

# 14204S006

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)	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)	8.67 (6.12E-02)
Back-EMF Constant	K <sub>E</sub>	V/krpm (V/rad/s)	6.41 (6.12E-02)
Resistance	R <sub>T</sub>	Ω	1.01
Inductance	L	mH	1.6
No-Load Current	I <sub>NL</sub>	A	0.26
Peak Current (Stall) <sup>2</sup>	I <sub>P</sub>	A	23.8
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

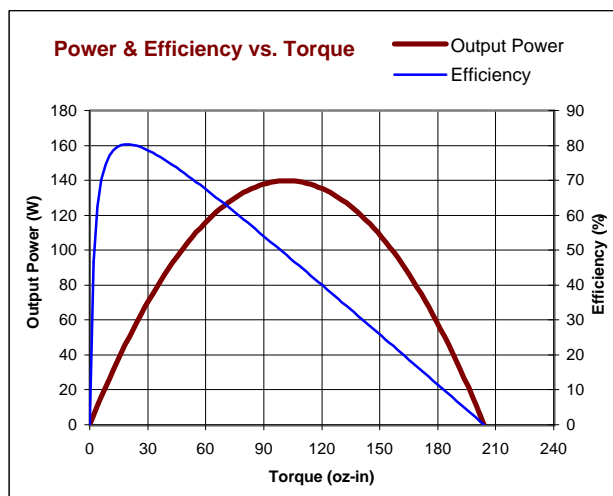
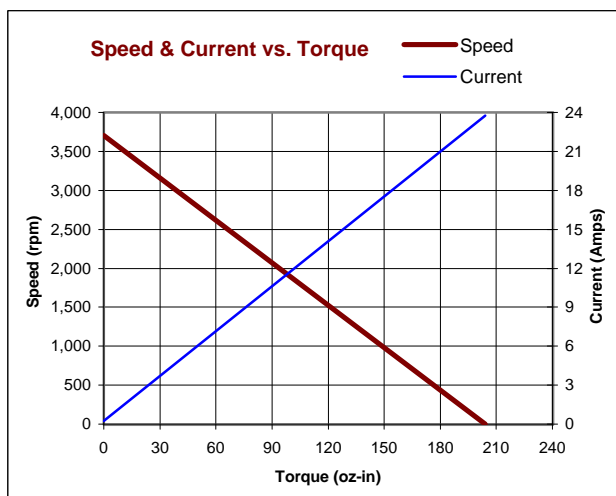
1 - Specified at max. winding temperature at 25°C ambient without heat sink. 2 - Theoretical values supplied for reference only.

## 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

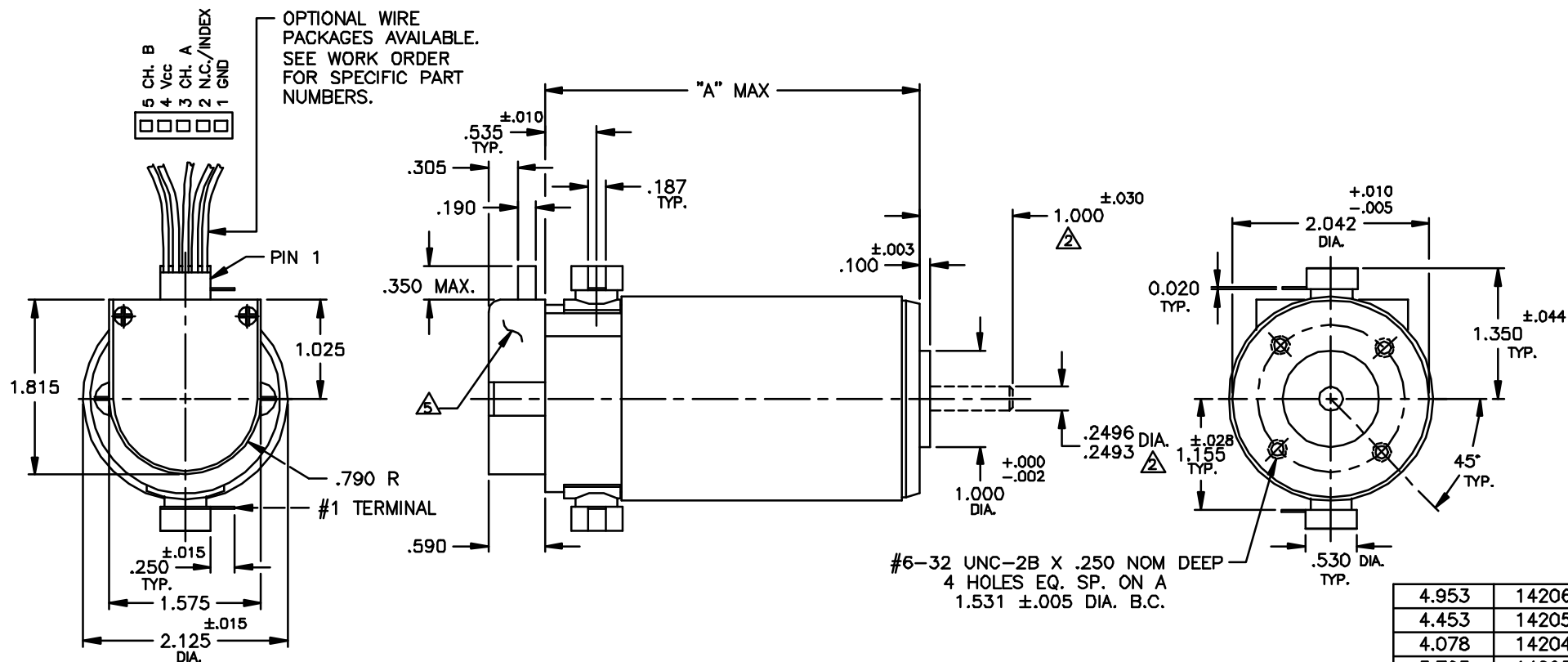


All values are nominal. Specifications subject to change without notice. Graphs are shown for reference only.

© 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
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 (13-407-000). 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 ±1/64 .001 ±.015 ±1° B.C. ±.010 ±.005 BREAK ALL SHARP EDGES		FILE: 150\229		
DRAFTED BY: KUH		DATE: 12 SEP 95	<b>TITLE:</b> OUTLINE AND MOUNTING DIMS. 142XX W/ 91X0 ENCODER	
ENGINEERED BY: KUH		12 SEP 95		
APPROVED BY: JR MELA		9-13-95	<b>DWG. NO.</b> 150-229 <b>B-</b>	
NEXT ASSY:				
FINISH:		USED ON:	<b>SCALE:</b> NONE <b>SHEET</b> 1	
			<b>REV.</b> F	