



# 14204S004

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)	3,702	(388)
Continuous Torque (Max.) <sup>1</sup>	T <sub>C</sub>	oz-in (N-m)	26	(1.8E-01)
Peak Torque (Stall) <sup>2</sup>	T <sub>PK</sub>	oz-in (N-m)	204	(1.4E+00)
Weight	W <sub>M</sub>	oz (g)	38	(1083)
Motor Data				
Torque Constant	K <sub>T</sub>	oz-in/A (N-m/A)	4.33	(3.06E-02)
Back-EMF Constant	K <sub>E</sub>	V/krpm (V/rad/s)	3.21	(3.06E-02)
Resistance	R <sub>T</sub>	Ω	0.27	
Inductance	L	mH	0.4	
No-Load Current	I <sub>NL</sub>	A	0.52	
Peak Current (Stall) <sup>2</sup>	I <sub>P</sub>	A	43.7	
Motor Constant	K <sub>M</sub>	oz-in/√W (N-m/√W)	8.63	(6.09E-02)
Friction Torque	T <sub>F</sub>	oz-in (N-m)	1.6	(1.1E-02)
Rotor Inertia	J <sub>M</sub>	oz-in-s <sup>2</sup> (kg-m <sup>2</sup> )	3.7E-03	(2.6E-05)
Electrical Time Constant	τ <sub>E</sub>	ms	1.58	
Mechanical Time Constant	τ <sub>M</sub>	ms	7.0	
Viscous Damping	D	oz-in/krpm (N-m-s)	0.18	(1.2E-05)
Damping Constant	K <sub>D</sub>	oz-in/krpm (N-m-s)	55	(3.7E-03)
Maximum Winding Temperature	θ <sub>MAX</sub>	°F (°C)	311	(155)
Thermal Impedance	R <sub>TH</sub>	°F/watt (°C/watt)	45.9	(7.70)
Thermal Time Constant	τ <sub>TH</sub>	min	28.8	
Gearbox Data				
Encoder Data				
Channels			3	
Resolution		CPR	500	

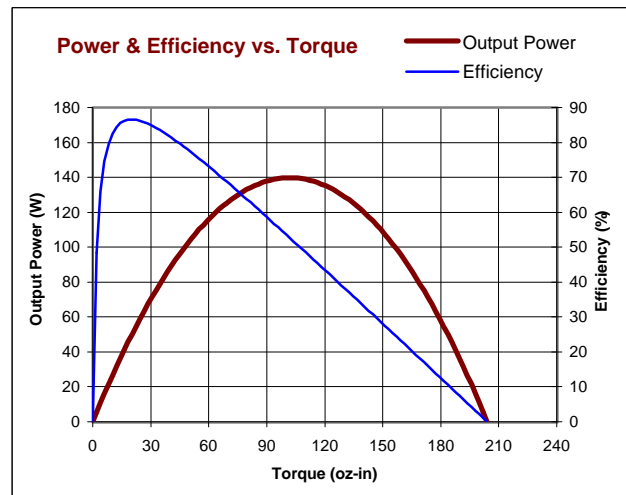
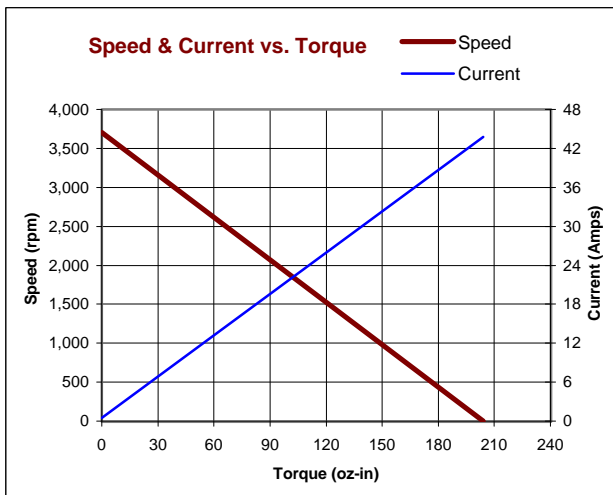
1 - Specified at max. winding temperature at 25°C ambient without heat sink. 2 - Theoretical values supplied for reference only.

## Included Features

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



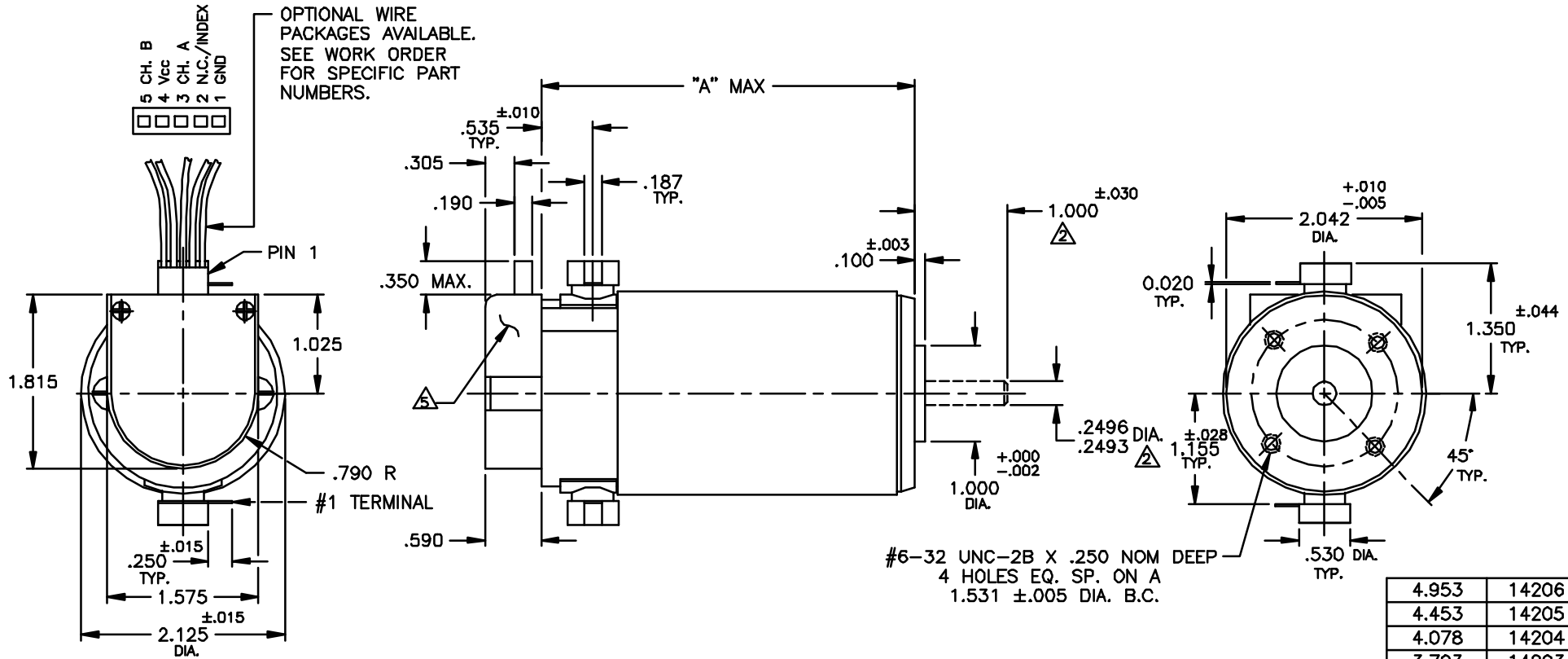
All values are nominal. Specifications subject to change without notice. Graphs are shown for reference only.

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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		



#6-32 UNC-2B X .250 NOM DEEP  
4 HOLES EQ. SP. ON A  
1.531 ±.005 DIA. B.C.

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:		FILE: 150\229	
FRACTION	DECIMAL	ANGLES	±	DRAFTED BY: KUH	DATE: 12 SEP 95
±1/64	±.015	±1°	±.010	ENGINEERED BY: KUH	DATE: 12 SEP 95
	±.010		±.005	APPROVED BY: JR MELA	DATE: 9-13-95
				NEXT ASSY:	
MATERIAL:		USED ON:		PITTMAN Pittman Engineering & Manufacturing Corp. 2800 East 10th Ave., Erie, PA 16510	
FINISH:		SCALE: NONE		TITLE: OUTLINE AND MOUNTING DIMS. 142XX W/ 91X0 ENCODER	
		SHEET 1		DWG. NO. 150-229	
				REV. F	