

"M" Series Brushless Motors

- High torque density
- Metric mounting dimensions
- Continuous stall torque to 165 lb-in (18.6 Nm)
- TENV IP55 and IP65 enclosures
- UL recognized
- High resolution encoders

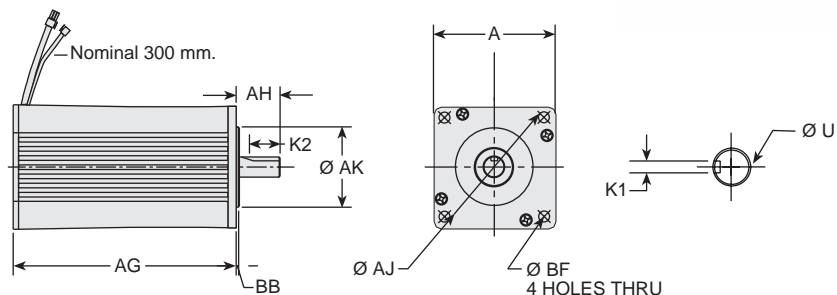
"M" Series are similar to the Turbo Servos in power density and acceleration. However, these motors are offered with standard metric mounting dimensions. They also have high-resolution encoders (up to 32,768 PPR)

for applications where extremely precise positioning is important. The "M" Series comes standard with protection ratings of IP55 or IP65.

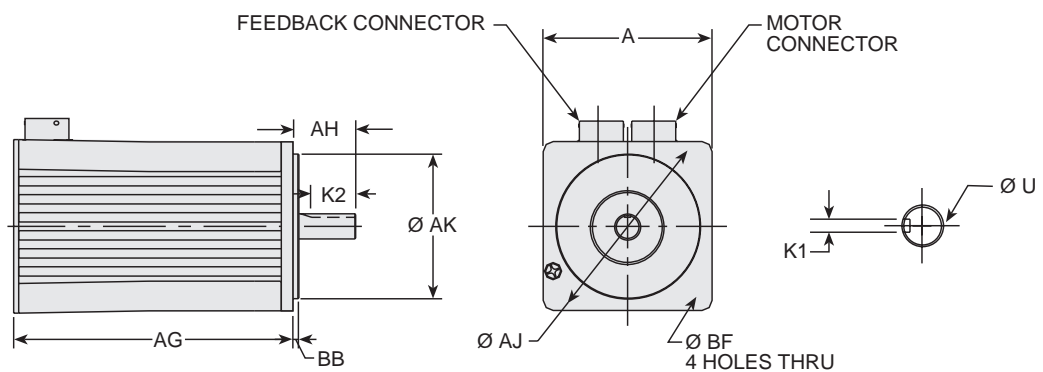


Specifications

MAC-M16
MAC-M24
MAC-M31
(IP55)



MAC-M51
MAC-M71
(IP65)



Model	U	AH	K1	K2	A	AK	BB	BF	AJ	AG	Weight lb	kg
MAC-M161-HM60	8	25	3	14	40	30	2.5	2-4.3	46	94.5	1.1	0.5
MAC-M241-HM60	14	30	5	20	60	50	3	5.5	70	96.5	2.4	1.1
MAC-M242-HM60	14	30	5	20	60	50	3	5.5	70	125	3.7	1.7
MAC-M312-HM60	16	40	5	30	80	70	3	7	90	145	7.5	3.4
MAC-M511-EM80	19	58	5	25	130	110	6	9	145	161	16.8	7.6
MAC-M512-EM80	22	58	6	25	130	110	6	9	145	185	21.2	9.6
MAC-M711-EM80	35	79	10	60	180	114.3	3.2	13.5	200	166	31	14
MAC-M712-EM80	35	79	10	60	180	114.3	3.2	13.5	200	192	40	18

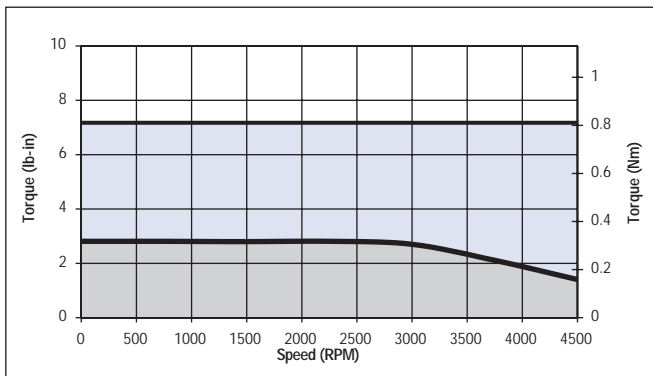
All dimensions in millimeters

"M" Series Brushless Motors

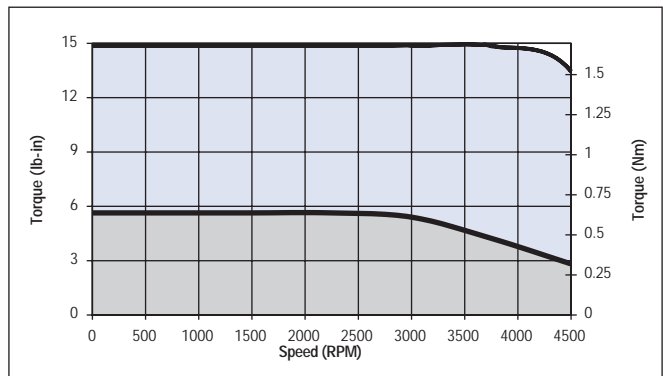
Model	IP Rating	Stall Torque (lb-in)	Stall Torque (Nm)	Cont./Peak (RPM)	Rated Power (Watt)	Inertia (lb-in-sec ²)	Inertia (kg-m ²)	K _T (lb-in/A)	K _T (Nm/A)	Amps Cont. RMS	Amps Peak RMS
MAC-M161-HM60	IP55	2.81	0.32	3000/4500	100	0.000062	0.000007	3.45	0.39	0.89	2.8
MAC-M241-HM60	IP55	5.64	0.64	3000/4500	200	0.000186	0.000021	3.10	0.35	2.00	6.0
MAC-M242-HM60	IP55	11.2	1.27	3000/4500	400	0.000310	0.000035	4.78	0.54	2.60	8.0
MAC-M312-HM60	IP55	21.2	2.39	3000/4500	750	0.001867	0.000211	5.66	0.64	4.10	13.9
MAC-M511-EM80	IP65	48	5.42	1500/3000	850	0.012302	0.001390	7.35	0.83	7.10	17.0
MAC-M512-EM80	IP65	74	8.36	1500/3000	1,310	0.022125	0.002500	7.43	0.84	10.70	28.0
MAC-M711-EM80	IP65	102	11.5	1500/3000	1,810	0.028055	0.003170	6.46	0.73	16.70	42.0
MAC-M712-EM80	IP65	165	18.6	1500/3000	2,930	0.040710	0.004600	7.35	0.83	23.80	56.0

Motor & Drive System Performance

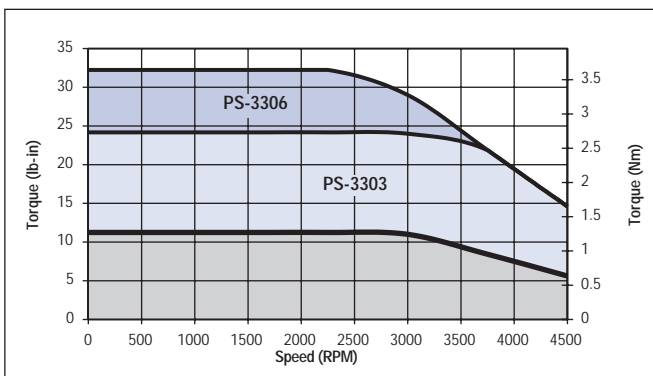
MAC-M161-HM60 / PS-3303



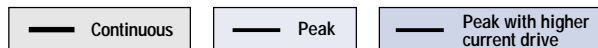
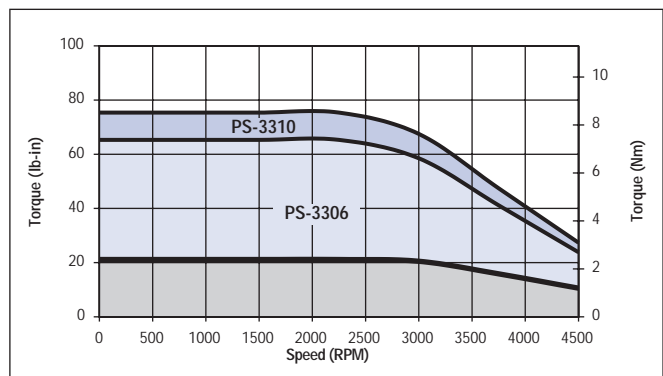
MAC-M241-HM60 / PS-3303



MAC-M242-HM60 / PS-3303, PS-3306



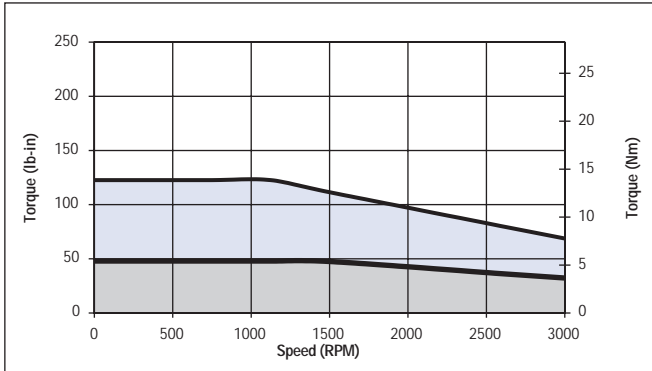
MAC-M312-HM60 / PS-3306, PS-3310



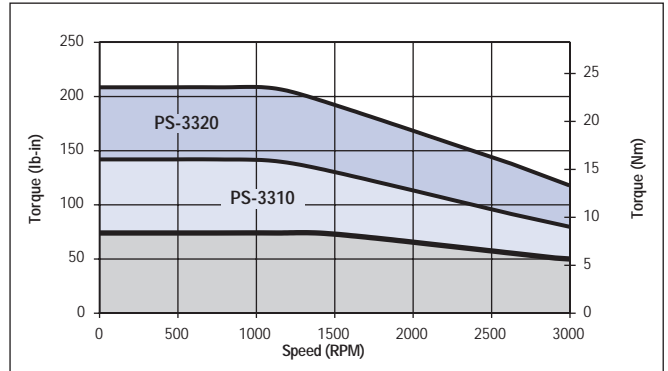
Note: Rated speed shown based on 240 VAC 3-phase line input. Reduce rated speed by 15% for 240 VAC single-phase line operation, and by 60% for 120 VAC single-phase line operation. Performance data based on 100°C winding temperature.

"M" Series Brushless Motors Motor & Drive System Performance

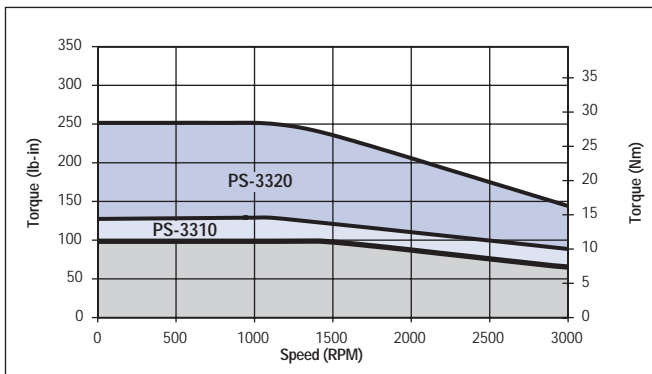
MAC-M511-EM80 / PS-3310



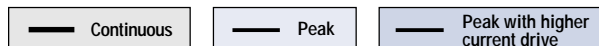
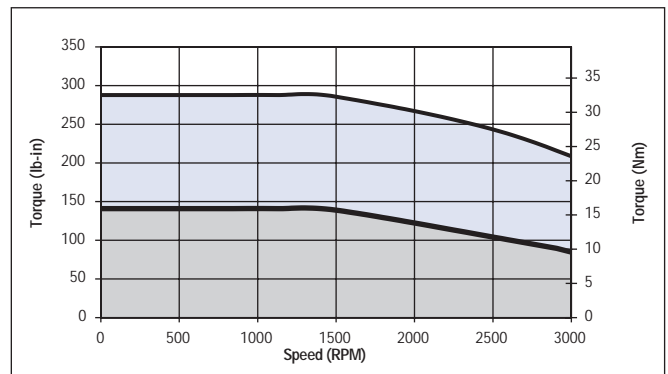
MAC-M512-EM80 / PS-3310, PS-3320



MAC-M711-EM80 / PS-3310, PS-3320



MAC-M712-EM80 / PS-3320



"M" Series Brushless Motors Connectors & Cables

Model	Motor				Feedback	
	Power Connector	Plug	Socket or Clamp	FB Connector	Plug	Socket or Clamp
MAC-M161-HM60	172167-1	192159-1	170361-1 (4)	172169	172161-1	170361-1 (9)
MAC-M241-HM60	172167-1	192159-1	170361-1 (4)	172169	172161-1	170361-1 (9)
MAC-M242-HM60	172167-1	192159-1	170361-1 (4)	172169	172161-1	170361-1 (9)
MAC-M312-HM60	172167-1	192159-1	170361-1 (4)	172169	172161-1	170361-1 (9)
MAC-M511-EM80	MS3102A18-10P	MS3106B18-10S	MS3057-10A	MS3102A20-29P	MS3106B20-29S	MS3057-12A
MAC-M512-EM80	MS3102A18-10P	MS3106B18-10S	MS3057-10A	MS3102A20-29P	MS3106B20-29S	MS3057-12A
MAC-M711-EM80	MS3102A22-22P	MS3106B22-22S	MS3057-12A	MS3102A20-29P	MS3106B20-29S	MS3057-12A
MAC-M712-EM80	MS3102A22-22P	MS3106B22-22S	MS3057-12A	MS3102A20-29P	MS3106B20-29S	MS3057-12A

Motor / Feedback Cable Sets (IP55)

CS-1631-010	Cable Set, Power & Feedback, MAC-M16-24-31 series, 10 foot
CS-1631-025	Cable Set, Power & Feedback, MAC-M16-24-31 series, 25 foot
CS-5100-010	Cable Set, Power & Feedback, MAC-M51 series, 10 foot
CS-5100-025	Cable Set, Power & Feedback, MAC-M51 series, 25 foot
CS-7100-010	Cable Set, Power & Feedback, MAC-M71 series, 10 foot
CS-7100-025	Cable Set, Power & Feedback, MAC-M71 series, 25 foot

Power

MS3112E14-5P
(PT02E-14-5P)

Motor	PIN		
	16/24/31	51	71
Phase U	1	A	A
Phase V	2	B	B
Phase W	3	C	C
Ground	4	D	D
NC			E

Feedback

MS3112E14-18P
(PT02E-14-18P)

Encoder	PIN	
	16/24/31	51/71
A +	1	A
A -	2	B
B +	3	C
B -	4	D
Z +	5	E
Z -	6	F
+ 5 RET	7	G
+ 5 VDC	8	H
Shield	9	J