

VA-7010 Series Electric On/Off Actuator

Product Bulletin

LIT-977360
January 2021

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 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	Application flexibility
AC stall type motor	Quiet operation
Manual lever	Manual position mode for servicing
Flat profile design with small side clearance	Mounting close to flat surfaces saves space
Actuator can be mounted after valve body is installed	Simple installation in confined space
Actuator can be rotated after mounting	Easy wiring as wiring conduit can be located in any direction

Ordering information

VA-7010-800

Supply Voltage	
1	24 VAC
2	120 VAC
3	230 VAC

Figure 2: Ordering data for the VA-7010

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 3.)

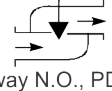


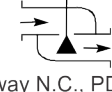





Valve Type	Stem Movement/Flow	▶ = Flow ▷ = No Flow
 2-way N.O., PDTC	 Actuator On	 Actuator Off
 2-way N.C., PDTO	 Actuator On	 Actuator Off
 3-way, Mixing	 Actuator On	 Actuator Off

Figure 3: 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

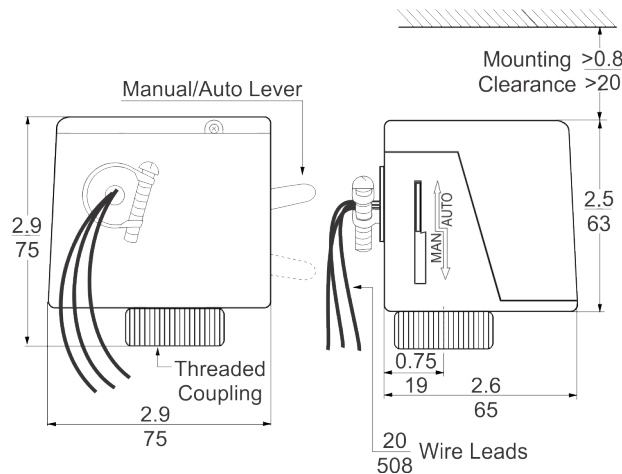


Figure 4: Dimensions, in. (mm)

Mounting

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.

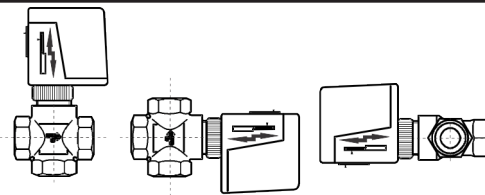


Figure 5: Valve/actuator mounting positions

Wiring

CAUTION: 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.

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. 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 6 for each respective model voltage.

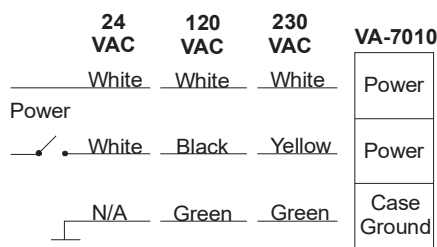



Figure 6: VA-7010 wiring diagram

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 Bulletin (LIT-977135) for complete ordering information.

VA-7010 Series Electric On/Off Actuator

Technical specifications

Product	VA-7010 Series Electric On/Off Actuator	
Action	On/off	
Type of motor	Synchronous stall	
Supply voltage (50/60 Hz)	VA7010-8001	24 VAC, Class 2, ±10%
	VA7010-8002	120 VAC, ±10%
	VA7010-8003	230 VAC, ±10%
Power consumption	7 VA	
Minimum force	20.2 lb (90 N)	
Nominal stroke	0.12 in. (3 mm) maximum 0.2 in. (5mm)	
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: CE Mark – Johnson Controls declares that this product is in compliance with the essential requirements and other relevant provisions of the EMC Directive	

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 shall not be liable for damages resulting from misapplication or misuse of its products.

Product warranty

This product is covered by a limited warranty, details of which can be found at www.johnsoncontrols.com/buildingswarranty

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