

Torque Motors

Megaflux Frameless Brushless Torque Motors

Brushless thin-ring component (rotor and stator) torque motor

Allied Motion’s Megaflux family of brushless torque motors includes 12 series of high performance frameless component torque motors, ranging in outside (stator) diameter from 60 mm up to 792 mm (2.36 in. up to 31.2 in.). Each motor consists of a matched rotor and stator pair. The stator is wound WYE with the three phase terminals made available.

Megaflux frameless brushless torque motors are computer-designed and -optimized to provide the highest torque density brushless torque motors available. Special attention has been given to cogging torque minimization to enhance their performance in precision applications.

Frameless Megaflux motors are thin annular ring motors with large diameter-to-length ratios, and are intended to be integrated directly into mechanisms, effectively eliminating problems of torsional resonances due to couplings and backlash associated with gear trains. They are typically mounted directly to the driven axis, and their large open bore enables passing system electrical cabling, fluid piping or light beams through the motor center.

Features & Benefits

- 12 standard frame sizes from 60 mm up to 792 mm outside diameter
- Continuous stall torque as high as 1875 Nm (1383 lb-ft) covers a very wide range of applications
- Computer-optimized design maximizes torque density and performance
- Large, clear through bore—allows passage of air, water, or vacuum lines, optical beams, and/or electrical/signal wiring
- Three winding voltage designs for each size of 48, 150, and 300 VDC
- Hall sensor assembly standard on MF0060 through MF0127 series

Options & Accessories

- Custom winding designs to accommodate special voltage requirements
- Thin lamination MFS version for improved efficiency in applications requiring high speeds
- Hall-effect sensor array for commutation signals on larger series
- Special-engineered mechanical configurations to meet specific application needs
- Application-matched brushless servo drives



- High torque density, thin-ring frameless brushless torque motors
- 12 stator diameters, each with five stack heights, mean a wide selection of performances from which to choose
- High rated continuous stall torque of up to 1875 Nm (1383 lb-ft)
- Three winding designs: 48, 150, and 300 VDC

SPECIFICATION SUMMARY

Model	Units	MF0060	MF0076	MF0095	MF0127	MF0150	MF0210
Continuous Stall Torque	lb-ft	0.22 - 0.76	0.38 - 1.62	0.68 - 3.24	1.2 - 6.2	2.3 - 18.2	5.9 - 55.3
	Nm	0.29 - 1.04	0.51 - 2.20	0.92 - 4.39	1.6 - 8.4	3.1 - 24.7	8.0 - 75.0
No Load Speed	RPM	2076 - 7098	1640 - 6447	1300 - 5436	939 - 5097	416 - 2500	338 - 1894
Diameter (Outer)	in	2.38	2.99	3.73	5.00	6.69	9.06
	mm	60.4	76.0	94.7	127.0	170.0	230.0
Model	Units	MF0255	MF0310	MF0410	MF0510	MF0610	MF0760
Continuous Stall Torque	lb-ft	7.2 - 75.9	12.8 - 133.7	50.6 - 280	81 - 504	127 - 762	225 - 1383
	Nm	9.7 - 102.9	17.3 - 181.3	68.6 - 380	110 - 684	172 - 1034	304 - 1875
No Load Speed	RPM	280 - 1591	100 - 1260	71 - 926	42 - 771	25 - 595	17.1 - 422
Diameter (Outer)	in	10.83	13.0	16.9	21.1	25.2	31.18
	mm	275.0	330	430	535	640	792

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SPECIFICATIONS (all data measured at 20 °C ambient)

Model No.		MF0060008			MF0060020			MF0060032		
Winding Voltage	V	48	150	300	48	150	300	48	150	300
Stall Torque (continuous) ⁽¹⁾	lb-ft	0.22	0.204	0.26	0.40	0.44	0.45	0.58	0.59	0.58
	Nm	0.29	0.33	0.36	0.54	0.59	0.61	0.78	0.79	0.79
Peak Torque (±25%)	lb-ft	1.7	2.8	2.9	3.9	4.7	4.7	5.6	7.7	7.7
	Nm	2.3	3.8	3.9	5.3	6.4	6.4	7.5	10.5	10.5
Peak Current	A	24	16.5	10.3	41	21	13.4	45	32	21
No Load Speed	RPM	4465	5891	7098	3382	4579	5724	2566	4010	5347
	rad/s	468	617	743	354	480	599	269	420	560
Cogging Torque (max.)	lb-ft	0.014			0.016			0.023		
	Nm	0.019			0.021			0.032		
Torque Constant (±10%)	lb-ft/A	0.071	0.17	0.28	0.09	0.22	0.35	0.12	0.25	0.37
	Nm/A	0.097	0.23	0.38	0.13	0.30	0.48	0.17	0.33	0.50
Voltage Constant (±10%)	V/kRPM	10	24	40	13	31	50	17	35	52
	V/rad/s	0.097	0.23	0.38	0.13	0.30	0.48	0.17	0.33	0.50
Motor Constant	lb-ft/√W	0.05	0.06	0.06	0.09	0.10	0.10	0.12	0.12	0.12
	Nm/√W	0.07	0.08	0.08	0.12	0.13	0.13	0.16	0.16	0.16
Elect. Time Constant	ms	0.25	0.31	0.35	0.30	0.36	0.38	0.37	0.38	0.38
Mech. Time Constant	ms	4.32	3.48	3.09	2.87	2.41	2.28	2.28	2.21	2.25
Terminal Resistance (±12%)	Ohm	1.99	9.10	22.25	1.17	5.26	12.71	1.06	4.11	9.42
Terminal Inductance (±30%)	mH	0.49	2.80	7.71	0.36	1.90	4.87	0.40	1.58	3.56
Thermal Resistance ⁽¹⁾	°C/W	3.60			3.10			2.75		
Motor Inertia	lb-ft-s ²	1.6E-5			3.1E-5			4.7E-5		
	kg-m ²	2.1E-5			4.3E-5			6.4E-5		
Motor Weight	lb	0.28	0.29	0.28	0.60	0.60	0.60	0.92	0.92	0.92
	kg	0.13	0.13	0.13	0.27	0.27	0.27	0.42	0.42	0.41
Ambient Storage Temperature	°C	-55 to 150								
Poles	-	16								

(1) Housed version of motor mounted to 102 mm sq. x 6.35 mm (4 in. sq x 0.25 in.) aluminum plate in still air; maximum operating temperature (ambient + rise) is 130 °C

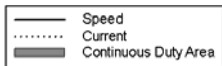
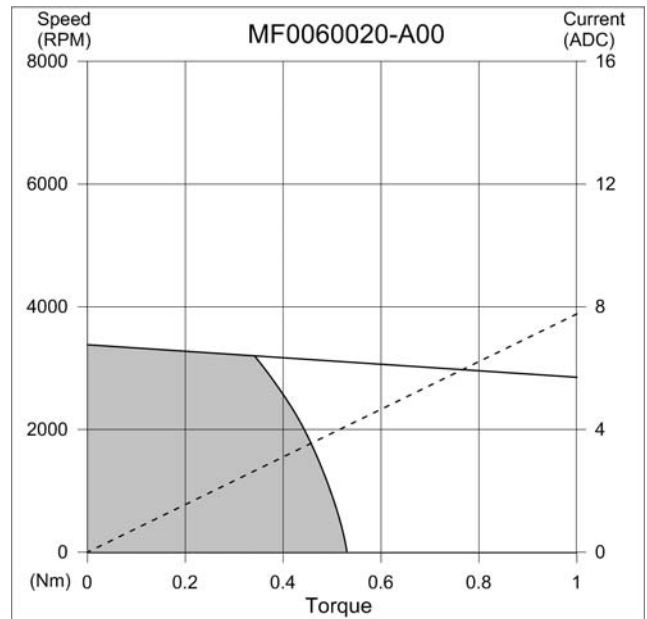
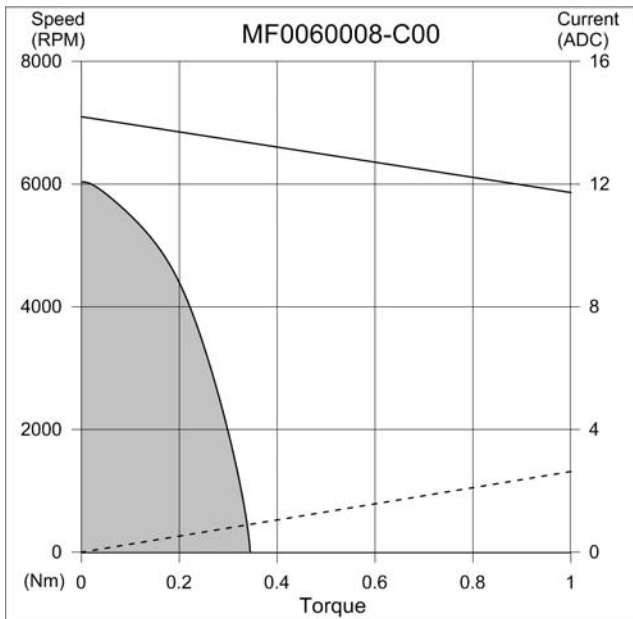
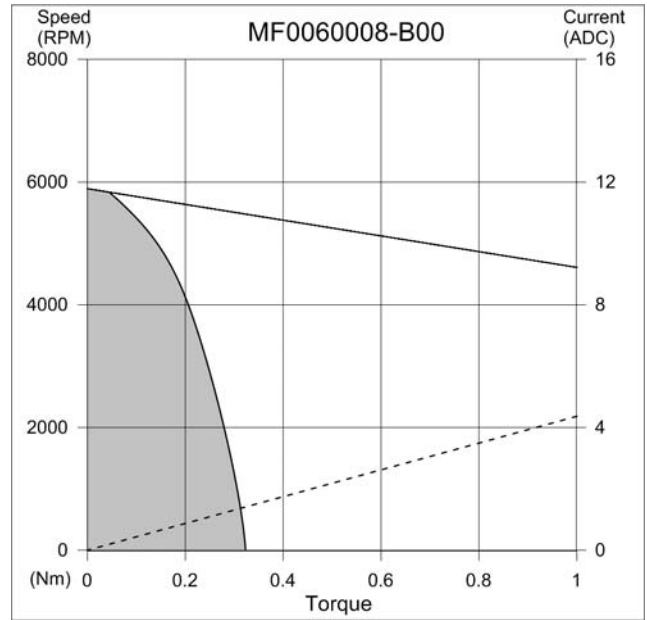
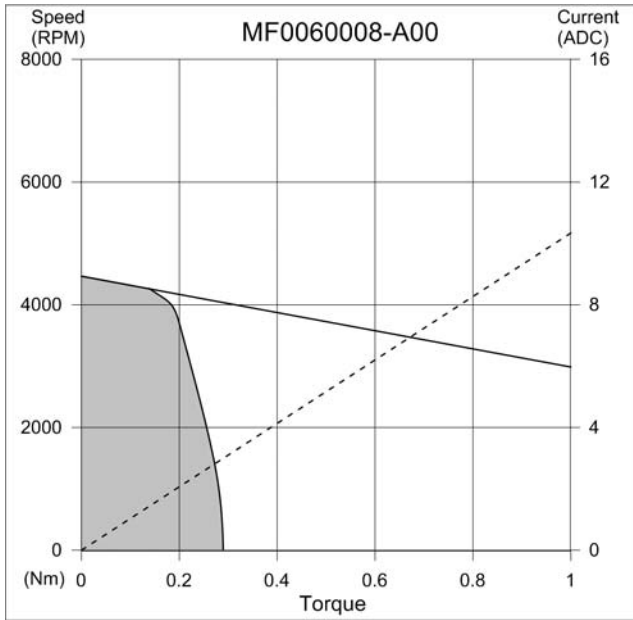
Model No.		MF0060044			MF0060056		
Winding Voltage	V	48	150	300	48	150	300
Stall Torque (continuous) ⁽¹⁾	lb-ft	0.74	0.75	0.74	0.77	0.78	0.76
	Nm	1.00	1.01	1.00	1.05	1.05	1.04
Peak Torque (±25%)	lb-ft	7.6	10.6	10.6	7.3	12	12
	Nm	10.3	14.3	14.3	9.9	16	17
Peak Current	A	56	39	47	37	27	40
No Load Speed	RPM	2383	3724	4965	2076	3244	4325
	rad/s	250	390	520	217	340	453
Cogging Torque (max.)	lb-ft	0.031			0.036		
	Nm	0.042			0.049		
Torque Constant (±10%)	lb-ft/A	0.13	0.27	0.40	0.15	0.31	0.46
	Nm/A	0.18	0.37	0.55	0.21	0.42	0.63
Voltage Constant (±10%)	V/kRPM	19	38	57	22	44	66
	V/rad/s	0.18	0.37	0.55	0.21	0.42	0.63
Motor Constant	lb-ft/√W	0.146	0.148	0.146	0.153	0.154	0.152
	Nm/√W	0.198	0.200	0.198	0.207	0.209	0.206
Elect. Time Constant	ms	0.41	0.42	0.41	0.44	0.45	0.45
Mech. Time Constant	ms	2.07	2.02	2.08	2.35	2.31	2.39
Terminal Resistance (±12%)	Ohm	0.85	3.34	7.70	1.02	4.01	9.33
Terminal Inductance (±30%)	mH	0.35	1.42	3.19	0.45	1.79	4.03
Thermal Resistance ⁽¹⁾	°C/W	2.50			2.35		
Motor Inertia	lb-ft-s ²	6.3E-5			7.9E-5		
	kg-m ²	8.5E-5			1.1E-4		
Motor Weight	lb	1.2	1.2	1.2	1.5	1.5	1.5
	kg	0.56	0.56	0.56	0.70	0.70	0.70
Ambient Storage Temperature	°C	-55 to 150					
Poles	-	16					

(1) Housed version of motor mounted to 102 mm sq. x 6.35 mm (4 in. sq x 0.25 in.) aluminum plate in still air; maximum operating temperature (ambient + rise) is 130 °C

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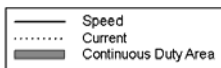
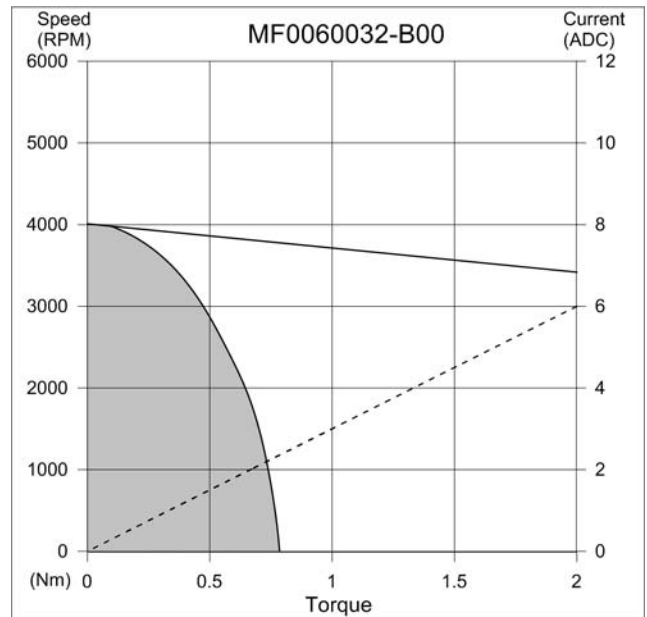
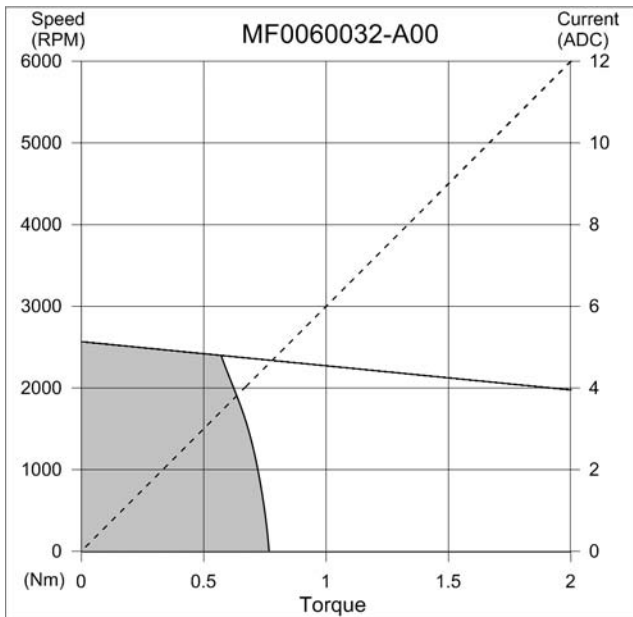
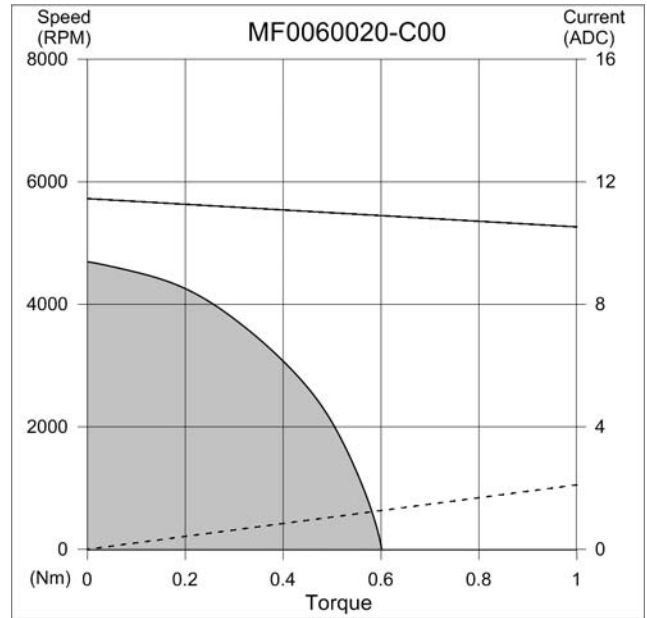
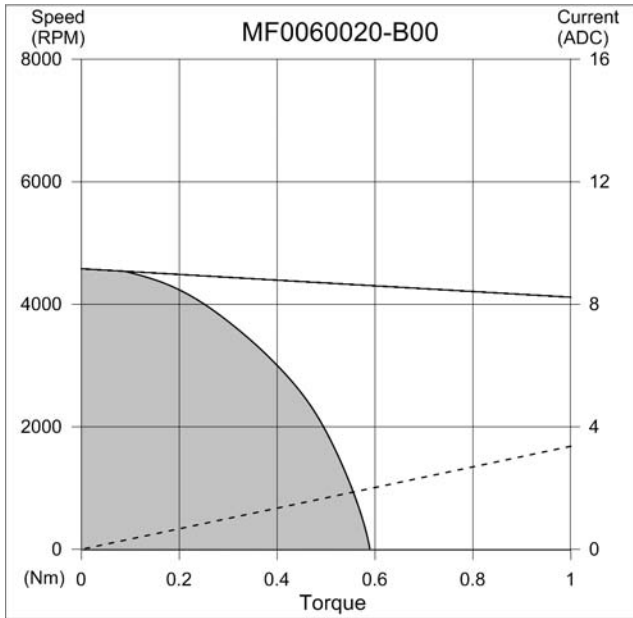
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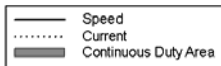
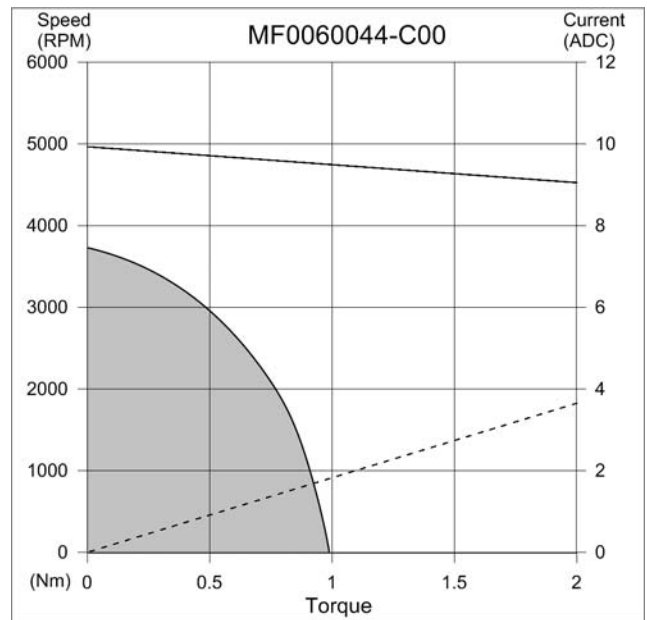
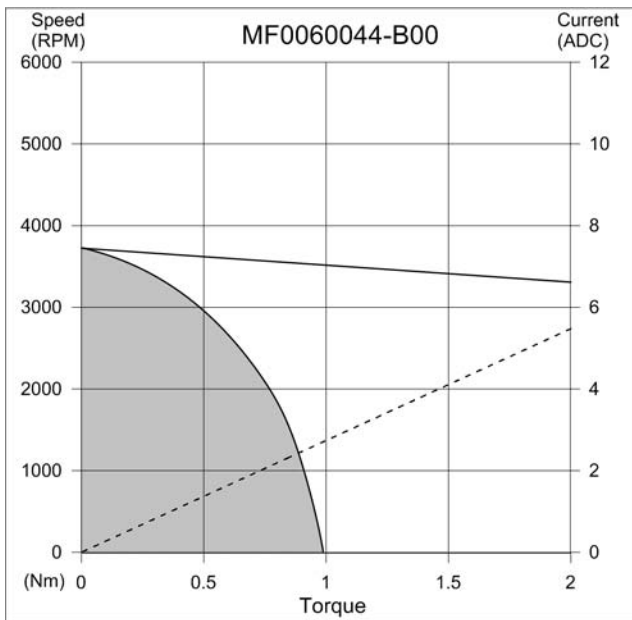
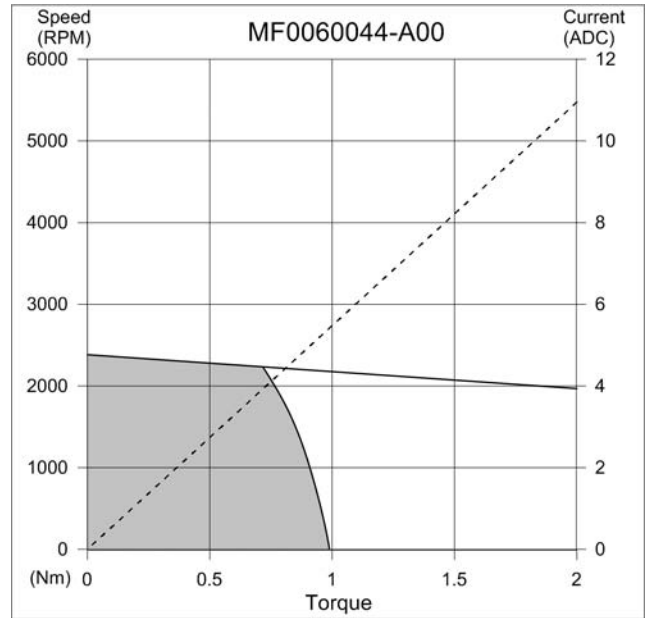
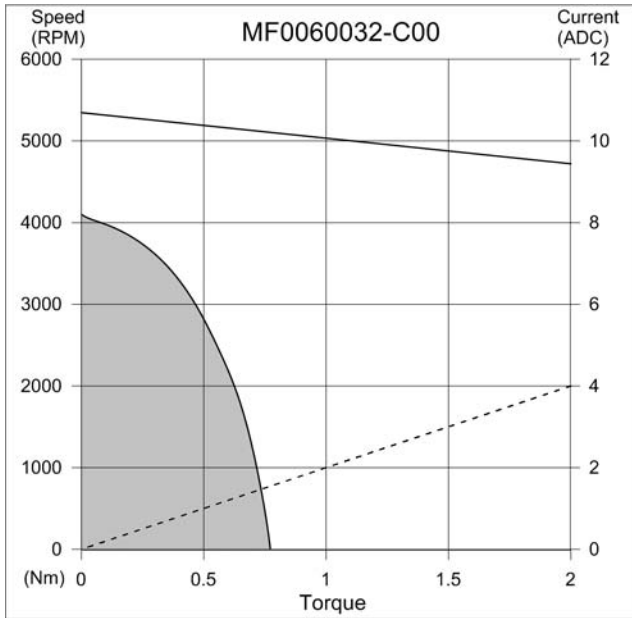
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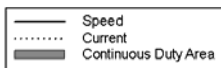
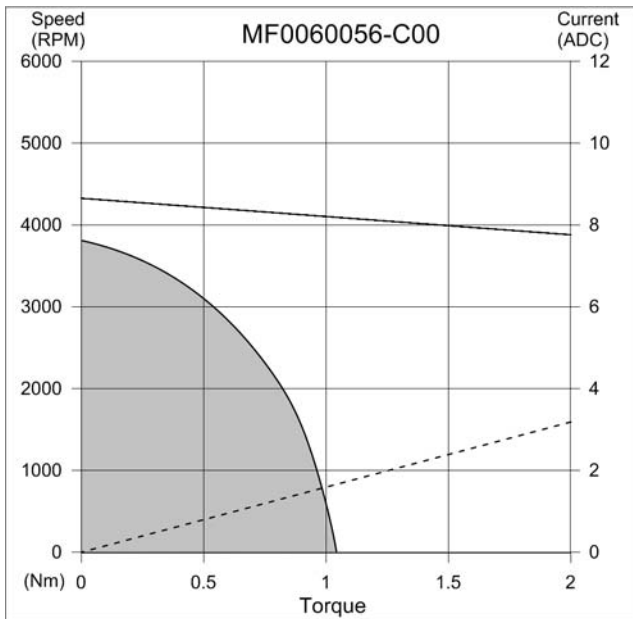
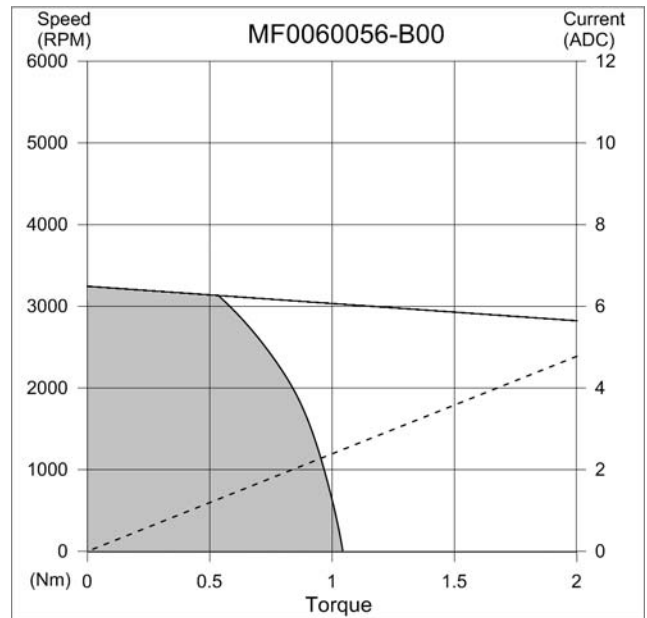
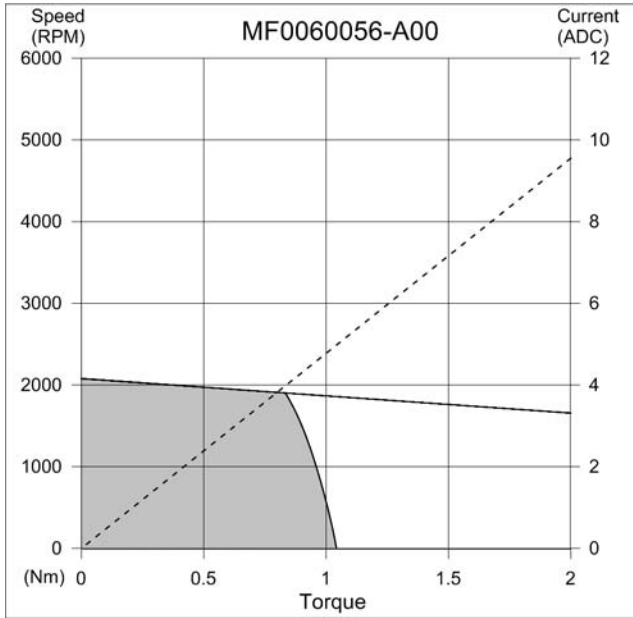
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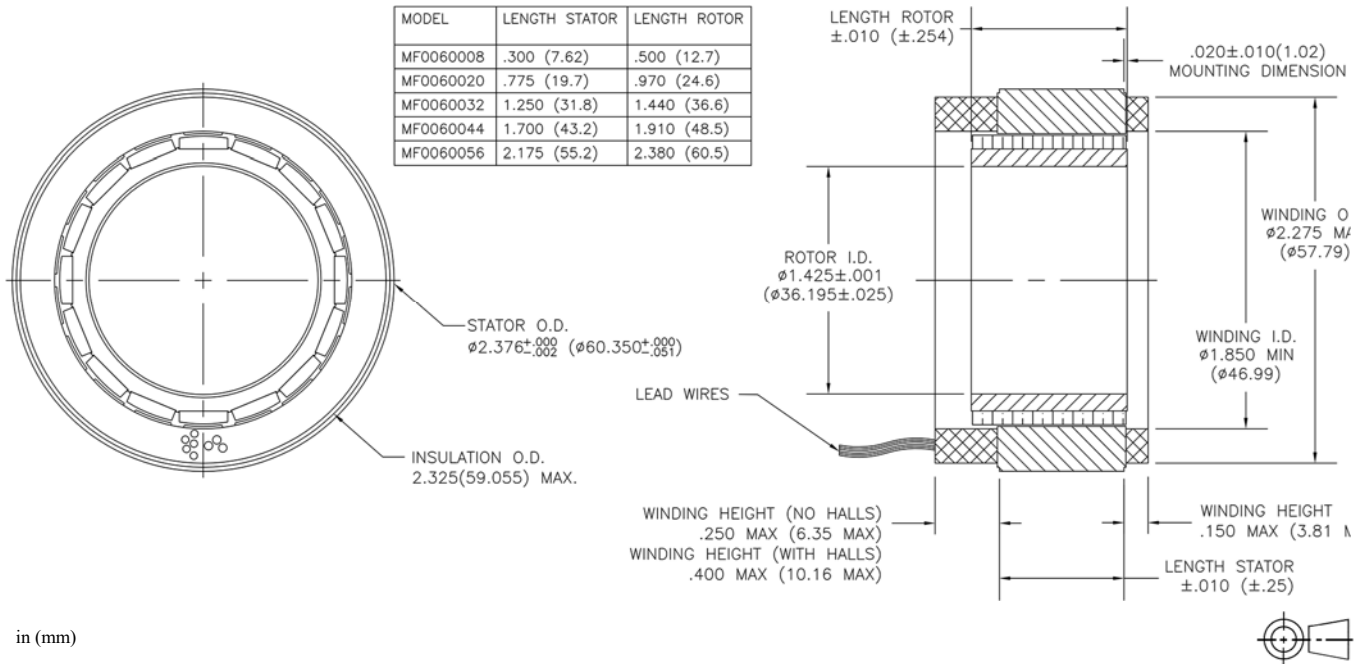
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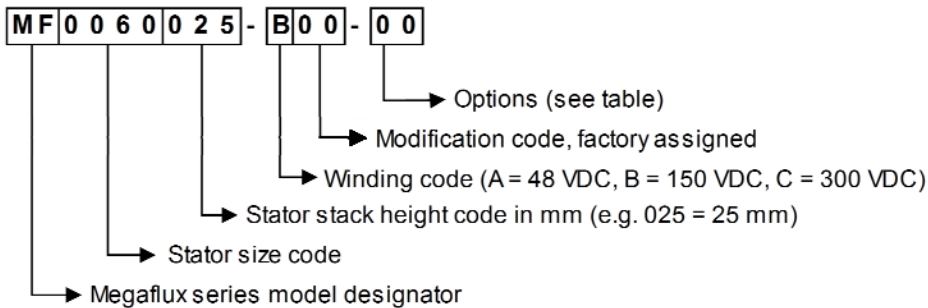
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MF0060 Series Frameless Brushless Torque Motors

DIMENSIONS



MODEL NUMBERING



Options
C = Customer-specified connector
Z = RoHS compliant

Torque Motors

MF0076 Series Frameless Brushless Torque Motors

SPECIFICATIONS (all data measured at 20 °C ambient)

Model No.		MF0076008			MF0076020			MF0076032		
Winding Voltage	V	48	150	300	48	150	300	48	150	300
Stall Torque (continuous) ⁽¹⁾	lb-ft	0.38	0.39	0.40	0.68	0.74	0.76	1.00	0.96	1.01
	Nm	0.51	0.53	0.54	0.92	1.01	1.03	1.35	1.30	1.37
Peak Torque (±25%)	lb-ft	2.9	2.9	2.9	8.1	9.6	9.6	10	15	15
	Nm	4.0	4.0	4.0	11.0	13.0	13.0	14	20	21
Peak Current	A	40	15.7	9.6	79	40	26	67	49	33
No Load Speed	RPM	4247	5248	6447	3153	4168	5419	2105	3289	4385
	rad/s	445	550	675	330	437	567	220	344	459
Cogging Torque (max.)	lb-ft	0.015			0.026			0.036		
	Nm	0.020			0.035			0.049		
Torque Constant (±10%)	lb-ft/A	0.07	0.19	0.31	0.10	0.24	0.37	0.15	0.31	0.46
	Nm/A	0.10	0.26	0.42	0.14	0.33	0.50	0.21	0.42	0.63
Voltage Constant (±10%)	V/kRPM	11	27	44	15	34	53	22	44	66
	V/rad/s	0.10	0.26	0.42	0.14	0.33	0.50	0.21	0.42	0.63
Motor Constant	lb-ft/√W	0.08	0.08	0.08	0.13	0.15	0.15	0.18	0.18	0.19
	Nm/√W	0.11	0.11	0.11	0.18	0.20	0.20	0.25	0.24	0.25
Elect. Time Constant	ms	0.34	0.36	0.37	0.47	0.57	0.59	0.61	0.56	0.63
Mech. Time Constant	ms	4.28	4.01	3.91	3.03	2.49	2.39	2.37	2.56	2.31
Terminal Resistance (±12%)	Ohm	0.92	5.50	14.23	0.60	2.78	6.31	0.71	3.08	6.24
Terminal Inductance (±30%)	mH	0.31	1.97	5.322	0.28	1.57	3.73	0.43	1.74	3.91
Thermal Resistance ⁽¹⁾	°C/W	2.80			2.45			2.17		
Motor Inertia	lb-ft-s ²	3.7E-5			7.5E-5			1.1E-4		
	kg-m ²	5.1E-5			1.0E-4			1.5E-4		
Motor Weight	lb	0.4	0.4	0.4	0.9	0.9	0.9	1.4	1.4	1.4
	kg	0.20	0.20	0.19	0.42	0.43	0.42	0.65	0.64	0.64
Ambient Storage Temperature	°C	-55 to 150								
Poles	-	16								

(1) Housed version of motor mounted to 114 mm sq. x 6.35 mm (4.5 in. sq x 0.25 in.) aluminum plate in still air; maximum operating temperature (ambient + rise) is 130 °C

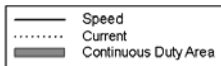
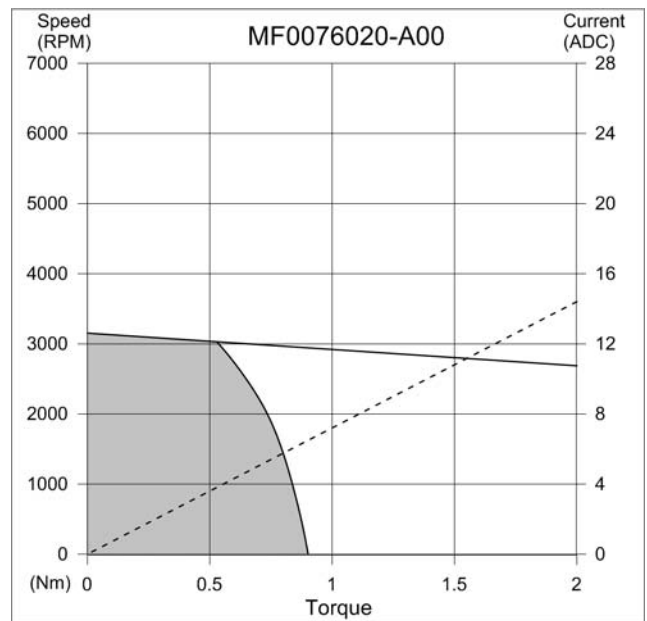
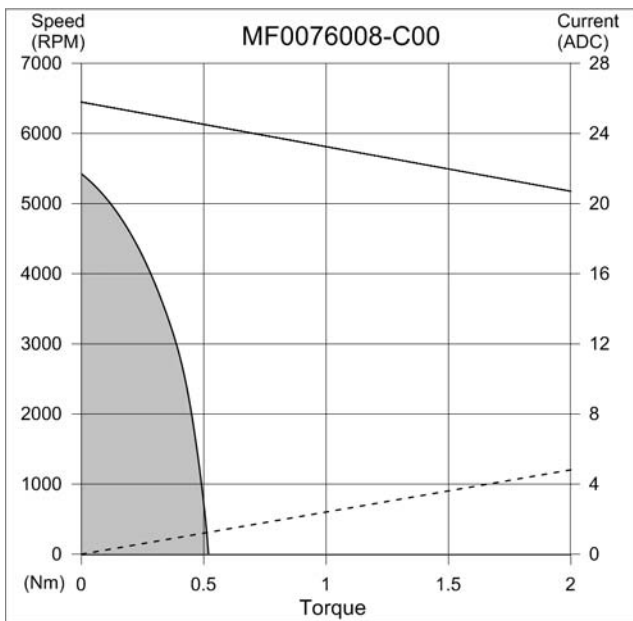
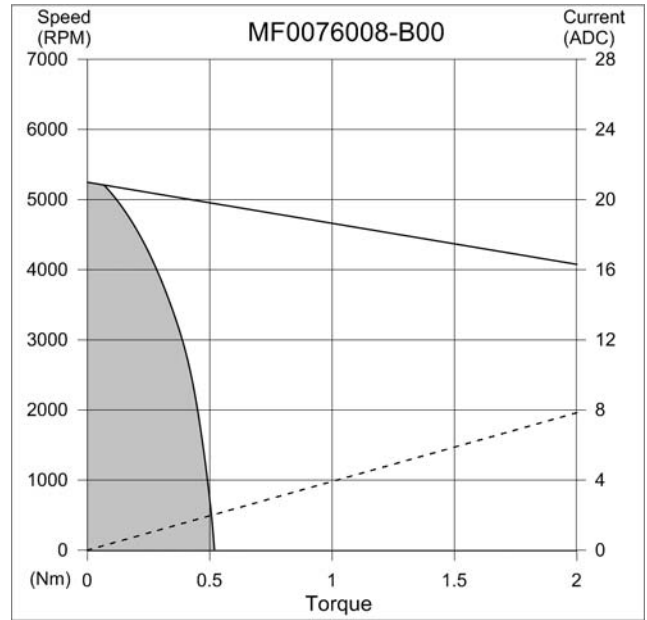
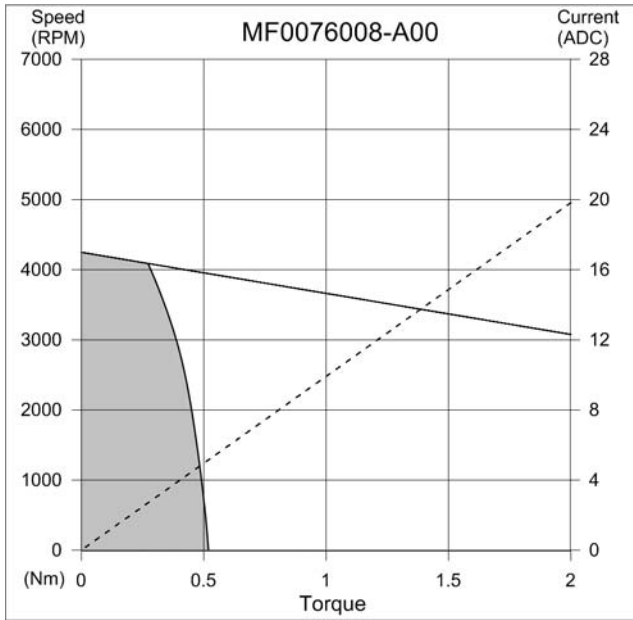
Model No.		MF0076044			MF0076056		
Winding Voltage	V	48	150	300	48	150	300
Stall Torque (continuous) ⁽¹⁾	lb-ft	1.28	1.37	1.40	1.53	1.55	1.62
	Nm	1.74	1.86	1.90	2.08	2.10	2.20
Peak Torque (±25%)	lb-ft	15	18	18	16	22	22
	Nm	21	24	24	21	30	30
Peak Current	A	97	50	31	80	57	38
No Load Speed	RPM	2036	2828	3510	1640	2563	3418
	rad/s	213	296	368	172	268	358
Cogging Torque (max.)	lb-ft	0.047			0.057		
	Nm	0.064			0.078		
Torque Constant (±10%)	lb-ft/A	0.16	0.35	0.57	0.20	0.39	0.59
	Nm/A	0.21	0.48	0.77	0.27	0.53	0.80
Voltage Constant (±10%)	V/kRPM	22	50	81	28	56	83
	V/rad/s	0.21	0.48	0.77	0.27	0.53	0.80
Motor Constant	lb-ft/√W	0.22	0.24	0.24	0.25	0.26	0.27
	Nm/√W	0.30	0.32	0.33	0.34	0.35	0.36
Elect. Time Constant	ms	0.62	0.71	0.74	0.65	0.66	0.72
Mech. Time Constant	ms	2.10	1.83	1.75	2.04	2.00	1.83
Terminal Resistance (±12%)	Ohm	0.50	2.19	5.44	0.60	2.35	4.83
Terminal Inductance (±30%)	mH	0.31	1.55	4.03	0.39	1.55	3.48
Thermal Resistance ⁽¹⁾	°C/W	1.94			1.74		
Motor Inertia	lb-ft-s ²	1.5E-4			1.9E-4		
	kg-m ²	2.0E-4			2.5E-4		
Motor Weight	lb	1.9	1.9	1.9	2.4	2.4	2.4
	kg	0.86	0.87	0.87	1.08	1.08	1.08
Ambient Storage Temperature	°C	-55 to 150					
Poles	-	16					

(1) Housed version of motor mounted to 114 mm sq. x 6.35 mm (4.5 in. sq x 0.25 in.) aluminum plate in still air; maximum operating temperature (ambient + rise) is 130 °C

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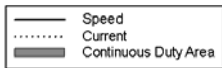
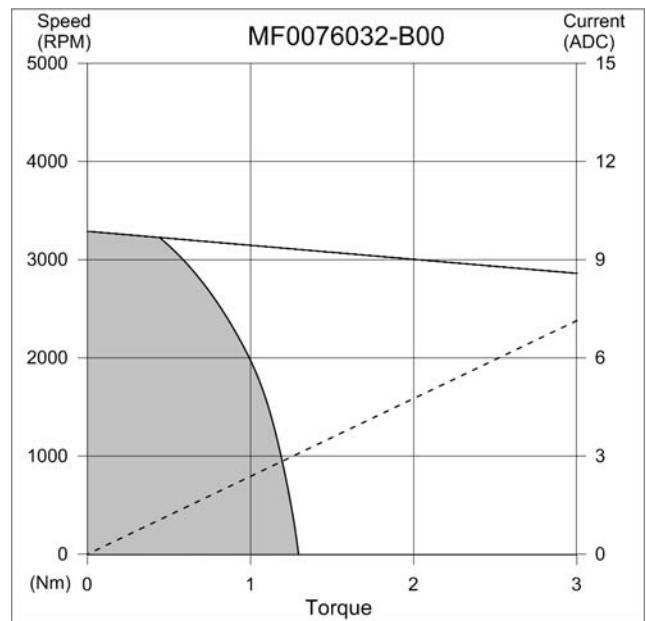
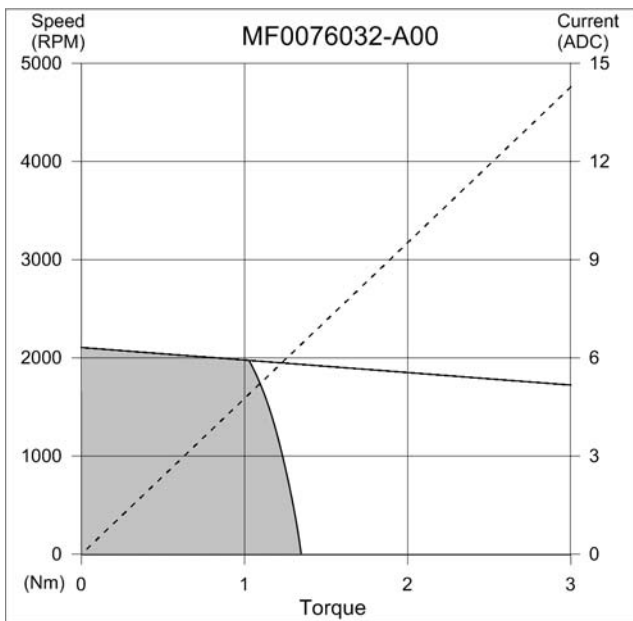
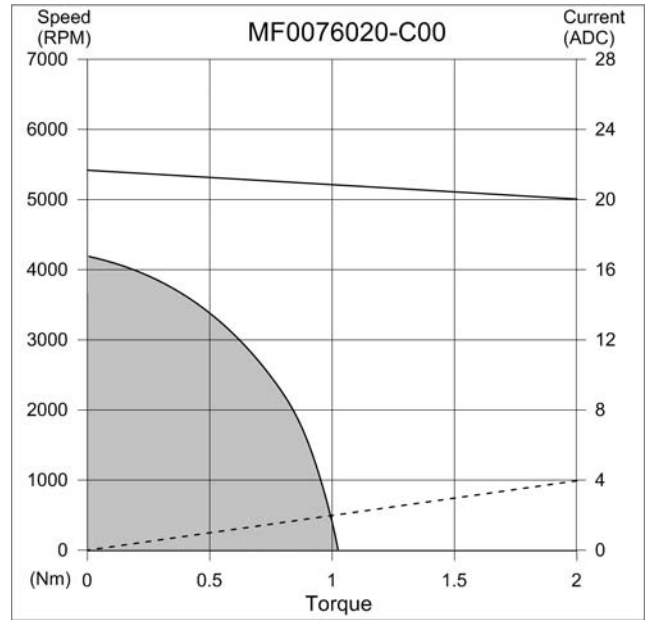
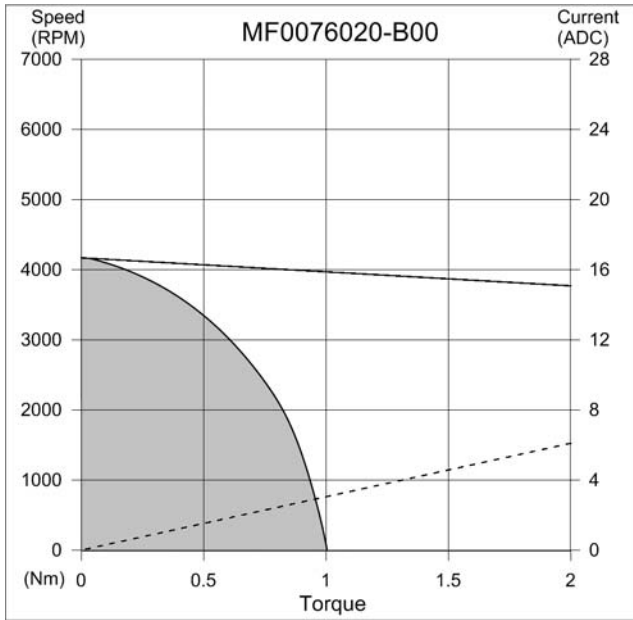
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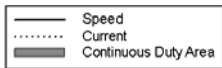
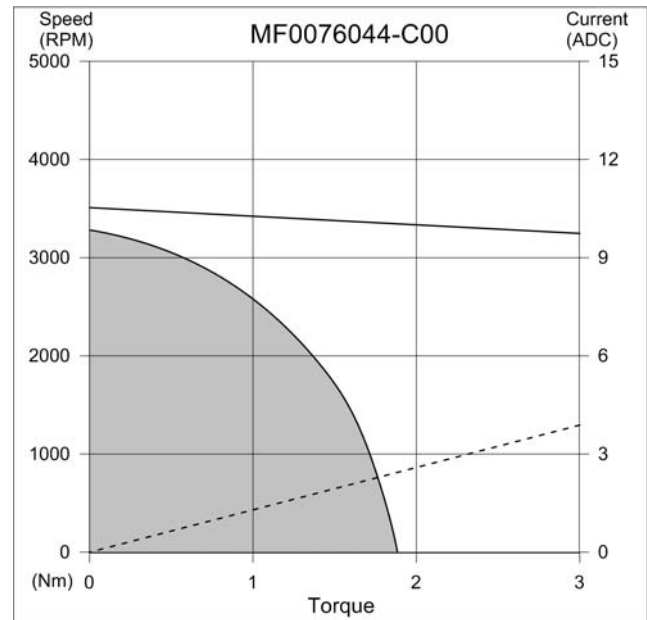
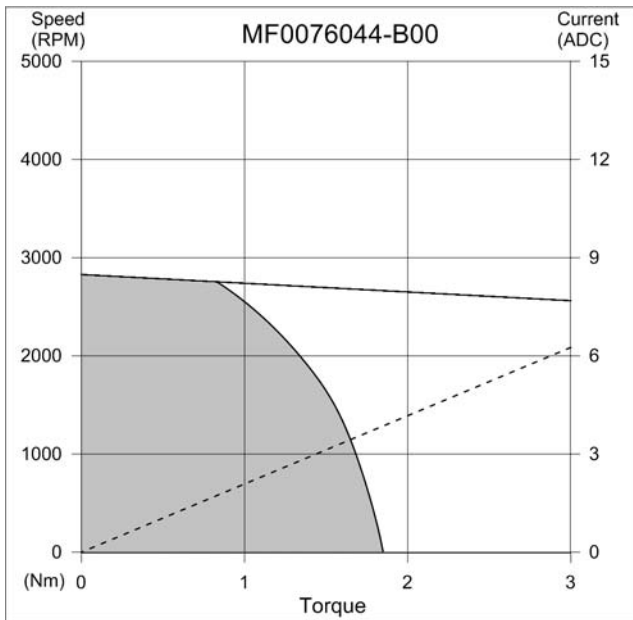
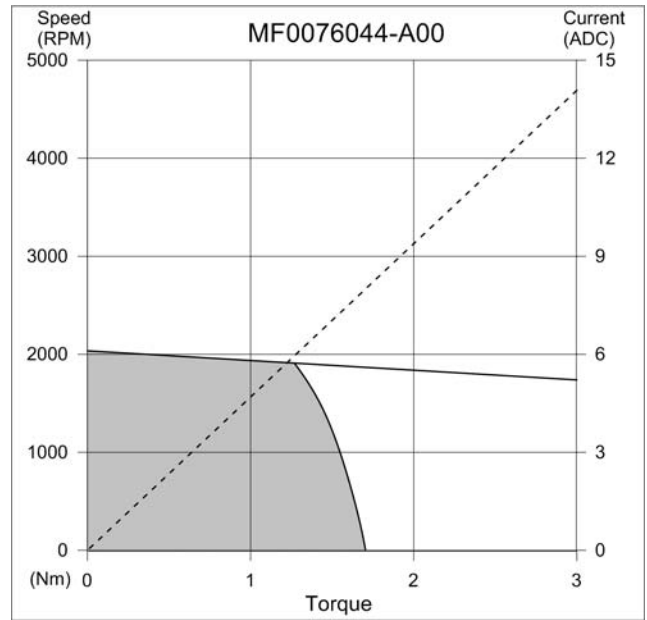
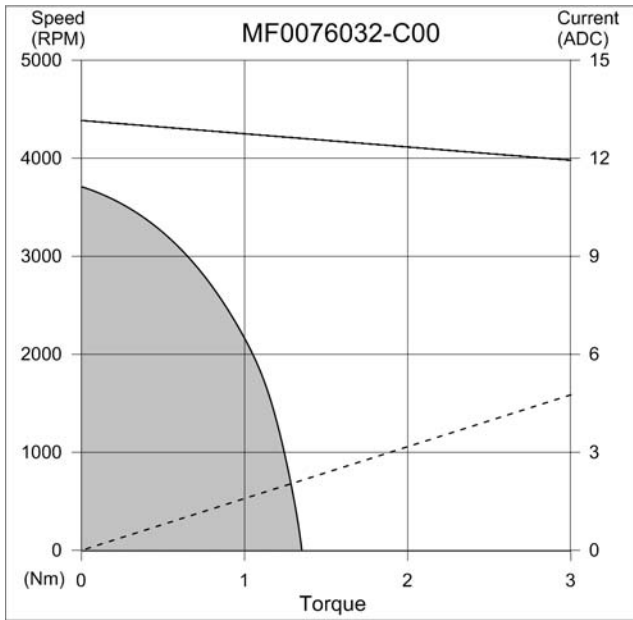
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MF0076 Series Frameless Brushless Torque Motors

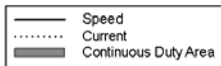
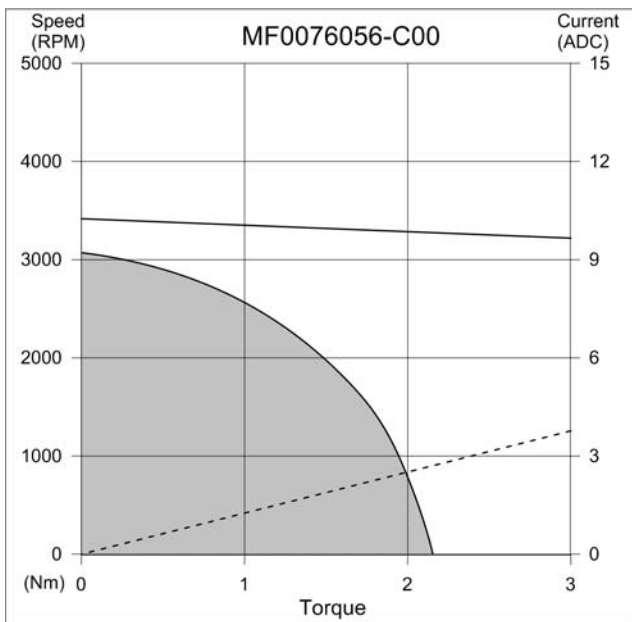
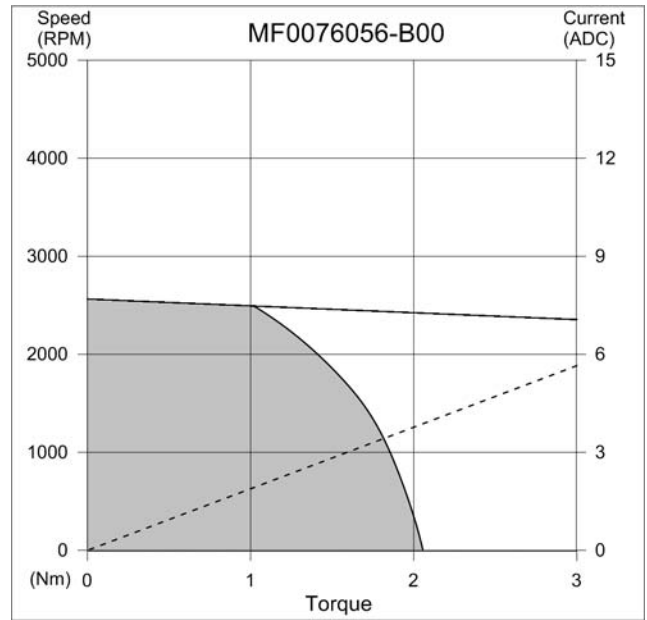
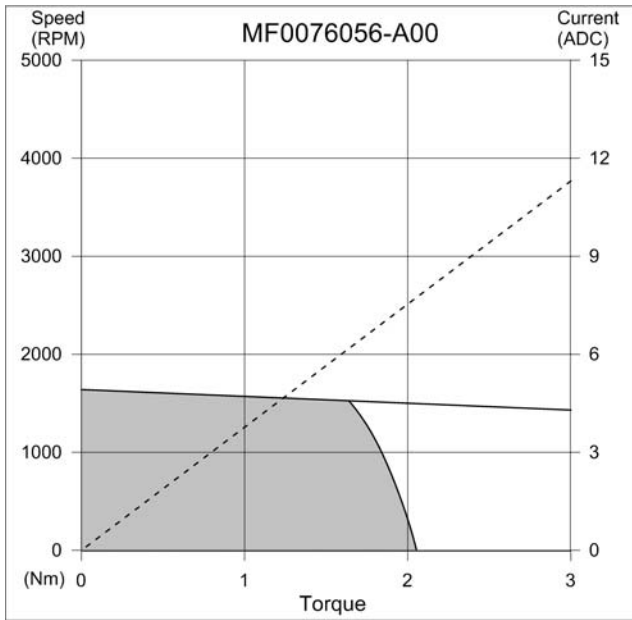
PERFORMANCE



Torque Motors

MF0076 Series Frameless Brushless Torque Motors

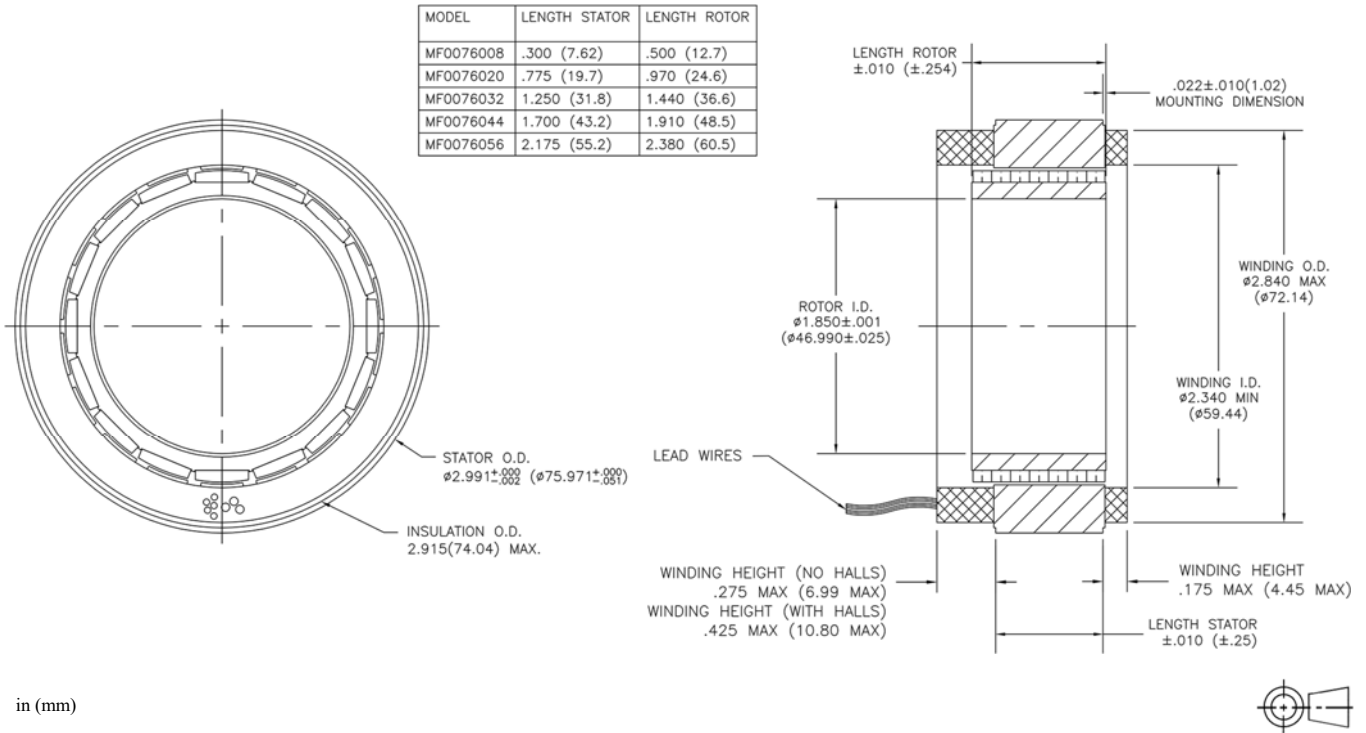
PERFORMANCE



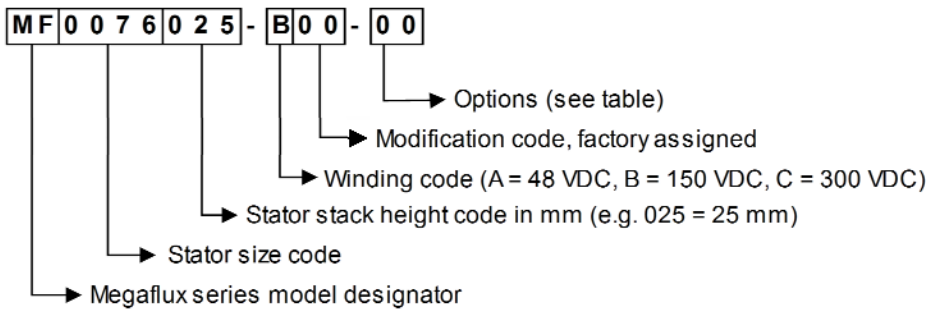
Torque Motors

MF0076 Series Frameless Brushless Torque Motors

DIMENSIONS



MODEL NUMBERING



Options
C = Customer-specified connector
Z = RoHS compliant

Torque Motors

MF0095 Series Frameless Brushless Torque Motors

SPECIFICATIONS (all data measured at 20 °C ambient)

Model No.		MF0095008			MF0095020			MF0095032		
Winding Voltage	V	48	150	300	48	150	300	48	150	300
Stall Torque (continuous) ⁽¹⁾	lb-ft	0.68	0.68	0.72	1.28	1.29	1.34	1.89	1.92	2.04
	Nm	0.92	0.92	0.97	1.73	1.75	1.82	2.56	2.61	2.76
Peak Torque (±25%)	lb-ft	5.4	5.4	5.4	13	13	13	23	23	23
	Nm	7.3	7.3	7.3	18	18	18	31	31	31
Peak Current	A	68	23	15	131	54	34	152	76	51
No Load Speed	RPM	4059	4324	5436	3158	4038	5076	2116	3306	4408
	rad/s	425	453	569	331	423	532	222	346	462
Cogging Torque (max.)	lb-ft	0.015			0.034			0.044		
	Nm	0.020			0.046			0.060		
Torque Constant (±10%)	lb-ft/A	0.08	0.23	0.37	0.10	0.25	0.40	0.15	0.30	0.45
	Nm/A	0.11	0.31	0.50	0.14	0.34	0.54	0.20	0.41	0.61
Voltage Constant (±10%)	V/kRPM	11	33	52	14	35	56	21	43	64
	V/rad/s	0.11	0.31	0.50	0.14	0.34	0.54	0.20	0.41	0.61
Motor Constant	lb-ft/√W	0.11	0.11	0.12	0.20	0.21	0.21	0.28	0.29	0.30
	Nm/√W	0.15	0.15	0.16	0.28	0.28	0.29	0.38	0.39	0.41
Elect. Time Constant	ms	0.56	0.56	0.63	0.84	0.86	0.93	0.91	0.94	1.05
Mech. Time Constant	ms	4.87	4.88	4.35	3.06	3.00	2.77	2.35	2.27	2.02
Terminal Resistance (±12%)	Ohm	0.48	4.314	9.34	0.25	1.46	3.41	0.28	1.08	2.17
Terminal Inductance (±30%)	mH	0.27	2.32	5.88	0.21	1.25	3.17	0.25	1.02	2.29
Thermal Resistance ⁽¹⁾	°C/W	1.90			1.55			1.45		
Motor Inertia	lb-ft-s ²	9.1E-5			1.8E-4			2.7E-4		
	kg-m ²	1.2E-4			2.5E-4			3.7E-4		
Motor Weight	lb	0.73	0.71	0.70	1.51	1.49	1.48	2.26	2.25	2.25
	kg	0.33	0.32	0.32	0.68	0.68	0.67	1.03	1.02	1.02
Ambient Storage Temperature	°C	-55 to 150								
Poles	-	16								

(1) Housed version of motor mounted to 178 mm sq. x 6.35 mm (7 in. sq x 0.25 in.) aluminum plate in still air; maximum operating temperature (ambient + rise) is 130 °C

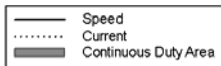
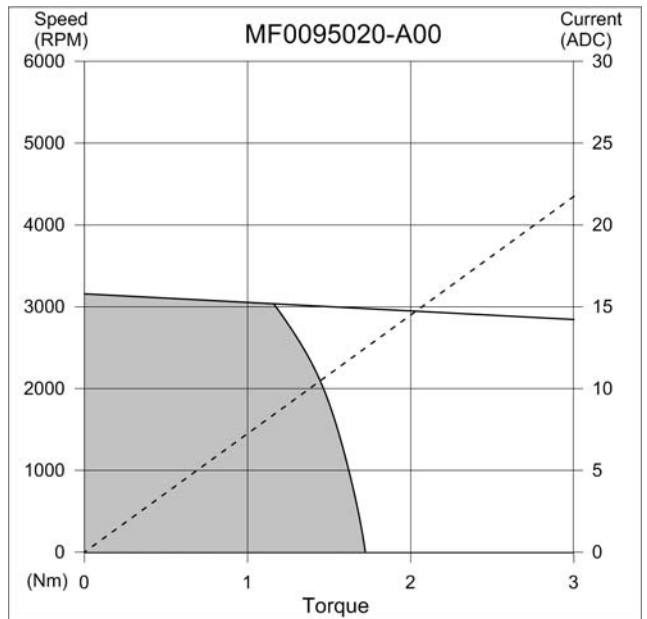
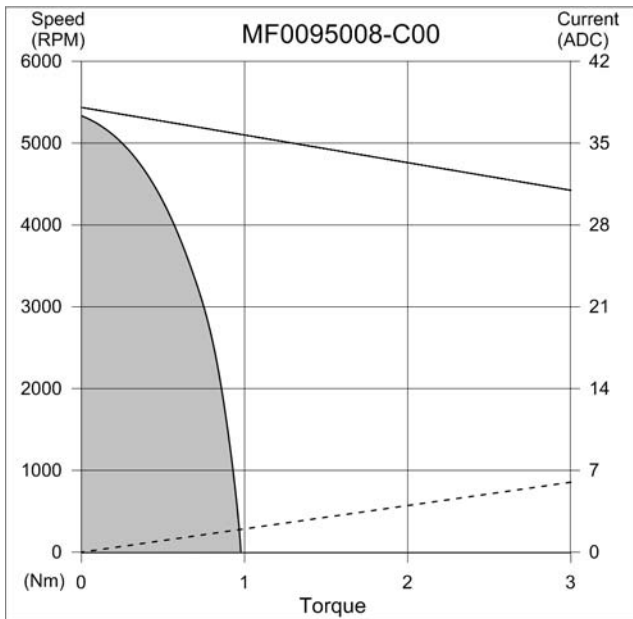
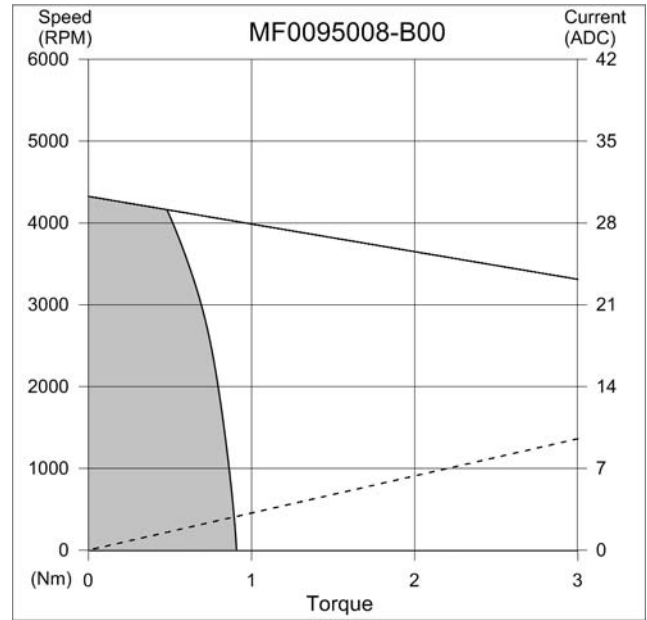
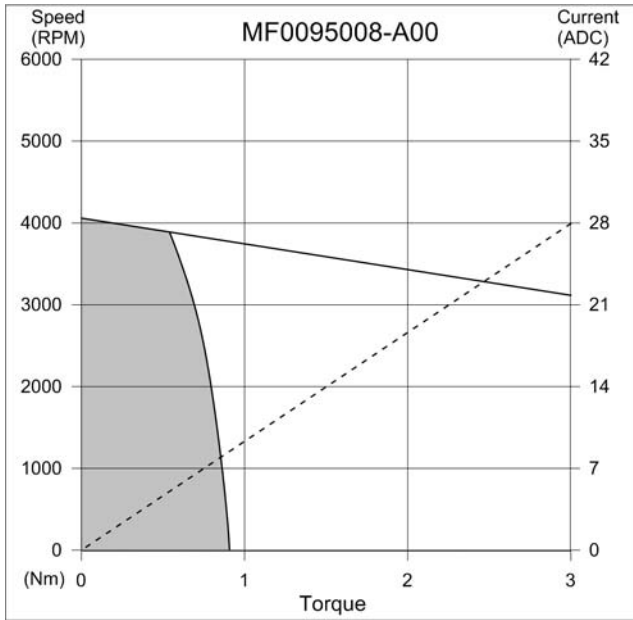
Model No.		MF0095044			MF0095056		
Winding Voltage	V	48	150	300	48	150	300
Stall Torque (continuous) ⁽¹⁾	lb-ft	2.38	2.42	2.54	3.22	2.92	3.24
	Nm	3.23	3.28	3.45	4.36	3.96	4.39
Peak Torque (±25%)	lb-ft	28	31	31	38	39	39
	Nm	38	42	42	51	53	53
Peak Current	A	142	77	51	149	78	52
No Load Speed	RPM	1596	2494	3325	1300	2031	2708
	rad/s	167	261	348	136	213	284
Cogging Torque (max.)	lb-ft	0.073			0.083		
	Nm	0.099			0.113		
Torque Constant (±10%)	lb-ft/A	0.20	0.40	0.60	0.25	0.50	0.76
	Nm/A	0.27	0.54	0.81	0.34	0.68	1.02
Voltage Constant (±10%)	V/kRPM	28	57	85	36	71	107
	V/rad/s	0.27	0.54	0.81	0.34	0.68	1.02
Motor Constant	lb-ft/√W	0.34	0.35	0.37	0.44	0.40	0.45
	Nm/√W	0.47	0.47	0.50	0.60	0.55	0.61
Elect. Time Constant	ms	1.00	1.03	1.14	1.33	1.09	1.34
Mech. Time Constant	ms	2.14	2.08	1.87	1.64	2.00	1.62
Terminal Resistance (±12%)	Ohm	0.34	1.32	2.67	0.32	1.56	2.86
Terminal Inductance (±30%)	mH	0.34	1.35	3.04	0.43	1.71	3.84
Thermal Resistance ⁽¹⁾	°C/W	1.35			1.23		
Motor Inertia	lb-ft-s ²	3.6E-4			4.5E-4		
	kg-m ²	4.9E-4			6.2E-4		
Motor Weight	lb	3.0	3.0	3.0	3.9	3.8	3.8
	kg	1.37	1.36	1.36	1.76	1.71	1.73
Ambient Storage Temperature	°C	-55 to 150					
Poles	-	16					

(1) Housed version of motor mounted to 178 mm sq. x 6.35 mm (7 in. sq x 0.25 in.) aluminum plate in still air; maximum operating temperature (ambient + rise) is 130 °C

Torque Motors

MF0095 Series Frameless Brushless Torque Motors

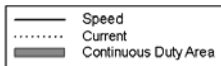
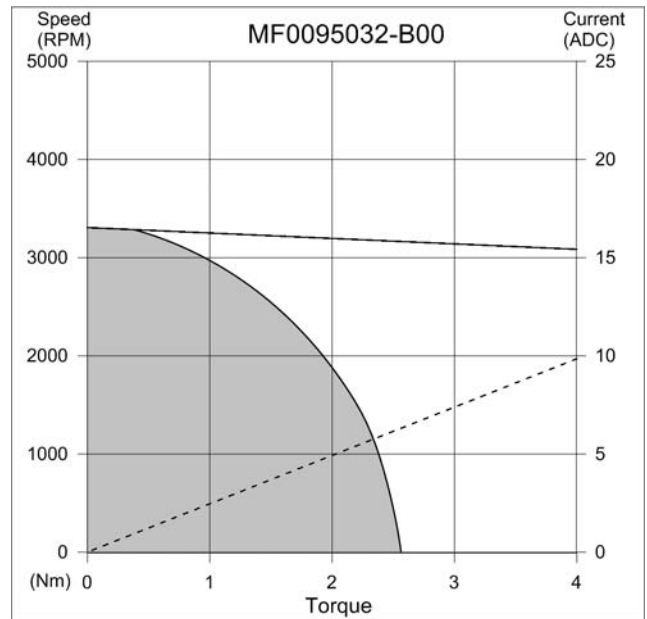
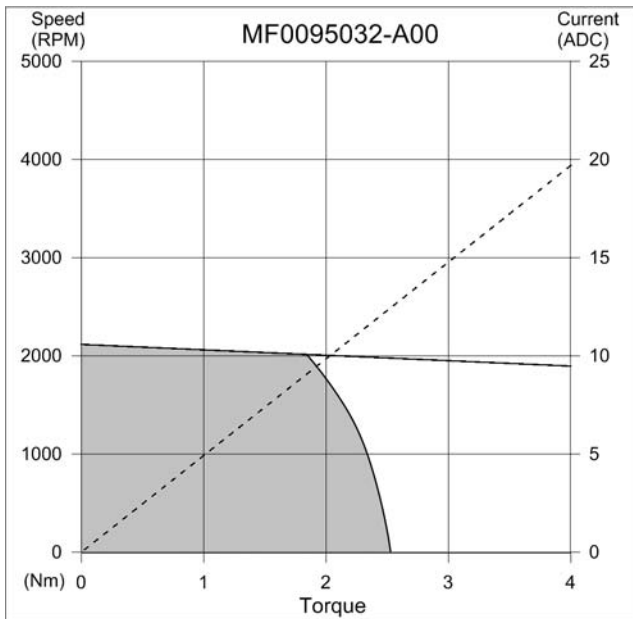
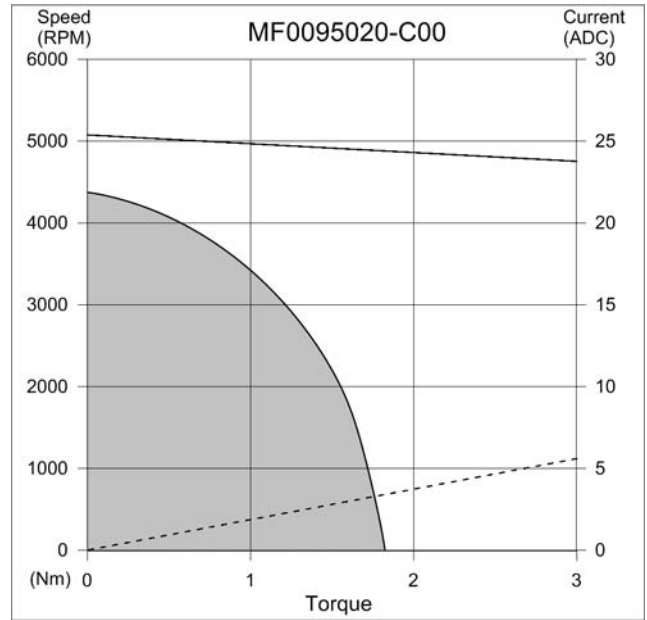
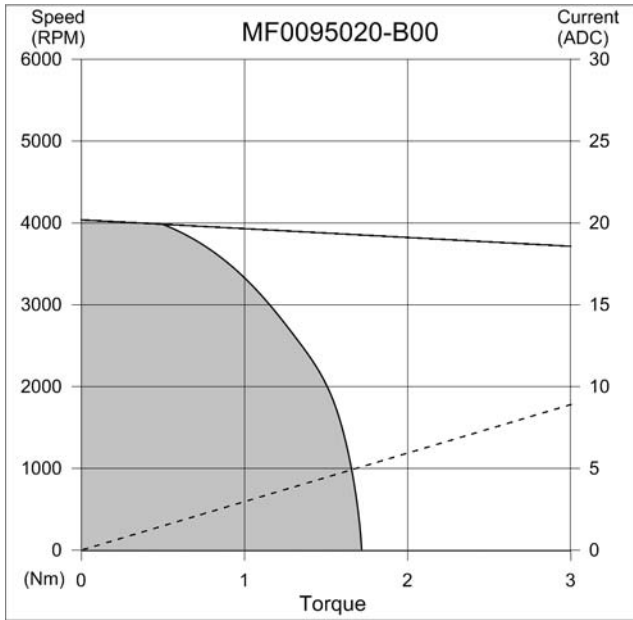
PERFORMANCE



Torque Motors

MF0095 Series Frameless Brushless Torque Motors

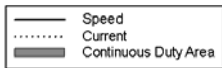
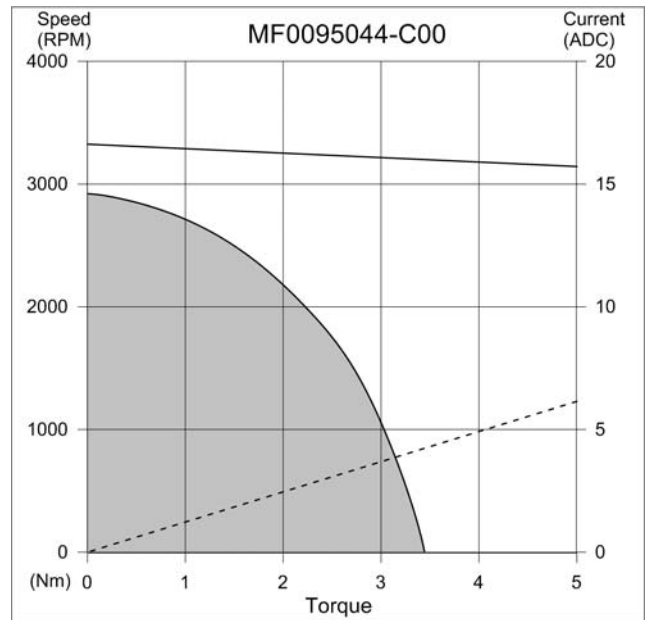
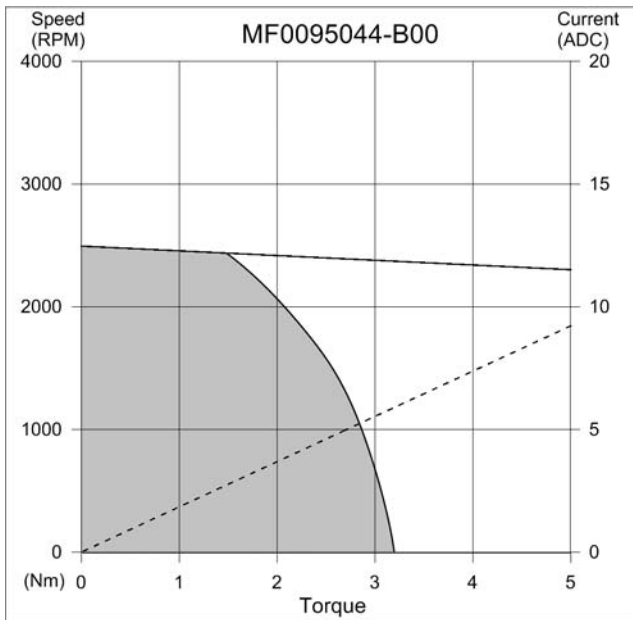
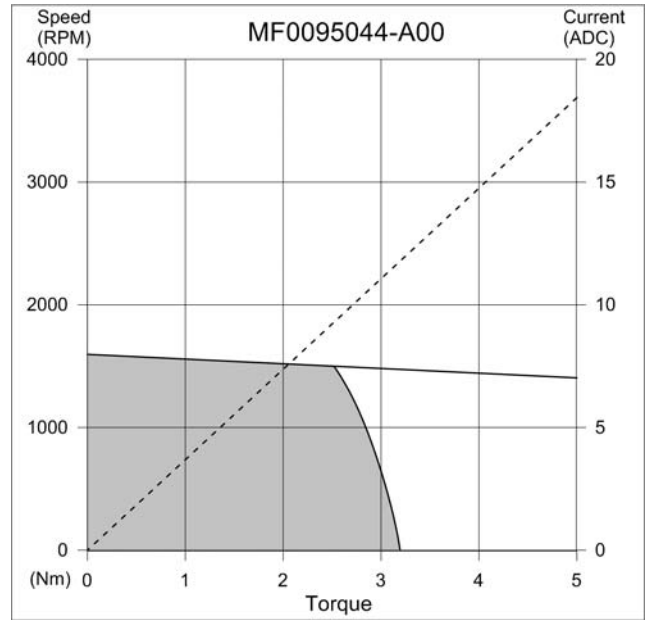
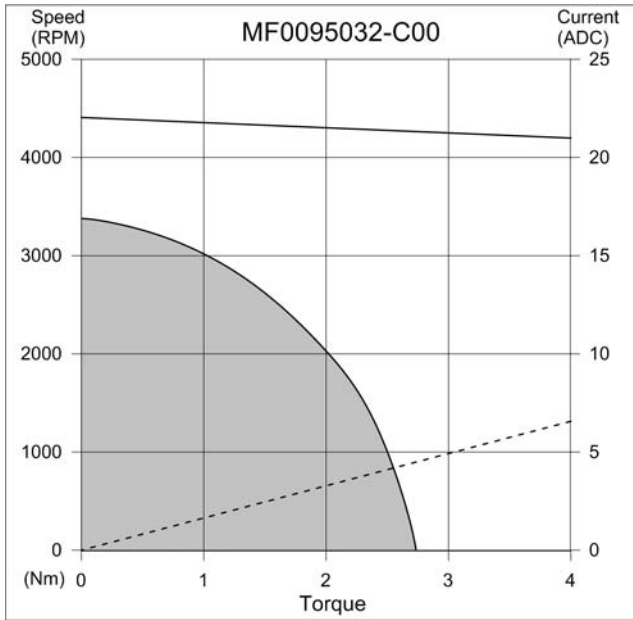
PERFORMANCE



Torque Motors

MF0095 Series Frameless Brushless Torque Motors

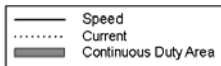
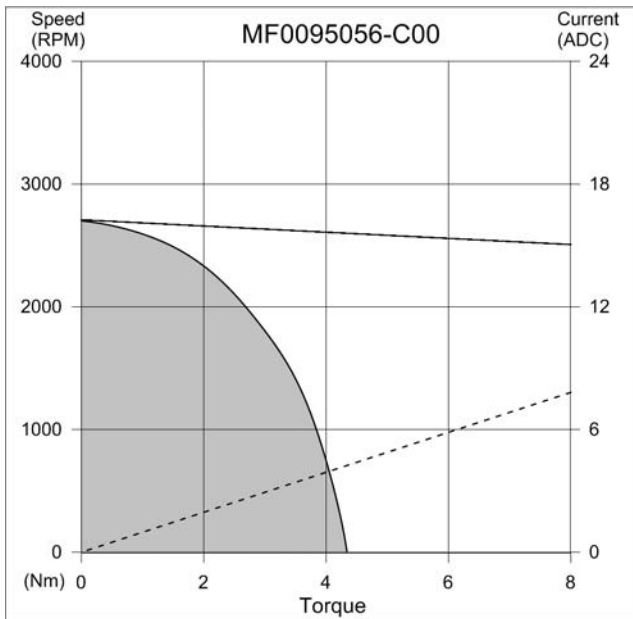
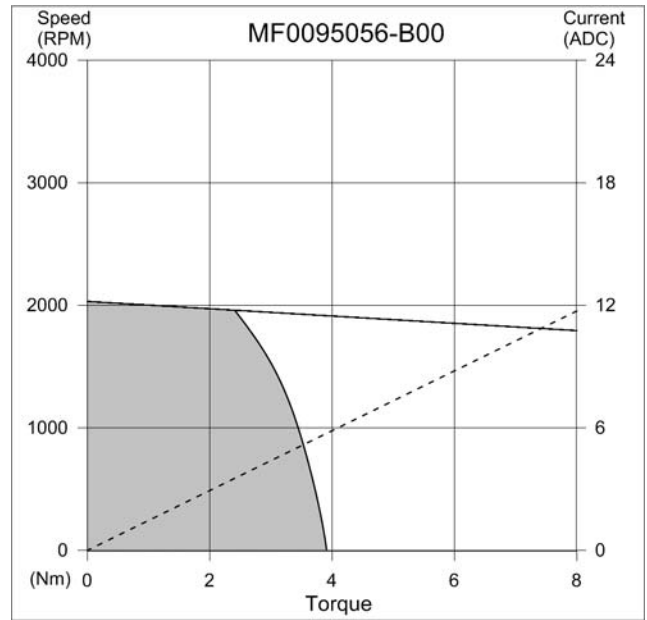
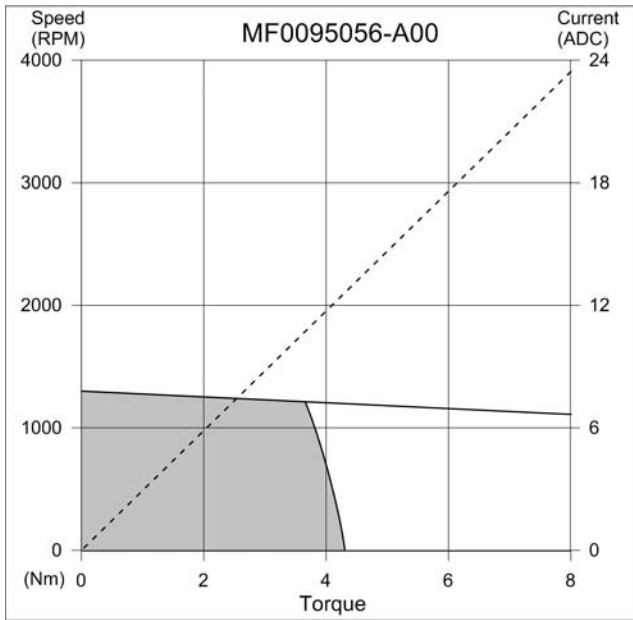
PERFORMANCE



Torque Motors

MF0095 Series Frameless Brushless Torque Motors

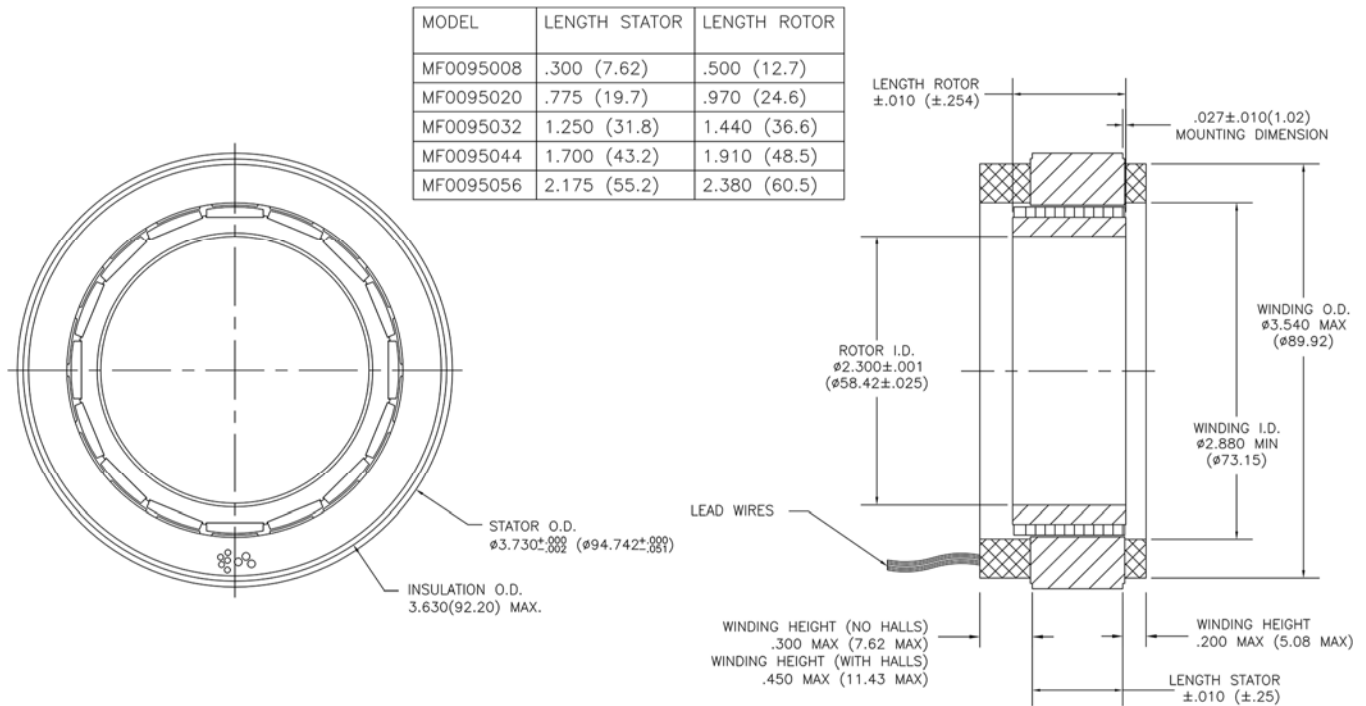
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Torque Motors

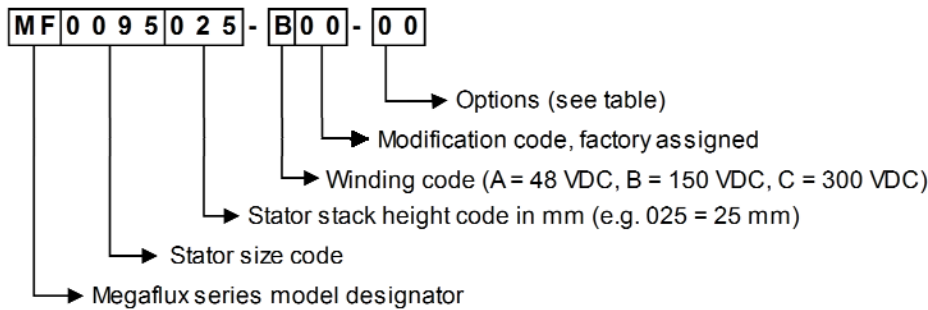
MF0095 Series Frameless Brushless Torque Motors

DIMENSIONS



in (mm)

MODEL NUMBERING



Options
C = Customer-specified connector
Z = RoHS compliant

Torque Motors

MF0127 Series Frameless Brushless Torque Motors

SPECIFICATIONS (all data measured at 20 °C ambient)

Model No.		MF0127008			MF0127020			MF0127032		
Winding Voltage	V	48	150	300	48	150	300	48	150	300
Stall Torque (continuous) ⁽¹⁾	lb-ft	1.2	1.2	1.4	2.7	2.9	3.0	3.9	4.0	4.0
	Nm	1.6	1.7	1.8	3.7	3.9	4.1	5.3	5.4	5.5
Peak Torque (±25%)	lb-ft	4.0	4.0	4.0	19.1	19.1	19.1	30.1	30.1	30.1
	Nm	5.4	5.4	5.4	25.8	25.8	25.8	40.8	40.8	40.8
Peak Current	A	48	17.5	9.9	163	67	42	130	65	43
No Load Speed	RPM	3942	4479	5097	2805	3610	4546	1411	2204	2939
	rad/s	413	469	534	294	378	476	148	231	308
Cogging Torque (max.)	lb-ft	0.03			0.07			0.10		
	Nm	0.05			0.09			0.14		
Torque Constant (±10%)	lb-ft/A	0.082	0.23	0.40	0.12	0.28	0.45	0.23	0.46	0.69
	Nm/A	0.112	0.31	0.54	0.16	0.38	0.61	0.31	0.63	0.94
Voltage Constant (±10%)	V/kRPM	12	32	57	17	40	64	33	66	98
	V/rad/s	0.112	0.31	0.54	0.16	0.38	0.61	0.31	0.63	0.94
Motor Constant	lb-ft/√W	0.17	0.17	0.19	0.36	0.38	0.40	0.48	0.49	0.50
	Nm/√W	0.23	0.23	0.26	0.49	0.52	0.54	0.65	0.67	0.67
Elect. Time Constant	ms	0.98	1.03	1.27	1.40	1.59	1.74	1.61	1.68	1.71
Mech. Time Constant	ms	6.14	5.86	4.75	2.69	2.37	2.17	2.25	2.16	2.12
Terminal Resistance (±12%)	Ohm	0.24	1.74	4.37	0.11	0.55	1.26	0.23	0.89	1.96
Terminal Inductance (±30%)	mH	0.15	0.87	2.19	0.37	1.49	3.35	0.39	1.56	3.51
Thermal Resistance ⁽¹⁾	°C/W	1.10			0.99			0.90		
Motor Inertia	lb-ft-s ²	4.9E-4			7.3E-4			9.7E-4		
	kg-m ²	6.6E-4			9.9E-4			1.3E-3		
Motor Weight	lb	1.2	1.2	1.2	2.5	2.6	2.5	3.8	3.8	3.7
	kg	0.56	0.55	0.55	1.15	1.16	1.14	1.72	1.71	1.69
Ambient Storage Temperature	°C	-55 to 150								
Poles	-	16								

(1) Housed version of motor mounted to 254 mm sq. x 6.35 mm (10 in. sq x 0.25 in.) aluminum plate in still air; maximum operating temperature (ambient + rise) is 130 °C

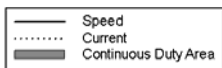
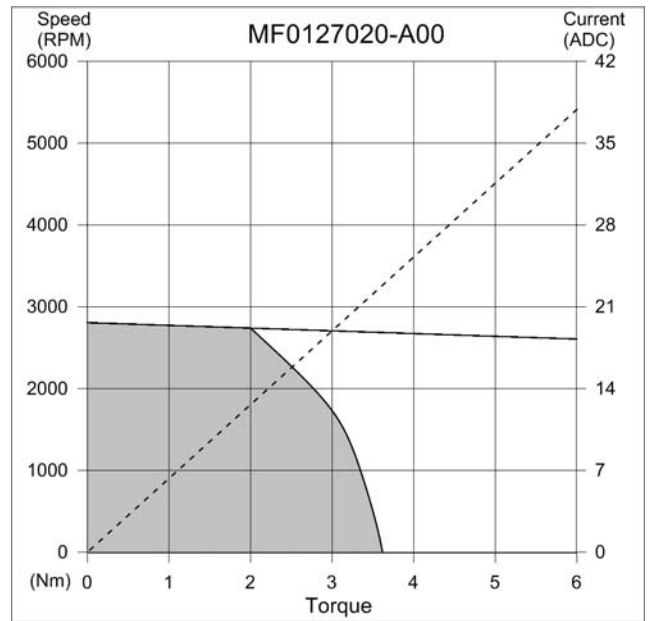
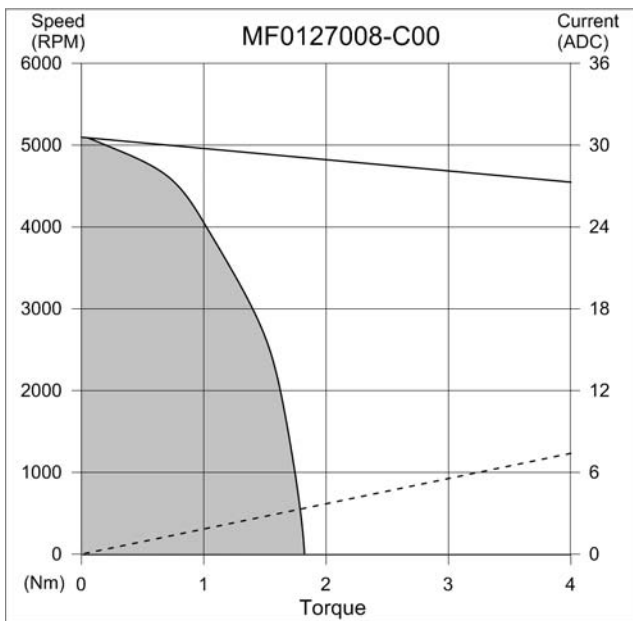
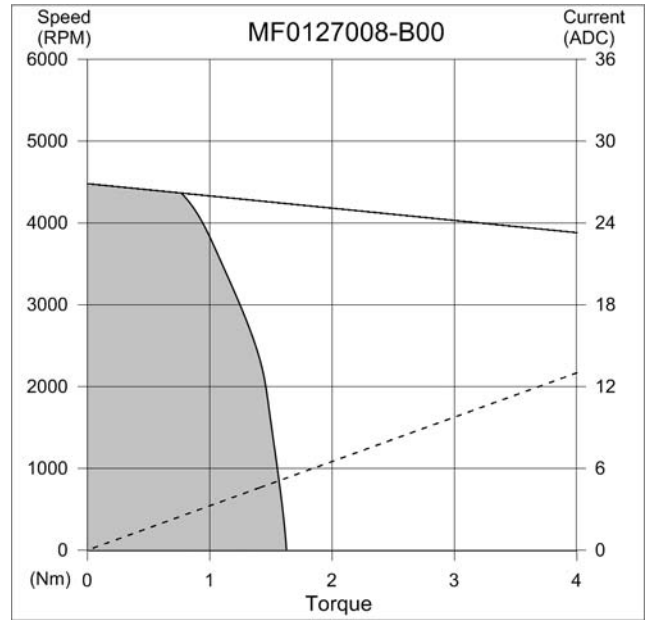
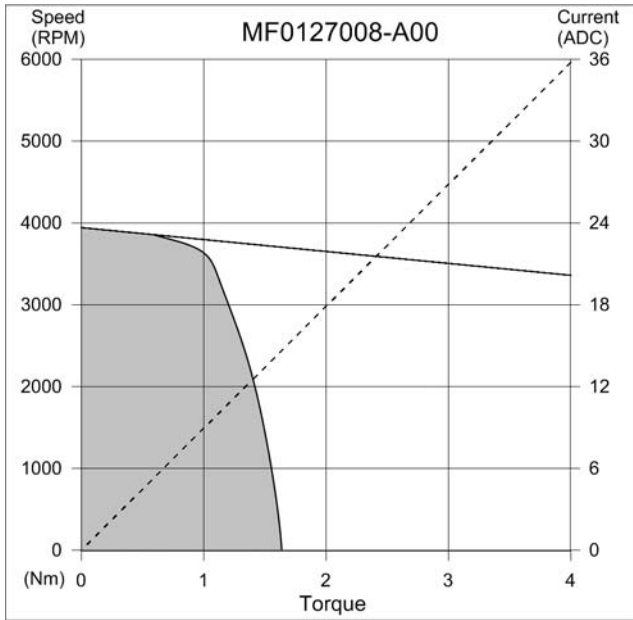
Model No.		MF0127044			MF0127056		
Winding Voltage	V	48	150	300	48	150	300
Stall Torque (continuous) ⁽¹⁾	lb-ft	5.0	5.1	5.1	6.1	6.2	6.2
	Nm	6.8	6.9	6.9	8.3	8.4	8.4
Peak Torque (±25%)	lb-ft	40	40	40	49	49	49
	Nm	54	54	54	67	67	67
Peak Current	A	145	73	48	141	71	47
No Load Speed	RPM	1190	1860	2480	939	1467	1956
	rad/s	125	195	260	98	154	205
Cogging Torque (max.)	lb-ft	0.14			0.18		
	Nm	0.19			0.24		
Torque Constant (±10%)	lb-ft/A	0.28	0.55	0.83	0.35	0.69	1.04
	Nm/A	0.37	0.75	1.12	0.47	0.94	1.41
Voltage Constant (±10%)	V/kRPM	39	78	117	49	99	148
	V/rad/s	0.37	0.75	1.12	0.47	0.94	1.41
Motor Constant	lb-ft/√W	0.59	0.60	0.60	0.69	0.70	0.70
	Nm/√W	0.80	0.81	0.82	0.93	0.95	0.95
Elect. Time Constant	ms	1.79	1.85	1.86	1.94	2.00	1.99
Mech. Time Constant	ms	2.01	1.94	1.92	1.83	1.77	1.78
Terminal Resistance (±12%)	Ohm	0.22	0.84	1.88	0.25	0.98	2.22
Terminal Inductance (±30%)	mH	0.39	1.56	3.51	0.49	1.97	4.42
Thermal Resistance ⁽¹⁾	°C/W	0.90			0.82		
Motor Inertia	lb-ft-s ²	9.7E-4			1.2E-3		
	kg-m ²	1.3E-3			1.7E-3		
Motor Weight	lb	5.0	5.0	4.9	6.3	6.3	6.2
	kg	2.28	2.27	2.24	2.86	2.85	2.82
Ambient Storage Temperature	°C	-55 to 150					
Poles	-	16					

(1) Housed version of motor mounted to 254 mm sq. x 6.35 mm (10 in. sq x 0.25 in.) aluminum plate in still air; maximum operating temperature (ambient + rise) is 130 °C

Torque Motors

MF0127 Series Frameless Brushless Torque Motors

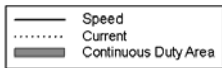
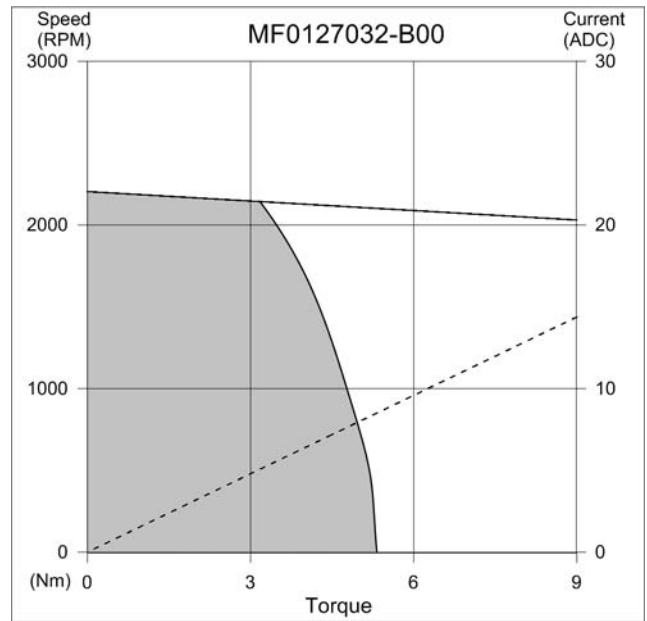
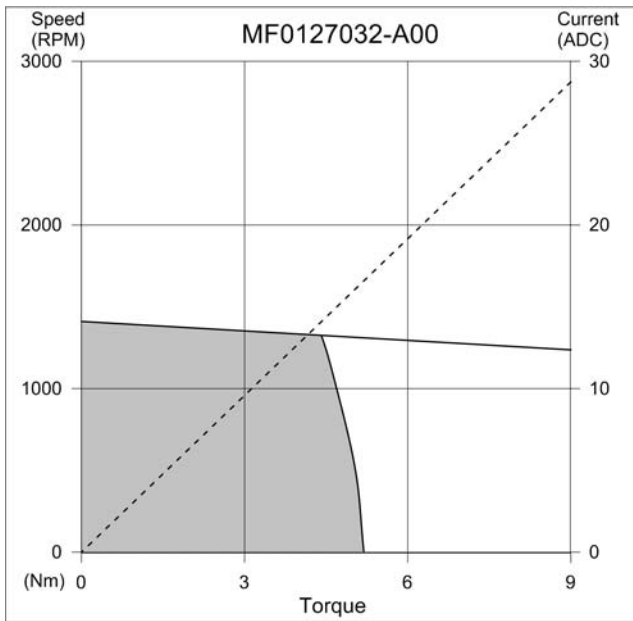
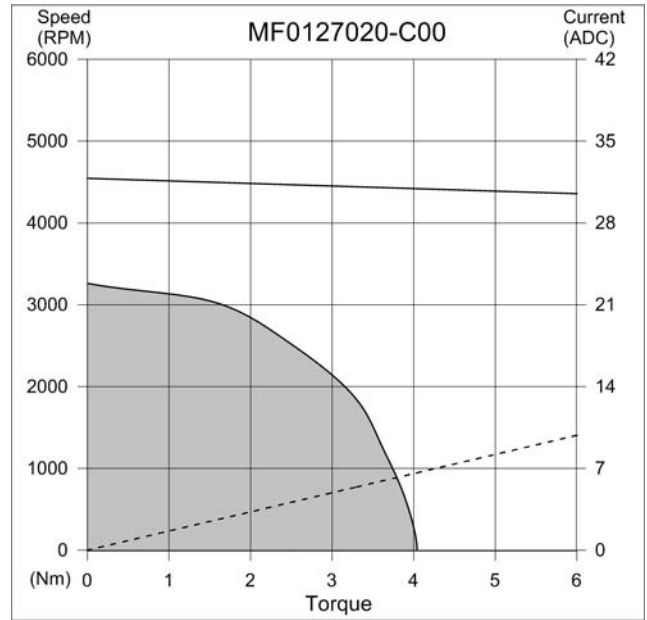
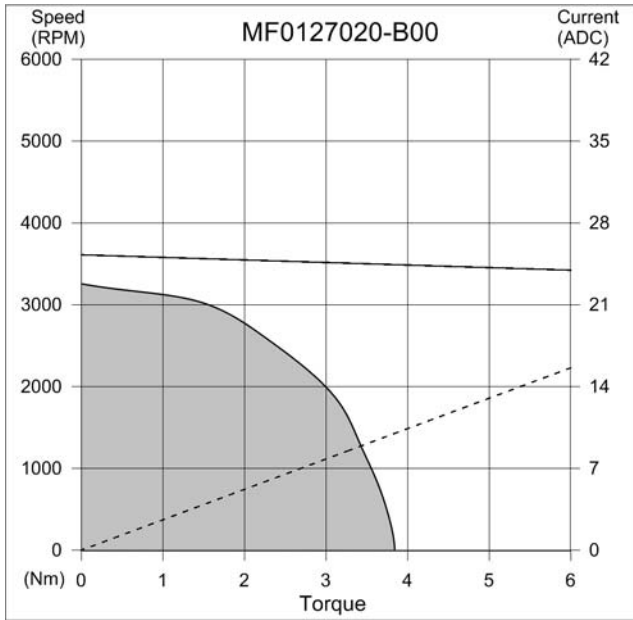
PERFORMANCE



Torque Motors

MF0127 Series Frameless Brushless Torque Motors

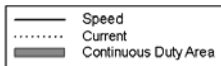
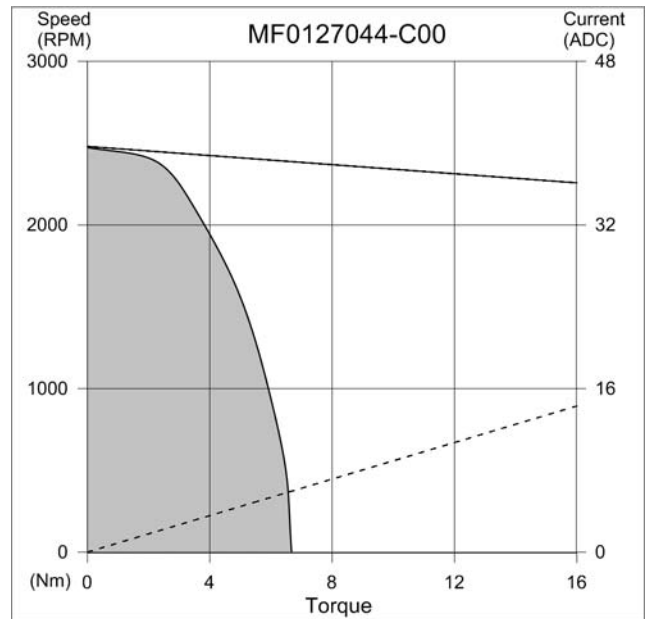
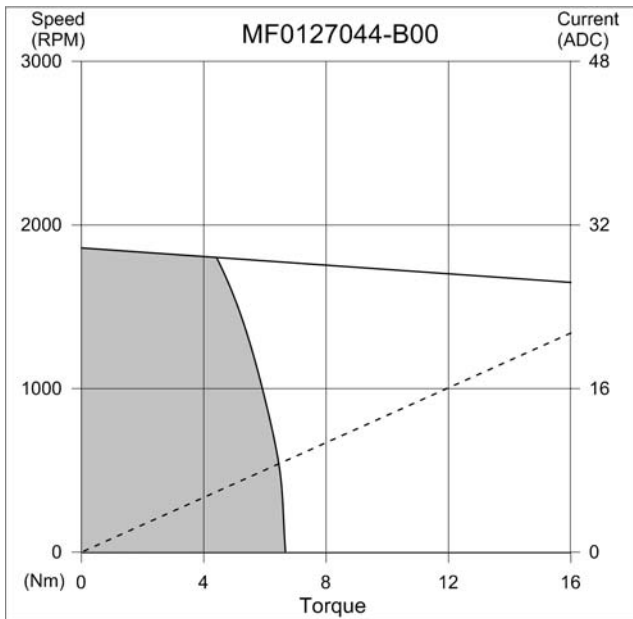
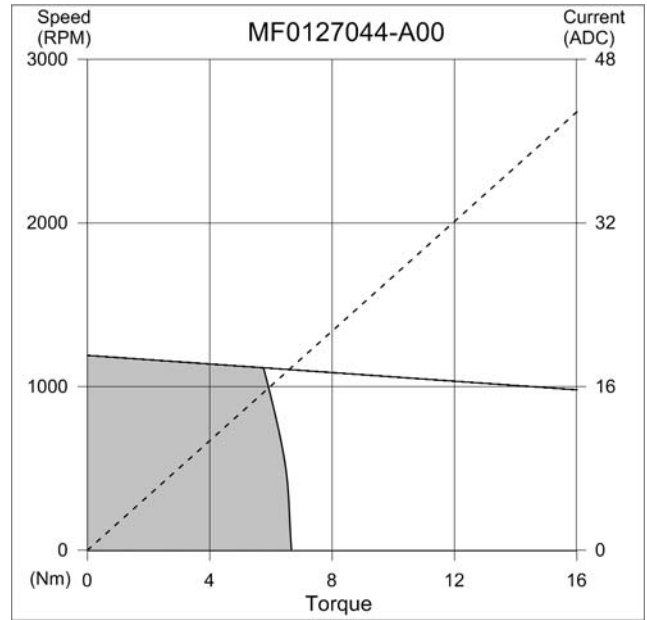
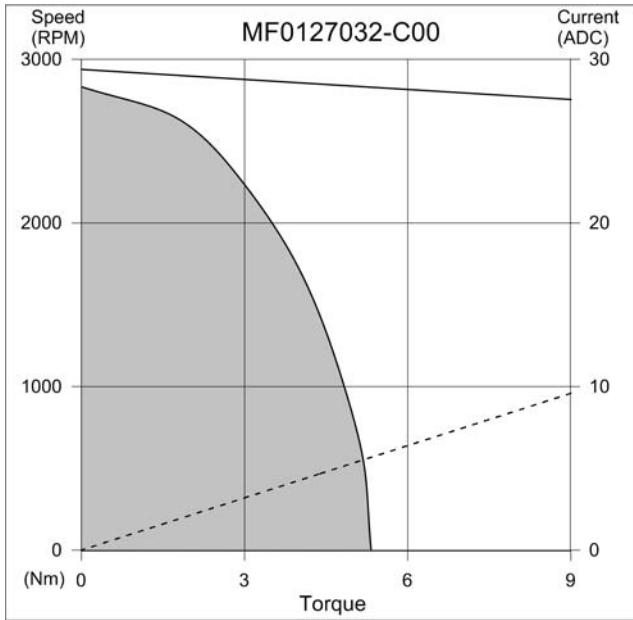
PERFORMANCE



Torque Motors

MF0127 Series Frameless Brushless Torque Motors

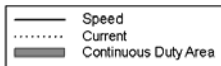
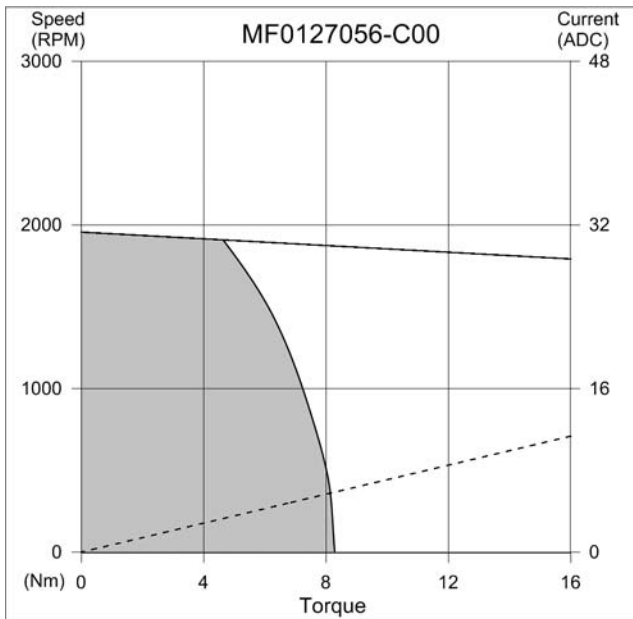
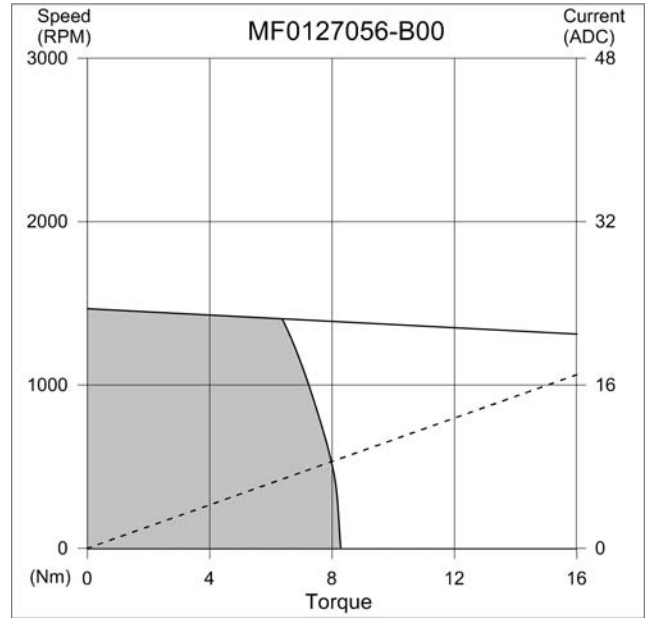
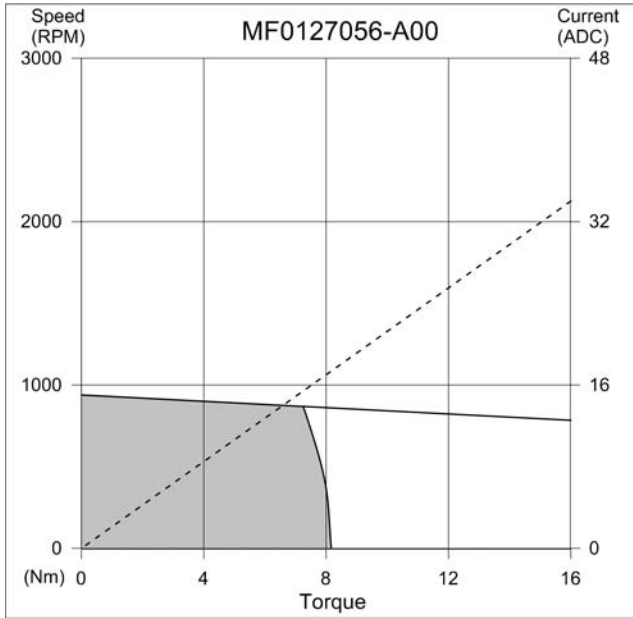
PERFORMANCE



Torque Motors

MF0127 Series Frameless Brushless Torque Motors

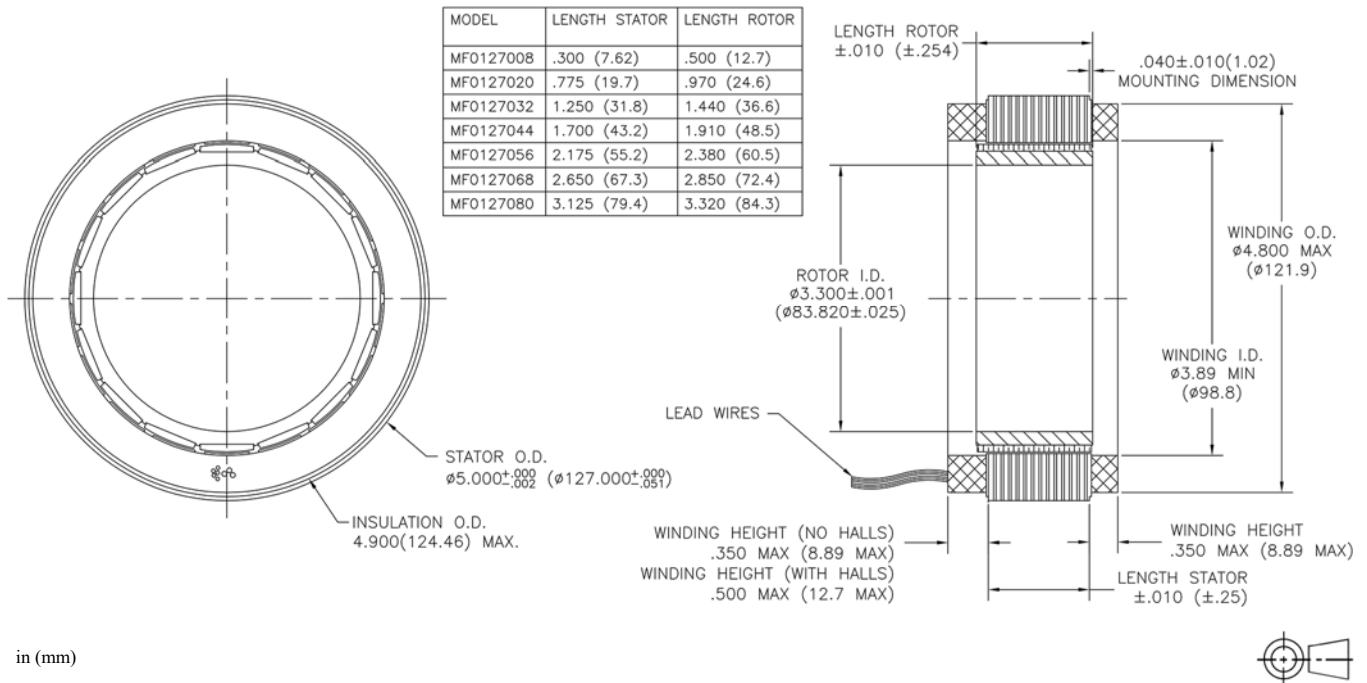
PERFORMANCE



Torque Motors

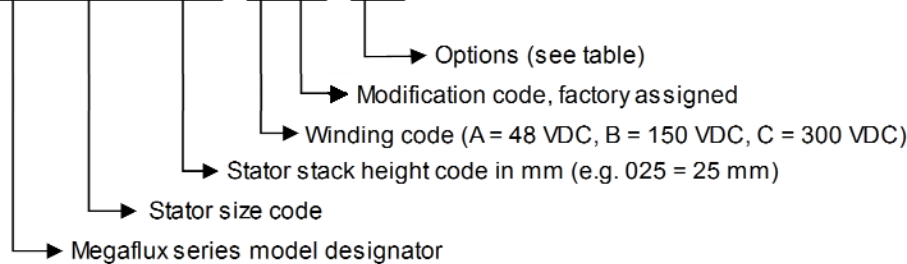
MF0127 Series Frameless Brushless Torque Motors

DIMENSIONS



MODEL NUMBERING

MF0127025 - B00 - 00



Options
C = Customer-specified connector
Z = RoHS compliant

Torque Motors

MF0150 Series Frameless Brushless Torque Motors

SPECIFICATIONS (all data measured at 20 °C ambient)

Model No.		MF0150010			MF0150025			MF0150050		
Winding Voltage	V	48	150	300	48	150	300	48	150	300
Stall Torque (continuous) ⁽¹⁾	lb-ft	2.4	2.3	2.3	6.2	6.2	6.2	9.9	10.1	9.8
	Nm	3.2	3.1	3.2	8.4	8.5	8.4	13.4	13.7	13.3
Peak Torque (±25%)	lb-ft	13.1	13.1	13.1	34.3	34.3	34.3	82.0	82.0	82.0
	Nm	17.8	17.8	17.8	46.5	46.5	46.5	111.2	111.2	111.2
Peak Current	A	52.2	25.5	16.4	121.5	60.7	45.5	160.7	128.6	80.4
No Load Speed	RPM	1267	1948	2500	1132	1789	2653	624	1559	1949
	rad/s	133	204	262	119	185	278	65	163	204
Cogging Torque (max.)	lb-ft	0.09			0.23			0.44		
	Nm	0.13			0.32			0.60		
Torque Constant (±10%)	lb-ft/A	0.253	0.515	0.802	0.282	0.564	0.753	0.510	0.638	1.020
	Nm/A	0.343	0.698	1.087	0.382	0.765	1.021	0.691	0.865	1.383
Voltage Constant (±10%)	V/kRPM	35.92	73.12	113.87	40.04	80.08	106.91	72.41	90.58	144.82
	V/rad/s	0.343	0.698	1.087	0.382	0.765	1.021	0.691	0.865	1.383
Motor Constant	lb-ft/√W	0.33	0.32	0.33	0.72	0.72	0.72	1.04	1.06	1.03
	Nm/√W	0.45	0.44	0.45	0.97	0.98	0.98	1.41	1.44	1.39
Elect. Time Constant	ms	2.14	1.56	2.14	3.54	3.55	3.22	3.38	3.54	3.33
Mech. Time Constant	ms	2.26	2.3	2.28	1.25	1.24	1.23	1.14	1.21	1.06
Terminal Resistance (±12%)	Ohm	0.584	2.525	5.930	0.154	0.613	1.082	0.242	0.361	0.984
Terminal Inductance (±30%)	mH	1.25	5.24	12.71	0.54	2.15	3.83	0.861	1.346	3.445
Thermal Resistance ⁽¹⁾	°C/W	1.25			0.85			0.70		
Motor Inertia	lb-ft-s ²	3.5E-4			9.3E-4			1.9E-3		
	kg-m ²	4.8E-4			1.3E-3			2.5E-3		
Motor Weight	lb	2.6	2.7	2.7	6.7	6.7	6.6	12.4	12.4	12.3
	kg	1.20	1.20	1.21	3.05	3.02	3.01	5.62	5.64	5.60
Ambient Storage Temperature	°C	-55 to 150								
Poles	-	24								

(1) Housed version of motor mounted to 254 mm sq. x 6.35 mm (10 in. sq x 0.25 in.) aluminum plate in still air; maximum operating temperature (ambient + rise) is 130 °C

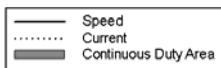
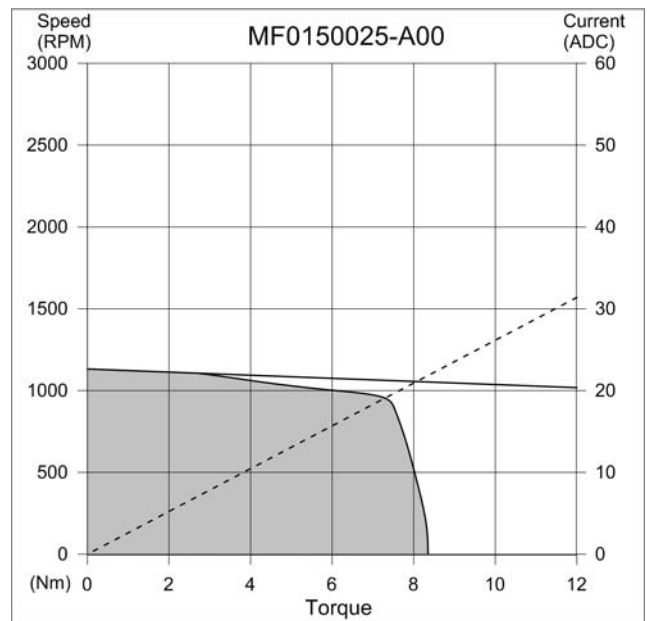
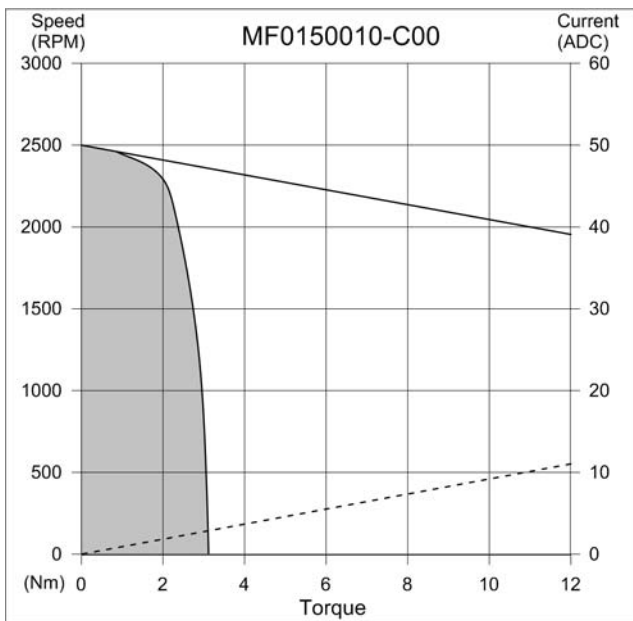
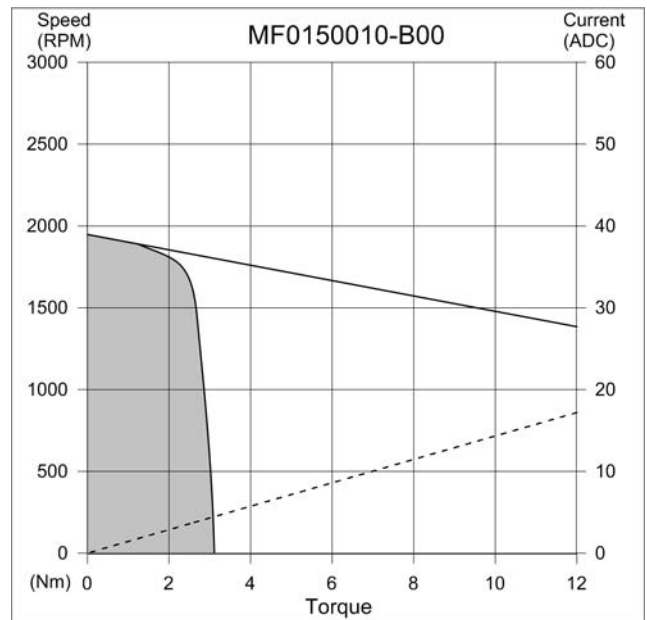
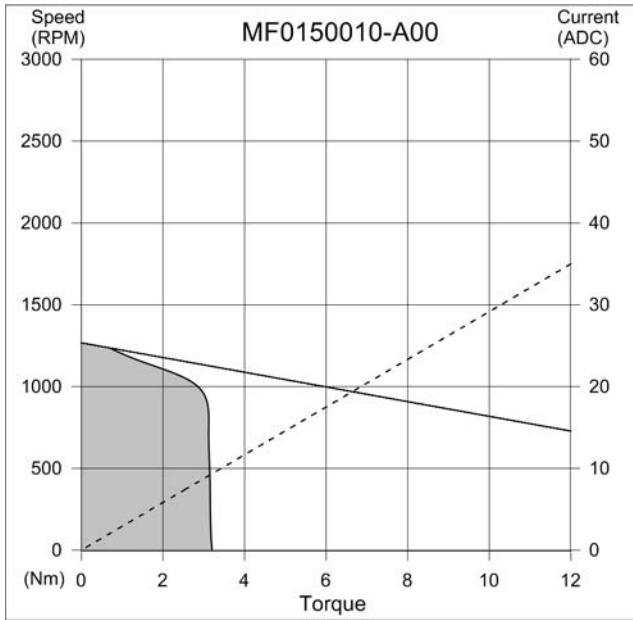
Model No.		MF0150075			MF0150100		
Winding Voltage	V	48	150	300	48	150	300
Stall Torque (continuous) ⁽¹⁾	lb-ft	13.9	13.6	13.8	18.1	18.1	18.2
	Nm	18.9	18.5	18.7	24.5	24.6	24.7
Peak Torque (±25%)	lb-ft	123	123	123	160	165	165
	Nm	166	166	166	217	223	223
Peak Current	A	214	143	107	207	142	107
No Load Speed	RPM	555	1156	1734	416	863	1294
	rad/s	58	121	182	44	90	136
Cogging Torque (max.)	lb-ft	0.60			0.90		
	Nm	0.82			1.21		
Torque Constant (±10%)	lb-ft/A	0.573	0.860	1.147	0.772	1.157	1.543
	Nm/A	0.777	1.166	1.555	1.047	1.569	2.092
Voltage Constant (±10%)	V/kRPM	81.4	122.1	162.9	109.6	164.3	219.1
	V/rad/s	0.777	1.166	1.555	1.047	1.569	2.092
Motor Constant	lb-ft/√W	1.35	1.33	1.34	1.60	1.60	1.61
	Nm/√W	1.83	1.80	1.92	2.17	2.18	2.19
Elect. Time Constant	ms	3.78	3.64	3.72	3.88	3.89	2.94
Mech. Time Constant	ms	1.06	1.10	1.07	1.01	1.00	0.99
Terminal Resistance (±12%)	Ohm	0.180	0.421	0.732	0.232	0.520	0.916
Terminal Inductance (±30%)	mH	0.681	1.532	2.723	0.899	2.022	2.696
Thermal Resistance ⁽¹⁾	°C/W	0.600			0.500		
Motor Inertia	lb-ft-s ²	2.8E-3			3.7E-3		
	kg-m ²	3.8E-3			5.0E-3		
Motor Weight	lb	18.8	18.4	18.4	24.3	24.3	24.3
	kg	8.53	8.35	8.34	11.04	11.04	11.03
Ambient Storage Temperature	°C	-55 to 150					
Poles	-	24					

(1) Housed version of motor mounted to 254 mm sq. x 6.35 mm (10 in. sq x 0.25 in.) aluminum plate in still air; maximum operating temperature (ambient + rise) is 130 °C

Torque Motors

MF0150 Series Frameless Brushless Torque Motors

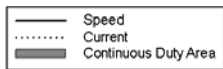
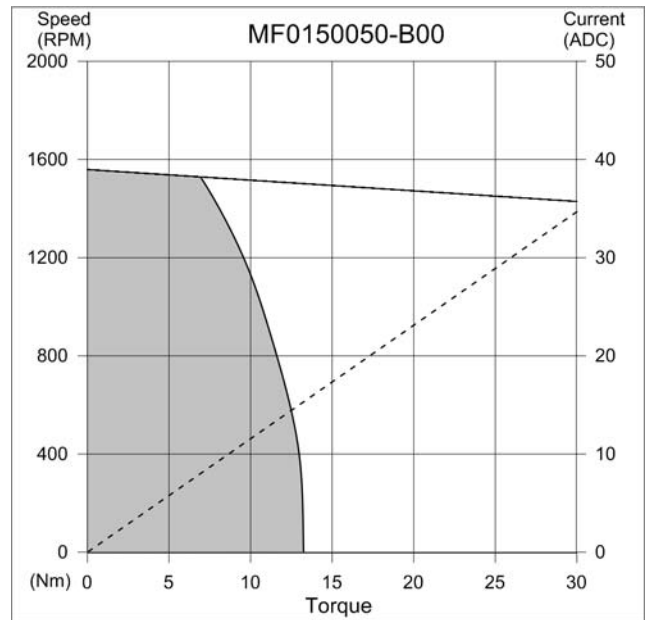
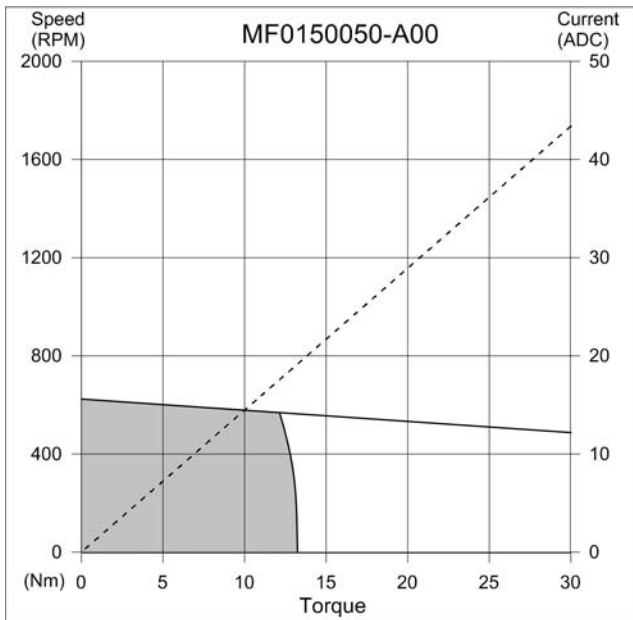
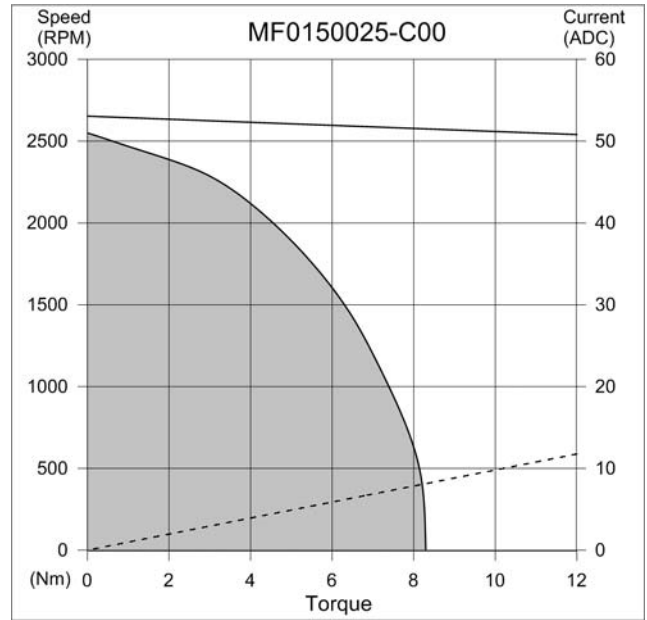
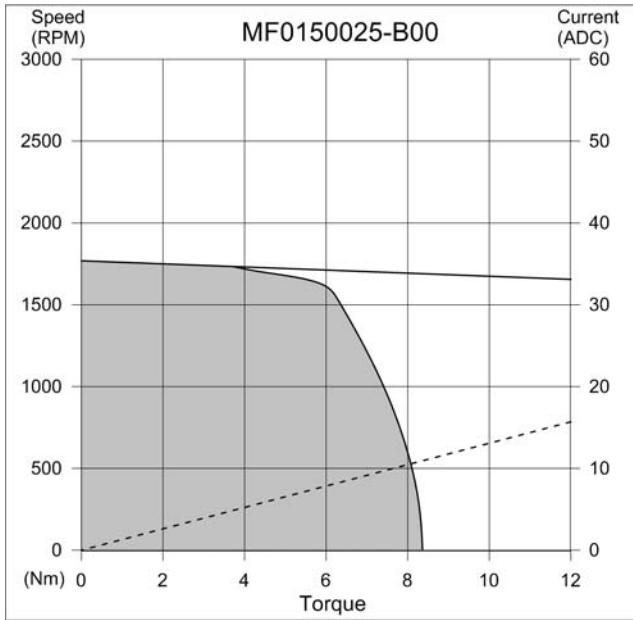
PERFORMANCE



Torque Motors

MF0150 Series Frameless Brushless Torque Motors

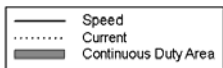
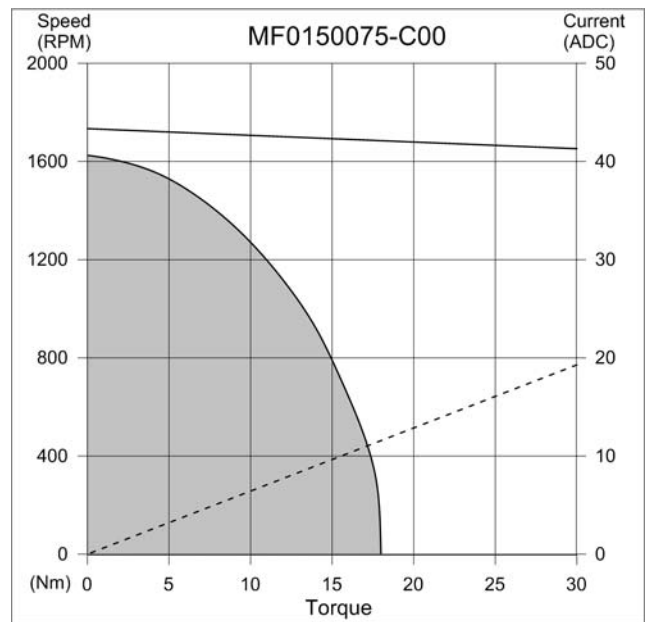
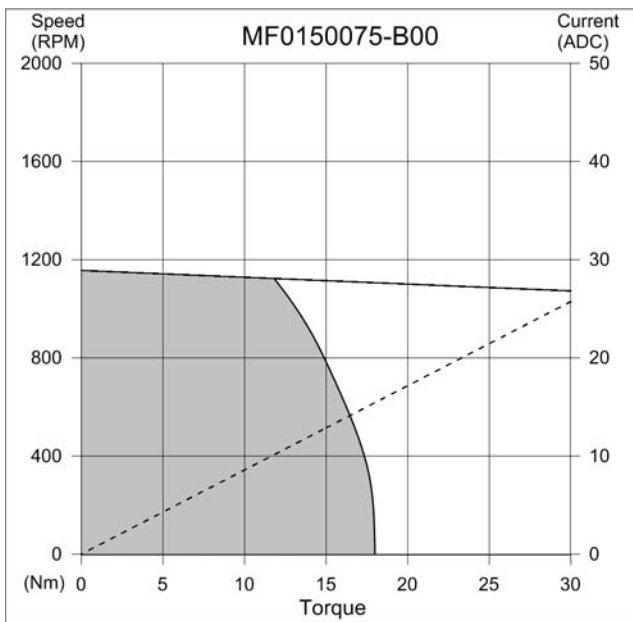
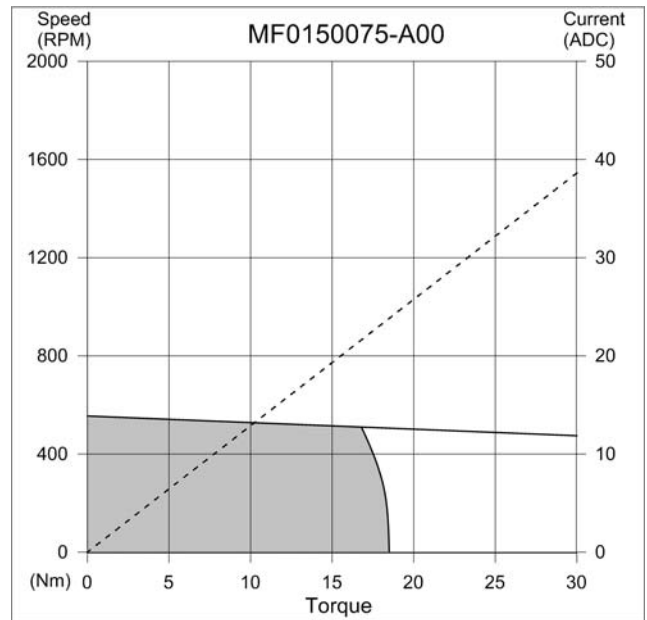
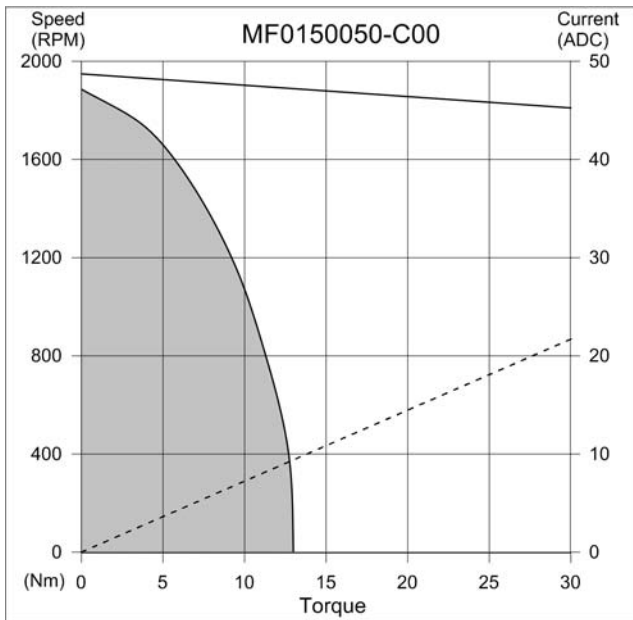
PERFORMANCE



Torque Motors

MF0150 Series Frameless Brushless Torque Motors

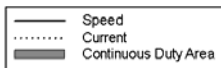
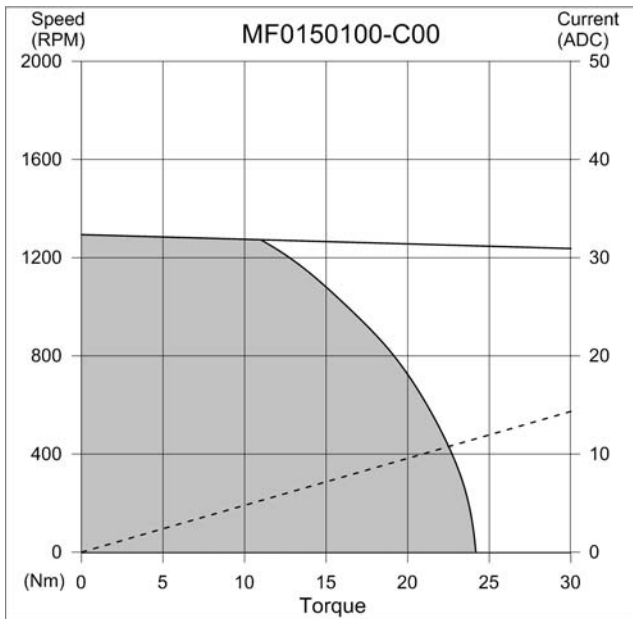
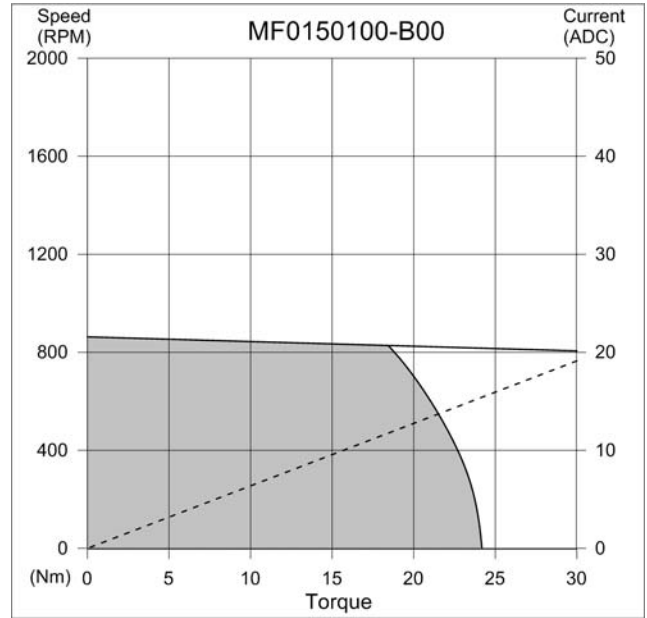
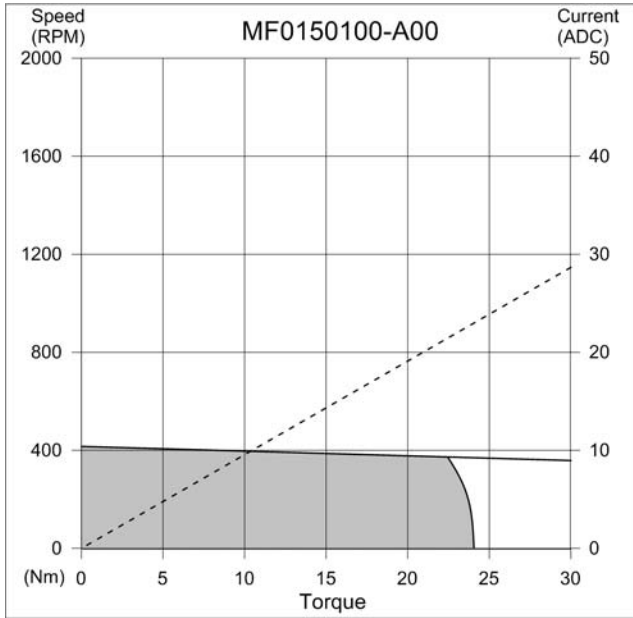
PERFORMANCE



Torque Motors

MF0150 Series Frameless Brushless Torque Motors

PERFORMANCE

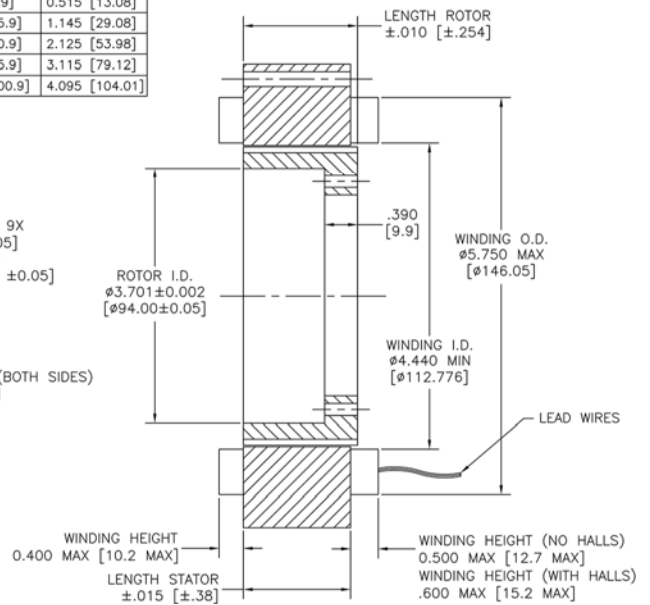
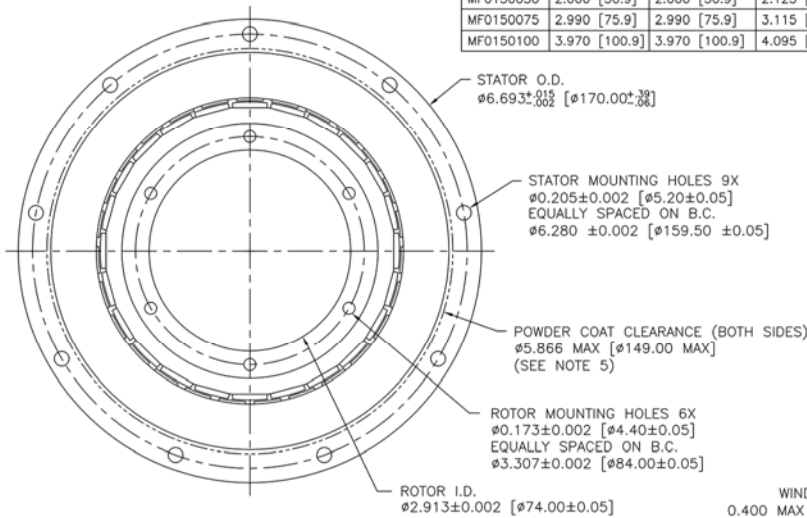


Torque Motors

MF0150 Series Frameless Brushless Torque Motors

DIMENSIONS

MODEL	LENGTH STATOR	LENGTH ROTOR NO HALLS	LENGTH ROTOR WITH HALLS
MF0150010	0.390 [9.9]	0.390 [9.9]	0.515 [13.08]
MF0150025	1.020 [25.9]	1.020 [25.9]	1.145 [29.08]
MF0150050	2.000 [50.9]	2.000 [50.9]	2.125 [53.98]
MF0150075	2.990 [75.9]	2.990 [75.9]	3.115 [79.12]
MF0150100	3.970 [100.9]	3.970 [100.9]	4.095 [104.01]

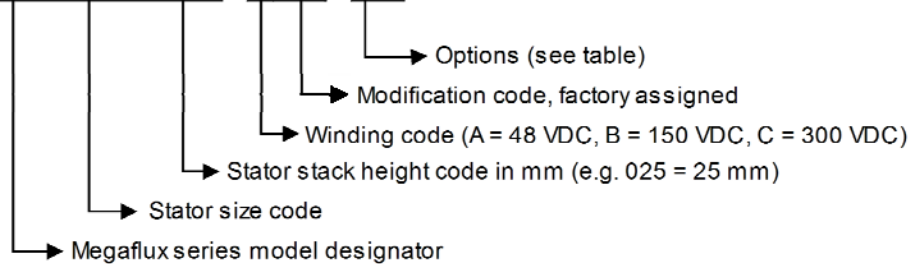


in (mm)



MODEL NUMBERING

MF0150025 - B00 - 00



Options
C = Customer-specified connector
Z = RoHS compliant

Torque Motors

MF0210 Series Frameless Brushless Torque Motors

SPECIFICATIONS (all data measured at 20 °C ambient)

Model No.		MF0210010			MF0210025			MF0210050		
Winding Voltage	V	48	150	300	48	150	300	48	150	300
Stall Torque (continuous) ⁽¹⁾	lb-ft	5.9	5.9	5.9	14.3	14.6	14.5	26.9	27.1	26.3
	Nm	8.0	8.0	8.1	19.4	19.7	19.6	36.5	36.8	35.7
Peak Torque (±25%)	lb-ft	40.2	40.2	40.2	105	105	105	214	214	214
	Nm	54.5	54.5	54.5	143	143	143	290	290	290
Peak Current	A	115	50.9	37.6	247	102	79	446	162	137
No Load Speed	RPM	920	1269	1894	760	978	1511	677	769	1302
	rad/s	96	133	198	80	102	158	71	81	136
Cogging Torque (max.)	lb-ft	0.14			0.36			0.68		
	Nm	0.18			0.49			0.93		
Torque Constant (±10%)	lb-ft/A	0.348	0.789	1.068	0.426	1.034	1.338	0.479	1.317	1.557
	Nm/A	0.472	1.070	1.448	0.578	1.402	1.814	0.649	1.786	2.111
Voltage Constant (±10%)	V/kRPM	49.4	112.0	151.6	60.5	146.8	190.0	68.0	187.0	221.1
	V/rad/s	0.472	1.070	1.448	0.578	1.402	1.814	0.649	1.786	2.111
Motor Constant	lb-ft/√W	0.70	0.70	0.71	1.46	1.48	1.47	2.35	2.37	2.30
	Nm/√W	0.95	0.95	0.96	1.98	2.01	1.99	3.18	3.21	3.11
Elect. Time Constant	ms	3.26	3.28	3.32	4.83	4.97	4.91	6.09	6.20	5.83
Mech. Time Constant	ms	1.82	1.81	1.80	1.11	1.08	1.10	0.86	0.85	0.90
Terminal Resistance (±12%)	Ohm	0.246	1.257	2.274	0.085	0.488	0.827	0.042	0.310	0.460
Terminal Inductance (±30%)	mH	0.802	4.119	7.539	0.411	2.423	4.058	0.254	1.922	2.684
Thermal Resistance ⁽¹⁾	°C/W	0.930			0.680			0.500		
Motor Inertia	lb-ft-s ²	1.3E-3			3.4E-3			6.7E-3		
	kg-m ²	1.7E-3			4.6E-3			9.1E-3		
Motor Weight	lb	4.3	4.0	4.1	10.1	9.5	9.8	18.3	18.2	18.1
	kg	1.93	1.83	1.84	4.57	4.33	4.47	8.30	8.28	8.20
Ambient Storage Temperature	°C	-55 to 150								
Poles	-	24								

(1) Housed version of motor mounted to 381 mm sq. x 12.7 mm (15 in. sq x 0.5 in.) aluminum plate in still air; maximum operating temperature (ambient + rise) is 130 °C

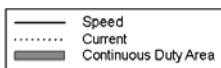
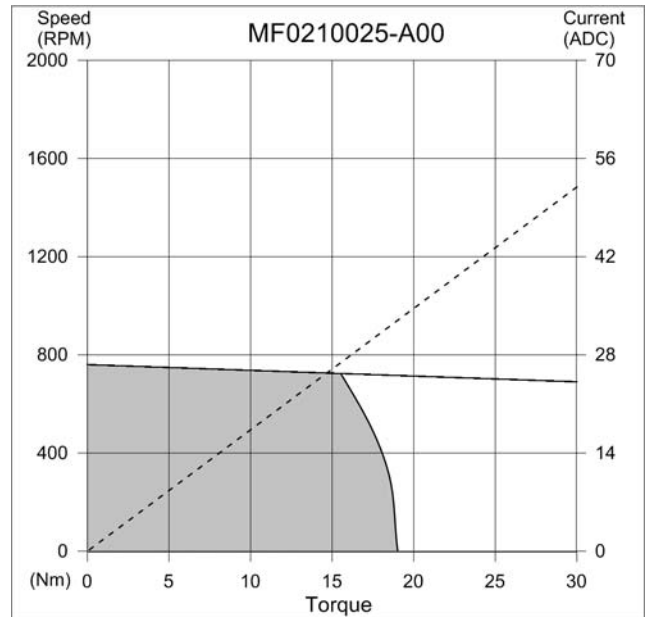
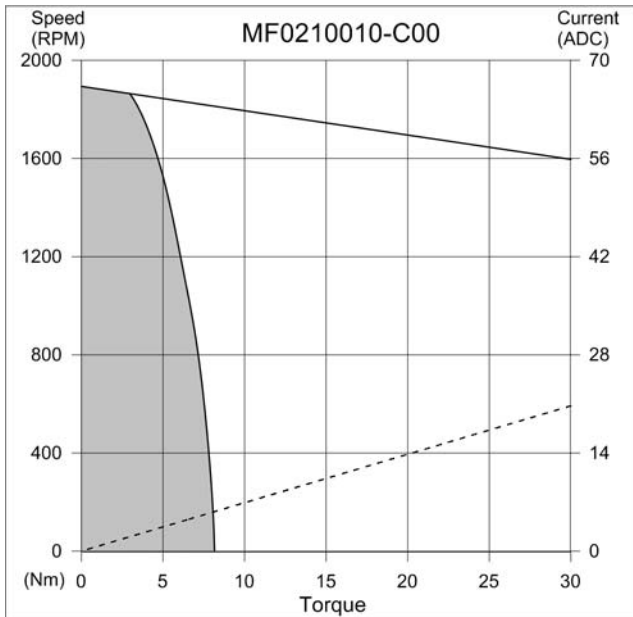
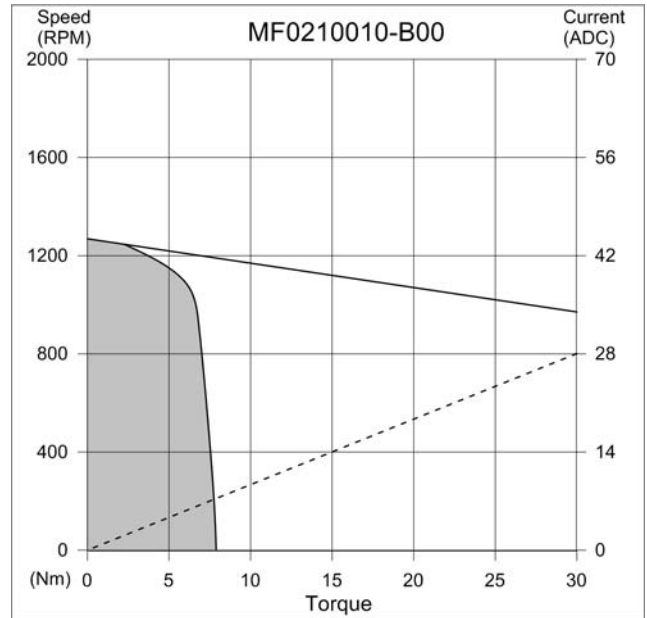
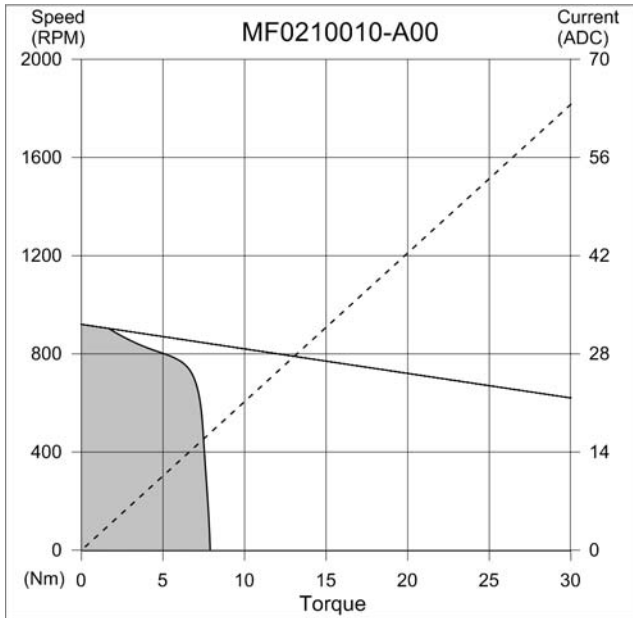
Model No.		MF0210075			MF0210100		
Winding Voltage	V	48	150	300	48	150	300
Stall Torque (continuous) ⁽¹⁾	lb-ft	43.1	42.4	43.9	55.3	54.2	53.1
	Nm	58.4	57.4	59.5	75.0	73.5	72.0
Peak Torque (±25%)	lb-ft	320	320	320	426	426	426
	Nm	433	433	433	578	578	578
Peak Current	A	446	297	198	445	297	222
No Load Speed	RPM	452	942	1256	338	705	1057
	rad/s	47	99	132	35	74	111
Cogging Torque (max.)	lb-ft	1.00			1.38		
	Nm	1.36			1.87		
Torque Constant (±10%)	lb-ft/A	0.717	1.076	1.614	0.958	1.436	1.915
	Nm/A	0.972	1.459	2.188	1.299	1.947	2.596
Voltage Constant (±10%)	V/kRPM	102	153	229	136	204	272
	V/rad/s	0.972	1.459	2.188	1.299	1.947	2.596
Motor Constant	lb-ft/√W	3.02	2.97	3.08	3.60	3.52	3.46
	Nm/√W	4.10	4.03	4.17	4.89	4.78	4.69
Elect. Time Constant	ms	6.53	6.45	6.91	7.01	6.2	6.45
Mech. Time Constant	ms	0.78	0.81	0.75	0.73	0.76	0.78
Terminal Resistance (±12%)	Ohm	0.056	0.131	0.275	0.071	0.166	0.307
Terminal Inductance (±30%)	mH	0.368	0.845	1.900	0.495	1.115	1.981
Thermal Resistance ⁽¹⁾	°C/W	0.325			0.280		
Motor Inertia	lb-ft-s ²	1.0E-2			1.3E-2		
	kg-m ²	1.4E-2			1.8E-2		
Motor Weight	lb	27.0	26.8	27.0	35.6	35.4	35.2
	kg	12.25	12.16	12.26	16.16	16.07	15.97
Ambient Storage Temperature	°C	-55 to 150					
Poles	-	24					

(1) Housed version of motor mounted to 381 mm sq. x 12.7 mm (15 in. sq x 0.5 in.) aluminum plate in still air; maximum operating temperature (ambient + rise) is 130 °C

Torque Motors

MF0210 Series Frameless Brushless Torque Motors

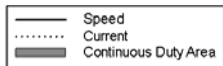
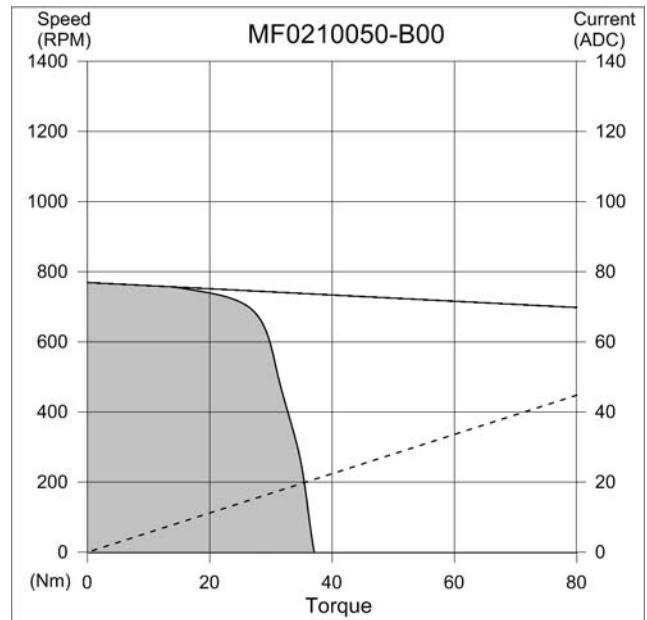
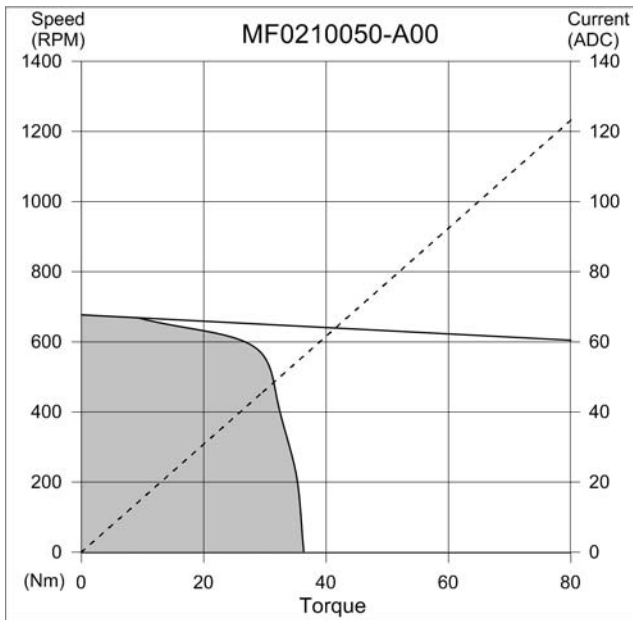
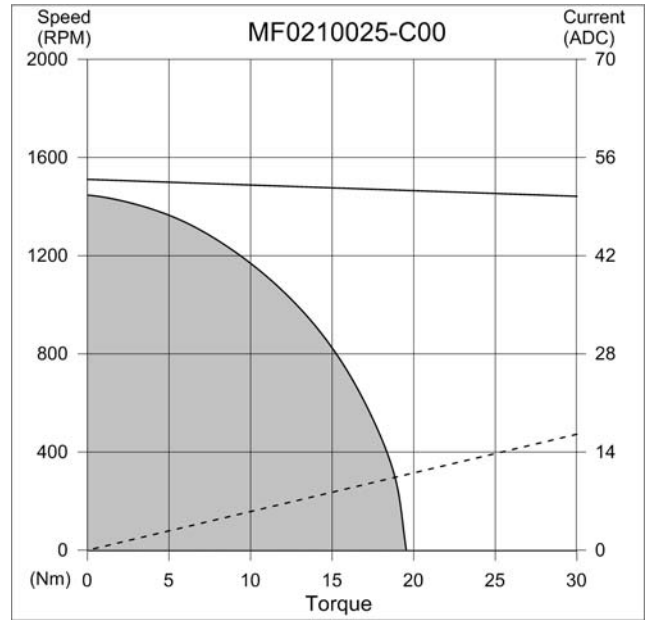
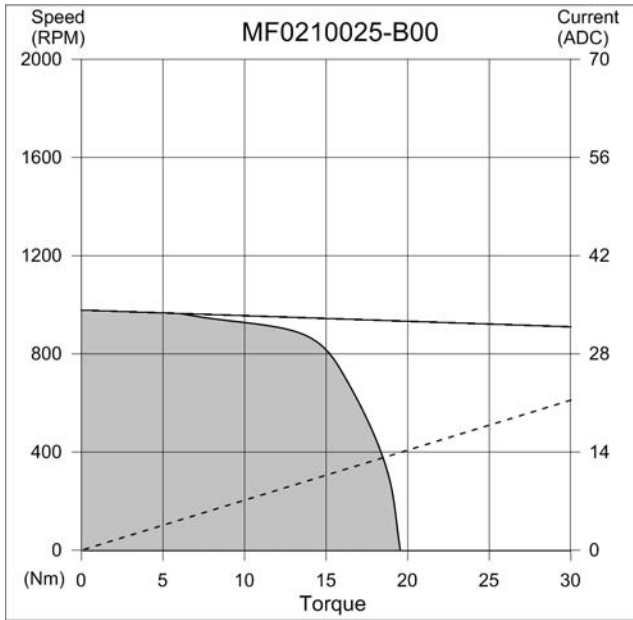
PERFORMANCE



Torque Motors

MF0210 Series Frameless Brushless Torque Motors

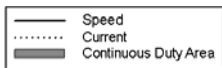
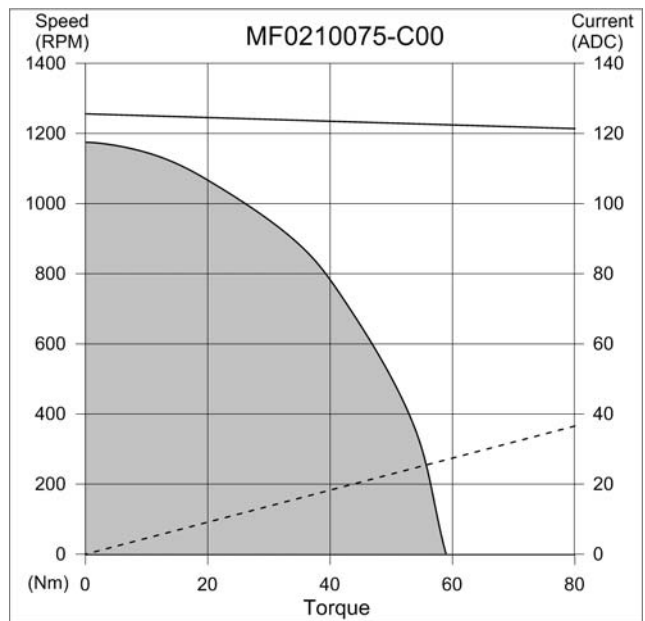
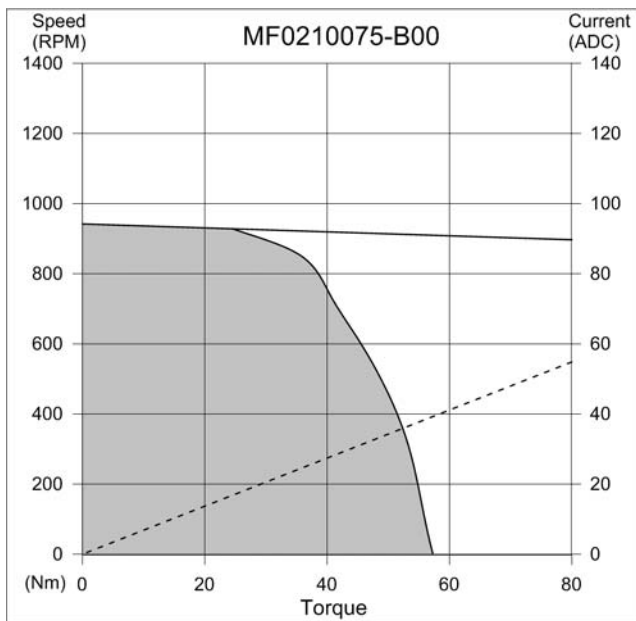
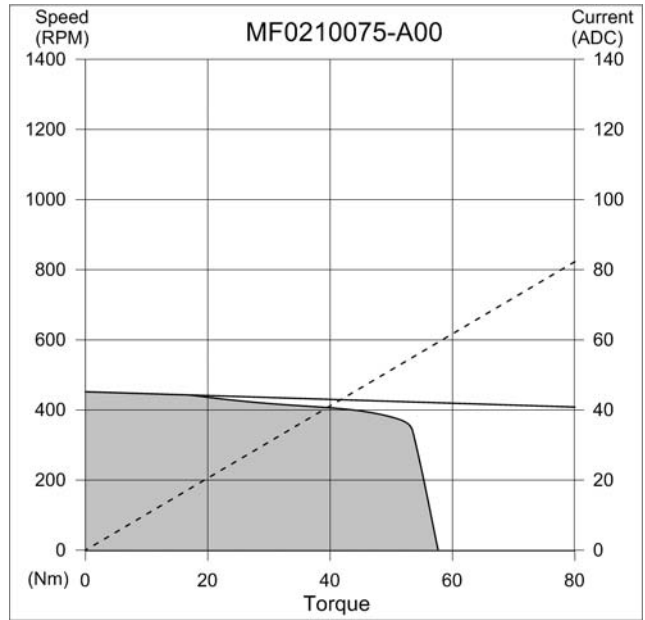
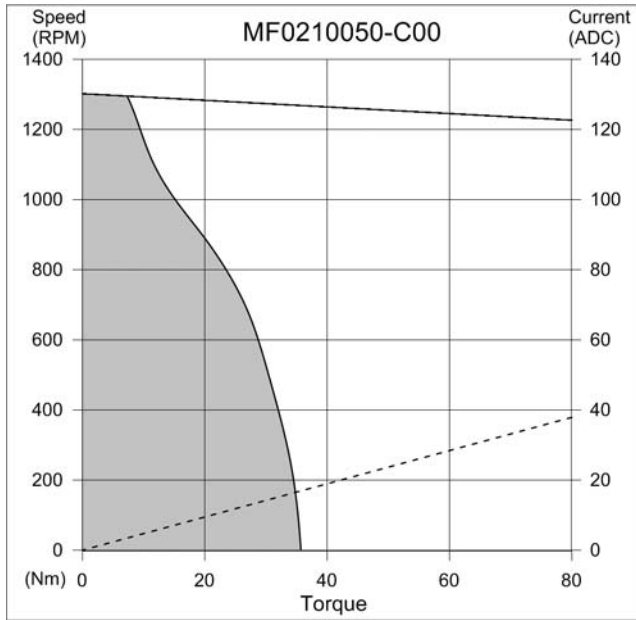
PERFORMANCE



Torque Motors

MF0210 Series Frameless Brushless Torque Motors

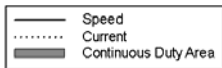
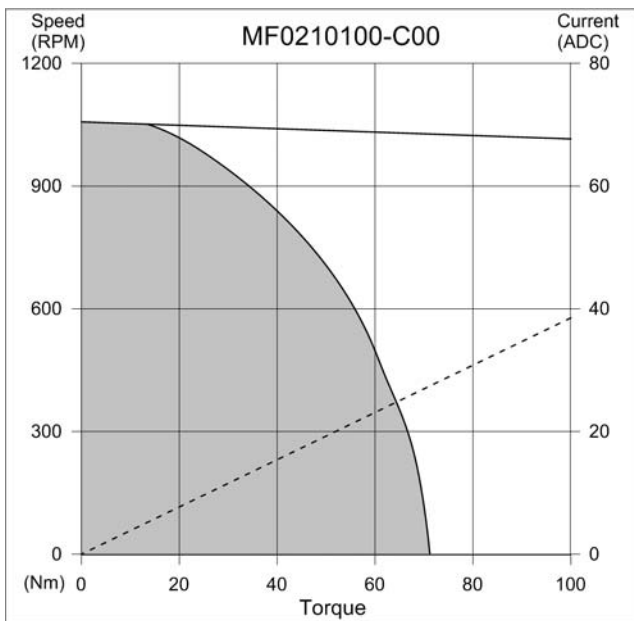
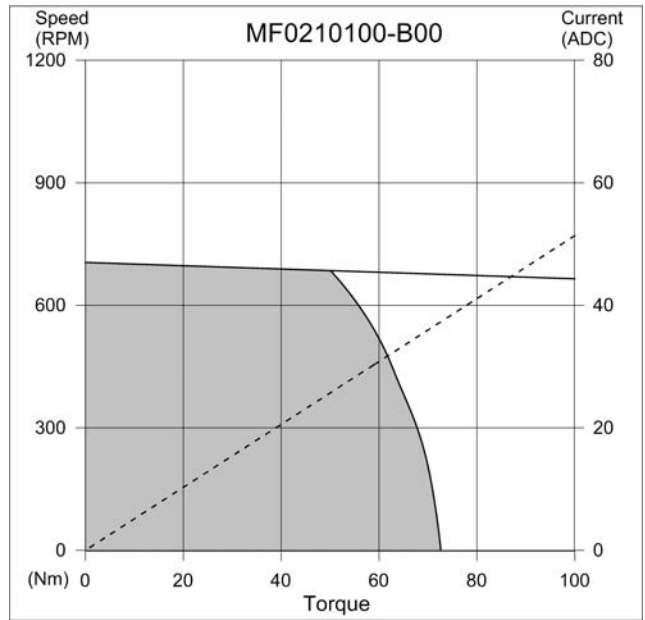
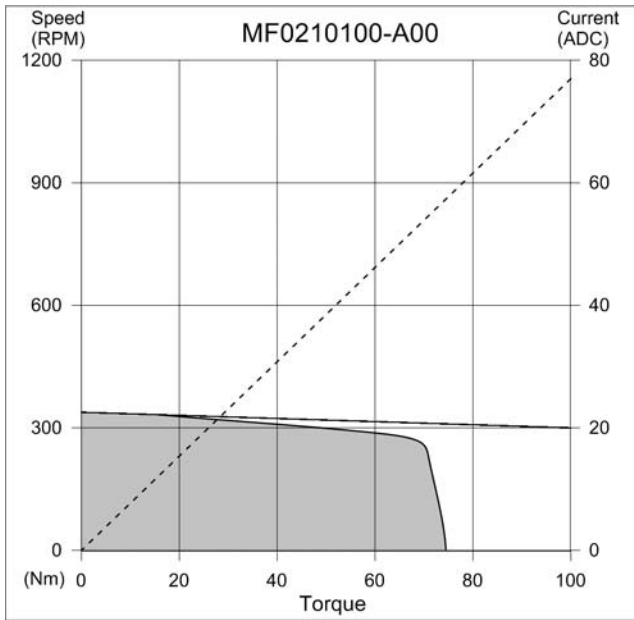
PERFORMANCE



Torque Motors

MF0210 Series Frameless Brushless Torque Motors

PERFORMANCE

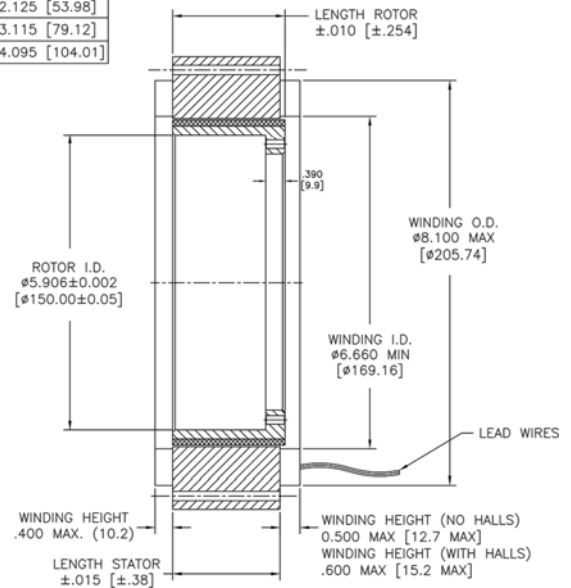
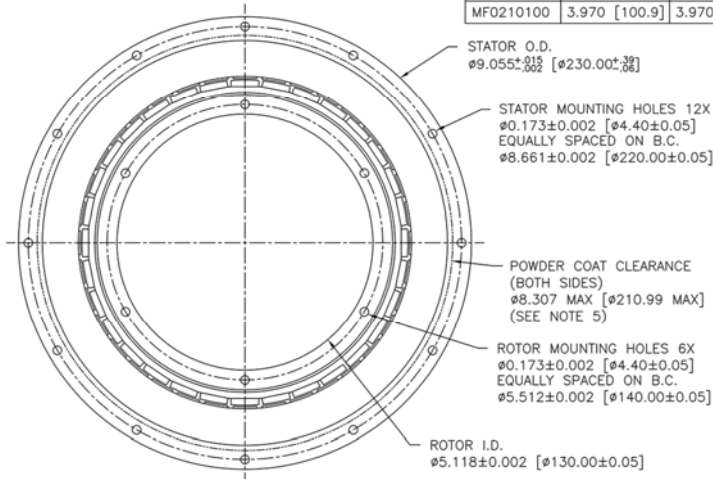


Torque Motors

MF0210 Series Frameless Brushless Torque Motors

DIMENSIONS

MODEL	LENGTH STATOR	LENGTH ROTOR NO HALLS	LENGTH ROTOR WITH HALLS
MF0210010	0.390 [9.9]	0.390 [9.9]	0.515 [13.08]
MF0210025	1.020 [25.9]	1.020 [25.9]	1.145 [29.08]
MF0210050	2.000 [50.9]	2.000 [50.9]	2.125 [53.98]
MF0210075	2.990 [75.9]	2.990 [75.9]	3.115 [79.12]
MF0210100	3.970 [100.9]	3.970 [100.9]	4.095 [104.01]

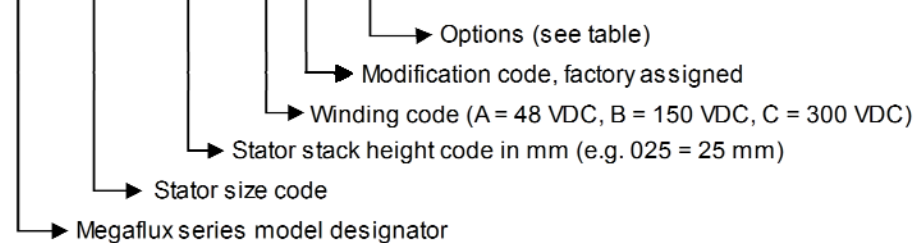


in (mm)



MODEL NUMBERING

MF0210025 - B00 - 00



Options
C = Customer-specified connector
Z = RoHS compliant

Torque Motors

MF0255 Series Frameless Brushless Torque Motors

SPECIFICATIONS (all data measured at 20 °C ambient)

Model No.		MF0255010			MF0255025			MF0255050		
Winding Voltage	V	48	150	300	48	150	300	48	150	300
Stall Torque (continuous) ⁽¹⁾	lb-ft	7.5	7.5	7.2	18.3	19.4	18.9	40.5	41.1	41.1
	Nm	10.1	10.1	9.7	24.8	26.3	25.6	54.9	55.7	55.7
Peak Torque (±25%)	lb-ft	53.3	53.3	53.3	143	143	143	293	293	293
	Nm	72.3	72.3	72.3	194	194	194	398	398	398
Peak Current	A	135	77.3	42.7	232	136	77	316	197	121
No Load Speed	RPM	806	1439	1591	520	948	1083	343	659	825
	rad/s	84	151	167	54	99	113	36	69	86
Cogging Torque (max.)	lb-ft	0.17			0.42			0.70		
	Nm	0.23			0.56			0.95		
Torque Constant (±10%)	lb-ft/A	0.394	0.689	1.246	0.616	1.057	1.849	0.929	1.487	2.416
	Nm/A	0.534	0.934	1.689	0.835	1.433	2.507	1.260	2.016	3.276
Voltage Constant (±10%)	V/kRPM	56	98	177	87	150	263	132	211	343
	V/rad/s	0.534	0.934	1.689	0.835	1.433	2.507	1.260	2.016	3.276
Motor Constant	lb-ft/√W	0.89	0.89	0.85	1.86	1.91	1.86	3.15	3.20	3.20
	Nm/√W	1.20	1.20	1.15	2.52	2.59	2.52	4.27	4.34	4.33
Elect. Time Constant	ms	3.40	3.39	3.11	4.89	5.15	4.89	6.00	6.17	6.17
Mech. Time Constant	ms	2.33	2.33	2.54	1.40	1.33	1.40	0.97	0.93	0.94
Terminal Resistance (±12%)	Ohm	0.197	0.605	2.158	0.110	0.307	0.991	0.087	0.216	0.517
Terminal Inductance (±30%)	mH	0.669	2.048	6.708	0.538	1.581	4.842	0.521	1.333	3.521
Thermal Resistance ⁽¹⁾	°C/W	0.900			0.620			0.395		
Motor Inertia	lb-ft-s ²	2.6E-3			6.9E-3			1.4E-2		
	kg-m ²	3.6E-3			9.4E-3			1.9E-2		
Motor Weight	lb	5.1	5.1	5.0	12.3	12.2	12.1	23.1	23.2	23.2
	kg	2.33	2.33	2.27	5.57	5.53	5.48	10.47	10.51	10.51
Ambient Storage Temperature	°C	-55 to 150								
Poles	-	24								

(1) Housed version of motor mounted to 406 mm sq. x 12.7 mm (16 in. sq x 0.5 in.) aluminum plate in still air; maximum operating temperature (ambient + rise) is 130 °C

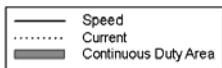
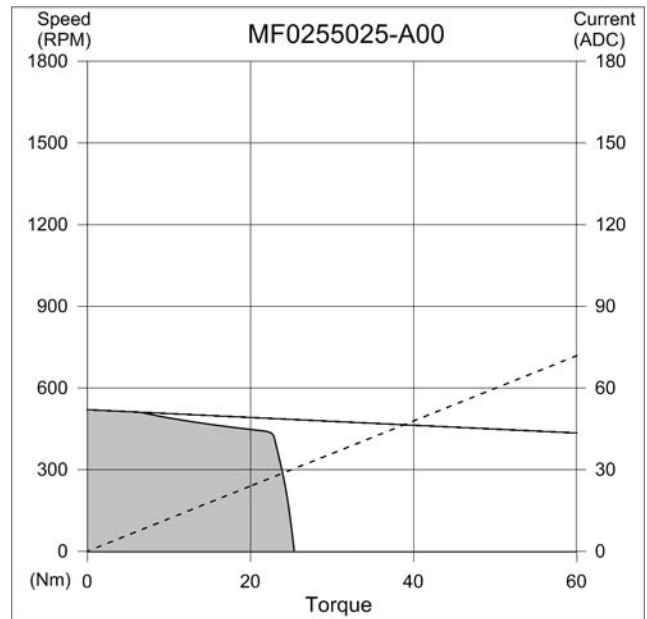
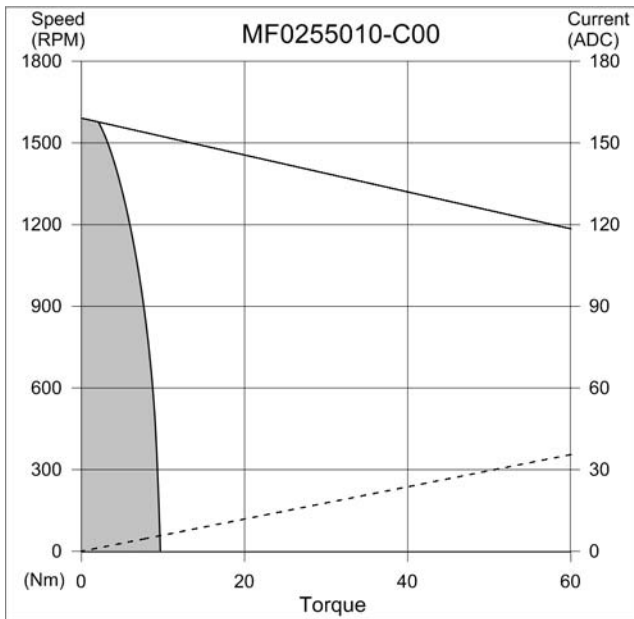
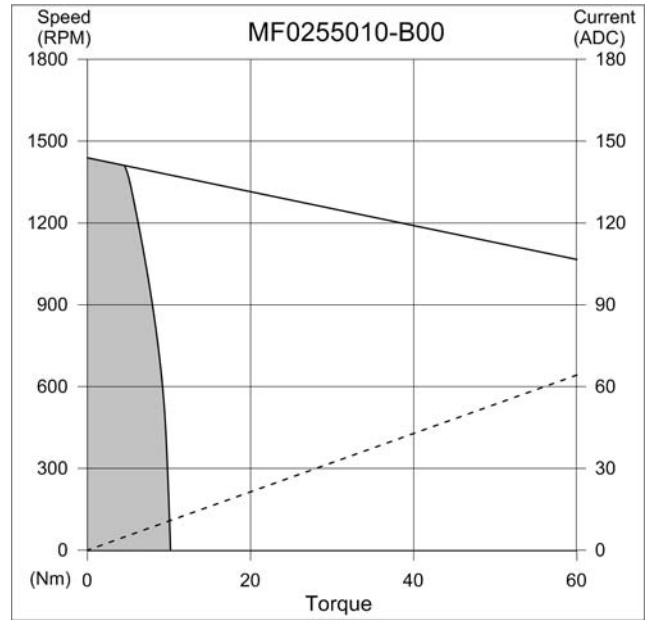
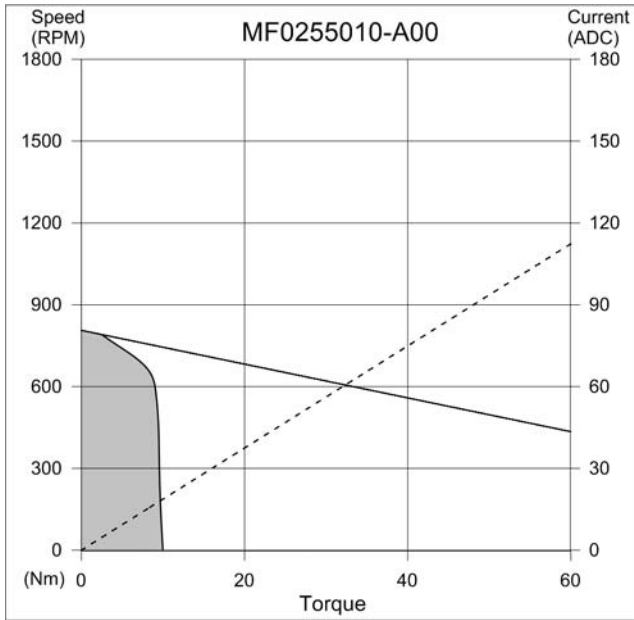
Model No.		MF0255075			MF0255100		
Winding Voltage	V	48	150	300	48	150	300
Stall Torque (continuous) ⁽¹⁾	lb-ft	60.1	61.7	60.7	76.4	77.3	75.9
	Nm	91.5	83.7	82.3	103.5	104.8	102.9
Peak Torque (±25%)	lb-ft	427	427	427	518	518	518
	Nm	578	578	578	703	703	703
Peak Current	A	383	256	170	467	280	200
No Load Speed	RPM	280	584	778	287	538	769
	rad/s	29	61	81	30	56	81
Cogging Torque (max.)	lb-ft	1.00			1.44		
	Nm	1.36			1.95		
Torque Constant (±10%)	lb-ft/A	1.113	1.667	2.505	1.110	1.850	2.590
	Nm/A	1.509	2.60	3.396	1.505	2.508	3.512
Voltage Constant (±10%)	V/kRPM	158	237	356	158	263	368
	V/rad/s	1.509	2.60	3.396	1.505	2.508	3.512
Motor Constant	lb-ft/√W	4.03	4.13	4.07	4.73	4.78	4.70
	Nm/√W	5.46	5.60	5.52	6.41	6.48	6.37
Elect. Time Constant	ms	6.46	6.80	6.58	6.64	6.77	6.5
Mech. Time Constant	ms	0.87	0.82	0.85	0.86	0.84	0.87
Terminal Resistance (±12%)	Ohm	0.076	0.63	0.379	0.055	0.150	0.304
Terminal Inductance (±30%)	mH	0.493	1.108	2.494	0.366	1.016	1.991
Thermal Resistance ⁽¹⁾	°C/W	0.293			0.235		
Motor Inertia	lb-ft-s ²	2.1E-2			2.8E-2		
	kg-m ²	2.8E-2			3.8E-2		
Motor Weight	lb	35.8	34.0	34.2	45.1	45.2	45.0
	kg	16.26	15.43	15.53	20.44	20.49	20.41
Ambient Storage Temperature	°C	-55 to 150					
Poles	-	24					

(1) Housed version of motor mounted to 406 mm sq. x 12.7 mm (16 in. sq x 0.5 in.) aluminum plate in still air; maximum operating temperature (ambient + rise) is 130 °C

Torque Motors

MF0255 Series Frameless Brushless Torque Motors

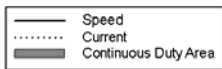
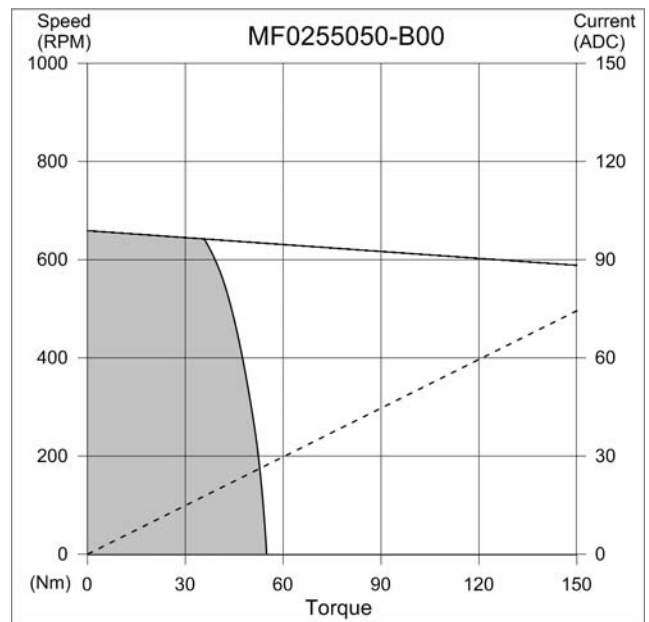
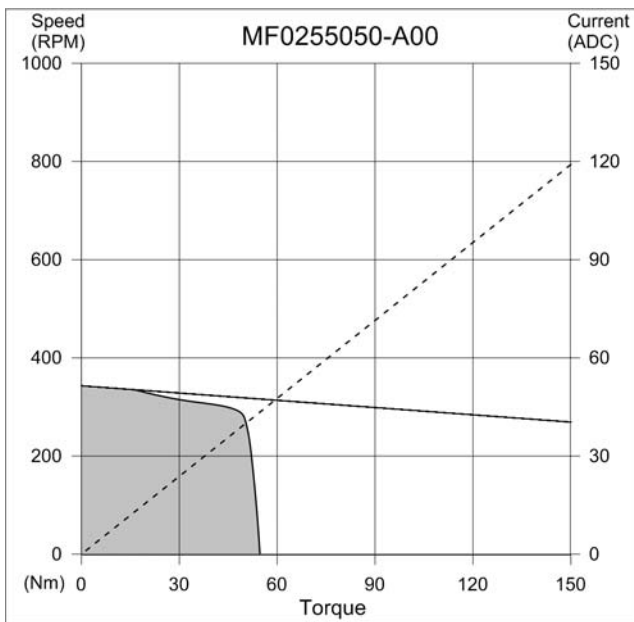
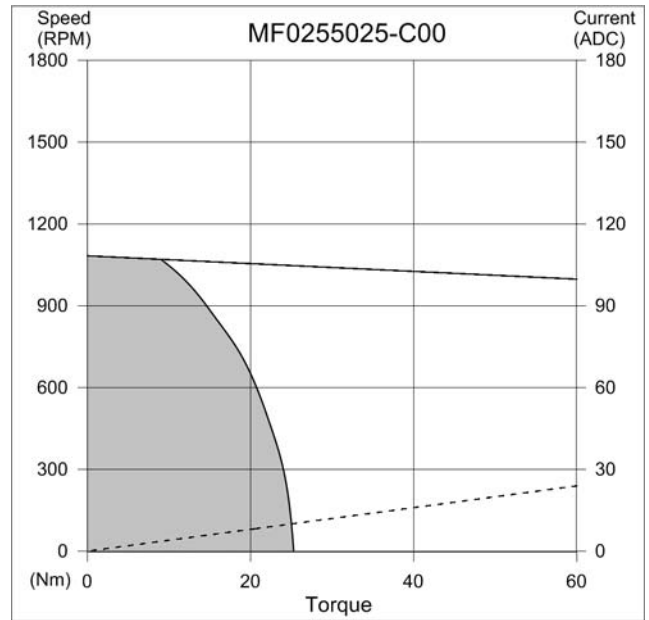
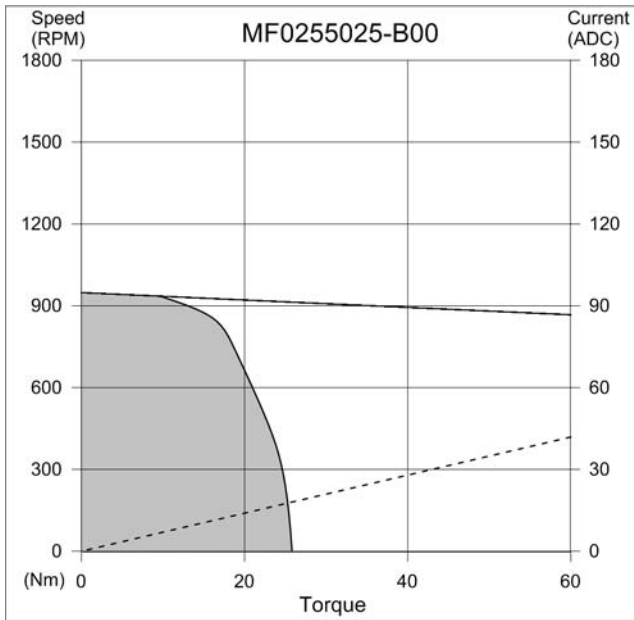
PERFORMANCE



Torque Motors

MF0255 Series Frameless Brushless Torque Motors

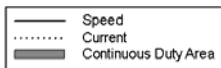
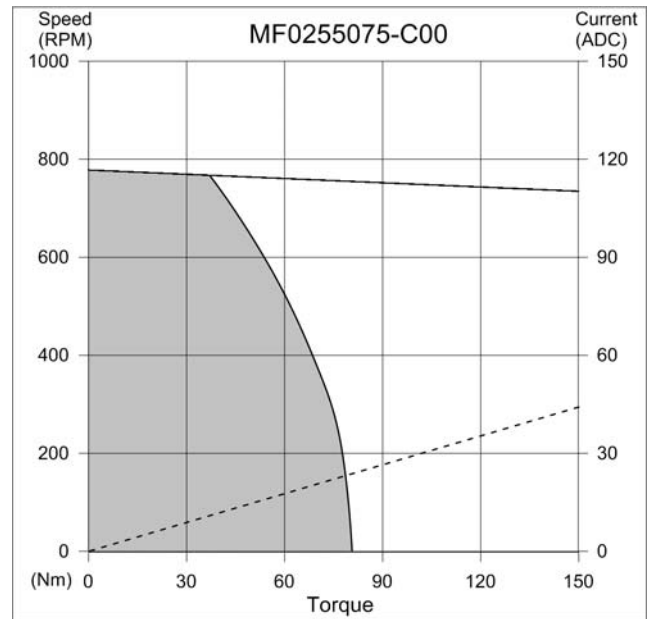
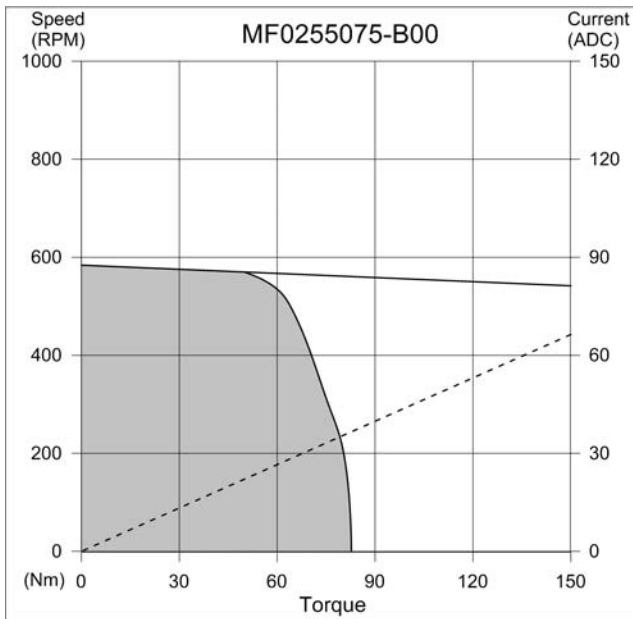
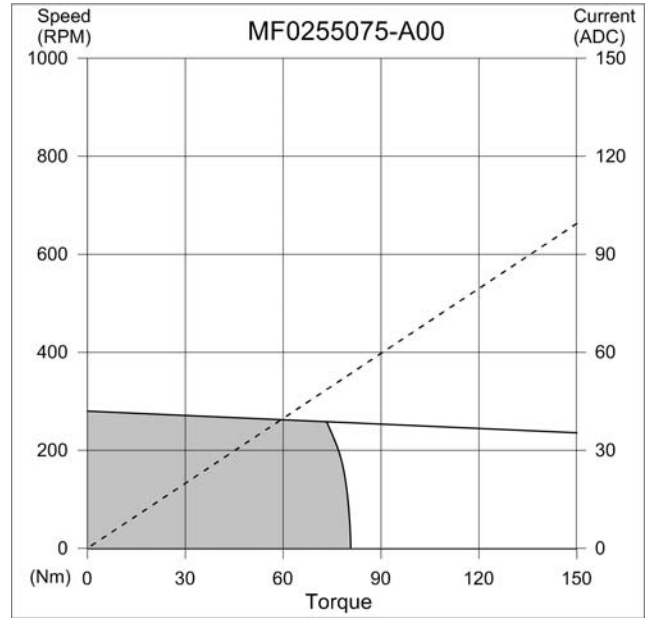
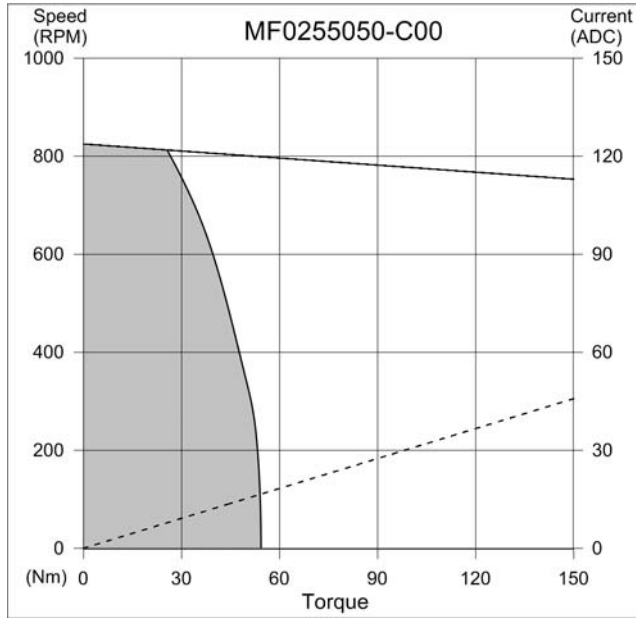
PERFORMANCE



Torque Motors

MF0255 Series Frameless Brushless Torque Motors

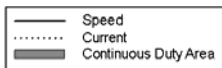
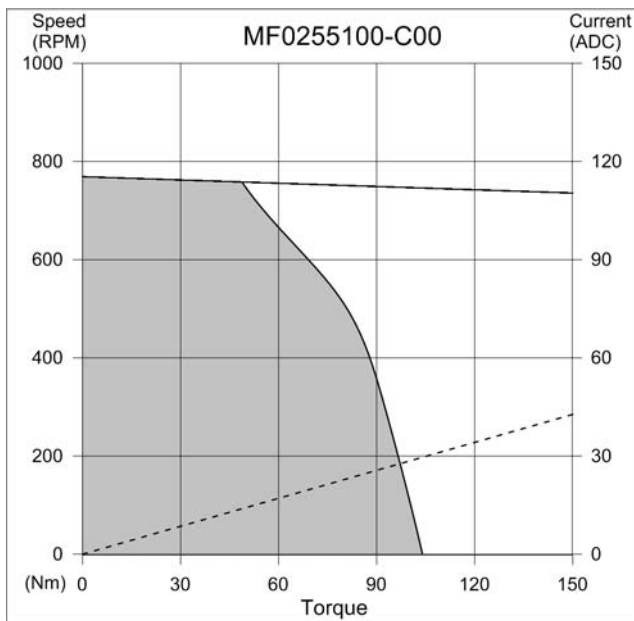
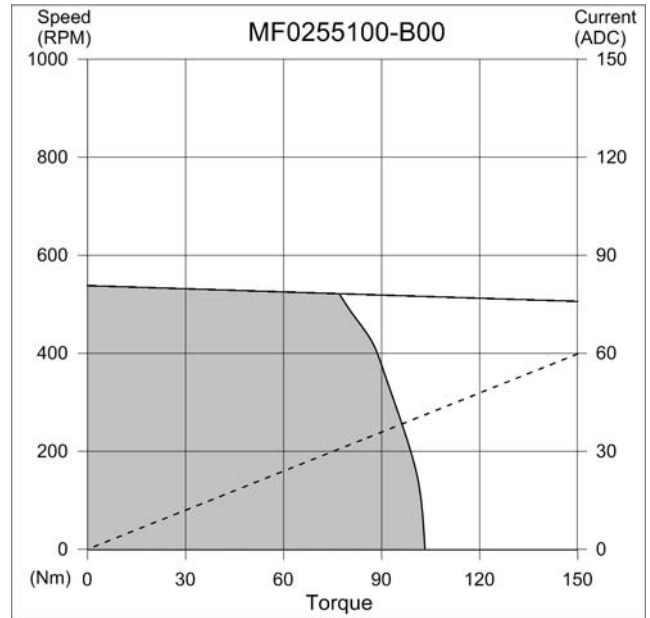
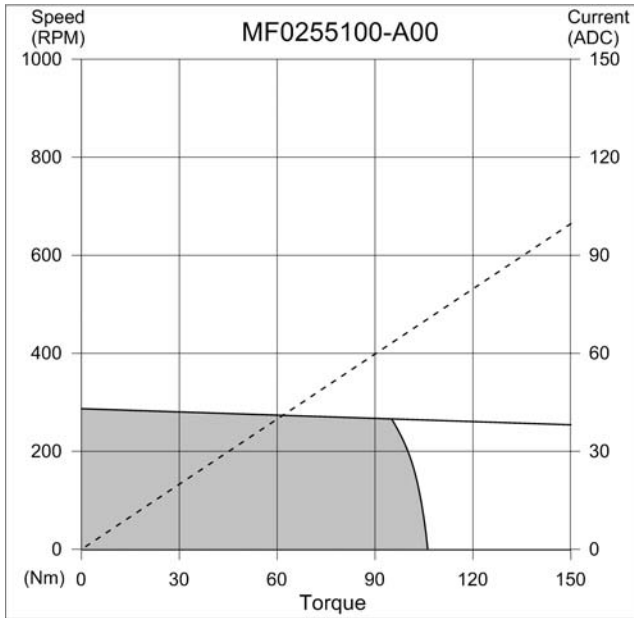
PERFORMANCE



Torque Motors

MF0255 Series Frameless Brushless Torque Motors

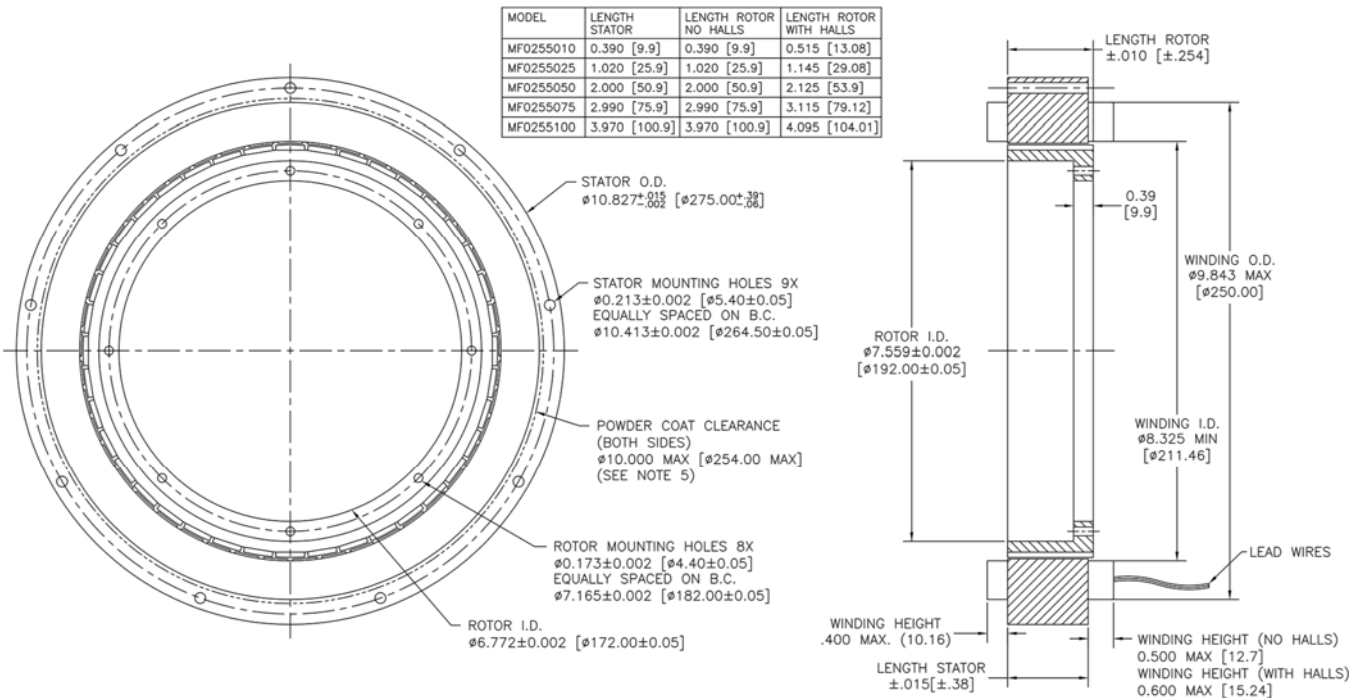
PERFORMANCE



Torque Motors

MF0255 Series Frameless Brushless Torque Motors

DIMENSIONS



in (mm)



MODEL NUMBERING

MF0255025 - B00 - 00

- Megaflux series model designator
- Stator size code
- Stator stack height code in mm (e.g. 025 = 25 mm)
- Winding code (A = 48 VDC, B = 150 VDC, C = 300 VDC)
- Modification code, factory assigned
- Options (see table)

Options
C = Customer-specified connector
Z = RoHS compliant

Torque Motors

MF0310 Series Frameless Brushless Torque Motors

SPECIFICATIONS (all data measured at 20 °C ambient)

Model No.		MF0310010			MF0310025			MF031050		
Winding Voltage	V	48	150	300	48	150	300	48	150	300
Stall Torque (continuous) ⁽¹⁾	lb-ft	13.7	12.8	13.5	32.1	33.2	32.4	66.4	66.4	66.4
	Nm	18.5	17.3	18.4	43.6	45.0	43.9	90.0	90.0	90.0
Peak Torque (±25%)	lb-ft	74.5	74.5	74.5	194	194	194	381	381	381
	Nm	101	101	101	264	264	264	517	517	517
Peak Current	A	146	86.1	47.2	208	121	77	239	179	120
No Load Speed	RPM	625	1150	1260	341	621	784	200	469	625
	rad/s	65	120	132	36	65	82	21	48	65
Cogging Torque (max.)	lb-ft	0.23			0.47			0.72		
	Nm	0.31			0.64			0.97		
Torque Constant (±10%)	lb-ft/A	0.510	0.865	1.580	0.935	1.603	2.538	1.593	2.124	3.186
	Nm/A	0.691	1.173	2.142	1.268	2.173	3.441	2.160	2.880	4.320
Voltage Constant (±10%)	V/kRPM	72	123	224	133	228	360	226	302	452
	V/rad/s	0.691	1.173	2.142	1.268	2.173	3.441	2.160	2.880	4.320
Motor Constant	lb-ft/√W	1.48	1.38	1.46	3.03	3.13	3.05	4.99	4.99	4.99
	Nm/√W	2.00	1.87	1.98	4.11	4.24	4.14	6.76	6.77	6.77
Elect. Time Constant	ms	4.95	4.32	4.85	7.22	7.69	7.34	9.43	9.45	9.46
Mech. Time Constant	ms	1.58	1.82	1.62	0.99	0.93	0.97	0.73	0.73	0.73
Terminal Resistance (±12%)	Ohm	0.119	0.394	1.166	0.095	0.263	0.691	0.102	0.181	0.407
Terminal Inductance (±30%)	mH	0.589	1.702	5.658	0.688	2.02	5.070	0.982	1.711	3.849
Thermal Resistance ⁽¹⁾	°C/W	0.750			0.570			0.365		
Motor Inertia	lb-ft-s ²	5.0E-3			1.3E-2			2.6E-2		
	kg-m ²	6.8E-3			1.8E-2			3.5E-2		
Motor Weight	lb	7.6	7.2	7.5	17.3	17.5	17.4	33.2	33.2	33.2
	kg	3.43	3.24	3.40	7.85	7.96	7.88	15.05	15.05	15.05
Ambient Storage Temperature	°C	-55 to 150								
Poles	-	24								

(1) Housed version of motor mounted to 457 mm sq. x 12.7 mm (18 in. sq x 0.5 in.) aluminum plate in still air; maximum operating temperature (ambient + rise) is 130 °C

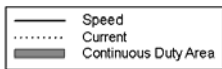
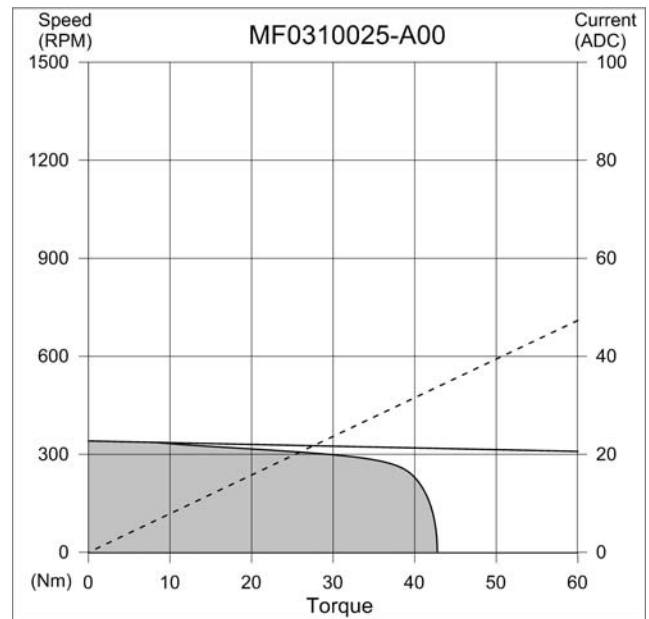
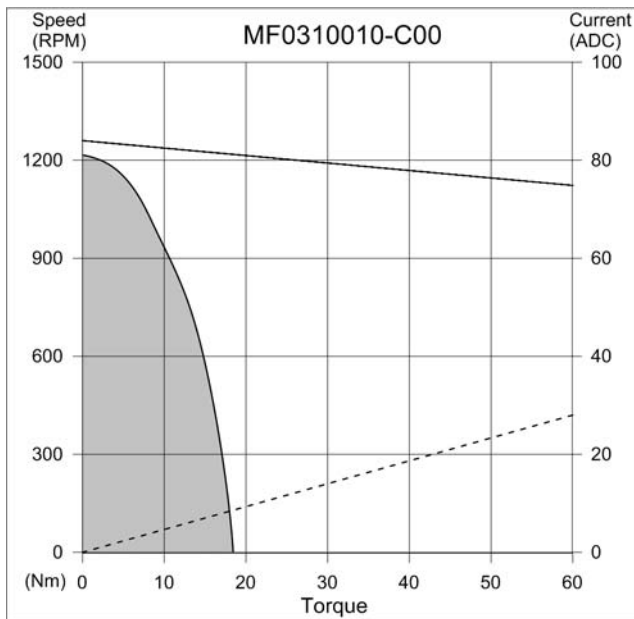
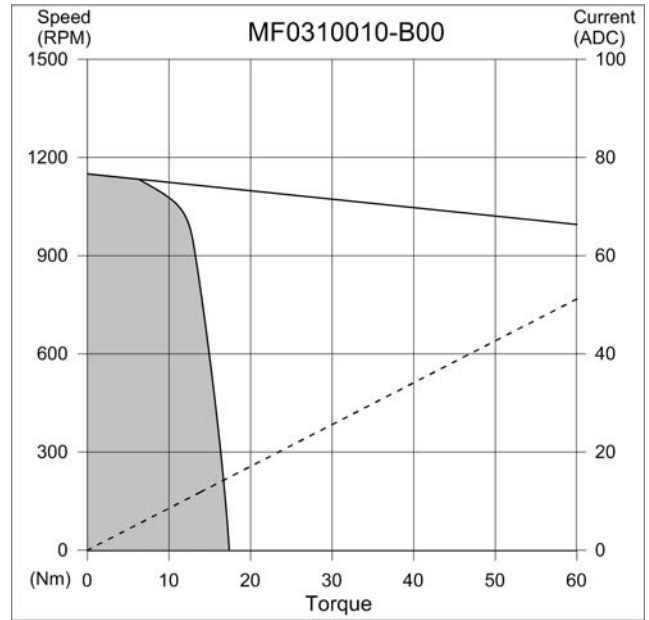
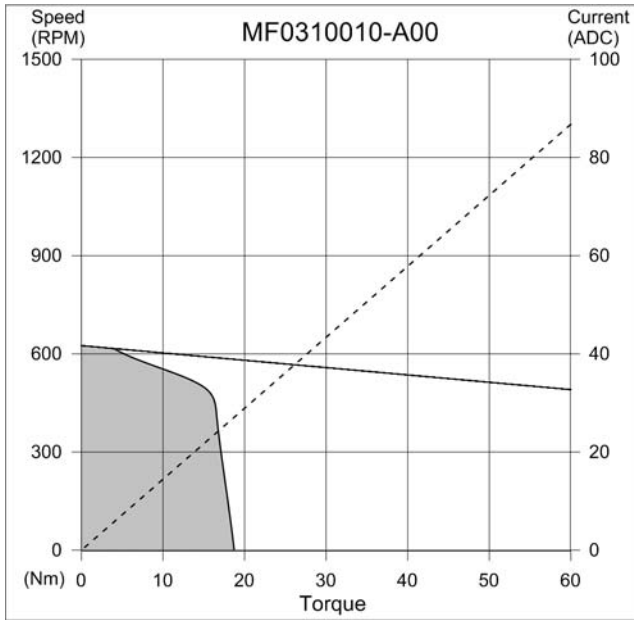
Model No.		MF0310075			MF0310100		
Winding Voltage	V	48	150	300	48	150	300
Stall Torque (continuous) ⁽¹⁾	lb-ft	99.3	99.3	96.1	133.7	133.4	133.7
	Nm	134.6	134.6	130.3	181.3	180.8	181.2
Peak Torque (±25%)	lb-ft	570	570	570	761	761	761
	Nm	773	773	773	1031	1031	1031
Peak Current	A	286	239	179	239	179	144
No Load Speed	RPM	160	417	625	100	235	375
	rad/s	17	44	65	10	25	39
Cogging Torque (max.)	lb-ft	1.07			1.53		
	Nm	1.45			2.07		
Torque Constant (±10%)	lb-ft/A	1.989	2.387	3.183	3.180	4.240	5.300
	Nm/A	2.697	3.236	4.316	4.312	5.749	7.186
Voltage Constant (±10%)	V/kRPM	282	339	452	451	602	752
	V/rad/s	2.697	3.236	4.316	4.312	5.749	7.186
Motor Constant	lb-ft/√W	6.43	6.43	6.22	7.62	7.62	7.63
	Nm/√W	8.71	8.71	8.43	10.34	10.32	10.34
Elect. Time Constant	ms	10.31	10.31	9.66	10.80	10.78	10.81
Mech. Time Constant	ms	0.66	0.66	0.70	0.62	0.63	0.62
Terminal Resistance (±12%)	Ohm	0.096	0.138	0.262	0.174	0.310	0.483
Terminal Inductance (±30%)	mH	0.988	1.423	2.531	1.880	3.342	5.223
Thermal Resistance ⁽¹⁾	°C/W	0.270			0.210		
Motor Inertia	lb-ft-s ²	3.9E-2			5.2E-2		
	kg-m ²	5.3E-2			7.1E-2		
Motor Weight	lb	51.4	49.0	50.4	66.4	65.8	64.6
	kg	23.31	22.21	22.86	30.10	29.85	29.30
Ambient Storage Temperature	°C	-55 to 150					
Poles	-	24					

(1) Housed version of motor mounted to 457 mm sq. x 12.7 mm (18 in. sq x 0.5 in.) aluminum plate in still air; maximum operating temperature (ambient + rise) is 130 °C

Torque Motors

MF0310 Series Frameless Brushless Torque Motors

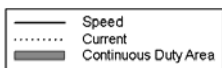
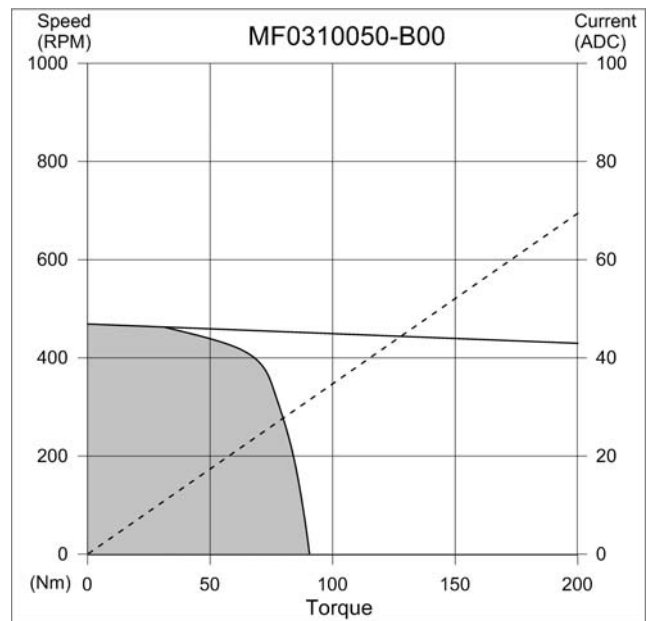
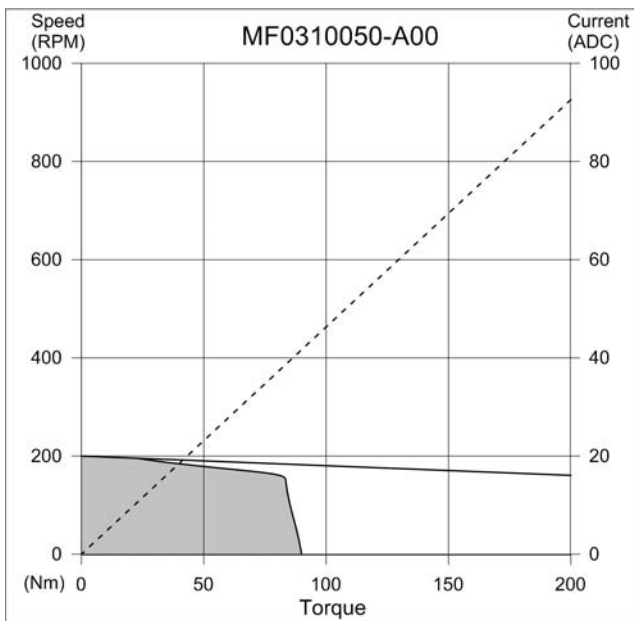
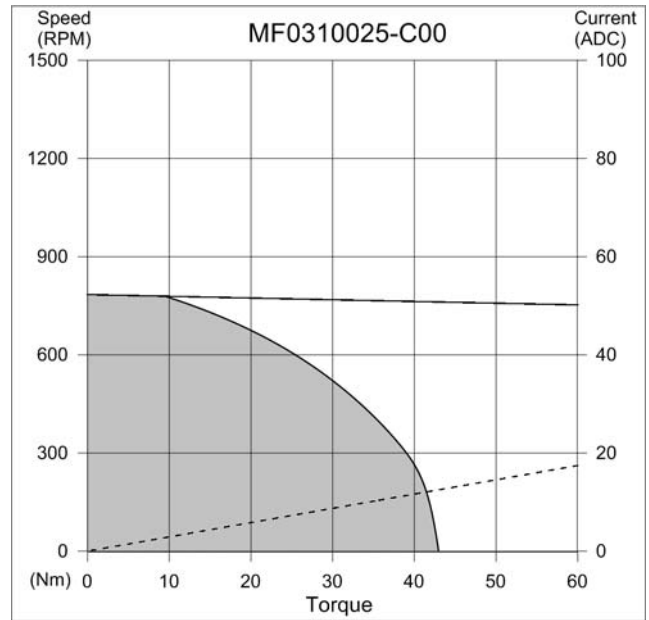
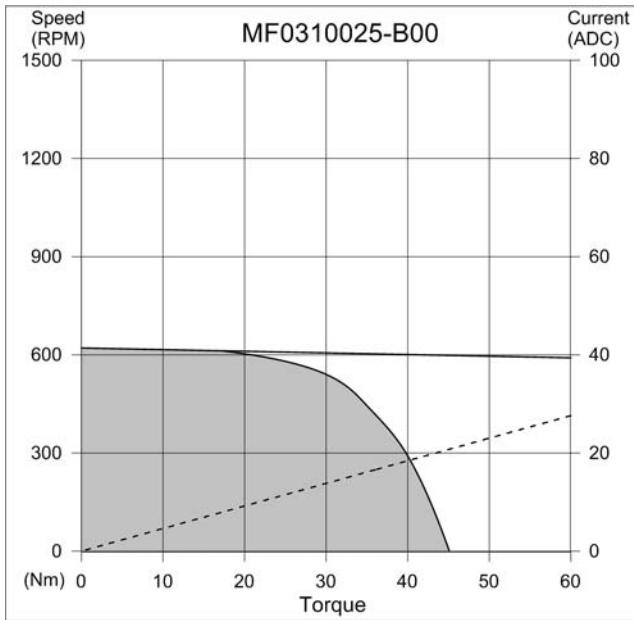
PERFORMANCE



Torque Motors

MF0310 Series Frameless Brushless Torque Motors

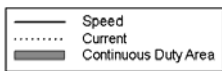
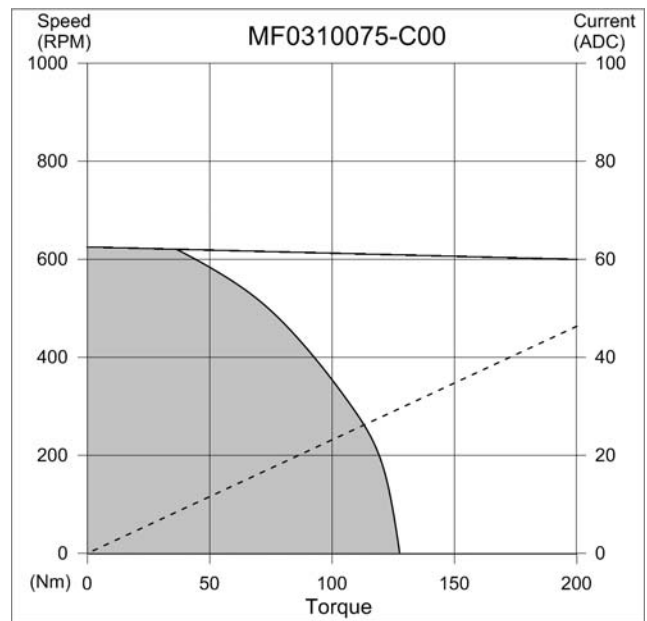
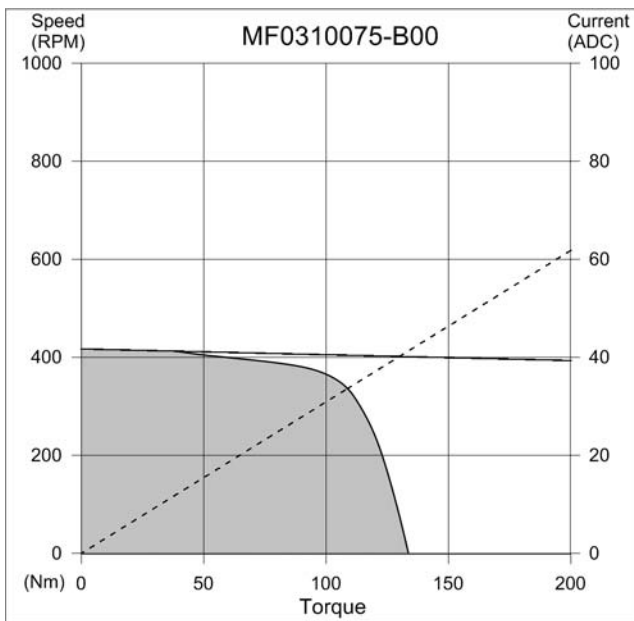
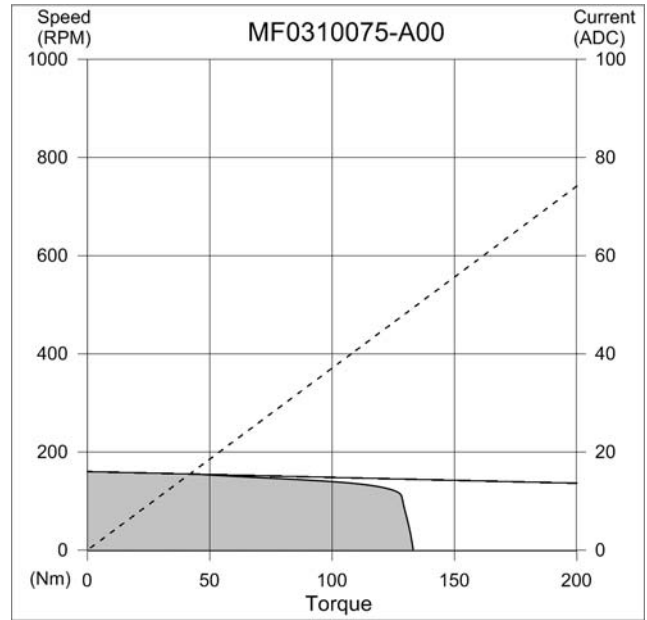
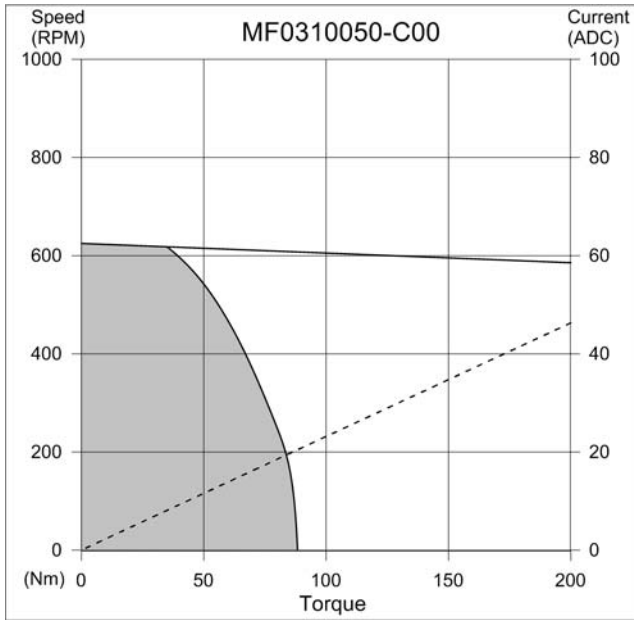
PERFORMANCE



Torque Motors

MF0310 Series Frameless Brushless Torque Motors

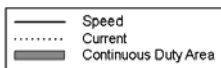
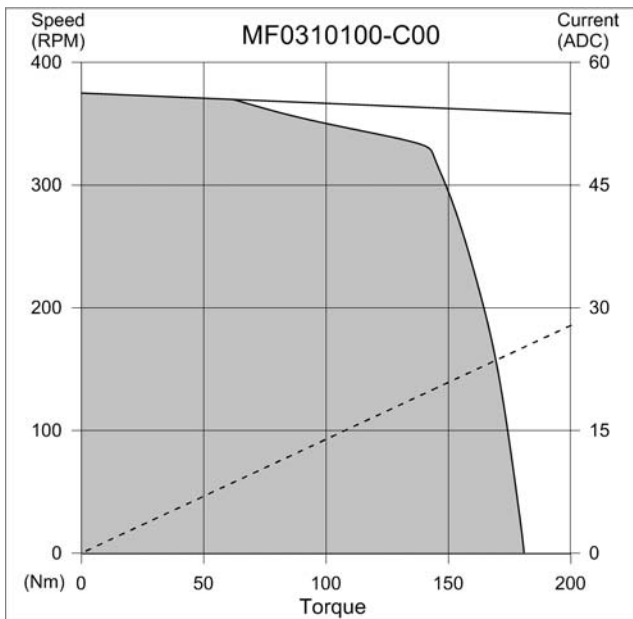
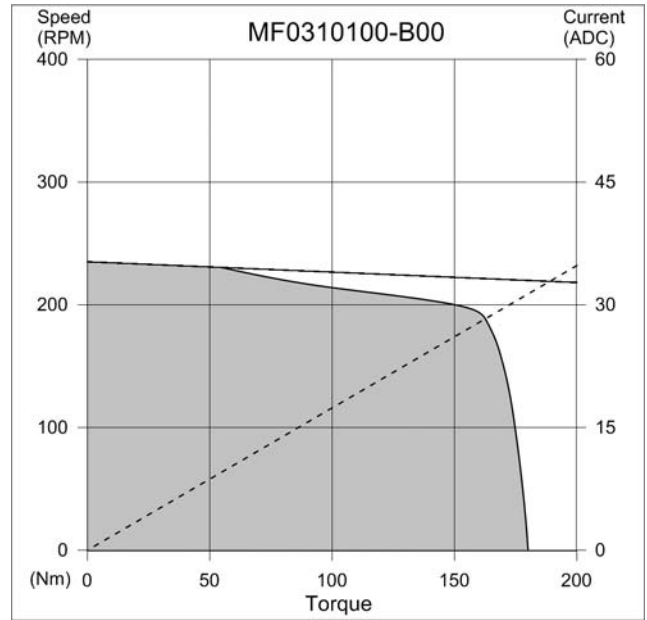
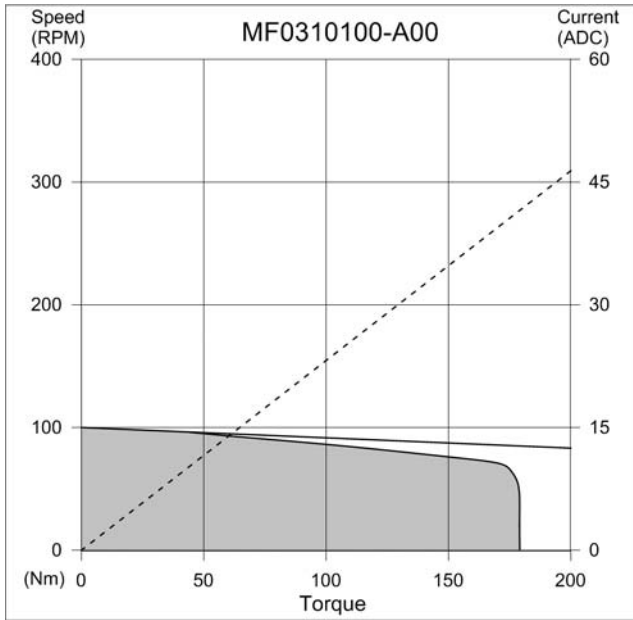
PERFORMANCE



Torque Motors

MF0310 Series Frameless Brushless Torque Motors

PERFORMANCE

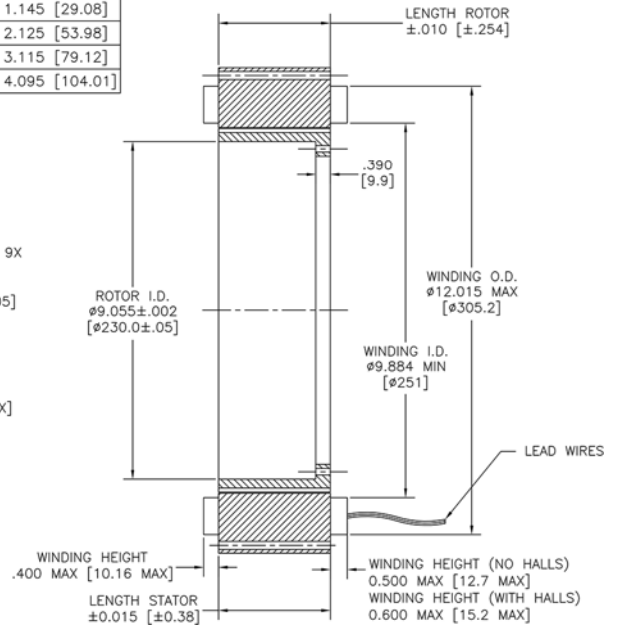
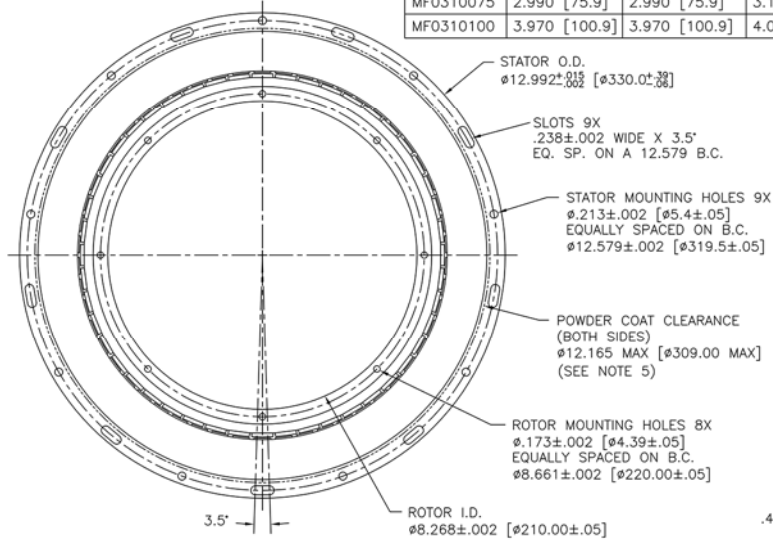


Torque Motors

MF0310 Series Frameless Brushless Torque Motors

DIMENSIONS

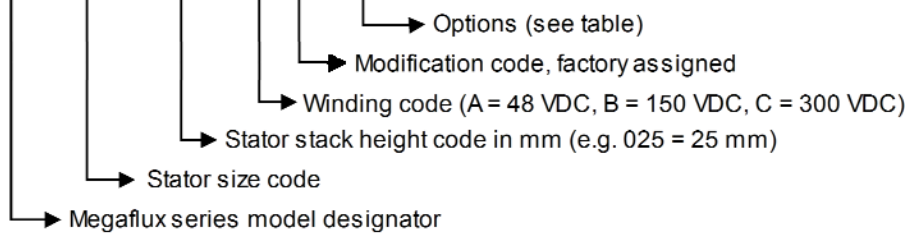
MODEL	LENGTH STATOR	LENGTH ROTOR NO HALLS	LENGTH ROTOR WITH HALLS
MF0310010	0.390 [9.9]	0.390 [9.9]	0.515 [13.08]
MF0310025	1.020 [25.9]	1.020 [25.9]	1.145 [29.08]
MF0310050	2.000 [50.9]	2.000 [50.9]	2.125 [53.98]
MF0310075	2.990 [75.9]	2.990 [75.9]	3.115 [79.12]
MF0310100	3.970 [100.9]	3.970 [100.9]	4.095 [104.01]



in (mm)

MODEL NUMBERING

MF0310025 - B00 - 00



Options
C = Customer-specified connector
Z = RoHS compliant

Torque Motors

MF0410 Series Frameless Brushless Torque Motors

SPECIFICATIONS (all data measured at 20 °C ambient)

Model No.		MF0410015			MF0410025			MF041050		
Winding Voltage	V	48	150	300	48	150	300	48	150	300
Stall Torque (continuous) ⁽¹⁾	lb-ft	50.6	50.6	50.6	81.0	81.5	81.4	142.1	139.5	144.0
	Nm	68.6	68.6	68.7	109.9	110.5	110.3	192.7	189.1	195.2
Peak Torque (±25%)	lb-ft	325	325	325	524	524	524	1036	1036	1036
	Nm	441	441	441	711	711	711	1404	1404	1404
Peak Current	A	375	225	150	579	331	210	459	382	287
No Load Speed	RPM	362	678	926	345	616	803	138	369	554
	rad/s	38	71	97	36	65	84	14	39	58
Cogging Torque (max.)	lb-ft	0.30			0.55			1.03		
	Nm	0.41			0.75			1.39		
Torque Constant (±10%)	lb-ft/A	0.868	1.446	2.169	0.906	1.585	2.491	2.259	2.711	3.615
	Nm/A	1.177	1.961	2.941	1.228	2.149	3.377	3.063	3.676	4.901
Voltage Constant (±10%)	V/kRPM	123	205	308	129	225	354	321	85	513
	V/rad/s	1.177	1.961	2.941	1.228	2.149	3.377	3.063	3.676	4.901
Motor Constant	lb-ft/√W	3.58	3.58	3.58	5.15	5.18	5.17	7.96	8.06	8.06
	Nm/√W	4.85	4.86	4.85	6.99	7.03	7.01	10.80	10.93	10.93
Elect. Time Constant	ms	7.56	7.58	7.55	10.07	10.19	10.14	11.52	11.81	11.81
Mech. Time Constant	ms	2.09	2.09	2.14	1.60	1.58	1.63	1.34	1.34	1.34
Terminal Resistance (±12%)	Ohm	00.59	0.163	0.368	0.031	0.093	0.232	0.080	0.113	0.201
Terminal Inductance (±30%)	mH	0.445	1.235	2.779	0.311	0.953	2.352	0.927	1.335	2.373
Thermal Resistance ⁽¹⁾	°C/W	0.320			0.257			0.200		
Motor Inertia	lb-ft-s ²	3.9E-2			6.2E-2			1.3E-1		
	kg-m ²	5.3E-2			8.5E-2			1.7E-1		
Motor Weight	lb	20.8	20.8	20.8	31.9	32.0	33.7	59.9	60.2	60.2
	kg	9.45	9.45	9.45	14.48	14.51	15.29	27.18	27.29	27.29
Ambient Storage Temperature	°C	-55 to 150								
Poles	-	24								

(1) Housed version of motor mounted to 508 mm sq. x 12.7 mm (20 in. sq x 0.5 in.) aluminum plate in still air; maximum operating temperature (ambient + rise) is 130 °C

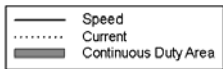
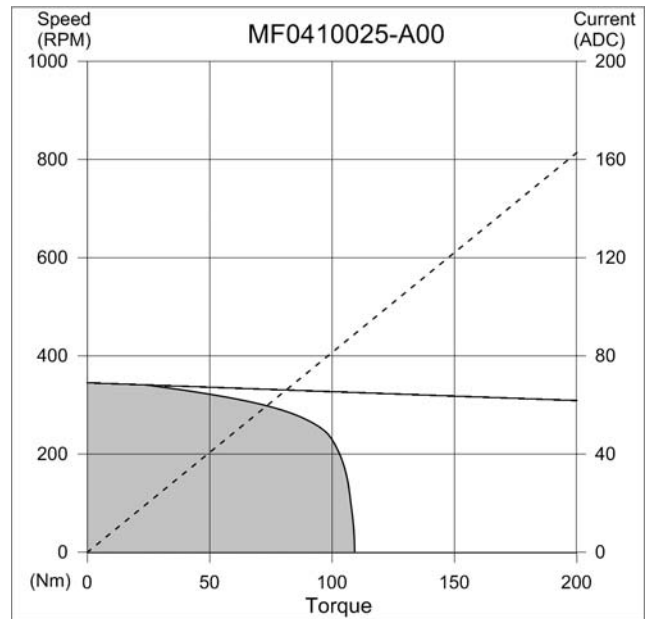
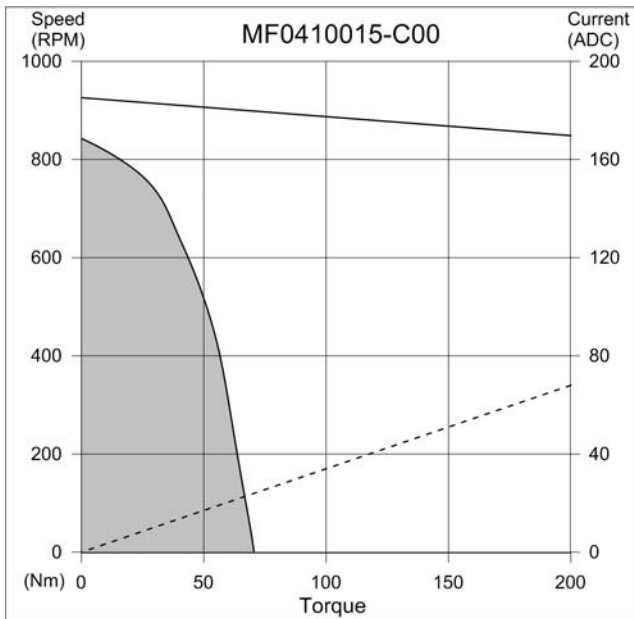
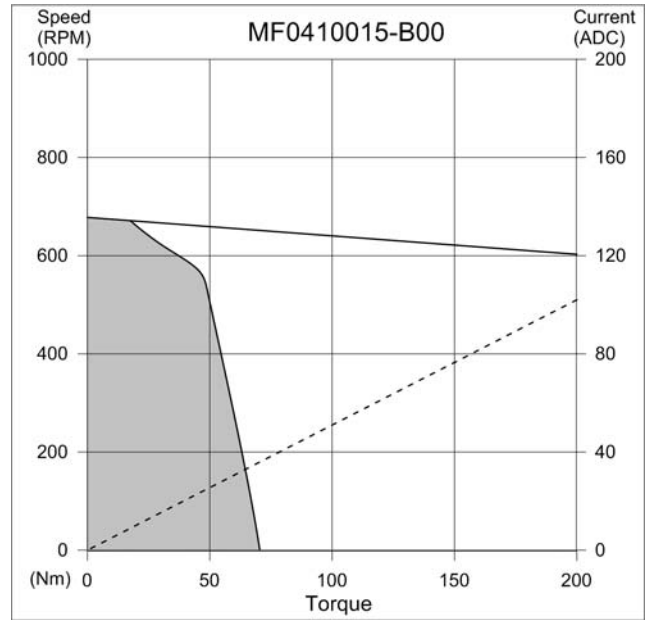
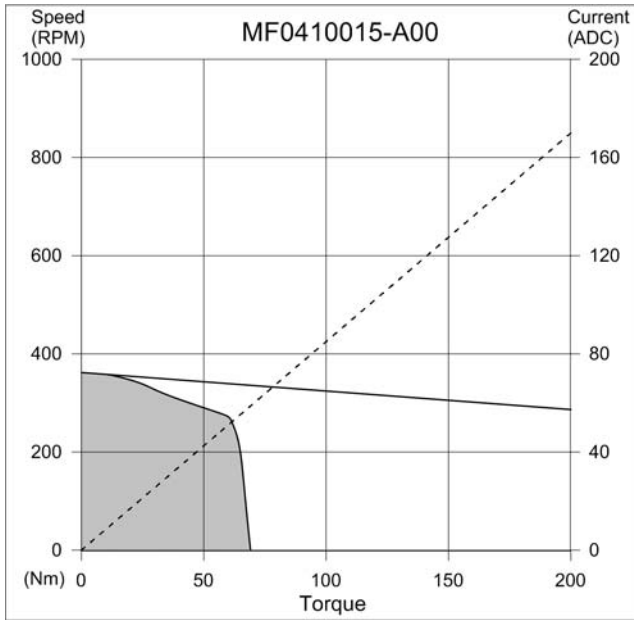
Model No.		MF0410075			MF0410100		
Winding Voltage	V	48	150	300	48	150	300
Stall Torque (continuous) ⁽¹⁾	lb-ft	205	204	209	280	265	273
	Nm	277	277	283	380	359	371
Peak Torque (±25%)	lb-ft	1271	1551	1551	1689	2059	2059
	Nm	1723	2102	2102	2290	2791	2791
Peak Current	A	314	286	230	375	381	286
No Load Speed	RPM	79	184	296	71	185	278
	rad/s	8.3	19.3	31.0	7.4	19.4	29.1
Cogging Torque (max.)	lb-ft	1.52			2.07		
	Nm	2.06			2.81		
Torque Constant (±10%)	lb-ft/A	4.050	5.428	6.750	4.504	5.405	7.206
	Nm/A	5.491	7.359	9.152	6.107	7.328	9.770
Voltage Constant (±10%)	V/kRPM	575	771	958	639	767	1023
	V/rad/s	5.491	7.359	9.152	6.107	7.328	9.770
Motor Constant	lb-ft/√W	10.35	10.67	10.55	12.59	12.30	12.30
	Nm/√W	14.04	14.46	14.31	17.07	16.68	16.68
Elect. Time Constant	ms	12.92	13.57	13.42	14.16	13.53	13.53
Mech. Time Constant	ms	1.22	1.15	1.17	1.09	1.15	1.15
Terminal Resistance (±12%)	Ohm	0.153	0.259	0.409	0.128	0.193	0.343
Terminal Inductance (±30%)	mH	1.977	3.514	5.490	1.813	2.611	4.642
Thermal Resistance ⁽¹⁾	°C/W	0.163			0.129		
Motor Inertia	lb-ft-s ²	1.9E-1			2.5E-1		
	kg-m ²	2.5E-1			3.4E-1		
Motor Weight	lb	88.9	89.6	89.4	118.2	117.5	117.5
	kg	40.3	40.6	40.5	53.6	53.3	53.3
Ambient Storage Temperature	°C	-55 to 150					
Poles	-	24					

(1) Housed version of motor mounted to 508 mm sq. x 12.7 mm (20 in. sq x 0.5 in.) aluminum plate in still air; maximum operating temperature (ambient + rise) is 130 °C

Torque Motors

MF0410 Series Frameless Brushless Torque Motors

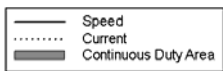
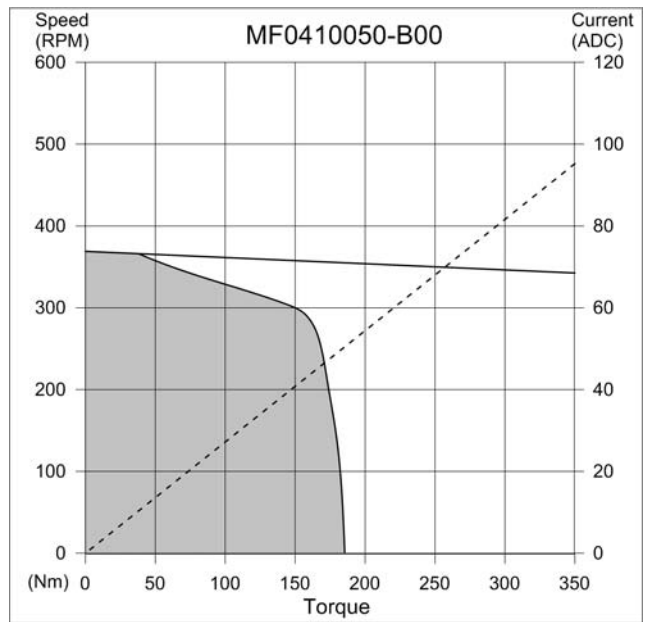
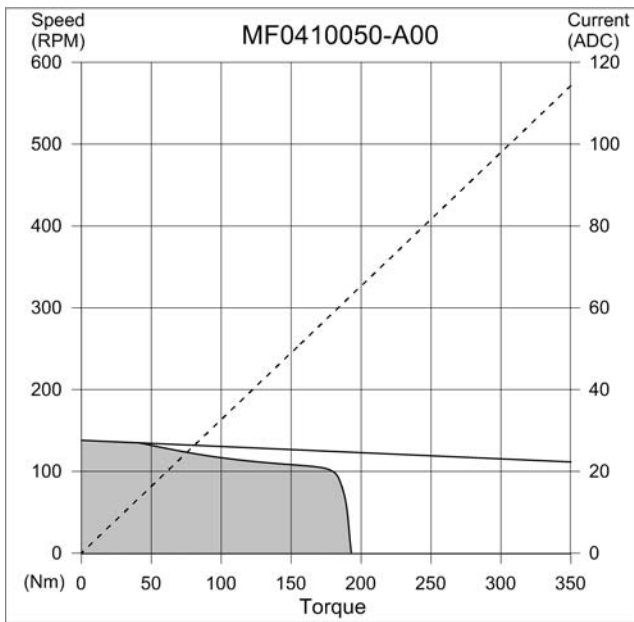
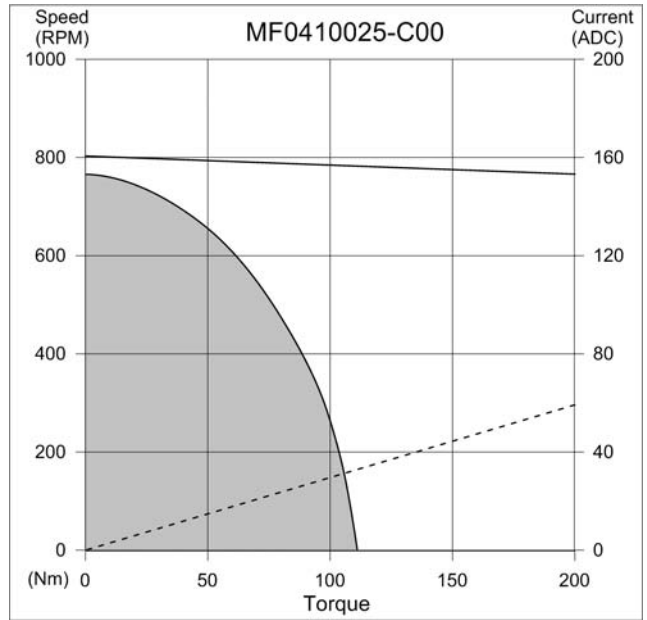
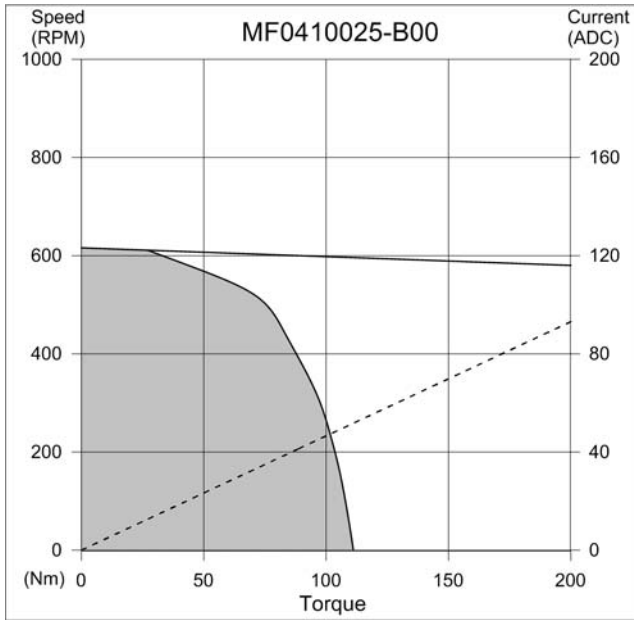
PERFORMANCE



Torque Motors

MF0410 Series Frameless Brushless Torque Motors

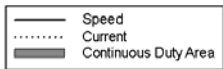
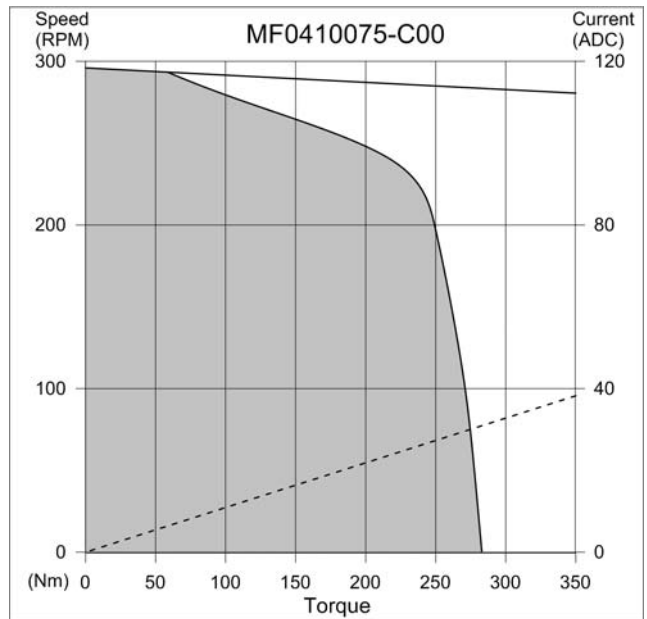
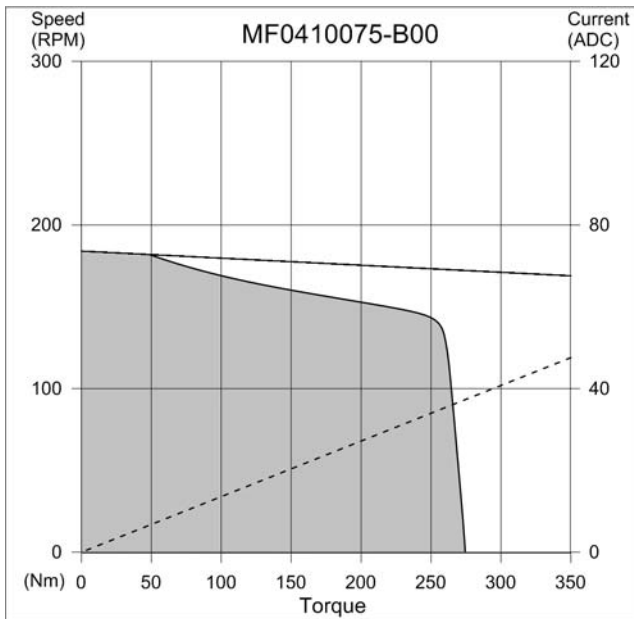
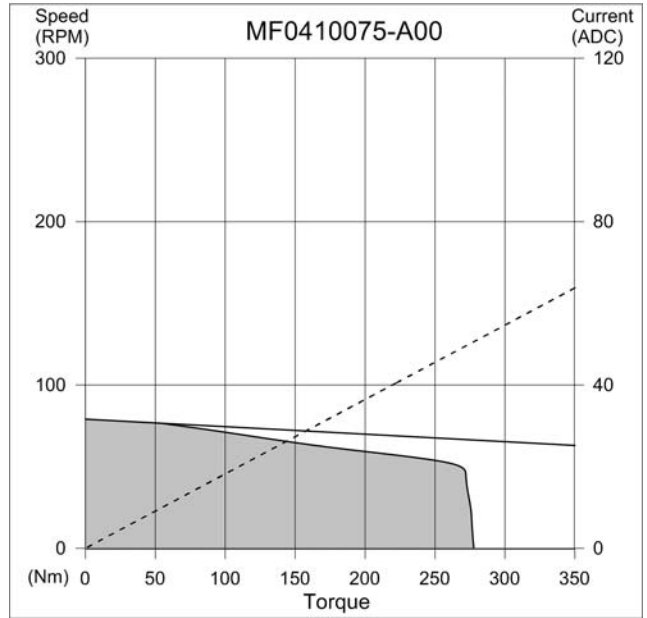
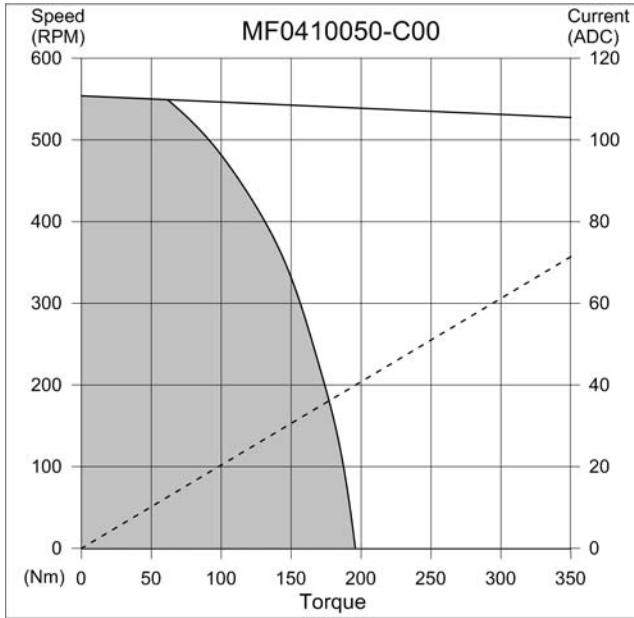
PERFORMANCE



Torque Motors

MF0410 Series Frameless Brushless Torque Motors

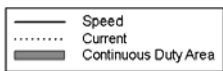
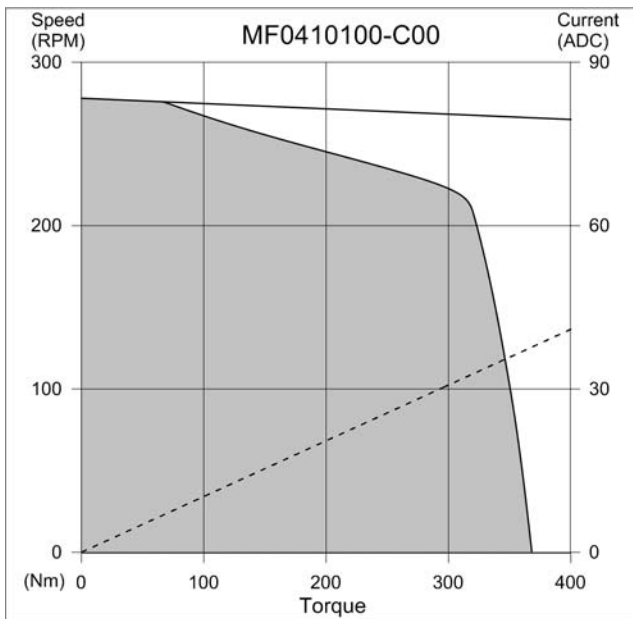
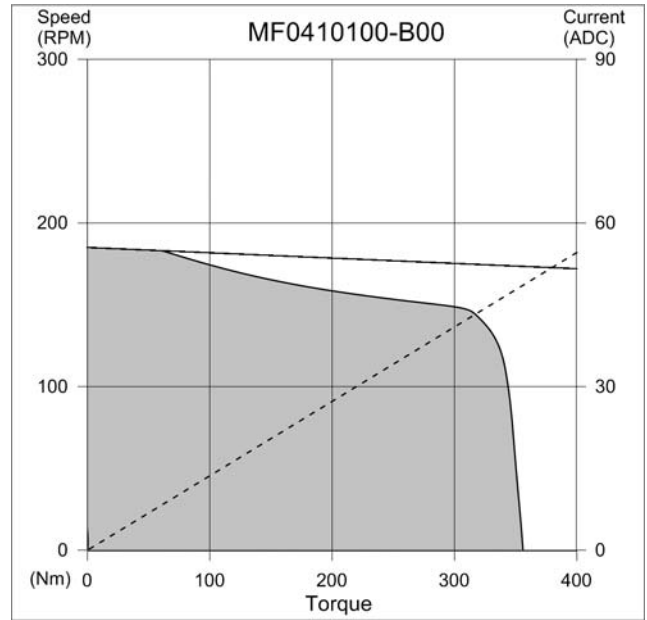
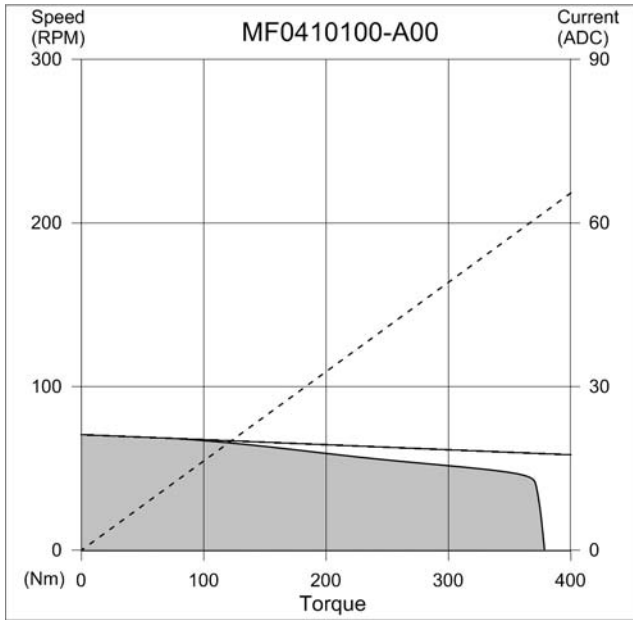
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Torque Motors

MF0410 Series Frameless Brushless Torque Motors

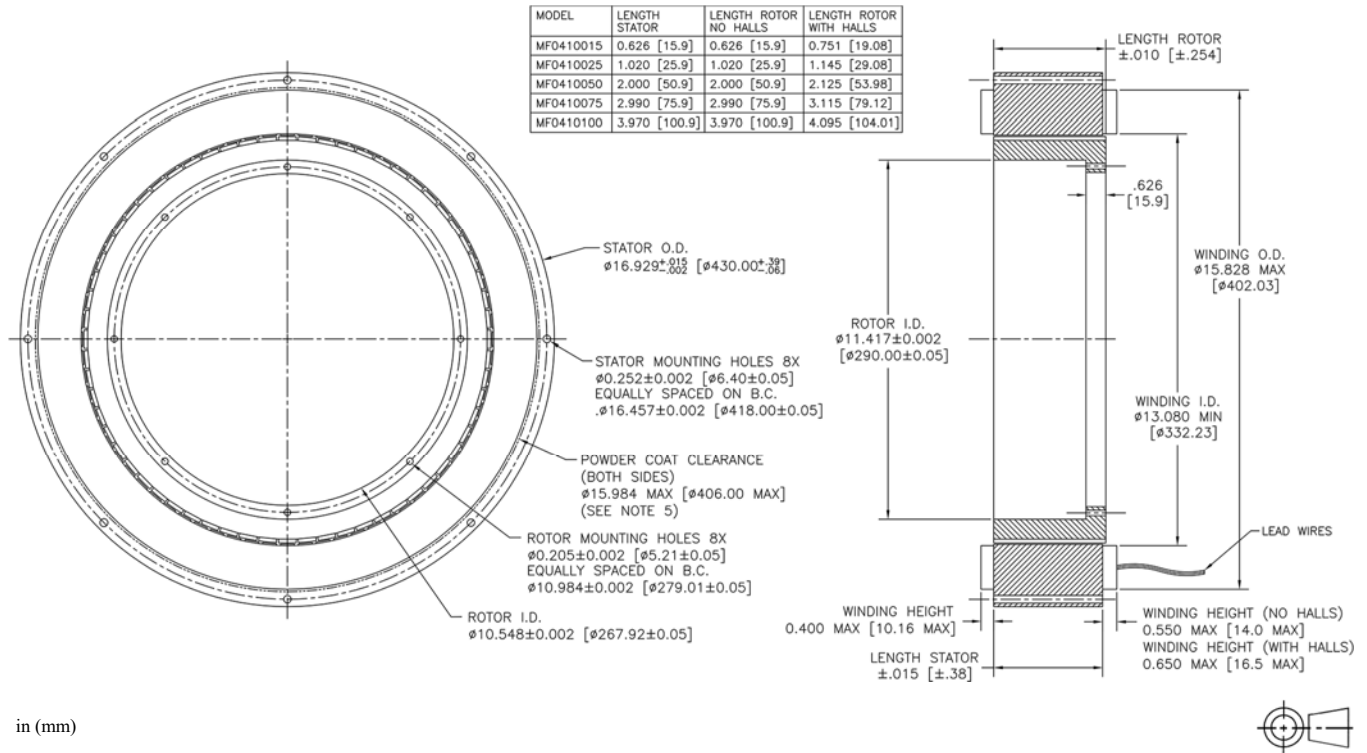
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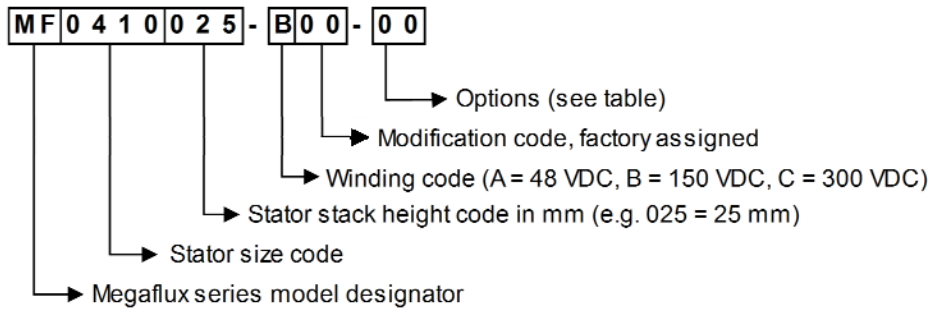
Torque Motors

MF0410 Series Frameless Brushless Torque Motors

DIMENSIONS



MODEL NUMBERING



Options
C = Customer-specified connector
Z = RoHS compliant

Torque Motors

MF0510 Series Frameless Brushless Torque Motors

SPECIFICATIONS (all data measured at 20 °C ambient)

Model No.		MF0510015			MF0510025			MF051050		
Winding Voltage	V	48	150	300	48	150	300	48	150	300
Stall Torque (continuous) ⁽¹⁾	lb-ft	82	82	81	122	120	122	256	256	250
	Nm	111	111	110	166	163	166	347	347	339
Peak Torque (±25%)	lb-ft	598	598	598	974	974	974	1840	1910	1910
	Nm	811	811	811	1320	1320	1320	2494	2590	2590
Peak Current	A	420	359	228	446	384	241	400	356	249
No Load Speed	RPM	223	606	771	147	395	495	71	189	265
	rad/s	23.4	63.5	80.7	15.4	41.4	51.8	7.41	19.8	27.8
Cogging Torque (max.)	lb-ft	0.34			0.61			1.16		
	Nm	0.46			0.83			1.57		
Torque Constant (±10%)	lb-ft/A	1.427	1.667	2.620	2.185	2.533	4.044	4.599	5.365	7.664
	Nm/A	1.935	2.260	3.552	2.962	3.434	5.483	6.235	7.274	10.391
Voltage Constant (±10%)	V/kRPM	203	237	372	310	360	574	653	762	1088
	V/rad/s	1.935	2.260	3.552	2.962	3.434	5.483	6.235	7.274	10.391
Motor Constant	lb-ft/√W	5.82	5.82	5.77	7.87	7.74	7.87	13.28	13.25	12.97
	Nm/√W	7.88	7.89	7.83	10.66	10.50	10.67	18.00	17.96	17.59
Elect. Time Constant	ms	8.32	8.31	8.17	10.17	9.98	9.99	12.43	12.38	11.87
Mech. Time Constant	ms	0.85	0.87	0.88	0.75	0.76	0.75	0.54	0.54	0.56
Terminal Resistance (±12%)	Ohm	0.060	0.682	0.206	0.077	0.107	0.264	0.120	0.164	0.349
Terminal Inductance (±30%)	mH	0.501	0.681	1.682	0.785	1.068	2.638	1.492	2.031	4.144
Thermal Resistance ⁽¹⁾	°C/W	0.337			0.267			0.180		
Motor Inertia	lb-ft-s ²	4.2E-2			6.7E-2			1.3E-1		
	kg-m ²	5.7E-2			9.0E-2			1.8E-1		
Motor Weight	lb	23.4	23.6	25.9	38.6	37.6	37.2	68.4	68.4	67.8
	kg	10.59	10.69	11.77	17.49	17.06	16.86	31.01	31.01	30.74
Ambient Storage Temperature	°C	-55 to 150								
Poles	-	24								

(1) Housed version of motor mounted to 762 mm sq. x 12.7 mm (30 in. sq x 1.0 in.) aluminum plate in still air; maximum operating temperature (ambient + rise) is 130 °C

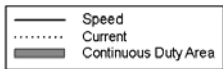
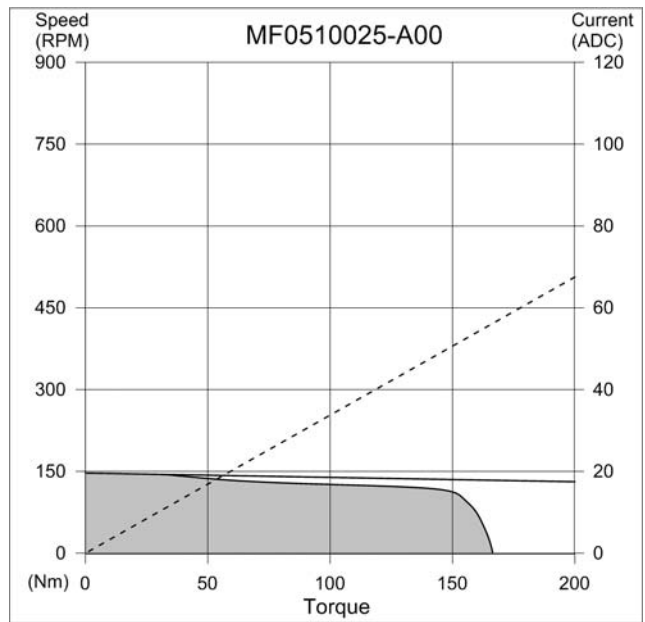
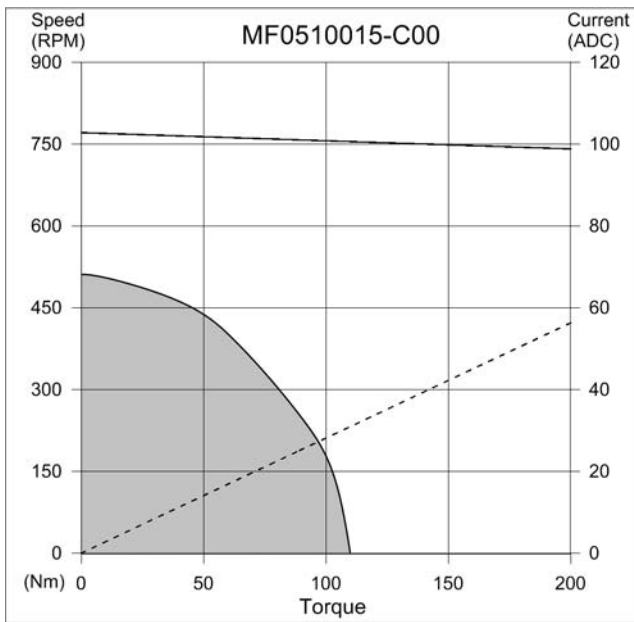
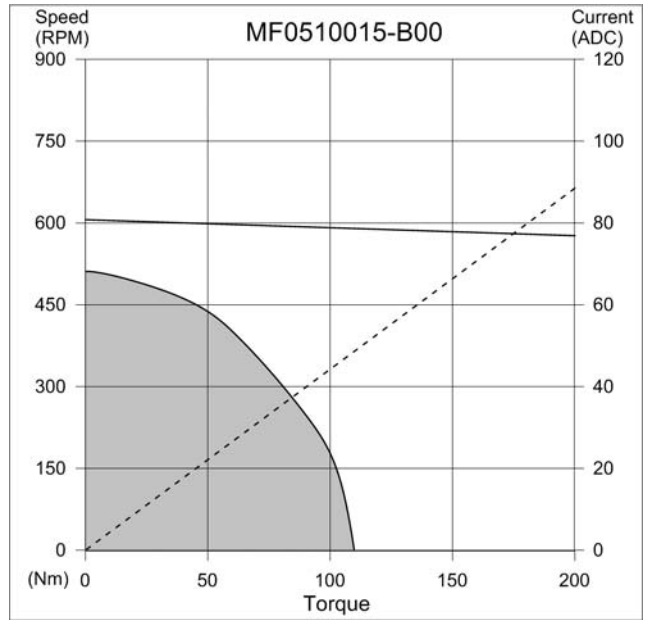
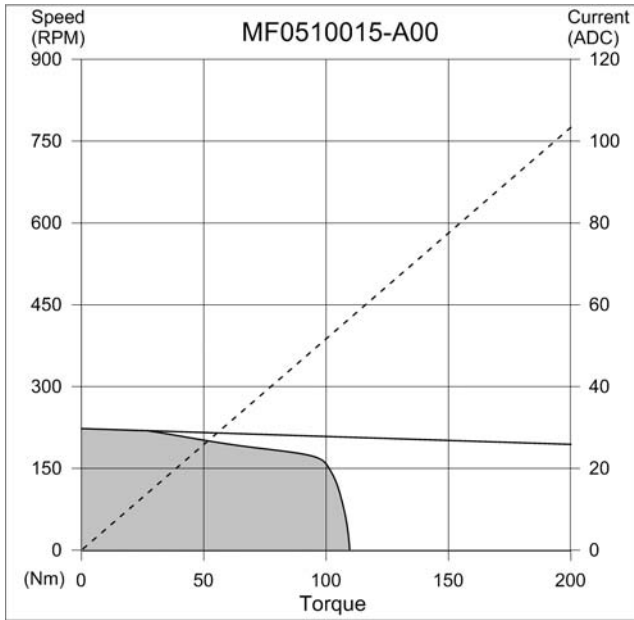
Model No.		MF0510075			MF0510100		
Winding Voltage	V	48	150	300	48	150	300
Stall Torque (continuous) ⁽¹⁾	lb-ft	389	387	387	504	501	501
	Nm	528	524	525	684	680	680
Peak Torque (±25%)	lb-ft	2427	2855	2855	2612	3790	3790
	Nm	3291	3870	3870	3542	5139	5139
Peak Current	A	429	421	315	340	412	309
No Load Speed	RPM	57	146	223	42	110	165
	rad/s	6.0	15.3	23.4	4.4	11.5	17.3
Cogging Torque (max.)	lb-ft	1.55			2.27		
	Nm	2.10			3.07		
Torque Constant (±10%)	lb-ft/A	5.663	6.786	9.061	7.673	9.208	12.277
	Nm/A	7.678	9.201	12.285	10.403	12.484	16.645
Voltage Constant (±10%)	V/kRPM	804	963	1286	1089	1307	1743
	V/rad/s	7.678	9.201	12.285	10.403	12.484	16.645
Motor Constant	lb-ft/√W	16.92	16.81	16.83	20.43	20.29	20.29
	Nm/√W	22.94	22.79	22.81	27.70	27.51	27.51
Elect. Time Constant	ms	13.68	13.53	13.52	14.35	14.14	14.15
Mech. Time Constant	ms	0.48	0.49	0.50	0.45	0.46	0.46
Terminal Resistance (±12%)	Ohm	0.112	0.163	0.290	0.141	0.206	0.366
Terminal Inductance (±30%)	mH	1.532	2.206	3.922	2.023	2.913	5.179
Thermal Resistance ⁽¹⁾	°C/W	0.125			0.110		
Motor Inertia	lb-ft-s ²	2.0E-1			2.7E-1		
	kg-m ²	2.6E-1			3.6E-1		
Motor Weight	lb	100.4	99.7	100.7	133.0	132.7	132.7
	kg	45.54	45.21	45.67	60.32	60.21	60.21
Ambient Storage Temperature	°C	-55 to 150					
Poles	-	24					

(1) Housed version of motor mounted to 762 mm sq. x 12.7 mm (30 in. sq x 1.0 in.) aluminum plate in still air; maximum operating temperature (ambient + rise) is 130 °C

Torque Motors

MF0510 Series Frameless Brushless Torque Motors

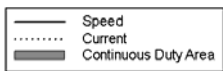
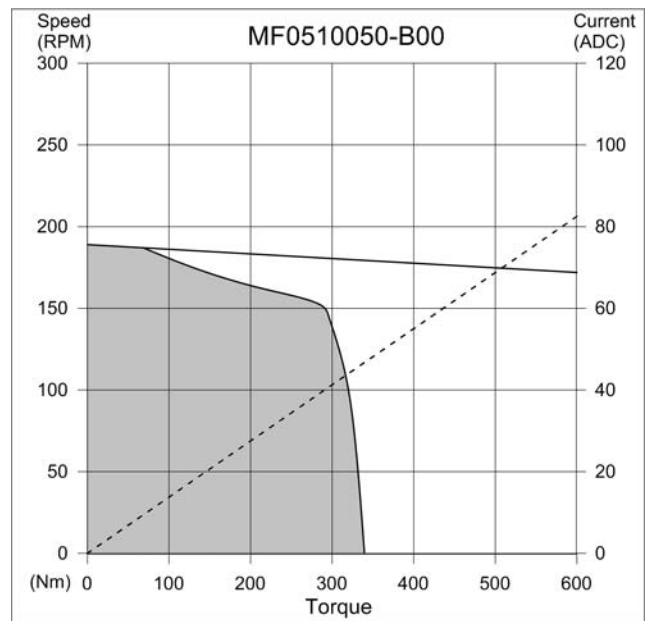
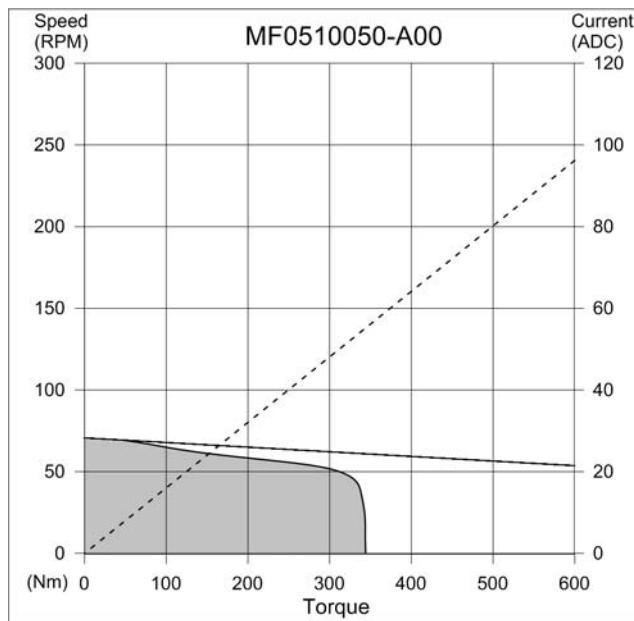
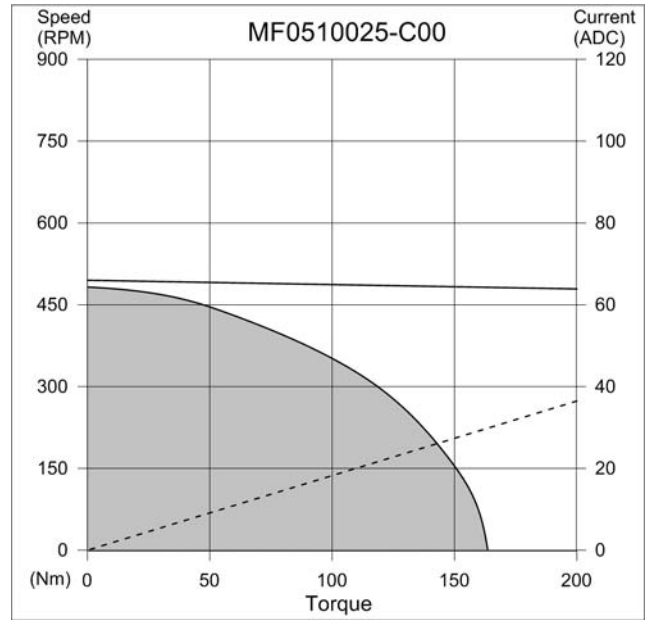
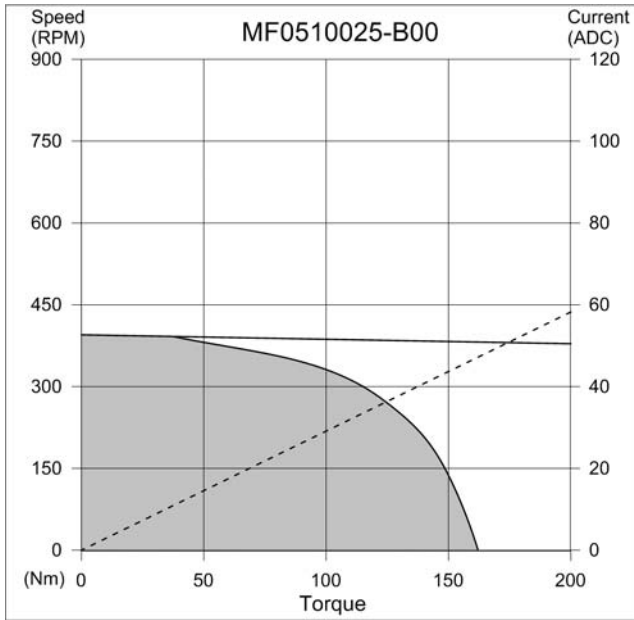
PERFORMANCE



Torque Motors

MF0510 Series Frameless Brushless Torque Motors

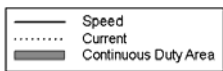
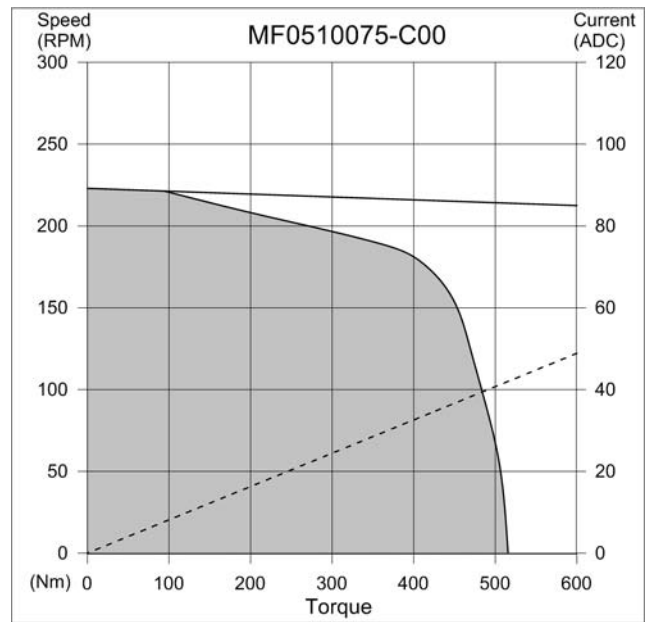
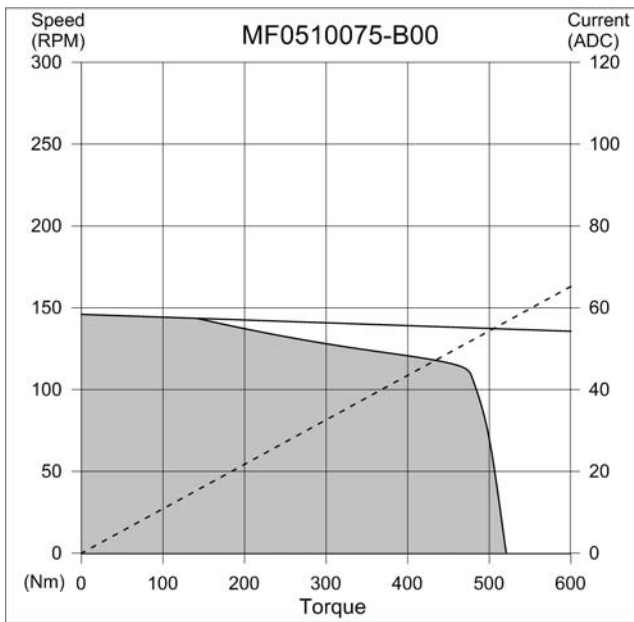
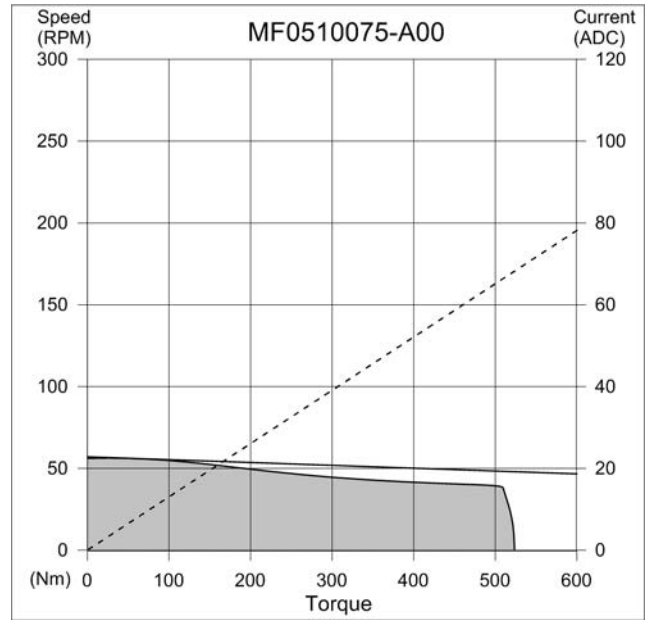
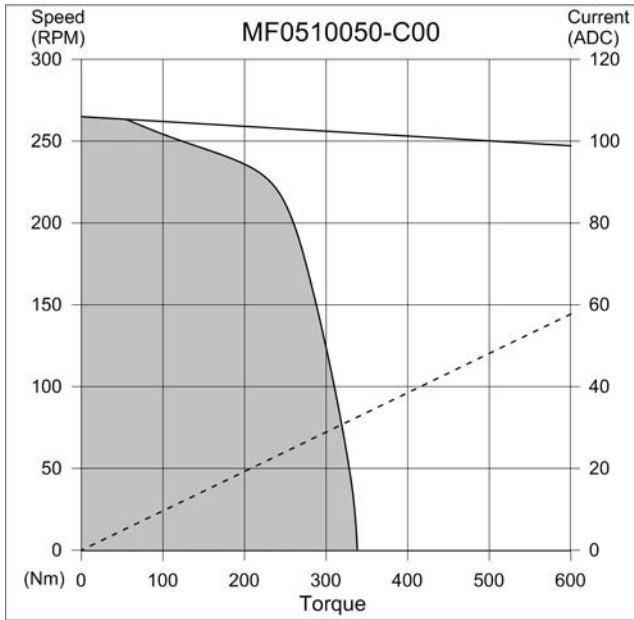
PERFORMANCE



Torque Motors

MF0510 Series Frameless Brushless Torque Motors

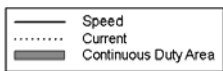
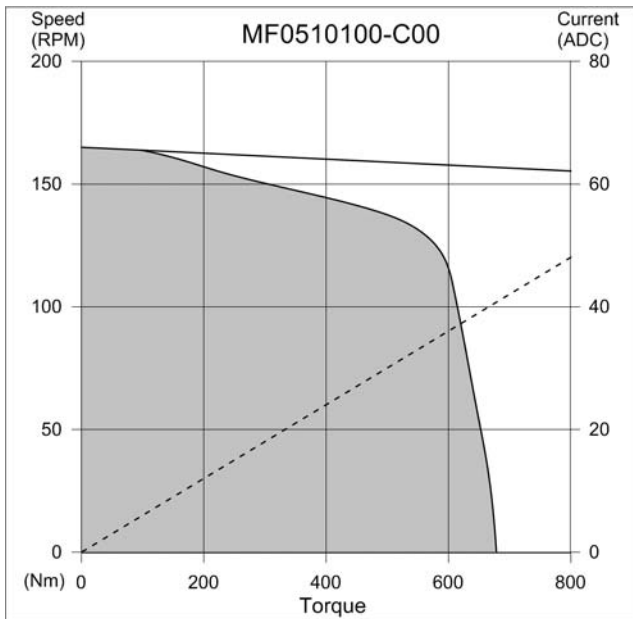
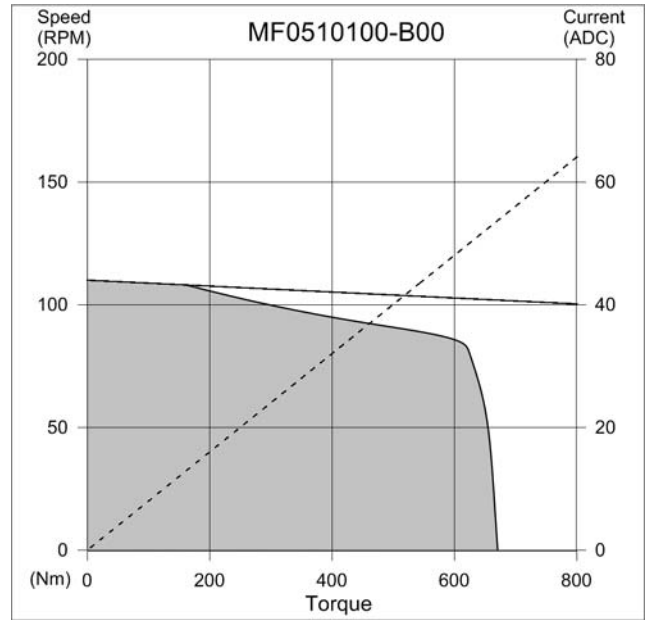
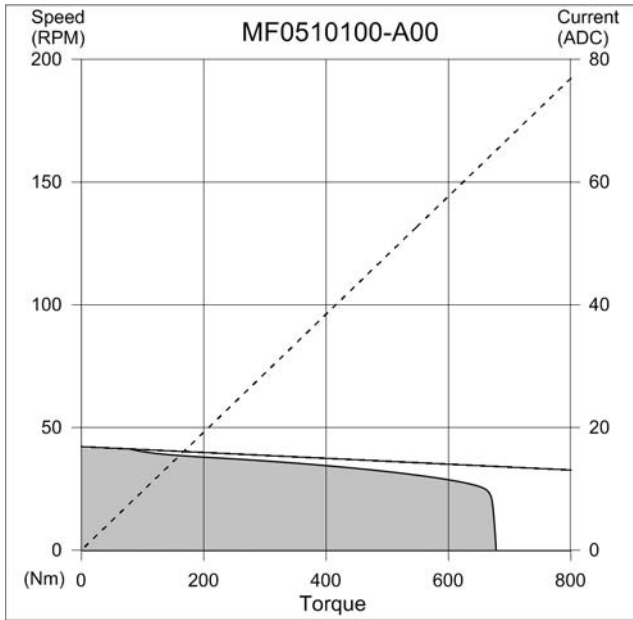
PERFORMANCE



Torque Motors

MF0510 Series Frameless Brushless Torque Motors

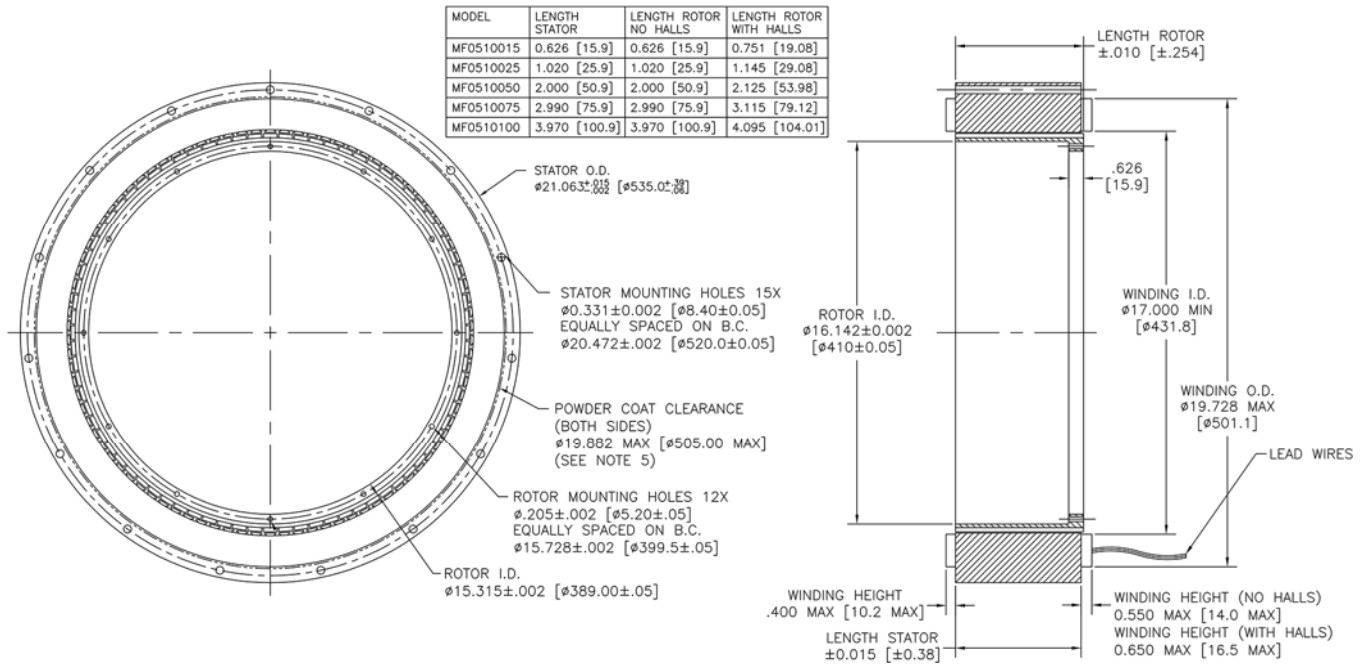
PERFORMANCE



Torque Motors

MF0510 Series Frameless Brushless Torque Motors

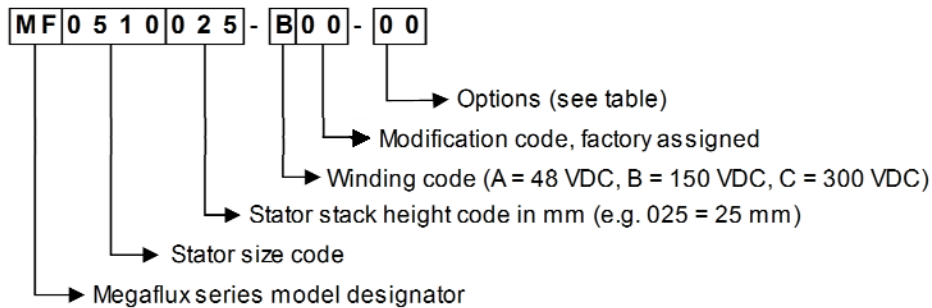
DIMENSIONS



in (mm)



MODEL NUMBERING



Options
C = Customer-specified connector
Z = RoHS compliant

Torque Motors

MF0610 Series Frameless Brushless Torque Motors

SPECIFICATIONS (all data measured at 20 °C ambient)

Model No.		MF0610015			MF0610025			MF061050		
Winding Voltage	V	48	150	300	48	150	300	48	150	300
Stall Torque (continuous) ⁽¹⁾	lb-ft	127	131	131	216	217	216	411	412	411
	Nm	172	178	177	293	294	293	557	559	557
Peak Torque (±25%)	lb-ft	743	743	743	1214	1214	1214	2363	2374	2374
	Nm	1008	1008	1008	1646	1646	1646	3204	3218	3218
Peak Current	A	368	315	221	362	310	217	56	307	214
No Load Speed	RPM	159	425	595	96	259	363	49	130	183
	rad/s	16.7	44.5	62.3	10.1	27.1	38.0	5.1	13.6	19.2
Cogging Torque (max.)	lb-ft	0.40			0.70			1.31		
	Nm	0.54			0.95			1.78		
Torque Constant (±10%)	lb-ft/A	2.02	2.36	3.37	3.36	3.92	5.60	6.65	7.74	11.08
	Nm/A	2.74	3.20	4.57	4.55	5.31	7.59	9.01	10.50	15.02
Voltage Constant (±10%)	V/kRPM	287	335	478	477	556	795	944	1100	1573
	V/rad/s	2.74	3.20	4.57	4.55	5.31	7.59	9.01	10.50	15.02
Motor Constant	lb-ft/√W	7.76	7.80	7.77	11.37	11.45	11.38	18.09	18.15	18.09
	Nm/√W	10.52	10.57	10.53	15.42	15.53	15.42	24.53	24.61	24.53
Elect. Time Constant	ms	9.45	9.53	9.47	11.56	11.72	11.56	14.20	14.34	14.20
Mech. Time Constant	ms	1.62	1.60	1.62	1.21	1.21	1.22	0.96	0.94	0.97
Terminal Resistance (±12%)	Ohm	0.068	0.091	0.188	0.087	0.117	0.242	0.135	0.182	0.375
Terminal Inductance (±30%)	mH	0.641	0.872	1.780	1.007	1.371	2.797	1.917	2.610	5.326
Thermal Resistance ⁽¹⁾	°C/W	0.230			0.185			0.130		
Motor Inertia	lb-ft-s ²	1.4E-1			2.2E-1			4.5E-1		
	kg-m ²	1.9E-1			3.0E-1			6.0E-1		
Motor Weight	lb	34.0	34.1	34.0	52.6	52.8	52.6	99.7	98.9	99.7
	kg	15.4	15.48	15.43	23.88	23.93	23.88	45.23	44.85	45.23
Ambient Storage Temperature	°C	-55 to 150								
Poles	-	24								

(1) Housed version of motor mounted to 762 mm sq. x 12.7 mm (30 in. sq x 1.0 in.) aluminum plate in still air; maximum operating temperature (ambient + rise) is 130 °C

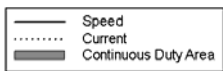
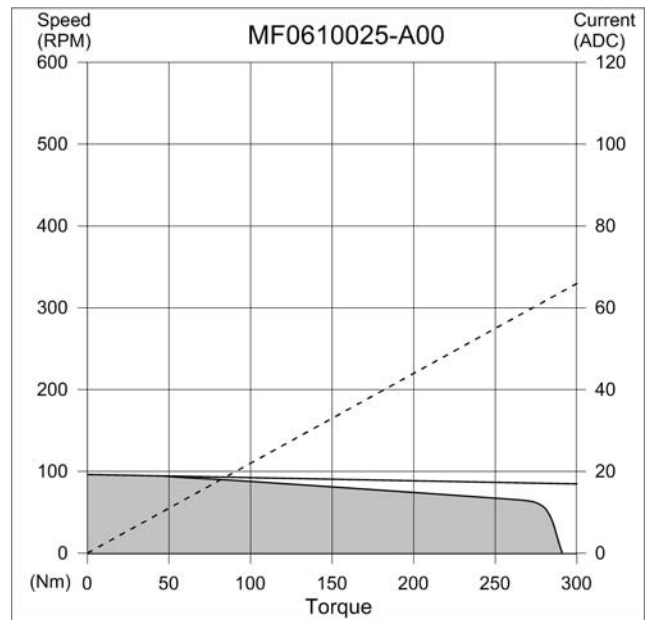
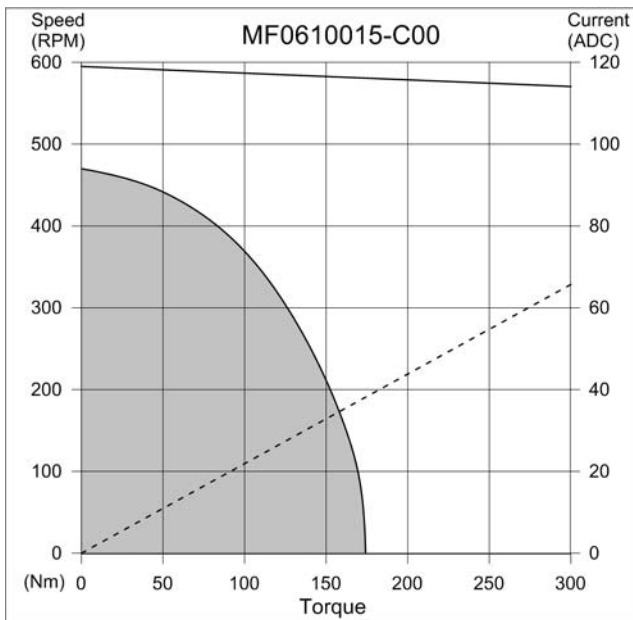
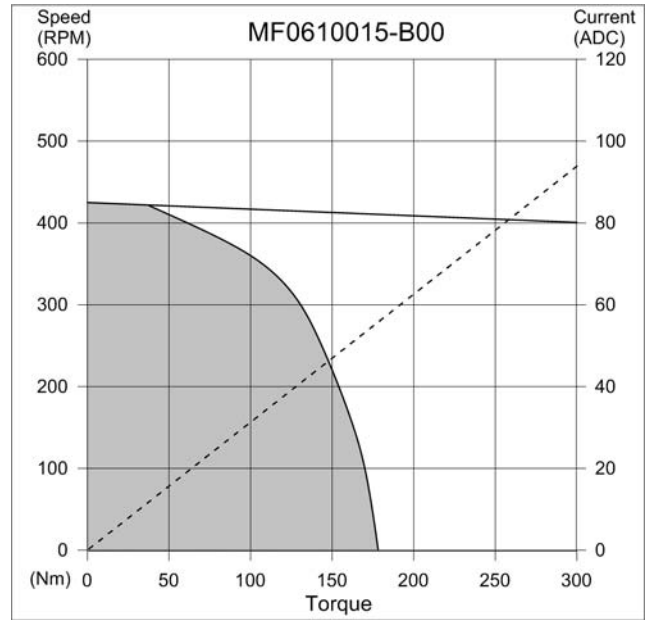
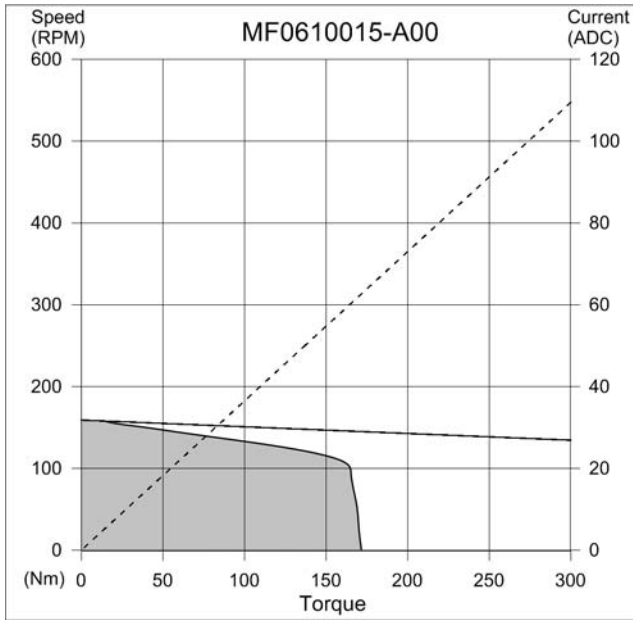
Model No.		MF0610075			MF0610100					
Winding Voltage	V	48	150	300	48	150	300			
Stall Torque (continuous) ⁽¹⁾	lb-ft	591	594	591	758	762	758			
	Nm	802	805	802	1028	1034	1028			
Peak Torque (±25%)	lb-ft	2573	3548	3548	2661	4712	4712			
	Nm	3488	4810	4810	3608	6389	6389			
Peak Current	A	262	311	217	208	315	221			
No Load Speed	RPM	33	88	123	25	67	93			
	rad/s	3.5	9.3	12.9	2.6	7.0	9.8			
Cogging Torque (max.)	lb-ft	1.85			2.63					
	Nm	2.51			3.56					
Torque Constant (±10%)	lb-ft/A	9.81	11.42	16.35	12.81	14.94	21.34			
	Nm/A	13.30	15.49	22.16	17.36	20.25	28.93			
Voltage Constant (±10%)	V/kRPM	13.93	1622	2321	1818	2121	3030			
	V/rad/s	13.30	15.49	22.16	17.36	20.25	28.93			
Motor Constant	lb-ft/√W	22.93	22.98	22.91	26.64	26.79	26.63			
	Nm/√W	31.09	31.16	31.06	36.12	36.32	36.11			
Elect. Time Constant	ms	15.50	15.64	15.48	16.23	16.40	16.21			
Mech. Time Constant	ms	0.90	0.88	0.90	0.87	0.87	0.87			
Terminal Resistance (±12%)	Ohm	0.183	0.247	0.509	0.231	0.311	0.642			
Terminal Inductance (±30%)	mH	2.837	3.862	7.881	3.748	5.101	10.410			
Thermal Resistance ⁽¹⁾	°C/W	0.100			0.080					
Motor Inertia	lb-ft-s ²	6.7E-1			8.9E-1					
	kg-m ²	9.1E-1			1.21					
Motor Weight	lb	147	146	147	194	195	194			
	kg	66.76	66.16	66.76	88.11	88.24	88.11			
Ambient Storage Temperature	°C	-55 to 150								
Poles	-	24								

(1) Housed version of motor mounted to 762 mm sq. x 12.7 mm (30 in. sq x 1.0 in.) aluminum plate in still air; maximum operating temperature (ambient + rise) is 130 °C

Torque Motors

MF0610 Series Frameless Brushless Torque Motors

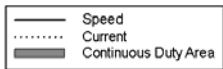
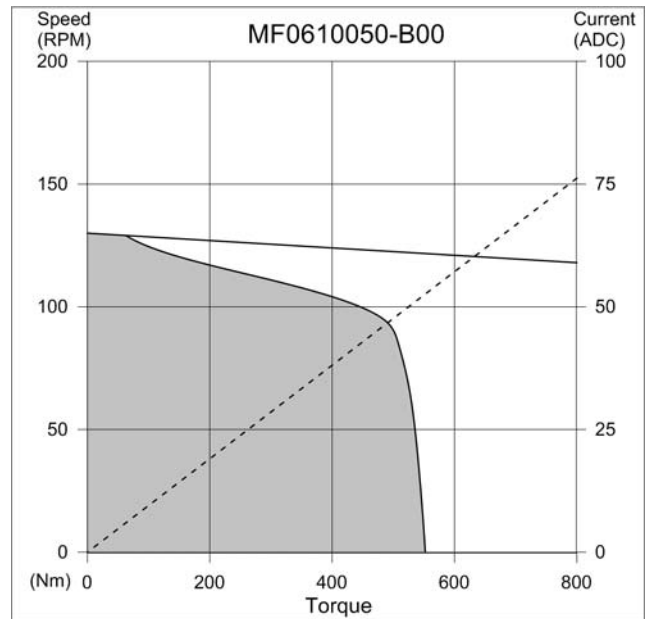
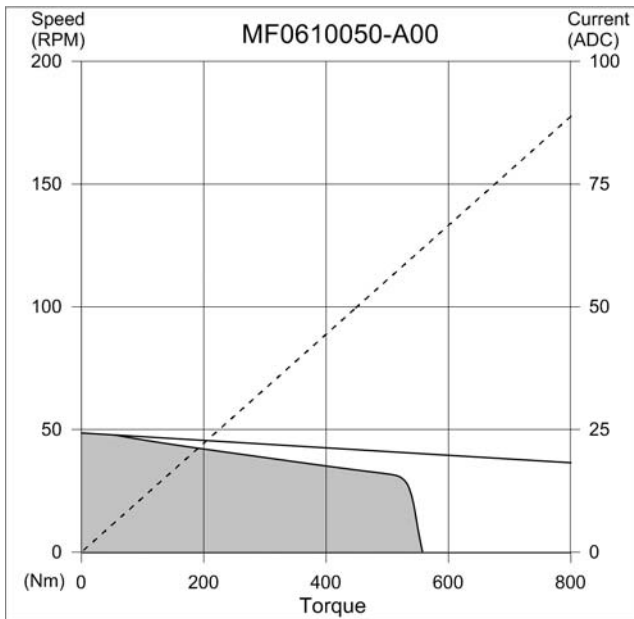
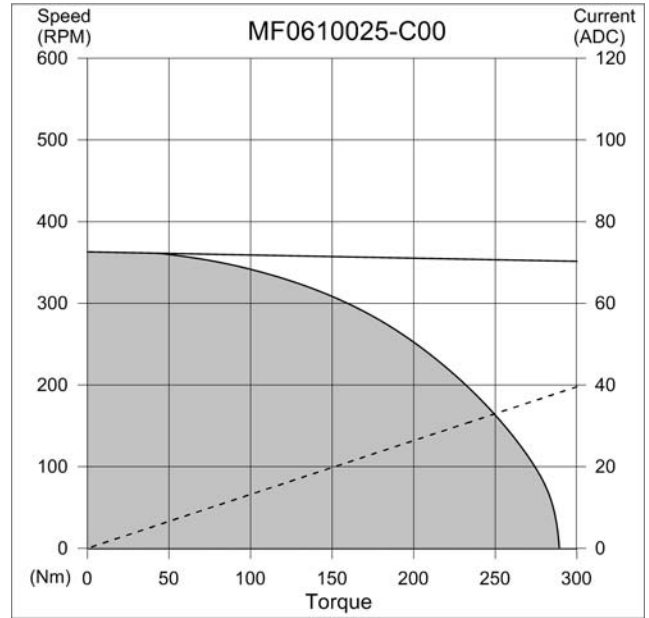
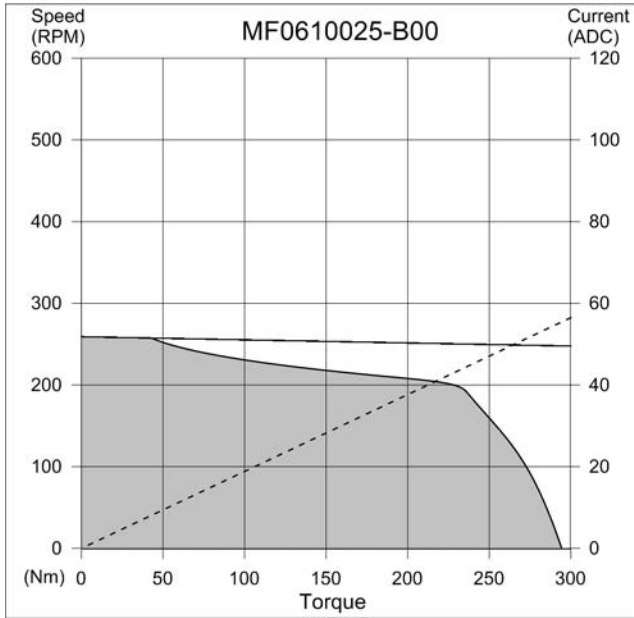
PERFORMANCE



Torque Motors

MF0610 Series Frameless Brushless Torque Motors

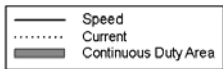
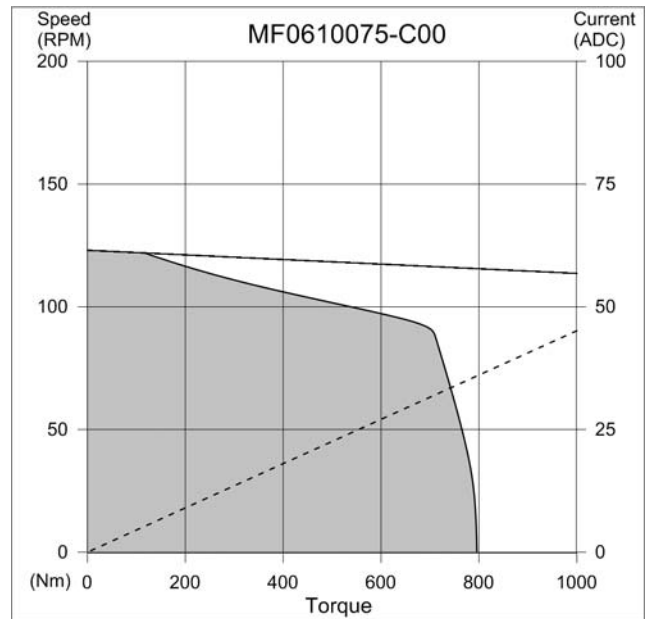
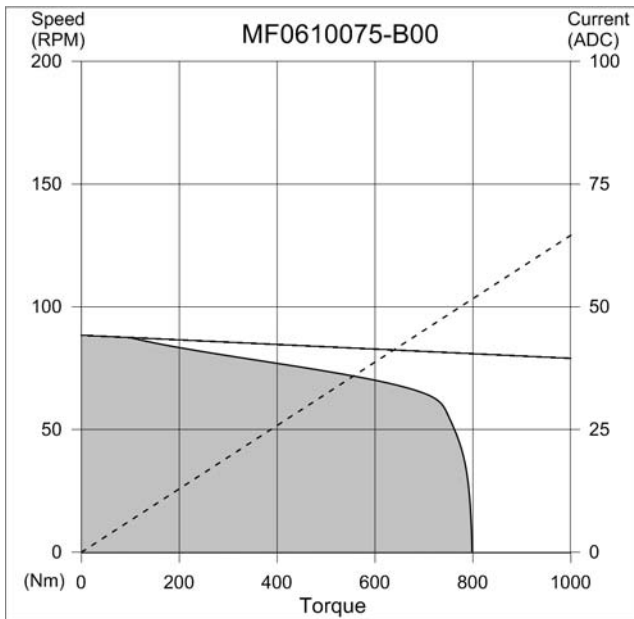
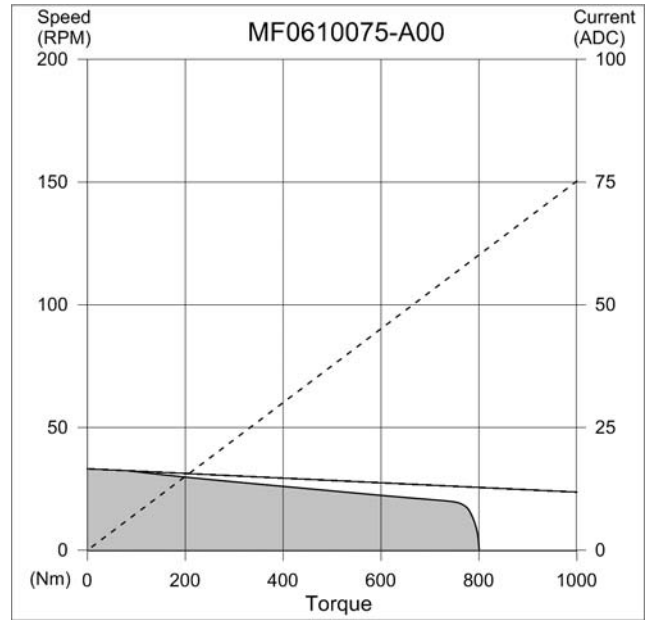
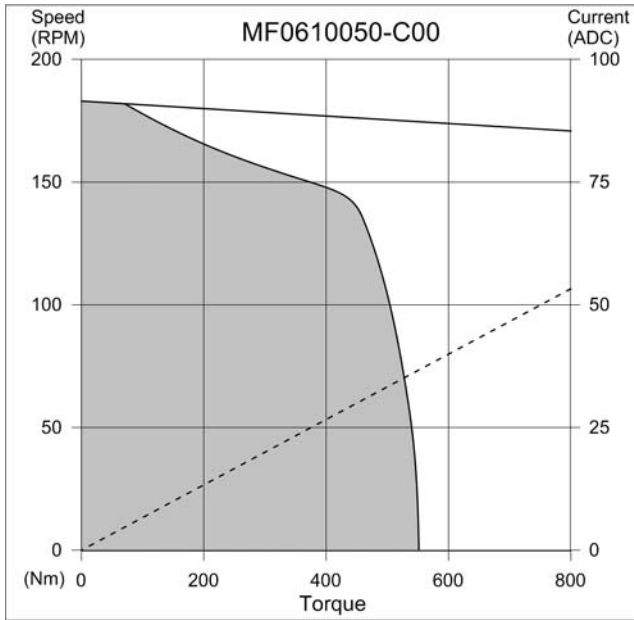
PERFORMANCE



Torque Motors

MF0610 Series Frameless Brushless Torque Motors

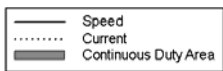
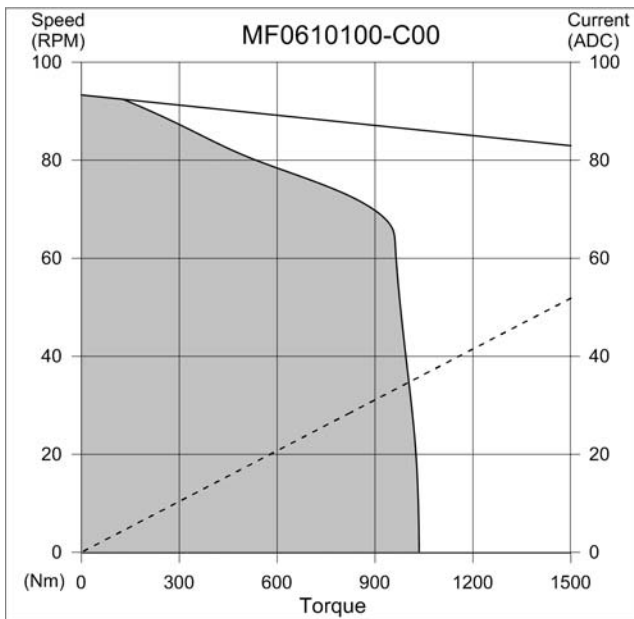
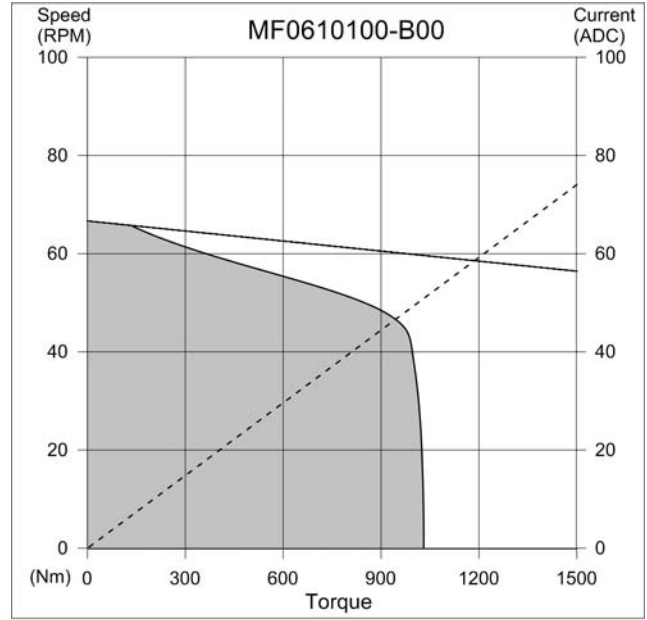
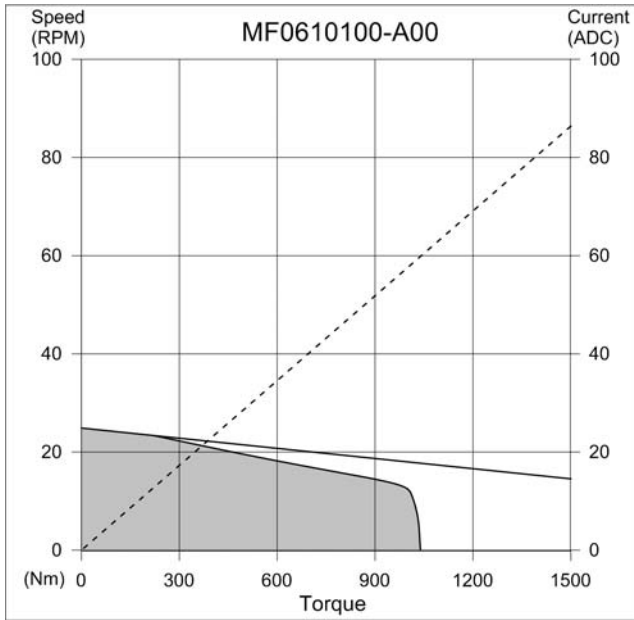
PERFORMANCE



Torque Motors

MF0610 Series Frameless Brushless Torque Motors

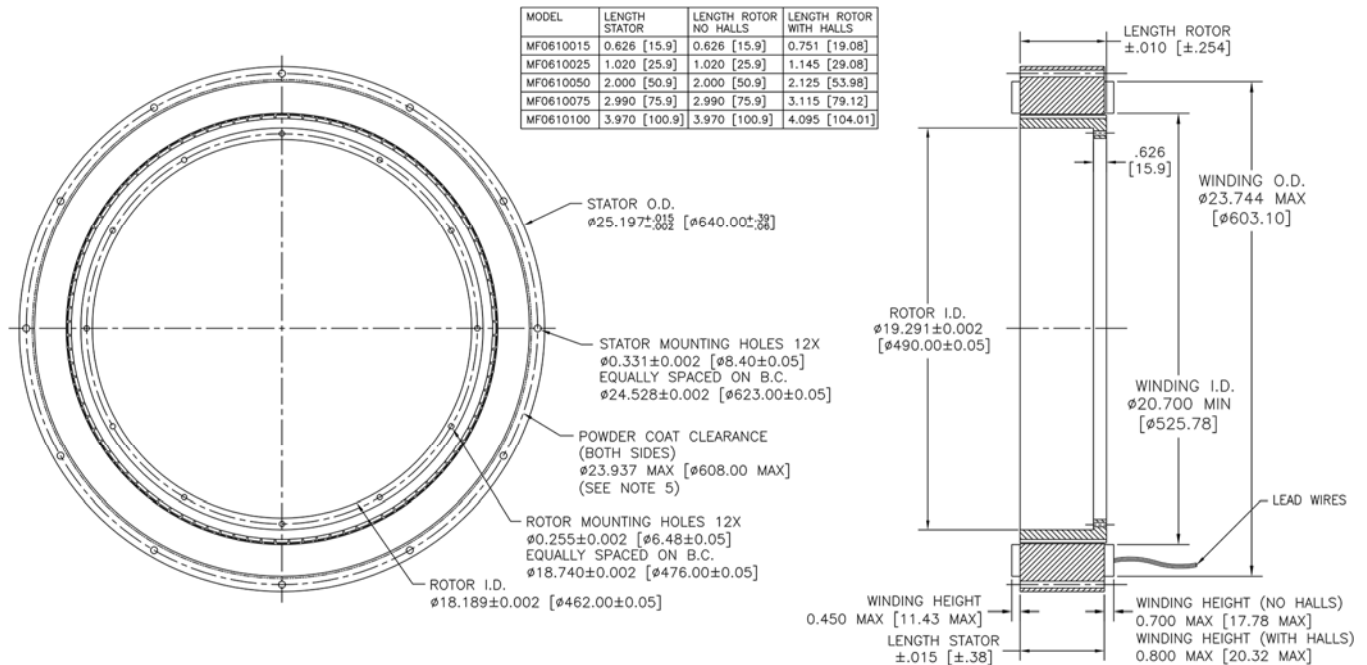
PERFORMANCE



Torque Motors

MF0610 Series Frameless Brushless Torque Motors

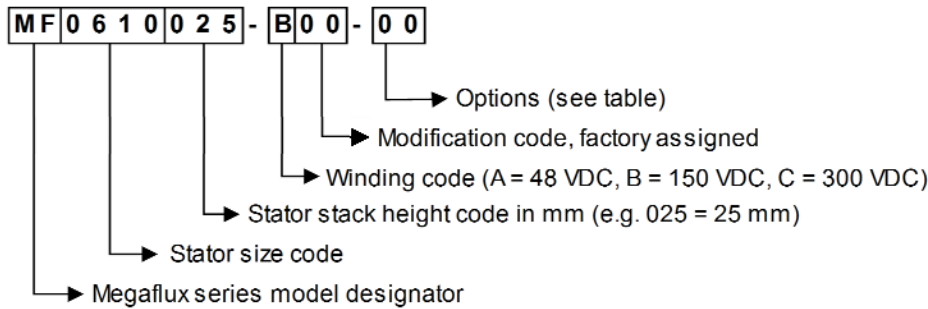
DIMENSIONS



in (mm)



MODEL NUMBERING



Options	
C	Customer-specified connector
Z	RoHS compliant

Torque Motors

MF0760 Series Frameless Brushless Torque Motors

SPECIFICATIONS (all data measured at 20 °C ambient)

Model No.		MF0760015			MF0760025			MF076050		
Winding Voltage	V	48	150	300	48	150	300	48	150	300
Stall Torque (continuous) ⁽¹⁾	lb-ft	226	225	228	354	353	361	694	688	700
	Nm	307	304	309	480	478	490	941	933	949
Peak Torque (±25%)	lb-ft	1861	1861	1861	3033	3033	3033	4543	5946	5945
	Nm	2524	2524	2523	4112	4112	4112	6160	8061	8061
Peak Current	A	621	517	388	628	524	393	475	518	389
No Load Speed	RPM	108	281	422	67	175	263	34	89	133
	rad/s	11.3	29.4	44.2	7.06	18.3	27.5	3.55	9.28	13.9
Cogging Torque (max.)	lb-ft	0.45			0.86			1.53		
	Nm	0.61			1.17			2.07		
Torque Constant (±10%)	lb-ft/A	3.00	3.60	4.80	4.83	5.79	7.72	9.56	11.47	15.30
	Nm/A	4.07	4.88	6.51	6.54	7.85	10.47	12.96	15.55	20.74
Voltage Constant (±10%)	V/kRPM	426	511	681	685	822	1096	1357	1629	2172
	V/rad/s	4.07	4.88	6.51	6.54	7.85	10.47	12.96	15.55	20.74
Motor Constant	lb-ft/√W	13.40	13.29	13.52	18.75	18.67	19.13	30.08	29.82	30.35
	Nm/√W	18.16	18.02	18.33	25.42	25.31	25.93	40.78	40.43	41.15
Elect. Time Constant	ms	13.47	13.24	13.71	16.11	15.98	16.77	20.27	19.91	20.63
Mech. Time Constant	ms	0.96	0.97	0.94	0.78	0.79	0.75	0.61	0.62	0.60
Terminal Resistance (±12%)	Ohm	0.050	0.073	0.126	0.066	0.096	0.163	0.101	0.148	0.254
Terminal Inductance (±30%)	mH	0.675	0.971	1.727	1.068	1.538	2.734	2.047	2.947	5.239
Thermal Resistance ⁽¹⁾	°C/W	0.235			0.187			0.126		
Motor Inertia	lb-ft-s ²	2.4E-1			3.9E-1			7.8E-1		
	kg-m ²	3.3E-1			5.3E-1			1.05		
Motor Weight	lb	47.8	47.6	48.1	74.0	73.6	74.0	138.8	138.3	139.3
	kg	21.69	21.58	21.80	33.59	33.39	33.56	62.96	62.75	63.17
Ambient Storage Temperature	°C	-55 to 150								
Poles	-	24								

(1) Housed version of motor mounted to 762 mm sq. x 12.7 mm (30 in. sq x 1.0 in.) aluminum plate in still air; maximum operating temperature (ambient + rise) is 130 °C

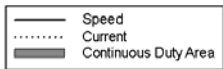
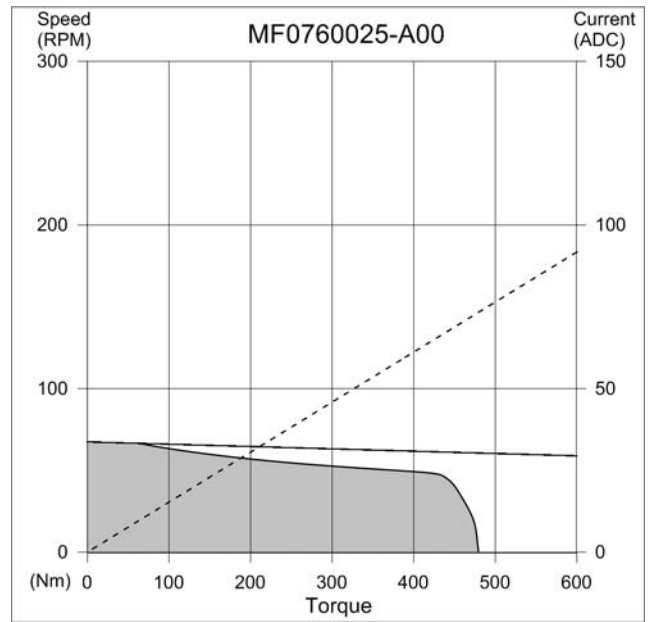
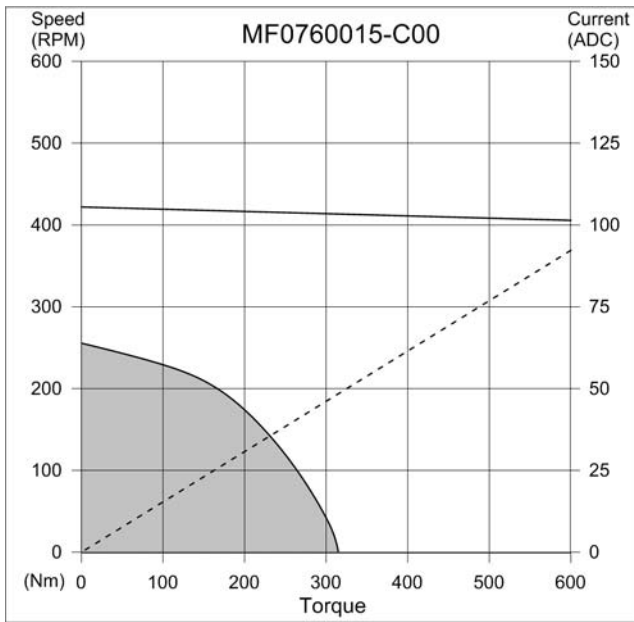
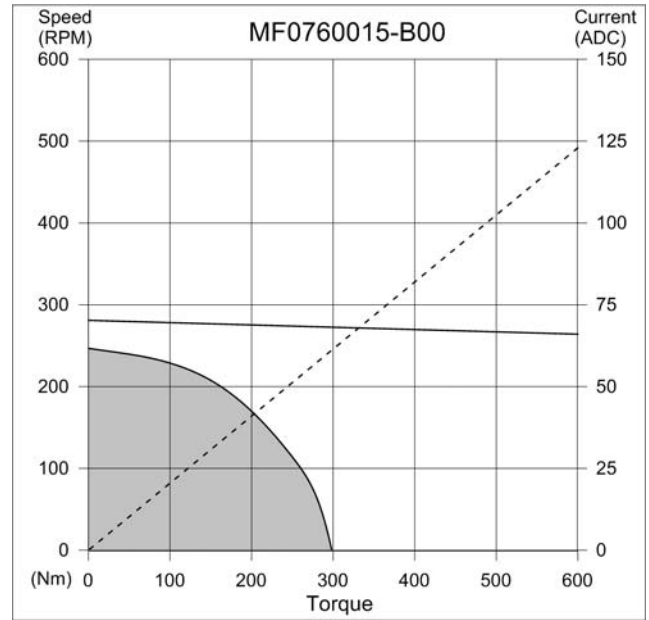
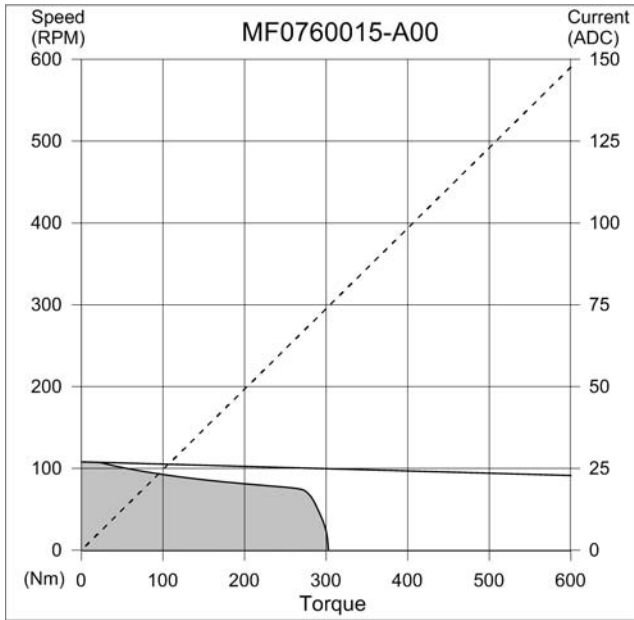
Model No.		MF0760075			MF0760100		
Winding Voltage	V	48	150	300	48	150	300
Stall Torque (continuous) ⁽¹⁾	lb-ft	1031	1022	1040	1371	1359	1383
	Nm	1398	1386	1410	1858	1842	1875
Peak Torque (±25%)	lb-ft	4980	8886	8886	5238	11738	11738
	Nm	6751	12048	12048	7102	15914	15915
Peak Current	A	348	517	388	276	515	386
No Load Speed	RPM	22.7	59.2	88.7	17.1	44.6	66.9
	rad/s	2.38	6.20	9.29	1.79	4.67	7.01
Cogging Torque (max.)	lb-ft	2.19			3.04		
	Nm	2.97			4.12		
Torque Constant (±10%)	lb-ft/A	14.32	17.18	22.91	18.99	22.79	30.38
	Nm/A	19.41	23.29	31.06	25.75	30.89	41.19
Voltage Constant (±10%)	V/kRPM	2033	2439	3252	2696	3235	4314
	V/rad/s	19.41	23.29	31.06	25.75	30.89	41.19
Motor Constant	lb-ft/√W	38.54	38.22	38.94	45.52	45.12	45.96
	Nm/√W	52.25	51.82	52.80	61.72	61.18	62.31
Elect. Time Constant	ms	21.99	21.64	22.46	23.07	22.67	23.51
Mech. Time Constant	ms	0.56	0.56	0.55	0.53	0.54	0.52
Terminal Resistance (±12%)	Ohm	0.138	0.202	0.346	0.174	0.255	0.437
Terminal Inductance (±30%)	mH	3.035	4.371	7.770	4.014	5.780	10.275
Thermal Resistance ⁽¹⁾	°C/W	0.094			0.074		
Motor Inertia	lb-ft-s ²	1.17			1.55		
	kg-m ²	1.58			2.11		
Motor Weight	lb	204.5	203.9	205.1	270	269	270
	kg	92.75	92.47	93.03	122.3	121.9	122.6
Ambient Storage Temperature	°C	-55 to 150					
Poles	-	24					

(1) Housed version of motor mounted to 762 mm sq. x 12.7 mm (30 in. sq x 1.0 in.) aluminum plate in still air; maximum operating temperature (ambient + rise) is 130 °C

Torque Motors

MF0760 Series Frameless Brushless Torque Motors

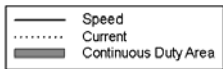
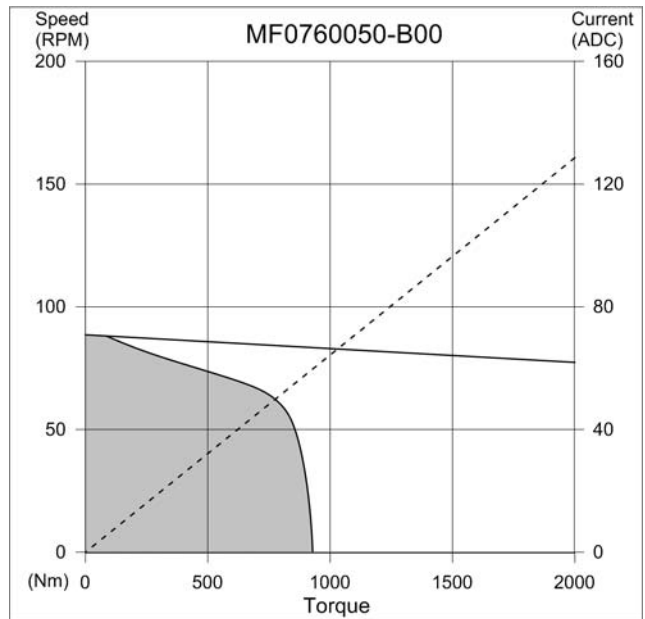
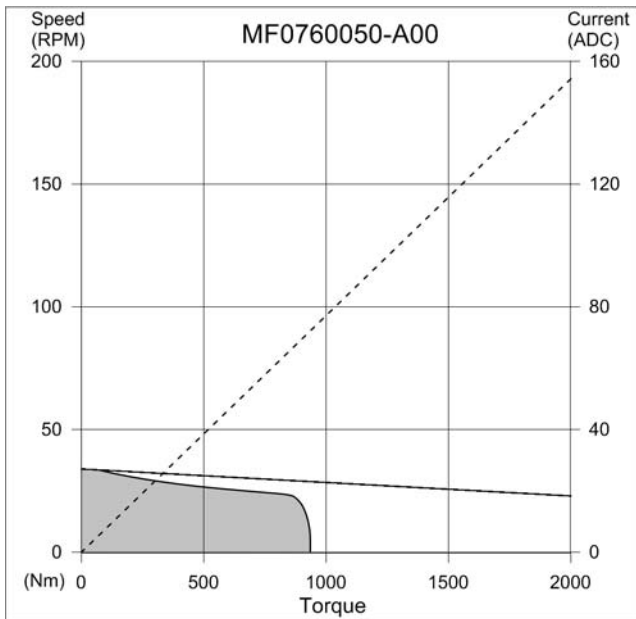
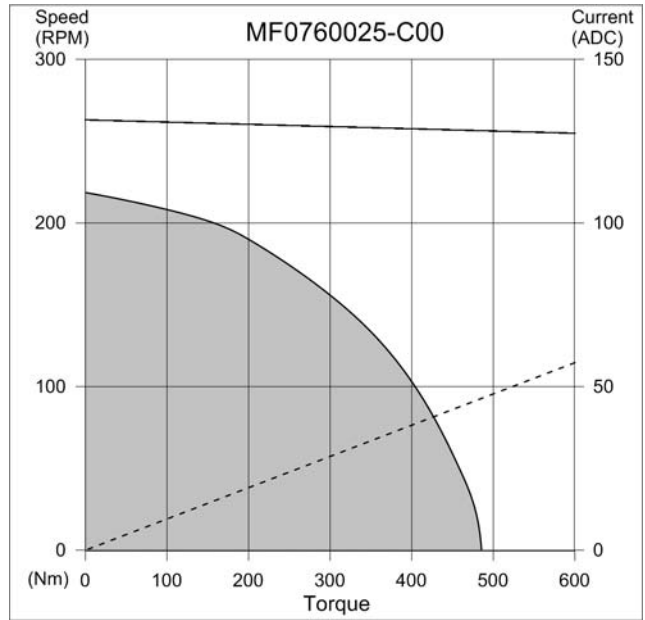
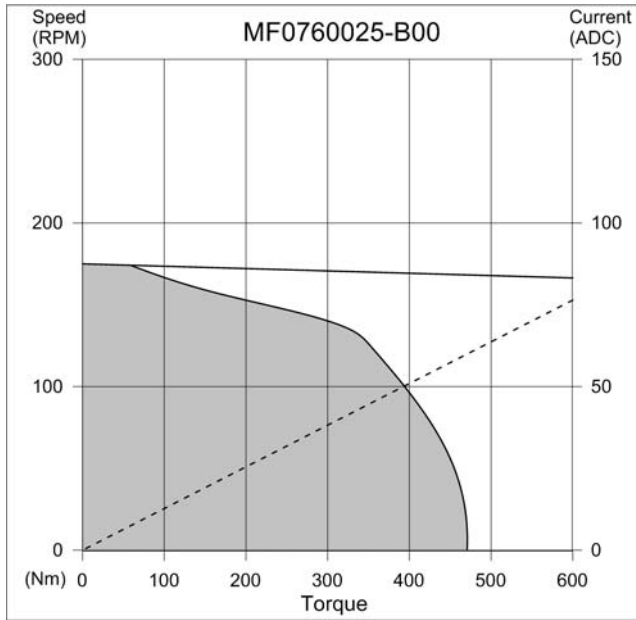
PERFORMANCE



Torque Motors

MF0760 Series Frameless Brushless Torque Motors

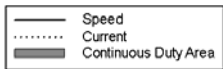
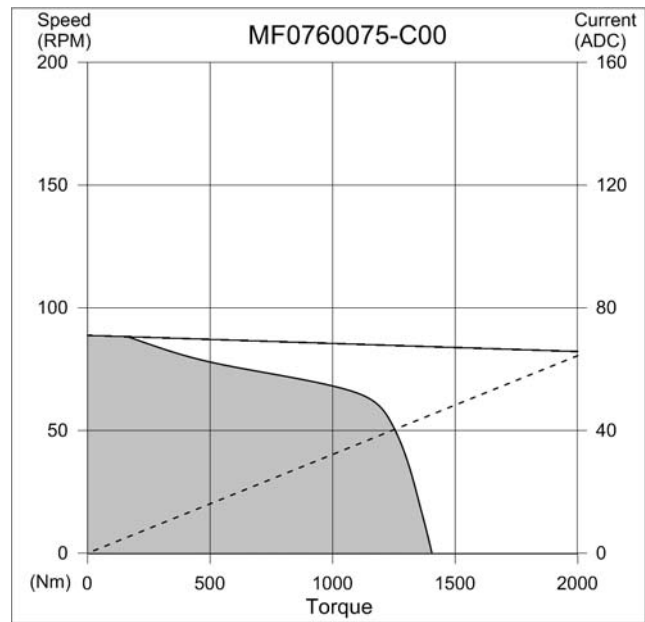
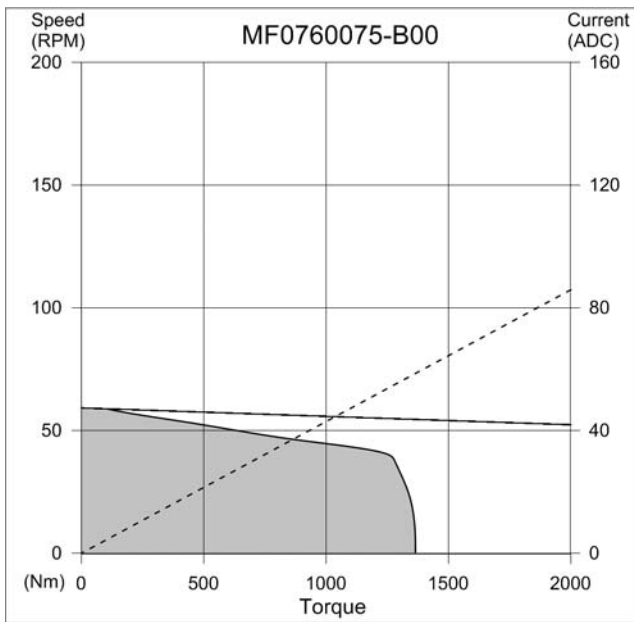
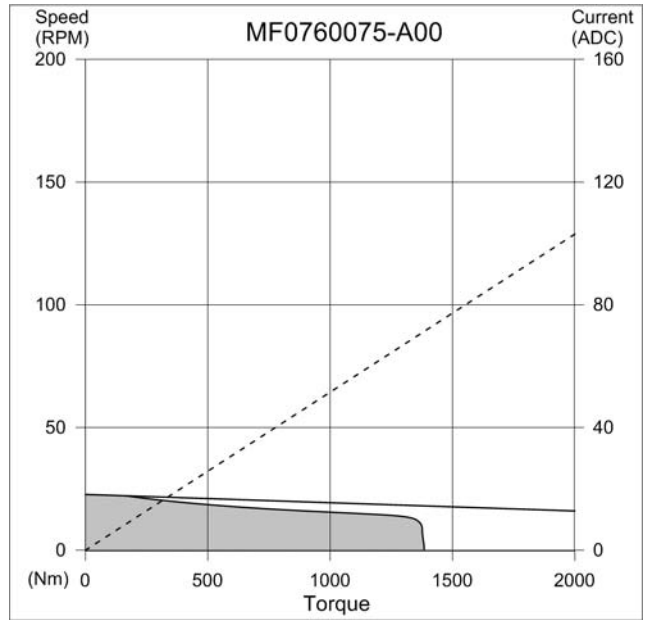
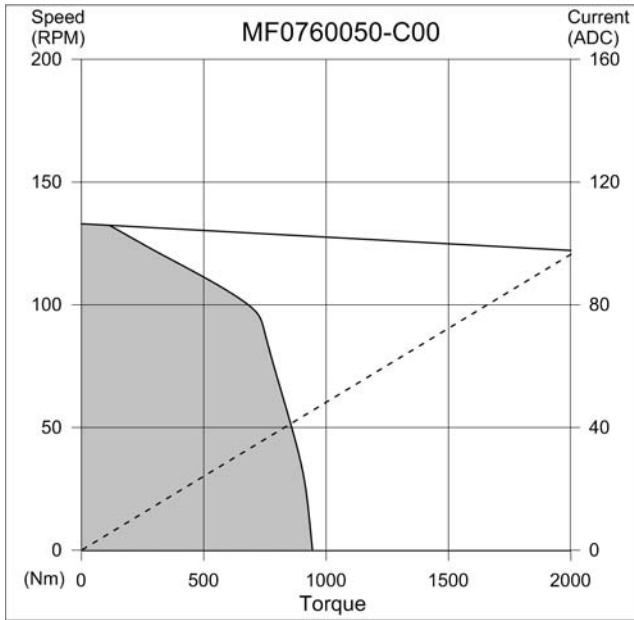
PERFORMANCE



Torque Motors

MF0760 Series Frameless Brushless Torque Motors

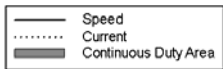
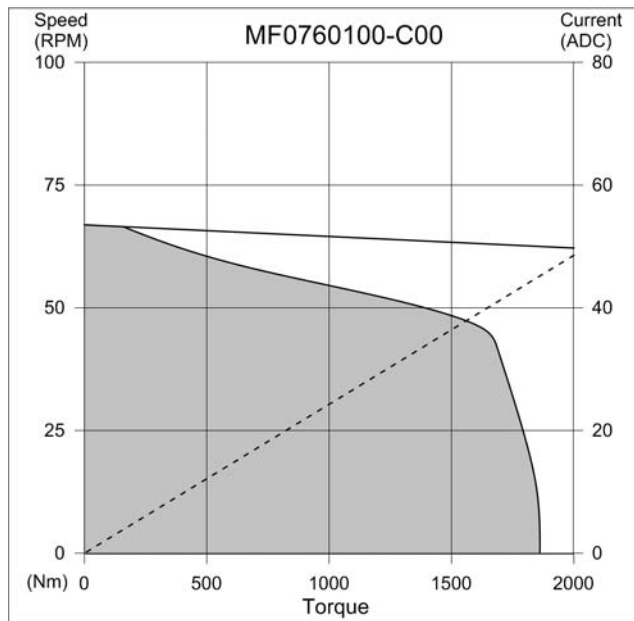
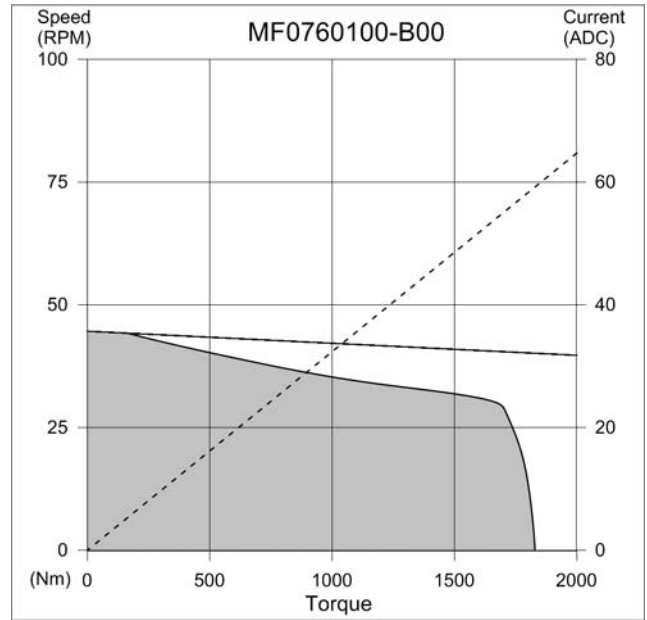
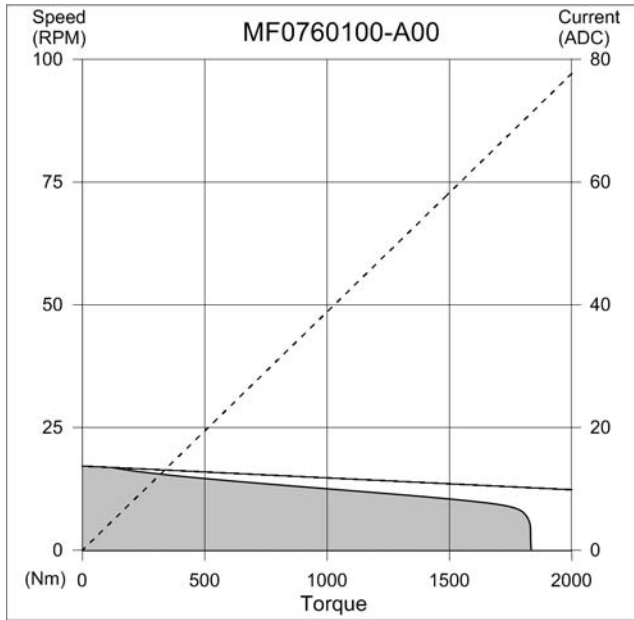
PERFORMANCE



Torque Motors

MF0760 Series Frameless Brushless Torque Motors

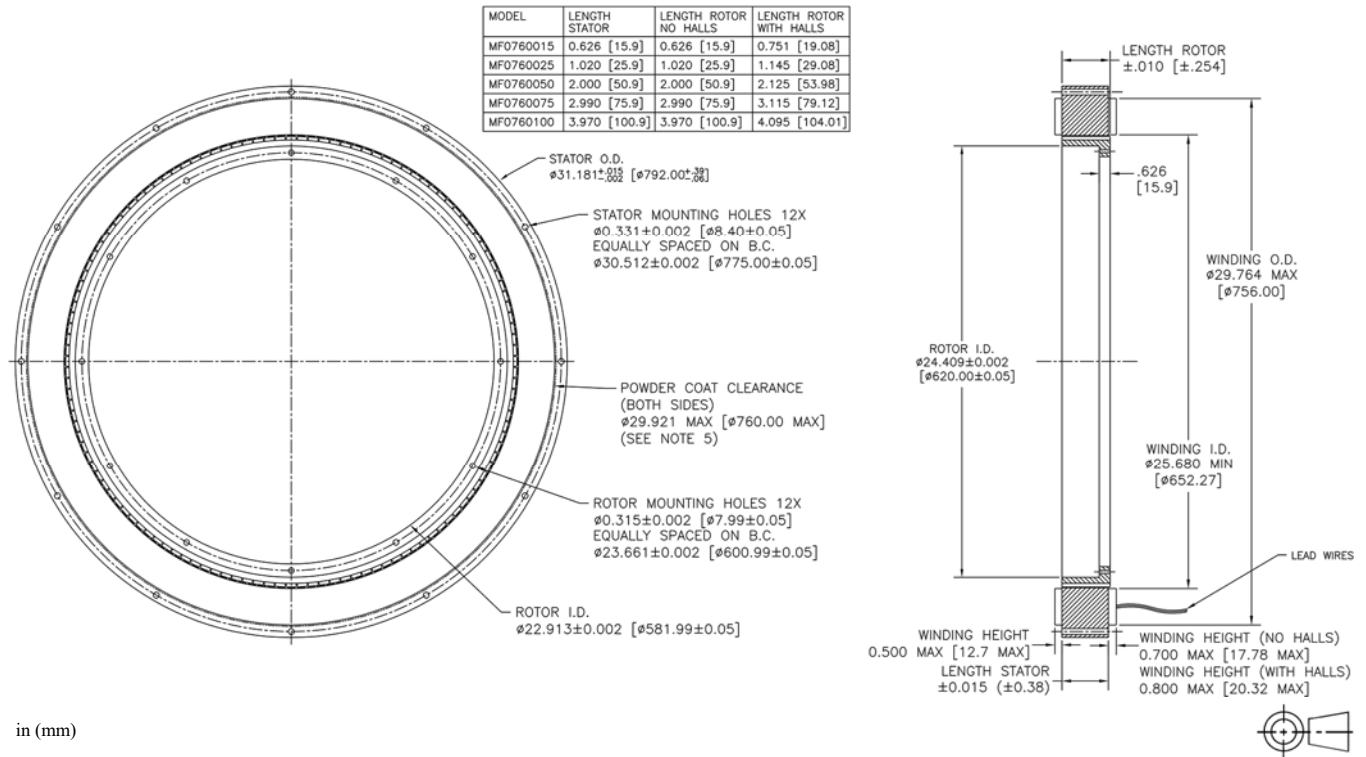
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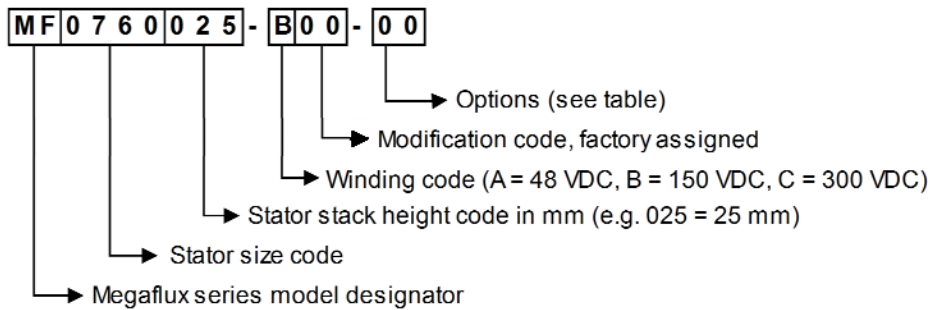
Torque Motors

MF0760 Series Frameless Brushless Torque Motors

DIMENSIONS



MODEL NUMBERING



Options
C = Customer-specified connector
Z = RoHS compliant