

GLENTEK BRUSHLESS SERVO MOTORS **GMBF5000 SERIES**

Revision: 3/24/2017



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 and Metric).

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 (120VAC) and high (240VAC) voltage amplifiers 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

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 = Volts/1000 RPM • R_A = Phase to Phase Resistance • L_A = 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	1.69	1.26	3000	2900	32.6	3.68	11.5	97.8	11.04	34.5	2.82	0.32	25	0.7	3.1	0.014	0.001582
GMBF5030-50	1.16	0.87	3000	2000	32.6	3.68	5.8	97.8	11.04	17.4	5.65	0.64	50	2.3	10.2	0.014	0.001582
GMBF5030-61	1.05	0.78	2400	1800	32.6	3.68	4.4	97.8	11.04	13.2	7.46	0.84	66	4.6	19.9	0.014	0.001582
GMBF5030-75	0.81	0.60	3000	1400	32.6	3.68	3.8	97.8	11.04	11.4	8.47	0.96	75	4.8	23	0.014	0.001582
GMBF5040-25	2.07	1.54	3500	2900	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	1.43	1.07	2400	2000	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	1.00	0.75	1700	1400	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	3.45	2.57	3500	2900	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	2.68	2.00	2400	2000	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	1.87	1.39	1700	1400	75	8.47	8.9	225.0	25.41	26.7	8.47	0.96	75	2.1	11	0.028	0.003164

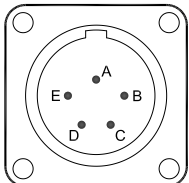
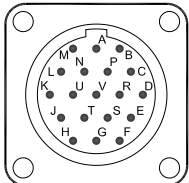
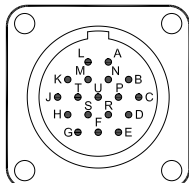
NOTE: All ratings based on a 25°C ambient temperature with the motor face mounted to a 14" x 14" x 3/4" aluminum heatsink.
The values for Max and Rated Speed are for motors operated with a 220 VAC power supply

BRAKE OPTION

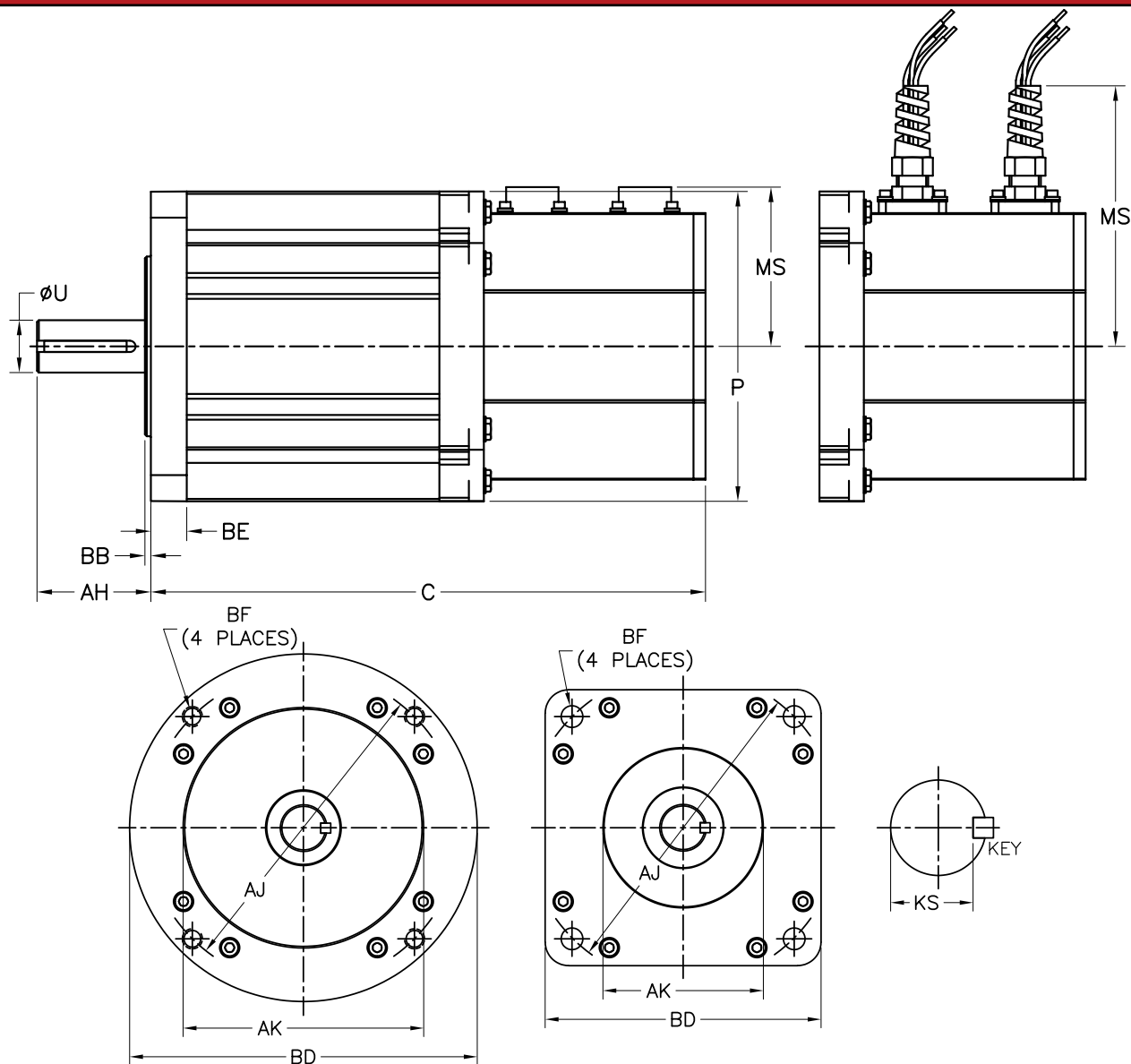
Brake requires 24V DC input voltage. The values for "Extension" represent the nominal maximum length that the brake will add to the motor. For some models, the extension will be less. Please contact one of our sales engineers for the exact values.

Extension	Torque		Power
in. (mm)	Lb-in	Nm	Watts
2.25 (57)	318	36	26

CONNECTORS & PIN-OUT INFORMATION

5-Pin MS connector MS3102R22-22P		18-Pin MS connector MS3112E14-18P		19-Pin MS connector MS3112E14-19P	
 FRONT VIEW Straight Mating Connector, MS3116F14-5S		 FRONT VIEW Straight Mating Connector, MS3116F14-18S		 FRONT VIEW Straight Mating Connector, MS3116F14-19S	
Pin#	Function	Pin#	Function	Pin#	Function
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
Special mounting options are available. Please contact a Glentek Sales Engineer for detailed information.		E	Reference	E	N/C
		F	Since Ground	F	Cosine Ground
		G	Cosine Ground	G	Cosine +
		H	Sine	H	Sine Ground
		J	N/C	J	Reference Ground
		K	N/C	K	Reference
		L	N/C	L	N/C
		M	N/C	M	N/C
		N	Temperature Switch	N	N/C
		P	N/C	P	N/C
		R	Reference Ground	R	N/C
		S	Cosine	S	N/C
		T	N/C	T	N/C
		U	Temperature Switch	U	Brake +
				V	Brake -

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

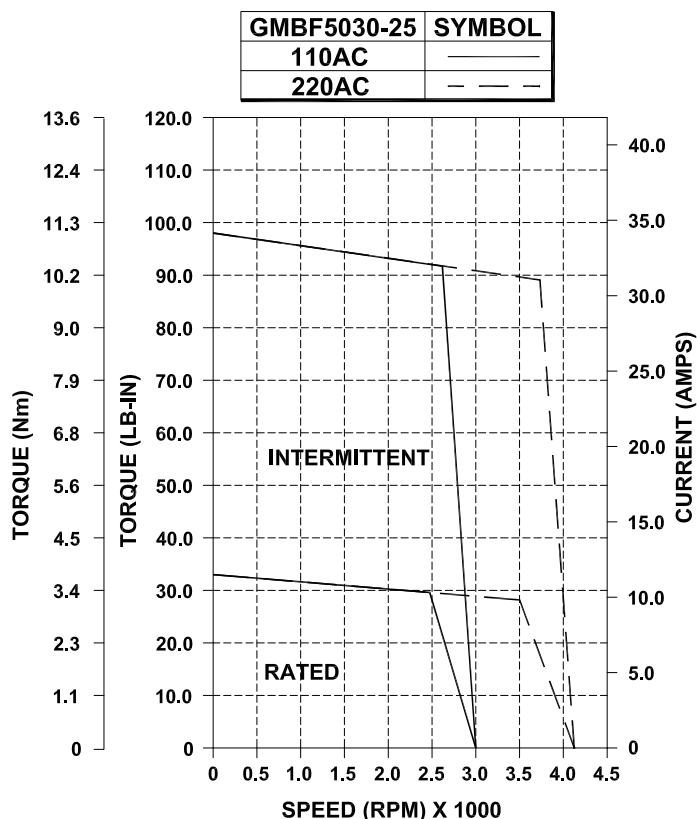
Note: Dimensions are in **mm** (inches)

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)

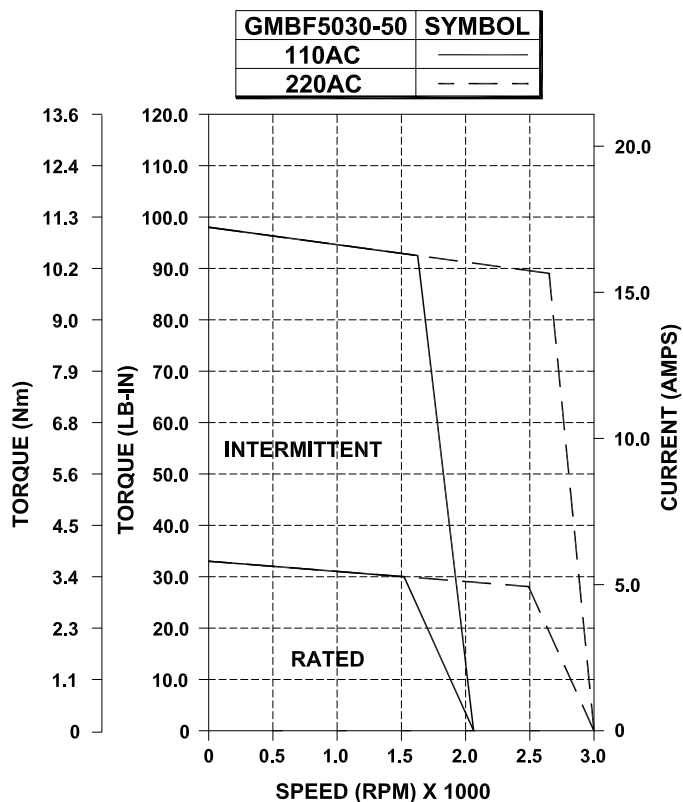
Connectors	5-Pin	18-Pin	19-Pin	Strain Relief
MS	2.62	2.62	2.62	4.35
inches (mm)	(66.5)	(66.5)	(66.5)	(110.4)
MS	66.5	66.5	66.5	81.1
mm (inches)	(2.62)	(2.62)	(2.62)	(3.19)

GMBF5030-25 PERFORMANCE DATA



Power @ Max Speed	HP	1.69
	KW	1.26
Speed, RPM	Max.	3000
	Rated	2900
Cont. Stall Rating	Lb-in	32.6
	Nm	3.68
	Amps	11.5
Peak Stall Rating	Lb-in	97.8
	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-sec ²	0.014
	Kg-m ²	0.001582

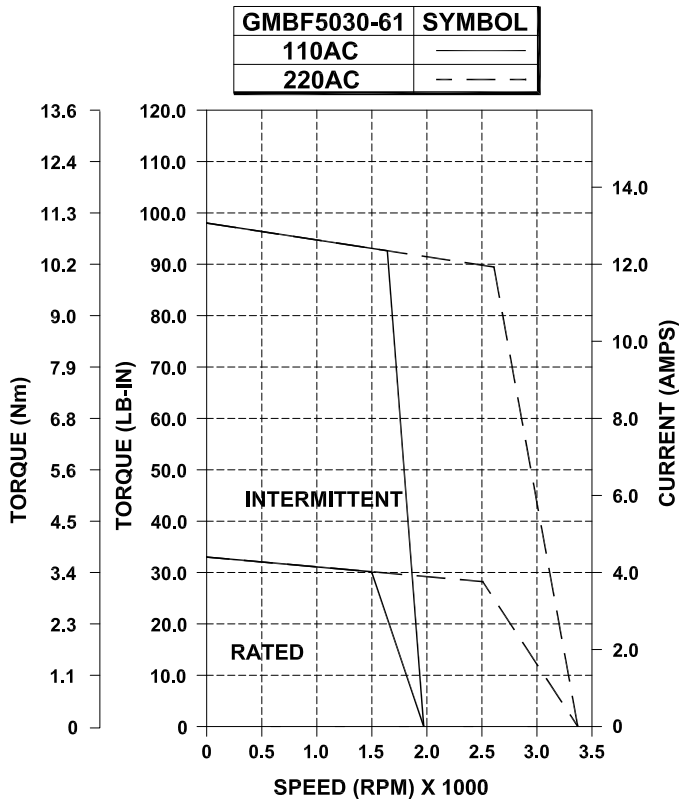
GMBF5030-50 PERFORMANCE DATA



Power @ Max Speed	HP	1.16
	KW	0.87
Speed, RPM	Max.	3000
	Rated	2000
Cont. Stall Rating	Lb-in	32.6
	Nm	3.68
	Amps	5.8
Peak Stall Rating	Lb-in	97.8
	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-sec ²	0.014
	Kg-m ²	0.001582

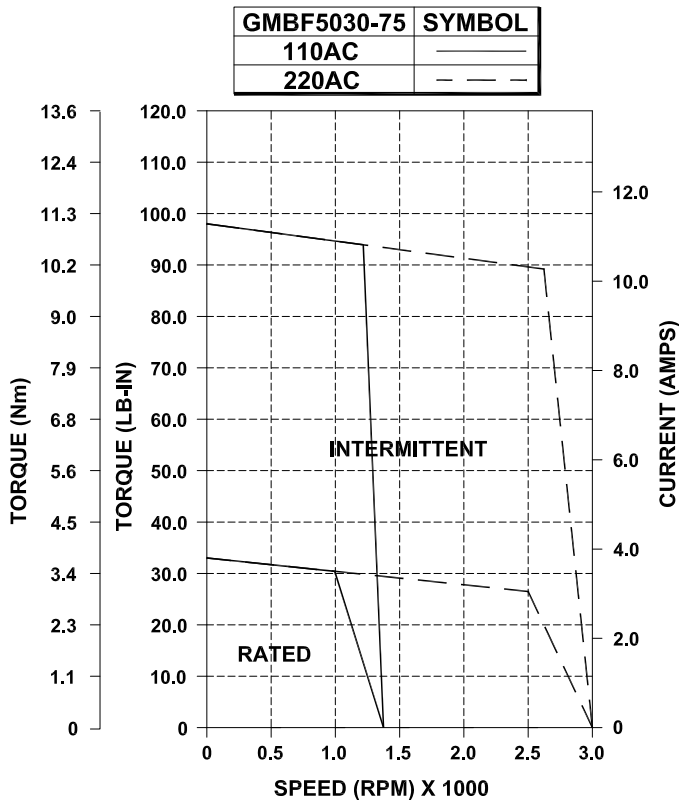
NOTE: All ratings based on a 25°C ambient temperature with the motor face mounted to a 14" x 14" x 3/4" aluminum heatsink.

GMBF5030-61 PERFORMANCE DATA



Power @ Max Speed	HP	1.05
	KW	0.78
Speed, RPM	Max.	2400
	Rated	1800
Cont. Stall Rating	Lb-in	32.6
	Nm	3.68
	Amps	4.4
Peak Stall Rating	Lb-in	97.8
	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

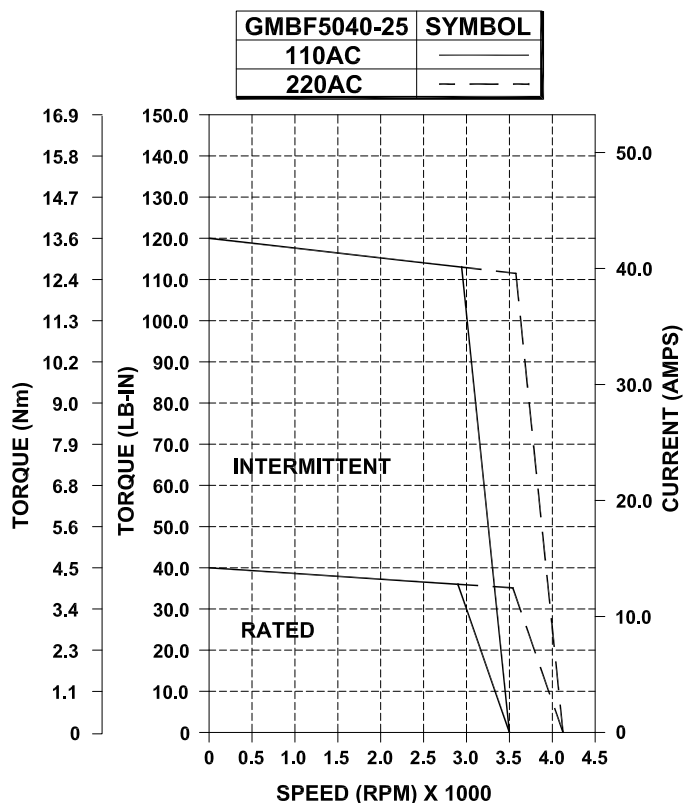
GMBF5030-75 PERFORMANCE DATA



Power @ Max Speed	HP	0.81
	KW	0.60
Speed, RPM	Max.	3000
	Rated	1400
Cont. Stall Rating	Lb-in	32.6
	Nm	3.68
	Amps	3.8
Peak Stall Rating	Lb-in	97.8
	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

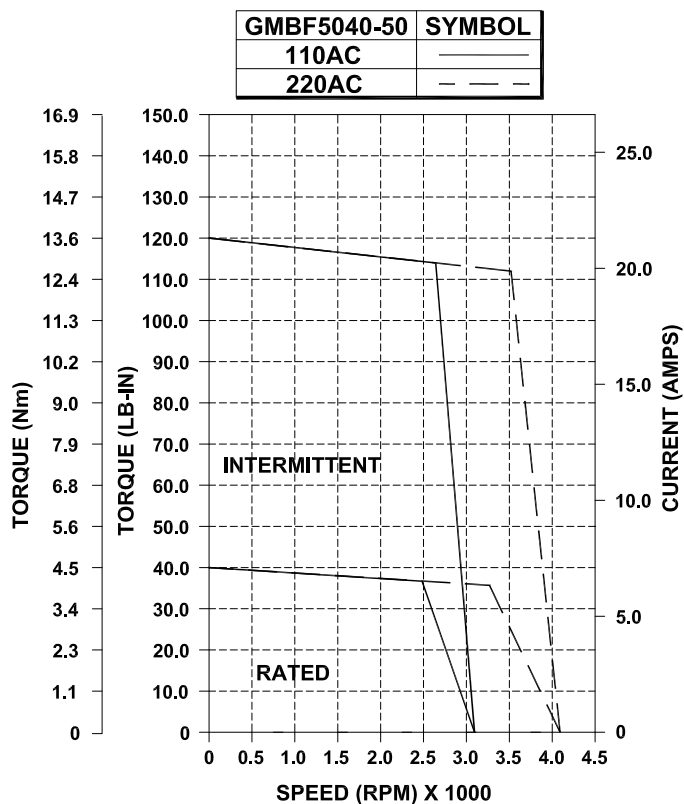
NOTE: All ratings based on a 25°C ambient temperature with the motor face mounted to a 14" x 14" x 3/4" aluminum heatsink.

GMBF5040-25 PERFORMANCE DATA



Power @ Max Speed	HP	2.07
	KW	1.54
Speed, RPM	Max.	3500
	Rated	2900
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-sec ²	0.019
	Kg-m ²	0.002147

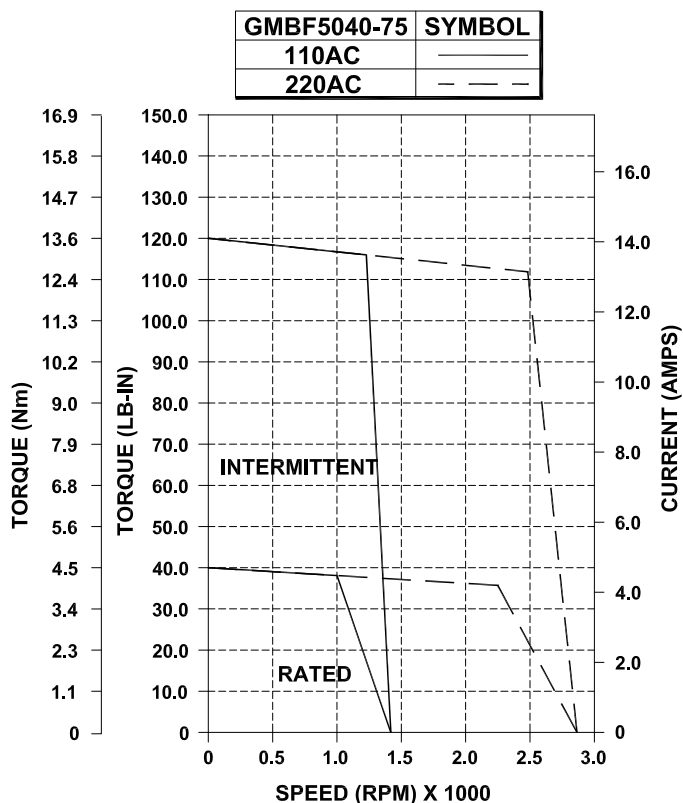
GMBF5040-50 PERFORMANCE DATA



Power @ Max Speed	HP	1.43
	KW	1.07
Speed, RPM	Max.	2400
	Rated	2000
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-sec ²	0.019
	Kg-m ²	0.002147

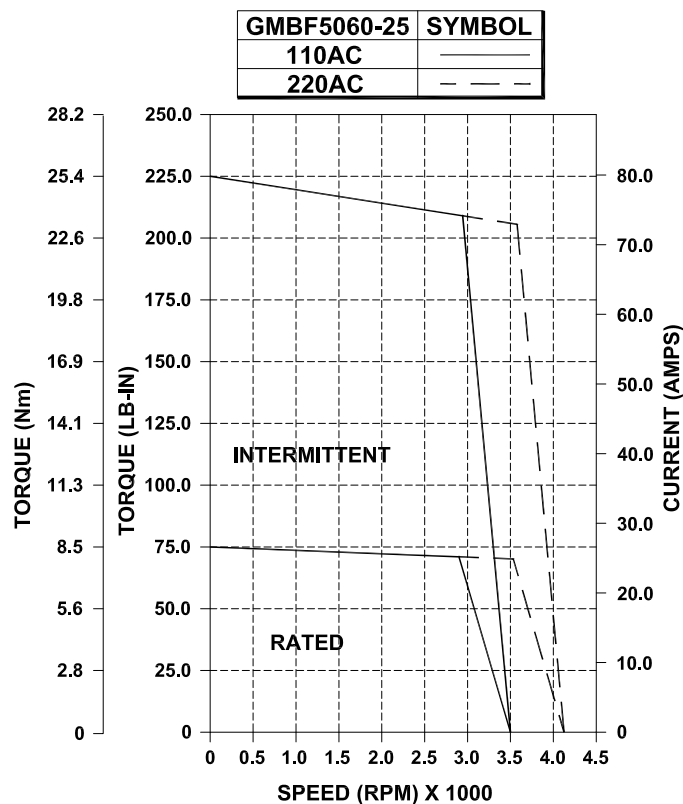
NOTE: All ratings based on a 25°C ambient temperature with the motor face mounted to a 14" x 14" x 3/4" aluminum heatsink.

GMBF5040-75 PERFORMANCE DATA



Power @ Max Speed	HP	1.00
	KW	0.75
Speed, RPM	Max.	1700
	Rated	1400
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

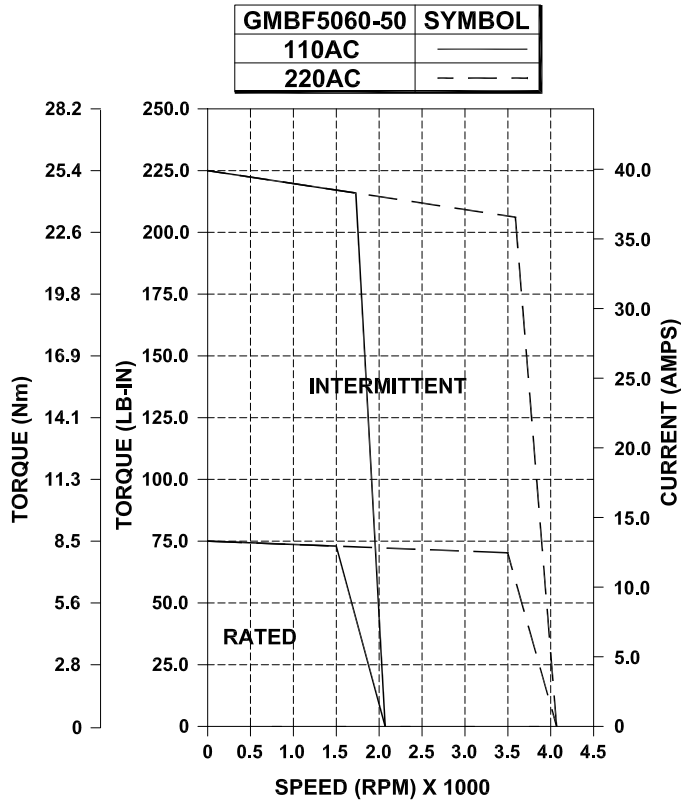
GMBF5060-25 PERFORMANCE DATA



Power @ Max Speed	HP	3.45
	KW	2.57
Speed, RPM	Max.	3500
	Rated	2900
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

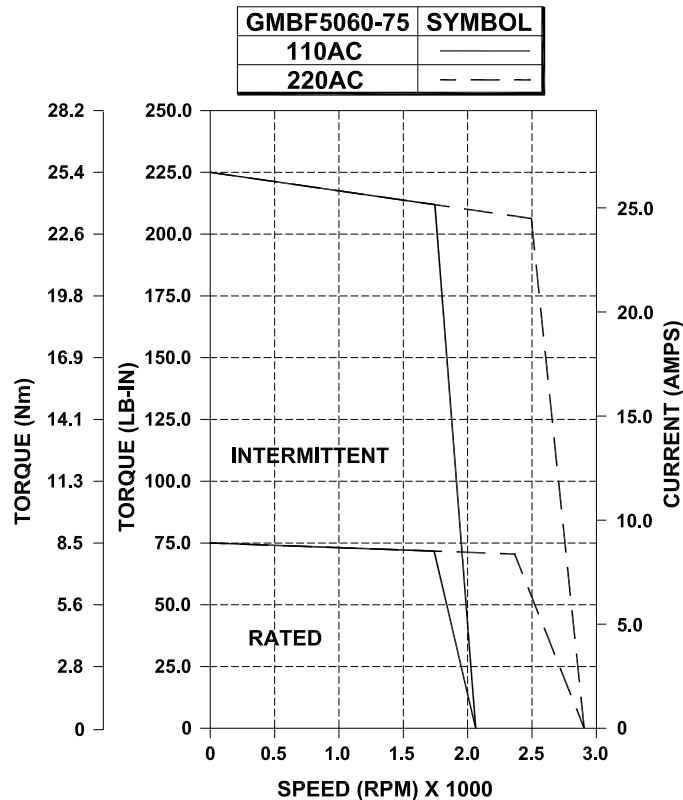
NOTE: All ratings based on a 25°C ambient temperature with the motor face mounted to a 14" x 14" x 3/4" aluminum heatsink.

GMBF5060-50 PERFORMANCE DATA



Power @ Max Speed	HP	2.68
	KW	2.00
Speed, RPM	Max.	2400
	Rated	2000
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-sec ²	0.028
	Kg-m ²	0.003164

GMBF5060-75 PERFORMANCE DATA



Power @ Max Speed	HP	1.87
	KW	1.39
Speed, RPM	Max.	1700
	Rated	1400
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-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.

GMBF5000 SERIES MODEL NUMBERING

This section explains the model numbering system for Glentek's GMBF5000 Series Brushless Servo Motors. The model numbering system is designed so that you, our customer, will be able to quickly and accurately create the model number for the drive that best suits your requirements. Please complete the drive configuration code you require using the information on this page. After completing your model number, please contact a Glentek Sales Engineer to confirm that the model number you have created is correct.

GMBF **50****30** - **25** - **E** - **0****0****3****0****0****1****0****0** -

GMB F - - - - - - - - - -

Factory Assigned Option
A numerical code will be assigned by Glentek to motors whoes specifications vary from the standard configuration