

# 14203S009

Lo-Cog® DC Motor



Assembly Data	Symbol	Units	Value	
Reference Voltage	E	V	24	
No-Load Speed	S <sub>NL</sub>	rpm (rad/s)	3,456	(362)
Continuous Torque (Max.) <sup>1</sup>	T <sub>C</sub>	oz-in (N-m)	21	(1.5E-01)
Peak Torque (Stall) <sup>2</sup>	T <sub>PK</sub>	oz-in (N-m)	159	(1.1E+00)
Weight	W <sub>M</sub>	oz (g)	31	(885)
Motor Data				
Torque Constant	K <sub>T</sub>	oz-in/A (N-m/A)	9.26	(6.54E-02)
Back-EMF Constant	K <sub>E</sub>	V/krpm (V/rad/s)	6.85	(6.54E-02)
Resistance	R <sub>T</sub>	Ω	1.38	
Inductance	L	mH	2.26	
No-Load Current	I <sub>NL</sub>	A	0.24	
Peak Current (Stall) <sup>2</sup>	I <sub>P</sub>	A	17.4	
Motor Constant	K <sub>M</sub>	oz-in/√W (N-m/√W)	7.88	(5.56E-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> )	3.0E-03	(2.1E-05)
Electrical Time Constant	τ <sub>E</sub>	ms	1.64	
Mechanical Time Constant	τ <sub>M</sub>	ms	6.8	
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)	46	(3.1E-03)
Maximum Winding Temperature	θ <sub>MAX</sub>	°F (°C)	311	(155)
Thermal Impedance	R <sub>TH</sub>	°F/watt (°C/watt)	46.6	(8.10)
Thermal Time Constant	τ <sub>TH</sub>	min	26.0	
Gearbox Data				
Encoder Data				

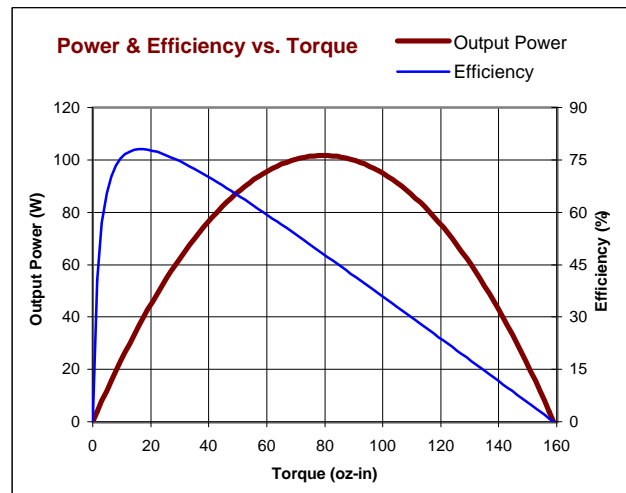
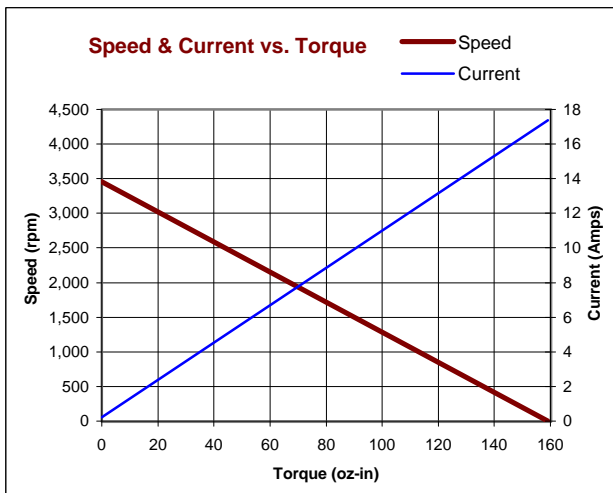
### Included Features

- 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

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

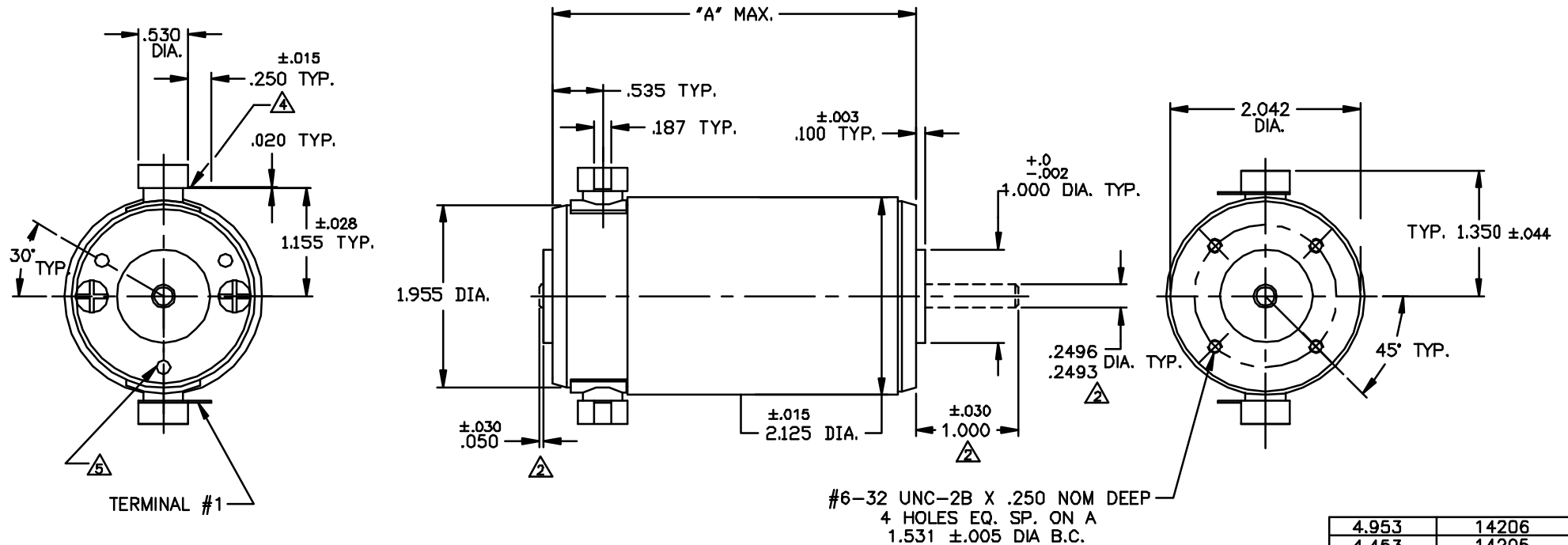


All values are nominal. Specifications subject to change without notice. Graphs are shown for reference only.

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REVISIONS				
LTR	DESCRIPTION	DRFT/ENGR	DATE	APPR
H	REDRAWN	KNJ	6-28-94	JRM
J	UPDATED TO CURRENT OUTLINE STANDARDS	KUH/KUH	8-7-94	JRM
K	REVISED ENDBELL DIMS	KUH/KUH	1-31-96	JRM
L	REVISED ENDBELL 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 (11-140-00□). FOR ALL OTHER SHAFT CONFIGURATIONS, REFER TO DATA SHEET FOR SHAFT PART NUMBERS.
- BALL BEARINGS: PRELOAD PER P-107, SLEEVE BEARINGS: .015 MAX ENDPLAY.
- TERMINALS WILL MATE WITH 187 SERIES AMP, INC., OR ETC, INC. PUSH ON RECEPTACLE.
- OPTIONAL REAR MOUNTING HOLES TAPPED #6-32 UNC-2B X .200 NOM DEEP ON A 1.531 DIA B.C., 3 HOLES EQ. SP. AS SHOWN.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		FILE:	150/67	
TOLERANCES ARE:		DRAFTED BY:	KNJ	DATE:
FRACTION	DECIMAL	ANGLS		25JUN94
±1/64	±.015	±1°	ENGINEERED BY:	KNJ
	±.010		APPROVED BY:	JVM
	±.005		DATE:	25JUN94
BREAK ALL SHARP EDGES		NEXT ASSY:		
MATERIAL:		USED ON:		
FINISH:		SCALE: DNS		
		<b>TITLE:</b> OUTLINE AND MOUNTING DIMS FOR 142XX SERIES		
<b>DWG. NO.</b> B-150-57		<b>REV.</b> L		
SHEET 1 OF 1				