

PRODUCT BULLETIN

**VA-6100 Series
Electric Valve Actuators**

VA-6100 Series Electric Valve Actuators use a synchronous motor to accurately position Johnson Controls VG2000 Series Cast Iron Flanged Globe Valves in Heating, Ventilating, and Air Conditioning (HVAC) and industrial applications. These non-spring return electric actuators provide a 1,350 lb (6,000 N) force output for on/off (floating) or proportional control. Integral auxiliary switches are available for indicating end stop position or for performing switching functions. Position feedback is also available through an isolated 2,000 ohm potentiometer at a fixed stroke of 1-21/32 in. or a nominal 0 to 10 VDC feedback signal. All models feature a hand wheel for manual positioning of the valve, independent of a power supply.



**Figure 1: VA-6100 Series
Electric Valve Actuator**

Features and Benefits

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| <ul style="list-style-type: none"> <input type="checkbox"/> Synchronous Motor with Pressure Switches <input type="checkbox"/> Two-Bolt Coupler Clamp <input type="checkbox"/> On/Off (Floating) or Proportional Control <input type="checkbox"/> Adjustable Starting Point, Span, and Action (Proportional Control Model Only) <input type="checkbox"/> 0 to 10 VDC or 0 to 20 mA Position Feedback Signal (Proportional Control Model Only) <input type="checkbox"/> Auxiliary Switches and Feedback Potentiometer Available on Select Models <input type="checkbox"/> Manual Hand Wheel | <p>Provides a constant running speed and establishes fixed closeoff forces</p> <p>Provides quick and easy coupling of the actuator to the valve stem</p> <p>Allows optimal choice of control signal</p> <p>Provide application flexibility and allow for easy sequencing from only one output signal</p> <p>Indicates accurate valve position in response to an input signal up to 10 VDC or 20 mA</p> <p>Provide independent verification of actuator position</p> <p>Allows for manual positioning of the valve, independent of a power supply</p> |
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Product Guidelines

Before mounting the VA-6100 Series Electric Valve Actuator to a VG2000 Series Cast Iron Flanged Globe Valve, please note the following:

- Mount the valve in an upright position in a conveniently accessible location. When mounted horizontally, orient the yoke so that the yoke supports are positioned vertically, one above the other (as illustrated in Figure 2).

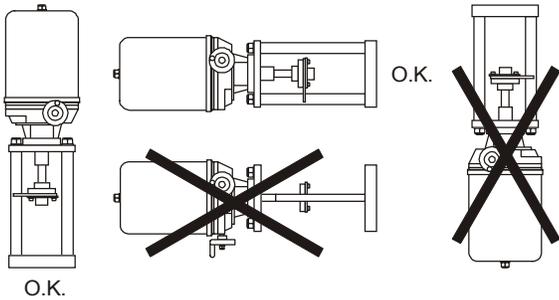


Figure 2: Proper Yoke Orientation

- Protect the actuator from dripping water that could enter the actuator housing and damage the mechanism or motor.
- Do not cover the actuator with insulating material.
- Allow sufficient clearance to remove the actuator (as illustrated in Figure 3).
- Pipe the valve with the flow in the direction of the arrow on the valve body, so that the plug seats against the flow.

⚠ CAUTION: Risk of Equipment Damage.
 Disconnect all power supplies before making wiring connections or prior to performing maintenance. Check all wiring connections before applying power to the system. Short-circuited or improperly connected wires will result in permanent damage to the equipment.

Table 1: Ordering Data

Actuator Model	Description					
	On/Off (Floating) Control	Proportional Control	Feedback			"N" Stem (1/2 in.), 4 through 6 in. Valves
			2,000 ohm Potentiometer	Two Auxiliary Switches	0 to 10 VDC or 0 to 20 mA Output	
VA-6100-AGC	X	---	X	X	---	X
VA-6100-HGC	---	X	---	X	X	X

Table 2: Accessories (Order Separately)

Code Number	Shipping Weight lb*	Description
VA-3100-501	3.5	Mounting Kit for Field Mounting VA-6100 Series Electric Actuators to 4, 5, and 6 in. VG2000 Series Cast Iron Flanged Globe Valves with 1/2 in. "N" Stem (Kit Includes One Stem Jam Nut, One Yoke Adaptor, One Packing Nut, and One Stem Adaptor)

* lb x 0.454 = kg.

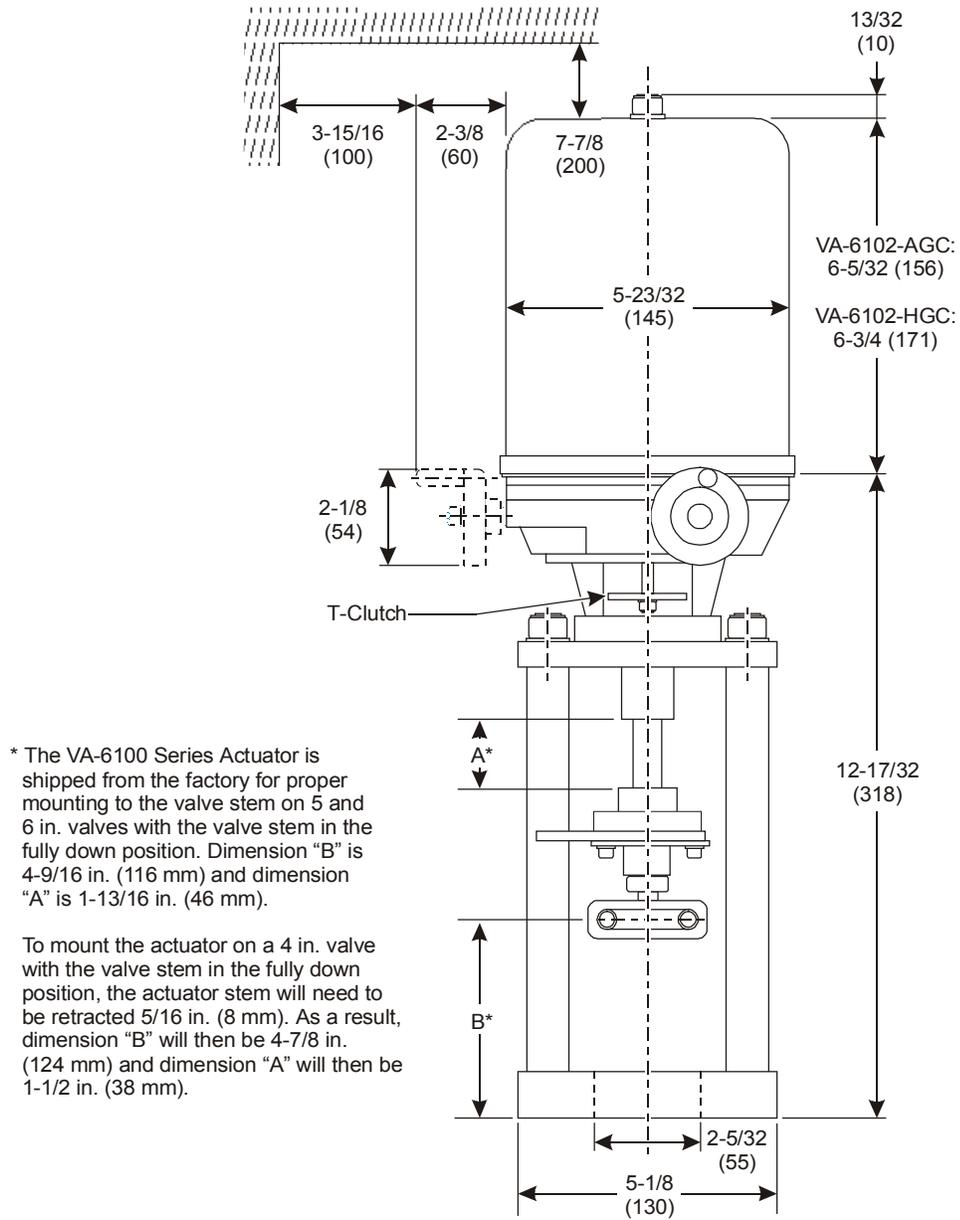


Figure 3: VA-6100 Series Electric Valve Actuator Dimensions, in. (mm)

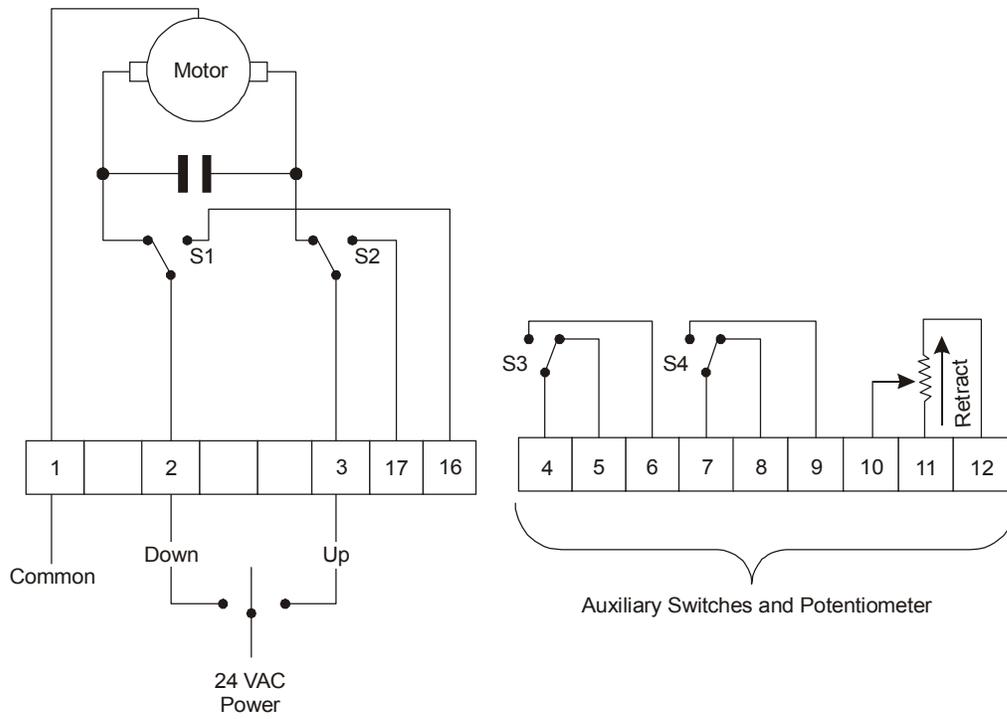


Figure 4: VA-6100-AGC Wiring Diagram for On/Off (Floating) Control

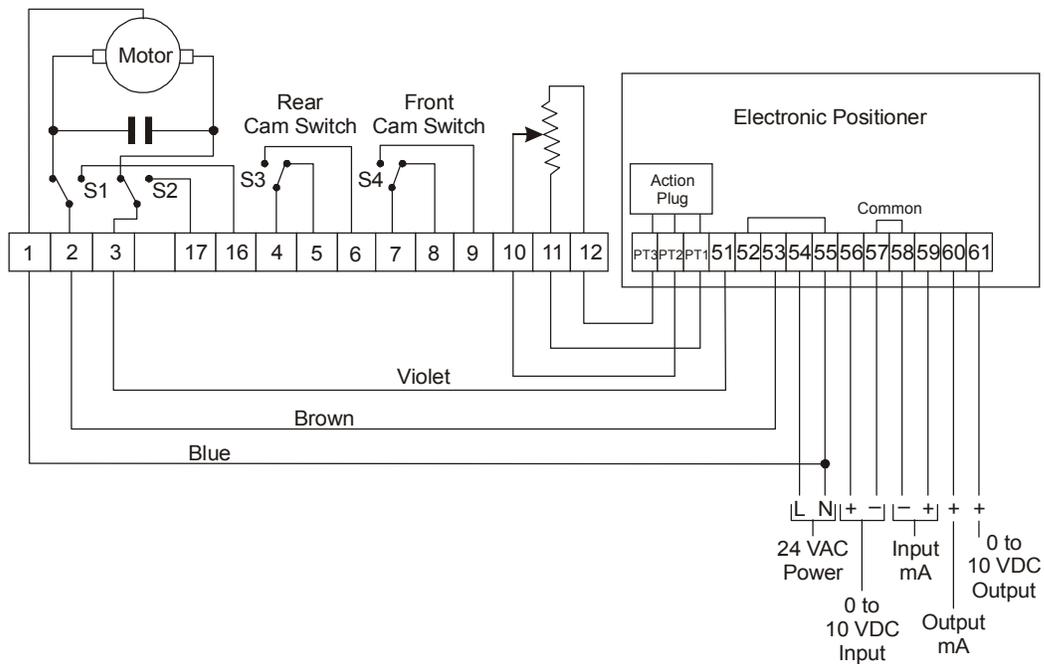


Figure 5: VA-6100-HGC Wiring Diagram for Proportional Control

Technical Data

Product	VA-6100 Series Electric Valve Actuators	
Force Output	1,350 lb (6,000 N)	
Power Requirements	VA-6100-AGC Only	20 to 28 VAC, 60 Hz; 37 VA Minimum
	VA-6100-HGC Only	20 to 28 VAC, 60 Hz; 42 VA Minimum
Input Signal	VA-6100-AGC Only	20 to 28 VAC, 60 Hz
	VA-6100-HGC Only	0 to 10 VDC or 0 to 20 mA; Minimum Control Signal Adjustable 0 to 8 VDC or 0 to 16 mA; Maximum Control Signal Adjustable 2 to 10 VDC or 4 to 20 mA*
Input Impedance	VA-6100-HGC Only	10,000 ohms with 0 to 10 VDC Input; 500 ohms with 0 to 20 mA Input
Feedback Signal	VA-6100-AGC Only	0 to 2,000 ohms
	VA-6100-HGC Only	0.35 to 9.65 VDC or 0.7 to 19.3 mA
Switch Contact Rating	5 A, 24 VAC	
Maximum Stroke	1-21/32 in. (42 mm)	
Nominal Timing for 1 in. Stroke	111 Seconds	
Ambient Operating Temperature Limits (Limited by the Actuator)	-4 to 140°F (-20 to 60°C)	
Agency Compliance	UL 873 Listed, File E27734, CCN XAPX; cUL C22.2 No. 24-93 Listed, File E27734, CCN XAPX7	
Enclosure Rating	NEMA 4, IP 65	
Shipping Weight	16.5 lb (7.5 kg)	

* The maximum control signal must always exceed the minimum control signal by at least 2 VDC or 4 mA.

The performance specifications are nominal and conform to acceptable industry standards. For application 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.



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