



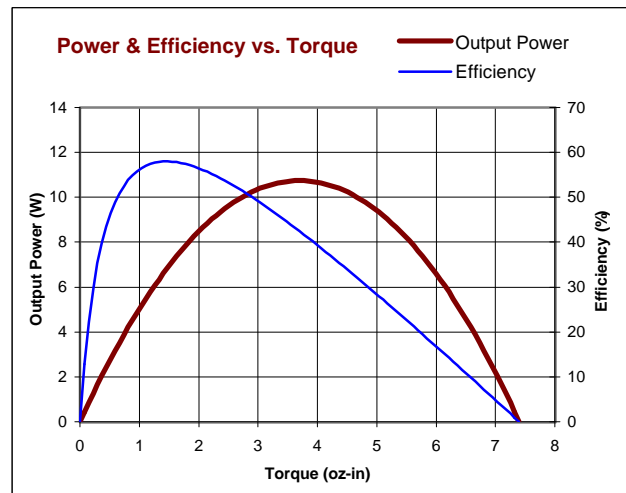
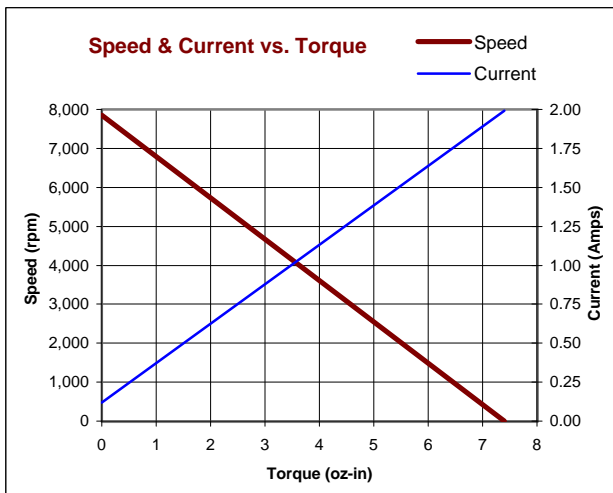
# 8222S002

Lo-Cog® DC 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)	4.7	(133)
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				

- 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.

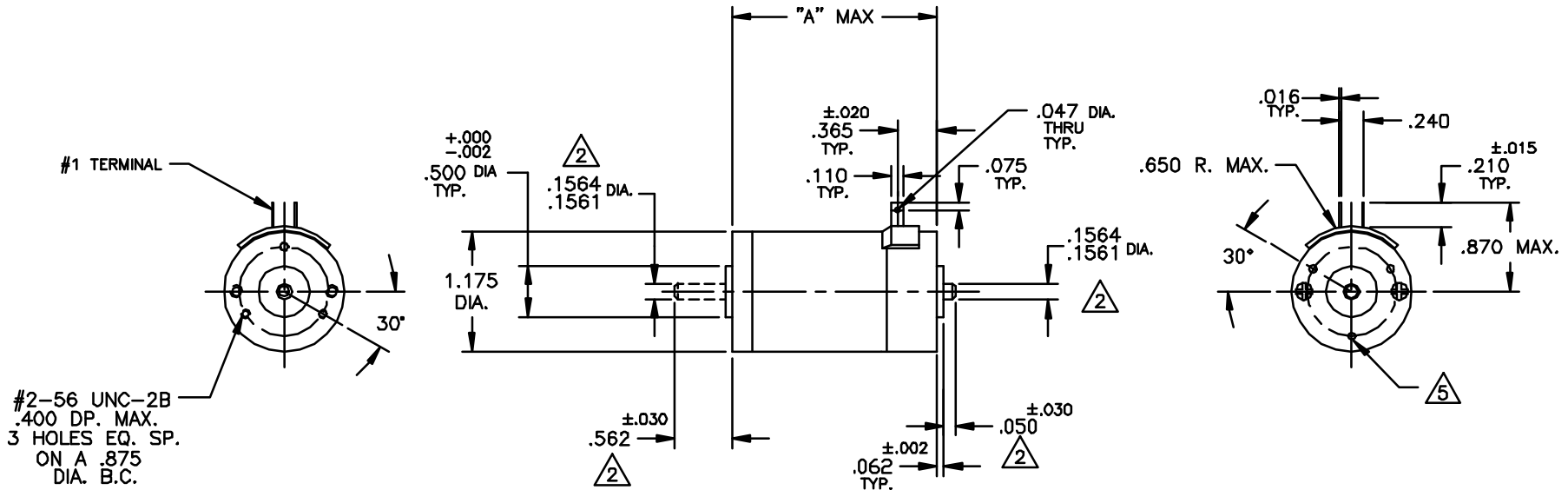
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REVISIONS				
LTR	DESCRIPTION	DRFT/ENGR	DATE	APPR
F	REDRAWN, UPDATED TO CURRENT STDS.	KUH/KUH	12/6/95	JRM
G	CHANGED 2.328 TO 2.378	TN/TN	5/24/00	JRM
H	REMOVED "TIN" FROM NOTE 4	EWS/EWS	1/21/00	JRM
J	DIM .016 WAS .020	TMG/TMG		

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



#1 TERMINAL  
#2-56 UNC-2B  
.400 DP. MAX.  
3 HOLES EQ. SP.  
ON A .875  
DIA. B.C.

2.378	83X4
2.128	83X3
2.003	83X2
"A" MAX	MODEL NO.

**NOTES:**

- SHAFT ROTATION IS CW, WHILE VIEWING THE MOUNTING END WITH POSITIVE VOLTAGE (+) APPLIED TO THE #1 TERMINAL.
- ALL SHAFT DIMENSIONS NOTED ARE STANDARD (10-754-00). FOR ALL OTHER SHAFT CONFIGURATIONS, REFER TO DATA SHEET FOR PART NUMBERS.
- BALL BEARINGS: PRELOAD PER P-107; SLEEVE BEARINGS; .015 MAX ENDPLAY.
- TERMINALS ARE PLATED FOR SOLDERING.
- OPTIONAL REAR MOUNTING PATTERN-#2-56 UNC-2B, .250 DP. MAX, 3 HOLES EQ. SP. ON A .875 DIA B.C.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		FILE: 150\26		
TOLERANCES ARE:		DRAFTED BY KUH DATE 1DEC95		
FRACTION ±1/64	DECIMAL .XX ±.018 .XX ±.010 XXX ±.008	ENGINEERED BY KUH 1DEC95	TITLE: OUTLINE & MOUNTING DIMENSIONS 83XX SERIES MOTORS	
BREAK ALL SHARP EDGES		APPROVED BY JRM 12/6/95	DWG. NO. 150-26	
MATERIAL:		NEXT ASSY:	REV. J	
FINISH:		USED ON:	SCALE: NONE SHEET 1 OF 1	