

GLENTEK BRUSHLESS SERVO MOTORS GMBF5000 SERIES

Revision: 2/23/26



Glentek's GMBF5000 series of high performance, permanent magnet brushless servo motors utilize traditional ferrite magnets which are ideal for cost sensitive applications. This helps to reduce the mechanical shaft resonance which allows higher servo gains with increased stability. In addition, all frame sizes incorporate skewed stators which provide ultra smooth operation (i.e. low cogging torque) at all speeds.

- Continuous Torque Range:
32.6 Lb-in (3.68 Nm) to 75.0 Lb-in (8.47 Nm)
- Peak Torque Range:
97.8 Lb-in (11.04 Nm) to 225.0 Lb-in (25.41 Nm)

GMBF5000 SERIES FEATURES

Traditional ferrite magnet design, which are ideal for cost sensitive applications.

Special design provides ultra smooth operation (i.e. low cogging torque) at all speeds.

Worldwide standard mounting configurations are available (English, Metric, and NEMA 56C).

Optional custom mounting configurations are available to meet virtually any requirement.

Normally closed thermal switch provides over temperature protection.

Encoder with commutation tracks, brushless resolvers or Hall sensors are standard feedback devices offered

Various electrical windings are available as standard to suit both low (120 VAC) and high (230 VAC) voltage drives in order to provide optimum speed and torque characteristics. Optional custom electrical windings are available.

Shaft Keyway.

Class H insulation standard.

Standard operating temperature is dependent on the feedback device installed. Motors with resolver feedback can be specially configured to operate down to -40°C.

Optional 24VDC holding brakes are available.

Constructed to withstand the toughest industrial environment with rugged, high performance bearings and TENV construction with IP65 sealing standard (shaft seal required for IP65 sealing).

RoHS compliant.

CE marked.

UL Recognized Component for US and Canada.

GMBF5000 SERIES ENVIRONMENTAL CONDITIONS

Storage Temperature: -20°C to 70°C

Operating Temperature: Standard: -20°C to 40°C, without derating, derate torque 10% per 10°C above 40°C
Special: -40°C to 40°C, without derating, derate torque 10% per 10°C above 40°C

Humidity: 5% to 95% relative humidity, non-condensing

Altitude: Up to 1000m without derating, derate torque 10% per 1000m above 1000m

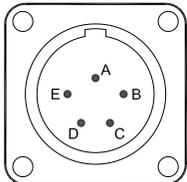
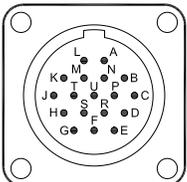
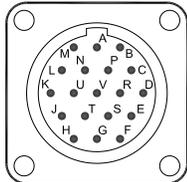
GMBF5000 SERIES SELECTION TABLE

K_t = Torque Constant • K_v = BEMF = V_{RMS} Phase-to-Phase/1000 RPM • R_A = Phase-to-Phase Resistance • L_A = Phase-to-Phase Inductance

Model Number	Power @ Rated Speed		Speed, RPM		Cont. Stall Rating			Peak Stall Rating			K_t		K_v	R_A	L_A	Rotor Inertia	
	HP	KW	Max	Rated	Lb-in	Nm	Amps	Lb-in	Nm	Amps	Lb-in/A	Nm/A	V	Ω	mH	Lb-in-sec ²	Kg-m ²
GMBF5030-25	1.17	0.87	3500	2800	33	3.68	11.5	98.0	11.04	34.5	2.82	0.32	25	0.7	3.1	0.014	0.001582
GMBF5030-50	1.17	0.87	3500	2800	33	3.68	5.8	98.0	11.04	17.4	5.65	0.64	50	2.3	10.2	0.014	0.001582
GMBF5030-61	1.01	0.75	3000	2400	33	3.68	4.4	98.0	11.04	13.2	7.46	0.84	66	4.6	19.9	0.014	0.001582
GMBF5030-75	0.84	0.62	2500	2000	33	3.68	3.8	98.0	11.04	11.4	8.47	0.96	75	4.8	23	0.014	0.001582
GMBF5040-25	1.42	1.06	3500	2800	40	4.52	14.2	120.0	13.56	42.6	2.82	0.32	25	0.3	3	0.019	0.002147
GMBF5040-50	1.42	1.06	3500	2800	40	4.52	7.1	120.0	13.56	21.3	5.65	0.64	50	1.4	12	0.019	0.002147
GMBF5040-75	1.02	0.76	2500	2000	40	4.52	4.7	120.0	13.56	14.1	8.47	0.96	75	3.5	28	0.019	0.002147
GMBF5060-25	2.67	1.99	3500	2800	75	8.47	26.6	225.0	25.41	79.8	2.82	0.32	25	0.2	2	0.028	0.003164
GMBF5060-50	2.67	1.99	3500	2800	75	8.47	13.3	225.0	25.41	39.9	5.65	0.64	50	0.9	7	0.028	0.003164
GMBF5060-75	1.90	1.42	2500	2000	75	8.47	8.9	225.0	25.41	26.7	8.47	0.96	75	2.1	11	0.028	0.003164

NOTE: All ratings based on a 25°C ambient temperature with the motor face mounted to a 14" x 14" x 3/4" aluminum heatsink.
The values for Max and Rated Speed are for motors operated with a 230 VAC power supply

CONNECTORS & PIN-OUT INFORMATION

5-Pin MS connector MS3102R22-22P		18-Pin MS connector MS3112E14-18P		19-Pin MS connector MS3112E14-19P				
 <p>FRONT VIEW</p> <p style="font-size: small;">Straight Mating Connector, MS3116F14-5S</p>		 <p>FRONT VIEW</p> <p style="font-size: small;">Straight Mating Connector, MS3116F14-18S</p>		 <p>FRONT VIEW</p> <p style="font-size: small;">Straight Mating Connector, MS3116F14-19S</p>				
Pin#	Function	Pin#	Function	Pin#	Function			
			Resolver					
A	Phase R	A	Brake +	A	Temperature Switch			
B	Phase S	B	Brake -	B	Temperature Switch			
C	Phase T	C	Brake Shield	C	Resolver Shield			
D	Case Ground	D	Resolver Shield	D	N/C			
E	N/C	E	Reference	E	N/C			
Special mounting options are available. Please contact a Glentek Sales Engineer for detailed information.			F	Since Ground	F	Sine Ground		
			G	Cosine Ground	G	Sine +	G	Channel A+
			H	Sine	H	Sine -	H	Channel A-
			J	N/C	J	N/C	H	Cosine Ground
			K	N/C	K	N/C	J	Cosine +
			L	N/C	L	N/C	K	Reference Ground
			M	N/C	M	N/C	L	Reference
			N	Temperature Switch	N	Temperature Switch	M	N/C
			P	N/C	P	N/C	N	N/C
			R	Reference Ground	R	Reference Ground	P	N/C
			S	Cosine	S	Cosine	R	N/C
			T	N/C	T	N/C	S	N/C
			U	Temperature Switch	U	Temperature Switch	T	N/C
					V	Brake +	U	Brake +
		V	Brake -	V	Brake -			
					Encoder with Commutation Track			
					Temperature Switch			
					Temperature Switch			
					Encoder Shield			
					Encoder +5VDC			
					Encoder Common			
					Channel A+			
					Channel A-			
					Channel B+			
					Channel B-			
					Channel Z+			
					Channel Z-			
					Comm. Track S1+			
					Comm. Track S1-			
					Comm. Track S2+			
					Comm. Track S2-			
					Comm. Track S3+			
					Comm. Track S3-			

GMBF5000 SERIES BRAKE OPTION

Motor Frame Size	Extension	Torque		Power	Current	Resistance	Inductance
	in. (mm)	Lb-in	Nm	Watts	A	Ω	mH
GMBF5000	1.25 (32)	160	18	24	1	24	100

Note:

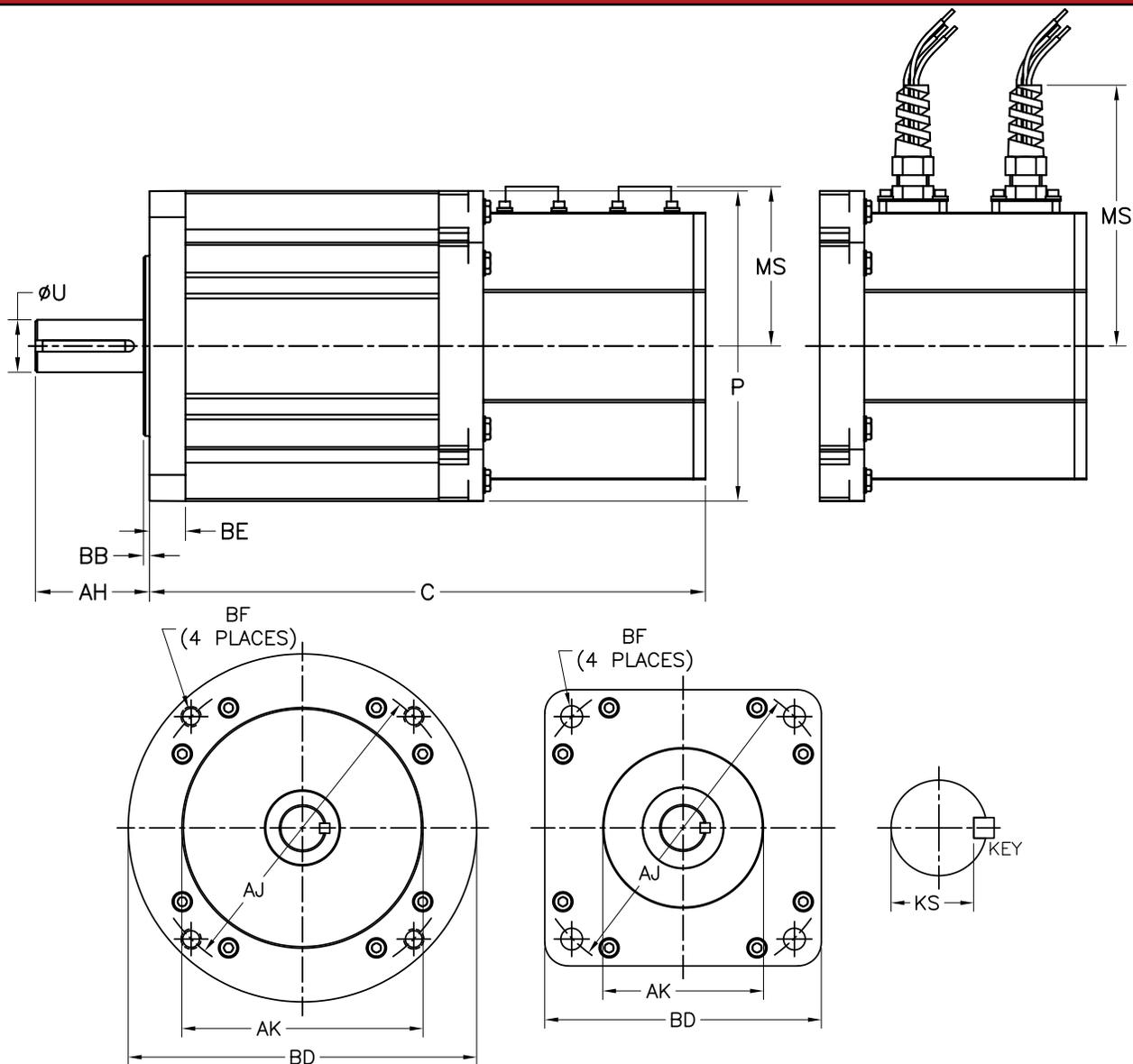
Brakes are optional. All brakes require 24 VDC input voltage. The values for “Extension” represent the nominal maximum length that the brake will add to the motor. For some models, the extension will be less. Please contact one of our sales engineers for the exact values.

SHAFT LOAD RATINGS

Motor Frame Size	Radial Shaft Load		Axial Shaft Load	
	Lbs	N	Lbs	N
GMBF5000	100	440	50	220

Note: This table is for general guidance only. Shaft load ratings are approximations and will vary with shaft diameter, the location of the load on the shaft, speed (RPM), bearings, and more. The values in the table are for a load located 1” (25.4 mm) from the mounting face of the motor and at 3000 RPM.

GMBF5000 SERIES DIMENSIONS



Model Number	Kg (lbs.)	C (max)	P (max)	Shaft				Flange/Face				Mounting Hole		
				AH	U	KEY	KS	AK	BB	BD	BE	AJ	BF Dia.	Tap
GMBF5030-XXX-M	10.2 (22.4)	294.4 (11.6)	131.6 (5.18)	50.00 (1.97)	24.00 (0.945)	M8 X M7 X 38	19.8 - 20.0	130.00 (5.118)	3.60 (0.142)	142.00 (5.59)	15.4 (0.61)	165.00 (6.496)	11.00 (0.433)	THRU
GMBF5040-XXX-M	12.5 (27.5)	303.8 (12.0)	131.6 (5.18)	50.00 (1.97)	24.00 (0.945)	M8 X M7 X 38	19.8 - 20.0	130.00 (5.118)	3.60 (0.142)	142.00 (5.59)	15.4 (0.61)	165.00 (6.496)	11.00 (0.433)	THRU
GMBF5060-XXX-M	15.9 (35.0)	370.8 (14.6)	131.6 (5.18)	50.00 (1.97)	24.00 (0.945)	M8 X M7 X 38	19.8 - 20.0	130.00 (5.118)	3.60 (0.142)	142.00 (5.59)	15.4 (0.61)	165.00 (6.496)	11.00 (0.433)	THRU

Note: Dimensions are in **mm** (inches)

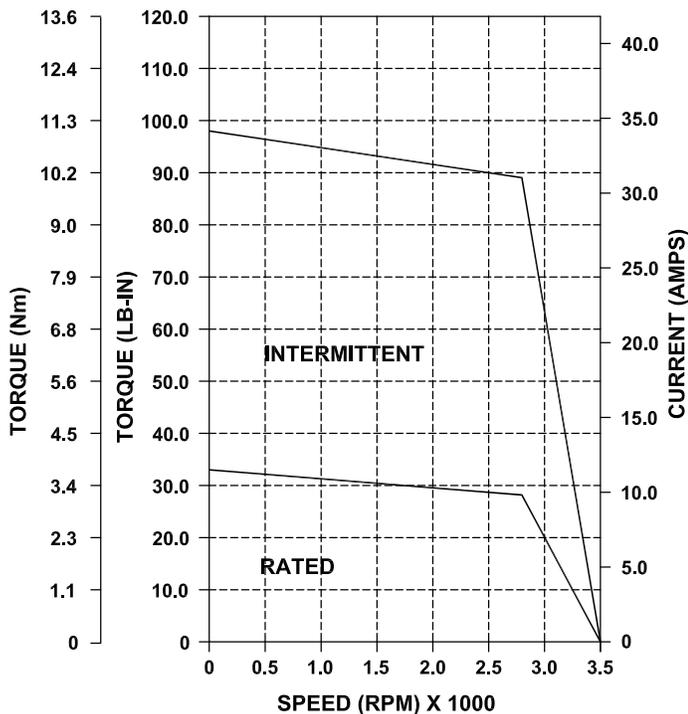
Model Number	Lbs. (Kg)	C (max)	P (max)	Shaft				Flange/Face				Mounting Hole		
				AH	U	KEY	KS	AK	BB	BD	BE	AJ	BF Dia.	Tap
GMBF5030-XXX-E	22.5 (10.2)	11.59 (294.4)	5.18 (131.6)	1.90 (48.3)	0.8750 (22.23)	.188 SQ. X 1.50	.761 - .771	3.000 (76.20)	0.10 (2.54)	5.18 (131.6)	0.60 (15.24)	5.875 (149.23)	0.406 (10.31)	THRU
GMBF5040-XXX-E	27.5 (12.5)	11.96 (303.8)	5.18 (131.6)	1.90 (48.3)	0.8750 (22.23)	.188 SQ. X 1.50	.761 - .771	3.000 (76.20)	0.10 (2.54)	5.18 (131.6)	0.60 (15.24)	5.875 (149.23)	0.406 (10.31)	THRU
GMBF5060-XXX-E	35.0 (15.9)	14.60 (370.8)	5.18 (131.6)	1.90 (48.3)	0.8750 (22.23)	.188 SQ. X 1.50	.761 - .771	3.000 (76.20)	0.10 (2.54)	5.18 (131.6)	0.60 (15.24)	5.875 (149.23)	0.406 (10.31)	THRU
NEMA 56C				2.06 (52.3)	0.6250 (15.88)	.188 SQ. X 1.50	.507 - .517	4.500 (114.30)	0.12 (3.05)	6.50 (165.1)	0.61 (15.49)	5.875 (149.23)		3/8-16 THRU

Note: Dimensions are in **inches** (mm)

Connectors	5-Pin	18-Pin	19-Pin	Strain Relief
MS	2.62	2.62	2.62	4.35
inches (mm)	(66.5)	(66.5)	(66.5)	(110.4)
MS	66.5	66.5	66.5	81.1
mm (inches)	(2.62)	(2.62)	(2.62)	(3.19)

GMBF5030-25 PERFORMANCE DATA

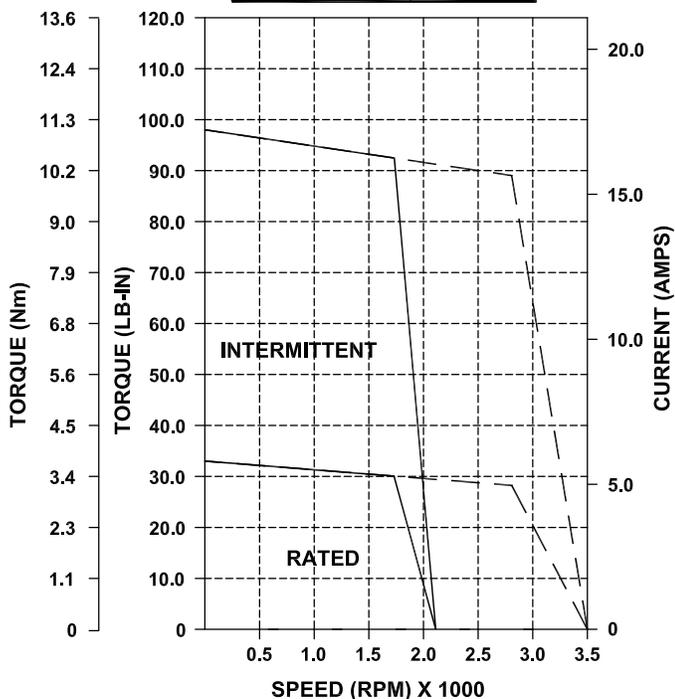
GMBF5030-25	SYMBOL
120 OR 230 VAC	—



Power @ Rated Speed	HP	1.17
	KW	0.87
Speed, RPM	Max.	3500
	Rated	2800
Cont. Stall Rating	Lb-in	33
	Nm	3.68
	Amps	11.5
Peak Stall Rating	Lb-in	98.0
	Nm	11.04
	Amps	34.5
Torque Constant	Lb-in/A	2.82
	Nm/A	0.32
Back EMF	V/Krpm	25
Resistance	Ohms	0.7
Inductance	mH	3.1
Armature Inertia	Lb-in-sec²	0.014
	Kg-m²	0.001582

GMBF5030-50 PERFORMANCE DATA

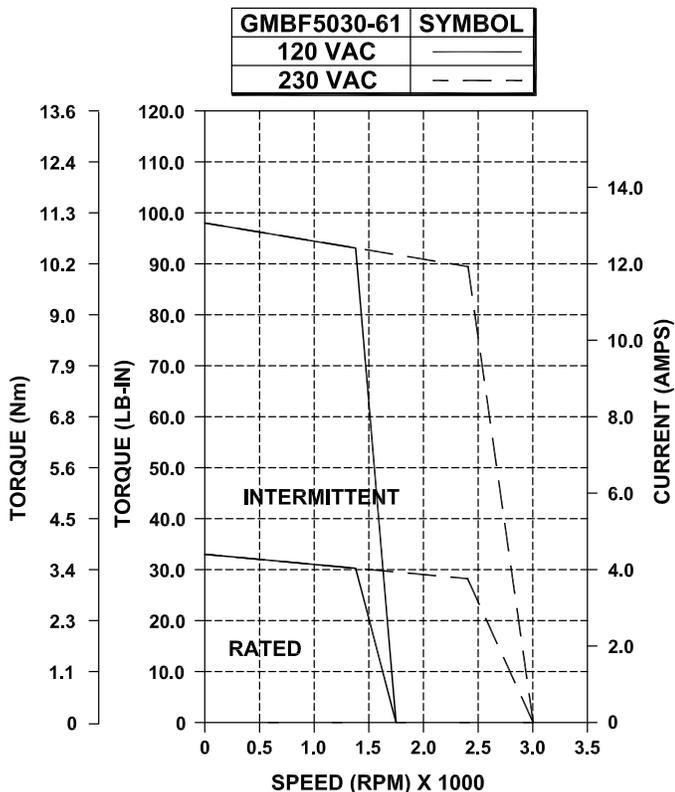
GMBF5030-50	SYMBOL
120 VAC	—
230 VAC	---



Power @ Rated Speed	HP	1.17
	KW	0.87
Speed, RPM	Max.	3500
	Rated	2800
Cont. Stall Rating	Lb-in	33
	Nm	3.68
	Amps	5.8
Peak Stall Rating	Lb-in	98.0
	Nm	11.04
	Amps	17.4
Torque Constant	Lb-in/A	5.65
	Nm/A	0.64
Back EMF	V/Krpm	50
Resistance	Ohms	2.3
Inductance	mH	10.2
Armature Inertia	Lb-in-sec²	0.014
	Kg-m²	0.001582

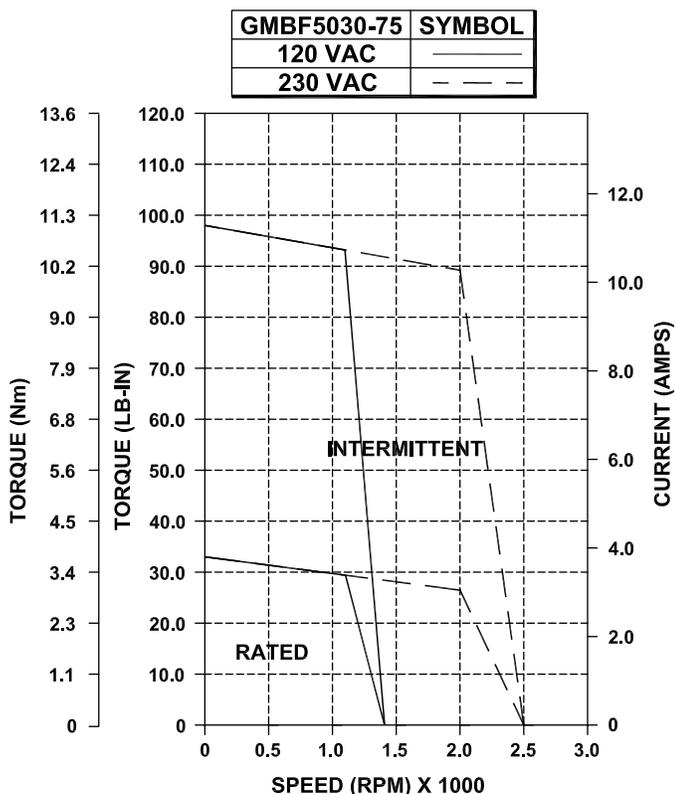
NOTE: All ratings based on a 25°C ambient temperature with the motor face mounted to a 14" x 14" x 3/4" aluminum heatsink.

GMBF5030-61 PERFORMANCE DATA



Power @ Rated Speed	HP	1.01
	KW	0.75
Speed, RPM	Max.	3000
	Rated	2400
Cont. Stall Rating	Lb-in	33
	Nm	3.68
	Amps	4.4
Peak Stall Rating	Lb-in	98.0
	Nm	11.04
	Amps	13.2
Torque Constant	Lb-in/A	7.46
	Nm/A	0.84
Back EMF	V/Krpm	66
Resistance	Ohms	4.6
Inductance	mH	19.9
Armature Inertia	Lb-in-sec ²	0.014
	Kg-m ²	0.001582

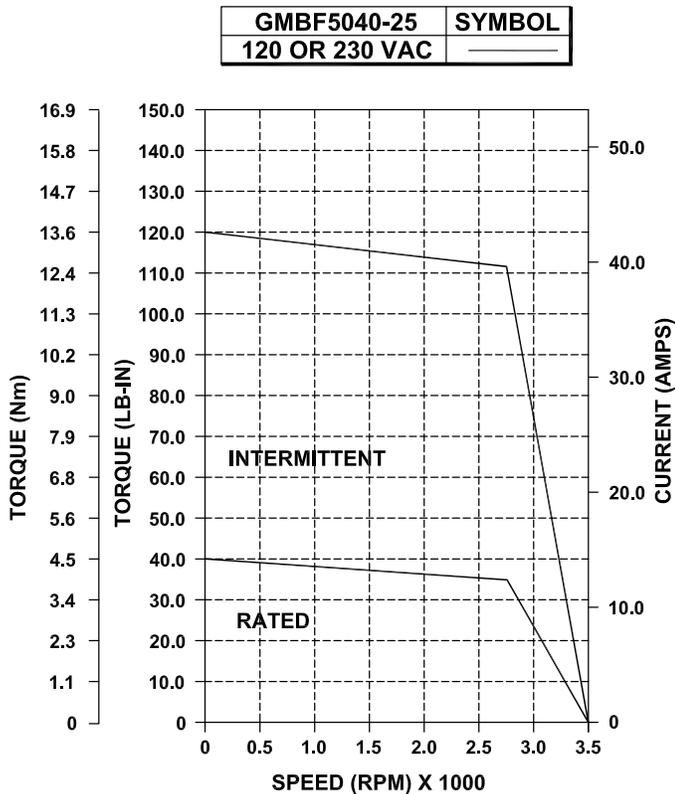
GMBF5030-75 PERFORMANCE DATA



Power @ Rated Speed	HP	0.84
	KW	0.62
Speed, RPM	Max.	2500
	Rated	2000
Cont. Stall Rating	Lb-in	33
	Nm	3.68
	Amps	3.8
Peak Stall Rating	Lb-in	98.0
	Nm	11.04
	Amps	11.4
Torque Constant	Lb-in/A	8.47
	Nm/A	0.96
Back EMF	V/Krpm	75
Resistance	Ohms	4.8
Inductance	mH	23
Armature Inertia	Lb-in-sec ²	0.014
	Kg-m ²	0.001582

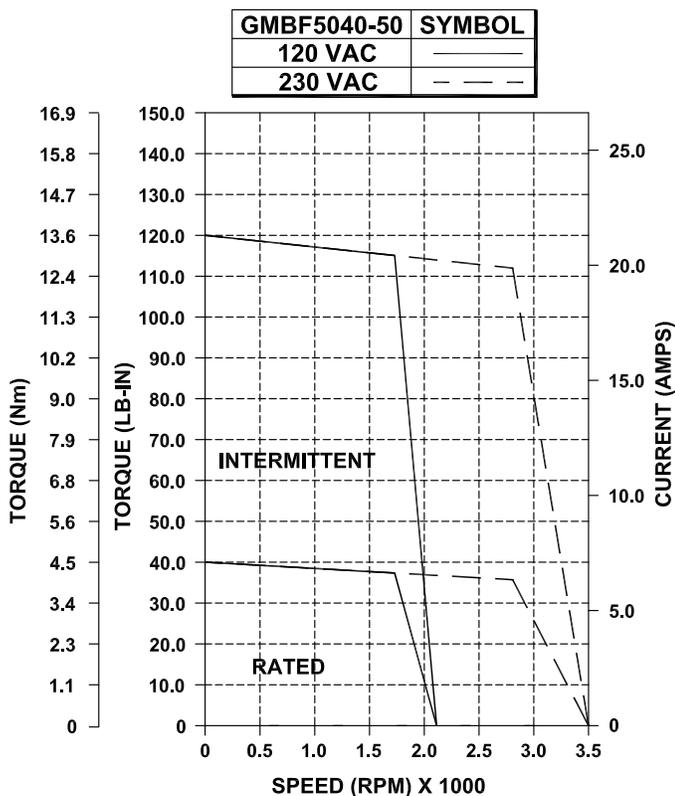
NOTE: All ratings based on a 25°C ambient temperature with the motor face mounted to a 14" x 14" x 3/4" aluminum heatsink.

GMBF5040-25 PERFORMANCE DATA



Power @ Rated Speed	HP	1.42
	KW	1.06
Speed, RPM	Max.	3500
	Rated	2800
Cont. Stall Rating	Lb-in	40
	Nm	4.52
	Amps	14.2
Peak Stall Rating	Lb-in	120.0
	Nm	13.56
	Amps	42.6
Torque Constant	Lb-in/A	2.82
	Nm/A	0.32
Back EMF	V/Krpm	25
Resistance	Ohms	0.3
Inductance	mH	3
Armature Inertia	Lb-in-sec²	0.019
	Kg-m²	0.002147

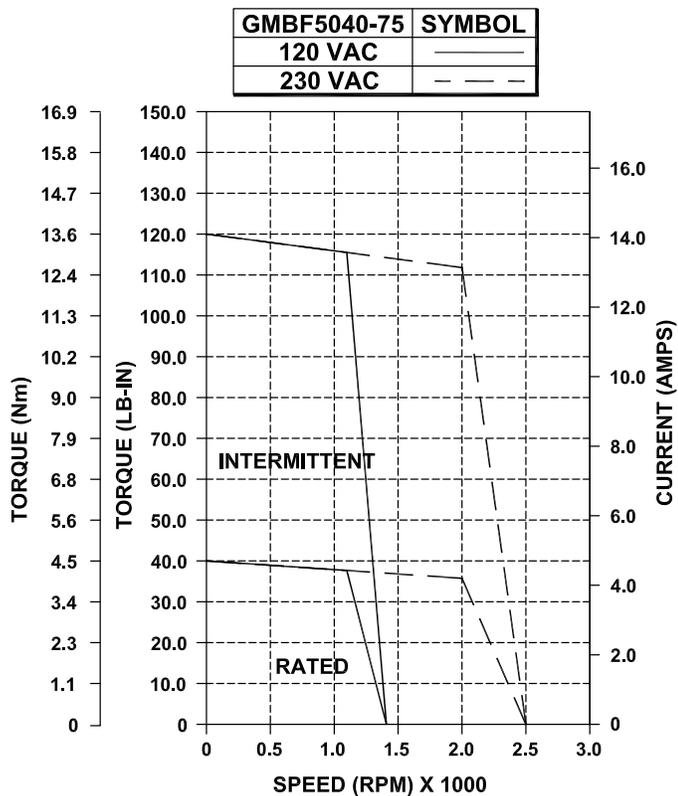
GMBF5040-50 PERFORMANCE DATA



Power @ Rated Speed	HP	1.42
	KW	1.06
Speed, RPM	Max.	3500
	Rated	2800
Cont. Stall Rating	Lb-in	40
	Nm	4.52
	Amps	7.1
Peak Stall Rating	Lb-in	120.0
	Nm	13.56
	Amps	21.3
Torque Constant	Lb-in/A	5.65
	Nm/A	0.64
Back EMF	V/Krpm	50
Resistance	Ohms	1.4
Inductance	mH	12
Armature Inertia	Lb-in-sec²	0.019
	Kg-m²	0.002147

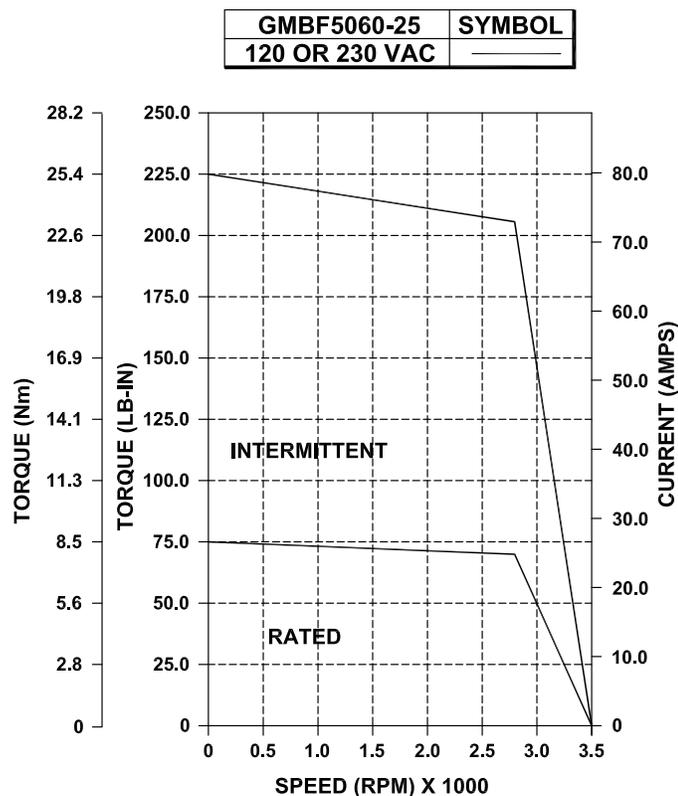
NOTE: All ratings based on a 25°C ambient temperature with the motor face mounted to a 14" x 14" x 3/4" aluminum heatsink.

GMBF5040-75 PERFORMANCE DATA



Power @ Rated Speed	HP	1.02
	KW	0.76
Speed, RPM	Max.	2500
	Rated	2000
Cont. Stall Rating	Lb-in	40
	Nm	4.52
	Amps	4.7
Peak Stall Rating	Lb-in	120.0
	Nm	13.56
	Amps	14.1
Torque Constant	Lb-in/A	8.47
	Nm/A	0.96
Back EMF	V/Krpm	75
Resistance	Ohms	3.5
Inductance	mH	28
Armature Inertia	Lb-in-sec ²	0.019
	Kg-m ²	0.002147

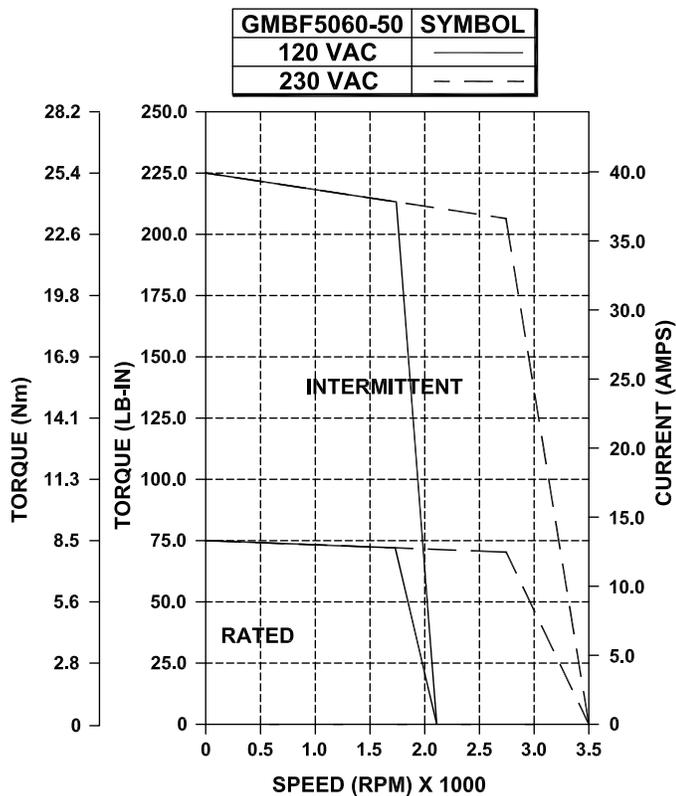
GMBF5060-25 PERFORMANCE DATA



Power @ Rated Speed	HP	2.67
	KW	1.99
Speed, RPM	Max.	3500
	Rated	2800
Cont. Stall Rating	Lb-in	75
	Nm	8.47
	Amps	26.6
Peak Stall Rating	Lb-in	225.0
	Nm	25.41
	Amps	79.8
Torque Constant	Lb-in/A	2.82
	Nm/A	0.32
Back EMF	V/Krpm	25
Resistance	Ohms	0.2
Inductance	mH	2
Armature Inertia	Lb-in-sec ²	0.028
	Kg-m ²	0.003164

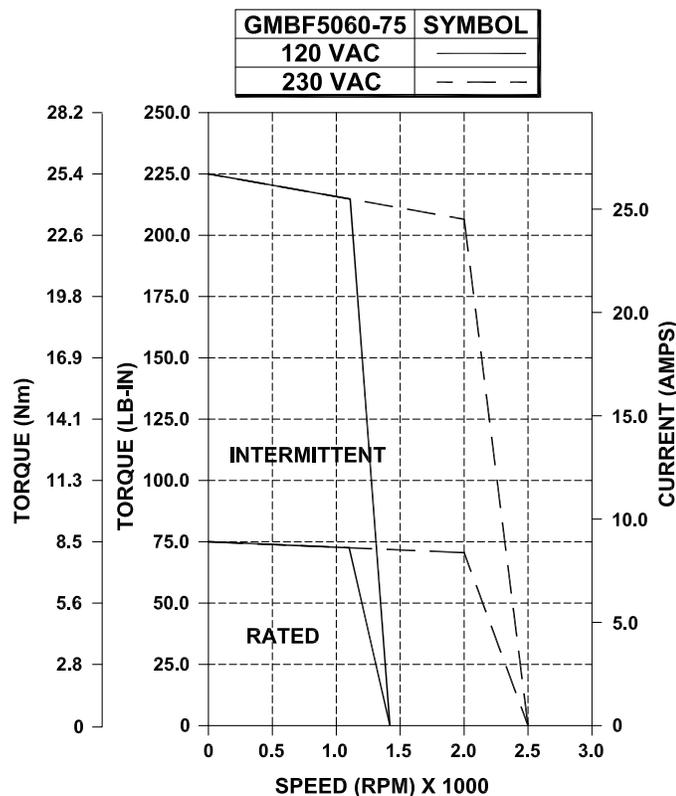
NOTE: All ratings based on a 25°C ambient temperature with the motor face mounted to a 14" x 14" x 3/4" aluminum heatsink.

GMBF5060-50 PERFORMANCE DATA



Power @ Rated Speed	HP	2.67
	KW	1.99
Speed, RPM	Max.	3500
	Rated	2800
Cont. Stall Rating	Lb-in	75
	Nm	8.47
	Amps	13.3
Peak Stall Rating	Lb-in	225.0
	Nm	25.41
	Amps	39.9
Torque Constant	Lb-in/A	5.65
	Nm/A	0.64
Back EMF	V/Krpm	50
Resistance	Ohms	0.9
Inductance	mH	7
Armature Inertia	Lb-in-sec²	0.028
	Kg-m²	0.003164

GMBF5060-75 PERFORMANCE DATA



Power @ Rated Speed	HP	1.90
	KW	1.42
Speed, RPM	Max.	2500
	Rated	2000
Cont. Stall Rating	Lb-in	75
	Nm	8.47
	Amps	8.9
Peak Stall Rating	Lb-in	225.0
	Nm	25.41
	Amps	26.7
Torque Constant	Lb-in/A	8.47
	Nm/A	0.96
Back EMF	V/Krpm	75
Resistance	Ohms	2.1
Inductance	mH	11
Armature Inertia	Lb-in-sec²	0.028
	Kg-m²	0.003164

NOTE: All ratings based on a 25°C ambient temperature with the motor face mounted to a 14" x 14" x 3/4" aluminum heatsink.

