

GM14902S020

Lo-Cog® DC Servo Gearmotor



Assembly Data	Symbol	Units	Value	
Reference Voltage	E	V	24	
No-Load Speed	S _{NL}	rpm (rad/s)	59	(6.2)
Continuous Torque (Max.) ¹	T _C	oz-in (N-m)	500	(3.5)
Peak Torque (Stall) ²	T _{PK}	oz-in (N-m)	4625	(33)
Weight	W _M	oz (g)	35.9	(1017)
Motor Data				
Torque Constant	K _T	oz-in/A (N-m/A)	7.80	(5.51E-02)
Back-EMF Constant	K _E	V/krpm (V/rad/s)	5.77	(5.51E-02)
Resistance	R _T	Ω	1.73	
Inductance	L	mH	2.54	
No-Load Current	I _{NL}	A	0.24	
Peak Current (Stall) ²	I _P	A	13.9	
Motor Constant	K _M	oz-in/√W (N-m/√W)	5.93	(4.19E-02)
Friction Torque	T _F	oz-in (N-m)	1.2	(8.5E-03)
Rotor Inertia	J _M	oz-in-s ² (kg-m ²)	2.3E-03	(1.6E-05)
Electrical Time Constant	τ _E	ms	1.47	
Mechanical Time Constant	τ _M	ms	9.3	
Viscous Damping	D	oz-in/krpm (N-m-s)	0.17	(1.1E-05)
Damping Constant	K _D	oz-in/krpm (N-m-s)	26	(1.8E-03)
Maximum Winding Temperature	θ _{MAX}	°F (°C)	311	(155)
Thermal Impedance	R _{TH}	°F/watt (°C/watt)	48.2	(9.0)
Thermal Time Constant	τ _{TH}	min	24.0	
Gearbox Data				
Reduction Ratio			65.5	
Efficiency ³			0.80	
Maximum Allowable Torque		oz-in (N-m)	500	(3.53)
Encoder Data				
Channels			3	
Resolution		CPR	500	

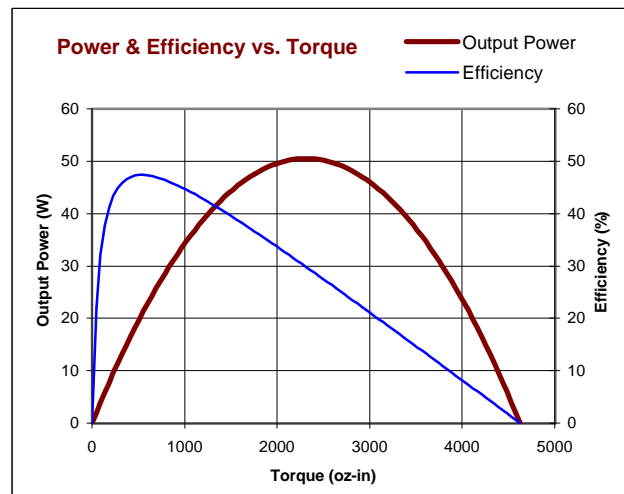
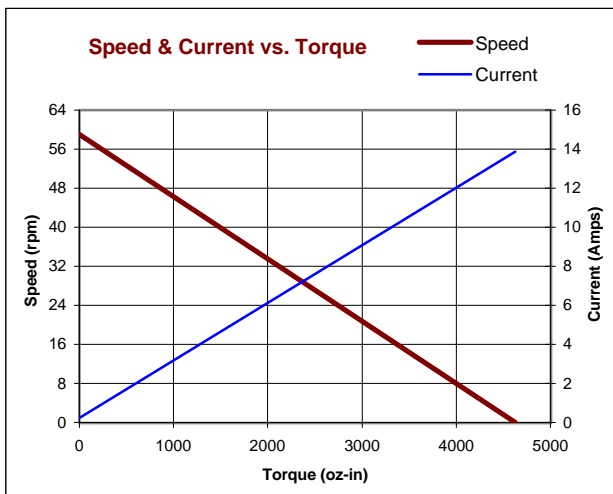
1 - Specified at max. winding temperature at 25°C ambient without heat sink. 2 - Theoretical values supplied for reference only.
3 - Effective gearbox efficiency for this unit improved by use of ball bearings.

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
- Output Ball Bearing
- Wide Face Gears

Customization Options

- Alternate Winding
- Sleeve or Ball Bearings
- Modified Output Shaft
- Custom Cable Assembly
- Special Brushes
- EMI/RFI Suppression
- Alternate Gear Material
- Special Lubricant
- Optional Encoder
- Fail-Safe Brake



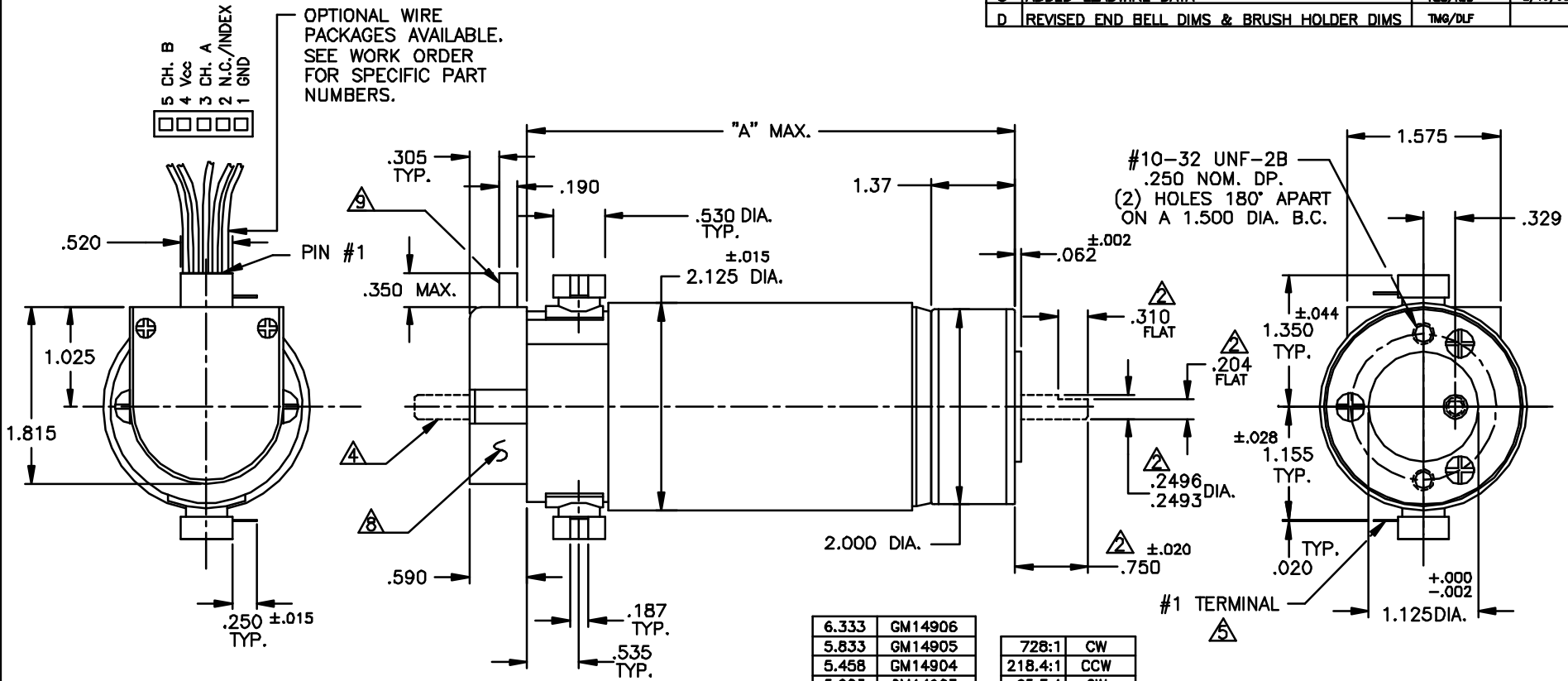
All values are nominal. Specifications subject to change without notice. Graphs are shown for reference only.

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REVISIONS				
LTR	DESCRIPTION	DRFT/ENGR	DATE	APPR
B	REDRAWN & REVISED	DCS/DCS	11/10/95	JRM
C	ADDED LEADWIRE DATA	RJS/RJS	2/13/98	JRM
D	REVISED END BELL DIMS & BRUSH HOLDER DIMS	TMG/DLF		



6.333	GM14906
5.833	GM14905
5.458	GM14904
5.083	GM14903
4.583	GM14902
4.333	GM14901
"A"	MODEL NO.

728:1	CW
218.4:1	CCW
65.5:1	CW
19.7:1	CCW
5.9:1	CW
RATIO	SHAFT ROTATION *

- NOTES:
- * 1. SHAFT ROTATION IS SHOWN WHILE VIEWING THE MOUNTING END, WITH POSITIVE VOLTAGE (+) APPLIED TO THE #1 TERMINAL.
 - △ ALL OUTPUT SHAFT DIMENSIONS NOTED ARE STANDARD (10-535). FOR ALL OTHER SHAFT CONFIGURATIONS, REFER TO DATA SHEET FOR SHAFT PART NUMBERS.
 - 3. FOR MOTOR SHAFT CONFIGURATION, SEE DATA SHEET.
 - △ OPTIONAL SHAFT EXTENSION AVAILABLE. REFER TO DATA SHEET FOR SPECIFICS.
 - △ TERMINALS WILL MATE WITH '187' SERIES AMP INC. OR EQUIV. PUSH-ON RECEPTACLE.
 - 6. MOTOR BALL BEARINGS: PRELOAD PER P-107.
 - 7. OUTPUT SHAFT ENDPLAY: .020 MAX.
 - △ ENCLOSED IS A H.P. HEDS-91X0 OPTICAL ENCODER MODULE. SEE DATA SHEET FOR PART NUMBERS.
 - 9. MOLEX CENTER CRIMP TERMINAL HOUSING, (2695 SERIES), WILL ACCEPT MOLEX MATING TERMINALS (2759).

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTION DECIMAL ANGLES ±1/84 ±.015 ±15 ±.010 ±.005 BREAK ALL SHARP EDGES	FILE: 150\314	
	DRAFTED BY: DCS DATE: 11/9/95	
MATERIAL:	ENGINEERED BY: DCS DATE: 11/9/95	DWG. NO. B-150-314
FINISH:	APPROVED BY: JRM DATE: XX/XX/97	REV. D
	NEXT ASSY:	SCALE: D.N.S. SHEET
	USED ON:	