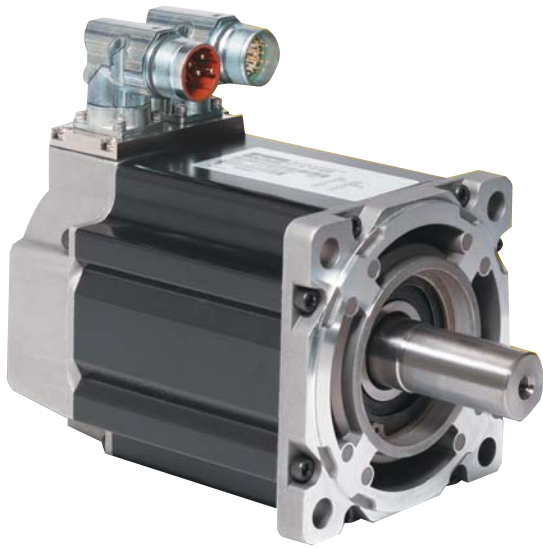




MPP / MPJ Series Servo Motors

Catalog USA

Higher Power Rotary Servo Motors, with Low and High Inertia

The “MaxPlusPlus” (MPP) series of brushless servo motors from Parker features a new design that offers lower inertia and higher power, all in a smaller motor package. These brushless servo motors are designed for the demanding applications found in today’s high-performance servo systems.

The MPP motors feature segmented core technology, which can yield up to 40% higher torque per unit size than conventionally wound servo motors. “Potted” stators improve heat transfer for better thermal efficiency, resulting in increased torque at the motor shaft. High-energy neodymium magnets are employed for higher rates of acceleration.

The “MaxPlus-J” (MPJ) series of rotary servo motors from Parker feature the same design characteristics as the MPP, but with 3 - 8 times the inertia of the standard MPP. This is a perfect solution for your applications requiring a high inertia servo motor.

Parker will customize any MPP/MPJ motor to meet your specific system requirements. Parker does customs like no one else. We are specialists at customs, offering unrivaled custom motor solutions and support.

MPP / MPJ Motor Features

- Segmented core technology - 40% higher torque
- Potted stator design - improved thermal efficiency
- Size 92, 100, 115, 142, 190, 230, and 270
- Continuous torque: 1.3 Nm (12 lb-in) to 146 Nm (1295 lb-in)
- Continuous stall torque: 1.5 Nm (14 lb-in) to 162 Nm (1434 lb-in)
- Peak torque: 5 Nm (44 lb-in) to 513 Nm (4540 lb-in)
- Brushless construction
- High-performance neodymium magnets
- Thermistor protection
- Resolver, incremental encoder, or absolute encoder (single or multi-turn)
- 24 volt failsafe brake (optional)
- “Rotatable” right angle PS-style connectors
- Optional IP65 shaft seal
- Two-year warranty
- MPJ motor features:
 - Size 92, 100, 115 and 142

Common Customizations Include:

- Shafts (longer, shorter, diameter change, hollow shafts)
- Front flange (bolt circle, pilot, NEMA dimensions)
- Motors coatings (white, PTFE, steel-it grey)
- Non-standard feedback devices
- Special Connectors
- Special stator windings



MPP / MPJ Series Servo Motors

Model	Rated Speed RPM	Rated Output kW	Rated Output HP	MPP Rotor Inertia Kg-m ² (lb-in-sec ²)	MPJ Rotor Inertia Kg-m ² (lb-in-sec ²)	Continuous Stall Torque Nm (lb-ins)	Peak torque Nm (lb-ins)	Continuous Stall Current Amps-rms	Peak Current Amps-rms	Voltage
MPP0921B	3800	0.5	0.7	.0000441 (.00039)	.0003911 (.00346)	1.5 (14)	5.0 (50)	1.8	6	230
MPP0921C	5000	0.6	0.8	.0000441 (.00039)	.0003911 (.00346)	1.6 (14)	5.0 (45)	2.9	9	230
MPP0921R	5000	0.6	0.8	.0000441 (.00039)	.0003911 (.00346)	1.6 (14)	5.0 (45)	1.4	5	460
MPP0922C	4200	1.1	1.4	.0000780 (.00069)	.0004261 (.00377)	2.9 (26)	9.3 (83)	3.7	12	230
MPP0922D	5000	1.2	1.6	.0000780 (.00069)	.0004261 (.00377)	3.1 (28)	10.0 (88)	5.6	18	230
MPP0922R	5000	1.2	1.6	.0000780 (.00069)	.0004261 (.00377)	3.1 (28)	9.8 (88)	2.8	9	460
MPP0923D	5000	1.6	2.1	.0001130 (.0010)	-	4.0 (36)	12.8 (113)	7.2	23	230
MPP0923R	5000	1.6	2.1	.0001130 (.0010)	-	4.0 (36)	12.8 (113)	3.6	11	460
MPP1002D	4900	1.6	2.1	.0002599 (.0023)	.0008238 (.00729)	4.6 (41)	14.5 (129)	7.9	25	230
MPP1002R	4900	1.5	2.0	.0002599 (.0023)	.0008238 (.00729)	4.6 (41)	14.5 (129)	3.9	12	460
MPP1003C	4200	1.8	2.4	.0003729 (.0033)	-	6.1 (54)	19.1 (170)	7.2	23	230
MPP1003D	4200	1.8	2.4	.0003729 (.0033)	-	6.0 (53)	19.1 (170)	10.3	32	230
MPP1003Q	4200	1.9	2.5	.0003729 (.0033)	-	6.3 (56)	19.9 (176)	3.9	12	460
MPP1003R	4200	1.9	2.5	.0003729 (.0033)	-	6.3 (56)	20.1 (178)	5.4	17	460
MPP1152C	4000	1.6	2.1	.0002712 (.0024)	.0010184 (.00902)	5.7 (51)	18.1 (160)	8.5	27	230
MPP1152D	4000	1.7	2.2	.0002712 (.0024)	.0010184 (.00902)	5.8 (52)	18.5 (163)	10.4	33	230
MPP1152R	4000	1.6	2.1	.0002712 (.0024)	.0001084 (.00902)	5.5 (49)	17.4 (154)	4.9	16	460
MPP1153B	3400	2.2	2.9	.0004068 (.0036)	.0011314 (.01002)	7.9 (70)	25.1 (222)	7.7	24	230
MPP1153C	4000	2.3	3.0	.0004068 (.0036)	.0011314 (.01002)	8.1 (71)	25.5 (226)	12.1	38	230
MPP1153P	3100	2.2	2.9	.0004068 (.0036)	.0011314 (.01002)	8.4 (74)	26.6 (235)	4.1	13	460
MPP1153R	4000	2.3	3.0	.0004068 (.0036)	.0011314 (.01002)	8.1 (72)	25.5 (226)	6.0	19	460
MPP1154A	1900	1.8	2.4	.0005198 (.0046)	-	9.8 (87)	31.2 (277)	5.4	17	230
MPP1154B	3800	2.7	3.5	.0005198 (.0046)	-	9.8 (87)	31.3 (277)	10.7	34	230
MPP1154P	3700	2.7	3.5	.0005198 (.0046)	-	9.8 (87)	31.2 (277)	5.4	17	460
MPP1422C	4000	3.4	4.5	.000779 (.0069)	.007204 (.06377)	11.1 (98)	35.1 (311)	14.6	46	230
MPP1422R	3800	3.3	4.5	.000779 (.0069)	.007204 (.06377)	11.1 (98)	35.1 (311)	7.3	23	460
MPP1424B	3100	5.0	6.6	.001469 (.013)	.007882 (.06978)	19.4 (172)	61.5 (544)	19.4	61	230
MPP1424C	3800	5.2	6.8	.001469 (.013)	.007882 (.06978)	19.5 (173)	61.7 (546)	24.3	77	230
MPP1424R	3700	5.2	6.8	.001469 (.013)	.007882 (.06978)	19.5 (173)	61.6 (546)	12.1	38	460
MPP1426B	3000	6.2	8.1	.002147 (.019)	.008334 (.07378)	26.0 (230)	72.1 (726)	26.2	83	230
MPP1426P	3000	6.2	8.1	.002147 (.019)	.008334 (.07378)	26.0 (230)	82.1 (726)	13.1	41	460
MPP1428P	2900	7.0	9.2	.002599 (.023)	-	33.2 (294)	105.0 (931)	16.8	53	460
MPP1428Q	2900	7.0	9.2	.002599 (.023)	-	33.4 (295)	106.0 (935)	21.0	66	460
MPP1904P	3000	8.3	10.9	.00452 (.040)	-	35.5 (315)	113.0 (996)	18.0	57	460
MPP1906B	2500	9.7	12.7	.00627 (.055)	-	47.3 (419)	150.0 (1326)	36.2	114	230
MPP1906P	3000	9.9	13.0	.00627 (.055)	-	45.9 (407)	146.0 (1288)	23.5	74	460
MPP1908N	2100	11.1	14.5	.00774 (.068)	-	62.4 (553)	198.0 (1750)	20.6	65	460
MPP1908P	2800	11.8	15.5	.00774 (.068)	-	60.1 (532)	190.0 (1684)	30.3	96	460
MPP2306N	2000	11.6	15.2	.01690 (.150)	-	80.3 (712)	255.0 (2252)	28.5	90	460
MPP2308N	1600	13.6	17.8	.02237 (.198)	-	106.5 (943)	337.0 (2985)	28.1	89	460
MPP2308P	1900	14.1	18.5	.02237 (.198)	-	105.7 (936)	335.0 (2964)	35.7	113	460
MPP2706M	1000	12.0	15.7	.02734 (.242)	-	124.8 (1105)	395.0 (3497)	24.7	78	460
MPP2706N	1400	14.4	18.9	.02734 (.242)	-	120.1 (1064)	380.3 (3366)	32.4	102	460
MPP2706P	1600	16.5	21.6	.02734 (.242)	-	120.9 (1071)	382.7 (3388)	40.5	128	460
MPP2708L	900	13.6	18.1	.0353 (.313)	-	161.9 (1433)	512.7 (4538)	26.4	84	460
MPP2708M	1300	17.8	23.3	.0353 (.313)	-	155.8 (1379)	493.1 (4364)	38.9	123	460
MPP2708N	1600	20.3	26.6	.0353 (.313)	-	153.0 (1354)	484.0 (4287)	50.1	158	460



Part Number Code:

MPP / MPJ	115	2	C		1E	-	K	PS	B
Series	Frame	Stack	Winding		Feedback Type		Shaft	Connectors	Options
			230 volt	460 volt					
MPP / MPJ	092	1	B,C	R	1E		K	PS	N
		2	C,D	R	3E		N		B
		3*	D	R	41				V
	100	2	D	R	6D				BV
		3*	C,D	Q,R	6S				
	115	2	C,D	R	9D				
		3	B,C	P,R	9S				
		4*	A,B	P					
	142	2	C	R			K		
		4	B,C	R					
		6	B	P					
		8*	--	P,Q					
MPP	190*	4	--	P					
		6	B	P					
		8	--	N,P					
	230*	6	--	N	41				
		8	--	N,P	6S				
	270*	6	--	M,N,P	9S				
		8	--	L,M,N					

* MPJ not available in these frame sizes or stack lengths. Please consult factory.

Codes:

Feedback Type:

- 1E 2000-line incremental encoder
- 3E 2000-line incremental encoder with serial interface
- 41 Single-speed resolver
- 6D Multi-turn high-resolution absolute encoder - Heidenhain EnDat
- 6S Multi-turn high resolution absolute encoder - Stegmann Hiperface®
- 9D Single-turn high-resolution absolute encoder - Heidenhain EnDat
- 9S Single-turn high resolution absolute encoder - Stegmann Hiperface®

Shaft:

- N Smooth shaft
- K Keyway

Connectors:

- PS Parker-style right-angle rotatable

Options:

- N None
- B 24 volt failsafe spring brake
- V Shaft seal - IP65



Custom Designed Servo Motors For Your Specific Application. Call 1-800-358-9070 Today.

MPP / MPJ092x, Specifications

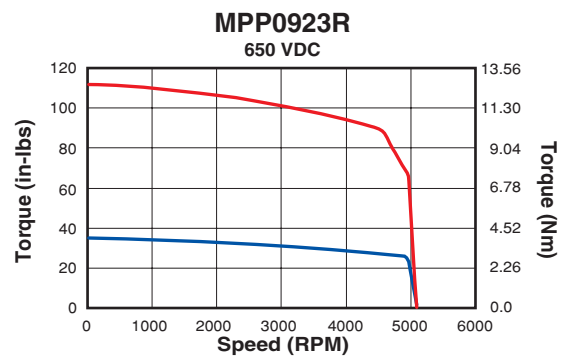
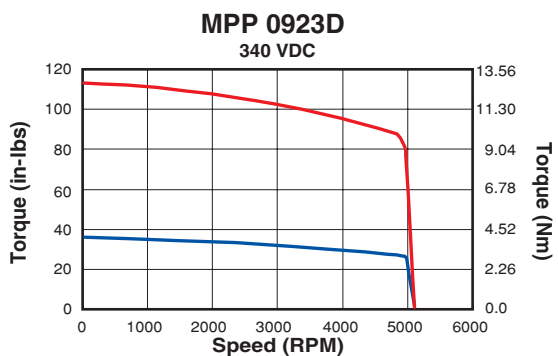
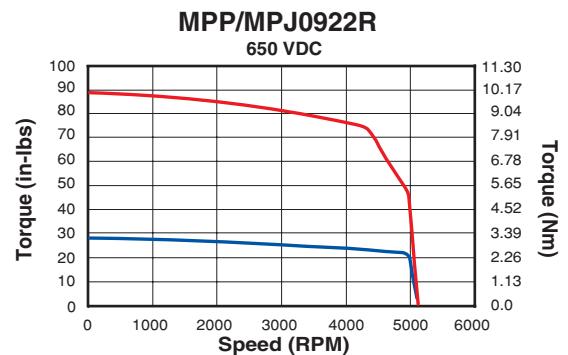
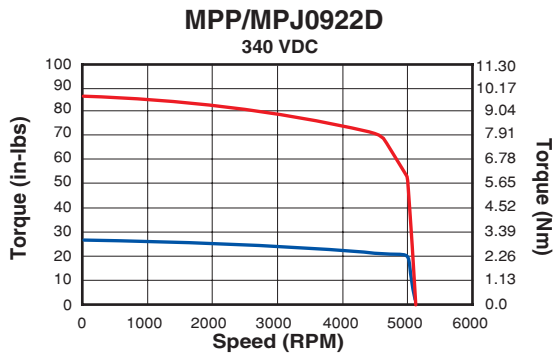
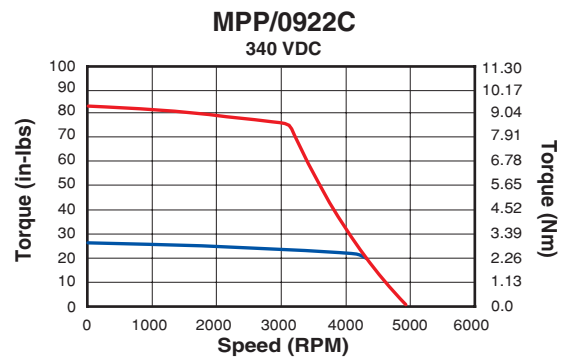
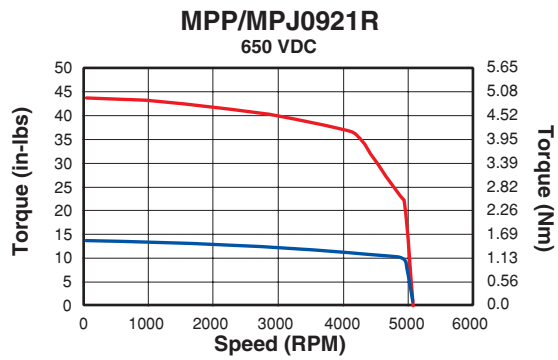
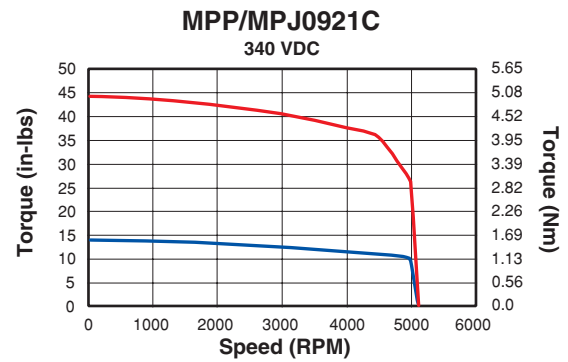
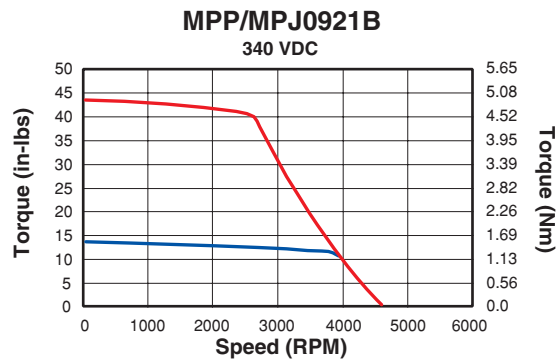
Parameter	Symbol	Units	0921B	0921C	0921R	0922C	0922D	0922R	0923D	0923R
Stall Torque Continuous ^{1,2,3}	T_{cs}	Nm	1.55	1.58	1.58	2.94	3.12	3.11	4.03	4.02
		lb-in	13.8	14.0	14.0	26.0	27.6	27.6	35.6	35.6
		oz-in	220	224	224	416	441	440	570	569
Stall Current Continuous ^{1,2,3}	$I_{cs}(rms)$	Arms/ph	1.8	2.9	1.4	3.7	5.6	2.8	7.2	3.6
Stall Current Continuous ^{1,2,3}	$I_{cs}(trap)$	Amps DC	2.2	3.5	1.7	4.6	6.8	3.4	8.9	4.4
Peak Torque	T_{pk}	Nm	4.93	5.02	5.02	9.34	9.89	9.88	12.79	12.78
		lb-in	43.6	44.5	44.4	82.7	87.6	87.5	113.2	113.1
		oz-in	698	711	710	1322	1401	1399	1811	1809
Peak Current	$I_{pk}(rms)$	Arms/ph	5.8	9.0	4.5	11.8	17.7	8.8	22.8	11.4
Peak Current	$I_{pk}(trap)$	Amps	7.1	11.1	5.5	14.4	21.6	10.8	28.0	14.0
Rated Speed ^{1,2,3}	S_r	rpm	3801	4980	4980	4194	4980	4980	4980	4980
Rated Torque ^{1,2,3}	T_r	Nm	1.31	1.17	1.16	2.43	2.38	2.38	2.99	2.98
		lb-in	11.6	10.3	10.3	21.5	21.1	21.0	26.4	26.4
		oz-in	184	165	164	344	336	336	422	422
Shaft Power @ Rated Speed ^{1,2,3}	P_{out}	kW	0.5	0.6	0.6	1.1	1.2	1.2	1.6	1.6
Current @ Rated Speed ^{1,2,3}	I_r	Arms	1.6	2.2	1.1	3.2	4.4	2.2	5.6	2.8
Voltage Constant ⁴	K_b	V/rad/s	0.70	0.46	0.91	0.65	0.46	0.92	0.46	0.92
Voltage Constant ⁴	K_e	Vrms/krpm	51.63	33.72	67.43	48.09	33.95	67.90	33.95	67.90
Torque Constant ⁴	K_t	Nm/Arms/ph	0.854	0.558	1.115	0.795	0.561	1.123	0.561	1.123
Torque Constant ⁴	K_t	oz-in/Amp DC	98.7	64.5	129.0	92.0	64.9	129.8	64.9	129.8
Resistance ^{3,4}	R	Ohm	11.00	4.52	18.12	3.90	1.73	6.94	1.20	4.81
Inductance ^{3,5}	L	mH	47	20	80	19	9	38	6	26
Maximum DC bus Voltage ⁶	V_{mbus}	VDC	340	340	650	340	340	650	340	650
Maximum AC Voltage ⁶	V_s	VAC	240	240	460	240	240	460	240	460
Thermal Res Wind-Amb ⁶	$R_{th w-a}$	°C/W	1.30	1.30	1.30	0.88	0.88	0.88	0.76	0.76
Ambient Temp at Rating	T_{amb}	°C	25	25	25	25	25	25	25	25
Max Winding Temp	T_{max}	°C	155	155	155	155	155	155	155	155
Winding Temp at Rating ⁷	T_{wr}	°C	125	125	125	125	125	125	125	125
Motor Thermal Time Constant ⁶	t_{th}	minutes	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Rotor Shaft Viscous Damping ⁶	B	Nm/krpm	0.0141	0.0141	0.0141	0.0177	0.0177	0.0177	0.0212	0.0212
Rotor Shaft Dynamic Friction ⁶	T_f	Nm	0.0085	0.0085	0.0085	0.0210	0.0210	0.0210	0.0330	0.0330
Rotor Inertia ⁶	J	kg-m ²	4.40668E-05	4.40668E-05	4.4067E-05	7.79644E-05	7.79644E-05	7.79644E-05	1.1299E-04	1.1299E-04
		lb-in-sec ²	3.9002E-04	3.9002E-04	3.9002E-04	6.9004E-04	6.9004E-04	6.9004E-04	1.0001E-03	1.0001E-03
		kg-m ²	3.911E-04	3.911E-04	3.911E-04	4.261E-04	4.261E-04	4.261E-04	-	-
MPJ Rotor Inertia		lb-in-sec ²	3.462E-03	3.462E-03	3.462E-03	3.772E-03	3.772E-03	3.772E-03	-	-
Number of rotor magnet poles ⁶	N_p	#poles	8	8	8	8	8	8	8	8
Motor Weight ⁶	#	kg	2.7	2.7	2.7	3.7	3.7	3.7	4.6	4.6
		lb	5.9	5.9	5.9	8.1	8.1	8.1	10.1	10.1
Winding Class	F	UL class	H	H	H	H	H	H	H	H
Winding Number			w00549	w00548	w00567	w00551	w00550	w00568	w00552	w00569
Environmental Protection Rating ⁸	IP		IP40 - IP65	IP40 - IP65	IP40 - IP65	IP40 - IP65	IP40 - IP65	IP40 - IP65	IP40 - IP65	IP40 - IP65

- Assumes motor is mounted to an aluminum plate with dimensions of 10" X 10" X 1/4" aluminum plate for 70mm motor frames or smaller, 12" X 12" X 1/2" for 92mm to 115mm, 12" X 12" X 1" for 142mm to 230mm motor frames, and 21"x21"x1" for 270mm to 320mm motor frames.
- Maximum winding temperature is 155° C. Thermal protection device threshold may be at a lower temperature.
- These ratings are valid for Parker drives. Other drives may not achieve the same ratings.
- ± 10%
- +/- 30% @ 1kHz
- Reference only
- The winding temperature at the motor rated speed may be lower than the winding maximum due to feedback or amplifier limitations.
- Refer to the product part number configurator for the IP rating character. All servo motors with a "V" designator in the part number for the shaft seal option are rated IP65. All other motors are rated for IP64, provided the feedback device is encased in an aluminum housing. Motors that have exposed feedback devices are rated at IP40.

Note: These specifications are based on theoretical motor performance and are not specific to any amplifier.



MPP / MPJ092x, Performance Curves



— CONTINUOUS — PEAK

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MPP / MPJ 100x, Specifications

Parameter	Symbol	Units	1002D	1002R	1003C	1003D	1003Q	1003R
Stall Torque Continuous ^{1,2,3}	T_{cs}	Nm	4.57	4.57	6.03	5.99	6.29	6.34
		lb-in	40.5	40.4	53.4	53.0	55.6	56.1
		oz-in	647	646	853	848	890	898
Stall Current Continuous ^{1,2,3}	$I_{cs}(rms)$	Arms/ph	7.9	3.9	7.2	10.3	3.9	5.4
Stall Current Continuous ^{1,2,3}	$I_{cs}(trap)$	Amps DC	9.6	4.8	8.8	12.6	4.7	6.7
Peak Torque	T_{pk}	Nm	14.51	14.50	19.15	19.03	19.97	20.14
		lb-in	128.5	128.3	169.5	168.4	176.7	178.3
		oz-in	2055	2052	2712	2694	2827	2852
Peak Current	$I_{pk}(rms)$	Arms/ph	24.9	12.4	22.8	32.5	12.3	17.2
Peak Current	$I_{pk}(trap)$	Amps	30.5	15.2	27.9	39.8	15.0	21.1
Rated Speed ^{1,2,3}	S_r	rpm	4849	4849	4194	4194	4194	4194
Rated Torque ^{1,2,3}	T_r	Nm	3.05	3.05	4.03	4.00	4.21	4.24
		lb-in	27.0	27.0	35.6	35.4	37.2	37.6
		oz-in	432	432	570	566	595	601
Shaft Power @ Rated Speed ^{1,2,3}	P_{out}	kW	1.6	1.5	1.8	1.8	1.8	1.9
Current @ Rated Speed ^{1,2,3}	I_r	Arms	5.5	2.8	5.0	7.2	2.7	3.8
Voltage Constant ⁴	K_b	V/rad/s	0.4776	0.9551	0.6877	0.4793	1.3337	0.9586
Voltage Constant ⁴	K_e	Vrms/krpm	35.36	70.72	50.92	35.49	98.76	70.98
Torque Constant ⁴	K_t	Nm/Arms/ph	0.585	1.170	0.842	0.587	1.633	1.174
Torque Constant ⁴	K_l	oz-in/Amp DC	67.62	135.24	97.38	67.87	188.85	135.74
Resistance ^{3,4}	R	Ohm	0.960	3.849	1.300	0.640	4.501	2.285
Inductance ^{3,5}	L	mH	4	17	6	3	21	11
Maximum DC bus Voltage ⁶	V_{mbus}	VDC	340	650	340	340	650	650
Maximum AC Voltage ⁶	V_s	VAC	240	460	240	240	460	460
Thermal Res Wind-Amb ⁶	$R_{th w-a}$	°C/W	0.80	0.80	0.71	0.71	0.71	0.71
Ambient Temp at Rating	T_{amb}	°C	25	25	25	25	25	25
Max Winding Temp	T_{max}	°C	155	155	155	155	155	155
Winding Temp at Rating ⁷	T_{wr}	°C	125	125	125	125	125	125
Motor Thermal Time Constant ⁶	t_{th}	minutes	40.0	40.0	40.0	40.0	40.0	40.0
Rotor Shaft Viscous Damping ⁶	B	Nm/krpm	0.0282	0.0282	0.0424	0.0424	0.0424	0.0424
Rotor Shaft Dynamic Friction ⁶	T_f	Nm	0.0318	0.0318	0.0459	0.0459	0.0459	0.0459
Rotor Inertia ⁶	J	kg-m ²	2.599E-04	2.599E-04	3.729E-04	3.729E-04	3.729E-04	3.729E-04
		lb-in-sec ²	2.300E-03	2.300E-03	3.300E-03	3.300E-03	3.300E-03	3.300E-03
		kg-m ²	8.236E-04	8.236E-04	-	-	-	-
MPJ Rotor Inertia		lb-in-sec ²	7.291E-03	7.291E-03	-	-	-	-
Number of rotor magnet poles ⁶	N_p	#poles	8	8	8	8	8	8
Motor Weight ⁶	#	kg	4.3	4.3	5.5	5.5	5.5	5.5
		lb	9.5	9.5	12.1	12.1	12.1	12.1
Winding Class	F	UL class	H	H	H	H	H	H
Winding Number			w00553	w00570	w00555	w00554	w00572	w00571
Environmental Protection Rating ⁸	IP		IP40 - IP65	IP40 - IP65	IP40 - IP65	IP40 - IP65	IP40 - IP65	IP40 - IP65

1 Assumes motor is mounted to an aluminum plate with dimensions of 10" X 10" X 1/4" aluminum plate for 70mm motor frames or smaller, 12" X 12" X 1/2" for 92mm to 115mm, 12" X 12" X 1" for 142mm to 230mm motor frames, and 21"x21"x1" for 270mm to 320mm motor frames.

2 Maximum winding temperature is 155° C. Thermal protection device threshold may be at a lower temperature.

3 These ratings are valid for Parker drives. Other drives may not achieve the same ratings.

4 ± 10%

5 ± 30% @ 1kHz

6 Reference only

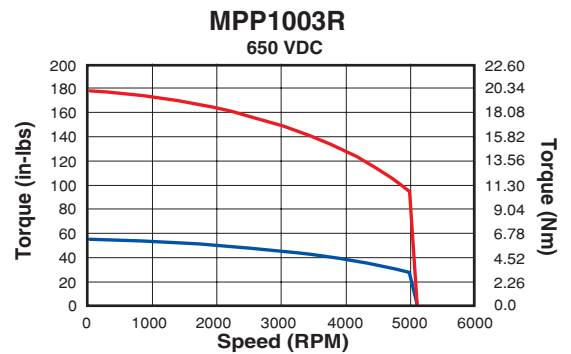
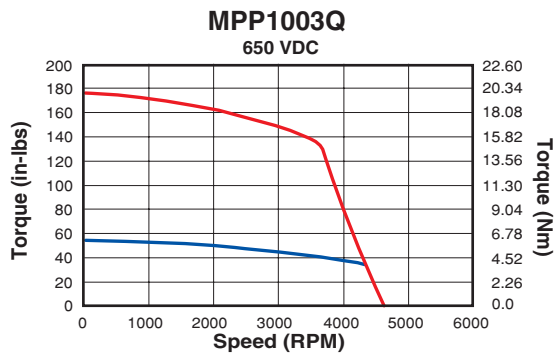
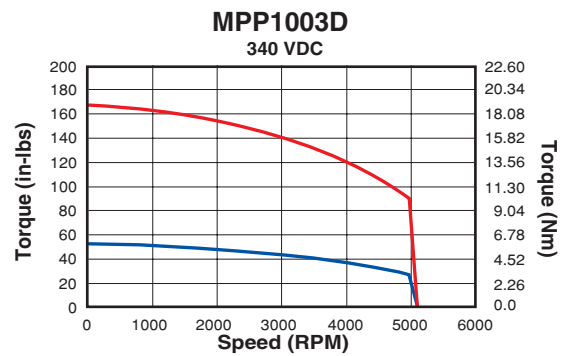
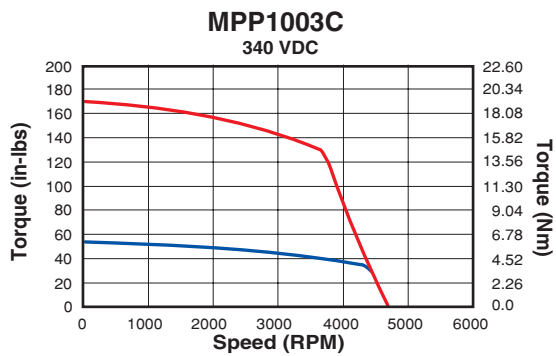
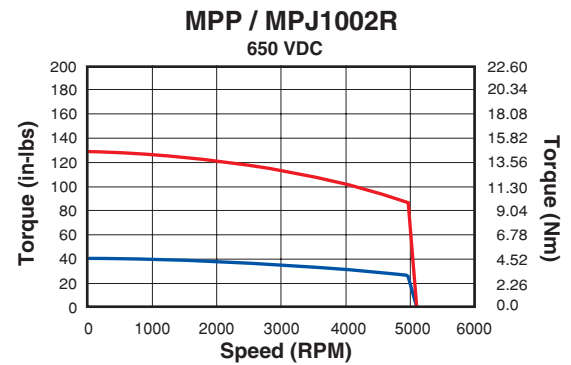
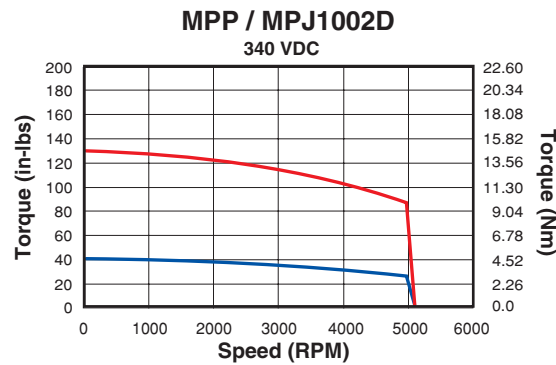
7 The winding temperature at the motor rated speed may be lower than the winding maximum due to feedback or amplifier limitations.

8 Refer to the product part number configurator for the IP rating character. All servo motors with a "V" designator in the part number for the shaft seal option are rated IP65. All other motors are rated IP64, provided the feedback device is encased in an aluminum housing. Motors that have exposed feedback devices are rated at IP40.

Note: These specifications are based on theoretical motor performance and are not specific to any amplifier.



MPP / MPJ100x, Performance Curves



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MPP / MPJ115x, Specifications

Parameter	Symbol	Units	1152C	1152D	1152R	1153B	1153C	1153P	1153R	1154A	1154B	1154P
Stall Torque Continuous ^{1,2,3}	T_{cs}	Nm	5.70	5.81	5.48	7.92	8.06	8.39	8.05	9.86	9.87	9.86
		lb-in	50.4	51.5	48.5	70.1	71.3	74.3	71.2	87.2	87.3	87.2
		oz-in	807	823	775	1122	1140	1188	1139	1395	1397	1395
Stall Current Continuous ^{1,2,3}	$I_{cs(rms)}$	Arms/ph	8.5	10.4	4.9	7.7	12.1	4.1	6.0	5.4	10.7	5.4
Stall Current Continuous ^{1,2,3}	$I_{cs(trap)}$	Amps DC	10.4	12.8	6.0	9.5	14.8	5.0	7.4	6.6	13.1	6.6
Peak Torque	T_{pk}	Nm	18.09	18.45	17.39	25.13	25.55	26.60	25.52	31.25	31.29	31.25
		lb-in	160.1	163.3	153.9	222.4	226.1	235.4	225.9	276.6	276.9	276.6
		oz-in	2561	2612	2462	3558	3617	3767	3613	4425	4430	4425
Peak Current	$I_{pk(rms)}$	Arms/ph	26.7	33.0	15.6	24.5	38.2	12.9	19.1	16.9	33.9	16.9
Peak Current	$I_{pk(trap)}$	Amps	32.7	40.4	19.1	30.0	46.8	15.9	23.4	20.7	41.5	20.7
Rated Speed ^{1,2,3}	S_r	rpm	4063	4063	4063	3407	4063	3145	4063	1864	3801	3669
Rated Torque ^{1,2,3}	T_r	Nm	3.84	3.92	3.69	6.03	5.39	6.73	5.39	6.75	6.76	6.97
		lb-in	34.0	34.7	32.6	53.3	47.7	59.6	47.7	59.8	59.9	61.7
		oz-in	544	555	521	853	763	953	762	957	957	987
Shaft Power @ Rated Speed ^{1,2,3}	P_{out}	kW	1.6	1.7	1.6	2.2	2.3	2.2	2.3	1.8	2.7	2.7
Current @ Rated Speed ^{1,2,3}	I_r	Arms	6.0	7.4	3.5	6.1	8.4	3.4	4.2	5.0	7.6	3.9
Voltage Constant ⁴	K_b	V/rad/s	0.5540	0.4570	0.9140	0.8405	0.5463	1.6810	1.0926	1.5091	0.7545	1.5091
Voltage Constant ⁴	K_e	Vrms/krpm	41.02	33.84	67.68	62.24	40.45	124.47	80.91	111.74	55.87	111.74
Torque Constant ⁴	K_t	Nm/Arms/ph	0.678	0.560	1.119	1.029	0.669	2.059	1.338	1.848	0.924	1.848
Torque Constant ⁴	K_t	oz-in/Amp DC	78.44	64.71	129.43	119.01	77.36	238.03	154.72	213.68	106.84	213.68
Resistance ^{3,4}	R	Ohm	0.880	0.576	2.592	1.200	0.491	4.285	1.967	2.600	0.648	2.600
Inductance ^{3,5}	L	mH	6	4	17	10	4	39	17	21	5	21
Maximum DC bus Voltage ⁶	V_{mbus}	VDC	340	340	650	340	340	650	650	340	340	650
Maximum AC Voltage ⁶	V_s	VAC	240	240	460	240	240	460	460	240	240	460
Thermal Res Wind-Amb ⁶	R_{th-w-a}	°C/W	0.76	0.76	0.76	0.67	0.67	0.67	0.67	0.64	0.64	0.64
Ambient Temp at Rating	T_{amb}	°C	25	25	25	25	25	25	25	25	25	25
Max Winding Temp	T_{max}	°C	155	155	155	155	155	155	155	155	155	155
Winding Temp at Rating ⁷	T_{wr}	°C	125	125	125	125	125	125	125	125	125	125
Motor Thermal Time Constant ⁶	t_{th}	minutes	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
Rotor Shaft Viscous Damping ⁶	B	Nm/krpm	0.0424	0.0424	0.0424	0.0494	0.0494	0.0494	0.0494	0.0565	0.0565	0.0565
Rotor Shaft Dynamic Friction ⁶	T_f	Nm	0.0353	0.0353	0.0353	0.0424	0.0424	0.0424	0.0424	0.0494	0.0494	0.0494
Rotor Inertia ⁶	J	kg-m ²	2.712E-04	2.712E-04	2.712E-04	4.068E-04	4.068E-04	4.068E-04	4.068E-04	5.198E-04	5.198E-04	5.198E-04
		lb-in-sec ²	2.400E-03	2.400E-03	2.400E-03	3.600E-03	3.600E-03	3.600E-03	3.600E-03	4.600E-03	4.600E-03	4.600E-03
		kg-m ²	1.018E-03	1.018E-03	1.018E-03	1.131E-03	1.131E-03	1.131E-03	1.131E-03	-	-	-
MPJ Rotor Inertia		lb-in-sec ²	9.015E-03	9.015E-03	9.015E-03	1.002E-02	1.002E-02	1.002E-02	1.002E-02	-	-	-
Number of rotor magnet poles ⁶	N_p	#poles	8	8	8	8	8	8	8	8	8	8
Motor Weight ⁶	#	kg	5.9	5.9	5.9	7.3	7.3	7.3	7.3	8.6	8.6	8.6
		lb	13.0	13.0	13.0	16.1	16.1	16.1	16.1	18.9	18.9	18.9
Winding Class	F	UL class	H	H	H	H	H	H	H	H	H	H
Winding Number			w00557	w00556	w00573	w00559	w00558	w00574	w00575	w00560	w00561	w00576
Environmental Protection Rating ⁸	IP		IP40 - IP65	IP40 - IP65	IP40 - IP65	IP40 - IP65	IP40 - IP65	IP40 - IP65	IP40 - IP65	IP40 - IP65	IP40 - IP65	IP40 - IP65

1 Assumes motor is mounted to an aluminum plate with dimensions of 10" X 10" X 1/4" aluminum plate for 70mm motor frames or smaller, 12" X 12" X 1/2" for 92mm to 115mm, 12" X 12" X 1" for 142mm to 230mm motor frames, and 21"x21"x1" for 270mm to 320mm motor frames.

2 Maximum winding temperature is 155°C. Thermal protection device threshold may be at a lower temperature.

3 These ratings are valid for Parker drives. Other drives may not achieve the same ratings.

4 ± 10%

5 ± 30% @ 1kHz

6 Reference only

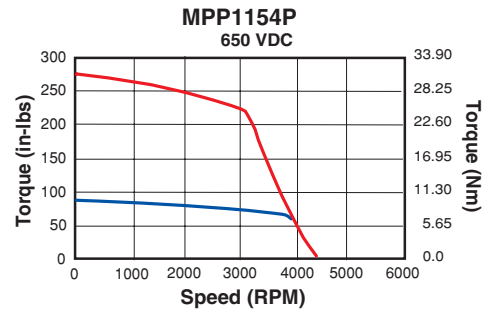
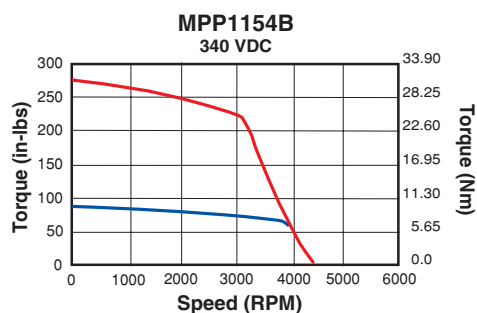
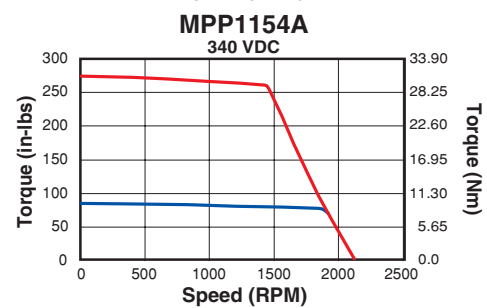
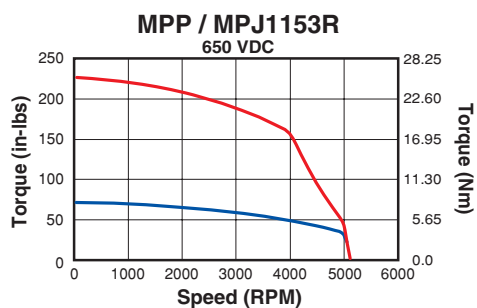
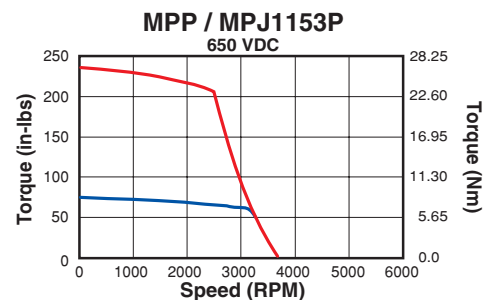
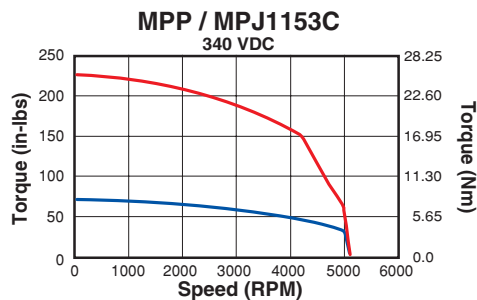
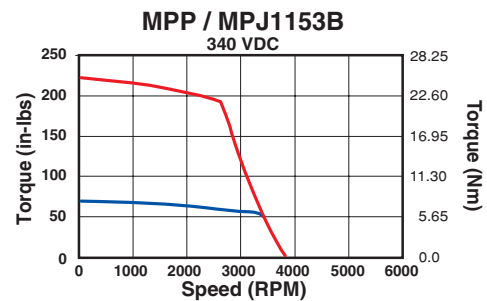
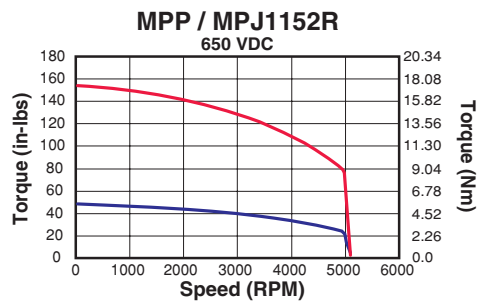
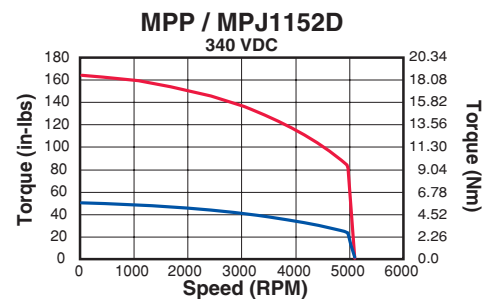
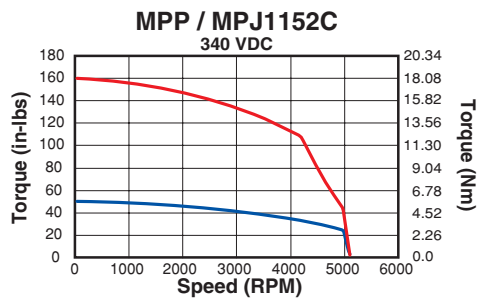
7 The winding temperature at the motor rated speed may be lower than the winding maximum due to feedback or amplifier limitations.

8 Refer to the product part number configurator for the IP rating character. All servo motors with a "V" designator in the part number for the shaft seal option are rated IP65. All other motors are rated for IP64, provided the feedback device is encased in an aluminum housing. Motors that have exposed feedback devices are rated at IP40.

Note: These specifications are based on theoretical motor performance and are not specific to any amplifier.



MPP / MPJ115x, Performance Curves



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MPP / MPJ142x, Specifications

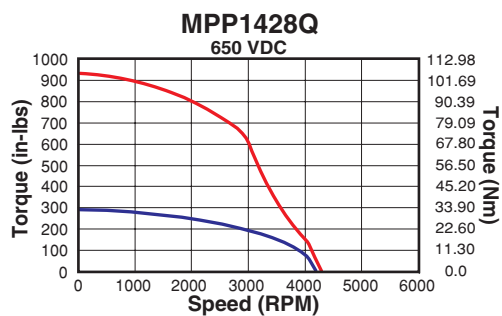
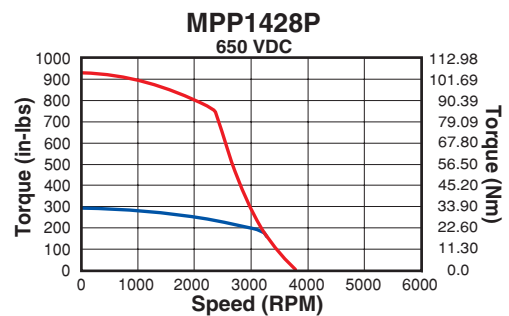
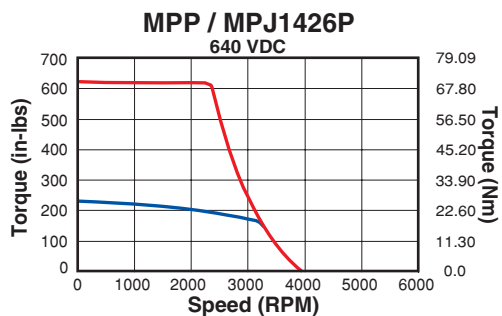
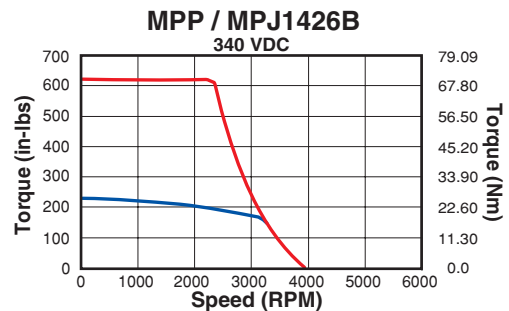
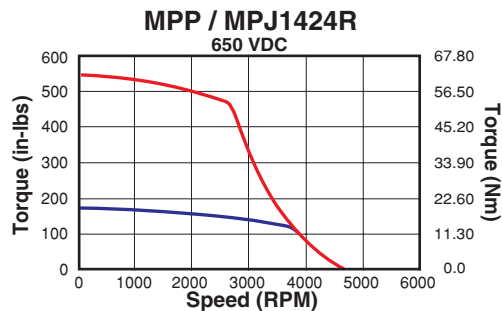
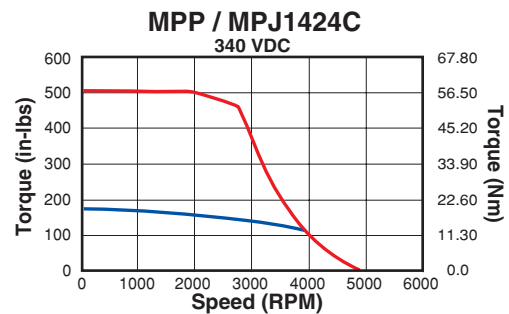
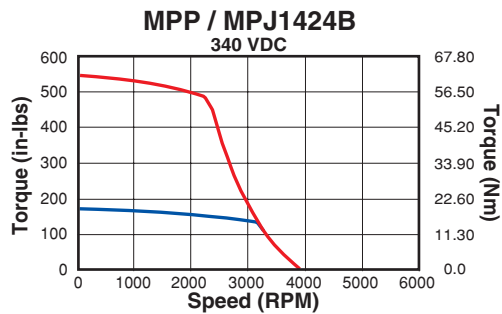
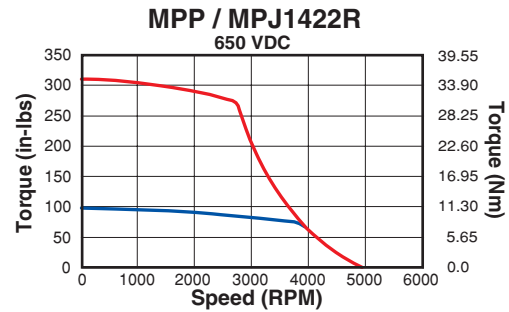
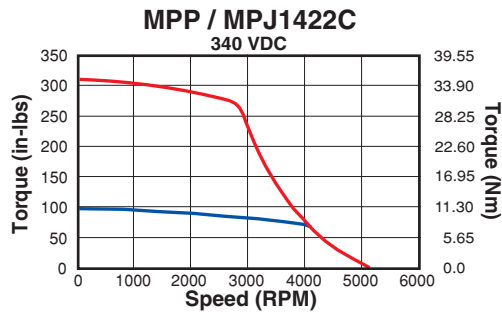
Parameter	Symbol	Units	1422C	1422R	1424B	1424C	1424R	1426B	1426P	1428P	1428Q
Stall Torque Continuous ^{1,2,3}	T_{cs}	Nm	11.08	11.07	19.42	19.50	19.48	25.96	25.93	33.23	33.37
		lb-in	98.1	98.0	171.8	172.6	172.4	229.7	229.4	294.1	295.3
		oz-in	1569	1567	2749	2761	2758	3675	3671	4705	4725
Stall Current Continuous ^{1,2,3}	$I_{cs}(rms)$	Arms/ph	14.6	7.3	19.4	24.3	12.1	26.2	13.1	16.8	21.0
Stall Current Continuous ^{1,2,3}	$I_{cs}(trap)$	Amps DC	17.9	8.9	23.7	29.8	14.9	32.1	16.0	20.5	25.8
Peak Torque	T_{pk}	Nm	35.09	35.05	61.47	61.74	61.67	82.18	82.08	105.18	105.64
		lb-in	310.6	310.2	544.0	546.4	545.7	727.3	726.4	930.9	934.9
		oz-in	4969	4963	8704	8742	8731	11636	11622	14893	14958
Peak Current	$I_{pk}(rms)$	Arms/ph	46.2	23.1	61.2	76.8	38.3	82.7	41.3	52.9	66.5
Peak Current	$I_{pk}(trap)$	Amps	56.6	28.3	74.9	94.0	47.0	101.3	50.6	64.8	81.4
Rated Speed ^{1,2,3}	S_r	rpm	4063	3801	3145	3801	3669	3145	3014	2883	2883
Rated Torque ^{1,2,3}	T_r	Nm	7.96	8.39	15.17	13.16	13.61	18.93	19.5	23.15	23.25
		lb-in	70.4	74.2	134.2	116.4	120.4	167.5	172.5	204.9	205.8
		oz-in	1127	1187	2147	1862	1926	2679	2760	3277	3292
Shaft Power @ Rated Speed ^{1,2,3}	P_{out}	kW	3.4	3.3	5.0	5.2	5.2	6.2	6.2	7.0	7.0
Current @ Rated Speed ^{1,2,3}	I_r	Arms	10.8	5.7	15.4	16.8	8.7	19.5	10.0	11.9	15.0
Voltage Constant ⁴	K_b	V/rad/s	0.6208	1.2416	0.8214	0.6571	1.3142	0.8118	1.6237	1.6237	1.2989
Voltage Constant ⁴	K_e	Vrms/krpm	45.97	91.94	60.82	48.66	97.32	60.12	120.23	120.23	96.18
Torque Constant ⁴	K_t	Nm/Arms/ph	0.760	1.521	1.006	0.805	1.610	0.994	1.989	1.989	1.591
Torque Constant ⁴	K_t	oz-in/Amp DC	87.91	175.82	116.31	93.05	186.10	114.96	229.91	229.91	183.93
Resistance ^{3,4}	R	Ohm	0.396	1.588	0.264	0.167	0.672	0.162	0.650	0.440	0.279
Inductance ^{3,5}	L	mH	6	23	5	3	12	3	13	9	6
Maximum DC bus Voltage ⁶	V_{mbus}	VDC	340	650	340	340	650	340	650	650	650
Maximum AC Voltage ⁶	V_s	VAC	240	460	240	240	460	240	460	460	460
Thermal Res Wind-Amb ⁶	$R_{th} w-a$	°C/W	0.57	0.57	0.48	0.48	0.48	0.43	0.43	0.39	0.39
Ambient Temp at Rating	T_{amb}	°C	25	25	25	25	25	25	25	25	25
Max Winding Temp	T_{max}	°C	155	155	155	155	155	155	155	155	155
Winding Temp at Rating ⁷	T_{wr}	°C	125	125	125	125	125	125	125	125	125
Motor Thermal Time Constant ⁶	t_{th}	minutes	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
Rotor Shaft Viscous Damping ⁶	B	Nm/krpm	0.0565	0.0565	0.0847	0.0847	0.0847	0.1130	0.1130	0.1695	0.1695
Rotor Shaft Dynamic Friction ⁶	T_f	Nm	0.0353	0.0353	0.0530	0.0530	0.0530	0.0706	0.0706	0.0847	0.0847
Rotor Inertia ⁶	J	kg-m ²	7.796E-04	7.796E-04	1.469E-03	1.469E-03	1.469E-03	2.147E-03	2.147E-03	2.599E-03	2.599E-03
		lb-in-sec ²	6.900E-03	6.900E-03	1.300E-02	1.300E-02	1.300E-02	1.900E-02	1.900E-02	2.300E-02	2.300E-02
		kg-m ²	7.204E-03	7.204E-03	7.882E-03	7.882E-03	7.882E-03	8.334E-03	8.334E-03	-	-
MPJ Rotor Inertia		lb-in-sec ²	6.377E-02	6.377E-02	6.978E-02	6.978E-02	6.978E-02	7.378E-02	7.378E-02	-	-
Number of rotor magnet poles ⁶	N_p	#poles	8	8	8	8	8	8	8	8	8
Motor Weight ⁶	#	kg	9.8	9.8	17.6	17.6	17.6	20.2	20.2	25.3	25.3
		lb	21.6	21.6	38.7	38.7	38.7	44.4	44.4	55.9	55.9
Winding Class	F	UL class	H	H	H	H	H	H	H	H	H
Winding Number			w00562	w00577	w00564	w00563	w00578	w00565	w00579	w00581	w00580
Environmental Protection Rating ⁸	IP		IP40 - IP65	IP40 - IP65	IP40 - IP65	IP40 - IP65	IP40 - IP65	IP40 - IP65	IP40 - IP65	IP40 - IP65	IP40 - IP65

- Assumes motor is mounted to an aluminum plate with dimensions of 10" X 10" X 1/4" aluminum plate for 70mm motor frames or smaller, 12" X 12" X 1/2" for 92mm to 115mm, 12" X 12" X 1" for 142mm to 230mm motor frames, and 21"x21"x1" for 270mm to 320mm motor frames.
- Maximum winding temperature is 155° C. Thermal protection device threshold may be at a lower temperature.
- These ratings are valid for Parker drives. Other drives may not achieve the same ratings.
- ± 10%
- +/- 30% @ 1kHz
- Reference only
- The winding temperature at the motor rated speed may be lower than the winding maximum due to feedback or amplifier limitations.
- Refer to the product part number configurator for the IP rating character. All servo motors with a "V" designator in the part number for the shaft seal option are rated IP65. All other motors are rated for IP64, provided the feedback device is encased in an aluminum housing. Motors that have exposed feedback devices are rated at IP40.

Note: These specifications are based on theoretical motor performance and are not specific to any amplifier.



MPP / MPJ142x, Performance Curves



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MPP190x, Specifications

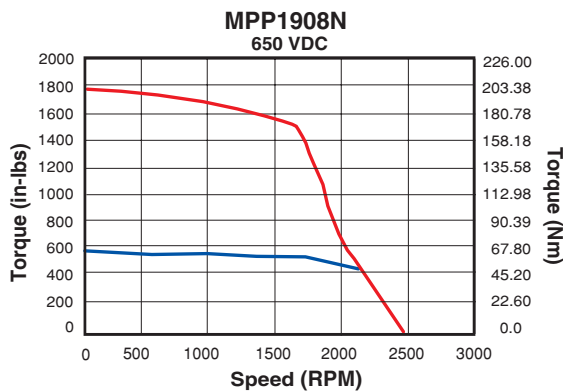
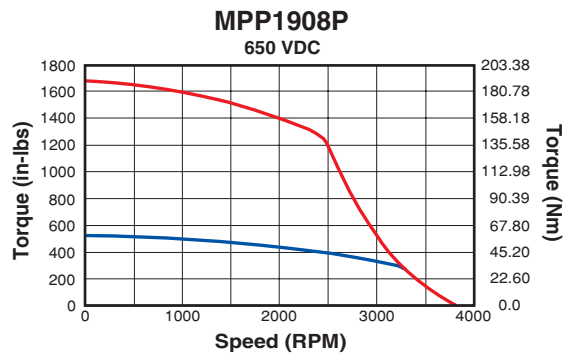
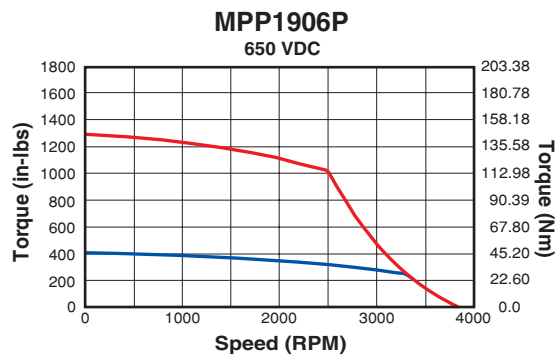
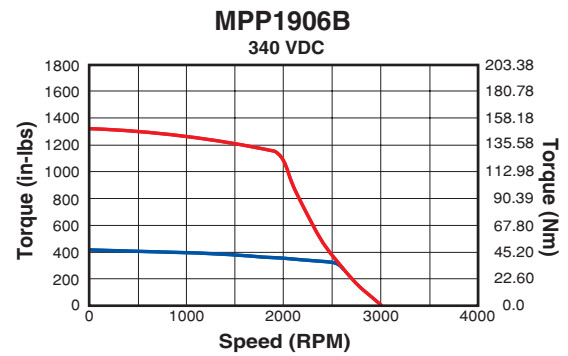
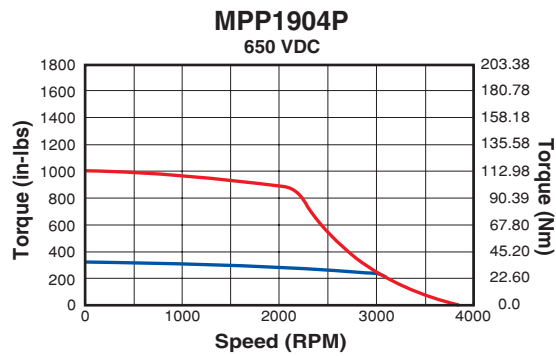
Parameter	Symbol	Units	1904P	1906B	1906P	1908N	1908P
Stall Torque Continuous ^{1,2,3}	T_{cs}	Nm	35.54	47.29	45.93	62.43	60.06
		lb-in	314.5	418.5	406.5	552.5	531.5
		oz-in	5031	6696	6503	8839	8504
Stall Current Continuous ^{1,2,3}	$I_{cs}(rms)$	Arms/ph	18.1	36.2	23.5	20.6	30.3
Stall Current Continuous ^{1,2,3}	$I_{cs}(trap)$	Amps DC	22.2	44.4	28.7	25.2	37.1
Peak Torque	T_{pk}	Nm	112.52	149.78	145.48	197.73	190.24
		lb-in	995.8	1325.5	1287.5	1749.9	1683.6
		oz-in	15933	21208	20599	27998	26938
Peak Current	$I_{pk}(rms)$	Arms/ph	57.3	114.4	74.1	65.1	95.8
Peak Current	$I_{pk}(trap)$	Amps	70.2	140.2	90.8	79.7	117.3
Rated Speed ^{1,2,3}	S_r	rpm	3014	2512	3014	2075	2752
Rated Torque ^{1,2,3}	T_r	Nm	26.33	36.80	31.22	50.91	40.81
		lb-in	233.0	325.7	276.3	450.5	361.1
		oz-in	3728	5211	4420	7208	5778
Shaft Power @ Rated Speed ^{1,2,3}	P_{out}	kW	8.3	9.7	9.9	11.1	11.8
Current @ Rated Speed ^{1,2,3}	I_r	Arms	13.6	28.5	16.2	17.0	20.9
Voltage Constant ⁴	K_b	V/rad/s	1.6046	1.0697	1.6046	2.4833	1.6237
Voltage Constant ⁴	K_v	Vrms/krpm	118.82	79.21	118.82	183.88	120.23
Torque Constant ⁴	K_t	Nm/Arms/ph	1.965	1.310	1.965	3.041	1.989
Torque Constant ⁴	K_t	oz-in/Amp DC	227.21	151.47	227.21	351.63	229.91
Resistance ^{3,4}	R	Ohm	0.348	0.108	0.258	0.376	0.174
Inductance ^{3,5}	L	mH	9	2	6	10	4
Maximum DC bus Voltage ⁶	V_{mbus}	VDC	650	340	650	650	650
Maximum AC Voltage ⁶	V_s	VAC	460	240	460	460	460
Thermal Res Wind-Amb ⁶	$R_{th,w-a}$	°C/W	0.42	0.34	0.34	0.30	0.30
Ambient Temp at Rating	T_{amb}	°C	25	25	25	25	25
Max Winding Temp	T_{max}	°C	155	155	155	155	155
Winding Temp at Rating ⁷	T_{wr}	°C	125	125	125	125	125
Motor Thermal Time Constant ⁶	t_{th}	minutes	120.0	120.0	120.0	120.0	120.0
Rotor Shaft Viscous Damping ⁶	B	Nm/krpm	0.1130	0.1695	0.1695	0.2260	0.2260
Rotor Shaft Dynamic Friction ⁶	T_f	Nm	0.1059	0.1589	0.1589	0.2119	0.2119
Rotor Inertia ⁸	J	kg-m ²	4.520E-03	6.271E-03	6.271E-03	7.740E-03	7.740E-03
		lb-in-sec ²	4.000E-02	5.550E-02	5.550E-02	6.850E-02	6.850E-02
Number of rotor magnet poles ⁶	N_p	#poles	8	8	8	8	8
Motor Weight ⁶	#	kg	26.7	35.0	35.0	40.4	40.4
		lb	59.0	94.5	94.5	89.0	89.0
Winding Class	F	UL class	H	H	H	H	H
Winding Number			w00582	w00566	w00583	w00584	w00585
Environmental Protection Rating ⁸	IP		IP40 - IP65	IP40 - IP65	IP40 - IP65	IP40 - IP65	IP40 - IP65

- Assumes motor is mounted to an aluminum plate with dimensions of 10" X 10" X 1/4" aluminum plate for 70mm motor frames or smaller, 12" X 12" X 1/2" for 92mm to 115mm, 12" X 12" X 1" for 142mm to 230mm motor frames, and 21"x21"x1 for 270mm to 320mm motor frames.
- Maximum winding temperature is 155°C. Thermal protection device threshold may be at a lower temperature.
- These ratings are valid for Parker drives. Other drives may not achieve the same ratings.
- + 10%
- +/- 30% @ 1kHz
- Reference only
- The winding temperature at the motor rated speed may be lower than the winding maximum due to feedback or amplifier limitations.
- Refer to the product part number configurator for the IP rating character. All servo motors with a "V" designator in the part number for the shaft seal option are rated IP65. All other motors are rated for IP64, provided the feedback device is encased in an aluminum housing. Motors that have exposed feedback devices are rated at IP40.

Note: These specifications are based on theoretical motor performance and are not specific to any amplifier.



MPP190x, Performance Curves



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MPP230x, Specifications

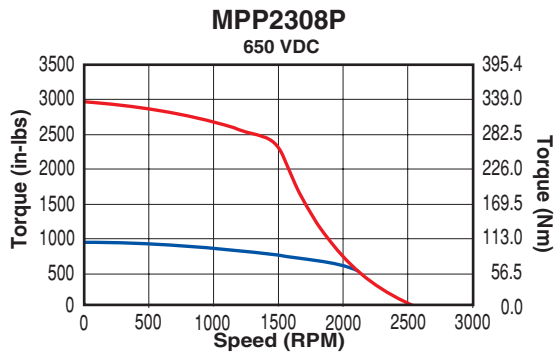
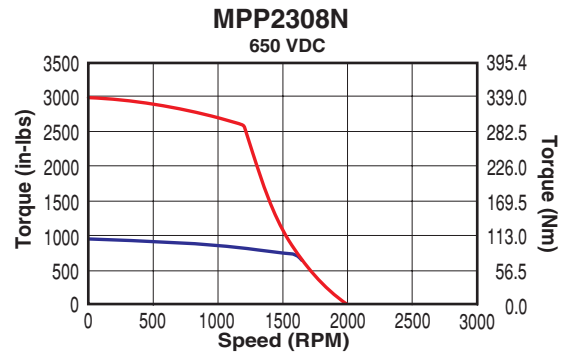
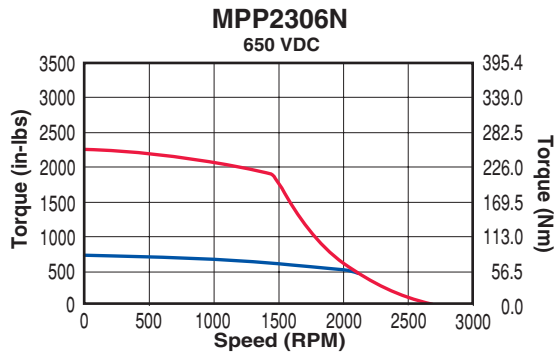
Parameter	Symbol	Units	2306N	2308N	2308P
Stall Torque Continuous ^{1,2,3}	T_{cs}	Nm lb-in oz-in	80.39 711.5 11383	106.51 942.6 15081	105.77 936.1 14977
Stall Current Continuous ^{1,2,3}	$I_{cs}(rms)$	Arms/ph	28.5	28.1	35.7
Stall Current Continuous ^{1,2,3}	$I_{cs}(trap)$	Amps DC	34.9	34.4	43.7
Peak Torque	T_{pk}	Nm lb-in oz-in	254.51 2252.4 36038	337.26 2984.7 47755	334.93 2964.1 47426
Peak Current	$I_{pk}(rms)$	Arms/ph	90.0	88.8	112.7
Peak Current	$I_{pk}(trap)$	Amps	110.2	108.8	138.1
Rated Speed ^{1,2,3}	S_r	rpm	2039	1584	1868
Rated Torque ^{1,2,3}	T_r	Nm lb-in oz-in	54.38 481.3 7700	81.99 725.6 11609	71.86 635.9 10175
Shaft Power @ Rated Speed ^{1,2,3}	P_{out}	kW	11.6	13.6	14.1
Current @ Rated Speed ^{1,2,3}	I_r	Arms	19.5	21.9	24.6
Voltage Constant ⁴	K_b	V/rad/s	2.3114	3.1041	2.4280
Voltage Constant ⁴	K_e	Vrms/krpm	171.45	229.85	179.79
Torque Constant ⁴	K_t	Nm/Arms/ph	2.831	3.802	2.974
Torque Constant ⁴	K_t	oz-in/Amp DC	327.29	439.54	343.80
Resistance ^{3,4}	R	Ohm	0.164	0.207	0.128
Inductance ^{3,5}	L	mH	8	10	6
Maximum DC bus Voltage ⁶	V_{mbus}	VDC	650	650	650
Maximum AC Voltage ⁶	V_s	VAC	460	460	460
Thermal Res Wind-Amb ⁶	$R_{th} w-a$	°C/W	0.36	0.29	0.29
Ambient Temp at Rating	T_{amb}	°C	25	25	25
Max Winding Temp	T_{max}	°C	155	155	155
Winding Temp at Rating ⁷	T_{wr}	°C	125	125	125
Motor Thermal Time Constant ⁶	t_{th}	minutes	150.0	150.0	150.0
Rotor Shaft Viscous Damping ⁶	B	Nm/krpm	0.3531	0.4943	0.4943
Rotor Shaft Dynamic Friction ⁶	T_f	Nm	0.2119	0.3178	0.3178
Rotor Inertia ⁶	J	kg-m ² lb-in-sec ²	1.695E-02 1.500E-01	2.237E-02 1.980E-01	2.237E-02 1.980E-01
Number of rotor magnet poles ⁶	N_p	#poles	8	8	8
Motor Weight ⁶	#	kg lb	57.2 126.1	72.5 159.9	72.5 159.9
Winding Class	F	UL class	H	H	H
Winding Number			w00586	w00587	w00588
Environmental Protection Rating ⁸	IP		IP40 - IP65	IP40 - IP65	IP40 - IP65

- Assumes motor is mounted to an aluminum plate with dimensions of 10" X 10" X 1/4" aluminum plate for 70mm motor frames or smaller, 12" X 12" X 1/2" for 92mm to 115mm, 12" X 12" X 1" for 142mm to 230mm motor frames, and 21"x21"x1" for 270mm to 320mm motor frames.
- Maximum winding temperature is 155°C. Thermal protection device threshold may be at a lower temperature.
- These ratings are valid for Parker drives. Other drives may not achieve the same ratings.
- ± 10%
- ± 30% @ 1kHz
- Reference only
- The winding temperature at the motor rated speed may be lower than the winding maximum due to feedback or amplifier limitations.
- Refer to the product part number configurator for the IP rating character. All servo motors with a "V" designator in the part number for the shaft seal option are rated IP65. All other motors are rated for IP64, provided the feedback device is encased in an aluminum housing. Motors that have exposed feedback devices are rated at IP40.

Note: These specifications are based on theoretical motor performance and are not specific to any amplifier.



MPP230x, Performance Curves



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MPP270x, Specifications

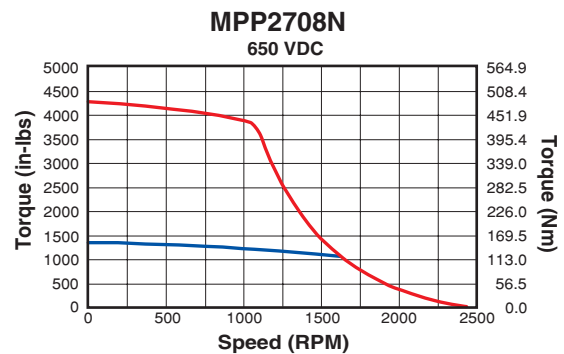
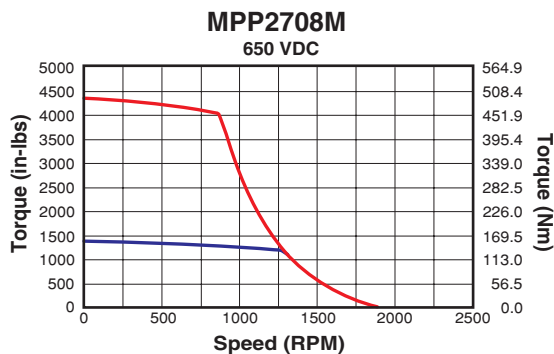
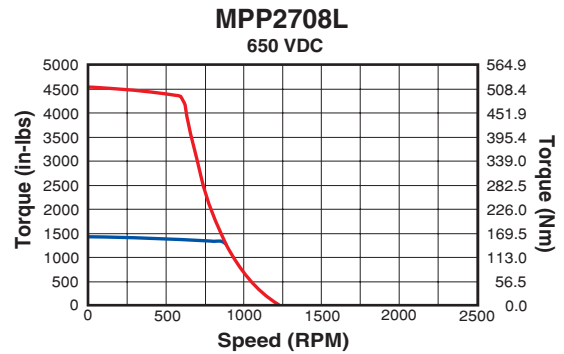
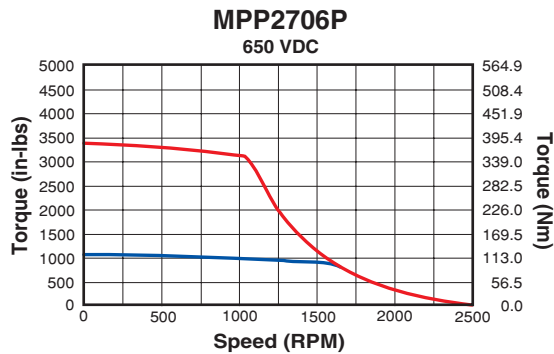
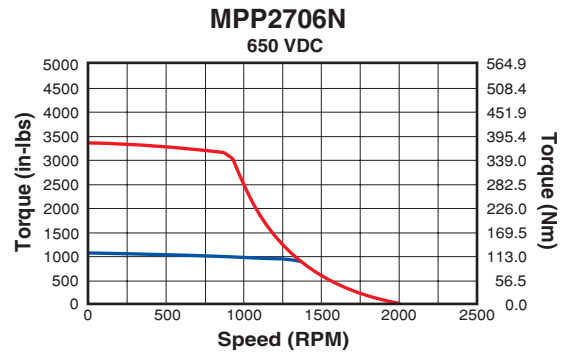
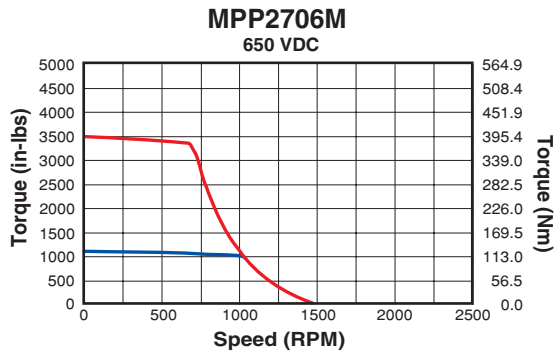
Parameter	Symbol	Units	2706M	2706N	2706P	2708L	2708M	2708N
Stall Torque Continuous ^{1,2,3}	T_{cs}	Nm	124.84	120.17	120.94	161.96	155.76	153.00
		lb-in	1104.8	1063.5	1070.3	1433.4	1378.5	1354.1
		oz-in	17677	17015	17124	22934	22055	21664
Stall Current Continuous ^{1,2,3}	$I_{cs}(rms)$	Arms/ph	24.7	32.4	40.5	26.4	38.9	50.0
Stall Current Continuous ^{1,2,3}	$I_{cs}(trap)$	Amps DC	30.3	39.6	49.6	32.4	47.7	61.2
Peak Torque	T_{pk}	Nm	395.10	380.33	382.77	512.72	493.12	484.40
		lb-in	3496.6	3365.9	3387.5	4537.6	4364.1	4286.9
		oz-in	55946	53855	54200	72601	69825	68590
Peak Current	$I_{pk}(rms)$	Arms/ph	78.1	102.2	128.1	83.6	123.0	157.9
Peak Current	$I_{pk}(trap)$	Amps	95.6	125.2	156.9	102.3	150.7	193.4
Rated Speed ^{1,2,3}	S_r	rpm	1001	1365	1591	885	1274	1638
Rated Torque ^{1,2,3}	T_r	Nm	114.89	101.22	98.93	146.68	133.72	118.49
		lb-in	1016.8	895.8	875.5	1298.1	1183.4	1048.7
		oz-in	16268.3	14333.3	14007.9	20769.2	18934.9	16778.5
Shaft Power @ Rated Speed ^{1,2,3}	P_{out}	kW	12.0	14.5	16.5	13.6	17.8	20.3
Current @ Rated Speed ^{1,2,3}	I_r	Arms	22.8	27.5	33.5	24.1	33.7	39.1
Voltage Constant ⁴	K_b	V/rad/s	4.1356	3.0394	2.4415	5.0143	3.2760	2.5072
Voltage Constant ⁴	K_e	Vrms/krpm	306.24	225.06	180.79	371.30	242.50	185.65
Torque Constant ⁴	K_t	Nm/Arms/ph	5.065	3.723	2.990	6.141	4.012	3.071
Torque Constant ⁴	K_t	oz-in/Amp DC	585.60	430.38	345.72	710.03	463.89	355.01
Resistance ^{3,4}	R	Ohm	0.343	0.200	0.127	0.347	0.160	0.097
Inductance ^{3,5}	L	mH	25	13	9	26	11	7
Maximum DC bus Voltage ⁶	V_{mbus}	VDC	650	650	650	650	650	650
Maximum AC Voltage ⁶	V_s	VAC	460	460	460	460	460	460
Thermal Res Wind-Amb ⁶	$R_{th,w-a}$	°C/W	0.23	0.23	0.23	0.20	0.20	0.20
Ambient Temp at Rating	T_{amb}	°C	25	25	25	25	25	25
Max Winding Temp	T_{max}	°C	155	155	155	155	155	155
Winding Temp at Rating ⁷	T_{wr}	°C	125	125	125	125	125	125
Motor Thermal Time Constant ⁶	t_{th}	minutes	180.0	180.0	180.0	180.0	180.0	180.0
Rotor Shaft Viscous Damping ⁶	B	Nm/krpm	0.5296	0.5296	0.5296	0.7061	0.7061	0.7061
Rotor Shaft Dynamic Friction ⁶	T_f	Nm	0.2825	0.2825	0.2825	0.4237	0.4237	0.4237
Rotor Inertia ⁸	J	kg-m ²	2.734E-02	2.734E-02	2.734E-02	3.537E-02	3.537E-02	3.537E-02
		lb-in-sec ²	2.420E-01	2.420E-01	2.420E-01	3.130E-01	3.130E-01	3.130E-01
Number of rotor magnet poles ⁶	N_p	#poles	8	8	8	8	8	8
Motor Weight ⁶	#	kg	75.8	75.8	75.8	94.3	94.3	94.3
		lb	167.2	167.2	167.2	207.9	207.9	207.9
Winding Class	F	UL class	H	H	H	H	H	H
Winding Number			w00589	w00590	w00591	w00592	w00593	w00594
Environmental Protection Rating ⁸	IP		IP40 - IP65	IP40 - IP65	IP40 - IP65	IP40 - IP65	IP40 - IP65	IP40 - IP65

- Assumes motor is mounted to an aluminum plate with dimensions of 10" X 10" X 1/4" aluminum plate for 70mm motor frames or smaller, 12" X 12" X 1/2" for 92mm to 115mm, 12" X 12" X 1" for 142mm to 230mm motor frames, and 21"x21"x1" for 270mm to 320mm motor frames.
- Maximum winding temperature is 155° C. Thermal protection device threshold may be at a lower temperature.
- These ratings are valid for Parker drives. Other drives may not achieve the same ratings.
- + 10%
- +/- 30% @ 1kHz
- Reference only
- The winding temperature at the motor rated speed may be lower than the winding maximum due to feedback or amplifier limitations.
- Refer to the product part number configurator for the IP rating character. All servo motors with a "V" designator in the part number for the shaft seal option are rated IP65. All other motors are rated for IP64, provided the feedback device is encased in an aluminum housing. Motors that have exposed feedback devices are rated at IP40.

Note: These specifications are based on theoretical motor performance and are not specific to any amplifier.



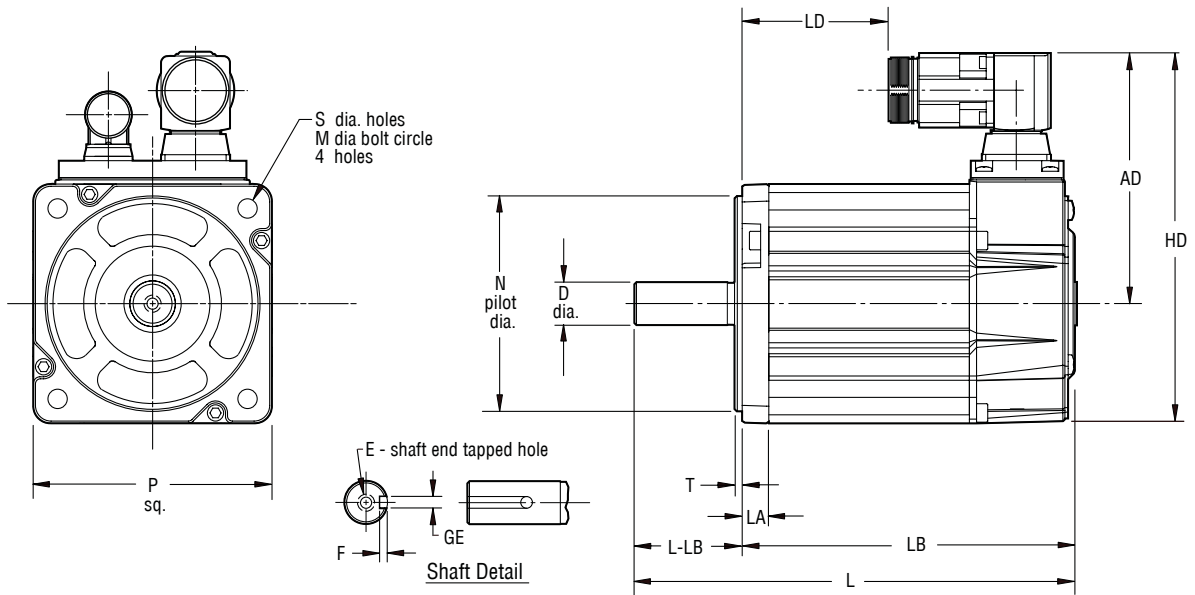
MPP270x, Performance Curves



— CONTINUOUS — PEAK

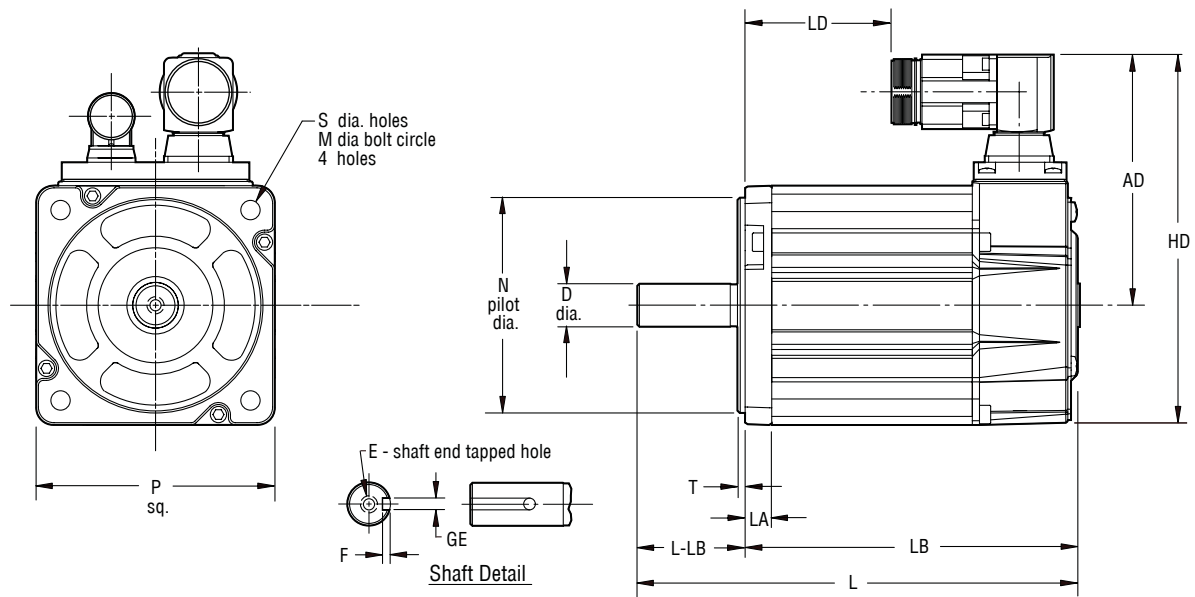
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MPP / MPJ Series Servo Motors



MPP / MPJ Dimensions Units: mm (in)

Motor Series	AD	HD	T	LA	LD*	L*	LB*	L-LB
MPP0921	92.0 (3.62)	136.4 (5.37)	2.9 (0.11)	9.9 (0.39)	64.2 (2.52)	167.0 (6.57)	127.2 (5.01)	40.1 (1.58)
MPP0922 / MPJ0921					90.2 (3.55)	193.0 (7.59)	152.6 (6.01)	
MPP0923 / MPJ0922					115.2 (4.53)	218.0 (8.58)	178.0 (7.01)	
MPP1002	94.9 (3.73)	143.8 (5.66)	2.9 (0.11)	10.2 (0.40)	86.2 (3.39)	189.2 (7.45)	149.1 (5.87)	40.2 (1.58)
MPP1003 / MPJ1002					111.2 (4.37)	219.2 (8.43)	174.5 (6.87)	
MPP1152	102.5 (4.04)	159.0 (6.26)	3.4 (0.13)	12.2 (0.48)	89.2 (3.51)	202.6 (7.97)	152.4 (6.00)	50.6 (1.99)
MPP1153 / MPJ1152					115.2 (4.53)	228.6 (9.00)	177.8 (7.00)	
MPP1154 / MPJ1153					140.2 (5.52)	253.6 (9.98)	203.2 (8.00)	
MPP1422	117.45 (4.62)	188.8 (7.45)	3.4 (0.13)	14.0(0.55)	109.9 (4.32)	233.4(9.18)	172.9 (6.81)	60.4 (2.38)
MPP1424 / MPJ1422					160.8 (6.33)	284.4 (11.19)	223.7 (8.81)	
MPP1426 / MPJ1424					211.9 (8.34)	335.4 (13.21)	274.5 (10.81)	
MPP1428 / MPJ1426					261.9 (10.31)	385.8 (15.19)	325.3 (12.81)	
	D	M	S	N	P	F	GE	E
MPP0921	16.007 (0.6302) 15.996 (0.6298)	100.0 (3.940)	7.0 (0.28)	80.012 (3.1501) 79.993 (3.1493)	88.8 (3.50)	3.0 (0.12)	5.0 (0.20)	M5 X 0.8 12.5 dp.
MPP0922 / MPJ0921								
MPP0923 / MPJ0922								
MPP1002	19.006 (0.7483) 18.996 (0.7489)	115.0 (4.528)	10.0 (0.41)	95.013 (3.7407) 94.991 (3.7398)	97.8 (3.85)	3.5 (0.14)	6.0(0.24)	M6 X 1.0 16 dp.
MPP1003 / MPJ1002								
MPP1152	24.005 (0.9451) 23.997 (0.9448)	130.0 (5.118)	10.0 (0.41)	110.013 (4.3312) 109.991 (4.3303)	113.0 (4.45)	4.0 (0.15)	8.0(0.31)	M8 X 1.25 19 dp.
MPP1153 / MPJ1152								
MPP1154 / MPJ1154								
MPP1422	28.006 (1.1026) 27.998 (1.1023)	165.0 (6.496)	12.0 (0.48)	130.014 (5.1187) 129.989 (5.1178)	142.7 (5.62)	4.1 (0.16)	8.0(0.13)	M10 X1.56 22 dp.
MPP1424 / MPJ1422								
MPP1426 / MPJ1424								
MPP1428 / MPJ1426								



MPP Dimensions Units: mm (in)

Motor Series	AD	HD	T	LA	LD *	L *	LB *	L-LB
MPP1904	167.6 (6.60)	260.1 (10.24)	3.9 (0.15)	17.8 (0.70)	110.3 (4.34)	304.1 (11.97)	224.0 (8.81)	80.1 (3.15)
MPP1906					161.3 (6.35)	355.1 (13.98)	275.0 (10.81)	
MPP1908					211.3 (8.32)	405.1 (15.94)	325.3 (12.81)	
MPP2306	186.0 (7.32)	303.4 (11.95)	3.9 (0.15)	20.3 (0.80)	165.0 (6.50)	394.4 (15.53)	284.4 (11.20)	110.0 (4.33)
MPP2308					216.2 (8.50)	445.2 (17.53)	335.2 (13.20)	
MPP2706	203.0 (7.99)	335.9 (13.23)	4.9 (0.19)	22.9 (0.90)	175.3 (6.90)	403.4 (15.88)	293.3 (11.55)	110.0 (4.33)
MPP2708					225.5 (8.90)	581.1 (17.88)	344.1 (13.55)	
	D	M	S	N	P	F	GE	E
MPP1904	38.016 (1.4967) 38.001 (1.4961)	215.0 (8.465)	14.5 (0.57)	180.014 (7.0872) 179.989 (7.0862)	184.9 (7.28)	5.1 (0.20)	10.0 (0.39)	M12 X 1.75 28 dp.
MPP1906								
MPP1908								
MPP2306	42.018 (1.6542) 42.002 (1.6536)	265.0 (10.43)	14.5 (0.57)	230.014 (9.0557) 229.987 (9.0546)	235.0 (9.25)	5.1 (0.20)	12.0 (0.47)	M16 X 2.0 dp. 46 dp.
MPP2308								
MPP2706	48.01 (1.8905) 48.002 (1.8898)	300.0 (11.81)	18.8 (0.74)	250.016 (9.8431) 249.987 (9.8419)	266.7 (10.50)	5.6 (0.22)	14.0 (0.55)	M16 X 2.0 46 dp.
MPP2708								

* LD, L, and LB dimensions increase by the following with brake option 'B'

MPP / MPJ092x 34.5 (1.36") MPP190 x 89.0 (3.50")

MPP / MPJ100x 48.5 (1.91") MPP230 x 108.0 (4.25")

MPP / MPJ115x 48.5 (1.91") MPP270 x 127.0 (5.00")

MPP / MPJ142x 51.6 (2.03")

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“PS” Connection Specifications (all motor sizes)

The PS connector option for the MPP motors features high-quality Hypertac - Interconnecton circular connectors mounted to the motor body. These connectors are a right-angle mount and can be fully rotated. This allows for greater cable routing options. Mating cables are specified and ordered separately. The PS option joins the motor phase wires and brake leads into a one connector. The second connector has motor feedback signals, Hall effect signals, and thermistor signals.

Motor Power/Brake

Designation	1.0 Connector Pin No.	1.5 Connector Pin No.
Phase A	1	U
Phase B	2	V
Phase C	6	W
Ground	3	⊥
Shield	3	⊥
Brake	4	+
Brake	5	-

Resolver Feedback (Type - 41)

Designation	Motor Feedback Connector Pin No.
Sin+	2
Sin -	1
Cos+	11
Cos -	12
Ref+	14
Ref -	17
Temp	9
Temp	13

Incremental Encoder/ Hall Feedback (Type 1E, 3E)

Designation	Motor Feedback Connector Pin No.
Encoder (or Smart Encoder)	
Vcc	8
Ground	7
CH A+	2
CH A-	1
CH B+	11
CH B-	12
Index + (or Data +)	15
Index - (or Data -)	16
Temperature Sensor	
Temp	13
Temp	9
Hall Effect (not applicable with smart encoder)	
Hall Gnd	7
Hall +5	8
Hall 1 (or CLK+)	4
Hall 2 (or CLK-)	5
Hall 3	6

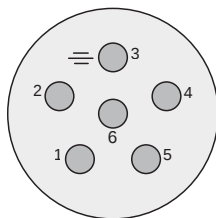
Absolute Encoder - Heidenhain EnDat (Type 6D, 9D)

Designation	Motor Feedback Connector Pin No.
Vcc	14
Ground	7
CH A+	2
CH A-	1
CH B+	11
CH B-	12
Data +	15
Data -	16
Temp	13
Temp	9
Gnd	7
+5	8
CLK+	4
CLK-	5

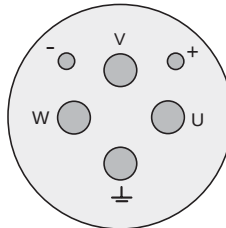
Absolute Encoder - Stegmann Hiperface® (Type 6S, 9S)

Designation	Motor Feedback Connector Pin No.
Ref Sin	1
Sin +	2
Data +	5
Data-	6
Temp+	9
Cos+	11
Ref Cos	12
Temp	13
+5	14
Gnd	17

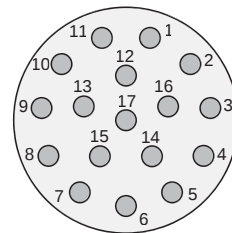
Connector - pin assignments



Size 1.0 Motor Connector
43-024091-01
(Mating Conn.# 43-021659-01)



Size 1.5 Motor Connector
43-025366-01
(Mating Conn.# 43-025495-01)



Feedback Connector
43-025367-01
(Mating Conn.# 43-021660-01)



MPP / MPJ Series, Feedback Specifications

Incremental Encoder Specifications (Type 1E, 3E)

Parameter	Value
Accuracy	±2 min of arc
Input power	5 VDC ±5%, 135 mA
Operating frequency	250 kHz max
Output device	26LS31
Sink/Source, nominal	20 mA
Suggested user interface	26LS32

Resolver Specifications (Type 41)

Parameter	Value
Input voltage @ 7 kHz	4.25 volts
Input current, max	55 mA
Input power, nominal	0.12 watts
Impedance ZS0 (@ 90°)	58+j145 ohms
Impedance ZR0	53+j72 ohms
Impedance ZRS	42+j55 ohms
Transformation ratio	0.470 ±5%
Output voltage	2.0 ±5% volts
DC rotor resistance	23 ±10% ohms
DC stator resistance	19 ±10% ohms
Sensitivity	35 mV/degree
Max error from EZ	±10 minutes
Phase shift, open circuit	5° leading, ±3"
Null voltage, total	20 mV rms
Impedance ZSS	50+j128 ohms
Inertia	Incl. with motor spec.

Absolute Encoder Specifications (Type 6D, 9D) Heidenhain EnDat

Parameter	Single-turn (9D)	Multi-turn (6D)
Absolute Position Values		
Position values/rev.	131072 (17 bits)	131072 (17 bits)
Distinguishable revolutions	n/a	4096 (12 bits)
Heidenhain Part Number	ECI 1317	EQI 1329

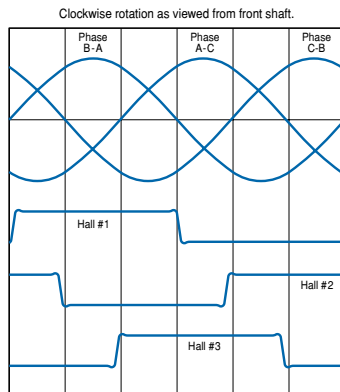
Absolute Encoder Specifications (Type 6S, 9S) Stegmann Hiperface®

Parameter	Single-turn (9S)	Multi-turn (6S)
Absolute Position Values		
Position values/rev.	65536 (16 bits)	65536 (16 bits)
Distinguishable revolutions	n/a	4096 (12 bits)
Stegmann Hiperface Part Number	SRS 50	SRM 50

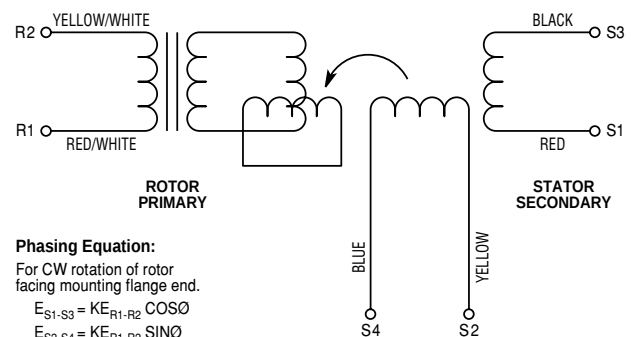
Hall-Effect Specifications

Parameter	Value
Input power	5 VDC ±5%, 80 mA
Output device	LM339
open collector	
Maximum pull up	12 VDC
Sink	16 mA

Commutation Chart



Resolver Schematic Diagram



Electrically Released Brake

	Units	MPP / MPJ092	MPP / MPJ100	MPP / MPJ115	MPP / MPJ142	MPP190	MPP230	MPP270
Static Rated Torque	Nm (lb-in)	4.18 (37)	10.2 (90)	10.2 (90)	28.3 (250)	70(619)	106 (938)	153 (1350)
Coil Current @24VDC	amps	0.50	0.70	0.70	1.28	2.19**	2.5**	4.7**
Maximum Backlash	(minutes)	45	37	37	25	25	25	25
Engage/Disengage	mSec	50/20	110/25	110/25	70/50	200/120	250/200	300/200
Avg. Rotor Inertia*	Kg-M ² (lb-in-s ²)	.00001(.00009)	.00004(.00036)	.00004(.00036)	.00011(.00098)	.00033(.00294)	.00080(.00714)	.00210(.01875)
Avg. Weight*	Kg (lb)	1 (2.2)	1.7 (3.7)	1.76 (3.89)	2.85 (6.27)	9.70 (21.23)	15.3 (33.6)	17.75 (39.1)

* consult factory for exact weights and inertia for specific motor.

**Verify current capability of amplifier's brake circuitry.

Motor / Drive Compatibility Table

Motor Model #	Continuous Stall Current Amps-rms	Aries Drive Model (ARxxAE)							Compax3 Drive Model (Sxxx-yy)									
		01	02	04	08	13	20	30	025-V2	063-V2	100-V2	150-V2	038-V4	075-V4	150-V4	300-V4	H050-V4	
		1.0	1.75	3.0	Current rating: 4.5 6.3 10.0			16.0	2.5	6.3	10	Current rating: 15 3.8 7.5			15.0	30.0	50.0	
MPP/MPJ0921B	1.8		●						●									
MPP/MPJ0921C	2.9			●						●								
MPP0921R	1.4		●						●				●					
MPP/MPJ0922C	3.7				●					●								
MPP/MPJ0922D	5.6					●				●								
MPP/MPJ0922R	2.8			●						●			●					
MPP0923D	7.2						●				●							
MPP0923R	3.6				●					●			●					
MPP/MPJ1002D	7.9						●				●							
MPP1002R	3.9				●					●			●					
MPP1003C	7.2						●				●							
MPP1003D	10.3							●				●						
MPP1003Q	3.9				●					●			●					
MPP1003R	5.4					●				●				●				
MPP/MPJ1152C	8.5						●				●							
MPP/MPJ1152D	10.4							●				●						
MPP/MPJ1152R	4.9					●				●				●				
MPP/MPJ1153B	7.7						●				●							
MPP/MPJ1153C	12.1							●				●						
MPP/MPJ1153P	4.1				●					●				●				
MPP/MPJ1153R	6.0					●				●				●				
MPP1154A	5.4					●				●								
MPP1154B	10.7							●				●						
MPP1154P	5.4					●				●				●				
MPP/MPJ1422C	14.6							●				●						
MPP/MPJ1422R	7.3						●				●			●				
MPP/MPJ1424B	19.4										●					●		
MPP/MPJ1424C	24.3															●		
MPP/MPJ1424R	12.1							●				●		●				
MPP/MPJ1426B	26.2															●		
MPP/MPJ1426P	13.1							●				●		●				
MPP1428P	16.8													●				
MPP1428Q	21.0															●		
MPP1904P	18.0															●		
MPP1906B	36.2																●	
MPP1906P	23.5															●		
MPP1908N	20.6															●		
MPP1908P	30.3															●		
MPP2306N	28.5															●		
MPP2308N	28.1															●		
MPP2308P	35.7																●	
MPP2706M	24.7															●		
MPP2706N	32.4																●	
MPP2706P	40.5																●	
MPP2708L	26.4															●		
MPP2708M	38.9																●	
MPP2708N	50.1																●	

- Ideal Motor / Drive combination
- These motors are rated for 460 volts AC. This combination, with the 230 volt drive, will result in motor running at 1/2 its rated speed
- These motors are only rated for 230 volts The drive in this combination must be run at 230 volts AC. Running drive at 460 volts will damage the motor.



Motor Cables

Feedback Cables

Drive	Feedback Type	Part Number
Compax 3	Resolver	F-2B1-xx
	Encoder - Incremental	F-2C1-xx
	Stegmann Absolute	F-2B1-xx
	Heidenhain Absolute	F-4E1-xx
Aries	Encoder - Incremental	F-1A1-xx
	Heidenhain Absolute	F-1A1-xx

-xx denotes cable length in feet. Motor power and feedback cables available in standard lengths of 10,25,50 feet. Other lengths also available.

Motor Feedback / Drive Compatibility Table

Drive Series	MPP/MPJ Feedback Option				
	1E Encoder	3E Serial Encoder	4I Resolver	6S / 9S Stegmann Absolute	6D / 9D Heidenhain Absolute
Aries	x	x	x		x
Compax3	x		x	x	x*
Gemini	x		x		
Vix	x		x		

*Compax3 with firmware version 5-2, hardware version CPP17 or newer.

Power Cables

Motor Current	Motor P/N	Cable Part Number	Motor Current	Motor P/N	Cable Part Number
Up to 6 A rms 230 volts only	MPP/J0921B MPP/J0921C MPP/J0922C MPP/J0922D	P-1A1-xx Size 1.0 PS Connector	20 - 30 A rms 230 or 460 V	MPP/J1424C MPP/J1426B MPP1428Q	P-4B1-xx Size 1.0 PS Motor Connector
0 - 20 A rms 230 or 460 V	MPP/J0921R MPP/J0922R MPP0923D MPP0923R MPP/J1002D MPP/J1002R MPP1003C MPP1003D MPP1003Q MPP1003R MPP/J1152C MPP/J1152D MPP/J1152R MPP/J1153B MPP/J1153C MPP/J1153P MPP/J1153R MPP1154A MPP1154B MPP1154P MPP/J1422C MPP/J1422C MPP/J1422R MPP/J1424B MPP/J1424R MPP/J1426P MPP1428P	P-3B1-XX Size 1.0 PS Motor Connector	20 - 30 A rms 230 or 460 V	MPP1904P MPP1906P MPP1908N MPP1908P MPP2306N MPP2306N MPP2308N MPP2706M MPP2708L	P-4B2-xx Size 1.5 PS Motor Connector
			30A - 50 A RMS 230 or 460 V	MPP1906B MPP2308P MPP2706N MPP2706P MPP2708M MPP2708N	P-6B2-xx Size 1.5 PS Motor Connector

-xx denotes cable length in feet. Motor power and feedback cables available in standard lengths of 10,25,50 feet. Other lengths are available. Drive current values are default values. When running Drive PWM frequency at values other than default, current output values will change. Please consult drive manual for current values, and select motor power cable accordingly.

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