



# PROMATION ENGINEERING

Precision Actuation for Industry

...Partners, Above and Beyond



## PL Series Linear Drive

Up to 4400lbs down/up force and up to 100mm (4") stem travel for globe valves, gate valves and linear travel devices. With override handwheel. Available with On/Off/Jog or Proportional control for 24vac, 120vac & 230vac supplies.



## P Series Non-Spring Return

135"lbs through 40,500"lbs.

Quarter-Turn, w/ manual Override Available with On/Off/Jog or Proportional control for 12vac/dc, 24vac/dc, 120vac, 230vac, 440vac, 230v/3 phase, 380v/3 phase & 460v/3phase supplies.

## D Series Spring Return

90"lbs through 450"lbs. Quarter-Turn, w/ manual Override Available with On/Off/Jog or Proportional control for 24...230vac/dc



## PA~PD Series Spring Return

450"lbs through 2300"lbs. Quarter-Turn, both with and w/o manual override handwheel. Spring either CW or CCW Available with On/Off or Jog or Proportional control for 24vac/dc, 120vac & 230vac supplies.



# Product Overview

## COMPANY

ProMation Engineering, Inc. is a solutions provider to the Industrial, Process Control and high end Commercial Industries. We provide the process and industrial automation markets a wide offering of Electric Spring and Non-Spring Return, Quarter-Turn and Linear actuation devices. We are founded by people with over 75 years experience in the controls and automation industries. Our headquarters and primary manufacturing facility is located in Brooksville, Florida, about 50 miles north of Tampa. We operate an efficient build-to-order system utilizing a global supply chain network. Our goal is to establish and nurture win-win relationships with entities focused in our target markets.

## VALUES STATEMENT

The interactions between ProMation Engineering, its customers, management and employees are based on Trust, Honesty, Integrity, Openness and Respect. Our dedication to customers is exemplified by respectable distribution guidelines, competitive pricing structures, and efficient control of inventory levels in order to maximize financial performance at our customer's level as well as at our own manufacturing operations.

# P Series Non-Spring Return 135”lb to 40,500”lbs Torque Quarter-Turn Electric Actuators



### Features:

- Patented Self Locking Drive
- Proportional, Jog or On/Off Control
- NEMA 4/4X cast Aluminum Alloy housing
- ISO5211 Mounting System
- Internal Heater
- Dual SPDT Auxiliary switches
- Modular Design eliminates excess wiring
- Internal Motor Thermal protection (275 deg F / 135 deg C)
- Planetary Epicyclic Gear Design
- Manual override for single-handed positioning
- Easy-to-see Raised Position indicator
- Two 3/4" NPT entry ports on base
- Positive Mechanical Stops in base
- Ambient Operating range -22F to +150F (-30C to +65C) with internal heater

### Benefits:

- No Brake required
- Responds to a wide range of industry-standard signals
- Resists Environmental attack.
- No bracket/coupling required for most valves - lower profile.
- Prevents condensate damage to internal electronics
- Easily control motor starters and damper based on actuator position
- Allows for easy field conversion from 2 position to proportional control.
- Further Protection for the longevity of the drive motor.
- Robust Industrial design for balanced distribution of gear train forces - designed for 90 degree +/- 3 degree rotation.
- No levers to push or pull are needed to engage the override hand wheel.
- Allows for quick visual verification of the true position of the actuated device.
- Easily accepts 12 ga field wiring
- Overtravel Protection for the actuated device during manual override functions.
- Allows for applications ranging from Mechanical Rooms to Outdoor Environments.



Simple one-handed clutchless manual override system



Self Locking worm and gear transmission system



ISO5211 standard drive and mounting design



# PROMATION ENGINEERING

Precision Actuation for Industry

# Innovative Quarter-Turn Industrial Actuators from 100 - 40,500"lbs.

## You may have seen the Outside...

## ...the ProMation difference is on the **INSIDE!**

### Thermal Management-

Our Proportional control actuators utilize proprietary, microprocessor-based algorithms to automatically control motor temperatures in real time with closed-loop feedback.



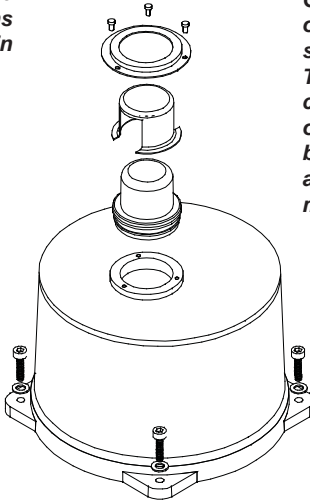
### Data Logging and Diagnostics-

Our Proportional control actuators respond to a variety of control signals which are user-selectable through a simple joystick/menu interface. The microprocessor based control monitors and records operating parameters that can be used for process diagnostics, advanced alarming functions or maintenance scheduling.



### Power Supply Flexibility-

ProMation P Series actuators are available for use in applications ranging from 12VDC up to 480V 3 Phase including On/off/ Jog and Proportional applications. All three phase actuators are available with pre-wired motor control centers.



### Cast Aluminum Enclosures-

Electrostatically applied Epoxy powdercoat assures even and thorough protection to NEMA 4x standards. All exterior hardware is Stainless to provide additional protection from the elements.

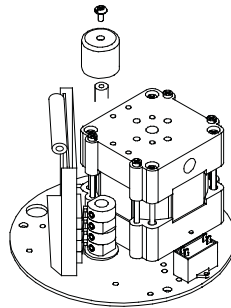
### Modular Design-

Our P Series actuators utilize modular PC Boards designed and manufactured in North America. By eliminating 90% of the internal wiring found in most imported actuation products, we're producing a higher quality, more reliable, and easier product to install, operate and maintain.



### Color-coded Cams-

The use of color-coded cams makes it easy to adjust auxiliary switch trip-points for up to four independent Form C dry switches, two of which are included

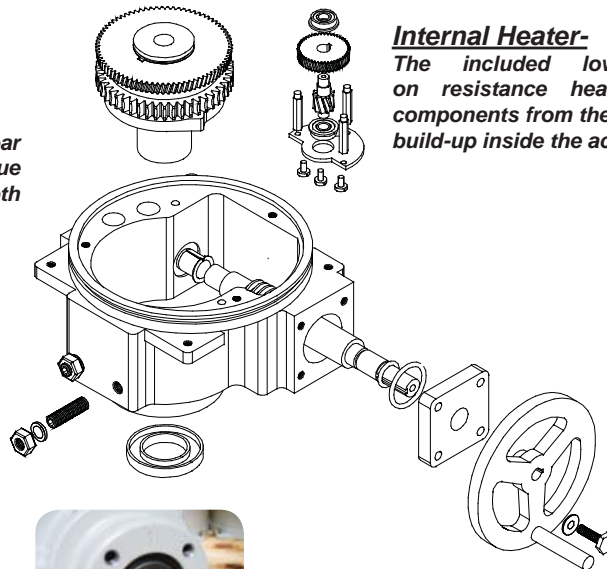


### Internal Heater-

The included low-power, continuously on resistance heating element protects components from the effects of condensation build-up inside the actuator enclosure.

### Superior Gear Design-

P Series actuators employ an epicyclic gear design to provide tough, dependable torque transmission in a compact, quiet, smooth package.



### Manual Override-

The manual handwheel override system employed on our P series actuators is the simplest, most reliable design in the industry. There are no levers to push or pull to engage the manual system....simply turn the handwheel at any time to manually position the actuator.

### Mounting Flexibility-

The P series actuators conform to ISO5211 standards to provide mounting flexibility and universal conformity. We employ 8 point star drives to provide further mounting solutions for both square/parallel and square/45 drive solutions. We offer a wide range of drive inserts as well.

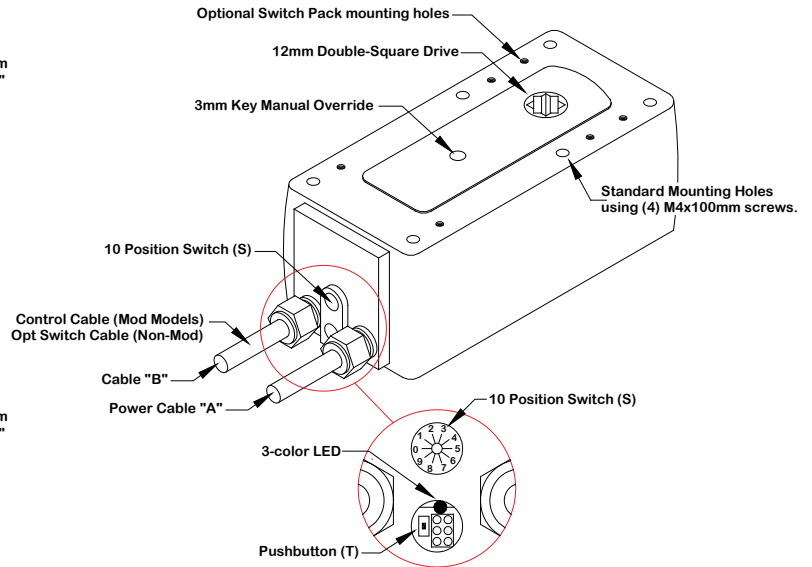




# PROMATION ENGINEERING

Precision Actuation for Industry

## ▶▶▶▶ D Series Spring Return ◀◀◀◀



### Options (Not all combinations are possible - consult Factory)

- EMT** EMT Enclosure  
1/2" Conduit Entry  
Terminal Strips
- OVD** Manual Override  
Handwheel  
Option
- AUX** Dual Auxiliary  
Switches  
(Externally Mounted)
- MKT** ISO5211  
Conversion  
Mounting Kit

## On-Off / 3-Pos / Proportional Control, 24...230VAC/DC 95° Angle of rotation incl. 5° pre-tension

### Compact - easy Installation - Universal - Cost effective - Safe

Torque	Supply	Motor Running Time	Spring Return	Control Mode
90"lb	24 .. 230VAC/DC	3/15/30/60/120 @ 90°	3 or 10 sec. @ 90°	On-off, 3-pos, Prop.
133"lb	24 .. 230VAC/DC	3/15/30/60/120 @ 90°	3 or 10 sec. @ 90°	On-off, 3-pos, Prop.
265"lb	24 .. 230VAC/DC	40/60/90/120/150 @ 90°	20 sec. @ 90°	On-off, 3-pos, Prop.
445"lb	24 .. 230VAC/DC	40/60/90/120/150 @ 90°	20 sec. @ 90°	On-off, 3-pos, Prop.

#### Features:

- Universal supply unit from 24 to 230 Volt - AC/DC.
- 5 different motor running times adjustable on site.
- Different spring return running times (3, 10 or 20 sec. @ 90°), selectable on site.
- Proportional, On-off and 3-pos control with or without spring return function.
- 90"lb to 445"lb torque range.
- 100 % overload protected.
- Compact design and small dimension.
- Direct coupling to the damper shaft with 12mm or 16 mm double-squared connection.
- 95° Angle of rotation incl. 5° pre-tension.
- Robust aluminum housing (optional stainless steel).
- Simple manual override include.
- Gears made of stainless steel and sintered metal.
- Integral heater for ambient temperatures down to -40°C
- Integral safety temperature sensor.
- Integral design for field selection of run time, and spring speed.
- Self Calibrating / Automatic setting of voltage.
- Auxiliary switches available.

# PA~PD Series Spring Return 450”lb to 2300”lbs Torque Quarter-Turn Electric Actuators

## Features & Benefits:

- Four Torque Ranges from 450”lbs to 2300”lbs.....The largest torque offering in it’s class.
- Available in Spring CW & CCW designs with 2 position, Jog or Proportional control for 24vac/dc, 120vac and 230vac supplies.
- Mechanical Spring Pack....Does not rely upon batteries for fail-safe operation.
- Full-time Manual Override Handwheel...Allows manual positioning of the device during power outages.
- Painless Manual Operation requires no pushing/pulling/levers for operation.....Simply the easiest way to provide manual control when required.



450” LB PAO-CW-1202S4 Shown

Other Standard features include an ISO5211 Mounting System, Internal Heater and auxiliary switches, 3/4” Conduit entry ports (2), Terminals that accept 12 gauge field wiring, and an easily seen top mounted Position Indicator.

# PL Series Linear Non-Spring Return Up to 100mm stroke (4”) Up to 4400 lbs linear Force

## Features:

- Patented Self Locking Drive
- Proportional, Jog or On/Off Control
- NEMA 4/4X cast Aluminum Alloy housing
- Easily adapts to most rising stem designs
- Internal Heater standard
- Modular Design eliminates excess wiring
- Internal Motor Thermal protection (275 deg F / 135 deg C)
- Manual override for single-handed positioning
- Easy-to-see Stem Position indicator
- Two 3/4” NPT entry ports on base
- Ambient Operating range -22F to +150F (-30C to +65C)



PL-550-120N4 Shown

# PBU Series

## Battery Backup System

- Provides Fail-Safe Operation for ProMation P Series Industrial Electric actuators size P2 through P13
- Field Selectable Fail Direction
- Readily available sealed Battery packs
- Provides 500% of Power requirements for a full load cycle
- Lockable Fiberglass NEMA 4X enclosure



**Application:**

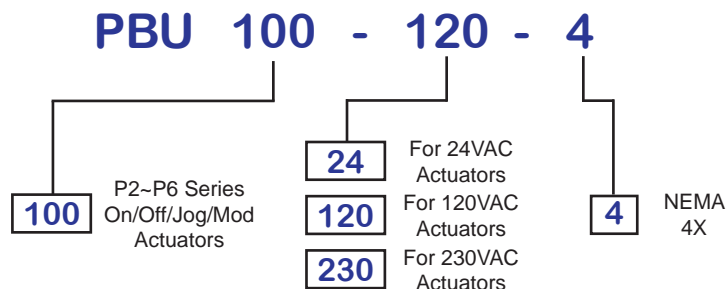
Typically, applications requiring fail-safe operation of actuated devices have had to rely on either the limited power of mechanical spring return actuators, or use costly high pressure pneumatic devices to provide fail-safe positioning. Model PBU series computer-grade UPS back-up systems designed for use with ProMation Engineering P Series electric industrial quarter-turn actuators provides the power necessary to drive these actuators to a field selectable fail-safe position. The system consists of a NEMA 4X lockable hinged door controls cabinet which houses the logic switching, all field wiring terminal points and a computer-grade back-up system. The back-up system is a component-level device which utilizes a replaceable spill-proof battery pack that can be readily purchased at most office supply centers.

**Safety in Numbers:**

The system is designed to provide at a minimum up to 500% of the power required to drive the various actuators through their full 90 degree rotation at full running amperage draws. However, when the actuators have reached their field-selectable end-of-travel positions, current draw drops to zero and the back-up system sits idle until either the time-out function integral to the battery is reached or the mains power returns, whichever occurs first.

**Simple User Interface:**

Indicator lights visible through the front of the control cabinet give status indication of mains power, back-up system charging and fail-safe operation. The PBU series is powered from building power, and all power and logic interface wiring passes through the control cabinet. Units are selected based on the size and number of P Series actuators being connected to the PBU system. Each model can be utilized for multiple control schemes...On/Off, Jog or Proportional control... to provide the most cost-effective and efficient means of providing fail-safe operation for these actuators.



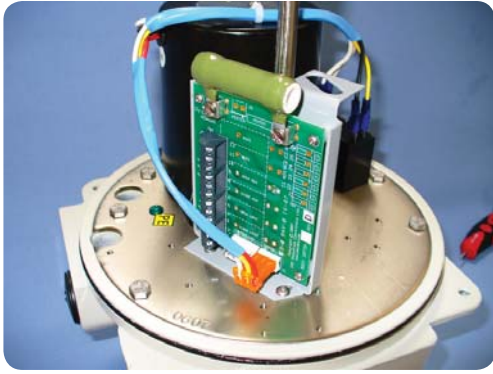
## SIZING AND PERFORMANCE CHART

MODEL	TORQUE OUTPUT	RUNTIME SECONDS	DRAW (AMPS)	2 POS/JOG/MOD	% CAPACITY USED @ FULL RUNTIME	REPLACEMENT BATTERY
P1-120N4, P1.A-120N4*	300	12	0.5	PBU100-120-X	0.5%	RBC-35
P2-120(P)N4	800	15	1.0	PBU100-120-X	1.5%	RBC-35
P3-120(P)N4	1335	22	1.0	PBU100-120-X	2.3%	RBC-35
P4-120(P)N4	3560	16	1.3	PBU102-120-X	2.0%	RBC-110
P5-120(P)N4	4450	22	1.5	PBU102-120-X	2.9%	RBC-110
P6-120(P)N4	5785	28	1.8	PBU102-120-X	10.0%	RBC-110
P7-120(P)N4	8900	46	3.2	PBU104-120-X	11.0%	RBC-17
P8-120(P)N4	13350	46	4.0	PBU104-120-X	11.3%	RBC-17
P9-120(P)N4	17800	58	3.2	PBU104-120-X	13.8%	RBC-17
P10-120(P)N4	22250	58	4.0	PBU104-120-X	14.2%	RBC-17
P11-120(P)N4	26700	58	3.0	PBU104-120-X	13.7%	RBC-17
P12-120(P)N4	31150	58	4.0	PBU104-120-X	14.2%	RBC-17
P13-120(P)N4	40500	80	3.5	PBU104-120-X	19.3%	RBC-17
P1-24N4, P1.A-24N4*	300	12	0.5	PBU300-24-X	1.3%	RBC-35
P2-24(P)N4	800	15	1.0	PBU300-24-X	1.3%	RBC-35
P3-24(P)N4	1335	22	1.0	PBU302-24-X	1.9%	RBC-35
P4-24(P)N4	3560	16	1.3	PBU302-24-X	1.4%	RBC-110
P5-24(P)N4	4450	22	1.5	PBU302-24-X	1.9%	RBC-110
P6-24(P)N4	5785	28	1.8	PBU302-24-X	7.8%	RBC-110
P1-230N4, P1.A-230N4*	300	12	0.5	PBU200-230-X	0.5%	RBC-35
P2-230(P)N4	800	15	1.0	PBU200-230-X	1.5%	RBC-35
P3-230(P)N4	1335	22	1.0	PBU200-230-X	2.2%	RBC-35
P4-230(P)N4	3560	16	1.3	PBU202-230-X	1.8%	RBC-110
P5-230(P)N4	4450	22	1.5	PBU202-230-X	2.7%	RBC-110
P6-230(P)N4	5785	28	1.8	PBU202-230-X	3.8%	RBC-110
P7-230(P)N4	8900	46	3.2	PBU204-230-X	8.9%	RBC-17
P8-230(P)N4	13350	46	4.0	PBU204-230-X	9.7%	RBC-17
P9-230(P)N4	17800	58	3.2	PBU204-230-X	13.7%	RBC-17
P10-230(P)N4	22250	58	4.0	PBU204-230-X	14.1%	RBC-17
P11-230(P)N4	26700	58	3.0	PBU204-230-X	13.7%	RBC-17
P12-230(P)N4	31150	58	4.0	PBU204-230-X	14.3%	RBC-17
P13-230(P)N4	40500	80	3.5	PBU204-230-X	19.2%	RBC-17

\* P1 & P1.A proportional control models cannot utilize the PBU backup system.

*"Where have all the wires gone?"*

*"Unequaled Proportional Intelligence"*



Engineered to eliminate wiring errors, increase reliability through the elimination of connection points, and provide simplicity for technicians and end-users alike. (Shown here is a fully functional On/Off/Jog control P2 Series actuator with 2 Aux switches and Heater!....just add field wiring)



Our Proportional Control Card is designed to respond to industry standard control signals while monitoring dynamic operating parameters and responding to or alarming of processes that are trending incorrectly.



## PROMATION ENGINEERING

*Precision Actuation for Industry  
...Partners, Above and Beyond*

16138 Flight Path Drive Brooksville, FL 34604  
Phone (352) 544-8436 Fax (352) 544-8439  
email: [jeff.jones@promotionei.com](mailto:jeff.jones@promotionei.com) / [brian.wheeler@promotionei.com](mailto:brian.wheeler@promotionei.com)  
Sales and Marketing: Jeff Jones Product Management: Brian J. Wheeler  
[www.promotionei.com](http://www.promotionei.com)

