

# Datasheet

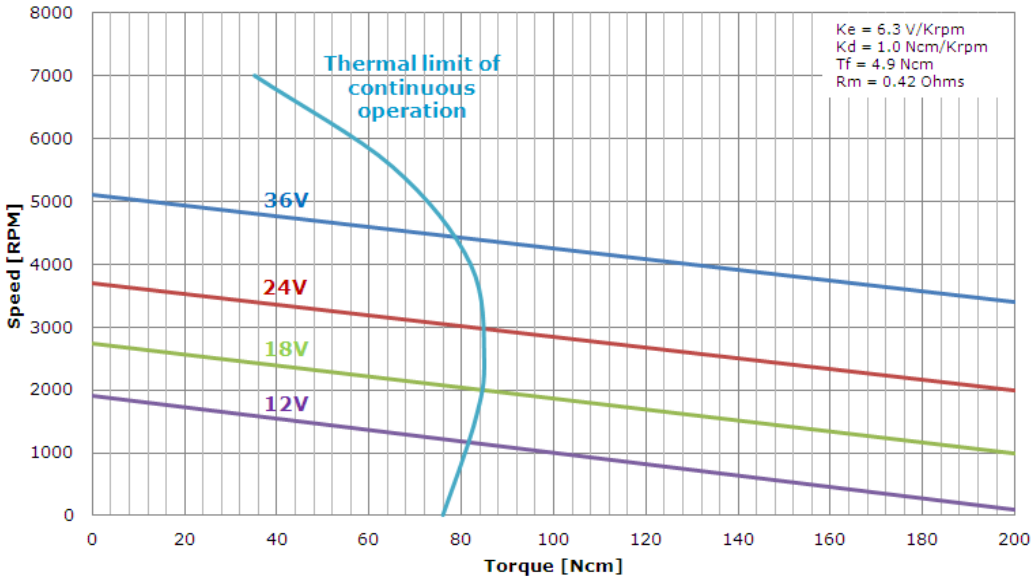
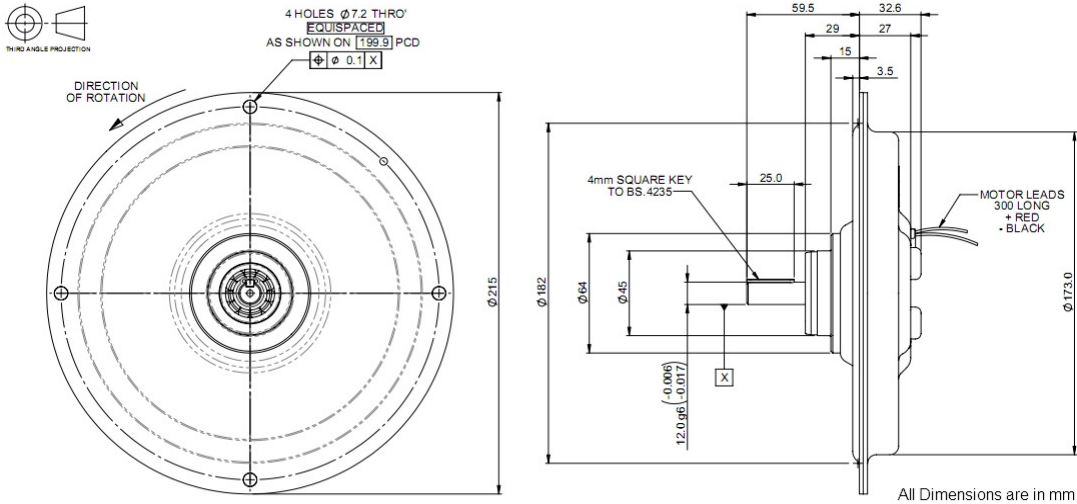
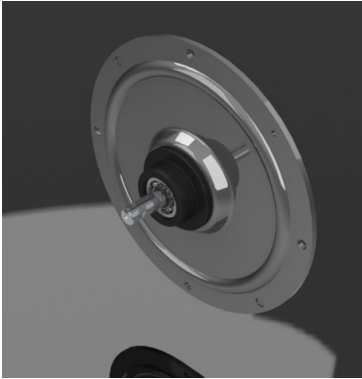
## GPM16LR

RS Pt No: 225 9591

The Printed Motor Works GPM16LR is a totally enclosed dc motor in an ultra slim pancake profile. This pancake motor can provide a cost effective servo capability either direct drive or combined with a timing pulley/gearbox.

### Features & Benefits

- Ultra slim profile
- Minimum torque ripple
- Very low inertia
- High peak torques
- Zero cogging
- Ultra slow/creep capability
- Low inductance
- EMC compatible



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



**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
- Open/kit option
- Customised shafts
- EMC suppression
- Connectors
- Rated for operation in 150°C ambient
- Mounting customisation

Performance Specifications	Symbol	Units	GPM16LR
Peak Torque	Tp	N-cm (oz-in)	730 (1034)
Rated Speed	N	RPM	3000
Rated Continuous Torque @ 25°C	T <sub>25</sub>	N-cm (oz-in)	84 (119)
Rated Power Output	P	Watts	221
Maximum Recommended Speed	Nmax	RPM	6000
Continuous Stall Torque	Ts	N-cm (oz-in)	43.1 (61.03)
Cogging Torque	Tc	N-cm (oz-in)	0 (0)
<b>Electrical Specifications</b>			
Rated Terminal Voltage	E	Volts	24
Rated Continuous Current	I	Amps	13.4
Peak Current	Ip	Amps	122.5
Continuous Stall Current	Is	Amps	8.0
<b>Winding Specifications</b>			
Terminal Resistance ± 10%	Rm	Ohms	0.425
Armature Resistance ± 10%	Ra	Ohms	0.37
Back EMF Constant ± 5%	Ke	V/kRPM	6.3
Torque Constant ± 5%	Kt	N-cm/Amp (oz-in/Amp)	6 (8.5)
Viscous Damping Constant	Kd	N-cm/KRPM (oz-in/KRPM)	1 (1.42)
Armature Inductance	L	µH	<0.03
Temperature Coefficient of KE	C	%/°C Rise	-0.19
Number of Commutation Bars	Z		165
<b>Mechanical Specifications</b>			
Moment of Inertia	Jm	Kg-cm <sup>2</sup> (oz-in-sec <sup>2</sup> )	6.284 (0.089)
Average Friction Torque	Tf	N-cm (oz-in)	4.9 (6.939)
Weight	W	kg (Ibs)	2.9 (6.393)
Diameter	D	mm (In)	215 (8.465)
Length	LG	mm (In)	32.6 (1.283)
Permitted Radial Load		Kg (Ibs)	6 (13.23)
Permitted Axial Load		Kg (Ibs)	6 (13.23)
<b>Figure of Merit</b>			
Mechanical Time Constant	Tm	ms	73.8
Electrical Time Constant	Te	ms	<0.24
<b>Thermal Specifications</b>			
Thermal Resistance at Rated Speed	RAAR	°C/Watt	1.25
Thermal Resistance at Stall	RAAS	°C/Watt	1.9