

Alloy Valves and Control

Actuator Specifications	P0300			
Torque	300 in.lbs/35 Nm			
Supply Voltage	12V AC/DC	24V AC/DC	120V AC	230V AC
Max Inrush Current	2.0A	1.1A	0.6A	0.4A
Running Current	1.9A	1.1A	0.6A	0.3A
Motor	DC Brush Type		Split Phase Capacitor	
Runtime (90°@60Hz/vdc)	15 sec		12 sec	
Runtime (90°@50Hz)	15 sec		13 sec	
Duty Cycle	75%		25%	
Motor Starts	1200 per hour			
Weight	5 lbs/3 kg			
Mechanical Connections	ISO 5211 F03/F05 8 point 14mm			
Electrical Entry	1/2" NPT (2 places)			
Electrical Terminations	14-18 gage			
Environmental Rating	NEMA 4/4X			
Manual Override	8mm Socket Drive			
Control	On/Off/Jog/Proportional			
Actuator Case Material	Aluminum Alloy, Powder coated			
Motor Protection	230°F/110°C Thermal F* Class *Totally Enclosed Non-Ventilated Motors			
Ambient Temperature Operating Range	-22°F to +125°F/-30°C to +52°C			



An electric actuator designed for load requirements of up to 300"lbs. The actuator comes standard with two auxiliary switches (shared common, rated at 3A 250V Max), an internal low power heater, a NEMA 4X environmental rating, and in 12V AC/DC, 24V AC/DC, 120V AC or 230V AC supply voltages. The P0300 mechanical connections are ISO5211 compliant, utilizing an F03/F05 bolt pattern and an 8 point 14mm female drive. The P0300 Series is available in on/off (two position) models that can also be used in bump/jog applications, or it can be ordered with an internal Standard Proportional control card.

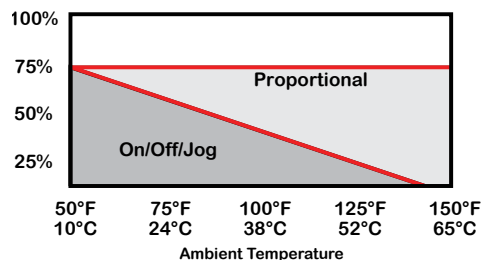
*****IMPORTANT***** All 12V and 24V DC On/Off Actuators are now positive switched in line with recognized industry practices.

HOW TO ORDER

P0300	4X	120A	-	Z1
Model	Enclosure	Voltage	Control	Options
P0300 - 300 in.lbs model	4X - NEMA 4X	12D - 12V DC 12A - 12V AC 24D - 24V DC 24A - 24V AC 120A - 120V AC 230A - 230V AC	blank - On/Off P - Proportional (Not 12V)	See last page

Example ordering codes: P0300-4X-120A = 120V AC 300 in/lbs Electric actuator with On/Off control
P0300-4X-24D-P = 24V DC 300 in.lbs Electric actuator with Proportional control

Duty cycle graph



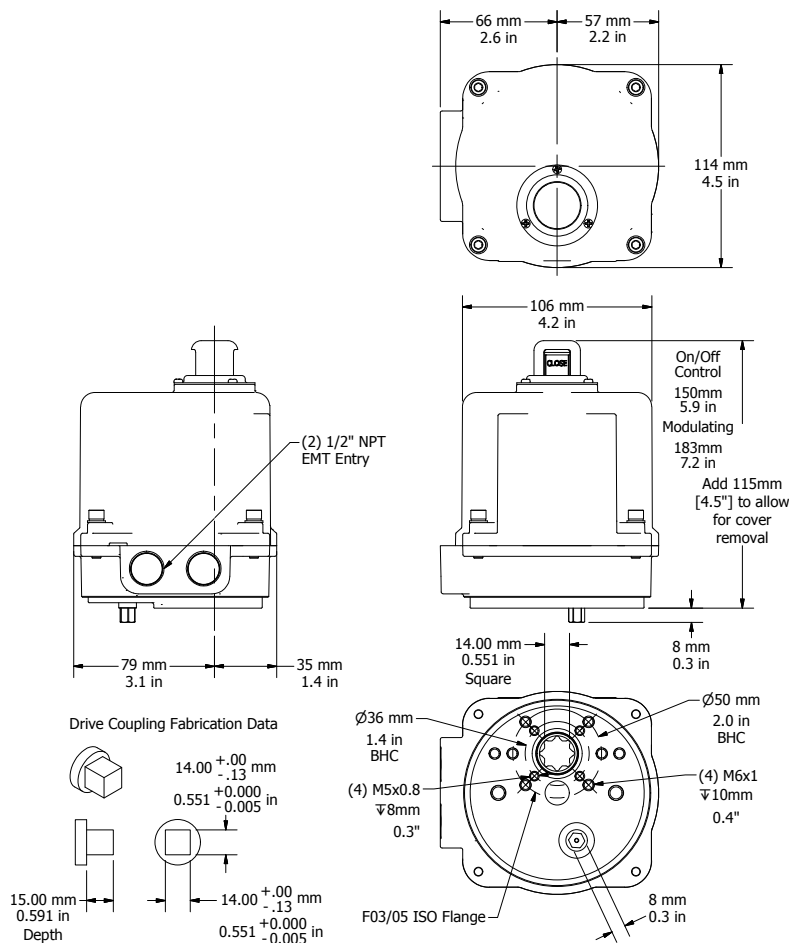
- Duty cycle is defined as the ratio of total time vs. run time, and is a function of environmental conditions including ambient temperature, supply voltage and control signal stability.
- Duty Cycle rating on all 12/24V AC/DC actuators is 75%.
- Duty Cycle rating on all 120/230V AC actuators is 25% unless an extended duty motor option has been added.
- Duty Cycle rating on all proportional control actuators is managed (75% maximum).

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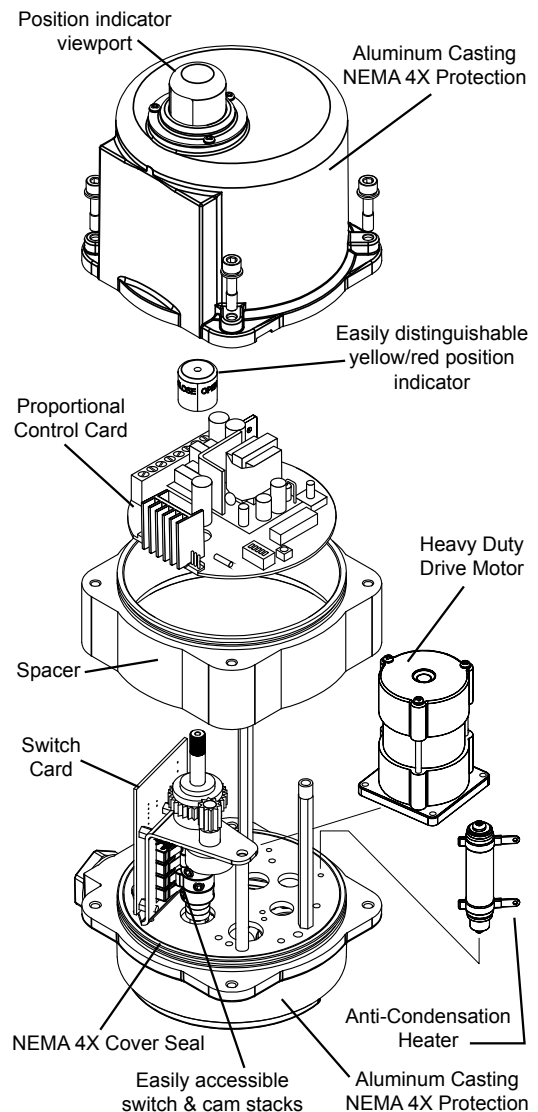
Application Notes:

1. These actuators are designed to be used in either a horizontal or upright position. Do **NOT** mount the actuator with the top below a horizontal position.
2. When installing conduit, use proper techniques for entry into the actuator. Use drip loops to prevent conduit condensate from entering the actuator.
3. Both NPT conduit ports **MUST** use proper equipment to protect the NEMA 4X integrity of the housing.
4. The anti-condensate internal heater is to be used in ALL applications.
5. Do **NOT** install the actuator outdoors or in humid environments without power to the heater.
6. Use proper wire size to prevent actuator failure (see wire sizing chart on next page).
7. Do **NOT** parallel wire multiple actuators together without utilizing isolation relays! If this is your intention, please contact AVCO for a multiple actuator parallel wiring diagram.

P0300 Series Exploded View (Proportional Control Option Shown)



P0300 Series Dimensional Data



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Wire Sizing Data

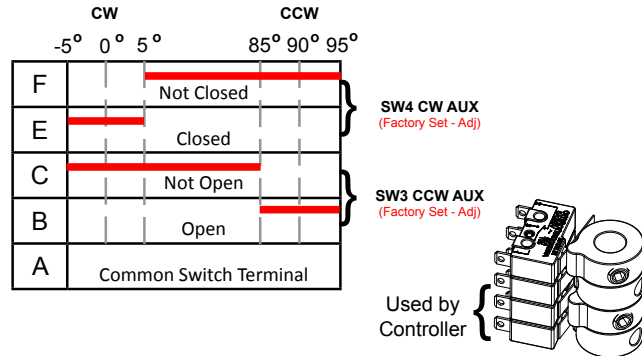
Wire sizing data is provided in the table below to assist in the selection of the proper wire size for AVCO P0300 series actuators using various wire sizes over distance. Please make sure to reference the correct voltage and do not exceed the indicated length of the wire run for each model.

Max distance between Actuator and Supply (feet)				
Wire Gage	P0300			
	12V AC/DC 2.0A	24V AC/DC 1.1A	120V AC 0.6A	240V AC 0.4A
18	41	150	1377	3960
16	65	236	2165	6223
14	105	381	3497	10052

Wire Sizing Chart

Switch/Cam Arrangement

The INCLUDED auxiliary switches SW3 & SW4 are for terminals marked A-F on the Switchcard and those set points may be modified to suit your application. SW1 and SW2 are for actuator positioning and are factory set. The red bar indicates when that contact makes with the common.

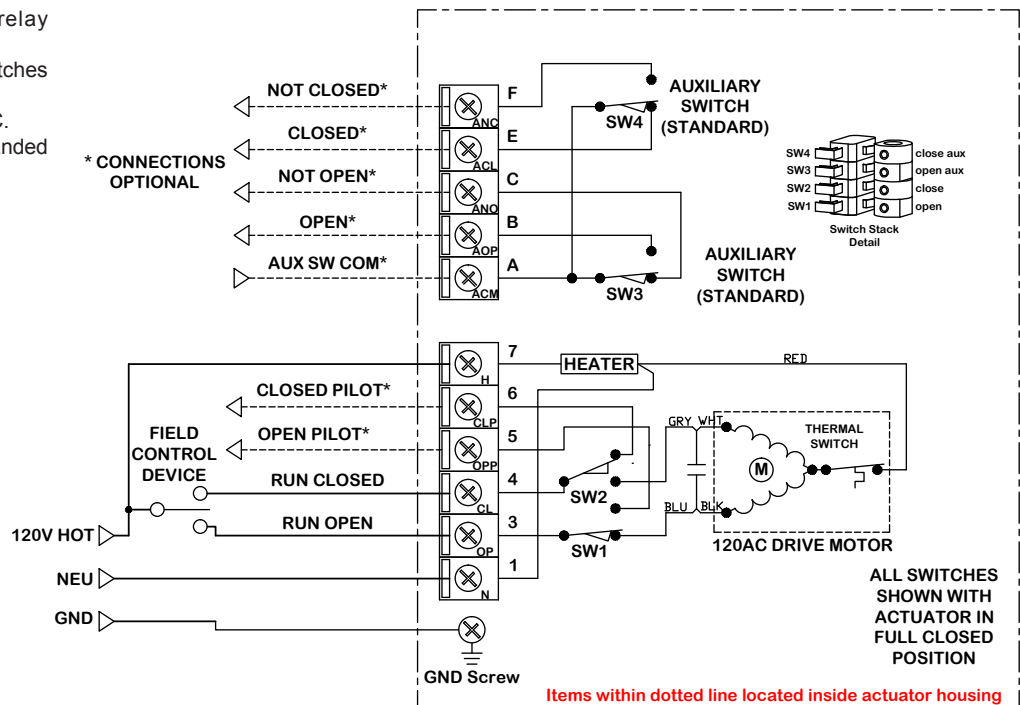


On/Off Switch/Cam arrangement shown

Wiring Diagrams for P0300 Series

On/Off/Jog Control

- Field Control Device may be relay contact, Switch or Triac type.
- Pilot device 3A MAX. Auxiliary switches are rated 3A @ 250vac MAX.
- Terminals A-F are dry type Form C.
- Terminals accept 14-18ga solid/stranded wire.



SAMPLE DIAGRAM

Refer to the proper IOM for your actuator for the correct wiring diagram.

Proportional Control

Standard Proportional Controller

The ProMation Engineering Standard controller is a robust proportional controller. It supports a full array of control and feedback signals, offers manual calibration of input and feedback signals, and has drive direction indicators. It can be set for direct or reverse acting. The small form factor allows for full proportional control in tight spaces.

Proportional Control Featuring:

- Full array of control and feedback signals
- Manual calibration
- Direct or Reverse Acting
- High resolution
- Drive direction indicators

Control Signal Inputs
(selectable using program menu):
2-10V DC, 1-5V DC, 4-20mA

Feedback Signal Output
(Can be different than input):
0-10V DC, 1-5V DC, 2-10V DC, 4-20mA

Max Load: 250 ohms

Factory set with common isolated from ground. Ground reference is possible.

AVAILABLE OPTIONS (Factory Installed)

- Standard Proportional Controller option. Converts 2 position to proportional control.
- Advanced Proportional Controller option. Converts 2 position to proportional control.
- Extended Duty Motor - 75% Duty Cycle
- Single Wire Control Relay (Internal) Units operate - NORMALLY CLOSED - ENERGIZE TO OPEN
- Single Wire Control Relay (Internal) Units operate - NORMALLY OPEN- ENERGIZE TO CLOSED
- 0-45-90 degree rotation option. Mid-point is center-off position.
- 0-90-180 degree rotation option. Mid-point is center-off position.
- 0-180 degree rotation option. No Mid-point position is offered. (On/Off/Jog only)
- Stainless Steel enclosure option.
- Cold weather auxiliary heater option. Thermostatically controlled, On 32°F, Off at 50°F, auto reset, hermetically sealed, 120/230V AC On/Off/Jog type actuators. 175W Internal Heater, 2A power consumption.
- 1k ohm position feedback potentiometer.
- 5k ohm position feedback potentiometer.
- 10k ohm position feedback potentiometer.
- 4-20mA feedback generator for On/Off/Jog actuators.
- Integral Thermostat for Heater Control - turns on at 32°F, turns off at 50°F
- Adjustable Timer, Dual Set Point Timer (Duration and Frequency) (Contact factory for application assistance)
- Local Control Stations - direct or remote mounted, for on/off or proportional actuators. (See catalog for additional Local Control Stations)
- Proportional Control Signal override capability (OPEN OR CLOSED).
- Auxiliary Switch set. Provides 3rd and 4th auxiliary switches (Form C x 2).



Signal	Input Impedance	Sensitivity
2-10V DC	30k ohms	150mV
1-5V DC	250k ohms	80mV
4-20mA	250 ohms	250µA

All proportional control card terminals accept 16-22 ga solid/stranded wire