



# 6312S001-R1

Lo-Cog® DC Motor

Assembly Data	Symbol	Units	Value	
Reference Voltage	E	V	12	
No-Load Speed	S <sub>NL</sub>	rpm (rad/s)	8,260	(865)
Continuous Torque (Max.) <sup>1</sup>	T <sub>C</sub>	oz-in (N-m)	0.8	(5.7E-03)
Peak Torque (Stall) <sup>2</sup>	T <sub>PK</sub>	oz-in (N-m)	2.7	(1.9E-02)
Weight	W <sub>M</sub>	oz (g)	1.5	(43)
Motor Data				
Torque Constant	K <sub>T</sub>	oz-in/A (N-m/A)	1.85	(1.31E-02)
Back-EMF Constant	K <sub>E</sub>	V/krpm (V/rad/s)	1.37	(1.31E-02)
Resistance	R <sub>T</sub>	Ω	7.75	
Inductance	L	mH	4.05	
No-Load Current	I <sub>NL</sub>	A	0.09	
Peak Current (Stall) <sup>2</sup>	I <sub>P</sub>	A	1.55	
Motor Constant	K <sub>M</sub>	oz-in/√W (N-m/√W)	0.66	(4.7E-03)
Friction Torque	T <sub>F</sub>	oz-in (N-m)	0.13	(9.2E-04)
Rotor Inertia	J <sub>M</sub>	oz-in-s <sup>2</sup> (kg-m <sup>2</sup> )	7.30E-05	(5.2E-07)
Electrical Time Constant	τ <sub>E</sub>	ms	0.52	
Mechanical Time Constant	τ <sub>M</sub>	ms	23.4	
Viscous Damping	D	oz-in/krpm (N-m-s)	0.0072	(4.9E-07)
Damping Constant	K <sub>D</sub>	oz-in/krpm (N-m-s)	0.33	(2.2E-05)
Maximum Winding Temperature	θ <sub>MAX</sub>	°F (°C)	266	(130)
Thermal Impedance	R <sub>TH</sub>	°F/watt (°C/watt)	93.2	(34.0)
Thermal Time Constant	τ <sub>TH</sub>	min	9.9	
Gearbox Data				
Encoder Data				

**Included Features**

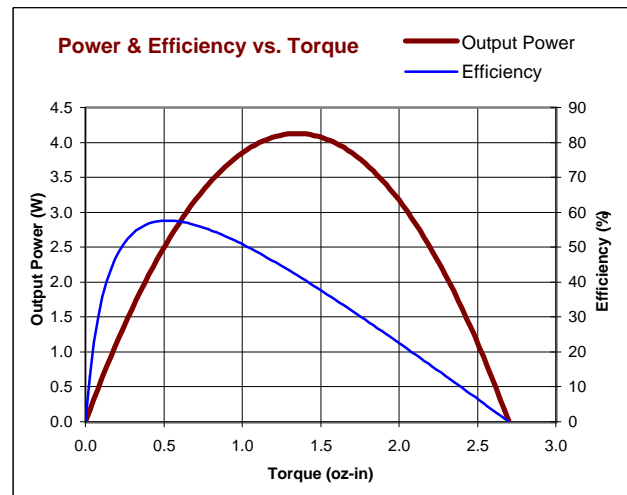
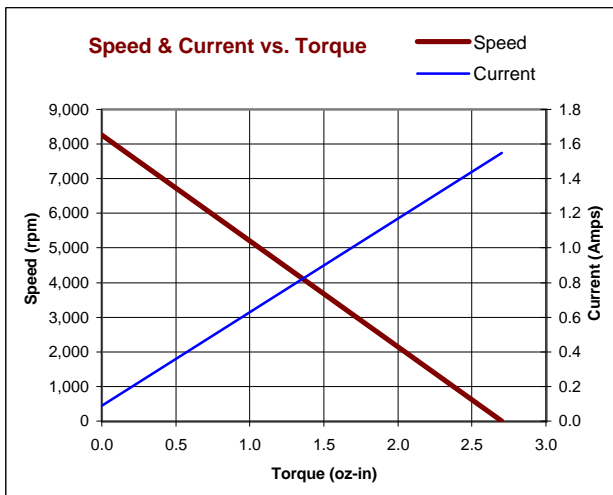
- 2-Pole Stator
- Neodymium Magnets
- Heavy-Gauge Steel Housing
- 5-Slot Armature
- Silicon Steel Laminations
- Stainless Steel Shaft
- Copper-Graphite Brushes
- Diamond Turned Commutator
- Motor Sleeve Bearings

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**Customization Options**

- Alternate Winding
- Sleeve or Ball Bearings
- Modified Output Shaft
- Custom Cable Assembly
- Special Brushes
- EMI/RFI Suppression
- Spur or Planetary Gearbox
- Special Lubricant
- Optional Encoder

1 - Specified at max. winding temperature at 25°C ambient without heat sink. 2 - Theoretical values supplied for reference only.

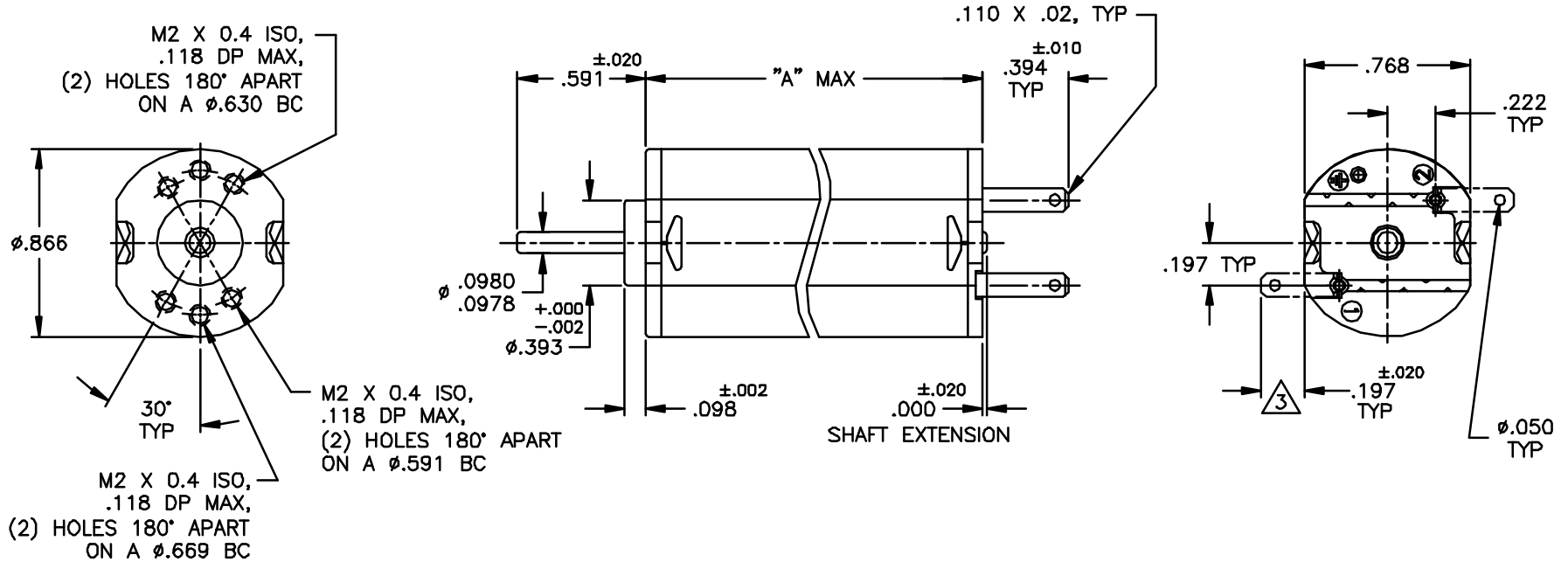


All values are nominal. Specifications subject to change without notice. Graphs are shown for reference only.

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REVISIONS				
LTR	DESCRIPTION	DRFT/ENGR	DATE	APPR
A	PRODUCTION RELEASE	CLU/CLU	8-25-99	JVM
B	MTG END EXT WAS .394±.030	CLU/CLU	10-20-99	JH
C	REMOVED "OPTIONAL" TAP CALLOUTS	CLU/CLU	12-9-99	JH
D	.015 MAX. ENDPLAY WAS .020	EWS/DLF	6-2-00	KPW
E	ADDED NOTE 4	EWS/EWS	10-6-00	KPW
F	REVISED BRUSH END VIEW	EWS/EWS		



NOTES:

- SHAFT ROTATION IS CW, WHILE VIEWING MOUNTING END WITH POSITIVE (+) VOLTAGE APPLIED TO #1 TERMINAL.
- SHAFT ENDPLAY: .015 MAX, SLEEVE BEARINGS ARE STANDARD, BALL BEARINGS OPTIONAL.
- OPTIONAL CONFIGURATION.
- ALL 22M MOTORS SHALL BE RECIEVE A STANDARD RUN-IN @ 75% OF THE RATED WINDING VOLTAGE, APPLIED FOR 4 HOURS MINIMUM, REVERSING DIRECTION EVERY ONE MINUTE, WITH RAMP-DOWN & RAMP-UP.

1.556	63X3
1.256	63X2
DIM "A"	MODEL No.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTION DECIMAL ANGLES ±1/64 ±.015 ±15 ±1/32 ±.010 ±15 ±1/16 ±.005	FILE:	150\624					
	DRAFTED BY:	CLU		DATE:	8-23-99		
BREAK ALL SHARP EDGES	ENGINEERED BY:	CLU	8-23-99	TITLE:	STANDARD OUTLINE & MOUNTING DIMENSIONS 63XX, 22mm SERIES		
MATERIAL:	APPROVED BY:	JVM	8-25-99	DWG. NO.	150-624	REV.	F
FINISH:	NEXT ASSY:			SCALE:	(2x)	SHEET	1 OF 1