

# 8324S005

Lo-Cog® DC Servo Motor



Assembly Data	Symbol	Units	Value	
Reference Voltage	E	V	12	
No-Load Speed	S <sub>NL</sub>	rpm (rad/s)	10,158	(1064)
Continuous Torque (Max.) <sup>1</sup>	T <sub>C</sub>	oz-in (N-m)	2.6	(1.8E-02)
Peak Torque (Stall) <sup>2</sup>	T <sub>PK</sub>	oz-in (N-m)	17	(1.2E-01)
Weight	W <sub>M</sub>	oz (g)	8.8	(250)
Motor Data				
Torque Constant	K <sub>T</sub>	oz-in/A (N-m/A)	1.54	(1.09E-02)
Back-EMF Constant	K <sub>E</sub>	V/krpm (V/rad/s)	1.14	(1.09E-02)
Resistance	R <sub>T</sub>	Ω	1.17	
Inductance	L	mH	0.58	
No-Load Current	I <sub>NL</sub>	A	0.36	
Peak Current (Stall) <sup>2</sup>	I <sub>P</sub>	A	10.3	
Motor Constant	K <sub>M</sub>	oz-in/√W (N-m/√W)	1.49	(1.05E-02)
Friction Torque	T <sub>F</sub>	oz-in (N-m)	0.35	(2.5E-03)
Rotor Inertia	J <sub>M</sub>	oz-in-s <sup>2</sup> (kg-m <sup>2</sup> )	2.3E-04	(1.6E-06)
Electrical Time Constant	τ <sub>E</sub>	ms	0.54	
Mechanical Time Constant	τ <sub>M</sub>	ms	14.7	
Viscous Damping	D	oz-in/krpm (N-m-s)	0.020	(1.4E-06)
Damping Constant	K <sub>D</sub>	oz-in/krpm (N-m-s)	1.6	(1.1E-04)
Maximum Winding Temperature	θ <sub>MAX</sub>	°F (°C)	311	(155)
Thermal Impedance	R <sub>TH</sub>	°F/watt (°C/watt)	70.5	(21.4)
Thermal Time Constant	τ <sub>TH</sub>	min	10.7	
Gearbox Data				
Encoder Data				
Channels			3	
Resolution		CPR	500	

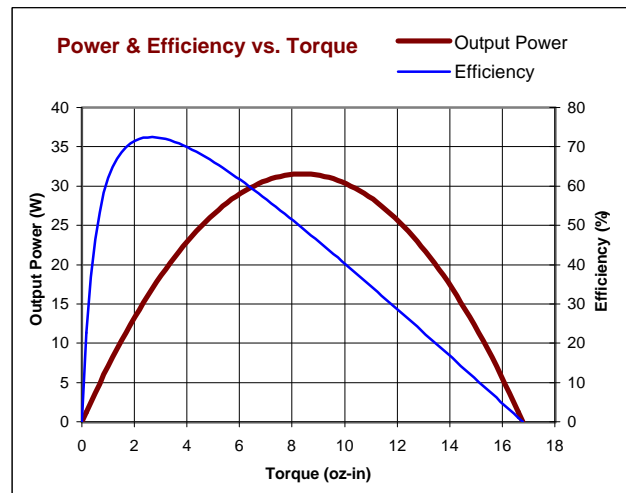
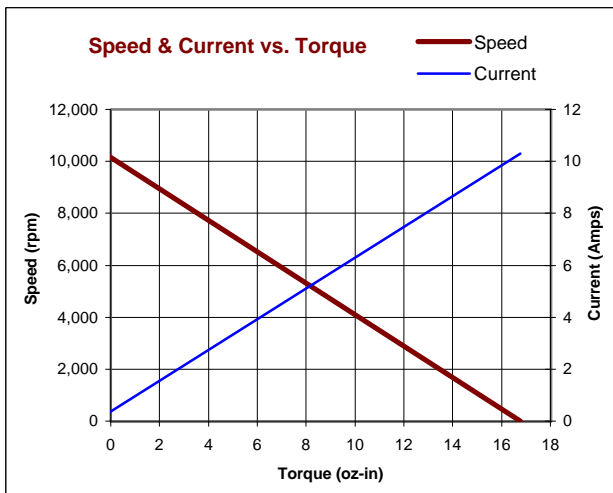
1 - Specified at max. winding temperature at 25°C ambient without heat sink. 2 - Theoretical values supplied for reference only.

## 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

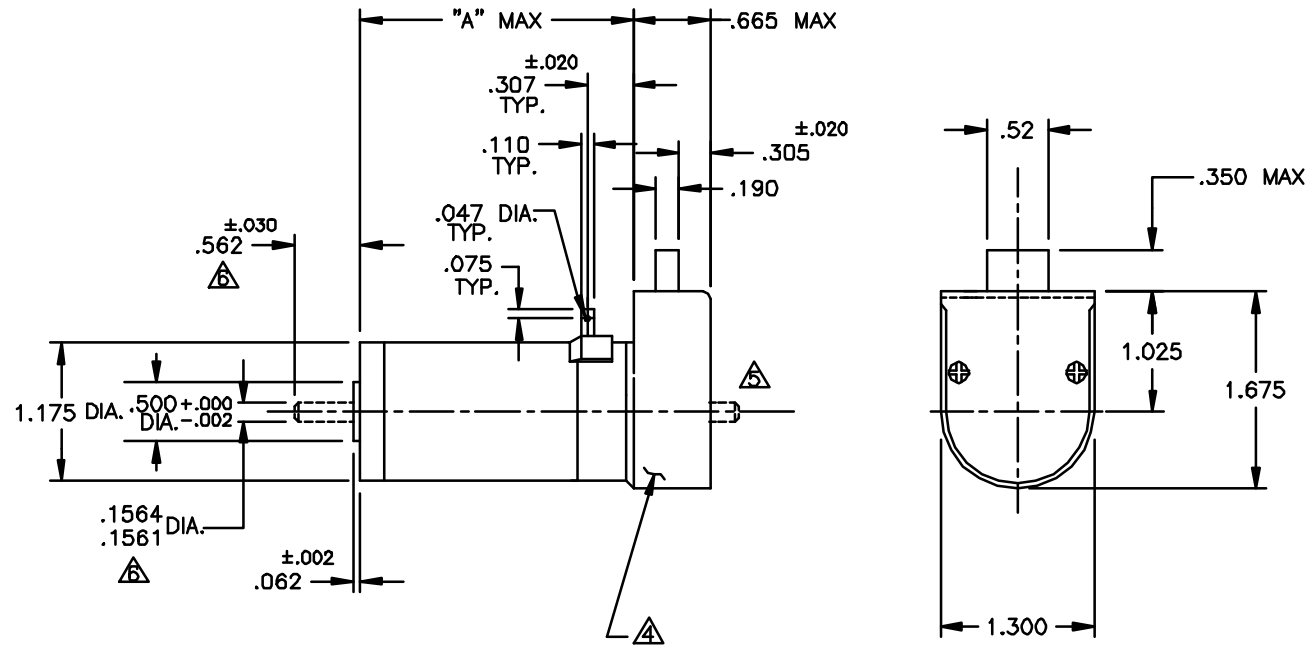
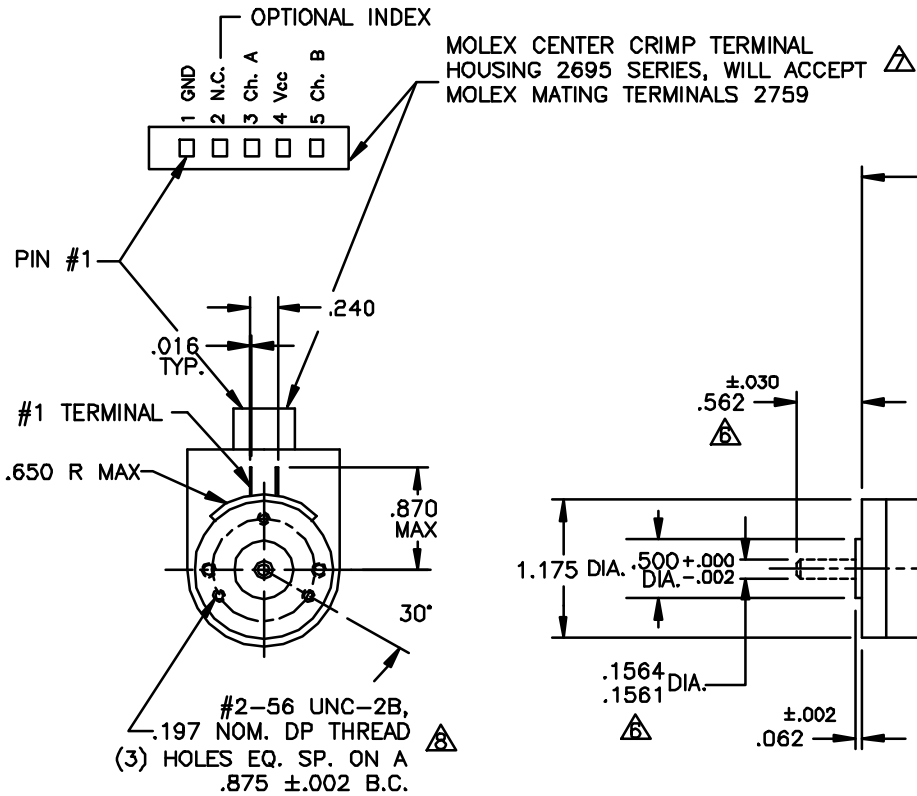


All values are nominal. Specifications subject to change without notice. Graphs are shown for reference only.

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REVISIONS				
LTR	DESCRIPTION	DRFT/ENGR	DATE	APPR
B	REDRAWN & REVISED	RJS/RJS	12/30/96	JRM
C	REVISED NOTE 1	DLF/DLF	1/2/98	JRM
D	DIM. .016 WAS .020	TMG/TMG		



NOTES:

1. SHAFT ROTATION IS CW WHILE VIEWING MOUNTING END, WITH POSITIVE (+) VOLTAGE APPLIED TO #1 TERMINAL.
  2. MOTOR HAS PRELOADED BALL BEARINGS PER P-107.
  3. TERMINALS ARE PLATED FOR SOLDERING AND WILL MATE WITH .110 PUSH-ON RECEPTACLE.
- $\Delta$  ENCLOSED IS A HEDS-91X0 OPTICAL ENCODER.
- $\Delta$  OPTIONAL REAR SHAFT EXTENSIONS ARE AVAILABLE.
- $\Delta$  ALL SHAFT DIMENSIONS NOTED ARE STANDARD, (13-706-00  $\square$ ). FOR ALL OTHER CONFIGURATIONS REFER TO DATA SHEET.
- $\Delta$  OPTIONAL WIRE PACKAGES AVAILABLE, SEE WORK ORDER FOR P/N.
- $\Delta$  OPTIONAL MTG. PATTERN: #4-40 UNC-2B, (3) HOLES LOCATED AS SHOWN ON MTG. END.

83X4	2.323
83X3	2.073
83X2	1.948
MODEL	"A" MAX

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTION DECIMAL ANGLES $\pm$ 1/64 $\pm$ .015 $\pm$ 1° XX $\pm$ .010 XXX $\pm$ .005		FILE: 150\307		
BREAK ALL SHARP EDGES	MATERIAL:	DRAFTED BY: RJS	DATE: 12/20/96	<b>TITLE:</b> OUTLINE AND MOUNTING DIMENSIONS 83XX W/91X0 ENCODER
		ENGINEERED BY: RJS	12/20/96	
		APPROVED BY: JRM	12/30/96	<b>DWG. NO.</b> B- 150-307
		NEXT ASSY:		
		FINISH:	USED ON:	<b>REV.</b> D
			SCALE: NONE	SHEET 1 OF 1