



# PROMATION ENGINEERING

*Precision Actuation for Industry*

## Reliable Electric Actuation for Industrial Control

### Full Line of Actuators

Quarter Turn to 40,000 in lb (4,500 Nm)

Linear to 4400 lb force (19.57kN)

Spring Return to 2300 in lb (260 Nm)

### Multiple Configurations

On/Off/Jog or Proportional Control

24VDC through 575/3/60 Applications

Local Control Stations

### Complete Support

Full Documentation

RapidQuote

Application Specific Solutions



P1 Quarter Turn Actuator



P4 Quarter Turn Actuator



PL550 Linear Actuator



PAO Spring  
Return Actuator



LCS-K Local  
Control Station



# PROMATION ENGINEERING

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**ProMation Engineering's full line of industrial actuators are designed and constructed to reliably meet the demands of industrial, municipal, and process installations and applications.**

## RuggedBoard Mounted Components

Anti-Condensation Heater  
(Standard Equipment)

Incoming Connections

Form C Auxiliary and  
Limit Switches

Single connection for  
motor control

Epicyclic Gearing

Mechanical End Stops

Easy to see yellow/red  
Position Indicator

NEMA 4/4X Rated  
Powder Coated  
Aluminum Enclosure

Color-Coded  
Aluminum Cams

Clutchless  
Manual Override

## RuggedBoard Design

Proprietary PC Boards with industrial grade components soldered into place eliminate 90% of the internal wiring found in most actuation products.

## Quarter Turn Actuators from 135 to 40,000 in lbs



**P1**

Torque Value:  
135 in lbs~445 in lbs  
15 Nm~50 Nm



**P2~3**

Torque Value:  
600 in lbs~1335 in lbs  
67 Nm~150 Nm



**P4~6**

Torque Value:  
2200 in lbs~5750 in lbs  
248 Nm~650 Nm



**P7~8**

Torque Value:  
8900 in lbs~13250 in lbs  
1000 Nm~1500 Nm



**P9~13**

Torque Value:  
17500 in lbs~40000 in lbs  
2000 Nm~4500 Nm



# PROMATION ENGINEERING

*Precision Actuation for Industry*

## Engineered for Installation Ease, Reduced Maintenance and Exceptional Reliability -- Backed by ProMation Customer Service

### RuggedBoard Means Reliability

RuggedBoard electronics increase reliability.

- Greatly reduced terminal block and crimped connections
- Reduction of excessive wiring
- Installation and maintenance are easier
- Reduced the potential for electromagnetic interference

### Industrial Grade Components

- All steel permanently lubricated gearing
- Industrial switches
- Thermally protected heavy duty motor
- Stainless steel hardware

### Highly Functional

- Clutchless manual override requires no levers or switches to engage handwheel
- Epicyclic gearing requires no motor brake.

### Field Compatibility

Reduced installation and set up problems.

- ISO 5211 mountings
- Easily accessible connection points
- Complete field installation documentation

### Customer Service

Telephones and emails promptly answered by our onsite experts to assist you at every step.

### Project Pricing

Working on a complex project? Let us assist you with actuator expertise and competitive project pricing.

### Partnering

ProMation has a network of responsive distributors and vendors worldwide. Contact us to see how ProMation aligns with your needs.

## Linear Actuators



**PL550~PL1100**

20-50mm Force:  
550 lbs~1100 lbs  
2.45kN~4.89kN



**P2200~PL4400**

38-100mm Force:  
2200 lbs~4400 lbs  
9.79kN~19.57kN

## Mechanical Fail Safe Actuators



**PA~PB**

Torque Value:  
445 in lbs~1150 in lbs  
50 Nm~130 Nm



**PC~PD**

Torque Value:  
1750 in lbs~2300 in lbs  
200 Nm~260 Nm

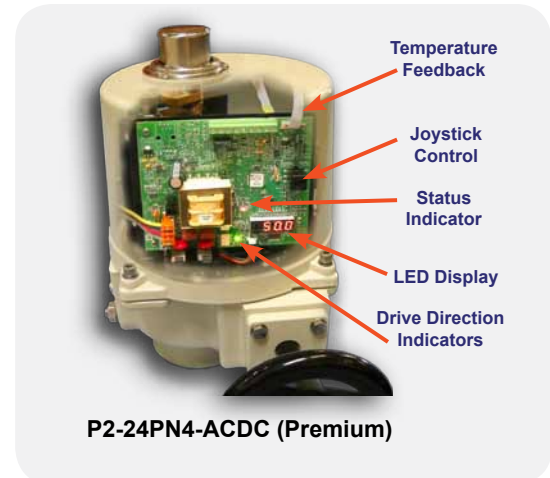
## Total Process Control Options

ProMation Engineering offers a wide range of control for nearly all products. From On/Off products, 2 Wire Control, and Feedback Kits to communication options and proportional control -- the features you need are available for your product.

**Premium Controller** Full proportional control utilizing multiple input and feedback signals. Features an alphanumeric readout, several fault indicators for operational diagnostics, extensive on board data logging. It has autocalibration for fast accurate setup and a simple intuitive interface for programming. ModBus communications are also an option on this controller.

### Proportional Control Featuring:

- Autocalibration
- Programmable
- High resolution
- Alarm Outputs
- Data logging
- Simple User Interface
- Field Selection Friendly
- Thermal Management



## Proportional Solutions

Control Options for the P2~13 Series:

- 4-20 mA, 0-10vdc, 2-10vdc, 1-5vdc Input and Feedback
- Modbus Communication
- Profibus Communication
- Local Control Station options available
- Separated Feedback Circuit

## On/Off/Jog Solutions

Control Options for the P2~13 Series:

- 2 Wire Control
- Potentiometric or 4-20 Feedback
- Rotation modifications
- Local Control Station options available
- Wireless Transmitter

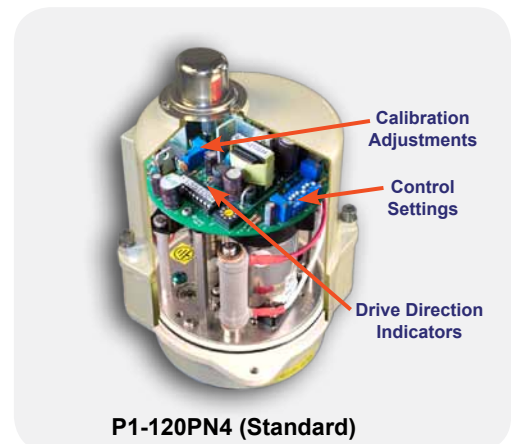
## P1 and P1.A

On/Off/Jog and Standard Proportional Control are available for the P1 and P1.A

- Voltage ranges from 12 vac/vdc to 120/230vac
- 2 Wire Control and Feedback kits
- Rotation modifications
- Local Control Station options available

### Standard Proportional Control Featuring:

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



## P2-8 Series Explosion Proof Quarter Turn Actuators

Industrial actuators featuring epicyclic gear drives and RuggedBoard internal connections. All P2-8 explosion proof actuators come with a standard anti-condensation heater, 2 auxiliary switches, clutchless manual override hand wheel and NEMA 7/9 enclosure.



Product Family	Torque (in lbs)	Torque (Nm)	Draw (Amps)	Runtime	ISO 5211	8pt dbl-sq	Height (in / mm)	Weight (lbs / kg)
P2-120N7	800	90	1.0	15	F07	22	14.1 / 359	40 / 18
P3-120N7	1,335	150	1.2	22	F07	22	14.1 / 359	40 / 18
P4-120N7	3,500	400	1.9	16	F10	35	15.3 / 389	58 / 26
P5-120N7	4,400	500	2.2	22	F10	35	15.3 / 389	58 / 26
P6-120N7	5,750	650	2.1	28	F10	35	15.3 / 389	58 / 26
P7-120N7	8,900	1,000	3.1	46	F12	36	18.8 / 478	93 / 42
P8-120N7	13,250	1,500	3.3	46	F12	36	18.8 / 478	93 / 42

Actuator Run Times and Running Amps: 120VAC @ 60Hz.

## Explosion Proof

The ProMation Engineering explosion/ignition proof actuators are certified for use in hazardous locations per UL 1203 and CSA 22.2 No. 30 and No. 31, and meets NEMA 7 and 9 criteria:

The hazardous location actuators share the same electronic and mechanical components as our standard location (UL 429 / CSA 22.2 No. 139) products.

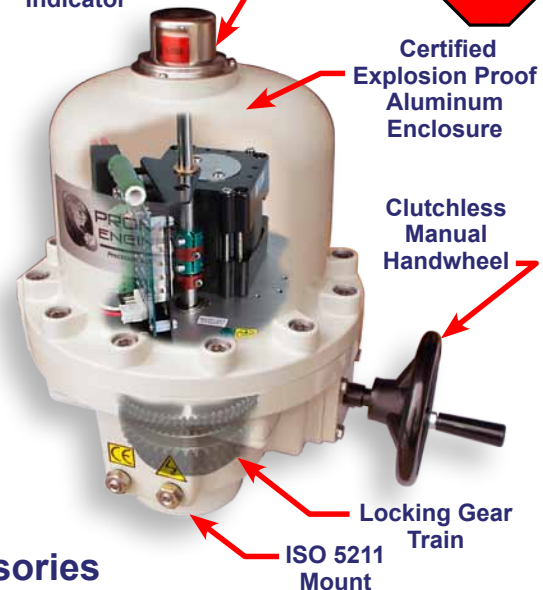
**Class I, Division 1, Groups C and D  
Class II, Division 1, Groups E, F, and G  
Class III; T6  
Ex d IIB Gb T6, Ex tb IIIC T85°C Db  
Class I, Zone 1, AEx d IIB Gb T6  
Zone 21, AEx tb IIIC T85°C Db**

Raised Position Indicator



Certified Explosion Proof Aluminum Enclosure

Clutchless Manual Handwheel



## P2-8 Series Explosion Proof Options and Accessories

Not all options are available for all actuators and not all accessories work concurrently with other accessories. Please contact the factory for product and application assistance.

### N7 Specific Options P2-8 (Factory Installed Only)

Low Voltage Modification	Pending Approval: 24 vac or vdc
High Voltage Modification	230 vac Single Phase
Proportional Control -P	ProMation Premium Proportional Controller 24 vac, 120 vac or 230 vac
-TS P2-8	Torque Switch (Not available for P2/3 with Premium Proportional Control)
MOD 0-45-90 DEG	0-45-90 degree rotation.
OPTION-X	3rd and 4th Auxiliary Switch set
MOD 0-90-180 DEG	0-90-180 degree rotation.
MOD 0-180 DEG	0-180 degree rotation. On/Off only.

## P Series Quarter Turn Actuators

Industrial actuators featuring epicyclic gear drives and RuggedBoard internal connections. All P Series actuators come with a standard anti-condensation heater, 2 auxiliary switches, clutchless manual override hand wheel and NEMA 4/4X/IP67 enclosure.



## Quarter Turn Actuators

Product Family	Torque Output		Draw (amps)	Actuator Run Time (sec)			Mounting Information		Height (in / mm)	Weight (lbs / kg)
	in lbs	Nm		50Hz	60Hz	VDC	ISO 5211	8pt dbl-sq (female mm)		
PZ6	55	6	0.3	11	8	8	F03 / F05	14	5 / 126	4 / 2
PZ15	135	15	0.3	22	19	19	F03 / F05	14	5 / 126	4 / 2
P1	300	35	0.6	13	12	15	F03 / F05	14	6 / 152	5 / 3
P1.A	445	50	0.6	24	20	20	F05 / F07	17	9 / 196	7 / 4
P1.B	135	15	0.6	10	8	8	F03 / F05	14	6 / 152	5 / 3
P1.C	135	15	1.8A at 24VDC	--		3	F03 / F05	14	6 / 152	5 / 3
P2	800	90	1.0	17	15	15	F07	22	11.4 / 289	26 / 12
P3	1,335	150	1.2	26	22	22	F07	22	11.4 / 289	26 / 12
P4	3,500	400	1.9	18	16	16	F10	35	12.5 / 317	47 / 22
P5	4,400	500	2.0	25	22	22	F10	35	12.5 / 317	47 / 22
P6	5,750	650	2.1	31	28	28	F10	35	12.5 / 317	47 / 22
P7	8,900	1,000	3.1	55	46	46	F12	36	16 / 406	82 / 37
P8	13,250	1,500	3.3	55	46	46	F12	36	16 / 406	82 / 37
P9	17,500	2,000	3.3	70	58	--	F16	75 x 100mm	21.8 / 554	145 / 66
P10	22,000	2,500	4.0	70	58	--	F16	75 x 100mm	21.8 / 554	145 / 66
P11	26,500	3,000	4.5	70	58	--	F16	75 x 100mm	21.8 / 554	157 / 72
P12	31,000	3,500	4.0	70	58	--	F16	75 x 100mm	21.8 / 554	157 / 72
P13	40,000	4,500	4.2	95	80	--	F25	72 x 110mm	22.5 / 571	240 / 109

Running Amps: 120VAC @ 60Hz. Actuator Run Times are given for 120VAC and 12 and 24 VDC.

P9~13 have round female receiver with keyways

Shipping weight

### Voltage Options

Low Voltage Modification	P1-6	12 vac or 24 vdc
Low Voltage Modification	P1-8	24 vac or 24 vdc
3 Phase Modification	P2-8 P9-13	3 Phase 230V, 315V, 380V, 440V, or 480V (does not include MCC)

### Control Options

Proportional Control –P	P1, P1.A P2-8	Standard Controller Premium Controller 24 vac, 120 vac or 230 vac
Proportional Control –P	P9-13	Premium Controller 120 vac or 230 vac

### Options with Product Suffix (Factory Installed Only)

-ED	P1, P1A, P2-8	Extended Duty Motor, 120 vac or 230 vac only 75% Duty Cycle – On/Off/Jog
-ED	P9-13	Extended Duty Motor, 120 vac or 230 vac only 50% Duty Cycle – On/Off/Jog
-RO	All but 1.B, P1.C, PZ	Single Wire Control Relay (Internal) Units. NORMALLY CLOSED - ENERGIZE TO OPEN.
-RC	All but 1.B, P1.C, PZ	Single Wire Control Relay (Internal) Units. NORMALLY OPEN - ENERGIZE TO CLOSE.
-TS	P2-8, P9-13	Torque Switch Assembly (On/Off/Jog or Select Proportional Controllers)
-MCC*		Motor Control Center for 3 Phase Voltage
-68	P2-8	IP68, tested to 0.7kgf/cm <sup>2</sup> for 72 hours.

Not all combinations of options are available.

\* Remote mounted MCC and LCS units are the only field mountable Options or Accessories -- customer required to make field connections.

## P Series Options and Accessories

Not all options are available for all actuators and not all accessories work concurrently with other accessories. Please contact your ProMation representative for product and application assistance.



## Options and Accessories

### Options specific to P1 Series (Factory Installed Only)

MOD 0-45-90 DEG	Modify actuator for 0-45-90° rotation. Available on 120 VAC or 230 VAC ONLY. (Unit will not support field use of auxiliary switches.)
MOD 0-90-180 DEG	Modify actuator for 0-90-180° rotation. Available on 120 VAC or 230 VAC ONLY. (Unit will not support field use of auxiliary switches.)
MOD 0-180 DEG	Modify actuator for 0-180° rotation. Available on On/Off/Jog models only.
OPT-COLD P1 HV	Cold weather PTC (positive temperature coefficient) auxiliary heater kit. Factory installed, 120 VAC or 230 VAC On/Off/Jog type actuators. 10 W Internal Heater.
OPT-P1-1K	1kΩ Feedback Option. Factory installed option consists of a 1kΩ position feedback potentiometer connected to a convenient 3 terminal block.
OPT-P1-5K	5kΩ Feedback Option. Factory installed option consists of a 5kΩ position feedback potentiometer connected to a convenient 3 terminal block.
OPT-P1-10K	10kΩ Feedback Option. Factory installed option consists of a 10kΩ position feedback potentiometer connected to a convenient 3 terminal block.
OPT-THERMOSTAT-P1	Integral Thermostat for Heater control - turns existing heater on at 0°C (+32°F), off at 10°C (+50°F).
OPT-TIMER-LI-P1	Timer set for duration and frequency to slow cycle time. (Contact factory for application assistance)
OPT-LCS-ALL	Local Control Stations. See page 11 for a complete listing of all Local Control Station solutions

### Options common to P2-13 (Factory Installed Only)

MOD 0-45-90 DEG	0-45-90° rotation.
OPTION-X	3rd and 4th Auxiliary Switch set
OPT-P213-1K	1kΩ Feedback Option. Factory installed option consists of a 1kΩ position feedback potentiometer connected to a convenient 3 terminal block.
OPT-P213-5K	5kΩ Feedback Option. Factory installed option consists of a 5kΩ position feedback potentiometer connected to a convenient 3 terminal block.
OPT-P213-10K	10kΩ Feedback Option. Factory installed option consists of a 10kΩ position feedback potentiometer connected to a convenient 3 terminal block.
OPT-TIMER-LI-P213	Timer set for duration and frequency to slow cycle time. (Contact factory)
OPT-COLD-P213	Cold weather auxiliary heater. On at 0°C (+32°F), off at 10°C (+50°F).
OPT-420FB-24A-P28	4-20mA feedback generator for On/Off/Jog, 24 VAC, 24VDC, 120 VAC or 230 VAC

### Options specific to P2-8 (Factory Installed Only)

MOD 0-90-180 DEG	0-90-180° rotation.
MOD 0-180 DEG	0-180° rotation. On/Off only.

**P7 Controlling  
Chiller Flow**




**P2-120PN4 Quarter  
Turn Actuator**

## PA-PD Series Mechanical Fail Safe Actuators

The PA-PD Series Spring Return actuators utilize springs to drive rack and pinion gears. Available with and without non-declutchable manual override handwheel. Specify **CW** or **CCW** model when ordering, **they are not interchangeable**. All units are standard 120VAC with a NEMA 4/4X/IP67 Enclosure.



## Fail Safe Solutions

Product Family	Torque Output		Draw (amps)	Actuator Run Time (sec)			Spring Return Time (sec)		Mounting Information		Height (in / mm)	Weight (lbs / kg)
	in lbs	Nm		50Hz	60Hz	VDC	120V / 230V	24V	ISO 5211			
PA	445	50	1.0	9	7	7	3	3	F07	17mm	17 / 425	65 / 30
PB	1,150	130	3.8	9	7	8	8	3	F10	22mm	20 / 503	124 / 57
PC	1,750	200	3.8	13	11	11	12	3	F12	27mm	23 / 577	209 / 95
PD	2,300	260	3.8	17	14	17	12	3	F12	27mm	23 / 577	209 / 95

### With Manual Override

PAO	445	50	1.0	9	7	7	3	3	F07	17mm	21.1 / 535	88 / 40
PBO	1,150	130	3.8	9	7	8	8	3	F10	22mm	25.3 / 638	184 / 84
PCO	1,750	200	3.8	13	11	11	12	3	F12	27mm	29.1 / 732	297 / 135
PDO	2,300	260	3.8	17	14	17	12	3	F12	27mm	29.1 / 732	297 / 135

Running Amps: 120VAC @ 60Hz. Actuator Run Times are given for 120VAC and 24 VDC.

8pt dbl-sq (female mm)

Shipping weight

### Options common to PA-PD Series (Factory Installed Only)

Low Voltage Modification	24 VAC or 24VDC (12V option NOT AVAILABLE)
3 Phase Voltage Modification	3 Phase 230V, 315V, 380V, 440V, or 480V with custom transformer enclosure
Proportional Control -P	Standard Proportional Controller 120 VAC or 230 VAC (24V option NOT AVAILABLE)
OPT-COLD-PAD	Cold weather auxiliary heater. On at 0°C (+32°F), off at 10°C (+50°F).
Option-X-PA	2 additional Auxiliary switches

## D Series Spring Return Actuators

Spring return actuators designed for use on valves and dampers. Featuring field adjustable open and close rates and auto switching power supplies which accept AC or DC from 24V to 230V.



Part Number	Torque (in lbs)	Torque (Nm)	Runtime (sec) Field selectable	Spring Drive Speed (sec, 90°)	Control	Height (in/mm)	Weight (lbs/kg)
D2-310S4-0	45/90	5/10	3/15/30/60/120	3 or 10 (Sel)	On/Off/Jog	3.15 / 80	10 / 5
D2-310S4-2	45/90	5/10	3/15/30/60/120	3 or 10 (Sel)	On/Off/Jog w/ Aux	4.72 / 120	11 / 5
D2-P310S4-0	45/90	5/10	3/15/30/60/120	3 or 10 (Sel)	Proportional	3.15 / 80	10 / 5
D3-310S4-0	133	15	3/15/30/60/120	3 or 10 (Sel)	On/Off/Jog	3.15 / 80	10 / 5
D3-310S4-2	133	15	3/15/30/60/120	3 or 10 (Sel)	On/Off/Jog w/ Aux	4.72 / 120	11 / 5
D3-P310S4-0	133	15	3/15/30/60/120	3 or 10 (Sel)	Proportional	3.15 / 80	10 / 5
D4-20S4-0	265	30	40/60/90/120/150	20 (Fixed)	On/Off/Jog	4.57 / 116	24 / 11
D4-20S4-2	265	30	40/60/90/120/150	20 (Fixed)	On/Off/Jog w/ Aux	6.14 / 156	25 / 11
D4-P20S4-0	265	30	40/60/90/120/150	20 (Fixed)	Proportional	4.57 / 116	24 / 11
D5-20S4-0	445	50	40/60/90/120/150	20 (Fixed)	On/Off/Jog	4.57 / 116	24 / 11
D5-20S4-2	445	50	40/60/90/120/150	20 (Fixed)	On/Off/Jog w/ Aux	6.14 / 156	25 / 11
D5-P20S4-0	445	50	40/60/90/120/150	20 (Fixed)	Proportional	4.57 / 116	24 / 11

### Options common to D Series

Not all combinations of options are available.

Shipping weight

D-OPT-2AUX	2 independently adjustable external auxiliary switches
D23-OPT-OVD-LO	D2/3 3" round steel override handwheel
D23-OPT-OVD-HI	D2/3 3" round steel override handwheel (For use with auxiliary switches)
D45-OPT-OVD	D4/5 3" round steel override handwheel

## Power Backup Units (PBU) for Electric Fail Safe

PBU's are designed for P and PL series actuators. Replaceable sealed lead-acid battery packs provide backup power for positive positioning in critical applications. Standard with a NEMA 4/4X enclosure. Some assembly is required and customer is required to make field connections.



## Fail Safe Solutions

	Part Number	For Actuator Series	Output Voltage	Required Supply Voltage	Replacement Battery	Height (in/mm)	Weight (lbs/kg)
On/Off/Log Solutions	PBU100-120-4	P1 - P3	120 vac	120 vac	RBC-35	14.50 / 368.3	25 / 11
	PBU100-24A-4	P1 - P2	24 vac	120 vac	RBC-35	14.50 / 368.3	39 / 18
	PBU102-120-4	P4 - P6	120 vac	120 vac	RBC-110	16.04 / 407.4	30 / 14
	PBU102-230-4	P1 - P6	230 vac	230 vac	RBC-51	16.04 / 407.4	30 / 14
	PBU102-24A-4	P3 - P6	24 vac	120 vac	RBC-110	16.04 / 407.4	45 / 20
	PBU104-120-4	P7 - P13	120 vac	120 vac	RBC-17	16.04 / 407.4	30 / 14
	PBU104-230-4	P7 - P13	230 vac	230 vac	RBC-51	16.04 / 407.4	30 / 14
	PBU505-120-4	PL550 / 1100	120 vac	120 vac	RBC-35	16.04 / 407.4	30 / 14
	PBU505-230-4	PL550 / 1100	230 vac	230 vac	RBC-35	16.04 / 407.4	30 / 14
	PBU505-24A-4	PL550 / 1100	24 vac	120 vac	RBC-35	16.04 / 407.4	45 / 20
	PBU506-120-4	PL2200 / 4400	120 vac	120 vac	RBC-35	16.04 / 407.4	30 / 14
	PBU506-230-4	PL2200 / 4400	230 vac	230 vac	RBC-35	16.04 / 407.4	30 / 14
	PBU506-24A-4	PL2200 / 4400	24 vac	120 vac	RBC-35	16.04 / 407.4	45 / 20
Proportional Solutions	PBU600-120P-4	P1 - P3	120 vac	120 vac	RBC-35	14.50 / 368.3	25 / 11
	PBU600-24AP-4	P1 - P2	24 vac	120 vac	RBC-35	14.50 / 368.3	45 / 20
	PBU602-120P-4	P4 - P6	120 vac	120 vac	RBC-110	16.04 / 407.4	30 / 14
	PBU602-230P-4	P1 - P6	230 vac	230 vac	RBC-110	16.04 / 407.4	30 / 14
	PBU602-24AP-4	P3 - P6	24 vac	120 vac	RBC-51	16.04 / 407.4	45 / 20
	PBU604-120P-4	P7 - P13	120 vac	120 vac	RBC-17	16.04 / 407.4	30 / 14
	PBU604-230P-4	P7 - P13	230 vac	230 vac	RBC-51	16.04 / 407.4	30 / 14
	PBU606-120P-4	PL550 / 1100 / 2200 / 4400	120 vac	120 vac	RBC-35	16.04 / 407.4	30 / 14
	PBU606-230P-4	PL550 / 1100 / 2200 / 4400	230 vac	230 vac	RBC-35	16.04 / 407.4	30 / 14
	PBU606-24AP-4	PL550 / 1100 / 2200 / 4400	24 vac	120 vac	RBC-35	16.04 / 407.4	45 / 20

Proportional Signals can be 2-10 vdc OR 4-20 mA and are field selectable.  
230 vac versions not available in PBU100 or PBU600.

### PBU102-120P-4 Power Backup Units



### Options common to PBU Series (Factory Installed Only)

OPT-COLD-PBU	Cold weather auxiliary heater. On at +32°F, off at +50°F. (Contact factory)
OPT-PBU-MON	Remote Status Monitoring option.

## Linear Actuators

Designed for use on rising stem globe control valves, PL Series actuators provide up to 4400 lbs. (19.57kN) of force and up to 3.9 inches (100 mm) travel. The PL Series comes standard 120 VAC, with anti-condensation heater, manual override hand wheel and NEMA 4/4X/IP67 enclosure.



## Linear Actuators

Product Family	Force lbs	Force kN	Draw (amps)	Speed (mm/sec)	Max Stroke Length (in/mm)	Max Stroke Run Time (sec)	Height* (in/mm)	Weight* (lbs/kg)
PL550-120PN4	550	2.45	0.5	0.6	1.97 / 50	83	9.10 / 232	23/11
PL1100-120PN4	1,100	4.89	0.5	0.6	1.97 / 50	83	9.10 / 232	23/11
PL2200-120PN4	2,200	9.79	0.5	0.5	3.94 / 100	200	13.02 / 330	62/28
PL4400-120PN4	4,400	19.57	0.4	0.5	3.94 / 100	200	13.02 / 330	62/28

Running Amps: 120VAC @ 60Hz.

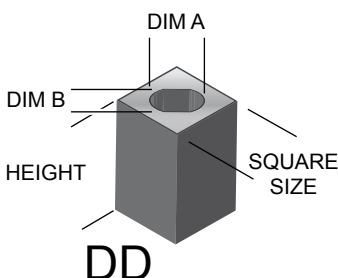
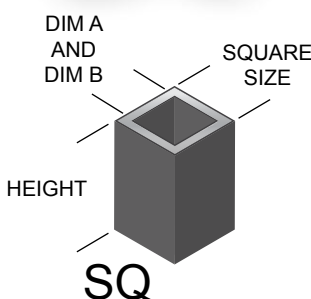
\* without linkage Shipping weight

### Options common to PL Series (Factory Installed Only)

Low Voltage Modification	24 VAC or VDC
3 Phase Voltage Modification	3 Phase 230, 315, 380, 440, 480, or 575, remote Local Control Station and single phase transformer
High Voltage Modification	230 VAC Single Phase
OPT-COLD-PL	Cold weather auxiliary heater. On at +32°F, off at +50°F. (Contact factory)

## Drive Inserts

The ProMation quarter-turn products have oversized female double square output couplings. Drive inserts allow the user to easily mate nearly any actuator to your application using one of the many standard sizes shown below.



Part Number	Square Size (mm)	SQ = Square DD= Double D	Dim A (mm)	Dim B (mm)	Height (mm)	Material
INS14SQ11X14.8	14	SQ	11	11	14.8	CF-8-304 SS
INS14SQ9X14.8	14	SQ	9	9	14.8	CF-8-304 SS
INS17SQ11X20	17	SQ	11	11	20	SUS304 SS
INS17SQ14X16	17	SQ	14	14	16	CF-8-304 SS
INS22DD14.10X30	22	DD	14.2	10	30	S45C
INS22DD16.11X29	22	DD	16.4	11.2	29.5	S45C
INS22DD19.13X29	22	DD	19.3	13.2	29.5	S45C
INS22SQ11X25	22	SQ	11	11	25	SUS304 SS
INS22SQ14X25	22	SQ	14	14	25	SUS304 SS
INS22SQ17X30	22	SQ	17	17	30	SUS304 SS
INS22SQ19X25	22	SQ	19	19	25	SUS304 SS
INS27SQ22X25	27	SQ	22	22	25	SUS304 SS
INS35DD22.16X21	35	DD	22.1	16	39.5	S45C
INS35DD30.22X33	35	DD	30.2	22	39.5	S45C
INS35SQ19X39	35	SQ	19	19	39.5	S45C
INS35SQ22X39.5	35	SQ	22	22	39.5	S45C
INS35SQ27X40	35	SQ	27	27	40	SUS304 SS
INS36SQ27X45	36	SQ	27	27	45	SUS304 SS

## Local Control Stations (LCS)

ProMation LCSs are designed to be remotely located or directly mounted to the actuator. Standard with NEMA 4 steel enclosure, also available with NEMA 4/4X stainless or fiberglass enclosures. Customer is required to make field connections. **Customers with proportional actuators specify when ordering: 4-20mA or DC 2-10 V control.**



LCS Model	LA	LB	LC	LD	LE	LF	LG	LH	LI	LJ	LK
<b>for Product →</b>	All	All	All	All	All	P1,PA,PL	P2-13	P1,PA,PL	P2-13	P1,PA,PL	P2-13
For On/Off/Jog Actuators Only	X	X	X	X							
For Proportional Actuators Only					X	X	X	X	X	X	X

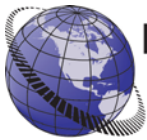
### Standard LCS Component Features common to LCS models listed (Factory Installed Only)

Local/Off/Remote Mode Switch	X	X	X	X	X	X	X	X	X	X	X
Close-Stop-Open Switch	X	X	X	X							
Close-Open Switch (2 Pos)					X	X	X				
Close / Open Indicator Lights		X	X	X		X	X	X	X	X	X
End of Travel (EOT) Outputs to Controller		X	X	X		X	X	X	X	X	X
Mode Switch Position Signal to Controller			X	X		X	X	X	X	X	X
Illuminated Power Indicator				X		X	X				
Full Proportional Control via Potentiometer								X	X	X	X
LCD Display for Incoming Signal								X	X	X	X
LCD Display for Feedback Signal										X	X

## Local Control Station Options

ProMation can configure Local Control Stations to fit your specific needs. Below are the general options that can be changed from our standard LCS offerings. All prices are determined by the scope of the project. Please contact the factory for application assistance.

Option	Description
Actuator Type	Nearly all our actuators can be optioned with a Local Control Station (LCS). LCS can be assembled for ProMation actuators as well as other brand electric actuators.
Control Mounting	Direct Mount (to the actuator) or Remote Mount
Supply Voltage	Supply Voltages including 12vac/vdc, 24 vac/vdc, 120vac, 230vac, and 3 phase. 3 phase voltages: 230, 315, 380, 440, 480, 575. Not all voltages are compatible with all actuators.
Control Type	4-20mA, 2-10vdc, 0-10vdc, 1-5vdc, or 0-135ohm
Enclosure Type	Painted Steel NEMA 4, Stainless Steel NEMA 4/4X, or Fiberglass NEMA 4/4X
Mode Select Switch	2 position knob, 3 position knob, 2 position key, 3 position key, no knob, or custom
Movement Select	2 position switch, Variable position potentiometer, no device, or custom
Visual Indicators	Indicator colors. Red, green, blue, yellow, and white LEDs are available.
Actuator Contacts	Pass through auxiliary switches, EOT Status Dry Contacts, EOT Hot Outputs, or none
Mode Feedback	Remote, Auto, and Monitor modes with Dry Contacts (relays), Hot Outputs, or none
Position Readout	4-20mA or 0-100% Signal Input and Outputs
Other Custom Components	External modular power cabling, remote location of proportional controller (in the LCS enclosure), custom indicators, switches, contact blocks, and enclosures.



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Precision Actuation for Industry

## Product Family Matrix

The ProMation Family of actuators has a specific customized solution to meet most users needs. This matrix gives a quick overview of the entire line at a glance. Please contact a factory representative with questions or to request a quote for your specific application.

Product Family	Torque Output		Voltage Options						3 Phase Options	Control					Environment		
			12		24		120	230		On/Off/Jog	Standard	Premium	Local Control Stations	NEMA 4/4X/IP67	IP 68	Explosion Proof (Gas)	Ignition Proof (Dust)
	AC	DC	AC	DC	AC	AC											
	in lbs	Nm															
Quarter Turn Actuators																	
PZ6	135	15		✓		✓	✓		✓				✓				
PZ15	135	15		✓		✓	✓		✓				✓				
P1	300	35	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓				
P1.A	445	50	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓				
P1.B	135	15	✓	✓	✓	✓	✓	✓	✓				✓				
P1.C	135	15		✓		✓			✓				✓				
P2	800	90	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	
P3	1,335	150	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	
P4	3,500	400	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	
P5	4,400	500	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	
P6	5,750	650	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	
P7	8,900	1,000		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	
P8	13,250	1,500		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	
P9	17,500	2,000				✓	✓	✓	✓		✓	✓	✓				
P10	22,000	2,500				✓	✓	✓	✓		✓	✓	✓				
P11	26,500	3,000				✓	✓	✓	✓		✓	✓	✓				
P12	31,000	3,500				✓	✓	✓	✓		✓	✓	✓				
P13	40,000	4,500				✓	✓	✓	✓		✓	✓	✓				
Spring Return Actuators																	
PA/PAO	445	50		✓	✓	✓	✓	✓	✓	✓		✓	✓				
PB/PBO	1,150	130		✓	✓	✓	✓	✓	✓	✓		✓	✓				
PC/PCO	1,750	200		✓	✓	✓	✓	✓	✓	✓		✓	✓				
PD/PDO	2,300	260		✓	✓	✓	✓	✓	✓	✓		✓	✓				
D2	45 or 90	5 or 10		Auto-switching power supplies automatically connect to AC or DC power sources from 24V to 230V					✓	✓			④				
D3	133	15							✓	✓			④				
D4	265	30							✓	✓			④				
D5	445	50							✓	✓			④				
Linear series																	
	Force lbs	Force kN															
PL550-120PN4	550	2.45		✓	✓	✓	✓	✓	✓	✓			✓				
PL1100-120PN4	1,100	4.89		✓	✓	✓	✓	✓	✓	✓			✓				
PL2200-120PN4	2,200	9.79		✓	✓	✓	✓	✓	✓	✓			✓				
PL4400-120PN4	4,400	19.57		✓	✓	✓	✓	✓	✓	✓			✓				

✓ Options available    ④ Only available with NEMA 4 Enclosure