

Direct Coupled, Non-Spring Return Actuators, 70 in-lb



DESCRIPTION

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

GA-VSP70-024
(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, 4 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 | 12.0 W (15.0 VA) |

Performance

| | |
|---------------------|--|
| Torque | 70 in-lb (8 Nm) |
| Damper size | Up to 18 sq. ft. (1.6 m ²) |
| Angle of rotation | 0-95°(CW)/95-0°(CCW) dip switch selectable, adj. angle with integral stops |
| Rotation time | 4 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

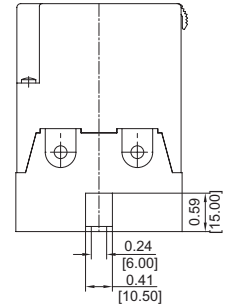
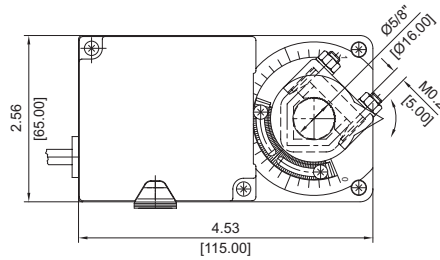
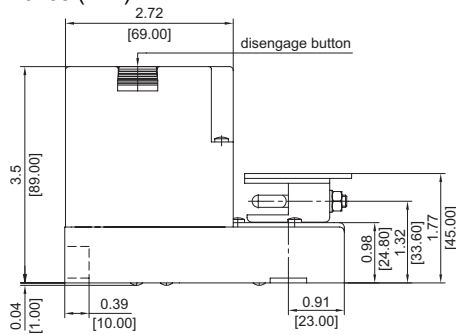
| | |
|---|--|
| Enclosure | |
| - cover | ABS, UL 94-5V |
| - base | PA 6.6 |
| - color | Grey and black |
| - protection | NEMA 2 |
| Mounting position | Any position |
| Anti-rotation bracket | Included w/actuator |
| Paralleling | Refer to table "Multiple Actuators" |
| Clamp connection to | |
| - 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 Listings/Approvals | ISO 9001 certified CE UL and CSA |
| Warranty | Five-year material and workmanship (Two-year standard, three-year conditional) |

ORDERING INFORMATION

| | |
|---------------------|---|
| GA-VSP70-024 | Standard, 4 sec. over 0-90° angle of rotation |
|---------------------|---|

DIMENSIONS

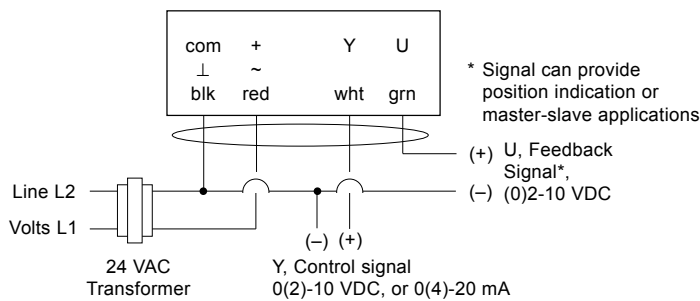
inches (mm)



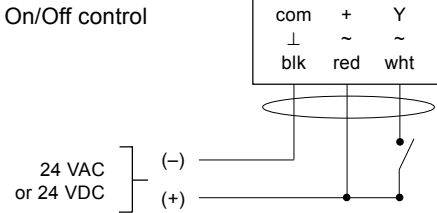
Note: Anti-rotation mounting bracket supplied w/actuator

WIRING CONFIGURATION

GA-VSP70-024 Proportional control



GA-VSP70-024 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-VSP70-024 Function and Signal Selection

Signal selector
(dip switch built-on printed circuit-board)



Dip switch setting

Off On

Angle of rotation:
(with increase of signal)
• CW/0-90°
• CCW/90-0°

| | |
|---|---|
| 3 | - |
| - | 3 |

| Y, control signal: | U, feedback signal: | 1,2 | - |
|--------------------|---------------------|-----|-----|
| • 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-VSP70-024 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> | |