



# 14201S003

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)	4,230	(443)
Continuous Torque (Max.) <sup>1</sup>	T <sub>C</sub>	oz-in (N-m)	10	(7.1E-02)
Peak Torque (Stall) <sup>2</sup>	T <sub>PK</sub>	oz-in (N-m)	63	(4.4E-01)
Weight	W <sub>M</sub>	oz (g)	24	(675)
Motor Data				
Torque Constant	K <sub>T</sub>	oz-in/A (N-m/A)	7.44	(5.25E-02)
Back-EMF Constant	K <sub>E</sub>	V/krpm (V/rad/s)	5.50	(5.25E-02)
Resistance	R <sub>T</sub>	Ω	2.79	
Inductance	L	mH	2.54	
No-Load Current	I <sub>NL</sub>	A	0.26	
Peak Current (Stall) <sup>2</sup>	I <sub>P</sub>	A	8.6	
Motor Constant	K <sub>M</sub>	oz-in/√W (N-m/√W)	4.45	(3.14E-02)
Friction Torque	T <sub>F</sub>	oz-in (N-m)	1.2	(8.5E-03)
Rotor Inertia	J <sub>M</sub>	oz-in-s <sup>2</sup> (kg-m <sup>2</sup> )	1.6E-03	(1.1E-05)
Electrical Time Constant	τ <sub>E</sub>	ms	0.91	
Mechanical Time Constant	τ <sub>M</sub>	ms	11.4	
Viscous Damping	D	oz-in/krpm (N-m-s)	0.17	(1.1E-05)
Damping Constant	K <sub>D</sub>	oz-in/krpm (N-m-s)	15	(9.9E-04)
Maximum Winding Temperature	θ <sub>MAX</sub>	°F (°C)	311	(155)
Thermal Impedance	R <sub>TH</sub>	°F/watt (°C/watt)	49.8	(9.90)
Thermal Time Constant	τ <sub>TH</sub>	min	22.0	
Gearbox Data				
Encoder Data				
Channels			3	
Resolution		CPR	500	

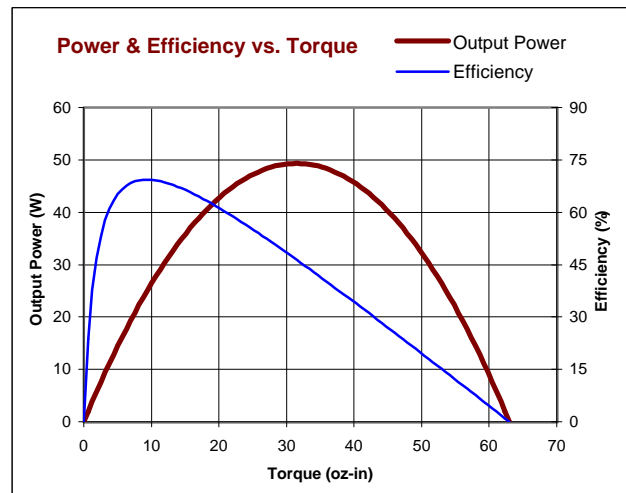
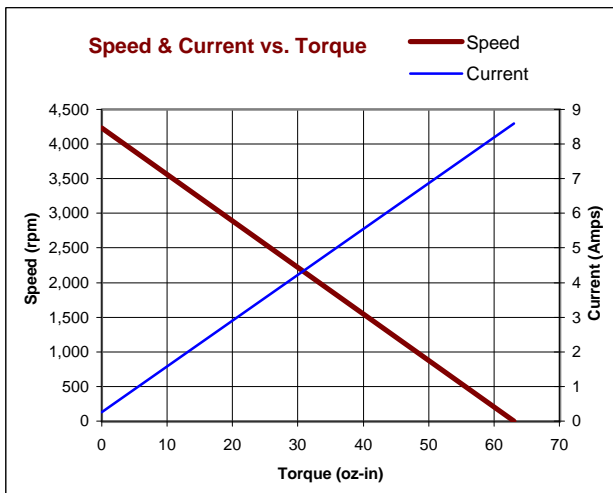
1 - Specified at max. winding temperature at 25°C ambient without heat sink. 2 - Theoretical values supplied for reference only.

## Included Features

- 2-Pole Stator
- Ceramic Magnets
- Heavy-Gauge Steel Housing
- 11-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



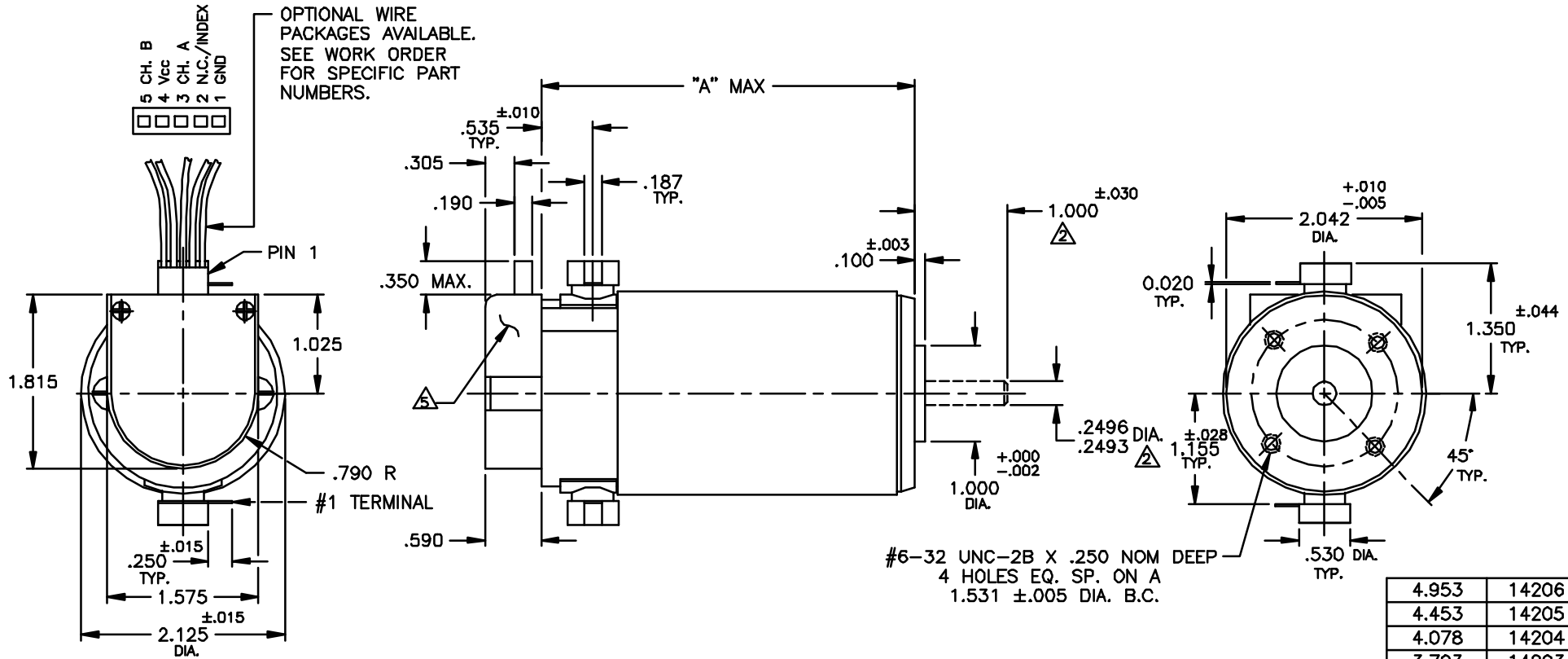
All values are nominal. Specifications subject to change without notice. Graphs are shown for reference only.

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REVISIONS				
LTR	DESCRIPTION	DRFT/ENGR	DATE	APPR
E	REDRAWN, UPDATED TO CURRENT STDS.	KUH/KUH	9-13-95	JRM
F	REVISED ENDBELL DIMS & BRUSH HOLDER DIMS	TMG/DLF		



4.953	14206
4.453	14205
4.078	14204
3.703	14203
3.203	14202
2.953	14201
"A" MAX	MODEL NO.

**NOTES:**

- SHAFT ROTATION IS CW WHILE VIEWING THE MOUNTING END, WITH POSITIVE VOLTAGE (+) APPLIED TO #1 TERMINAL.
- ALL SHAFT DIMENSIONS NOTED ARE STANDARD (13-407-00□). FOR ALL OTHER SHAFT CONFIGURATIONS, REFER TO DATA SHEET FOR SHAFT PART NUMBERS.
- BALL BEARINGS: PRELOAD PER P-107
- MOLEX HOUSING 2695 SERIES WILL ACCEPT MOLEX MATING TERMINALS 2759.
- ENCLOSED IS A H.P. HEDS-91X0 OPTICAL ENCODER MODULE.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTION DECIMAL ANGLES ±1/84 ±.015 ±15		FILE: 150\229		
BREAK ALL SHARP EDGES		DRAFTED BY: KUH DATE: 12 SEP 95		
MATERIAL:	APPROVED BY: JR MELA DATE: 9-13-95	ENGINEERED BY: KUH DATE: 12 SEP 95	TITLE: OUTLINE AND MOUNTING DIMS. 142XX W/ 91X0 ENCODER	
FINISH:	USED ON:	NEXT ASSY:	DWG. NO. B-150-229 REV. F	
SCALE: NONE			SHEET 1	