

VA7800 Series Electric Valve Actuators

Description

The VA7800 Series of Electric Valve Actuators control VG7000 Series Bronze Globe Valves in Heating, Ventilating, and Air Conditioning (HVAC) systems. The VA7800 Series produce a minimum linear output force of 180 lb (800 N) and are ordered field mounted or factory coupled to 1/2 through 2 in. VG7000 Series Bronze Globe Valves. All actuators are direct mount and available in both Spring Return and Non-Spring Return models.

Spring Return models ship from the factory set for DC 0 to 10 V Proportional Control. With a change of DIP switch settings, this model can be field configured to On/Off or Floating Control. In addition to these settings, optional auxiliary switches are also available.

Non-Spring Return models are available in AC 24 V On/Off (Floating) Control, or DC 0 to 10 V Proportional Control. Models are available with or without optional auxiliary switches.

Refer to the *VA7800 Series Electric Valve Actuators Product Bulletin (LIT-12011474)* for important product application information.

Features

- Automatic stroke adjustment—provides easy, quick, and precise commissioning
- Manual override as standard—allows manual positioning of valve for easy commissioning and servicing
- IP54 enclosure protection—allows installation in a wide range of environments
- Unique swing-gate yoke—offers fast and secure attachment to the valve
- Brushless motor—ensures low energy consumption and long life
- Proportional model—enables one model to be used for various control types.
- Force-controlled motor shut-off—reduces energy consumption, wear of the actuator, and protects the valve from excessive forces
- Stroke position indicator—gives visual indication of valve operation, provides automatic adjustment of stroke indicators during first cycle of operation
- Status Light-Emitting Diode (LED)—gives visual indication of actuator status and assists with diagnostic
- Optional integrated auxiliary switches—provides adjustable switch points with line voltage capability
- Integral cable with colored conductors—simplifies installation and field wiring



VA7810 Electric Valve Actuator

- Integral connector for 3/8 in. (10mm) Flexible Metal Conduit (FMC)—simplifies installation and field wiring
- Underwriters Laboratories Inc.® (UL) and CE compliant—provides internationally recognized regulatory agency approval

Repair Information

If a VA78x0-xxx-2 Series Electric Valve Actuator fails to operate within specifications, replace the unit. For a replacement actuator, contact the nearest Johnson Controls® representative.

Selection Charts

VA-78x0-xxx-2 Series Electric Valve Actuators

Code Number	Input Signal			Power Requirements			Action on Power Failure			Feedback	Auxiliary Switches	Nominal Stroke Time ¹ (Sec-onds)		
	On/Off	Floating Point	Proportional 0 (2) to 10 VDC 0 (4) to 20 mA	24 VAC 50/60 Hz ± 15%	230 VAC 50/60 Hz ± 15%	VA Rating	Non-Spring Return	Spring Return Actuator Retracted Valve Stem Full Up	Spring Return Actuator Extended Valve Stem Full Down	0 (2) to 10 VDC	2 SPDT, 1A, 3A Resistive, 1/4 HP	1/2 and 3/4 in. VG7000 (5/16 in. valve stroke)	1 and 1-1/4 in. VG7000 (1/2 in. valve stroke)	1-1/2 and 2 in. VG7000 (3/4 in. valve stroke)
VA7810-ADA-2	X	X	---	---	X	8	X	---	---	---	---	48	76	114
VA7810-ADC-2	X	X	---	---	X	8	X	---	---	---	X	48	76	114
VA7810-AGA-2	X	X	---	X	---	3	X	---	---	---	---	48	76	114
VA7810-AGC-2	X	X	---	X	---	3	X	---	---	---	X	48	76	114
VA7810-HGA-2	X	X	X	X	---	6	X	---	---	X	---	24/48	38/76	57/114
VA7810-HGC-2	X	X	X	X	---	6	X	---	---	X	X	24/48	38/76	57/114
VA7820-HGA-2	X	X	X	X	---	11	---	X	---	X	---	24/48	38/76	57/114
VA7820-HGC-2	X	X	X	X	---	11	---	X	---	X	X	24/48	38/76	57/114
VA7830-HGA-2	X	X	X	X	---	11	---	---	X	X	---	24/48	38/76	57/114
VA7830-HGC-2	X	X	X	X	---	11	---	---	X	X	X	24/48	38/76	57/114

1. VA78x0-HGx-2 actuators have field selectable stroke speed; factory setting is the slowest speed.

VA7800 Series Electric Valve Actuators (Continued)

Technical Specifications

VA7810-AGx-2 and VA7810-ADx-2 Series On/Off (Floating) Electric Non-Spring Return Valve Actuators

Model		VA7810-AGx-2	VA7810-ADx-2
Thrust Force		180 lb (800 N) minimum	
Power Supply		AC 24 V (AC 19 to 30 V) at 50/60 Hz, Class 2	AC 230 V (AC 195 to 265 V) at 50/60 Hz
Transformer Sizing		3 VA	8 VA
Input Signal		AC 24 V (AC 19 to 30 V) at 50/60 Hz	AC 230 V (AC 195 to 265 V) at 50/60 Hz
Feedback		N/A	N/A
Auxiliary Switch Rating		Two Single-Pole, Double-Throw (SPDT), AC 230 V, 3.0 A Resistive, 1/4 hp	
Stroke		5/16 to 1 in. (8 to 25 mm)	
Stroke Speed		5/16 in. stroke: 48 seconds 1/2 in. stroke: 76 seconds 3/4 in. stroke: 114 seconds	
Ambient Operating Conditions		23 to 131°F (-5 to 55°C); 10 to 90% RH Noncondensing	
Enclosure Rating		NEMA 2 (IP54)	
Electrical Connection		48 in. (1.2 m) UL 758 Type AWM Halogen Free Cable with 18 AWG (0.85 mm ²) Conductors and 0.25 in. (6 mm) Ferrule Ends	
Dimensions		9.6 x 4.56 x 8.35 in. (244 x 116 x 212 mm)	
Materials	Gearbox and Yoke	Die Cast Aluminum	
	Cover	Resin ABS/PC - UL94-V0	
	Stem	Stainless Steel	
	Coupler	Brass	
Life Cycles		100,000 full stroke cycles	
Shipping Weight		5.4 lb (2.45 kg)	
Compliance	United States	UL 60730 Listed Type 1 Enclosure, CCN XAPX, File E194024	
	Canada	UL 60730-1 Listed Type 1 Enclosure, CCD XAPX7, File E194024	
	Europe	CE Mark - Johnson Controls, Inc. declares that this product is in compliance with the essential requirements and other relevant provisions of the EMC directive 2004/108/EC and the Low Voltage Directive 2006/95/EC.	



VA7800 Series Electric Valve Actuators (Continued)

VA7810-HGx-2 Series Proportional Electric Non-Spring Return Valve Actuators

Model		VA7810-HGx-2
Thrust Force		180 lb (800 N) minimum
Power Supply		AC 24 V (AC 19 to 30 V) at 50/60 Hz, Class 2
Transformer Sizing		6 VA
Input Signal		Switch Selectable: Proportional: DC 0 to 10 V, DC 2 to 10 V, 0 to 20 mA or 4 to 20 mA Programmable Proportional: Start Point: 0 to 6 VDC (0 to 12 mA) End Point: 3 to 10 VDC (6 to 20 mA) with 3 VDC (6 mA) minimum span On/Off (Floating): AC 24 V at 50/60 Hz Switch Selectable Direct or Reverse Action with signal increase Switch Selectable preset actuator position on loss of signal
Feedback		DC 0 (2) to 10 V corresponds to input range
Auxiliary Switch Rating		SPDT, AC 230 V, 3.0 A Resistive, 1/4 hp
Stroke		5/16 to 1 in. (8 to 25 mm)
Stroke Speed (Switch Selectable)		Slow (Factory Setting)
		5/16 in. stroke: 48 seconds 1/2 in. stroke: 76 seconds 3/4 in. stroke: 114 seconds
		Fast
		5/16 in. stroke: 24 seconds 1/2 in. stroke: 38 seconds 3/4 in. stroke: 57 seconds
Ambient Operating Conditions		23 to 131°F (-5 to 55°C); 10 to 90% RH Noncondensing
Ambient Storage Conditions		-40 to 176°F (-40 to 80°C); 5 to 95% RH Noncondensing
Enclosure Rating		NEMA 2 (IP54)
Electrical Connection		48 in. (1.2 m) UL 758 Type AWM Halogen Free Cable with 18 AWG (0.85 mm ²) Conductors and 0.25 in (6 mm) Ferrule Ends
Dimensions		9.6 x 4.56 x 8.35 in. (244 x 116 x 212 mm)
Materials	Gearbox and Yoke	Die Cast Aluminum
	Cover	Resin ABS/PC - UL94-V0
	Stem	Stainless Steel
	Coupler	Brass
Life Cycles		100,000 full stroke cycles
Shipping Weight		5.4 lb (2.45 kg)
Compliance 	United States	UL 60730 Listed Type 1 Enclosure, CCN XAPX, File E194024
	Canada	UL 60730-1 Listed Type 1 Enclosure, CCN XAPX7, File E194024
	Europe	CE Mark - Johnson Controls, Inc. declares that this product is in compliance with the essential requirements and other relevant provisions of the EMC directive 2004/108/EC and the Low Voltage Directive 2006/95/EC.

VA7800 Series Electric Valve Actuators (Continued)

VA7820-HGx-2 / VA7830-HGx-2 Series Proportional Electric Spring Return Valve Actuators

Model		VA7820-HGx-2 / VA7830-HGx-2	
Thrust Force		180 lb (800 N) minimum	
Power Supply		AC 24 V (AC 19 to 30 V) at 50/60 Hz, Class 2	
Transformer Sizing		11 VA	
Input Signal		Switch Selectable: Proportional: DC 0 to 10 V, DC 2 to 10 V, 0 to 20 mA or 4 to 20 mA Programmable Proportional: Start Point: 0 to 6 VDC (0 to 12 mA) End Point: 3 to 10 VDC (6 to 20 mA) with a 3 VDC (6 mA) minimum span On/Off (Floating): AC 24 V at 50/60 Hz Switch Selectable Direct or Reverse Action with signal increase Switch Selectable reset actuator position on loss of signal	
Feedback		DC 0 (2) to 10 V corresponds to input range	
Auxiliary Switch Rating		SPDT, AC 230 V, 3.0 A Resistive, 1/4 hp	
Stroke		5/16 to 1 in. (8 to 25 mm)	
Stroke Speed		Slow (Factory Setting)	5/16 in. stroke: 48 seconds 1/2 in. stroke: 76 seconds 3/4 in. stroke: 114 seconds
		Fast	5/16 in. stroke: 24 seconds 1/2 in. stroke: 38 seconds 3/4 in. stroke: 57 seconds
Ambient Operating Conditions		23 to 131°F (-5 to 55°C); 10 to 90% RH Noncondensing	
Ambient Storage Conditions		-40 to 176°F (-40 to 80°C); 5 to 95% RH Noncondensing	
Enclosure Rating		NEMA 2 (IP54)	
Electrical Connection		48 in. (1.2 m) UL 758 Type AWM Halogen Free Cable with 18 AWG (0.85 mm ²) Conductors and 0.25 in. (6 mm) Ferrule Ends	
Dimensions		9.6 x 4.56 x 8.35 in. (244 x 116 x 212 mm)	
Materials	Gearbox and Yoke	Die Cast Aluminum	
	Cover	Resin ABS/PC - UL94-V0	
	Stem	Stainless Steel	
	Coupler	Brass	
Life Cycles		100,000 full stroke cycles	
Shipping Weight		7.3 lb (3.3 kg)	
Compliance	United States	UL 60730 Listed Type 1 Enclosure, CCN XAPX, File E194024	
	Canada	UL 60730-1 Listed Type 1 Enclosure, CCN XAPX7, File E194024	
	Europe	CE Mark - Johnson Controls, Inc. declares that this product is in compliance with the essential requirements and other relevant provisions of the EMC directive 2004/108/EC and the Low Voltage Directive 2006/95/EC.	

