

# 8224S007

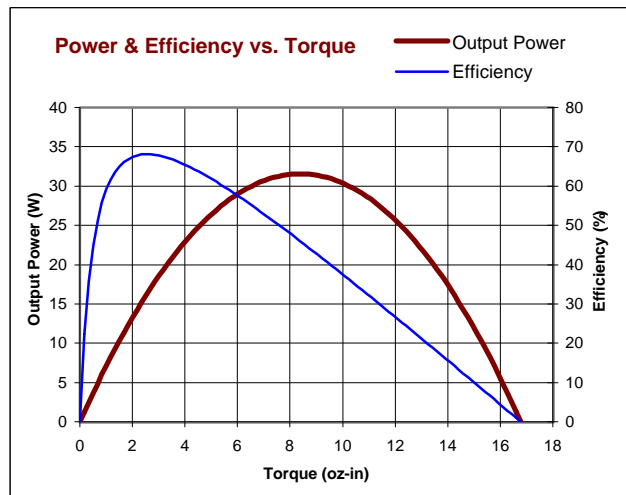
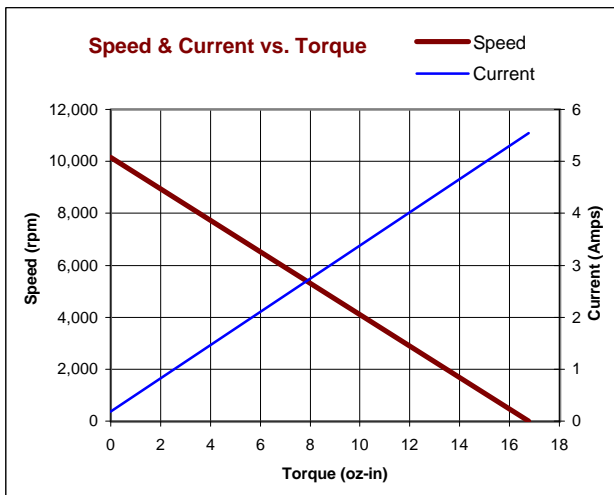
Lo-Cog® DC Servo Motor



Assembly Data	Symbol	Units	Value	
Reference Voltage	E	V	24	
No-Load Speed	S <sub>NL</sub>	rpm (rad/s)	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)	3.09	(2.18E-02)
Back-EMF Constant	K <sub>E</sub>	V/krpm (V/rad/s)	2.29	(2.18E-02)
Resistance	R <sub>T</sub>	Ω	4.33	
Inductance	L	mH	2.34	
No-Load Current	I <sub>NL</sub>	A	0.18	
Peak Current (Stall) <sup>2</sup>	I <sub>P</sub>	A	5.54	
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	

- 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

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.

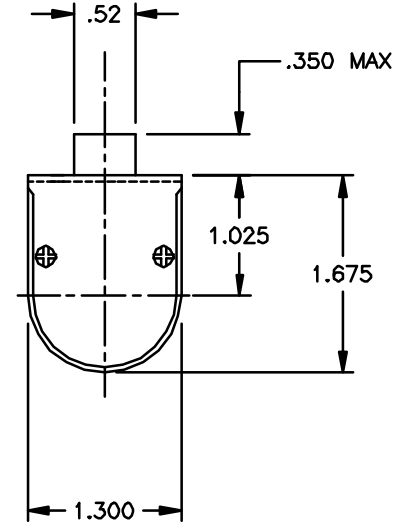
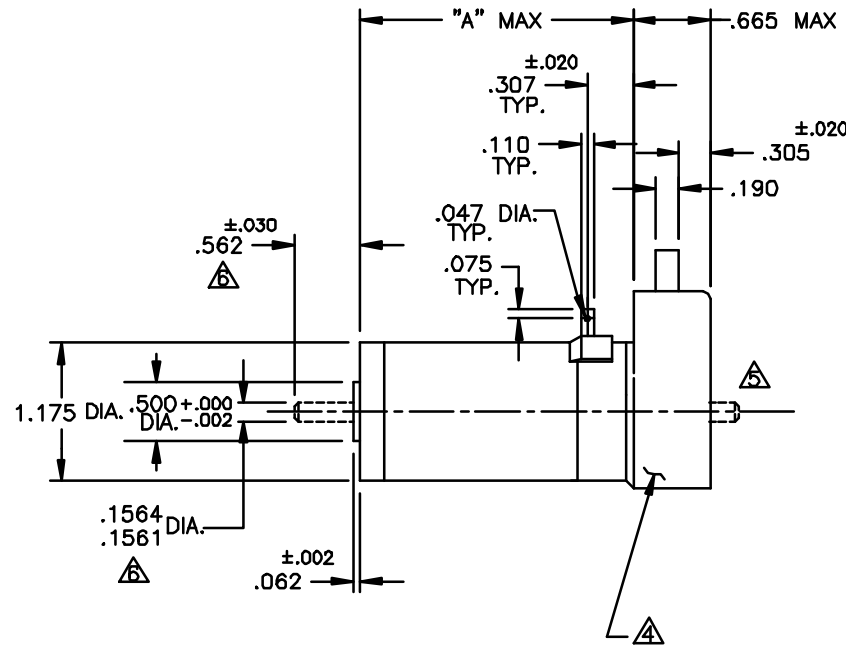
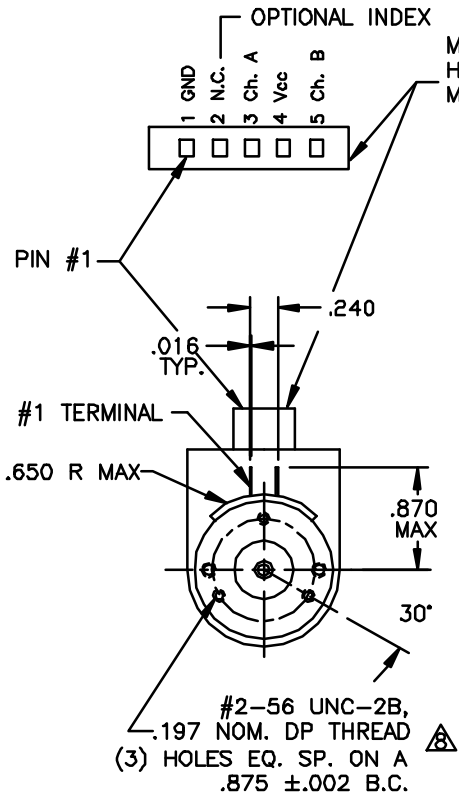
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REVISIONS				
LTR	DESCRIPTION	DRFT/ENGR	DATE	APPR
B	REDRAWN & REVISED	RJS/RJS	12/30/96	JRM
C	REVISED NOTE 1	DLF/DLF	1/2/98	JRM
D	DIM. .016 WAS .020	TMG/TMG		

\*Actual motor will ship with 18 inch leads and not terminals as shown below



- 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.
- △ ENCLOSED IS A HEDS-91X0 OPTICAL ENCODER.
  - △ OPTIONAL REAR SHAFT EXTENSIONS ARE AVAILABLE.
  - △ ALL SHAFT DIMENSIONS NOTED ARE STANDARD, (13-706-00). FOR ALL OTHER CONFIGURATIONS REFER TO DATA SHEET.
  - △ OPTIONAL WIRE PACKAGES AVAILABLE, SEE WORK ORDER FOR P/N.
  - △ 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 ±1/64 .015 ±1° ±.010 ±1° ±.005 ±1°		FILE: 150\307		
DRAFTED BY: RJS DATE: 12/20/96		DATE: 12/20/96		
ENGINEERED BY: RJS		DATE: 12/20/96	<b>TITLE:</b> OUTLINE AND MOUNTING DIMENSIONS 83XX W/91X0 ENCODER	
APPROVED BY: JRM		DATE: 12/30/96		
MATERIAL:		NEXT ASSY:	<b>DWG. NO.</b> B- 150-307	
FINISH:		USED ON:		
			<b>SCALE:</b> NONE <b>SHEET</b> 1 OF 1	