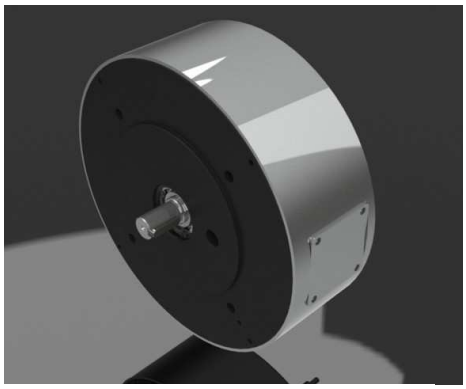
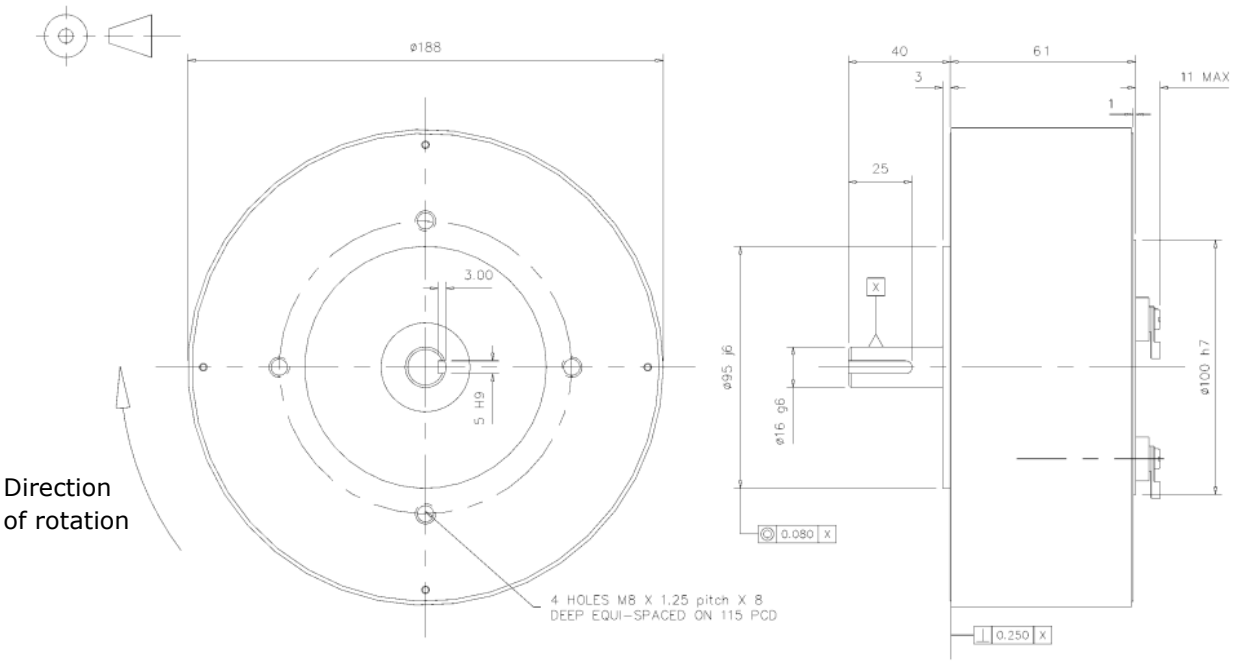
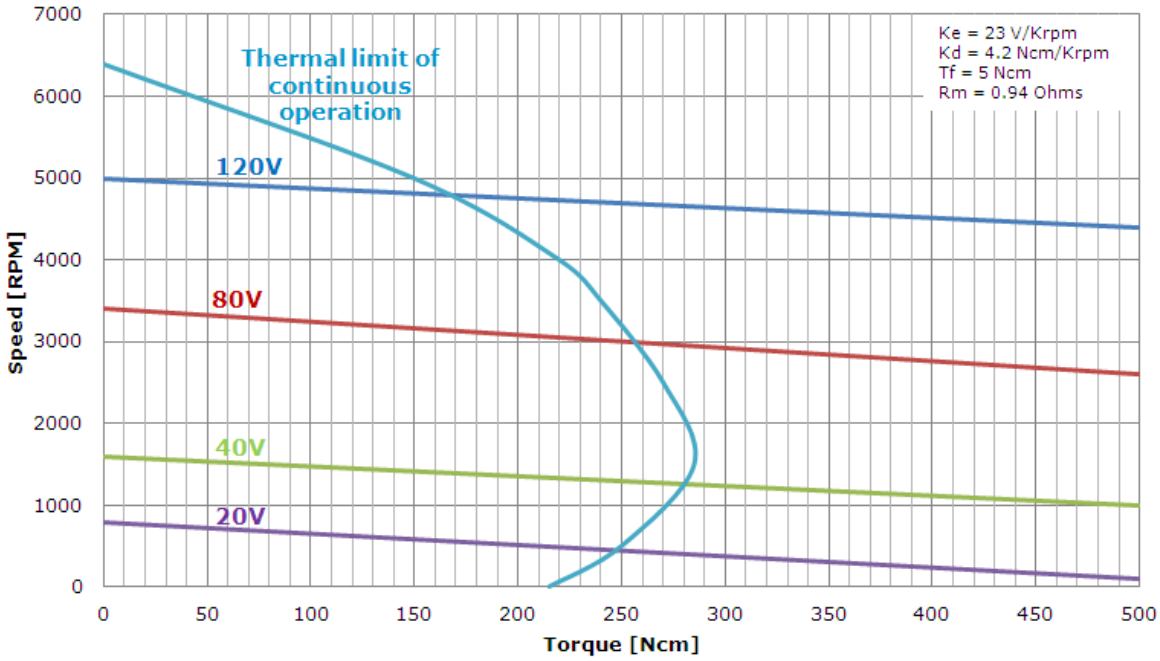
GM16

Printed Motor Works

The Printed Motor Works GM16 is a precision DC servo motor with high power magnets. The motors are fitted with thermally stable AlNiCo magnets and can be tuned using the charge coils for optimum performance to customer's applications. The GM range is the original pancake motor type and has been successfully used in a variety of applications for decades.







NOTE: The above voltages are examples, not a predefined maximum or minimum.
Due to ongoing product improvements data is subject to change without notice.

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Applications: Servo mechanisms, motion control, industrial robots, CNC machining, printing machinery, logistics solutions, medical mobility, medical scanners, flight simulators, marine autopilots and high ambient temperature ventilation.

Markets: Industrial automation, automotive, medical, life sciences, aerospace, printing, logistics, instrumentation, test and measurement, oil & gas and offshore marine.

Design Modifications

- Encoders
- Timing pulleys
- Long leads
- Tri-rated cable
- US mounting customisation
- Customised shafts
- EMC suppression
- Connectors
- Rated for operation in 150°C ambient

Performance Specifications	**Symbol**	**Units**	**GM16**
Peak Torque	Tp	N-cm (oz-in)	2105 (2981)
Rated Speed	N	RPM	3000
Rated Continuous Torque @ 25°C	T_{25}	N-cm (oz-in)	280 (396.5)
Rated Power Output	P	Watts	704
Maximum Recommended Speed	Nmax	RPM	6000
Continuous Stall Torque	Ts	N-cm (oz-in)	194 (280)
Cogging Torque	Tc	N-cm (oz-in)	0 (0)
Electrical Specifications			
Rated Terminal Voltage	E	Volts	80
Rated Continuous Current	I	Amps	11.0
Peak Current	Ip	Amps	95
Continuous Stall Current	Is	Amps	8.0
Winding Specifications			
Terminal Resistance ± 10%	Rm	Ohms	0.94
Armature Resistance ± 10%	Ra	Ohms	0.74
Back EMF Constant ± 5%	Ke	V/kRPM	23.0
Torque Constant ± 5%	Kt	N-cm/Amp (oz-in/Amp)	22.0 (31.15)
Viscous Damping Constant	Kd	N-cm/KRPM (oz-in/KRPM)	4.2 (5.95)
Armature Inductance	L	µH	<100
Temperature Coefficient of KE	C	%/°C Rise	-0.02
Number of Commutation Bars	Z		165
Mechanical Specifications			
Moment of Inertia	Jm	Kg-cm² (oz-in-sec²)	5.93 (0.084)
Average Friction Torque	Tf	N-cm (oz-in)	5.0 (7.08)
Weight	W	kg (Ibs)	8.4 (18.5)
Diameter	D	mm (In)	188 (7.402)
Length	LG	mm (In)	61 (2.402)
Permitted Radial Load		Kg (Ibs)	38.56 (85)
Permitted Axial Load		Kg (Ibs)	34.02 (75)
Figure of Merit			
Mechanical Time Constant	Tm	ms	8.81
Electrical Time Constant	Te	ms	<0.14
Thermal Specifications			
Thermal Resistance at Rated Speed	RAAR	°C/Watt	0.65
Thermal Resistance at Stall	RAAS	°C/Watt	1.25
Forced Air Thermal Resistance With 2.0Ibs/min Forced Air	RAA3	°C/Watt	0.18

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