

GLENTEK BRUSHLESS SERVO MOTORS GMB7500 SERIES

Revision: 4/10/2020



Glentek's GMB7500 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, 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 Range:
400 Lb-in (45.2 Nm) to 1092 Lb-in (123.4 Nm)
- Peak Torque Range:
1200 Lb-in (135.6 Nm) to 3276 Lb-in (370.2 Nm)

GMB7500 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 (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 (120 VAC) and high (230 VAC and 460 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 |
| RoHS compliant. |
| CE marked. |
| UL Recognized Component for US and Canada. |

GMB7500 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 |

GMB7500 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 |
| GMB7530-80 | 9.65 | 7.19 | 2400 | 1900 | 400 | 45.2 | 44 | 1200 | 135.6 | 132 | 9.1 | 1.02 | 80 | 0.25 | 2.3 | 0.0432 | 0.00488 |
| GMB7530-162 | 5.08 | 3.79 | 1200 | 1000 | 400 | 45.2 | 22 | 1200 | 135.6 | 65 | 18.4 | 2.07 | 162 | 0.95 | 9.0 | 0.0432 | 0.00488 |
| GMB7560-80 | 15.44 | 11.51 | 2400 | 1900 | 640 | 72.3 | 71 | 1920 | 216.9 | 212 | 9.1 | 1.02 | 80 | 0.09 | 1.00 | 0.0750 | 0.00848 |
| GMB7560-162 | 8.12 | 6.06 | 1200 | 1000 | 640 | 72.3 | 35 | 1920 | 216.9 | 105 | 18.4 | 2.07 | 162 | 0.36 | 4.0 | 0.0750 | 0.00848 |
| GMB7590-80 | 21.22 | 15.83 | 2400 | 1900 | 880 | 99.4 | 97 | 2640 | 298.2 | 291 | 9.1 | 1.02 | 80 | 0.05 | 0.65 | 0.1082 | 0.01223 |
| GMB7590-162 | 11.17 | 8.33 | 1200 | 1000 | 880 | 99.4 | 48 | 2640 | 298.2 | 144 | 18.4 | 2.07 | 162 | 0.19 | 2.6 | 0.1082 | 0.01223 |
| GMB75120-108 | 19.41 | 14.47 | 1800 | 1400 | 1092 | 123.4 | 89 | 3276 | 370.2 | 268 | 12.2 | 1.38 | 108 | 0.06 | 0.84 | 0.1397 | 0.01579 |
| GMB75120-162 | 13.86 | 10.34 | 1200 | 1000 | 1092 | 123.4 | 60 | 3276 | 370.2 | 179 | 18.4 | 2.07 | 162 | 0.14 | 1.9 | 0.1397 | 0.01579 |
| GMB75120-248* | 8.32 | 6.20 | 800 | 600 | 1092 | 123.3 | 39 | 3276 | 370.2 | 117 | 28.1 | 3.17 | 248 | 0.37 | 4.4 | 0.1397 | 0.01579 |

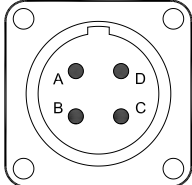
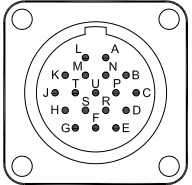
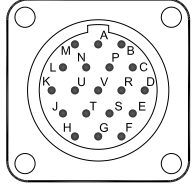
NOTE: All ratings based on a 25°C ambient temperature with the motor face mounted to a 14" x 14" x 3/4" aluminum heatsink. The values for Max and Rated Speed are for motors operated with a 230 VAC power supply. Current values are in peak phase current. Values for motors denoted with an asterisk (*) are for 460 VAC.

BRAKE OPTION

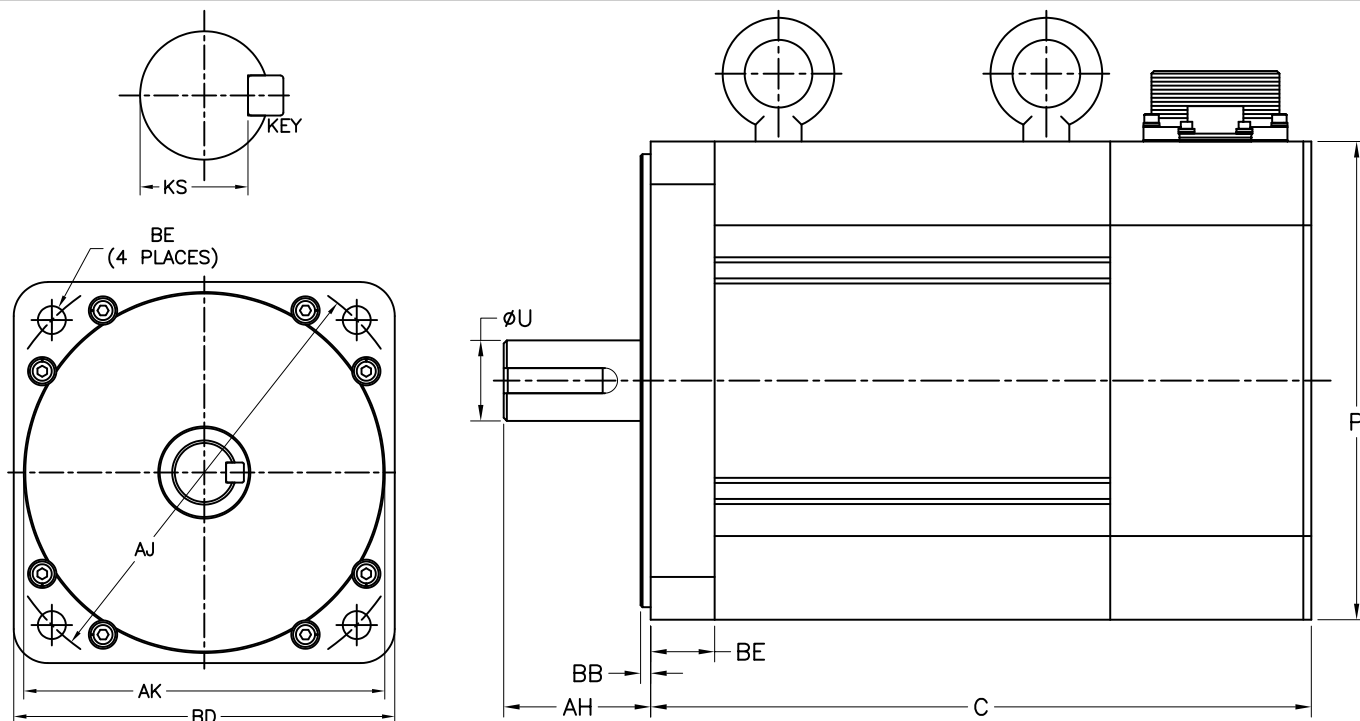
Brake requires 24V DC input voltage. The values for "Extension" represent the nominal maximum length that the brake will add to the motor. For some models, the extension will be less. Please contact one of our sales engineers for the exact values.

| Extension | Torque | | Power | Current | Resistance | Inductance |
|-----------|--------|-----|-------|---------|------------|------------|
| in. (mm) | Lb-in | Nm | Watts | A | Ω | mH |
| 3.00 (76) | 1283 | 145 | 50 | 2.1 | 11 | 110 |

CONNECTORS & PIN-OUT INFORMATION

| 4-Pin MS connector MS3102R32-17P | | 18-Pin MS connector MS3112E14-18P | | 19-Pin MS connector MS3112E14-19P | | | | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------------------|----------------|------------------|-----------------|
|  FRONT VIEW <small>Straight Mating Connector, MS3106F32-17S</small> | |  FRONT VIEW <small>Straight Mating Connector, MS3116F14-18S</small> | |  FRONT VIEW <small>Straight Mating Connector, MS3116F14-19S</small> | | | | | |
| Pin# | Function | Pin# | Function | Pin# | Function | | | | |
| | | | Resolver | | Resolver | Encoder with Commutation Track | | | |
| A | Phase R | A | Brake + | A | Temperature Switch | Temperature Switch | | | |
| B | Phase S | B | Brake - | B | Temperature Switch | Temperature Switch | | | |
| C | Phase T | C | Brake Shield | C | Resolver Shield | Encoder Shield | | | |
| D | Case Ground | D | Resolver Shield | D | N/C | Encoder +5VDC | | | |
| Special mounting options are available. Please contact a Glentek Sales Engineer for detailed information. | | | E | Reference | E | N/C | Encoder Common | | |
| | | | F | Since Ground | F | Cosine Ground | F | Cosine Ground | Channel A+ |
| | | | G | Cosine Ground | G | Sine | G | Cosine + | Channel A- |
| | | | H | Sine | H | N/C | H | Sine Ground | Channel B+ |
| | | | J | N/C | J | N/C | J | Reference Ground | Channel B- |
| | | | K | N/C | K | N/C | K | Reference | Channel Z+ |
| | | | L | N/C | L | N/C | L | N/C | Channel Z- |
| | | | M | N/C | M | N/C | M | N/C | Comm. Track S1+ |
| | | | N | Temperature Switch | N | Temperature Switch | N | N/C | Comm. Track S1- |
| | | | P | N/C | P | N/C | P | N/C | Comm. Track S2+ |
| | | | R | Reference Ground | R | Reference Ground | R | N/C | Comm. Track S2- |
| | | | S | Cosine | S | Cosine | S | N/C | Comm. Track S3+ |
| | | | T | N/C | T | N/C | T | N/C | Comm. Track S3- |
| | | | U | Temperature Switch | U | Temperature Switch | U | Brake + | Brake + |
| | | V | Brake - | V | Brake - | Brake - | | | |

GMB7500 SERIES DIMENSIONS

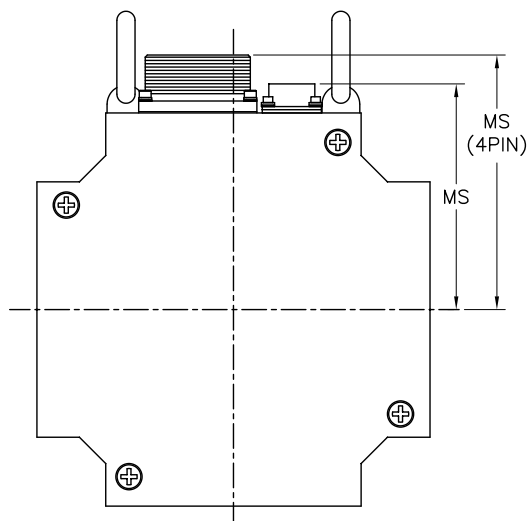


| Model Number | Kg (lbs.) | C (max) | P (max) | Shaft | | | | Flange/Face | | | | Mounting Hole | | |
|-----------------------|------------------------|------------------------|------------------------|------------------------|-------------------------|--------------------------------|------------------------------|--------------------------|------------------------|-------------------------|-----------------------|--------------------------|-------------------------|-------------|
| | | | | AH | U | KEY | KS | AK | BB | BD | BE | AJ | BF Dia. | Tap |
| GMB7530-XXX-M | 30.0 (66.0) | 294.4 (11.6) | 190.0 (7.48) | 58.00 (2.28) | 32.00 (1.260) | M10 X M8 X 36 | 26.8 - 27.0 | 180.00 (7.087) | 4.00 (0.157) | 190.00 (7.48) | 24.3 (0.96) | 215.00 (8.465) | 14.00 (0.551) | THRU |
| GMB7560-XXX-M | 44.0 (96.8) | 370.6 (14.6) | 190.0 (7.48) | 58.00 (2.28) | 32.00 (1.260) | M10 X M8 X 36 | 26.8 - 27.0 | 180.00 (7.087) | 4.00 (0.157) | 190.00 (7.48) | 24.3 (0.96) | 215.00 (8.465) | 14.00 (0.551) | THRU |
| GMB7590-XXX-M | 59.0 (129.8) | 446.8 (17.6) | 190.0 (7.48) | 58.00 (2.28) | 48.00 (1.890) | M14 X M9 X 40 | 42.3 - 43.5 | 180.00 (7.087) | 4.00 (0.157) | 190.00 (7.48) | 24.3 (0.96) | 215.00 (8.465) | 14.00 (0.551) | THRU |
| GMB75120-XXX-M | 73.0 (160.6) | 523.0 (20.6) | 190.0 (7.48) | 58.00 (2.28) | 48.00 (1.890) | M14 X M9 X 40 | 42.3 - 43.5 | 180.00 (7.087) | 4.00 (0.157) | 190.00 (7.48) | 24.3 (0.96) | 215.00 (8.465) | 14.00 (0.551) | THRU |

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

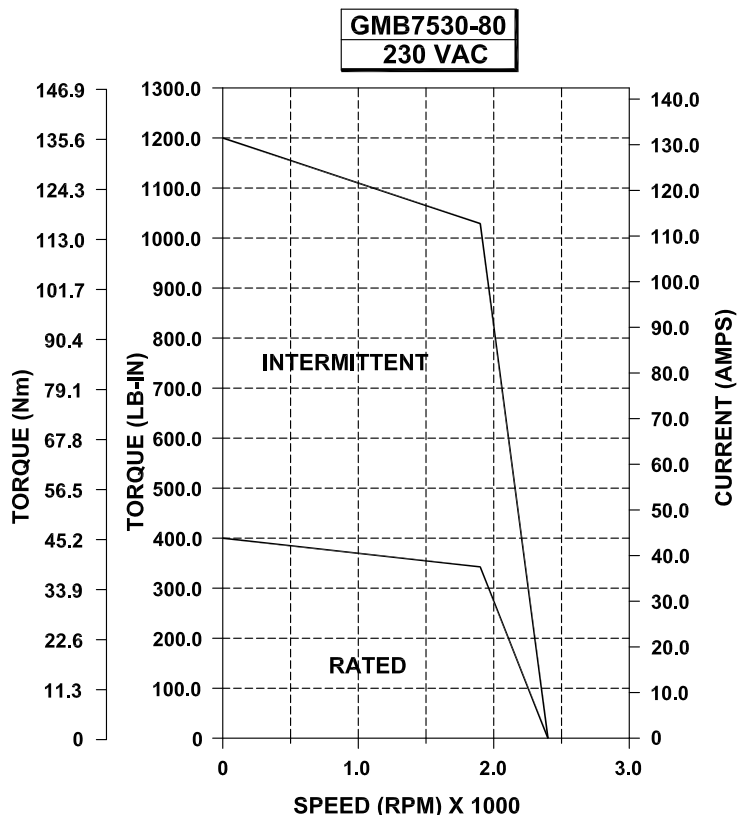
| Model Number | Lbs. (Kg) | C (max) | P (max) | Shaft | | | | Flange/Face | | | | Mounting Hole | | |
|-----------------------|------------------------|-------------------------|------------------------|-----------------------|-------------------------|---------------------------------|-------------------------------|--------------------------|-----------------------|------------------------|------------------------|--------------------------|-------------------------|-------------|
| | | | | AH | U | KEY | KS | AK | BB | BD | BE | AJ | BF Dia. | Tap |
| GMB7530-XXX-E | 66.0 (29.9) | 11.59 (294.4) | 7.48 (190.0) | 2.28 (57.9) | 1.250 (31.75) | .250 SQ X 1.50 | 1.102- 1.112 | 7.087 (180.01) | 0.16 (4.06) | 7.48 (190.0) | 0.96 (24.38) | 8.464 (214.99) | 0.551 (14.00) | THRU |
| GMB7560-XXX-E | 98.0 (44.5) | 14.59 (370.6) | 7.48 (190.0) | 2.28 (57.9) | 1.250 (31.75) | .250 SQ X 1.50 | 1.102- 1.112 | 7.087 (180.01) | 0.16 (4.06) | 7.48 (190.0) | 0.96 (24.38) | 8.464 (214.99) | 0.551 (14.00) | THRU |
| GMB7590-XXX-E | 130.0 (59.0) | 17.59 (446.8) | 7.48 (190.0) | 2.28 (57.9) | 1.875 (47.63) | .500 SQ X 1.50 | 1.581- 1.591 | 7.087 (180.01) | 0.16 (4.06) | 7.48 (190.0) | 0.96 (24.38) | 8.464 (214.99) | 0.551 (14.00) | THRU |
| GMB75120-XXX-E | 162.0 (73.5) | 20.59 (523.0) | 7.48 (190.0) | 2.28 (57.9) | 1.875 (47.63) | .500 SQ X 1.50 | 1.581- 1.591 | 7.087 (180.01) | 0.16 (4.06) | 7.48 (190.0) | 0.96 (24.38) | 8.464 (214.99) | 0.551 (14.00) | THRU |

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



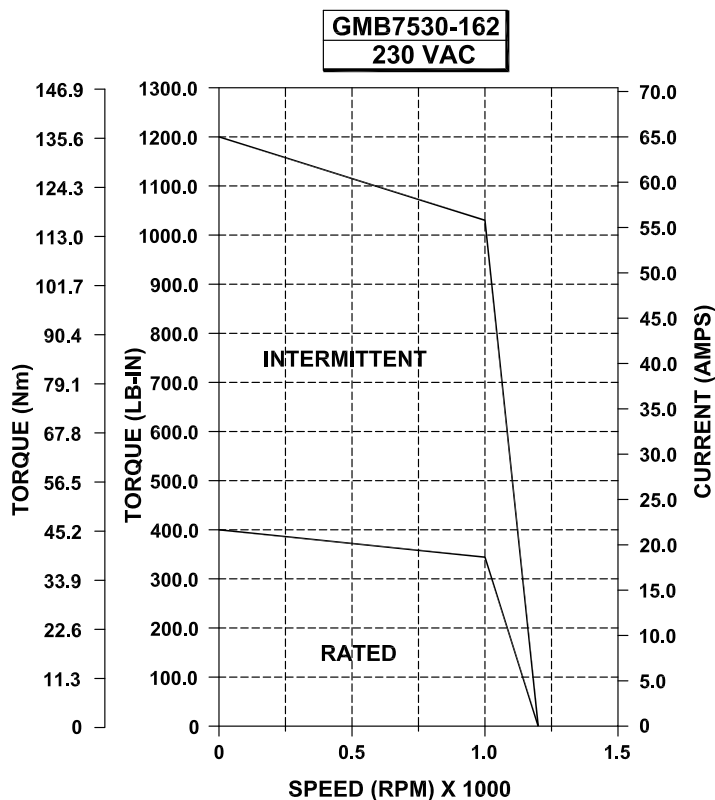
| Connectors | MS inches (mm) | MS mm (inches) |
|---------------|----------------------|------------------------|
| 4-Pin | 4.84 (123) | 123.0 (4.84) |
| 18-Pin | 4.29 (109) | 109.0 (4.29) |
| 19-Pin | 4.29 (109) | 109.0 (4.29) |

GMB7530-80 PERFORMANCE DATA



| | | |
|----------------------------|------------------------------|---------|
| Power @ Rated Speed | HP | 9.65 |
| | KW | 7.19 |
| Speed, RPM | Max. | 2400 |
| | Rated | 1900 |
| Cont. Stall Rating | Lb-in | 400 |
| | Nm | 45.2 |
| | Amps | 44 |
| Peak Stall Rating | Lb-in | 1200 |
| | Nm | 135.6 |
| | Amps | 132 |
| Torque Constant | Lb-in/A | 9.1 |
| | Nm/A | 1.02 |
| Back EMF | V/Krpm | 80 |
| Resistance | Ohms | 0.25 |
| Inductance | mH | 2.3 |
| Armature Inertia | Lb-in-sec² | 0.0432 |
| | Kg-m² | 0.00488 |

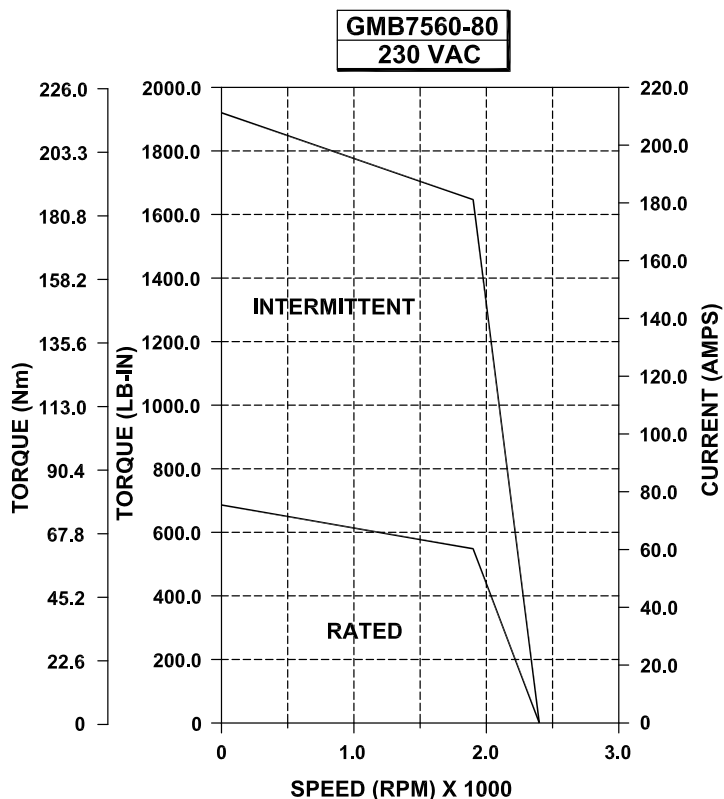
GMB7530-162 PERFORMANCE DATA



| | | |
|----------------------------|------------------------------|---------|
| Power @ Rated Speed | HP | 5.08 |
| | KW | 3.79 |
| Speed, RPM | Max. | 1200 |
| | Rated | 1000 |
| Cont. Stall Rating | Lb-in | 400 |
| | Nm | 45.2 |
| | Amps | 22 |
| Peak Stall Rating | Lb-in | 1200 |
| | Nm | 135.6 |
| | Amps | 65 |
| Torque Constant | Lb-in/A | 18.4 |
| | Nm/A | 2.07 |
| Back EMF | V/Krpm | 162 |
| Resistance | Ohms | 0.95 |
| Inductance | mH | 9.0 |
| Armature Inertia | Lb-in-sec² | 0.0432 |
| | Kg-m² | 0.00488 |

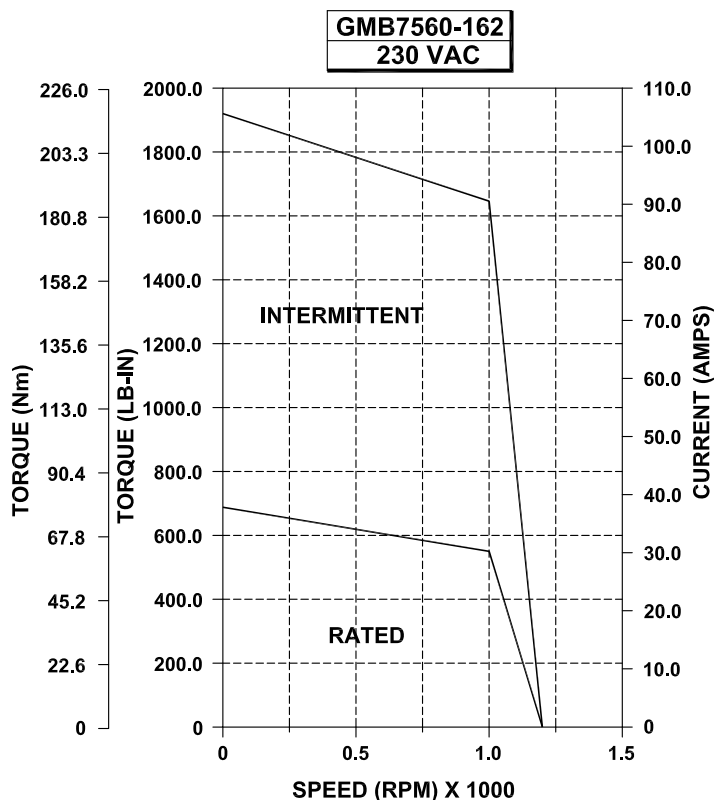
NOTE: All ratings based on a 25°C ambient temperature with the motor face mounted to a 14" x 14" x 3/4" aluminum heatsink.

GMB7560-80 PERFORMANCE DATA



| | | |
|----------------------------|------------------------------|---------|
| Power @ Rated Speed | HP | 15.44 |
| | KW | 11.51 |
| Speed, RPM | Max. | 2400 |
| | Rated | 1900 |
| Cont. Stall Rating | Lb-in | 640 |
| | Nm | 72.30 |
| | Amps | 71 |
| Peak Stall Rating | Lb-in | 1920 |
| | Nm | 216.9 |
| | Amps | 212 |
| Torque Constant | Lb-in/A | 9.1 |
| | Nm/A | 1.02 |
| Back EMF | V/Krpm | 80 |
| Resistance | Ohms | 0.09 |
| Inductance | mH | 1.00 |
| Armature Inertia | Lb-in-sec² | 0.0750 |
| | Kg-m² | 0.00848 |

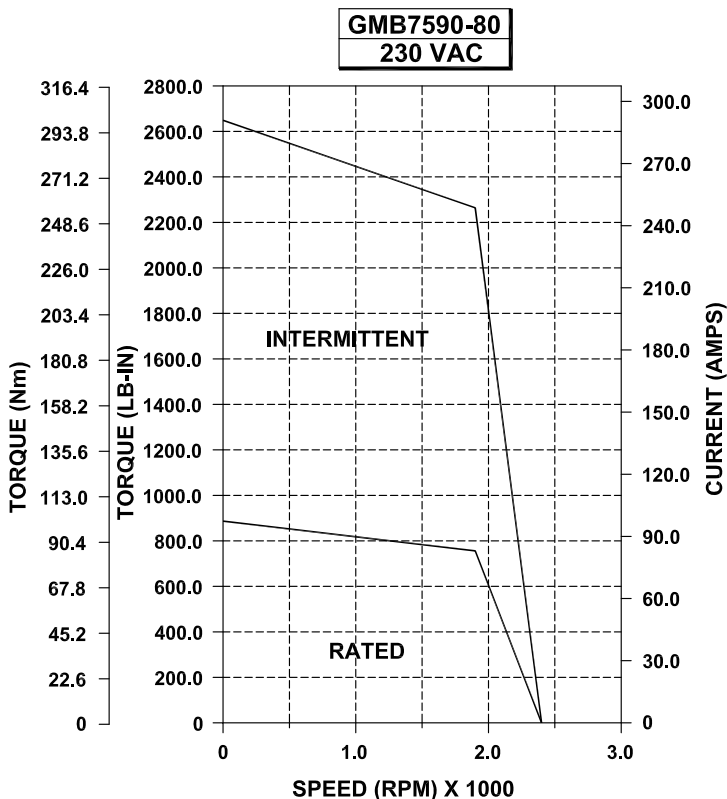
GMB7560-162 PERFORMANCE DATA



| | | |
|----------------------------|------------------------------|---------|
| Power @ Rated Speed | HP | 8.12 |
| | KW | 6.06 |
| Speed, RPM | Max. | 1200 |
| | Rated | 1000 |
| Cont. Stall Rating | Lb-in | 640 |
| | Nm | 72.30 |
| | Amps | 35 |
| Peak Stall Rating | Lb-in | 1920 |
| | Nm | 216.9 |
| | Amps | 105 |
| Torque Constant | Lb-in/A | 18.4 |
| | Nm/A | 2.07 |
| Back EMF | V/Krpm | 162 |
| Resistance | Ohms | 0.36 |
| Inductance | mH | 4.0 |
| Armature Inertia | Lb-in-sec² | 0.0750 |
| | Kg-m² | 0.00848 |

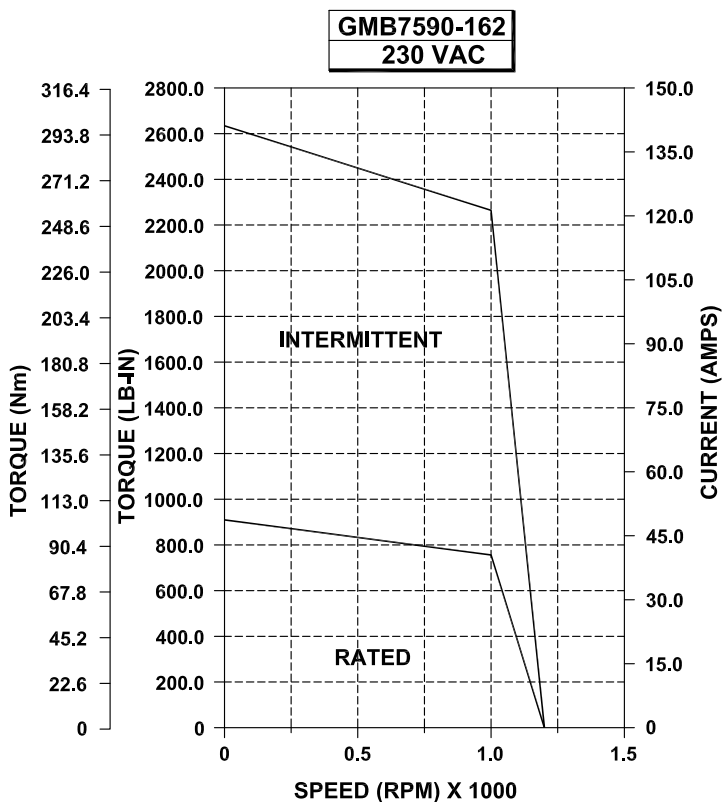
NOTE: All ratings based on a 25°C ambient temperature with the motor face mounted to a 14" x 14" x 3/4" aluminum heatsink.

GMB7590-80 PERFORMANCE DATA



| | | |
|----------------------------|------------------------------|---------|
| Power @ Rated Speed | HP | 21.22 |
| | KW | 15.83 |
| Speed, RPM | Max. | 2400 |
| | Rated | 1900 |
| Cont. Stall Rating | Lb-in | 880 |
| | Nm | 99.4 |
| | Amps | 97 |
| Peak Stall Rating | Lb-in | 2640 |
| | Nm | 298.2 |
| | Amps | 291 |
| Torque Constant | Lb-in/A | 9.1 |
| | Nm/A | 1.02 |
| Back EMF | V/Krpm | 80 |
| Resistance | Ohms | 0.05 |
| Inductance | mH | 0.65 |
| Armature Inertia | Lb-in-sec² | 0.1082 |
| | Kg-m² | 0.01223 |

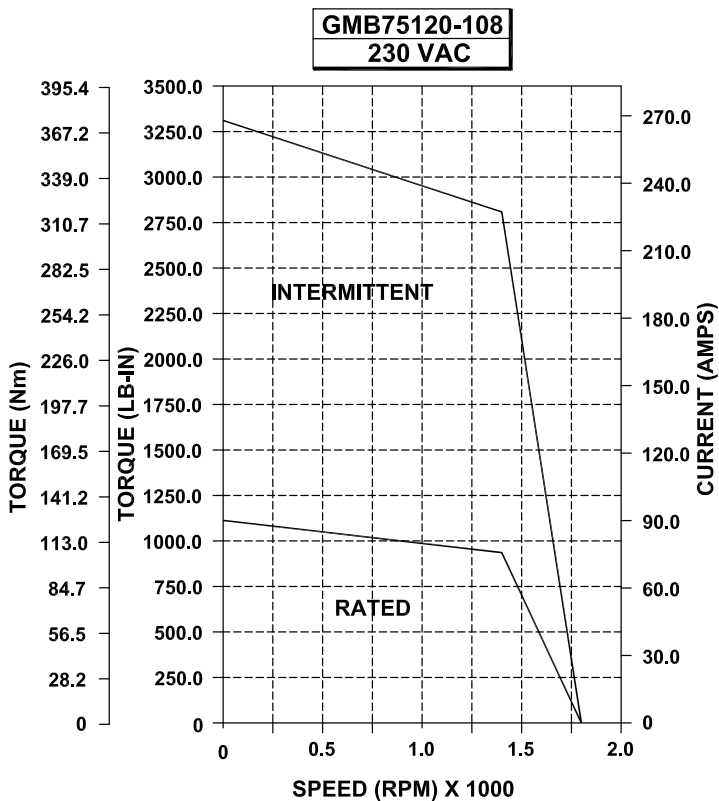
GMB7590-162 PERFORMANCE DATA



| | | |
|----------------------------|------------------------------|---------|
| Power @ Rated Speed | HP | 11.17 |
| | KW | 8.33 |
| Speed, RPM | Max. | 1200 |
| | Rated | 1000 |
| Cont. Stall Rating | Lb-in | 880 |
| | Nm | 99.4 |
| | Amps | 48 |
| Peak Stall Rating | Lb-in | 2640 |
| | Nm | 298.2 |
| | Amps | 144 |
| Torque Constant | Lb-in/A | 18.4 |
| | Nm/A | 2.07 |
| Back EMF | V/Krpm | 162 |
| Resistance | Ohms | 0.19 |
| Inductance | mH | 2.6 |
| Armature Inertia | Lb-in-sec² | 0.1082 |
| | Kg-m² | 0.01223 |

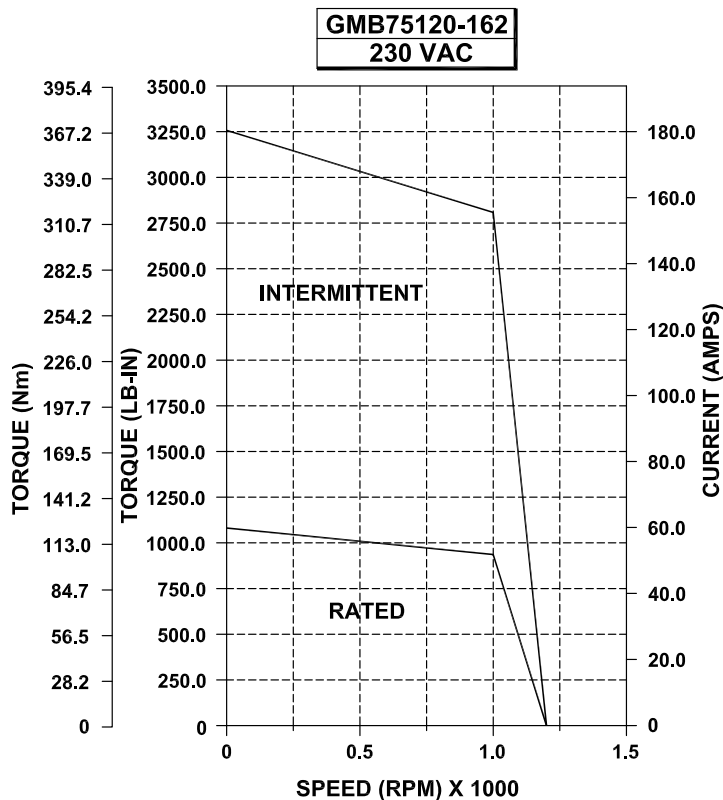
NOTE: All ratings based on a 25°C ambient temperature with the motor face mounted to a 14" x 14" x 3/4" aluminum heatsink.

GMB75120-108 PERFORMANCE DATA



| | | |
|----------------------------|------------------------------|---------|
| Power @ Rated Speed | HP | 19.41 |
| | KW | 14.47 |
| Speed, RPM | Max. | 1800 |
| | Rated | 1400 |
| Cont. Stall Rating | Lb-in | 1092 |
| | Nm | 123.4 |
| | Amps | 89 |
| Peak Stall Rating | Lb-in | 3276 |
| | Nm | 370.2 |
| | Amps | 268 |
| Torque Constant | Lb-in/A | 12.2 |
| | Nm/A | 1.38 |
| Back EMF | V/Krpm | 108 |
| Resistance | Ohms | 0.06 |
| Inductance | mH | 0.84 |
| Armature Inertia | Lb-in-sec² | 0.1397 |
| | Kg-m² | 0.01579 |

GMB75120-162 PERFORMANCE DATA



| | | |
|----------------------------|------------------------------|---------|
| Power @ Rated Speed | HP | 13.86 |
| | KW | 10.34 |
| Speed, RPM | Max. | 1200 |
| | Rated | 1000 |
| Cont. Stall Rating | Lb-in | 1092 |
| | Nm | 123.4 |
| | Amps | 60 |
| Peak Stall Rating | Lb-in | 3276 |
| | Nm | 370.2 |
| | Amps | 179 |
| Torque Constant | Lb-in/A | 18.4 |
| | Nm/A | 2.07 |
| Back EMF | V/Krpm | 162 |
| Resistance | Ohms | 0.14 |
| Inductance | mH | 1.9 |
| Armature Inertia | Lb-in-sec² | 0.1397 |
| | Kg-m² | 0.01579 |

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.

GMB7500 SERIES MODEL NUMBERING

This section explains the model numbering system for Glentek's GMB7500 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.



- Magnet Type** blank = NdFeB
- Frame Size** 75 = 7.5" (6 pole) Motor
- Stack Length** 30 = 3.5 inch stack
- Back EMF Constant** 80 = 80 V/Krpm
- Dimensions** E = English
- Brake option** 0 = No brake installed
- Commutation Device** 0 = Brushless Resolver
- Number of Motor poles** 2 = 6 Pole
- Flange Type** 0 = Standard
- Shaft Type** 0 = Standard
- Lead Termination** 1 = Two MS Connectors
- Wiring Diagram (MS connector lead termination only)** 0 = Glentek Standard
- Encoder Option** 0 = No encoder installed
- Factory Assigned Option** leave blank



| Magnet Type | | | |
|------------------------------------|------------|-----|-------------|
| Leave blank for rare earth magnets | | | |
| Frame Size | | | |
| 75 | 7.5" Motor | | |
| Stack Length | | | |
| 30 | 3.0" Stack | 90 | 9.0" Stack |
| 60 | 6.0" Stack | 120 | 12.0" Stack |

| Back EMF Constant | | | | | | | |
|---------------------------------------------|-----------|------------|-----------|------------|-----------|-------------|-----------|
| 3.0" Stack | | 6.0" Stack | | 9.0" Stack | | 12.0" Stack | |
| 80 | 80V/Krpm | 80 | 80V/Krpm | 80 | 80V/Krpm | 108 | 108V/Krpm |
| 162 | 162V/Krpm | 162 | 162V/Krpm | 162 | 162V/Krpm | 162 | 162V/Krpm |
| | | | | | | 248 | 248V/Krpm |
| For custom Back EMF, Please Contact Glentek | | | | | | | |

| Dimensions | | | | |
|------------|---------|--|---|--------|
| E | English | | M | Metric |

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

| Commutation Device | | | | | |
|--------------------|---------------------|--|---|---------------------------------|--|
| 0 | Brushless Resolver | | 2 | Encoder with commutation tracks | |
| 1 | Hall Effect Sensors | | 3 | Special | |
| | | | 4 | Absolute Encoder | |
| | | | 5 | Sin/Cos Encoder | |

| Number of Motor Poles | |
|-----------------------|--------|
| 2 | 6 pole |

| Flange Type | | | | |
|-------------|----------|--|---|---------|
| 0 | Standard | | 1 | Special |

| Shaft Type | | | | |
|------------|----------|--|---|---------|
| 0 | Standard | | 1 | Special |

| Lead Termination | | | | | | |
|------------------|-------------------------------|--|--|---|----------------------------------------------|--|
| 0 | One MS Connector | | | 3 | Special | |
| 1 | Two MS Connectors | | | 4 | Liquid tight strain relief with flying leads | |
| 2 | NPT(s) only with flying leads | | | 5 | Euro-style connectors | |

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

| Encoder Option | | | | | | | | |
|----------------|----------------------|--|---|-----------|--|---|----------|--|
| 0 | No encoder installed | | 4 | 1250 PPR | | 8 | 8192 PPR | |
| 1 | 500PPR | | 5 | 2000 PPR | | 9 | 5000 PPR | |
| 2 | 1000PPR | | 6 | 2500 PPR | | A | 512 PPR | |
| 3 | 1024PPR | | 7 | Special | | B | 2048 PPR | |
| | | | C | 4096 PPR | | | | |
| | | | D | 3600 PPR | | | | |
| | | | E | 18000 PPR | | | | |

Factory Assigned Option

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