

**3-Phase BLDC (PMSM) Motor**

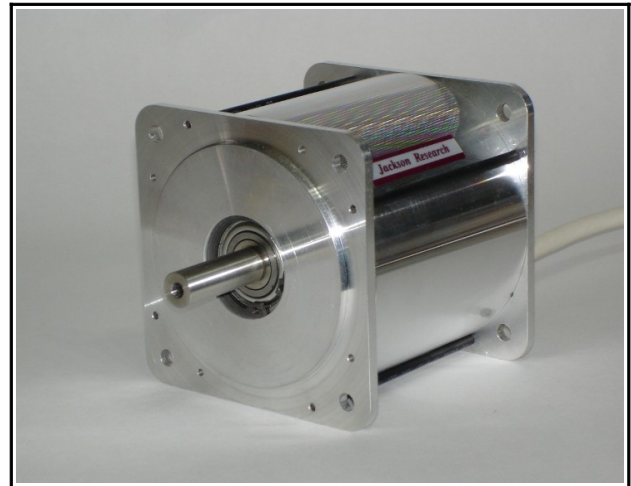
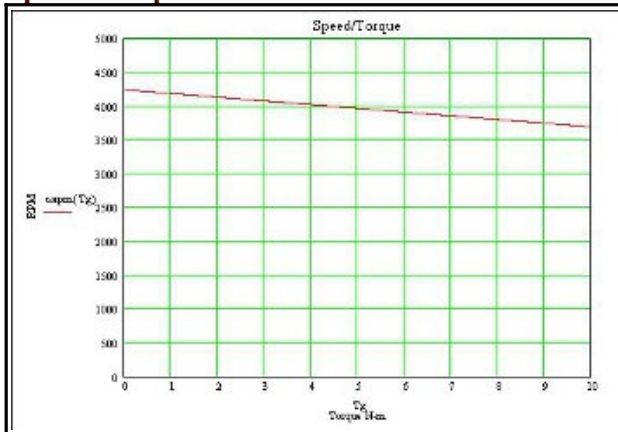
**Features**

- Electronically Commutated
- Slotless Motor
- Permanent Magnet
- 1HP @ 48V, 15A
- Sine Wave BackEMF
- Continuous Stall Torque
- Zero Cogging
- Zero Detente Torque
- Optional Winding Configurations

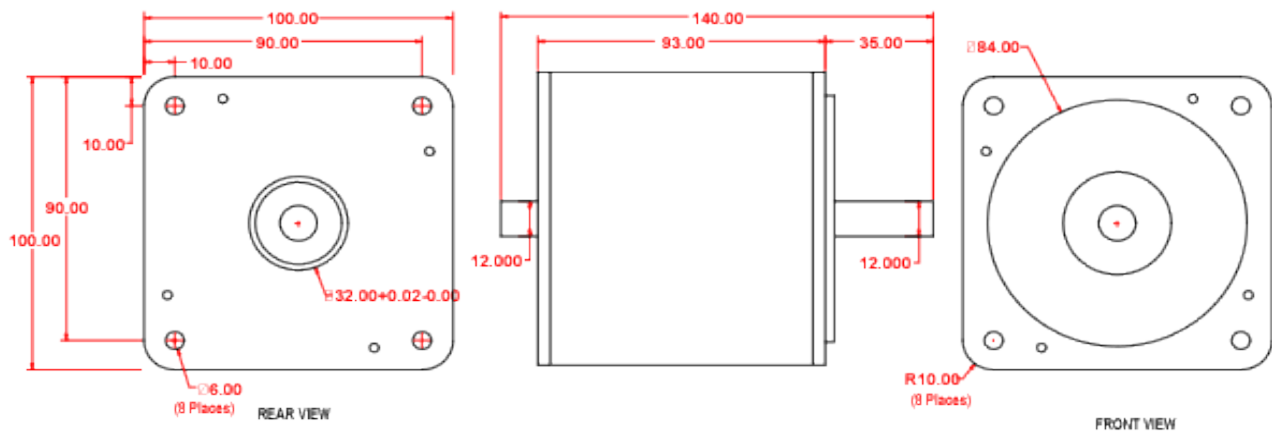
**Description**

This machine is a BLDC (PMSM) permanent magnet motor with pure sine wave backEMF. The slotless construction exhibits continuous stall torque with zero cogging and zero detente torque. The standard winding topology is a 3-Phase Y. Optional windings provide a broad range of input voltages and speed/torque variations. An encoder mounting is provided at the rear of the machine.

**Speed/Torque Curve**



**Outline Drawing**



## Operational Characteristics

PARAMETER	SYMBOL	VALUE	UNITS
Power	Watts	750	Watts
Speed at Rated Power	N Rated	4000	RPM
Continuous Torque	Tc	5.5	N-m
Stall Torque	Tp	77	N-m
Continuous Line Current	Ic	15	Adc
Torque Sensitivity (DC Amps)	Kt	0.229	N-m/Adc
Back EMF (line-to-line)	Ke	8.0	VRMS/KRPM
Motor Constant	Km	0.20	N-m/ $\sqrt{\text{Watt}}$
DC Resistance (line-to-neutral)	Rm	0.11	Ohms
Inductance (line-to-neutral)	Lm	110	$\mu\text{H}$
Rotor Inertia	Jm	$2.39 \times 10^{-4}$	$\text{kg-m}^2$
Weight	Wt	2.95	kg
Static Friction	Tf	0.04	N-m
Thermal Time Constant	tc	53.45	$^{\circ}\text{C/minutes}$
Thermal Resistance @ Stall	Rth	TBD	$^{\circ}\text{C/Watt}$
Number of Poles		4	

Power Cable	
Wire Color Code	Function
Red	A
White	B
Black	C
Green	Fault Gnd

## Jackson Research

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