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

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

Part No. 34-636-763, Rev. B
Code No. LIT-977360

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	M Actuator On	M Actuator Off
2-way N.C., PDTO	M Actuator On	M Actuator Off
3-way, Mixing	M Actuator On	M Actuator Off

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

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

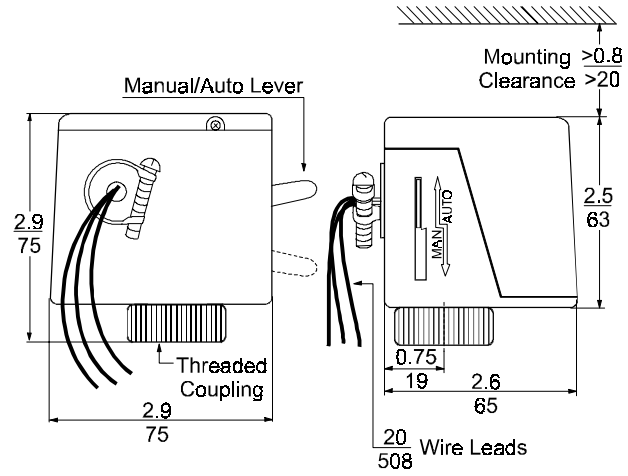

Figure 3: Dimensions, in. (mm)

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: **Equipment Damage Hazard.** Mount only on a valve that is piped within 90° of the vertical position, so it is free of dripping water, which could enter the housing and damage the mechanism and motor. (See Figure 4.)

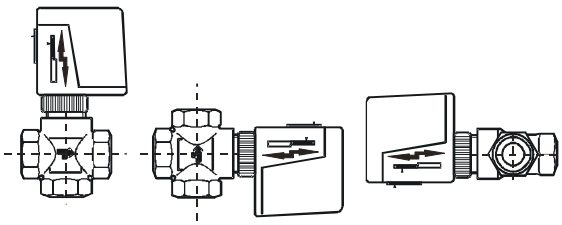

Figure 4: Valve/Actuator Mounting Positions

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.

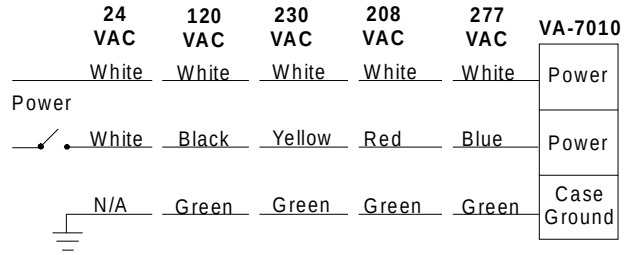

Figure 5: VA-7010 Wiring Diagram

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

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

JOHNSON CONTROLS

Controls Group
507 E. Michigan Street
P.O. Box 423
Milwaukee, WI 53201

Printed in U.S.A.
www.johnsoncontrols.com