

# 8322S003

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)	7,847 (822)
Continuous Torque (Max.) <sup>1</sup>	T <sub>C</sub>	oz-in (N-m)	1.6 (1.1E-02)
Peak Torque (Stall) <sup>2</sup>	T <sub>PK</sub>	oz-in (N-m)	7.4 (5.2E-02)
Weight	W <sub>M</sub>	oz (g)	7.7 (218)
Motor Data			
Torque Constant	K <sub>T</sub>	oz-in/A (N-m/A)	3.88 (2.74E-02)
Back-EMF Constant	K <sub>E</sub>	V/krpm (V/rad/s)	2.87 (2.74E-02)
Resistance	R <sub>T</sub>	Ω	12.1
Inductance	L	mH	6.27
No-Load Current	I <sub>NL</sub>	A	0.12
Peak Current (Stall) <sup>2</sup>	I <sub>P</sub>	A	1.99
Motor Constant	K <sub>M</sub>	oz-in/√W (N-m/√W)	1.12 (7.91E-03)
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> )	1.4E-04 (9.9E-07)
Electrical Time Constant	τ <sub>E</sub>	ms	0.52
Mechanical Time Constant	τ <sub>M</sub>	ms	15.6
Viscous Damping	D	oz-in/krpm (N-m-s)	0.015 (1.0E-06)
Damping Constant	K <sub>D</sub>	oz-in/krpm (N-m-s)	0.92 (6.2E-05)
Maximum Winding Temperature	θ <sub>MAX</sub>	°F (°C)	311 (155)
Thermal Impedance	R <sub>TH</sub>	°F/watt (°C/watt)	75.9 (24.4)
Thermal Time Constant	τ <sub>TH</sub>	min	7.8
Gearbox Data			
Encoder Data			
Channels			3
Resolution		CPR	500

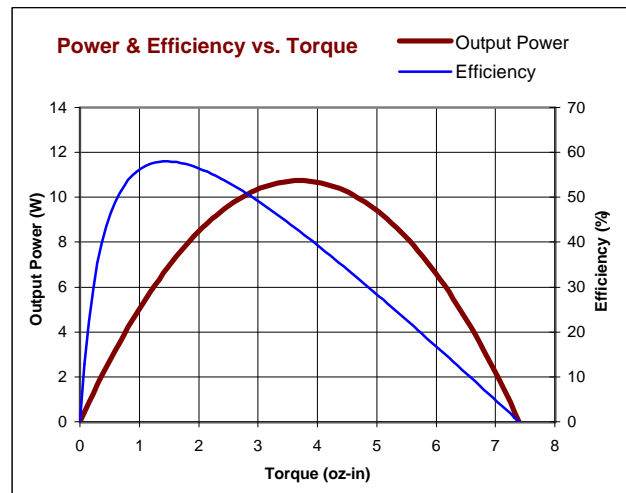
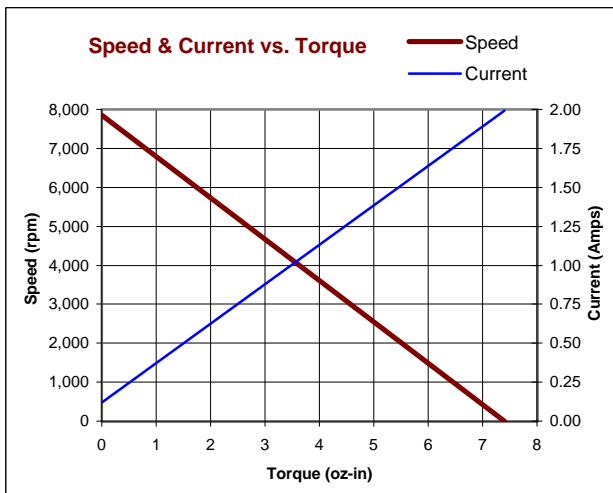
1 - Specified at max. winding temperature at 25°C ambient without heat sink. 2 - Theoretical values supplied for reference only.

### 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

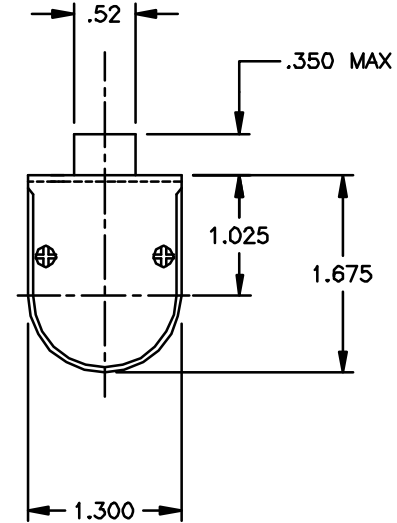
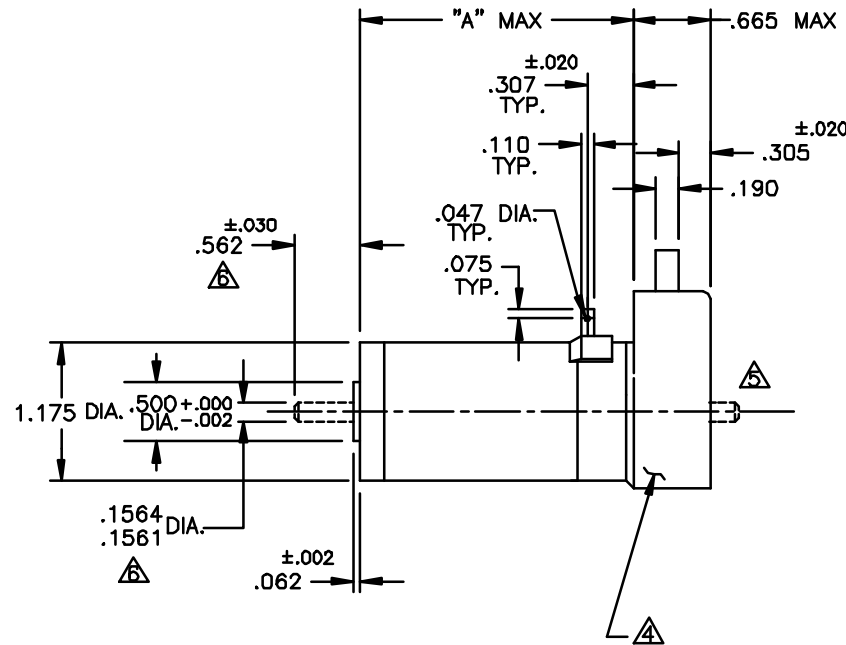
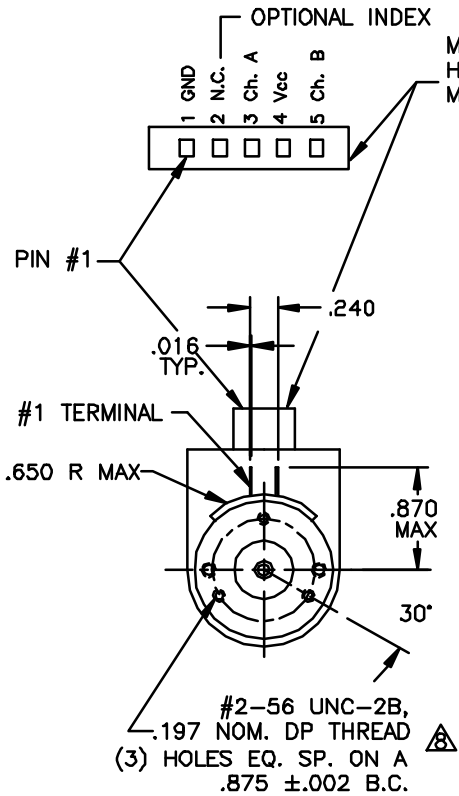


All values are nominal. Specifications subject to change without notice. Graphs are shown for reference only.

© 2001 Pittman.

NOTICE: CONFIDENTIAL PROPRIETARY INFORMATION THIS PRINT CONTAINS IDEAS, INFORMATION, AND INTELLECTUAL PROPERTY WHICH ARE THE EXCLUSIVE PROPERTY OF PITTMAN, DIVISION OF PENN ENGINEERING & MANUFACTURING CORP. RECIPIENT MUST KEEP THE INFORMATION DISCLOSED HEREIN CONFIDENTIAL AND RECIPIENT IS EXPRESSLY PROHIBITED FROM COPYING OR PUBLICATION OF THIS PRINT EXCEPT TO OTHERS IN THEIR ORGANIZATION ON A NEED-TO-KNOW BASIS

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