

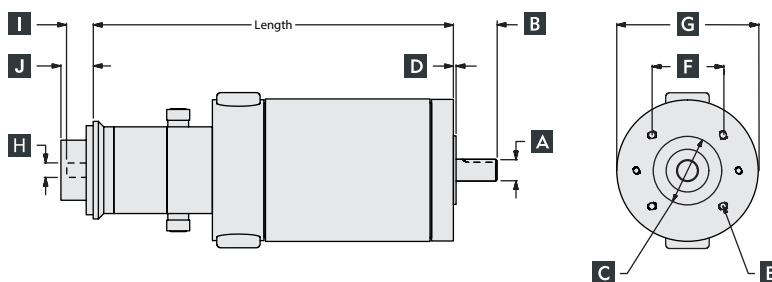
High-Torque. Long life.

Our ElectroCraft DirectPower™ Plus 680 Series features a rugged, heavy-gauge steel housing construction for long-life and durability. This high-efficiency motor includes dynamically balanced armatures, sealed ball bearings, and replaceable brushes.



DPP680 BRUSH MOTOR	
Size	3.25-inch or 82.5mm
Peak Torque	to 1100 oz-in or 776.8 Ncm

Model	MAX Length	MAX Length (with tachometer)	A Front Shaft Diameter	B Front Shaft Length	C Pilot Diameter	D Pilot Length (Ref)	E Mount Hole Callout (Ref)	F Mount Hole Spacing (Ref)	G Flange External Dimension (Ref)	H Rear Shaft Diameter	I Rear Shaft Length	J Encoder Length (max)
DPP681	5.10 in	7.81 in	0.5000 in 0.4995 in	1.000 in ±0.03	1.574 in 1.572 in	0.062 in	(4) 10-32 UNC-28 0.50 in Deep Min EQ SP on 2.312 in D.B.C.	1.635 in	3.25 in OD	0.3750 in 0.3747 in (motor only) 0.2497 in 0.2494 in (motor only)	0.43 in ±0.030	0.43 in
DPP683	5.70 in	8.41 in										
DPP685	6.82 in	9.53 in										
DPP689	7.62 in	10.33 in										
DPP681M	132 mm	199 mm	12.00 mm 11.99 mm	30 mm ±0.762	N/A	N/A	(4) M6 x 1-6H 10 mm Deep Min EQ SP on 63.5 mm D.B.C.	44.9 mm	78 mm OD	8.00 mm 7.99 mm (motor only) 6.00 mm 5.99 mm (motor only)	109 mm ±0.762	109 mm
DPP683M	147 mm	214 mm										
DPP685M	175 mm	242 mm										
DPP689M	196 mm	263 mm										



DPP680 Model Number

1 - Frame Size (Imperial or Metric)

D P P 6 8 1

Product Name

Frame Size

2 - Torque

T - 9 0

Optional Tachometer

Continuous Torque (oz-in)

3 - Winding

V

6 0

Voltage

4 - Features

1 2 2 - C

Rear Shaft Front Shaft Lead Option

Encoder

D P P 6 8 1 M

Product Name

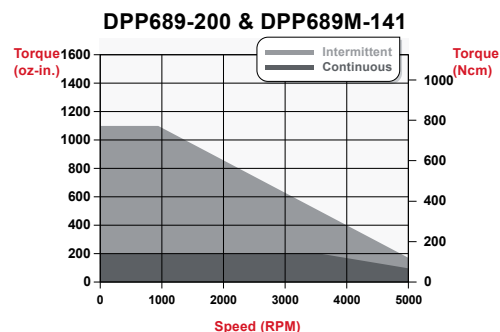
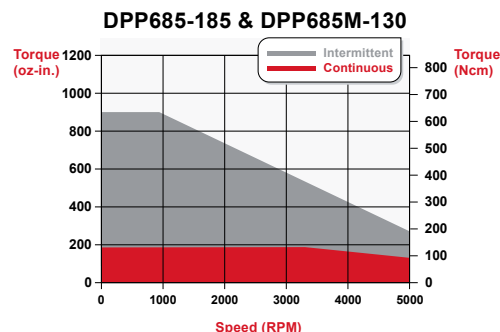
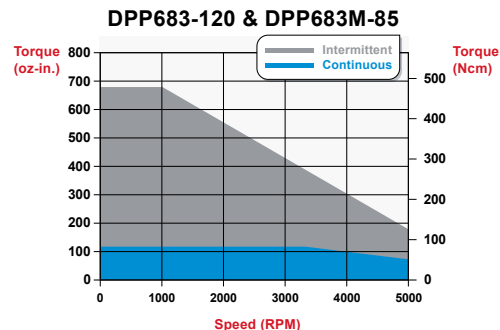
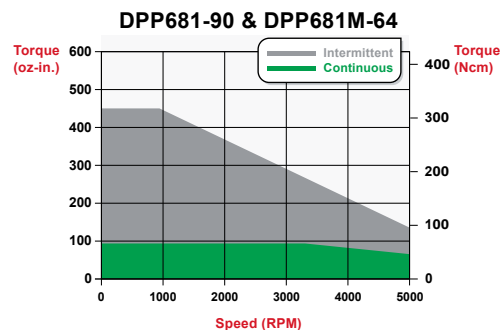
Frame Size

Optional Metric

Optional Tachometer

Continuous Torque (Ncm)

DPP680 - Performance



Continuous torque ratings developed with 12" x 12" x 0.50" heat sink at an ambient temperature of 20 degrees C.

DPP680 Mechanical / Winding Data

DPP680 Stack/Torque Sizes

Stack Size Models	DPP681-90	DPP683-120	DPP685-185	DPP689-200
Continuous Stall Torque ¹ (oz-in)	90	120	185	200
Continuous Stall Torque ¹ (Ncm)	63.55	84.73	130.63	141.22
Peak Torque ² (oz-in)	450	680	950	1100
Peak Torque ² (Ncm)	317.75	480.15	670.80	776.71
Rotor Inertia (oz-in-sec ²)	0.0230	0.0320	0.0550	0.0680
Rotor Inertia (g-cm ²)	1624.3	2259.8	3884.1	4802.2
Thermal Resistance (C / Watts)	2.8	2.8	2.0	1.6
Weight (lb)	6.0	6.5	7.0	8.0
Weight (Kg)	2.27	2.95	3.18	3.63
Length ³ (inches)	5.2	5.8	6.9	7.7
Length ³ (mm)	13.2	14.7	17.5	19.6
Number of Poles	2	2	2	2

DPP680 Winding Options

Winding Models	90V24	90V48	90V60	120V24	120V48	120V60	185V24	185V48	185V60	200V24	200V48	200V60
Design Voltage (VDC)	24	48	60	24	48	60	24	48	60	24	48	60
Continuous Current ¹ (Amps)	13	7	6	13	9	8	15	14	11	15	15	14
Peak Current ² (Amps)	64	30	25	89	45	37	90	64	54	90	74	59
Voltage Constant $\pm 10\%$ (VDC/kRPM)	5.2	11.1	13.4	5.6	11.2	13.6	5.4	10.8	13.0	5.5	11.0	13.8
Torque Constant $\pm 10\%$ (oz-in / Amp)	7.1	14.9	18.1	7.6	15.2	18.4	7.3	14.6	17.5	7.4	14.9	18.6
Torque Constant $\pm 10\%$ (Ncm / Amp)	5.014	10.522	12.781	5.367	10.734	12.993	5.155	10.310	12.358	5.226	10.522	13.134
Resistance $\pm 10\%$ (Ohms)	0.2	0.7	1.0	0.2	0.5	0.6	0.2	0.3	0.5	1.6	0.3	0.4
Inductance $\pm 10\%$ (mH)	0.5	2.1	3.0	0.5	1.8	2.8	0.0	1.5	2.1	0.3	1.2	1.9
Motor Constant (oz-in / $\sqrt{\text{Watt}}$)	14.63	18.28	18.36	17.13	21.82	23.3	17.67	23.56	26.38	18.83	28.13	27.45
Motor Constant (Nm / $\sqrt{\text{Watt}}$)	1.65	2.07	2.07	1.94	2.47	2.63	2.00	2.66	2.98	2.13	3.18	3.10
Electrical Constant (msec)	1.97	3.08	3.11	2.37	3.84	4.37	2.15	3.81	4.78	1.88	4.21	4.01
Mechanical Constant (msec)	15.22	9.74	9.66	15.44	9.51	8.35	24.93	14.03	11.19	27.17	12.17	12.78



Your Genius. Our Drive.

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