

Direct Coupled, Non-Spring Return Actuators, 180 in-lb



DESCRIPTION

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

APPLICATION

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

FEATURES

- *Direct coupled, easy to install*
- *Ridged V-clamp connector for better shaft gripping*
- *Switch selectable control and feedback signals*
- *Tested for 60,000+ full operations*
- *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
Input impedance	100 kΩ
Feedback signal	(0)2-10 VDC or for use as constant power supply 10/15 VDC, 0.5A 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	4.0 W (5.5 VA)

Performance

Torque	180 in-lb (20 Nm)
Damper size	Up to 45 sq. ft. (4 m ²)
Angle of rotation	0-91°/91-0°, selectable
- CCW(L) and CW(R)	L/R selector, built-in actuator cover
Rotation time	60 to 80 sec/0-90°
Power failure	Stays in last position of operation
Position indicator	0-90° and adj. visual indicator
Synchronization	± 1%
Overload protection	Electronic throughout rotation
Manual override	Built-in disengage button
Motor type	DC motor
Noise level	Max. 40 dB(A)

Environmental

Permissible ambient	
- working temperature	-22°F to 122°F (-30°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
Stacking/paralleling	Refer to table "Multiple Actuators"
Clamp connection to	
- round shaft	Ø 3/8" to 3/4" (9 to 20 mm)
- square shaft	□ 3/8" to 5/8" (9 to 16 mm)
Wire connection	3 ft. (0.9 m) appliance cable, color coded Plenum rated cable 18 AWG (0.75 mm ²) 1/2", built-in
- option, on request	
Wire size	18 AWG (0.75 mm ²)
Conduit connector	1/2", built-in
Dimensions	7.01 x 3.65 x 2.95 in. (178 x 92.7 x 75 mm)
Weight	3.3 lbs. (1.5 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-P180-024	Standard
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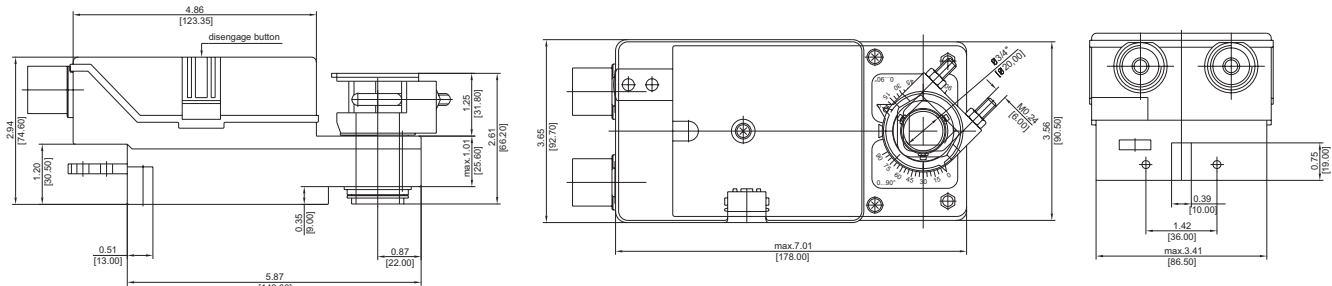
CE
ISO 9001



GA-P180-024
(0)2-10 VDC, or (0)4-20 mA

DIMENSIONS

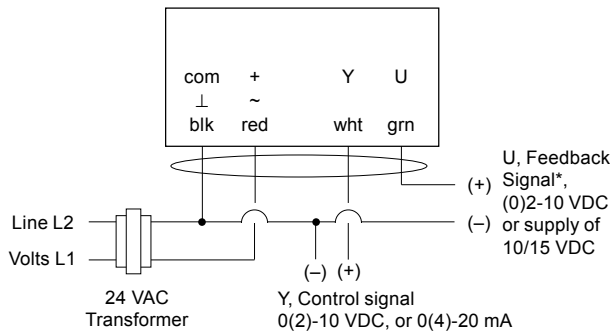
inches (mm)



Note: Anti-rotation mounting bracket supplied w/actuator

WIRING CONFIGURATION

GA-P180-024 Proportional control



* Signal can provide position indication or master-slave applications

- 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.

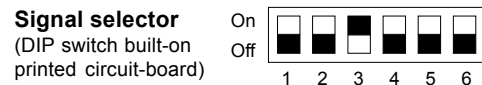
Multiple Actuators (maximum quantities)	GA-P180-024 Proportional
Stacking (torque is additive)	4*
Parallel connection, 0(2)-10 VDC	20
Parallel connection, 0(4)-20 mA	10
Master-slave, via U, feedback signal	10

* Stacking options for continuous control
 Sum of total torque:
 2 actuators = (2 x 100%)
 3 actuators = (2 x 100%) + (1 x 80%)
 4 actuators = (2 x 100%) + (1 x 80%) + (1 x 50%)

GA-P180-024 Function and Signal Selection

L/R selector (built-in actuator cover)

Select	Angle of rotation	
R	CW/0-90°	"with increase of control signal"
L	CCW/90-0°	



DIP switch setting	Off	On
Y, control signal:		
• 0-10 VDC	2	1
• 2-10 VDC	1,2	-
• 0-20 mA	-	1,2
• 4-20 mA	1	2
U, feedback signal:		
• 0-10 VDC	4	3 (1=ON)
• 2-10 VDC	4 (1=OFF)	3
or VDC supply:		
• 10 VDC	3	4,5
• 15 VDC	3,5	4

Unused DIP switches should be in the OFF position!

Allowable combinations of control signal (Y) and feedback signal (U), respectively:

- (Y) 0-10 VDC + (U) 0-10 VDC
- (Y) 0-20 mA + (U) 0-10 VDC
- (Y) 2-10 VDC + (U) 2-10 VDC
- (Y) 4-20 mA + (U) 2-10 VDC

Factory set: Y, control signal: 2-10 VDC
 U, feedback signal: 2-10 VDC
 OFF = 1, 2, 4, 5, 6 / ON = 3

- 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.