

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 for indicating 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.

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 (Shown 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 Charts

VA-4233 Series Electric Valve Actuators

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	VA-4233-GGC-2MP
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 for VA-4233 Series (Order Separately)

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 Information

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

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

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 \pm 10%; Class 2, 12 VA	
Input Signal	VA-4233-AGx Models	20 to 30 VAC at 50/60 Hz or 24 VDC \pm 10%, 2 mA
	VA-4233-BGx Models	20 to 30 VAC at 50/60 Hz or 24 VDC \pm 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 Non-Condensing (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; CE Mark, EMC Directive 89/336/EEC	
Enclosure Rating	NEMA 2, IP 42	
Shipping Weight	3.1 lb (1.4 kg)	