000 Series Bronze Control Valves, with no additional linkages required.

The VA-4233 Series can also be field mounted to select Barber-Colman® valves, using mounting kits available from Johnson Controls. Proportional control models include an AUTO stroke calibration feature that eliminates the need for manual calibration or adjustment after installation. Integral auxiliary switches are available to indicate end-stop position or to perform switching functions. On proportional models, position feedback is also available through a proportional DC voltage signal. All models feature a hand crank for manual positioning of the valve, independent of a power supply.

Refer to the *VA-4233 Series Electric Valve Actuators Product Bulletin (LIT-977552)* for important product application information.

Features

- designed for use in hot water, chilled water, and steam applications, allowing for universal application
- automatic spring return returns the valve to the full stem-up position, in the event of a power failure
- simple no-linkage mounting with AUTO stroke calibration at installation (VA-4233-GGx models only) reduces installation time and cost
- reversible stroke direction (VA-4233-GGx models only) expands usability by allowing switch-selectable direct or reverse action
- optional auxiliary switches provide adjustable switch points with line voltage capability
- 0 (2) to 10 VDC, 6 to 9 VDC, or 0 (4) to 20 mA input (VA-4233-GGx models only) provides enhanced control solutions
- optional power supply output of 20 VDC at 25 mA (VA-4233-GGx models only) provides power for external devices, making the VA-4233-GGx an ideal replacement for Barber-Colman retrofit installations
- manual hand crank allows for manual positioning of the valve, independent of a power supply

VA-4233 Series Electric Valve Actuator Mounted on a VG7000 Series Bronze Control Valve

- integral position indicator provides visual indication of the valve stem position
- 1/2 in. conduit connector with 48 in. wire leads meets national and local code requirements for wiring, and allows easy field wiring on retrofit jobs

Selection Chart

Description	Actuator Model						
	VA-4233-AGA-2	VA-4233-AGC-2	VA-4233-BGA-2	VA-4233-BGC-2	VA-4233-GGA-2	VA-4233-GGA-2MP	VA-4233-GGC-2
Floating Control	■	■	—	—	—	—	—
On/Off Control	—	—	■	■	—	—	—
Proportional Control	—	—	—	—	■	■	■
Feedback: 0 (2) to 10 VDC or 6 to 9 VDC at 2 mA	—	—	—	—	■	■	■
Two Auxiliary Switches	—	■	—	■	—	—	■
Power Supply Output of 20 VDC at 25 mA	—	—	—	—	—	■	—
Automatic Spring Return (Returns Valve to Full Stem-Up Position)	■	■	■	■	■	■	■

Accessories

Code Number	Description
M9000-200	Commissioning Tool (Used when AUTO Stroke Calibrating a VA-4233-GGx Series Electric Valve Actuator Prior to Initial Installation)
VG7000-1016	Bonnet Adaptor (Used when Replacing Johnson Controls M100, V-400, V-500, and MP8000 Series Valve Actuators on VG7000 Series Bronze Control Valves)
V-9999-BC1	Mounting Kit (Used when Mounting a VA-4233-GGx Series Electric Valve Actuator onto a 1/2 through 1-1/4 in. Barber-Colman VB-7xxx Series Valve)

Repair Parts

Code Number	Description
VA-4233-600	Manual Hand Crank Kit (Includes Five Manual Hand Cranks)
VA-4233-601 [1]	Hardware Kit (Includes One Manual Hand Crank, One Special Stem Nut, One Jam Nut, and One Yoke Screw)

1. Items included in the hardware kit are also included with each actuator.

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. © 2014 Johnson Controls, Inc.

VA-4233 Series Electric Valve Actuators (Continued)

Technical Specifications

VA-4233 Series Electric Valve Actuators		
Control Type	**VA-4233-AGx Models**	Floating Control
	VA-4233-BGx Models	On/Off Control
	VA-4233-GGx Models	Proportional Control
Force Output		Minimum 61 lb (271 N)
Power Requirements		20 to 30 VAC at 50/60 Hz or 24 VDC ± 10%; Class 2, 12 VA
Input Signal	**VA-4233-AGx Models**	20 to 30 VAC at 50/60 Hz or 24 VDC ± 10%, 2 mA
	VA-4233-BGx Models	20 to 30 VAC at 50/60 Hz or 24 VDC ± 10%, 12 VA
	VA-4233-GGx Models	0 (2) to 10 VDC, 6 to 9 VDC, or 0 (4) to 20 mA
Input Signal Adjustments (VA-4233-GGx Models Only)		Factory Set at 0 to 10 VDC; Switch Selectable 0 (2) to 10 VDC, 6 to 9 VDC, or 0 (4) to 20 mA
Direction of Action (VA-4233-GGx Models Only)		Switch Selectable Stem Up or Stem Down with Signal Increase
Input Impedance (VA-4233-GGx Models Only)	**Voltage Input**	200,000 Ohms
	Current Input	500 Ohms
Feedback Signal (VA-4233-GGx Models Only)		0 to 10 VDC, 2 to 10 VDC, or 6 to 9 VDC at 2 mA (Corresponding to Input Signal Selection)
Switch Contact Rating (VA-4233-xGC-2 and -2MP Models Only)		Two Single-Pole, Double-Throw (SPDT), Double Insulated Switches: 24 VAC, 50 VA Pilot Duty; 120 VAC, 5.8 A Resistive, 1/4 hp, 275 VA Pilot Duty; 240 VAC, 2.9 A Resistive, 1/4 hp, 275 VA Pilot Duty
Maximum Stroke		29/32 in. (23 mm)
Nominal Timing for 29/32 in. Stroke		76 Seconds (Proportionally Less for Shorter Strokes)
Nominal Spring Return Timing for 29/32 in. Stroke		4 to 9 Seconds at Room Temperature (Proportionally Less for Shorter Strokes)
Spring Return Direction		Stem Up
Electrical Connections	**Actuator**	48 in. (122 cm) Cable with 20 AWG Wire Leads
	Auxiliary Switches (VA-4233-xGC-2 and -2MP Models Only)	48 in. (122 cm) Cable with 18 AWG Wire Leads
Ambient Temperature Limits	**Operating**	32 to 122°F (0 to 50°C)
	Storage	-85 to 185°F (-65 to 85°C)
Maximum Ambient Humidity Limits		95% RH Noncondensing (90% RH at 70°F Ambient Temperature and 40°F Fluid Temperature)
Fluid Temperature Limits (Actuator and Valve Assembly)		35 to 250°F (2 to 121°C); 15 psig (103 kPa) Saturated Steam
Acoustic Noise		35 dB(A) Maximum at 39 in. (100 cm) per DIN 1946 and ISO 3745
Agency Compliance		UL 873 Listed, File E27734, CCN XAPX; CSA C22.2 No. 139 Certified, File LR85083, Class 3221 02
Enclosure Rating		NEMA 2, IP 42
Shipping Weight		3.1 lb (1.4 kg)

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