

GLENTEK BRUSHLESS SERVO MOTORS GMBM80 SERIES

Revision: 5/28/2024



Glentek's GMBM80 series of high performance, permanent magnet Brushless servo motors utilize high-energy Neodymium-Iron- Boron (NdFeB) magnets, which provide more torque in a smaller package with higher dynamic performance than traditional ferrite magnet designs. In addition, GMBM80 series have been tooled for high volume production which makes them easy to use and extremely cost effective..

- Continuous Torque Range:
11.7 Lb-in (1.3 Nm) to 28.0 Lb-in (3.2 Nm)
- Peak Torque Range:
35.1 Lb-in (3.9 Nm) to 84.0 Lb-in (9.6 Nm)

GMBM80 SERIES FEATURES

High-energy Neodymium-Iron-Boron (NdFeB) magnet design with low inertia rotors provides a high dynamic performance.

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

Worldwide standard mounting configurations are available.

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

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

Shaft Keyway.

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 optional

RoHS Compliant.

CE marked.

UL Recognized Component for US and Canada.

GMBM80 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

GMBM80 SERIES SELECTION TABLE

K_T = Torque Constant • K_V = BEMF = Volts/1000 RPM • R_A = Phase to Phase Resistance • L_A = Inductance

Model Number	Rated Power	Speed, RPM		Cont. Stall Rating			Peak Stall Torque			K_T		K_V	R_A	L_A	Rotor Inertia	
	W	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
GMBM80400-29	400	5000	3000	11.7	1.3	2.8	35.1	3.9	8.4	4.16	0.47	29.3	2.42	16.22	0.000597	0.000067
GMBM80300-34	300	3000	2000	13.2	1.5	2.6	39.6	4.5	7.8	5.09	0.58	34.2	3.20	19.60	0.000597	0.000067
GMBM80600-35	600	5000	3000	17.6	2.0	3.6	52.8	6.0	10.8	4.91	0.55	35.2	1.43	9.18	0.000967	0.000109
GMBM80500-43	500	3000	2000	19.7	2.2	3.2	59.1	6.6	9.6	6.11	0.69	43.3	2.00	13.43	0.000597	0.000067
GMBM80800-36	800	5000	3000	23.4	2.6	4.8	70.2	7.8	14.4	4.84	0.55	35.6	0.87	5.94	0.001336	0.000151
GMBM80550-45	550	3000	2000	23.7	2.7	3.8	71.1	8.1	11.4	6.20	0.70	44.6	1.29	9.06	0.001336	0.000151
GMBM801000-39	1000	5000	3000	29.4	3.3	5.4	88.2	9.9	16.2	5.47	0.62	39.2	0.75	5.04	0.001706	0.000193
GMBM80650-46	650	3000	2000	28.0	3.2	4.4	84.0	9.6	13.2	6.35	0.72	45.7	1.02	6.90	0.001706	0.000193

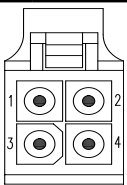
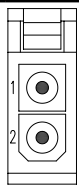
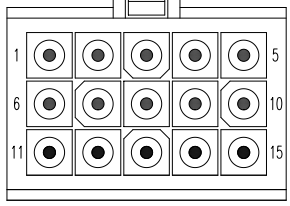
NOTE: The values for Max and Rated Speed are for motors operated with a 200 VAC power supply.

BRAKE OPTION

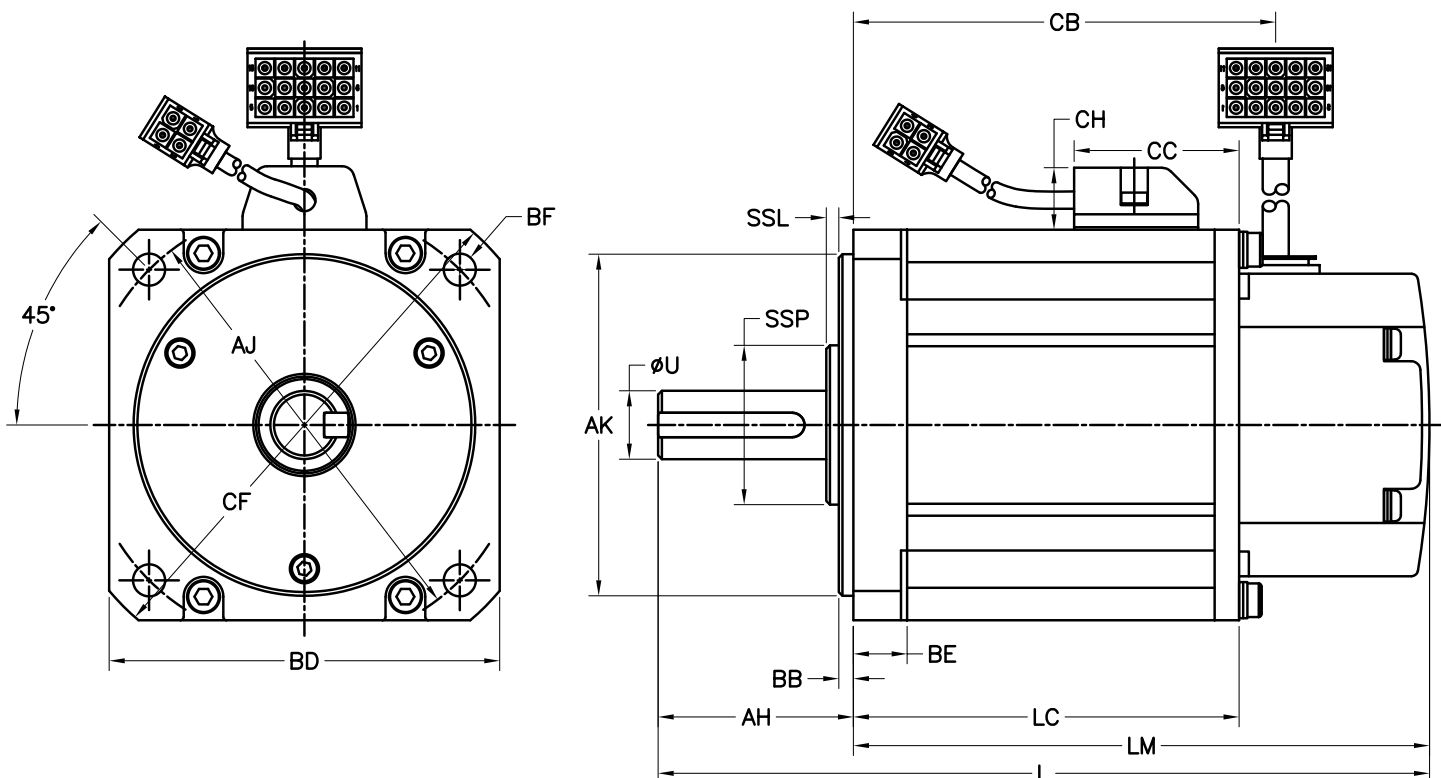
Brake requires 24V DC input voltage. The values for "Extension" represent the nominal maximum length that the brake will add to the motor. For some models, the extension will be less. Please contact one of our sales engineers for the exact values.

Extension	Torque		Power
mm (in.)	Lb-in	Nm	Watts
40 (1.57)	13.0	1.8	6.5

CONNECTORS & PIN-OUT INFORMATION

A - Motor Power AMP Connector		B - Brake AMP Connector		C - Encoder Feedback AMP Connector			
Pin #	Function	Pin #	Function	Pin #	Function	Pin #	Function
							
1	Phase T	1	Brake +	1	A+	9	Hall V+
2	Phase S	2	Brake -	2	A-	10	Hall V+
3	Phase R			3	B+	11	Hall U+
4	Ground			4	B-	12	Hall U+
				5	Z+	13	+5V
				6	Z-	14	Common
				7	Hall W+	15	Shield
				8	Hall W-	-	-

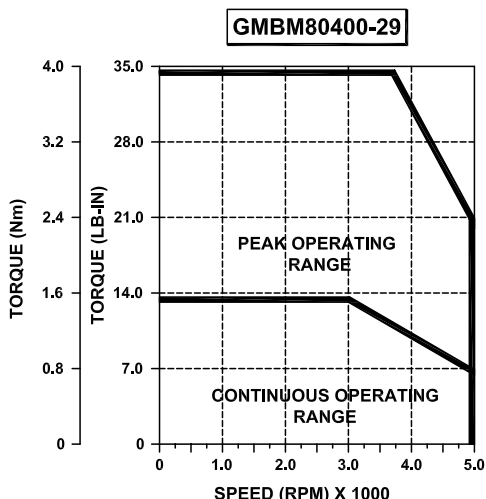
GMBM80 SERIES DIMENSIONS



Model Number	Weight Kg	External Dimension						Shaft/Key			Flange/Face					Mounting Hole		Shaft Seal (Optional)	
		L	LM	LC	CB	CC	CH	AH	U	KEY	AK	BB	BD	BE	CF	AJ	BF Ø	SSP	SSL
GMBM80400-29	1.88	158	118	79.0	87	34.0	13.0	40.0	14.0	M5 SQ. X 30	70.0	3.0	80.0	11.0	105.0	90.0	6.6	38.0	4.5
GMBM80300-34	2.52	178	138	99.0	107	34.0	13.0	40.0	16.0	M5 SQ. X 30	70.0	3.0	80.0	11.0	105.0	90.0	6.6	38.0	4.5
GMBM80600-35	3.15	198	158	119.0	127	34.0	13.0	40.0	16.0	M5 SQ. X 30	70.0	3.0	80.0	11.0	105.0	90.0	6.6	38.0	4.5
GMBM80800-36	3.80	218	178	139.0	147	34.0	13.0	40.0	16.0	M5 SQ. X 30	70.0	3.0	80.0	11.0	105.0	90.0	6.6	38.0	4.5
GMBM80550-45																			
GMBM801000-39																			
GMBM80650-46																			

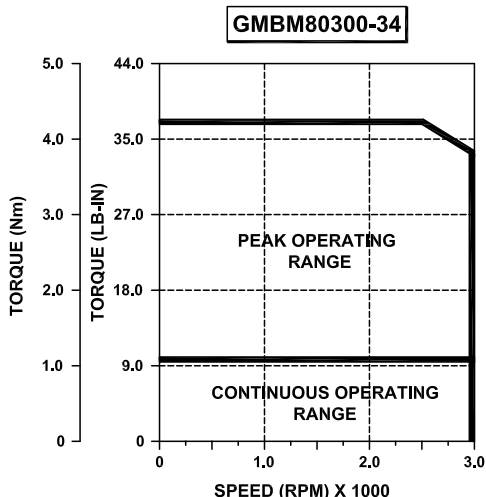
Note: Dimensions are in **mm**

GMBM80400-29 PERFORMANCE DATA



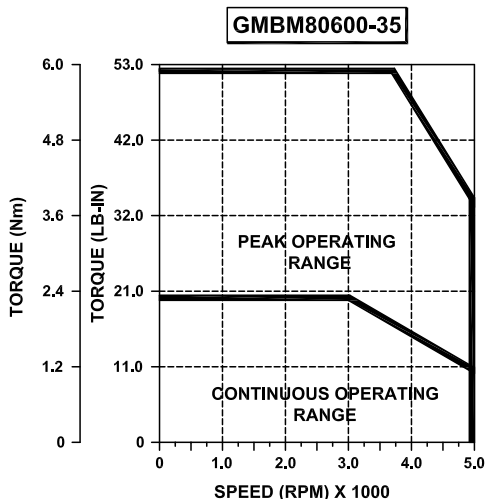
Power @ Max Speed	HP	0.536
	W	400
Speed, RPM	Max.	5000
	Rated	3000
Cont. Stall Rating	Lb-in	11.7
	Nm	1.3
	Amps	2.8
Peak Stall Rating	Lb-in	35.1
	Nm	3.9
	Amps	8.4
Torque Constant	Lb-in/A	4.16
	Nm/A	0.47
Back EMF	V/Krpm	29.3
Resistance	Ohms	2.42
Inductance	mH	16.22
Armature Inertia	Lb-in-sec²	0.000597
	Kg-m²	0.000067

GMBM80300-34 PERFORMANCE DATA



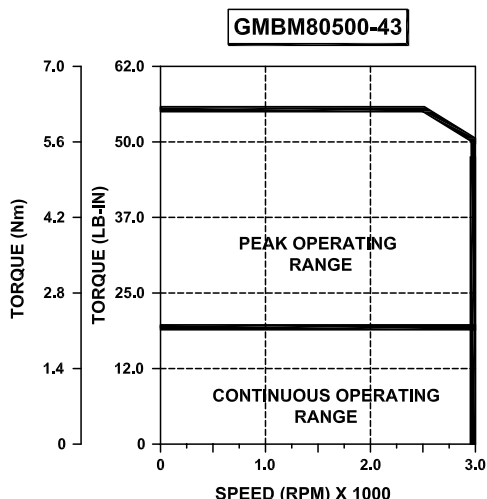
Power @ Max Speed	HP	0.402
	W	300
Speed, RPM	Max.	3000
	Rated	2000
Cont. Stall Rating	Lb-in	13.2
	Nm	1.5
	Amps	2.6
Peak Stall Rating	Lb-in	39.6
	Nm	4.5
	Amps	7.8
Torque Constant	Lb-in/A	5.09
	Nm/A	0.58
Back EMF	V/Krpm	34.2
Resistance	Ohms	3.20
Inductance	mH	19.60
Armature Inertia	Lb-in-sec²	0.000597
	Kg-m²	0.000067

GMBM80600-35 PERFORMANCE DATA



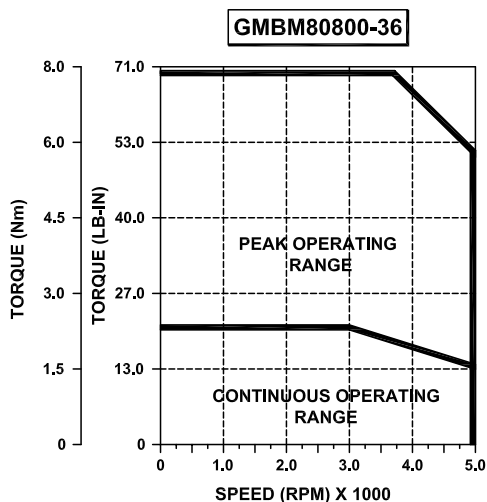
Power @ Max Speed	HP	0.805
	W	600
Speed, RPM	Max.	5000
	Rated	3000
Cont. Stall Rating	Lb-in	17.6
	Nm	2.0
	Amps	3.6
Peak Stall Rating	Lb-in	52.8
	Nm	6.0
	Amps	10.8
Torque Constant	Lb-in/A	4.91
	Nm/A	0.55
Back EMF	V/Krpm	35.2
Resistance	Ohms	1.43
Inductance	mH	9.18
Armature Inertia	Lb-in-sec²	0.000967
	Kg-m²	0.000109

GMBM80500-43 PERFORMANCE DATA



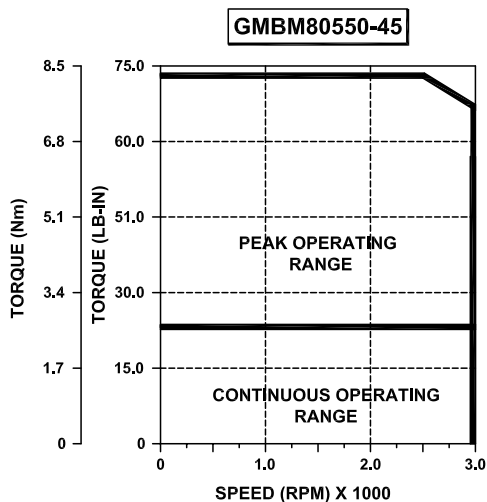
Power @ Max Speed	HP	0.671
	W	500
Speed, RPM	Max.	3000
	Rated	2000
Cont. Stall Rating	Lb-in	19.7
	Nm	2.2
	Amps	3.2
Peak Stall Rating	Lb-in	59.1
	Nm	6.6
	Amps	9.6
Torque Constant	Lb-in/A	6.11
	Nm/A	0.69
Back EMF	V/Krpm	43.3
Resistance	Ohms	2.00
Inductance	mH	13.43
Armature Inertia	Lb-in-sec²	0.000597
	Kg-m²	0.000067

GMBM80800-36 PERFORMANCE DATA



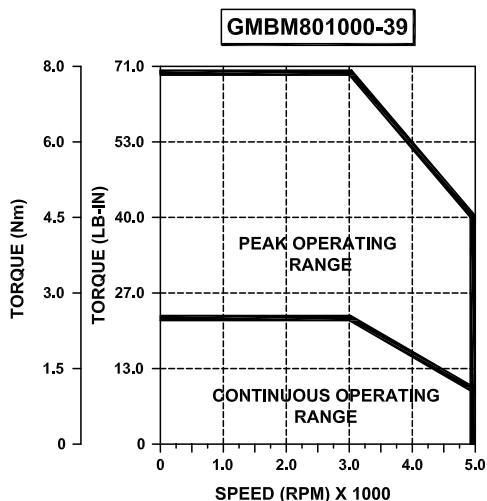
Power @ Max Speed	HP	1.073
	W	800
Speed, RPM	Max.	5000
	Rated	3000
Cont. Stall Rating	Lb-in	23.4
	Nm	2.6
	Amps	4.8
Peak Stall Rating	Lb-in	70.2
	Nm	7.8
	Amps	14.4
Torque Constant	Lb-in/A	4.84
	Nm/A	0.55
Back EMF	V/Krpm	35.6
Resistance	Ohms	0.87
Inductance	mH	5.94
Armature Inertia	Lb-in-sec²	0.001336
	Kg-m²	0.000151

GMBM80550-45 PERFORMANCE DATA



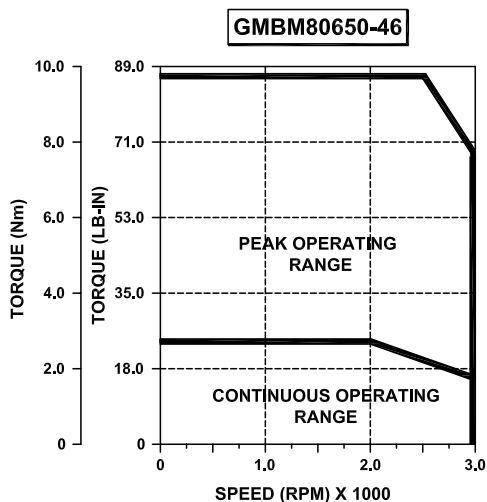
Power @ Max Speed	HP	0.738
	W	550
Speed, RPM	Max.	3000
	Rated	2000
Cont. Stall Rating	Lb-in	23.7
	Nm	2.7
	Amps	3.8
Peak Stall Rating	Lb-in	71.1
	Nm	8.1
	Amps	11.4
Torque Constant	Lb-in/A	6.20
	Nm/A	0.70
Back EMF	V/Krpm	44.6
Resistance	Ohms	1.29
Inductance	mH	9.60
Armature Inertia	Lb-in-sec²	0.001336
	Kg-m²	0.000151

GMBM801000-39 PERFORMANCE DATA



Power @ Max Speed	HP	1.341
	W	1000
Speed, RPM	Max.	5000
	Rated	3000
Cont. Stall Rating	Lb-in	29.4
	Nm	3.3
	Amps	5.4
Peak Stall Rating	Lb-in	88.2
	Nm	9.9
	Amps	16.2
Torque Constant	Lb-in/A	5.47
	Nm/A	0.62
Back EMF	V/Krpm	39.2
Resistance	Ohms	0.75
Inductance	mH	5.04
Armature Inertia	Lb-in-sec²	0.001706
	Kg-m²	0.000193

GMBM80650-46 PERFORMANCE DATA



Power @ Max Speed	HP	0.872
	W	650
Speed, RPM	Max.	3000
	Rated	2000
Cont. Stall Rating	Lb-in	28.0
	Nm	3.2
	Amps	4.4
Peak Stall Rating	Lb-in	84.0
	Nm	9.6
	Amps	13.2
Torque Constant	Lb-in/A	6.35
	Nm/A	0.72
Back EMF	V/Krpm	45.7
Resistance	Ohms	1.02
Inductance	mH	6.90
Armature Inertia	Lb-in-sec²	0.001706
	Kg-m²	0.000193

GMBM80 SERIES MODEL NUMBERING

This section explains the model numbering system for Glentek's GMBM80 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.



- Frame Size** 80 = 80mm Motor
- Power at Rated RPM** 400 = 400 Watts
- Back EMF Constant** 29 = 29 V/Krpm
- Brake option** 0 = No brake installed
- Flange Type** 0 = Standard
- Shaft Type** 0 = Standard
- Lead Termination** 0 = Two AMP Connectors
- Wiring Diagram** 0 = Glentek Standard
- Encoder Option** 0 = 2048 PPR
- Sealing Option** 0 = No Shaft Seal
- Factory Assigned Option** leave blank



Frame Size					
80	80mm Motor				

Power at Rated RPM					
300	300 Watts	550	550 Watts	800	800 Watts
400	400 Watts	600	600 Watts	1000	1000 Watts
500	500 Watts	650	650 Watts	-	-

Back EMF Constant					
300 Watts	400 Watts	500 Watts	550 Watts		
34 34V/Krpm	29 29V/Krpm	43 43V/Krpm	45 45V/Krpm		
600 Watts	650 Watts	800 Watts	1000 Watts		
35 35V/Krpm	46 46V/Krpm	36 36V/Krpm	39 39V/Krpm		

Brake Option					
0	No brake installed	1	24 VDC Brake	2	Special

Flange Type			
0	Standard	1	Special

Shaft Type			
0	Standard	1	Special

Lead Termination Type			
0	2 AMP	1	Special
2	2 MS		

Wiring Diagram			
0	Glentek Standard	1	Special

Encoder Option			
0	2048 PPR	4	2500 PPR
1	3000 PPR	5	5000 PPR
3	1024 PPR	7	Special

Sealing Option			
0	No Shaft Seal (IP54 Sealing)	2	Special
1	Shaft Seal	-	-

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