

# 9237S011

Lo-Cog® DC Servo Motor



Assembly Data	Symbol	Units	Value	
Reference Voltage	E	V	24	
No-Load Speed	S <sub>NL</sub>	rpm (rad/s)	5,331	(558)
Continuous Torque (Max.) <sup>1</sup>	T <sub>C</sub>	oz-in (N-m)	11.5	(8.1E-02)
Peak Torque (Stall) <sup>2</sup>	T <sub>PK</sub>	oz-in (N-m)	77	(5.4E-01)
Weight	W <sub>M</sub>	oz (g)	19	(524)
Motor Data				
Torque Constant	K <sub>T</sub>	oz-in/A (N-m/A)	6.00	(4.24E-02)
Back-EMF Constant	K <sub>E</sub>	V/krpm (V/rad/s)	4.44	(4.24E-02)
Resistance	R <sub>T</sub>	Ω	1.85	
Inductance	L	mH	1.97	
No-Load Current	I <sub>NL</sub>	A	0.18	
Peak Current (Stall) <sup>2</sup>	I <sub>P</sub>	A	13.0	
Motor Constant	K <sub>M</sub>	oz-in/√W (N-m/√W)	4.41	(3.11E-02)
Friction Torque	T <sub>F</sub>	oz-in (N-m)	0.80	(5.6E-03)
Rotor Inertia	J <sub>M</sub>	oz-in-s <sup>2</sup> (kg-m <sup>2</sup> )	1.2E-03	(8.5E-06)
Electrical Time Constant	τ <sub>E</sub>	ms	1.06	
Mechanical Time Constant	τ <sub>M</sub>	ms	8.9	
Viscous Damping	D	oz-in/krpm (N-m-s)	0.055	(3.7E-06)
Damping Constant	K <sub>D</sub>	oz-in/krpm (N-m-s)	14	(9.7E-04)
Maximum Winding Temperature	θ <sub>MAX</sub>	°F (°C)	311	(155)
Thermal Impedance	R <sub>TH</sub>	°F/watt (°C/watt)	52.2	(11.2)
Thermal Time Constant	τ <sub>TH</sub>	min	13.8	
Gearbox Data				
Encoder Data				
Channels			3	
Resolution		CPR	500	

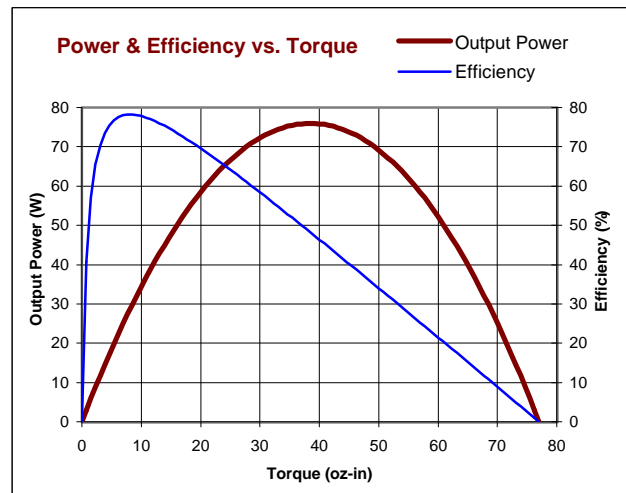
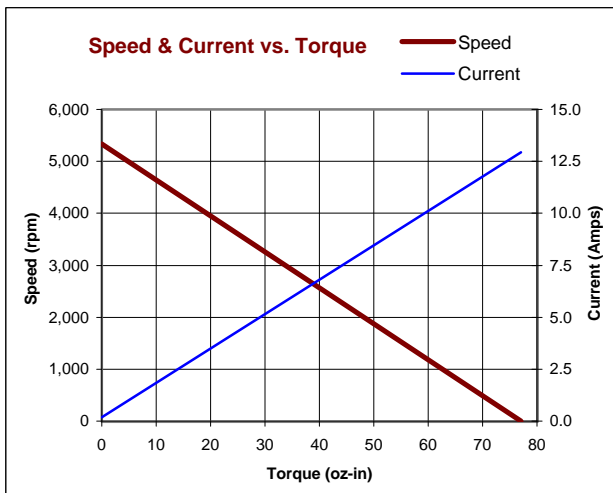
1 - Specified at max. winding temperature at 25°C ambient without heat sink. 2 - Theoretical values supplied for reference only.

## Included Features

- 2-Pole Stator
- Ceramic Magnets
- Heavy-Gauge Steel Housing
- 7-Slot Armature
- Silicon Steel Laminations
- Stainless Steel Shaft
- Copper-Graphite Brushes
- Diamond Turned Commutator
- Motor Ball Bearings

## 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
- Fail-Safe Brake

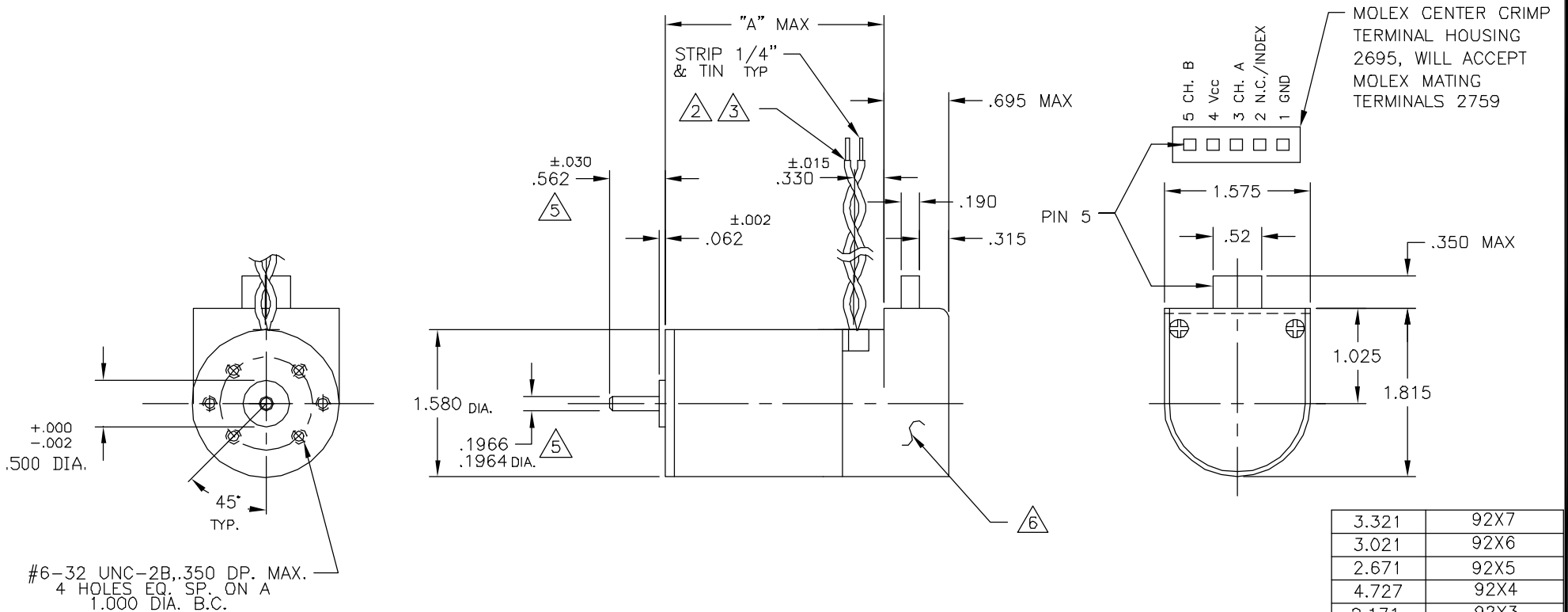


All values are nominal. Specifications subject to change without notice. Graphs are shown for reference only.

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REVISIONS				
LTR	DESCRIPTION	DRFT/ENGR	DATE	APPR
A	PRODUCTION RELEASE	KUH/KUH	8/13/96	JRM
B	1/4" STRIP & TIN WAS "STRIP"	KUH/KUH	5/12/98	JRM
C	ADDED .015 TO "A" MAX DIMS	TMG/TMG		



NOTES:

- SHAFT ROTATION IS CW VIEWING MOUNTING END WITH POSITIVE (+) VOLTAGE APPLIED TO RED LEAD.
- LEADS ARE 22 AWG (7X30) PVC INSULATION, UL STYLE 1569/1007. RED AND BLACK
- STANDARD LEAD LENGTH IS 18" ±1/2"
- MOTORS ARE PRELOADED PER P-107.
- ALL SHAFT DIMENSIONS NOTED ARE STANDARD (13-850-00□); FOR ALL OTHER SHAFT CONFIGURATIONS REFER TO DATA SHEET FOR PART #'S
- ENCLOSED IS A H.P. HEDS 91X0 OPTICAL ENCODER MODULE.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTION DECIMAL ANGLES ±1/64 .X ±.015 ±1° .XX ±.010 .XXX ±.005 BREAK ALL SHARP EDGES	FILE:			
	DRAFTED BY	DATE		
MATERIAL:	BY	KUH	8/12/96	<b>TITLE:</b> OUTLINE AND MTG. DIMS. 92XX SERIES MOTOR-5MM SHAFT WITH 91X0 HP ENCODER MODULE
	ENGINEERED BY	KUH	8/12/96	
FINISH:	APPROVED BY	JR MELA	5/12/98	<b>DWG. NO.</b> B- 150-521
	NEXT ASSY:			
	USED ON:			<b>REV.</b> C
SCALE: NONE			SHEET 1	