

GLENTEK DC BRUSH SERVO MOTORS GMR3300 SERIES

Revision: 6/5/24



Glentek's GMR3300 series of high performance, permanent magnet DC brush 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, due to high torque to inertia ratio of these motors, they are ideal for applications which require high acceleration and deceleration characteristics or where the physical size of the motor is a major concern.

- Continuous Torque:
16.0 Lb-in (0.5 Nm)
- Peak Torque:
88.0 Lb-in (9.05 Nm)

GMR3300 SERIES FEATURES

- High-energy Neodymium-Iron-Boron (NdFeB) magnet design provides more torque in a smaller package with higher dynamic performance.
- Skewed armature design provides ultra smooth operation (i.e. low cogging torque) at all speeds.
- Various electrical windings are available as standard to suit both low and high voltage amplifiers in order to provide optimum speed and torque characteristics. Optional custom electrical windings are available to meet virtually any requirement.
- Worldwide standard mounting configurations are available (Square, Round, and NEMA 34). Optional custom mounting configurations are available to meet virtually any requirement.
- Industry standard lead termination configurations. (i.e. MS connectors, fluid tight strain relief cable exit, NPT hole with flying leads and terminal boxes)
- Optional industry standard feedback devices. (i.e. high performance silver commutator tachometers, and encoders)
- 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.
- Optional IP65 sealing is available
- RoHS compliant.
- CE marked.
- UL Recognized Component for US and Canada.

GMR3300 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

GMR3300 SERIES SELECTION TABLE

K_T = Torque Constant • K_V = BEMF = Volts/1000 RPM • L_A = Inductance

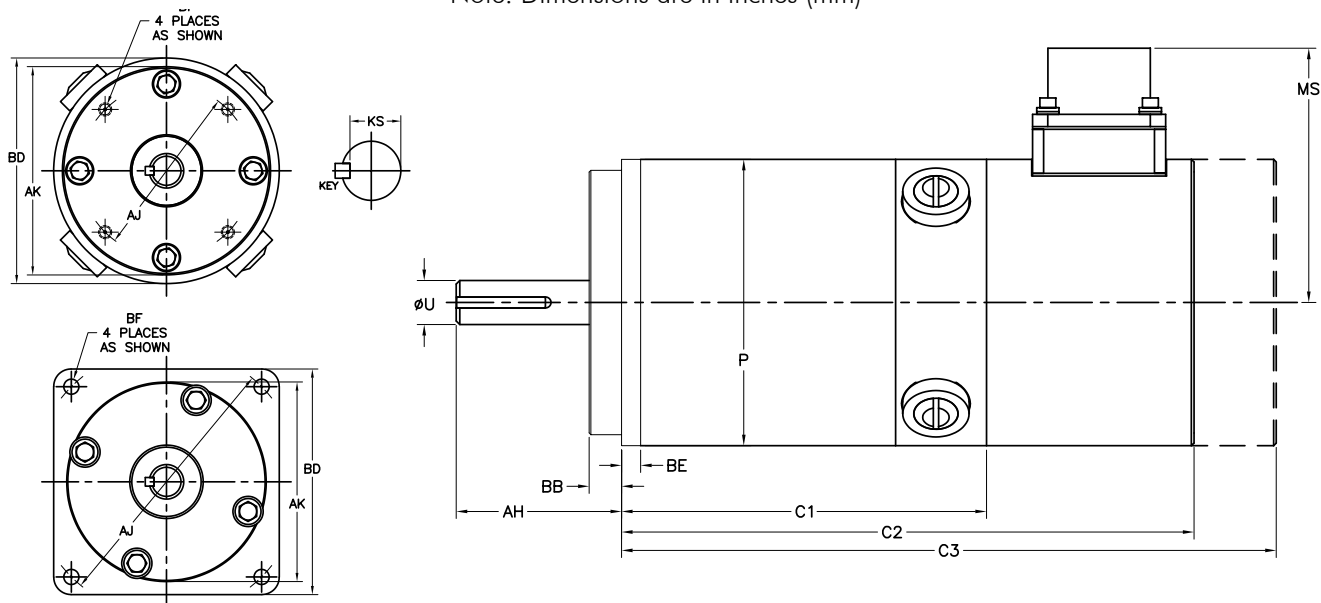
Model Number	Power @ Max Speed		Cont. Stall Rating			Peak Stall Rating			K_T		R_A	L_A	RPM	K_V	Armature Inertia	
	HP	KW	Lb-in	Nm	Amps	Lb-in	Nm	Amps	Lb-in/A	Nm/A	Ω	mH	Max	V/Krpm	Lb-in-sec ²	Kg-m ²
GMR3340-27	0.84	0.627	16	1.81	7.1	80.0	9.05	35.5	2.25	0.25	0.9	1.25	3300	27	0.00310	0.000350
GMR3340-30	0.81	0.604	16	1.81	6.3	80.0	9.05	31.5	2.53	0.29	1.4	1.40	3200	30	0.00310	0.000350

NOTE: All ratings based on a 40°C ambient temperature with the motor face mounted to a 12" x 12" x 1/2" aluminum heatsink.

GMR3300 SERIES DIMENSIONS

C1 = Bare Motor, C2 = Motor with Tachometer or Encoder, C3 = Motor with Tachometer and Encoder.

Note: Dimensions are in inches (mm)



Model Number	Lbs (kg)	C1		C2		C3		P
		RND	SQR	RND	SQR	RND	SQR	
GMR3340	10.0 (4.5)	5.98 (151.89)	5.88 (149.35)	8.71 (221.23)	8.61 (218.69)	9.97 (253.24)	9.87 (250.73)	3.25 (82.55)

Connectors	6-Pin	14-Pin	16-Pin	Liquid Tight
MS	2.689 (68.3)	2.886 (73.3)	2.979 (75.7)	2.691 (68.35)

Flange Type	Shaft				Flange/Face				Mounting Hole		
	AH	U (MAX)	KEY	KS	AJ	AK	BB	BD	BE (MAX)	BF Dia.	Tap
Round	1.87 (47.50)	0.5000 (12.70)	0.125 SQ. X 1.00	0.420-0.430	2.500 (63.50)	3.000 (76.20)	0.37 (9.40)	3.25 (82.55)	0.22 (5.59)	-	10-32 ∇ .50
Square Flange	1.60 (40.64)	0.5000 (12.70)	0.125 SQ. X 1.00	0.420-0.430	3.875 (98.43)	2.875 (73.03)	0.10 (2.54)	3.25 (82.55)	0.48 (12.19)	0.22 (5.59)	THRU
NEMA 34	1.19 (30.23)	0.3750 (9.53)	-	-	3.875 (98.43)	2.875 (73.03)	0.10 (2.54)	3.25 (82.55)	0.48 (12.19)	0.22 (5.59)	THRU

GMR3300 SERIES BRAKE OPTION

Motor Frame Size	Extension	Torque		Power	Current	Resistance	Inductance
	in. (mm)	Lb-in	Nm	Watts	A	Ω	mH
GMR3300	1.91 (49)	40	4.5	12	0.5	47	145

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.

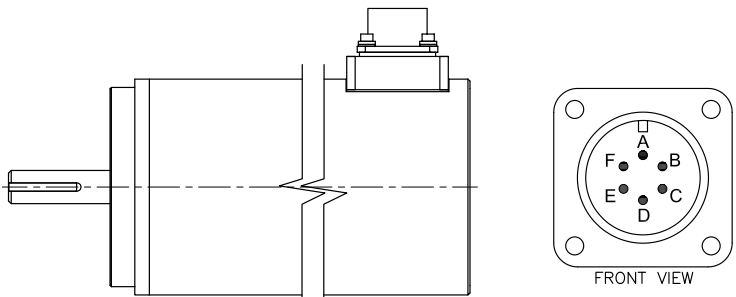
SHAFT LOAD RATINGS

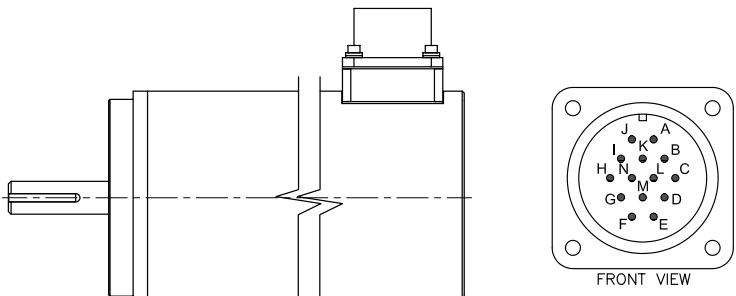
Motor Frame Size	Radial Shaft Load		Axial Shaft Load	
	Lbs	N	Lbs	N
GMR3300	50	220	25	110

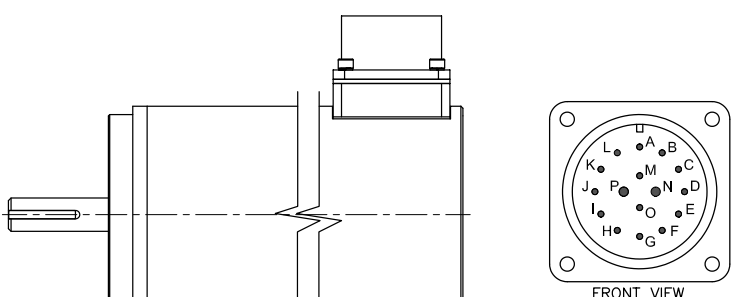
Note: This table is for general guidance only. Shaft load ratings are approximations and will vary with shaft diameter, the location of the load on the shaft, speed (RPM), bearings, and more. The values in the table are for a load located 1” (25.4 mm) from the mounting face of the motor and at 3000 RPM.

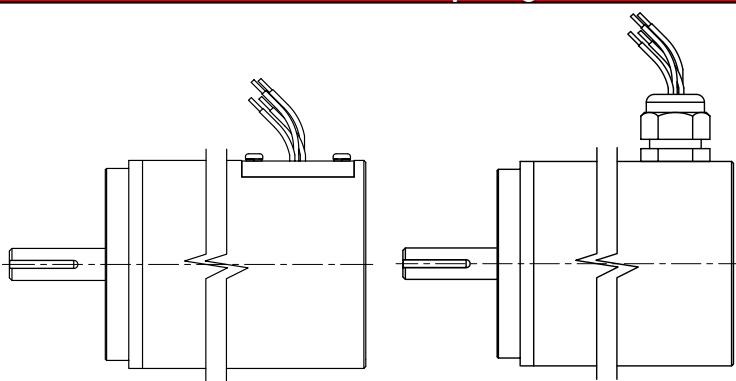
CONNECTORS & PIN-OUT INFORMATION

With a positive voltage applied to the red motor lead (Motor +) with respect to the black motor lead (Motor -), the motor drive shaft will turn in the clockwise direction as viewed from the shaft end.

GMR 3300 Series Standard 6-pin MS Connector Location	MS102R-14-6P	Function
 <p style="text-align: center;">FRONT VIEW</p> <ul style="list-style-type: none"> •Straight Mating Connector: MS3106F-20-27S •90° Mating Connector: MS3108E-20-27S 	6-Pin	
	A	Motor +
	B	Motor -
	C	Tachometer +
	D	Tachometer -
	E (W/O Brake) E (W/ Brake)	Tachometer Cable Shield
	F	Brake+ Brake -

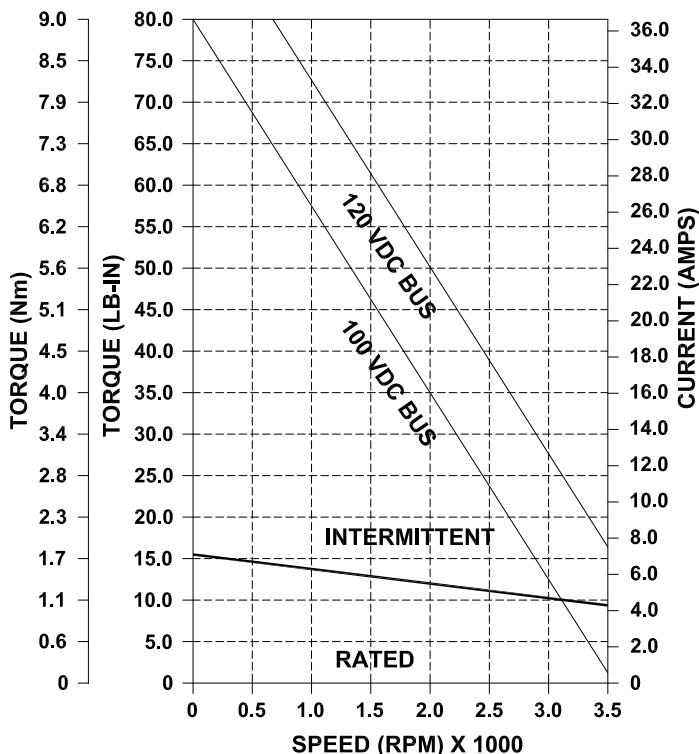
GMR 3300 Series Standard 14-pin MS Connector Location	MS102R-20-27P	Encoder Feedback	Resolver Feedback
 <p style="text-align: center;">FRONT VIEW</p> <ul style="list-style-type: none"> •Straight Mating Connector: MS3106F-20-27S •90° Mating Connector: MS3108E-20-27S 	14-Pin	Function	Function
	A	Channel A+	Sine Sig (S1)
	B	Channel A-	Sine Com (S2)
	C	Channel B+	Cosine Sig (S3)
	D	Channel B-	Cosine Com (S4)
	E	Channel Z+	Reference Sig (R1)
	F	Channel Z-	Reference Com (R2)
	G	+5 VDC	N/C
	H	Common	N/C
	I	Cable Shield	N/C
	J	Tachometer +	
	K	Tachometer -	
	L	Tachometer Cable Shield	
	M	Motor -	
N	Motor +		

GMR 3300 Series Standard 16-pin MS Connector Location	MS102R-24-07P	Encoder Feedback	Resolver Feedback
 <p style="text-align: center;">FRONT VIEW</p> <ul style="list-style-type: none"> •Straight Mating Connector: MS3106F-20-27S •90° Mating Connector: MS3108E-20-27S 	16-Pin	Function	Function
	A	Channel A+	Sine Sig (S1)
	B	Channel A-	Sine Com (S2)
	C	Channel B+	Cosine Sig (S3)
	D	Channel B-	Cosine Com (S4)
	E	Channel Z+	Reference Sig (R1)
	F	Channel Z-	Reference Com (R2)
	G	+5 VDC	N/C
	H	Common	N/C
	I	Cable Shield	N/C
	J	Tachometer +	
	K	Tachometer -	
	L	Tachometer Cable Shield	
	M	Brake +	
	N	Motor +	
	O	Brake -	
P	Motor -		

GMR 3300 Series standard NPT & Liquid Tight Strain Relief	
 <p style="text-align: center;">Standard NPT Liquid Tight Strain Relief</p>	<p>Glentek's GMR3300 Series offer Special mounting options please contact a Gletnek Sales Engineer for detailed information.</p>

GMR3340-27 PERFORMANCE DATA

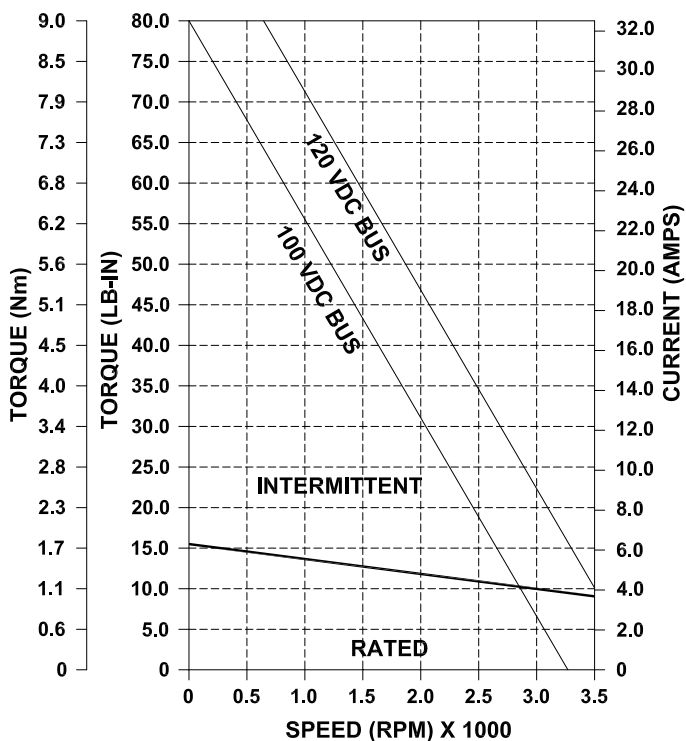
GMR3340-27



Power @ Max Speed	HP	0.84
	KW	0.627
Cont. Stall Rating	Lb-in	16
	Nm	1.81
	Amps	7.1
Peak Stall Rating	Lb-in	80.0
	Nm	9.05
	Amps	35.5
Torque Constant	Lb-in/A	2.25
	Nm/A	0.25
Resistance	Ohms	0.9
Inductance	mH	1.25
Maximum Speed	RPM	3300
Back EMF	V/Krpm	27
Armature Inertia	Lb-in-sec²	0.00310
	Kg-m²	0.000350

GMR3340-30 PERFORMANCE DATA

GMR3340-30



Power @ Max Speed	HP	0.81
	KW	0.604
Cont. Stall Rating	Lb-in	16
	Nm	1.81
	Amps	6.3
Peak Stall Rating	Lb-in	80.0
	Nm	9.05
	Amps	31.5
Torque Constant	Lb-in/A	2.53
	Nm/A	0.29
Resistance	Ohms	1.4
Inductance	mH	1.40
Maximum Speed	RPM	3200
Back EMF	V/Krpm	30
Armature Inertia	Lb-in-sec²	0.00310
	Kg-m²	0.000350

NOTE: All ratings based on a 40°C ambient temperature with the motor face mounted to a 12" x 12" x 1/2" aluminum heatsink.

GMR3300 SERIES MODEL NUMBERING

This section explains the model numbering system for Glentek's GMR3340 Series DC Brush 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** 33 = 3.3" Motor
- Stack Length** 40 = 4.0 inch stack
- Back EMF Constant** 27 = 27 V/Krpm
- Brake Option** 0 = No brake installed
- Tachometer Option** 2 = 7 VDC tachometer
- Encoder Option** 8 = 2500 PPR
- Brushless Resolver Option** 0 = No resolver installed
- Flange Type** 1 = Standard Square
- Lead Termination** 5 = Male MS connector, MS3102R-24-07P (16-pin style)
- Wiring Diagram** 0 = Glentek Standard
- Sealing Option** 0 = No shaft seal
- Factory Assigned Option** Leave blank



Frame Size	
33	3.3" Motor

Stack Length	
40	4.0 inch Stack

Back EMF Constant	
4.0" only	
27	27 V/Krpm
30	30 V/Krpm
For custom Back EMF, Please Contact Glentek	

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

Tachometer Option					
0	No tachometer installed	2	7 VDC tachometer	4	Special
1	3 VDC tachometer	3	9.5 VDC tachometer	-	-

Encoder Option					
0	No encoder installed	4	1000 PPR	8	2500 PPR
2	500 PPR	6	2000 PPR	9	Special

Brushless Resolver Option					
0	No resolver installed	1	Brushless resolver	2	Special

Flange Type					
0	Standard Round	6	Special		
1	Standard Square	8	NEMA 34		

Lead Termination					
0	Flying leads exiting through a rubber grommet	4	14-Pin, Male MS connector		
1	.5" NPT with flying leads	5	16-Pin, Male MS connector		
2	.75" NPT with flying leads	6	Liquid tight strain relief with flying leads		
3	6-Pin, Male MS connector	8	Special		

Wiring Diagram (MS connector lead termination only)					
0	Glentek Standard	1	Special		

Sealing Option					
0	No shaft seal	1	Shaft Seal	2	Special

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