

## 4. VB-7000 Globe Valves Actuators & Linkages

# Forta M4xx, M8xx and M15xx A-VB NSR Actuators

### Forta M400A (VB) / M800A (VB) /M1500A (VB)

Forta M400A (VB) / M800A (VB) /M1500A (VB) series Non-Spring Return linear actuators are available in U-Bolt (Mx00A) and Screw Mount (Mx00A-VB) style for Schneider Electric globe valves with AV-821 linkage kits for mounting to VB-7000 valves. The Screw Mount style screws directly to the bonnet nut on VB-7000 valves (no adapter required). Applications include chilled or hot water and steam.

### Benefits

- Field-selectable input signals include reverse and direct-acting, Floating or Proportional plus proportional sequencing input signal ranges.
- Floating configuration - controlled by a SPDT floating controller
- Proportional configuration - 0...10, 2...10 vdc or 4...20 mA with the addition of a 500 ohm resistor (included)
- Direct/Reverse action switch selectable
- Linear force: 90 lbf (400N), 180 lbf (800N), 337 lbf (1500N)
- Die-cast housing with plenum-rated plastic cover for NEMA 2 (IP54 vertical mount only) applications
- Manual override to allow positioning of valve
- Electronic valve sequencing and electronic flow curve (equal percentage or Linear) selection.
- Torque overload protection throughout stroke
- Easy "One Touch" input signal/stroke calibration



U-Bolt Style Forta



Screw Mount Style Forta

### Applicable Literature

- Forta Series Installation Instructions, F-27599
- Forta/VB-7000 Selection Guide, F-27490
- Forta/VB-8xxx/9xxx Selection Guide, F-27491
- AV-800 Series Linkage Adapters for Competitors Valves, F-27470
- AV-821 Linkage VB-7000, F-27701 (U-Bolt Style Only). AV-821 is required for the Mx00A but is not for the Mx00A-VB.
- AV-822 Linkage VB-8xxx, VB-9xxx, F-27702 (U-Bolt Style Only)
- CA-28 Control Valve Sizing, F-13755

### Specifications

U-bolt Style	M400A	M400A-S2	M800A	M800A-S2	M1500A	M1500A-S2
Screw Mount Style	M400A-VB	M400A-S2-VB	M800A-VB	M800A-S2-VB	M1500A-VB	M1500A-S2-VB
AC Power	24 Vac +/- 10% 50-60 Hz					
DC Power	20...29 Vdc 20 W			20...29 Vdc 30 W		
Running VA	6		15		24	
Transformer Size VA	30		50		50	
Floating Control	Yes					
Proportional Control	0...10 Vdc, 2...10 Vdc or 4...20mA with 500 ohm resistor					
Feedback	2...10 Vdc					
Force	90 lbf (400 N)		180 lbf (800 N)		337 lbf (1500 N)	
2-SPDT Aux Switch	No	24 Vac 4A res	No	24 Vac 4A res	No	24 Vac 4A res

### Restrictions on Ambient Temperature for Forta Valve Actuators

Fluid Temperature in Valve Body	Maximum Allowable Ambient Temperature <sup>a</sup>
Chilled Water	122°F (50°C)
281°F (138°C)	113°F (45°C)
300°F (149°C)	107°F (42°C)
340°F (171°C)	100°F (38°C)

a - Minimum allowable ambient operating temperature 14°F (-10°C).

Specifications (continued)		
Stroke	M800A, M1500A	U-Bolt style: >3/8" ... 2" (9-52mm)
	M800A-VB, M1500A-VB	Screw Mount Style >3/8" ... 1 7/8" (9-48mm)
	M400A, M400A-VB	U-Bolt and Screw Mount Style >3/8" ... 1 1/4" (9-48mm)
Stroke Timing	Floating: 60 or 300 sec selectable, Proportional: 15 sec @1/2" stroke	
Feedback AO	2...10 Vdc	
Power Supply Type	Half Wave	
Motor Type	Brushless DC	
Enclosure	NEMA 2 (IP 54, vertical mount only) with both conduit connectors used. NEMA 1 IP40 with one connector used.	
Sound Power Level	Maximum 32 dba	
Ambient Temperature Storage	-13 °F...149 °F (-25...65 °C) ambient	
Ambient Temperature Operational	122 °F (50 °C) For chilled water applications 113 °F (45 °C) ambient at 281 °F (138 °C) fluid temperature 107 °F (42 °C) ambient at 300 °F (149 °C) fluid temperature 100 °F (38 °C) ambient at 340 °F (171 °C) fluid temperature 90 °F (32 °C) ambient at 366 °F (186 °C) fluid temperature	
Minimum Operating Temperature	14...150 °F (-10...50 °C)	
Ambient Humidity	15...95 % RH non-condensing	
Housing Material	Die-Cast Aluminum	
Cover Material	UL94 plenum rated plastic	
Agency Listings	UL873, cULus, RCM, CE	

**Mounting**

The actuator may be mounted horizontally, vertically and in any position in between, but not upside down. Please note that to maintain NEMA 2 (IP54) rating the actuator must be mounted vertically.

