

PROMATION ENGINEERING

Precision Actuation for Industry

Data Sheet

P1 Series

On/Off/Jog Control
Proportional Control

The P1 series quarter turn actuators are used on OEM applications such as filter and pump skids as well as process control, water treatment, and heating & cooling.

Key features include:

- Compact size
- A variety of run times
- Quick to install, easy to service
- Industrial grade components
- Override options for all

Actuator Specifications Comparison

Actuator	P1				P1.A			
Torque "lb/Nm	300"lbs/35Nm				445"lbs/50Nm			
Supply Voltage	12vac/dc	24vac/dc	120vac	230vac	12vac/dc	24vac/dc	120vac	230vac
Max Inrush Current	2.0A	1.1A	0.6	0.4	1.5A	0.9A	0.6	0.4
Running Current	1.9A	1.1A	0.6	0.3	1.3A	0.8A	0.6	0.3
Motor	DC Brush Type		Split Phase Capacitor		DC Brush Type		Split Phase Capacitor	
Runtime (90°@60Hz/vdc)	15 sec		12 sec		20 sec		20 sec	
Runtime (90°@50Hz)	15 sec		13 sec		20 sec		24 sec	
Duty Cycle	75%		25%*		75%		25%*	
Starts Per Hour	1200 per hour				1200 per hour			
Weight	5lbs/3kg				7lbs/4kg			
Mechanical Connections	ISO5211 F03/F05 8pt 14mm				ISO5211 F05/F07 8pt 17mm			
Manual Override	8mm Socket Drive - Bottom Access				5mm Hex Drive (XOV has no Override)			
Control	On/Off/Jog or Proportional				On/Off/Jog or Proportional			

Actuator	P1.B				P1.C	
Torque "lb/Nm	135"lbs/15Nm				135"lbs/15Nm	
Supply Voltage	12vac/dc	24vac/dc	120vac	230vac	12vdc	24vdc
Max Inrush Current	2.0A	1.1A	0.6	0.4	5.1A	5.4A
Running Current	1.9A	1.1A	0.6	0.3	1.7A	1.8A
Motor	DC Brush Type		Split Phase Capacitor		DC Brush Type	
Runtime (90°@60Hz/vdc)	8 sec		8 sec		3 sec	
Runtime (90°@50Hz)	8 sec		10 sec		3 sec	
Duty Cycle	75%		25%		75% only	
Starts Per Hour	1200 per hour				1200 per hour	
Weight	5lbs/3kg				5lbs/3kg	
Mechanical Connections	ISO5211 F03/F05 8pt 14mm				ISO5211 F03/F05 8pt 14mm	
Manual Override	8mm Socket Drive - Bottom Access				8mm Socket Drive - Bottom Access	
Control	On/Off/Jog ONLY				On/Off ONLY	

Common to all P1 Series

Electrical Entry	(2) 1/2" NPT
Electrical Terminations	14-18ga (12-16ga P1.C only)
Environmental Rating	NEMA 4/4X
Actuator Case material	Aluminum Alloy, Powder coated
Motor Protection (On/Off)	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

* Duty Cycle for proportional actuators is 75% maximum.

ProMation Engineering has an extensive stock of electric actuators and can ship product very rapidly, worldwide.

Wiring Diagram

On/Off/Jog Control

SAMPLE DIAGRAM

Refer to the proper IOM for your actuator for the correct wiring diagram or visit www.promationei.com.

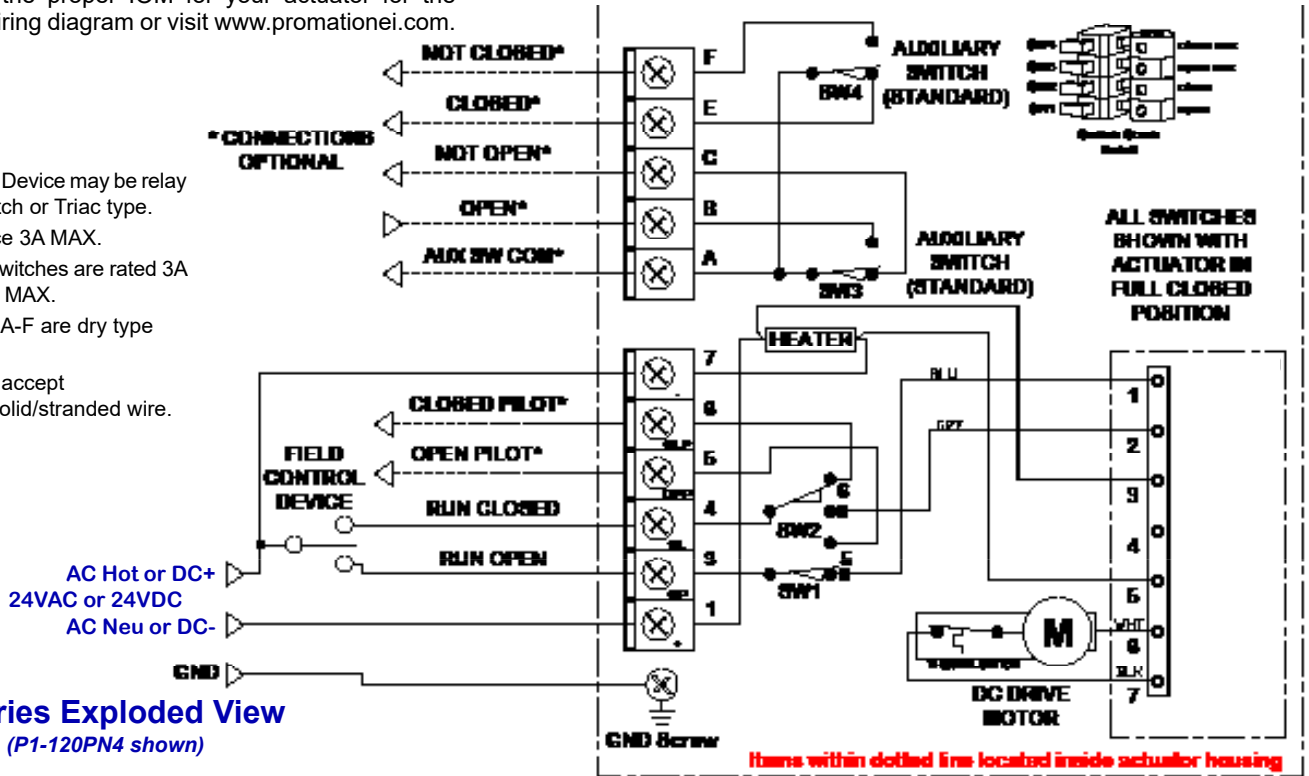
Field Control Device may be relay contact, Switch or Triac type.

Pilot device 3A MAX.

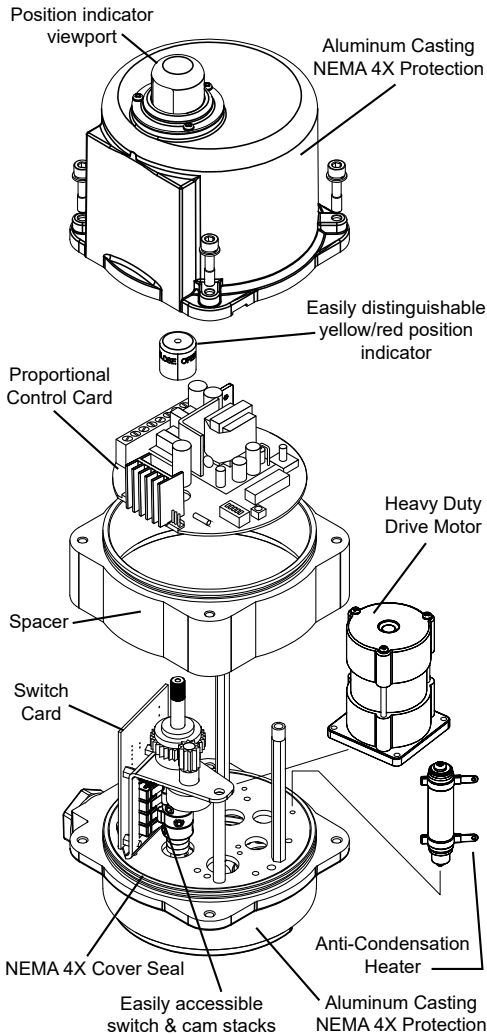
Auxiliary switches are rated 3A @ 250vac MAX.

Terminals A-F are dry type Form C.

Terminals accept 14-18ga solid/stranded wire.



P Series Exploded View (P1-120PN4 shown)



Wire Sizing Charts

Wire Gage	MAX distance between Actuator and Supply (feet)				Wire Gage	MAX distance between Actuator and Supply (feet)	
	P1 24V 1.1A	P1.A 24V 0.9A	P1.B 24V 1.1A	P1.C 24VDC 5.4A		P1, P1.A, P1.B 120VAC 0.6A	P1, P1.A, P1.B 230VAC 0.4A
18	150	184	150	-	18	1377	3960
16	236	289	236	48	16	2165	6223
14	381	466	381	78	14	3497	10052
12	583	713	583	119	12	5348	15374
10	992	1212	992	202	10	9091	26136
8	1480	1809	1480	302	8	13569	39009

Wire sizing data is provided to assist in the selection of the proper wire size for ProMation P1 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. Contact ProMation for 12 volt data or proportional data.

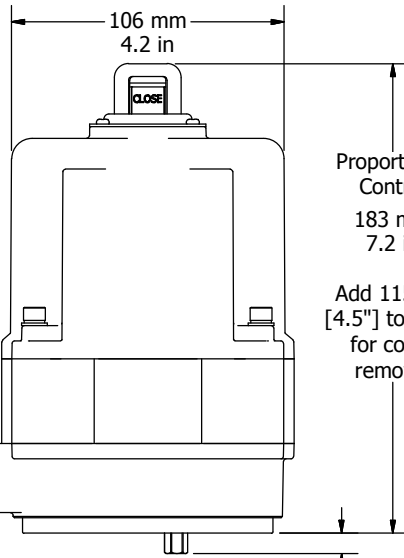
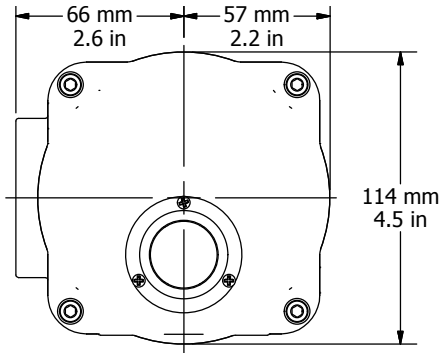
Application Notes:

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 internal heater is to be used in ALL applications.
5. Do NOT install or store the actuator outdoors or in humid environments unless it is powered up and the heater is functioning.
6. Use proper wire size to prevent actuator failure.
7. Do not parallel wire on/off/jog actuators without utilizing isolation relays.

P1 Series Dimensional Data:

P1 Series Views

(P1-120VN4 shown, some views rotated for clarity)

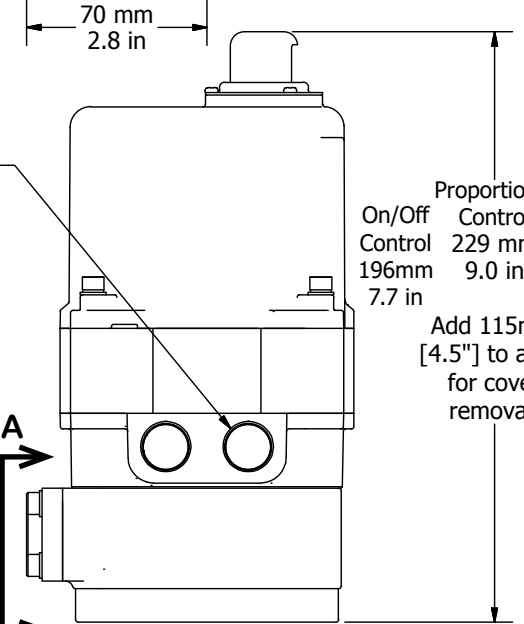
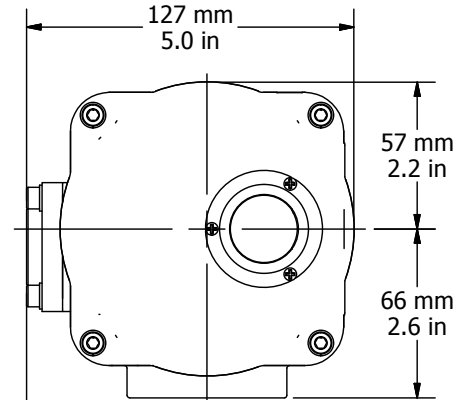


(2) 1/2" NPT EMT Entry

8 mm
0.3 in

P1.A Series Views

(Typical, some views rotated for clarity)

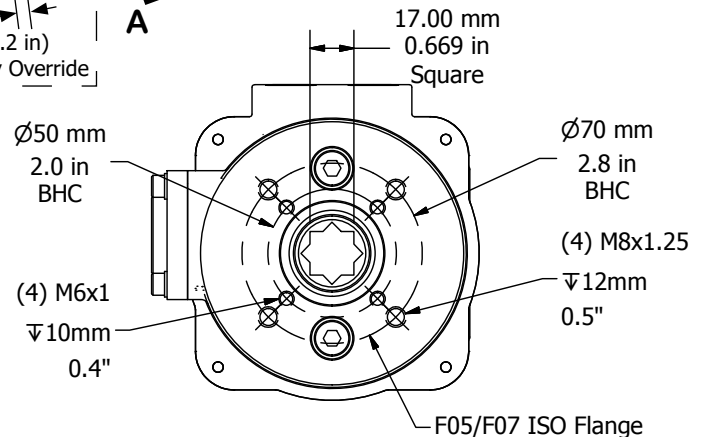
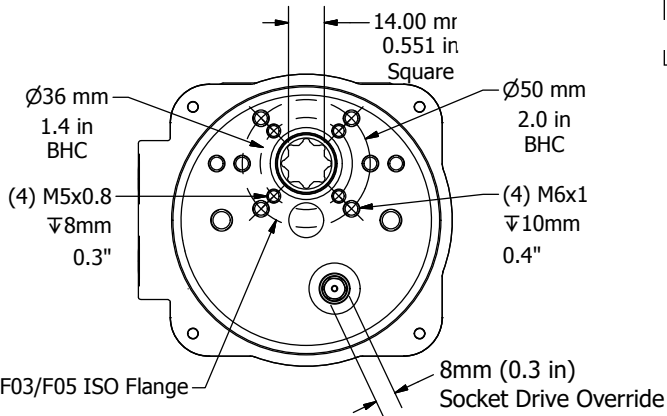
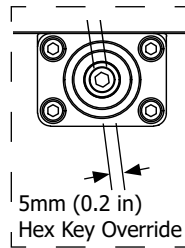


(2) 1/2" NPT EMT Entry

Proportional Control 229 mm 9.0 in
On/Off Control 196mm 7.7 in

Add 115mm [4.5"] to allow for cover removal.

View A-A



Drive Coupling Fabrication Data



14.00 $\begin{smallmatrix} +.00 \\ -.13 \end{smallmatrix}$ mm
0.551 $\begin{smallmatrix} +0.000 \\ -0.005 \end{smallmatrix}$ in



14.00 $\begin{smallmatrix} +.00 \\ -.13 \end{smallmatrix}$ mm
0.551 $\begin{smallmatrix} +0.000 \\ -0.005 \end{smallmatrix}$ in

15.00 mm
0.591 in
Depth



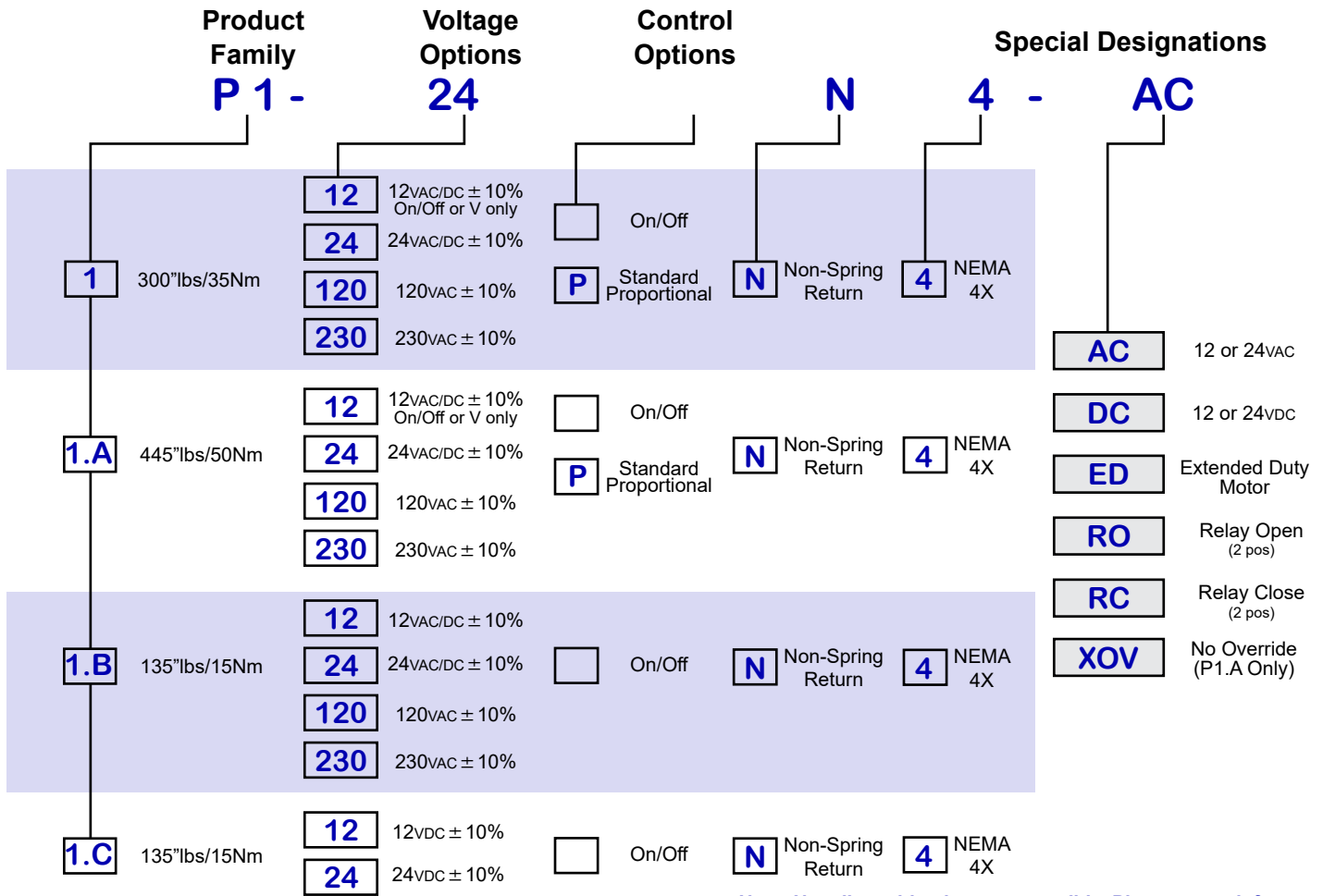
17.00 $\begin{smallmatrix} +.00 \\ -.13 \end{smallmatrix}$ mm
0.669 $\begin{smallmatrix} +0.000 \\ -0.005 \end{smallmatrix}$ in



17.00 mm
0.669 in
Depth

17.00 $\begin{smallmatrix} +.00 \\ -.13 \end{smallmatrix}$ mm
0.669 $\begin{smallmatrix} +0.000 \\ -0.005 \end{smallmatrix}$ in

Product Ordering Example



Note: Not all combinations are possible. Please consult factory.



ISO F03/05 Mounting Detail, 8 point 14mm female drive, and 8mm socket override on P1, P1.B, and P1.C Series actuators.



Simplified wiring under the cover makes field connections easier and less prone to loose connections and wiring errors.

ProMation Engineering follows a policy of continual product updates and enhancements. Our website is the best place to obtain the latest product documentation, including the wiring diagrams for these controllers.

www.promationei.com or use this code to visit the site.



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