

## VA-7010 Series Electric On/Off Actuator

*The VA-7010 Series Electric On/Off Actuators provide two-position (open/closed) control and can easily be field mounted with a threaded coupling onto VG5000 Series Forged Brass Valves. Refer to the VG5000 Series Forged Brass Valves 1/2 Through 1 in., Two-Way Normally Closed and Three-Way Product/Technical Bulletin (LIT-977135) for specific information.*

*A lever at the side of the actuator housing can be used to open the mounted valve manually for servicing.*



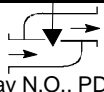


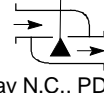


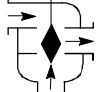


**Figure 1: VA-7010 Actuator with VG5000 Valve**

<b>Features and Benefits</b>	
<input type="checkbox"/> <b>Low or Line Voltage Model Available</b>	Provides application flexibility
<input type="checkbox"/> <b>AC Stall Type Motor</b>	Ensures quiet operation
<input type="checkbox"/> <b>Manual Lever</b>	Allows manual position mode for servicing
<input type="checkbox"/> <b>Flat Profile Design with Small Side Clearance</b>	Provides mounting close to flat surfaces; saves space
<input type="checkbox"/> <b>Actuator can be Mounted after Valve Body is Installed</b>	Simplifies installation in confined spaces; allows application flexibility
<input type="checkbox"/> <b>Actuator can be Rotated after Mounting</b>	Provides easier wiring by locating the wiring conduit entry in any direction

## Operation

When power is applied to the actuator, the motor drives the gear assembly, and pushes down on the valve stem against the force of the valve return spring.

When power is removed from the actuator, the actuator retracts and allows the valve return spring to move the valve stem up, in the direction of its normal position. (See Figure 2.)

Valve Type	Stem Movement/Flow	▶ = Flow ▷ = No Flow
 2-way N.O., PDTC	 Actuator On	 Actuator Off
 2-way N.C., PDO	 Actuator On	 Actuator Off
 3-way, Mixing	 Actuator On	 Actuator Off

Note: Push Down to Close (PDTC)  
Push Down to Open (PDO)

Figure 2: Flow Diagram

## Manual Override

The VA-7010 actuator features a manual operating lever (shown in Figure 3) for manually opening Normally Closed (N.C.) valves or the N.C. port of 3-way valves. The lever will not fully close Normally Open (N.O.) valves or the N.O. port of 3-way valves.

## Dimensions

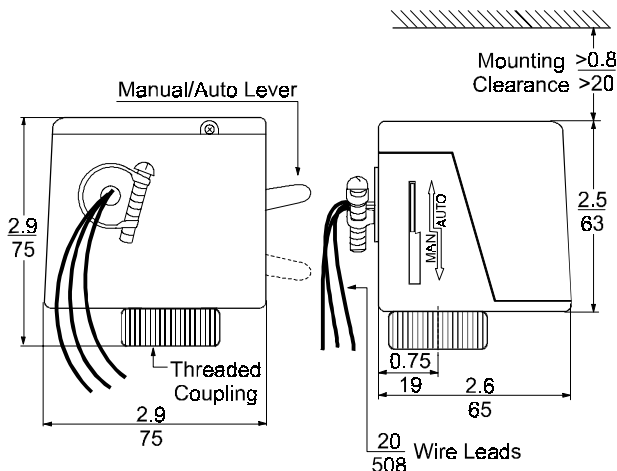


Figure 3: Dimensions, in. (mm)

## Mounting

Observe the following recommendations when mounting the actuator:

- Make sure the actuator is easily accessible for the electrical connections.
- Make sure the actuator is free of thermal insulation material.
- Leave at least 0.8 in. (20 mm) clearance above the actuator for mounting purposes. (See Figure 3.)

To mount the actuator on a VG5000 valve:

1. Place the threaded coupling over the valve stem and the bonnet.
2. Rotate the actuator to the desired position and tighten the coupling securely by hand.

Note: Never use the actuator as a mounting lever.

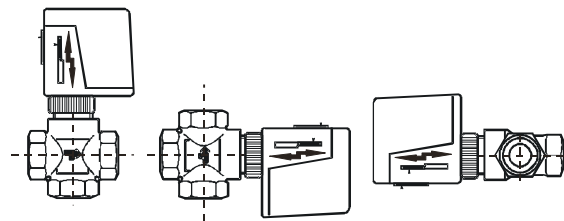
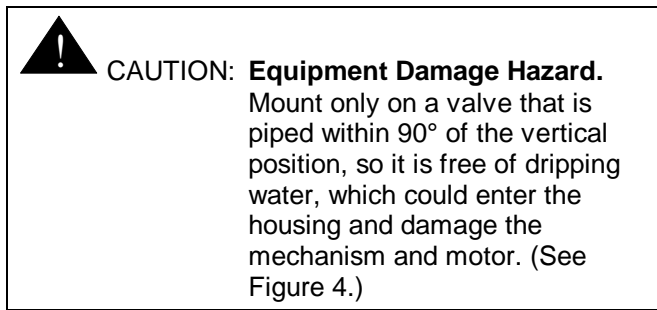


Figure 4: Valve/Actuator Mounting Positions

# Wiring

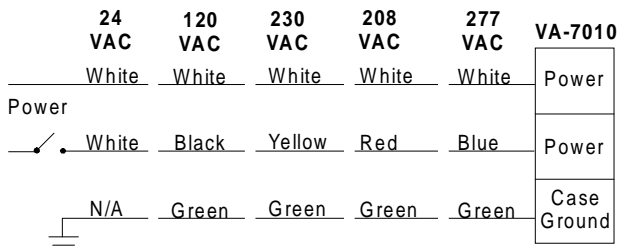
**WARNING: Electrical Shock Hazard.**  
 When servicing, make sure that the electrical supply to the actuator is switched off to avoid personal injury or shock. Do not attempt to connect or disconnect wires when the power is on.

**CAUTION: Equipment Damage Hazard.**  
 Check all wiring connections before applying power to the system. Short-circuited or improperly connected wires will result in permanent damage to the equipment.

**IMPORTANT:** Make all wiring connections in accordance with the National Electrical Code and all local regulations.


To wire the VA-7010 actuator:

1. Run the actuator wires through 3/8 in. Flexible Metallic Conduit (FMC) or its equivalent as appropriate.
2. Secure the FMC to the connector provided with the actuator by tightening the clamp screw using a 1/4 in. flat-blade screwdriver.
3. Connect the wires as shown in Figure 5 for each respective model voltage.



**Figure 5: VA-7010 Wiring Diagram**

# Ordering Information

VA-7010-800 

Supply Voltage	
1	24 VAC
2	120 VAC
3	230 VAC
6	208 VAC
7	277 VAC

**Figure 6: Ordering Data for the VA-7010**

## Actuator Combinations

The VA-7010 Series Electric Valve Actuators are designed to be used with the VG5000 valve series. Refer to the VG5000 Series Forged Brass Valves Product/Technical Bulletin (LIT-977135) for complete ordering information.

# Specifications

<b>Product</b>	VA-7010 Series Electric On/Off Actuator
<b>Action</b>	On/Off
<b>Type of Motor</b>	Synchronous Stall
<b>Supply Voltage (50/60 Hz)</b>	VA-7010-8001: 24 VAC, Class 2, $\pm 10\%$ VA-7010-8002: 120 VAC, $\pm 10\%$ VA-7010-8003: 230 VAC, $\pm 10\%$ VA-7010-8006: 208 VAC, $\pm 10\%$ VA-7010-8007: 277 VAC, $\pm 10\%$
<b>Power Consumption</b>	7 VA
<b>Minimum Force</b>	20.2 lb (90 N)
<b>Nominal Stroke</b>	0.12 in. (3 mm), maximum 0.2 in. (5 mm)
<b>Full Stroke Time On</b>	Nominal 10 seconds
<b>Full Stroke Time Off</b>	Nominal 5 seconds
<b>Enclosure</b>	IP40, NEMA 1
<b>Ambient Operating Condition</b>	35 to 122°F (2 to 50°C), non-condensing
<b>Ambient Storage Condition</b>	-4 to 149°F (-20 to 65°C), non-condensing
<b>Electrical Connections</b>	18 AWG, 20 in. (508 mm) long wire leads
<b>Dimensions (H x W x D)</b>	2.9 x 2.9 x 2.6 in. (75 x 75 x 65 mm)
<b>Shipping Weight</b>	1.1 lb (0.5 kg)
<b>Agency Compliance</b>	UL 873 Listed, File E27734, Guide XAPX, Plenum Rated CSA C22.2 No. 139 Certified, File LR85083, Class 3221 01
<b>CE Conformity</b>	VA-7010-8001: EMC Directive (89/336 EU)

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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