

## 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.



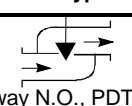


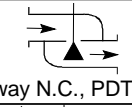


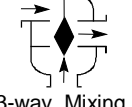


Figure 1: VA-7010 Actuator with VG5000 Valve

Features and Benefits	
q	<b>Low or Line Voltage Model Available</b> Provides application flexibility
q	<b>AC Stall Type Motor</b> Ensures quiet operation
q	<b>Manual Lever</b> Allows manual position mode for servicing
q	<b>Flat Profile Design with Small Side Clearance</b> Provides mounting close to flat surfaces; saves space
q	<b>Actuator can be Mounted after Valve Body is Installed</b> Simplifies installation in confined spaces; allows application flexibility
q	<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., PDT0	 Actuator On	 Actuator Off
 3-way, Mixing	 Actuator On	 Actuator Off

Note: Push Down to Close (PDTC)  
Push Down to Open (PDT0)

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

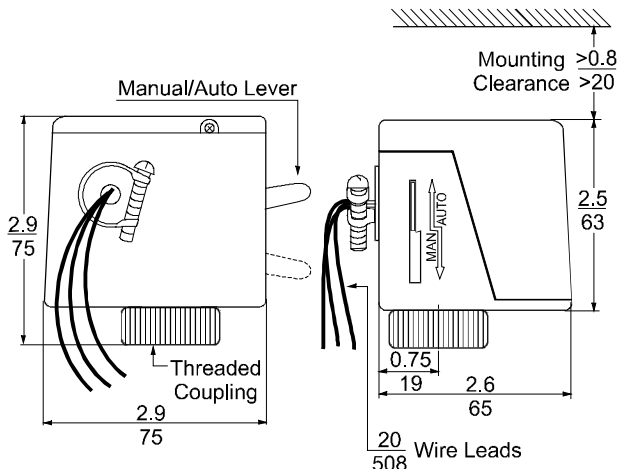


Figure 3: Dimensions, in. (mm)

## 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.



### CAUTION: Risk of Property Damage.

Mount the actuator housing only on a valve that is piped 90° of the vertical position so that it is free of dripping water. Failure to do so could lead to water entering the housing and damaging the mechanism and motor.

### MISE EN GARDE : Risque de dégâts matériels.

Montez l'actionneur uniquement sur une vanne raccordée à 90° de la position verticale de manière à éviter les écoulements d'eau. Le non-respect de cette précaution peut entraîner des infiltrations dommageables pour le mécanisme et le moteur.

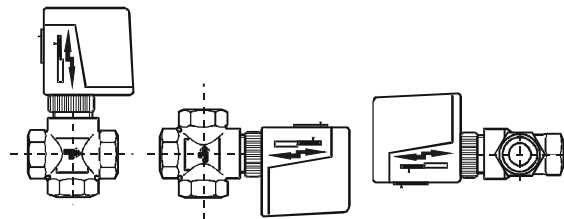


Figure 4: Valve/Actuator Mounting Positions

# Wiring



**WARNING: Risk of Electric Shock.**

When servicing the actuator, make sure that the electrical supply to the actuator is turned off. Do not attempt to connect or disconnect wires when power is applied to the actuator. Failure to do so can cause electric shock and may result in severe personal injury or death.

**AVERTISSEMENT : Risqué de décharge électrique.**

En cas d'intervention sur l'actionneur, assurez-vous que l'alimentation électrique est coupée. N'essayez pas de brancher ou débrancher les câbles quand l'actionneur est sous tension. Le non-respect de cette précaution peut entraîner une décharge électrique et provoquer des blessures graves voire mortelles.

**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.

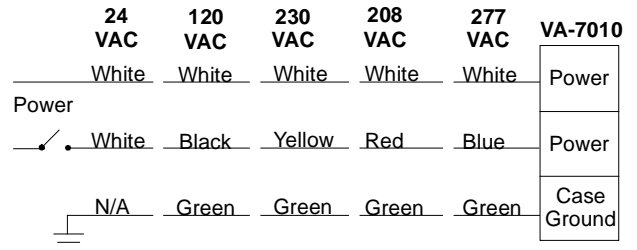


Figure 5: VA-7010 Wiring Diagram



**CAUTION: Risk of Property Damage.**

Do not apply power to the system before checking all wiring connections. Short circuited or improperly connected wires may result in permanent damage to the equipment.

**MISE EN GARDE : Risque de dégâts matériels.**

Ne pas mettre le système sous tension avant d'avoir vérifié tous les raccords de câblage. Des fils formant un court-circuit ou connectés de façon incorrecte risquent d'endommager irrémédiablement l'équipement.

## 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, ±10% VA-7010-8002: 120 VAC, ±10% VA-7010-8003: 230 VAC, ±10% VA-7010-8006: 208 VAC, ±10% VA-7010-8007: 277 VAC, ±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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