

Direct Coupled, Non-Spring Return Actuators, 20 in-lb



DESCRIPTION

Electronic, motor-driven, reversible, noiseless, direct coupled actuators.

GA-VSP20-024
(0)2-10 VDC, or (0)4-20 mA
"Very Speedy"

APPLICATION

Actuators to be easily installed by direct shaft mounting on air dampers, and shutters for super fast rotation in ventilation and air conditioning systems. Can be controlled by any compatible electric or electronic analog controller, DDC/PLC control or automation system.



FEATURES

- *Very speedy, 1.0 sec. rotation*
- *Direct coupled, easy to install*
- *Ridged V-clamp connector for better shaft gripping*
- *Position indicator*
- *Switch selectable:*
 - *Control signal*
 - *Direction of rotation*
- *Angle of rotation selectable*
- *Full control signal auto-adjust to actual angle of rotation "Teach-in of Range"*
- *Tested for 60,000+ full operations*
- *Plenum rated cable*
- *Manual override*
- *Overload protected*
- *Maintenance-free*
- *Five-year warranty*

SPECIFICATIONS

Control

Input signal	Proportional, (0)2-10 VDC or (0)4-20 mA (switch selectable), or On/Off 24 VAC/VDC
Input impedance	50 kΩ
Feedback signal	(0)2-10 VDC
	Refer to table "Function and Signal Selection"

Electrical

Power supply	24 VAC/VDC ± 20%, 50/60 Hz
Over voltage	Up to 40 V, max. 5 sec.
Power consumption	18.0 W (22.0 VA)

Performance

Torque	20 in-lb (2.5 Nm)
Damper size	Up to 5.4 sq. ft. (0.5 m ²)
Angle of rotation	0-95°(CW)/95-0°(CCW) dip switch selectable, adj. angle with integral stops
Rotation time	1.0 sec./0-90°
Power failure	Stays in last position of operation
Position indicator	0-10 divisions and adj. visual indicator
Synchronization	± 1%
Overload protection	Electronic throughout rotation
Manual override	Built-in disengage button
Motor type	DC motor
Noise level	Max. 70 dB(A)

Environmental

Permissible ambient	
- working temperature	-4°F to 122°F (-20°C to 50°C)
- storage temperature	-40°F to 176°F (-40°C to 80°C)
- humidity	5-95% RH, non-condensing

Physical

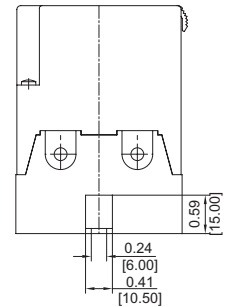
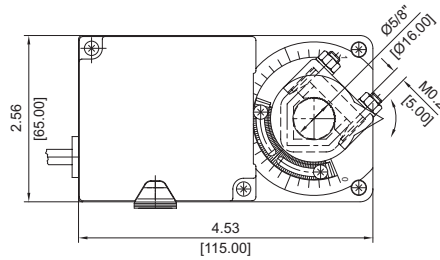
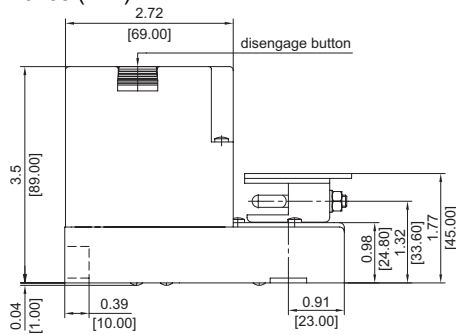
Enclosure	
- cover	ABS, UL 94-5V
- base	PA 6.6
- color	Grey and black
- protection	NEMA 2
Mounting position	Any position
Anti-rotation bracket	Included w/actuator
Paralleling	Refer to table "Multiple Actuators"
Clamp connection to	
- round shaft	Ø 5/16" to 5/8" (8 to 16 mm)
- square shaft	□ 5/16" to 15/32" (8 to 12 mm)
Wire connection	3 ft. (0.9 m) cable, color coded, plenum rated
Wire size	18 AWG (0.75 mm ²)
Dimensions	4.53 x 2.56 x 3.50 in. (115 x 65 x 89 mm)
Weight	1.6 lbs. (0.75 kg)
Manufacturing	ISO 9001 certified
Listings/Approvals	CE UL and CSA
Warranty	Five-year material and workmanship (Two-year standard, three-year conditional)

ORDERING INFORMATION

GA-VSP20-024	Standard, 1.0 sec. over 0-90° angle of rotation
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DIMENSIONS

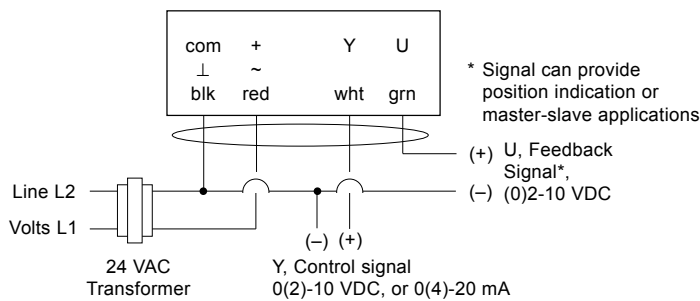
inches (mm)



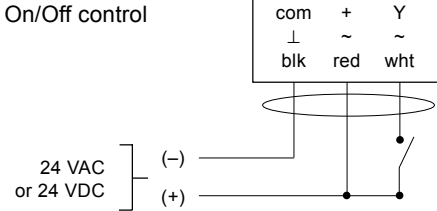
Note: Anti-rotation mounting bracket supplied w/actuator

WIRING CONFIGURATION

GA-VSP20-024 Proportional control



GA-VSP20-024 On/Off control



- Notes:
- Actuators are provided with color coded wires.
 - Observe polarity on secondary of transformers. All common and signal (-) must be connected in line. Incorrect polarity can cause controller damage or operation error.
 - Long wire runs requires a 4-wire configuration (connect common for power and control signal at the actuator or close by). Greater than a 0.2 V drop must be avoided for any common wire.
 - Always use a separate transformer when controller power is full-wave rectified.
 - Controller and actuators must have separate transformers for paralleled multi-actuator application.
 - Provide overload protection for line voltage and disconnect as required.

GA-VSP20-024 Function and Signal Selection

Signal selector (dip switch built-on printed circuit-board)		On	
Dip switch setting		Off	On
Angle of rotation: (with increase of signal)			
• CW/0-90°		3	-
• CCW/90-0°		-	3
Y, control signal:	U, feedback signal:		
• 2-10 VDC	• 2-10 VDC	1,2	-
• 0-10 VDC	• 0-10 VDC	2	1
• 4-20 mA	• 2-10 VDC	1	2
• 0-20 mA	• 0-10 VDC	-	1,2
Full control signal adaptation to actual angle of rotation "Teach-in"			
• Disabled (Off)		4*	-
• Enabled (On)		-	4*

Factory set: All dip switches in the Off position

*** Dip switch #4 function**

Teach-in feature can be used to adapt the full control signal range to the actual angle of rotation.

ANGLEmax - ANGLEmin ≥ 30°
A minimum of 30° "angle of rotation" range is required.

Teach-in procedure:

- Adjust the mechanical end-stops
- Apply power to actuator
- Change dip switch #4 from Off to On
- Teach-in process starts automatically and concludes in 15 secs.
- Change dip switch #4 from On to Off
- Actuator full-signal (Y) match actual "angle of rotation" range

Multiple Actuators (maximum quantities)	GA-VSP20-024 Proportional
Parallel connection, 0(2)-10 VDC	20
Parallel connection, 0(4)-20 mA	10
Master-slave, via U, feedback signal	10
<i>Actuator stacking is NOT recommended</i>	