



**PROMATION
ENGINEERING**

Precision Actuation for Industry

**Explosion Proof Dual Acting
Quarter Turn, Spring Return and
Linear Electric Actuators
24vac, 24vdc, 120vac, 230vac**



Hazardous Location Electric Actuator

- Dual Acting (300 to 13,000 in lbs of torque)



- Spring Return Failsafe
(450 to 2,300 in lbs of torque)

- Spring Return with
Manual Override



**EXPLOSION
PROOF**



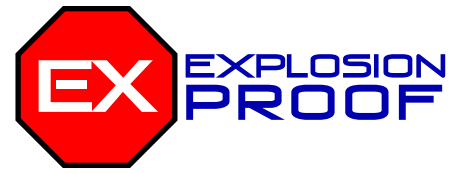
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Enclosures Certified to:
Class I, Division 1, Groups C, D.
Class II, Division 1, Groups E, F, G.
Class III; T6 (85°C)

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

Quarter Turn Explosion Proof Actuators

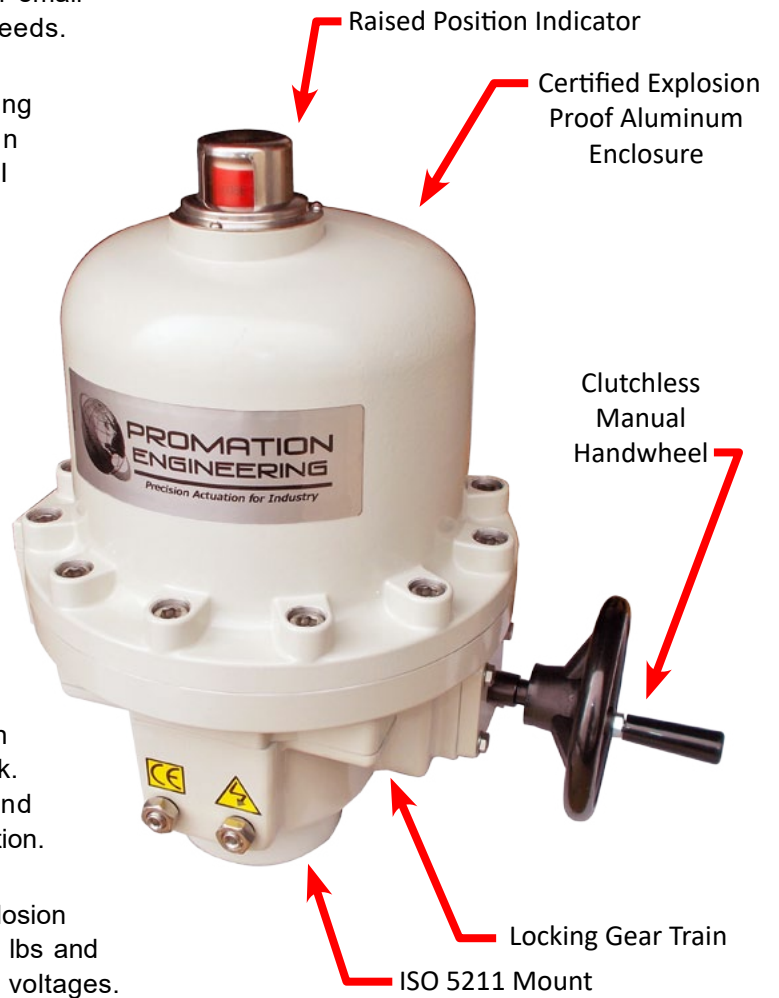
Hazardous Applications - Rugged and reliable, ProMation Engineering actuators are designed for use in Oil and Gas, Mining, Food Processing, Chemicals and Power applications controlling butterfly valves, ball valves, high performance valves, plug valves and dampers. Call or email to have our actuator experts help you with your needs.




Explosion Proof - The ProMation Engineering explosion proof actuators are designed for use in hazardous locations. They meet the latest Class I and Class II Division 1 standards per UL 1203. The explosion proof actuators share the same electronic and mechanical components as the ProMation Standard Location products and give you the same reliability and performance that you've come to expect from our Standard Location quarter turn actuators.

Features - The ProMation explosion proof actuators feature the only hazardous duty electric actuator that comes with a standard raised indicator allowing easy identification of actuator position. Other standard items include an anti-condensation heater, two auxiliary switches, ISO 5211 mounting, permanently lubricated locking gear train, and a clutchless manual handwheel. In addition to on/off control, the explosion proof actuators can have proportional control with 4–20 mA, 0–10, 2–10, and 1–5vdc input and feedback. Also available: torque switch to protect motors and valves, additional auxiliary switches, and 0–220° rotation.

Torque Range and Voltages - The explosion proof actuators range in torque from 300 to 13,250 in lbs and are available in 24vac, 24vdc, 120vac, and 230vac voltages. The output gearing and mounting patterns are the same as our standard product and therefore fully compatible with valve, damper couplers and linkages that are used for nearly any industrial application.



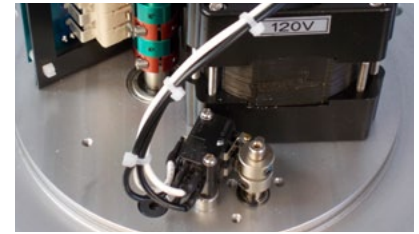
Explosion Proof Actuator Specifications

Product Family	Torque Output		Draw (amps)	Actuator Run Time (seconds)		Mounting Information		Shipping Weight (lbs / kg)
	in lbs	Nm		60Hz	50Hz	ISO 5211	Output Drive (mm) 	
P1	300	35	0.6	11	110	F03/F05	14	4 / 2
P1.A	450	50	0.6	21	19	F05/07	17	7 / 3
P2	800	90	1.0	17	15	F07	22	40 / 18
P3	1,335	150	1.2	26	22	F07	22	40 / 18
P4	3,500	400	1.9	18	16	F10	35	58 / 26
P5	4,400	500	2.0	25	22	F10	35	58 / 26
P6	5,750	650	2.1	31	28	F10	35	58 / 26
P7	8,900	1,000	3.1	55	46	F12	36	93 / 42
P8	13,250	1,500	3.3	55	46	F12	36	93 / 42

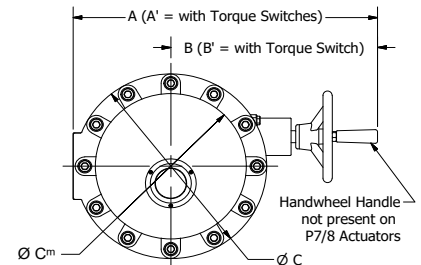
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Available Options (Factory Installed)

- Proportional Control - 4-20mA, 0-10VDC, 2-10VDC, 1-5VDC input
- Mechanical Torque Switch Assembly.
- Rotation modifications for up to 220 degree rotation.
- Auxiliary Switch Set. Provides two additional auxiliary switches, for a total of four.
- Local Control Stations and Power Backup Units are available if located outside hazardous area and wired to code.

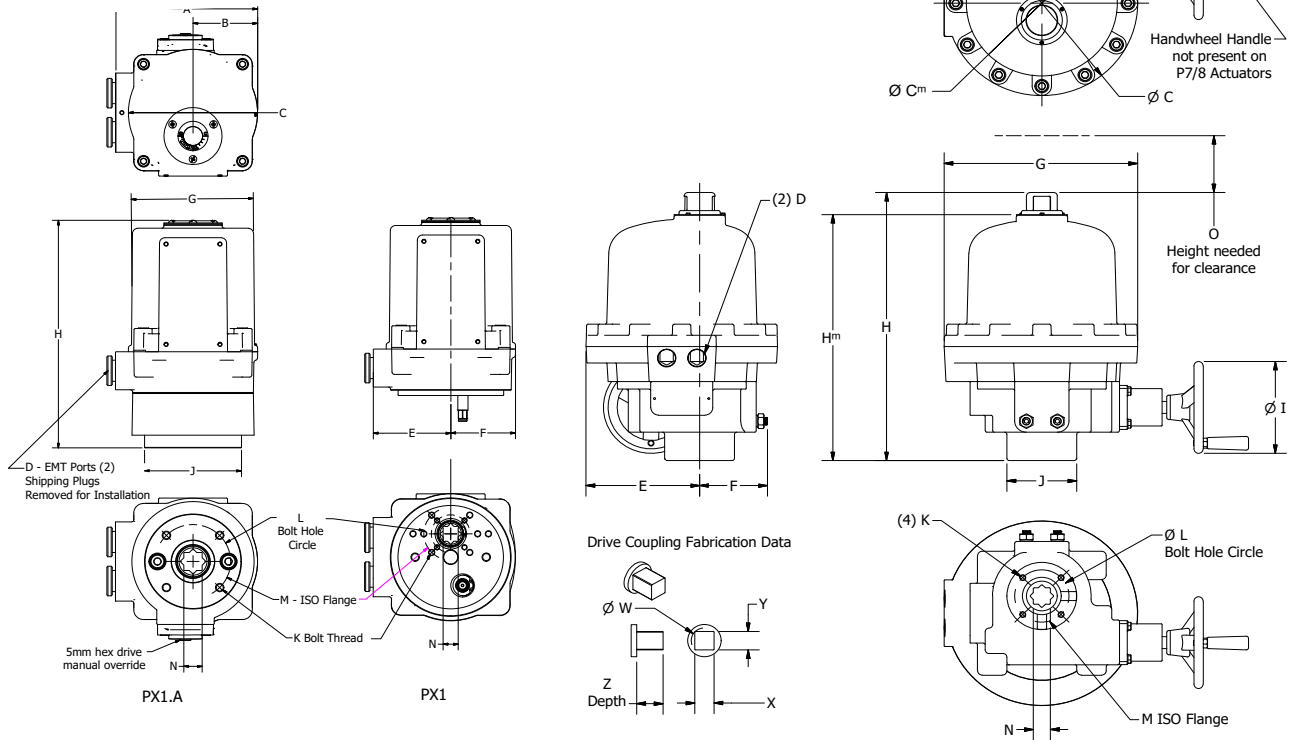


Torque Switch Option



Mechanical Data

PX1 and P2~8-EX Series Dimensional Data



PX1.A

PX1

P2-8

Dimensional Data P2-8 N7 Series Actuators

inches (mm)

	A	A ^{ts}	B	B ^{ts}	C	D	E	F	G	H	I
PX1	5.18 (132)		3.36(85)		4.72 (120)	1/2 NPT	3.03 (77)	2.36 (60)	4.45 (113)	6.65 (169)* 7.91 (201)	
PX1.A	5.18 (132)		3.36(85)		4.72 (120)	1/2 NPT	2.83 ()	2.36 (60)	4.45 (113)	8.50 (216)* 7.91 (201)	
P2~P3	14.0 (355)	15.5 (392)	9.0 (229)	10.5 (267)	9.7 (247)	3/4" NPT	5.8 (146)	3.4 (88)	9.8 (249)	14.1 (359)	4.8 (123)
P4~P6	16.7 (423)	19.2 (488)	10.8 (275)	13.4 (340)	11.2 (285)	3/4" NPT	7.3 (184)	5.0 (126)	11.5 (291)	15.3 (389)	7.6 (194)
P7~P8	14.9 (377)	18.4 (468)	9.0 (226)	12.6 (320)	11.2 (285)	3/4" NPT	9.3 (236)	5.0 (126)	11.5 (291)	18.8 (478)	11.6 (295)
	J	K	L	M	N	O	W	X	Y	Z	
PX1	3.82	F03 M5-0.8 x 0.8"D F07 M6-1.0 x 0.8"D	F03 1.4 (36) F07 1.97 (50)	F03 F07	.551 (14)	4.75	0.75(19)	.551 (14)	.551 (14)	.67 (17)	
PX1.A	3.54	M6-1.0 x 0.8"D	1.97 (50)	F07	.669 (17)	4.75	0.91(23)	.669 (17)	.669 (17)	.79 (20)	
P2~3	3.5 (90)	M8-1.25 x 0.8" D	2.8 (70)	F07	0.866 (22)	8 (203)	1.18 (30.0)	.866 (22.0)	.866 (22.0)	1.18 (30.0)	
P4~6	4.9 (125)	M10-1.5 x 0.8" D	4.0 (102)	F10	1.378 (35)	8 (203)	1.89 (48.0)	1.378 (35.0)	1.378 (35.0)	1.58 (40.0)	
P7~8	7.1 (180)	M16-2 x 1.0" D	5.5 (140)	F14	1.417 (36)	8 (203)	1.93 (49.0)	1.417 (36.0)	1.417 (36.0)	1.77 (45.0)	

* ON OFF/ Proportional

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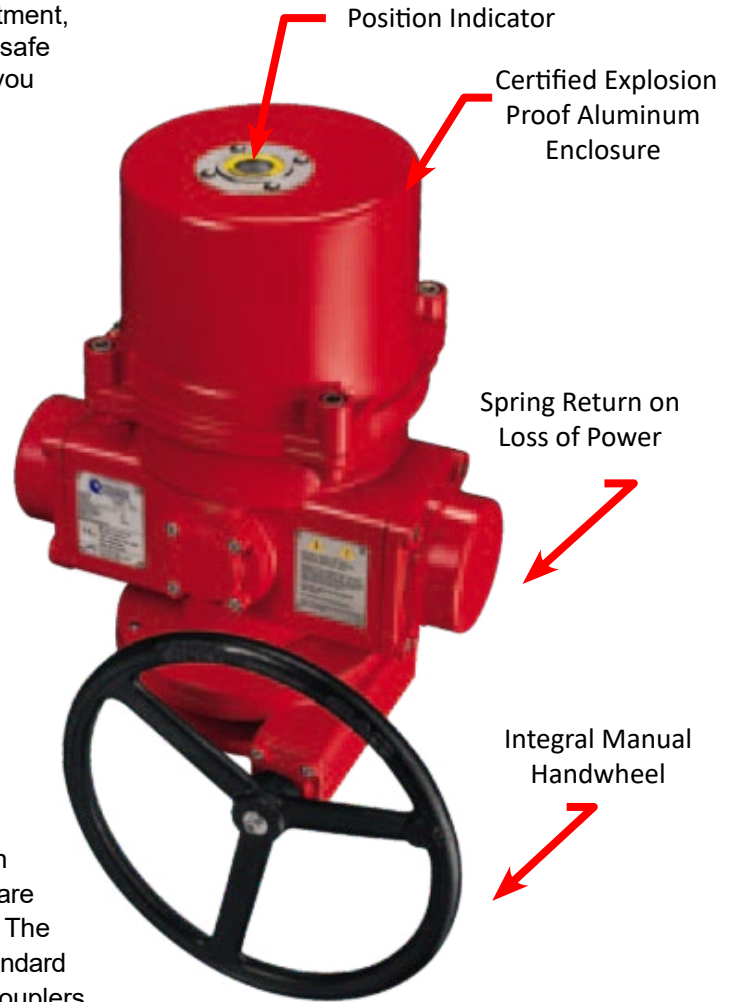
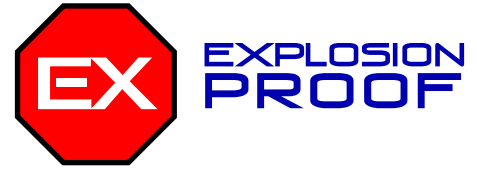
Spring Return Explosion Proof Actuators

Hazardous Applications - ProMation Engineering actuators spring return mechanical failsafe actuators have critical applications in isolation and shut off valves in the Oil and Gas industry in midstream processing,, tank isolation and gas delivery, to name just a few applications. Below grade applications in Waste Water Treatment, Mining and Chemical Processing many times require failsafe actuation. Call or email to have our actuator experts help you with your needs.

Explosion Proof - The ProMation Engineering explosion proof actuators are designed for use in hazardous locations meeting US and Canadian Class I Division 1 standards. The explosion proof actuators share the same electronic and mechanical components as the ProMation Standard Location products and give you the same reliability and performance that you've come to expect from our Standard Location quarter turn actuators.

Features - The ProMation spring return explosion proof actuators standard features include a position indicator, anti-condensation heater, two auxiliary switches, ISO 5211 mounting and permanently lubricated locking gear train. An integral optional manual override is also available. In addition to on/off control, the explosion proof actuators can have proportional control with 4–20 mA, 0–10, 2–10, and 1–5vdc input and feedback.

Torque Range and Voltages - The explosion proof actuators range in torque from 450 to 2,300 in lbs and are available in 24vac, 24vdc, 120vac, and 230vac voltages. The output gearing and mounting patterns are the same as our standard product and therefore fully compatible with valve, damper couplers and linkages that are used for nearly any industrial application.

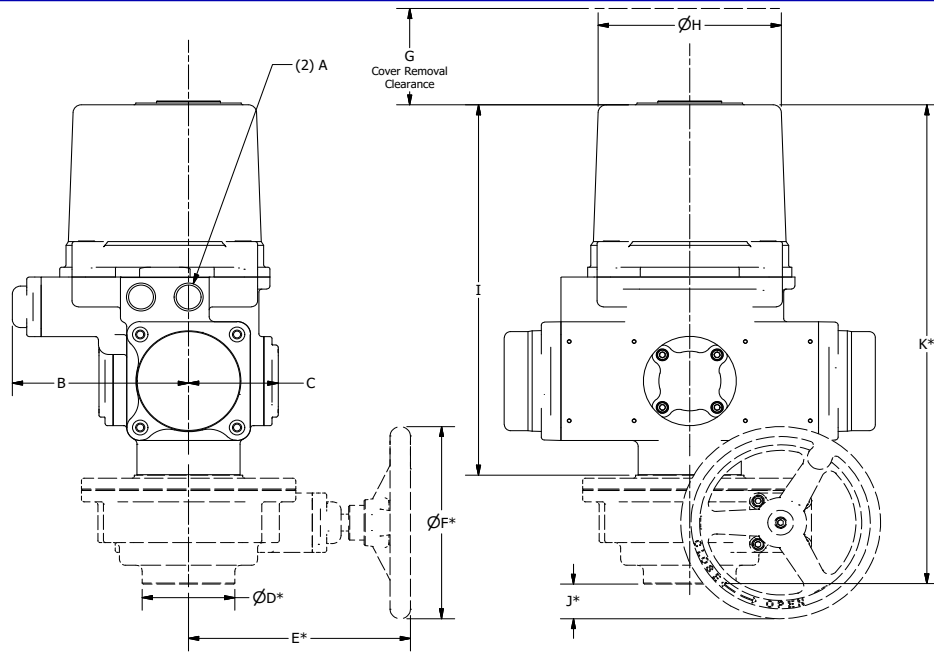


Actuator	Motor Run Speed	Spring Return Speed	Max Torque		Amperage			Weight		Mounting Flange (ISO 5211)
	seconds	seconds	Nm	in lb	24V	120V	230V	kg	lbs	
PA	7	3	50	445	3.0	1.0	0.7	27	60	F07
PB	7	8	130	1150	9.0	3.8	2.1	57	126	F10
PC	11	12	200	1770	9.0	3.8	2.1	95	209	F12
PD	14	12	260	2300	9.0	3.8	2.1	95	209	F12
PAO	7	3	50	445	3.0	1.0	0.7	37	82	F07
PBO	7	8	130	1150	9.0	3.8	2.1	74	163	F10
PCO	11	12	200	1770	9.0	3.8	2.1	135	298	F12
PDO	14	12	260	2300	9.0	3.8	2.1	135	298	F12

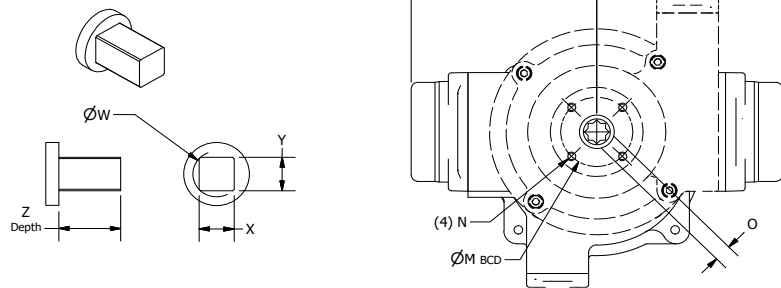
Motor speed is for 120VAC actuators @ 60Hz.

Output Drives are 8 point female double-square. Drive Inserts are available for nearly any application.

PA(O) - PD(O) Hazardous Location Series Dimensional Data



Drive Coupling Fabrication Data



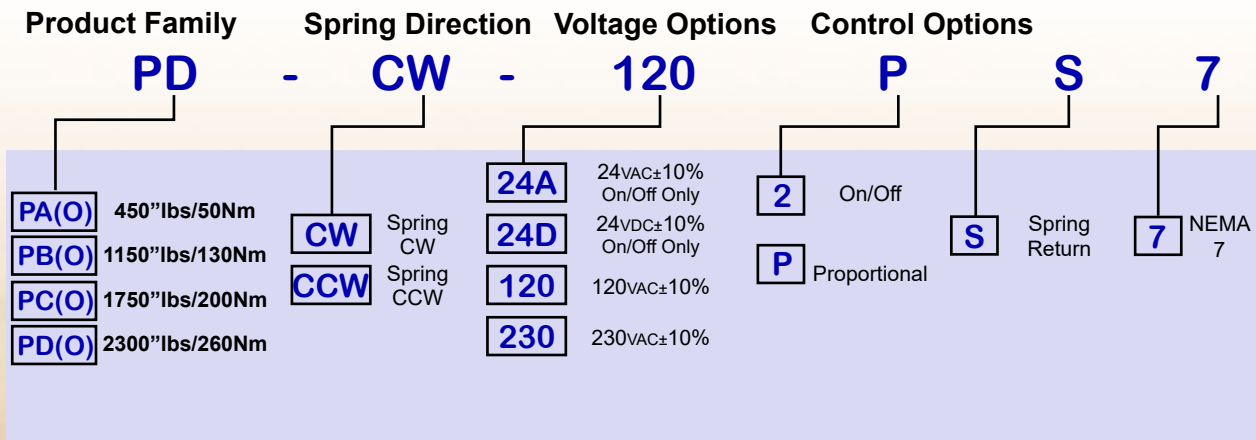
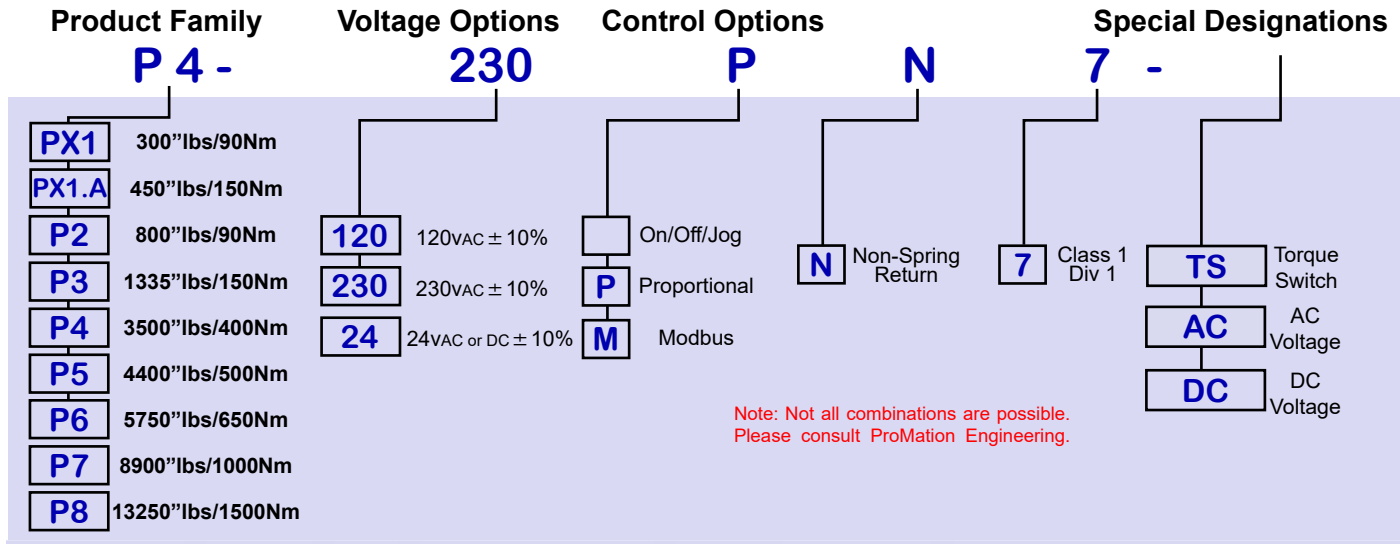
Actuator	Torque (lb-in)	ISO5211 Mount	A	B	C	D*	E*	F*	G	H	I
PA/ PAO*	445	F07	1/2" NPT	6.7 (171)	3.4 (87)	3.9 (100)	8.5 (216)	7.5 (191)	9.0 (229)	7.0 (178)	15.0 (382)
PB/ PBO*	1150	F10	1/2" NPT	9.7 (247)	4.3 (110)	4.5 (140)	9.3 (237)	11.6 (295)	10.0 (254)	10.4 (265)	18.1 (460)
PC/ PCO*	1750	F12	1/2" NPT	12.0 (305)	5.2 (133)	6.7 (170)	11.2 (284)	15.7 (398)	10.0 (254)	12.0 (305)	21.0 (534)
PD/ PDO*	2300	F12	1/2" NPT	12.0 (305)	5.2 (133)	6.7 (170)	11.2 (284)	15.7 (398)	10.0 (254)	12.0 (305)	21.0 (534)
Actuator	M*	J*	K*	L	M	N	O	W	X**	Y**	Z
PA/ PAO*	4.3 (110)	1.3 (33)	19.4 (492)	7.1 (180)	2.8 (70)	M8-1.25 x 12mm	0.67 (17)	0.906 (23.00)	0.669 (17.00)	0.669 (17.00)	1.18 (30.00)
PB/ PBO*	5.3 (135)	2.7 (68)	23.4 (595)	9.1 (231)	4.0 (102)	M10-1.5 x 15mm	0.87 (22)	1.181 (30.00)	0.866 (22.00)	0.866 (22.00)	1.61 (41.00)
PC/ PCO*	6.1 (155)	4.3 (109)	27.1 (689)	11.8 (300)	4.9 (125)	M12-1.75 x 18mm	1.06 (27)	1.457 (37.00)	1.063 (27.00)	1.063 (27.00)	1.72 (45.00)
PD/ PDO*	6.1 (155)	4.3 (109)	27.1 (689)	11.8 (300)	4.9 (125)	M12-1.75 x 18mm	1.06 (27)	1.457 (37.00)	1.063 (27.00)	1.063 (27.00)	1.72 (45.00)

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* With Manual Override

**Dim X and Y Tolerance: +0.000" -0.005"

EX Series Actuators



ProMation Standard Location Product Line

PL Series Linear Drive

Up to 4400lbs down/up force and up to 100mm (4") stem travel

For globe valves and other linear travel devices. With override handwheel. Available with On/Off/Jog or Proportional control for 24vac, 24vdc, 120vac & 230vac supplies.

P Series Non-Spring Return

55"lbs through 40,000"lbs. Quarter-Turn, with Manual Override

Available with On/Off/Jog or Proportional control. For 12vac/dc, 24vac/dc, 120vac, 230vac, 230v/3 phase, 380v/3 phase & 460v/3phase supplies.

PA~PD Series Spring Return

445"lbs through 2300"lbs. Quarter-Turn, both with and w/o manual override handwheel.

Spring either CW or CCW. Available with On/Off control for 24vac/dc and On/Off or Proportional control for 120vac & 230vac supplies. Stepdown for 3phase available.

PBU Battery Back-Up Systems

Provides power sufficient to drive P Series actuators

to field-selectable fail-safe positions. For P Series & PL Series actuators in On/Off and Proportional control modes. Available for 24/120/230vac actuators. 120vac/230 vac supply.



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