



GM14904S012

Lo-Cog® DC Servo Gearmotor

Assembly Data	Symbol	Units	Value	
Reference Voltage	E	V	24	
No-Load Speed	S_{NL}	rpm (rad/s)	597	(62.5)
Continuous Torque (Max.) ¹	T_C	oz-in (N-m)	124	(0.88)
Peak Torque (Stall) ²	T_{PK}	oz-in (N-m)	975	(6.9)
Weight	W_M	oz (g)	44.1	(1250)
Motor Data				
Torque Constant	K_T	oz-in/A (N-m/A)	8.67	(6.12E-02)
Back-EMF Constant	K_E	V/krpm (V/rad/s)	6.41	(6.12E-02)
Resistance	R_T	Ω	1.01	
Inductance	L	mH	1.6	
No-Load Current	I_{NL}	A	0.26	
Peak Current (Stall) ²	I_P	A	23.8	
Motor Constant	K_M	oz-in/ \sqrt{W} (N-m/ \sqrt{W})	8.63	(6.09E-02)
Friction Torque	T_F	oz-in (N-m)	1.6	(1.1E-02)
Rotor Inertia	J_M	oz-in-s ² (kg-m ²)	3.7E-03	(2.6E-05)
Electrical Time Constant	τ_E	ms	1.58	
Mechanical Time Constant	τ_M	ms	7.0	
Viscous Damping	D	oz-in/krpm (N-m-s)	0.18	(1.2E-05)
Damping Constant	K_D	oz-in/krpm (N-m-s)	55	(3.7E-03)
Maximum Winding Temperature	θ_{MAX}	$^{\circ}F$ ($^{\circ}C$)	311	(155)
Thermal Impedance	R_{TH}	$^{\circ}F/watt$ ($^{\circ}C/watt$)	45.9	(7.7)
Thermal Time Constant	τ_{TH}	min	28.8	
Gearbox Data				
Reduction Ratio			5.9	
Efficiency ³			0.90	
Maximum Allowable Torque		oz-in (N-m)	300	(2.12)
Encoder Data				
Channels			3	
Resolution		CPR	500	

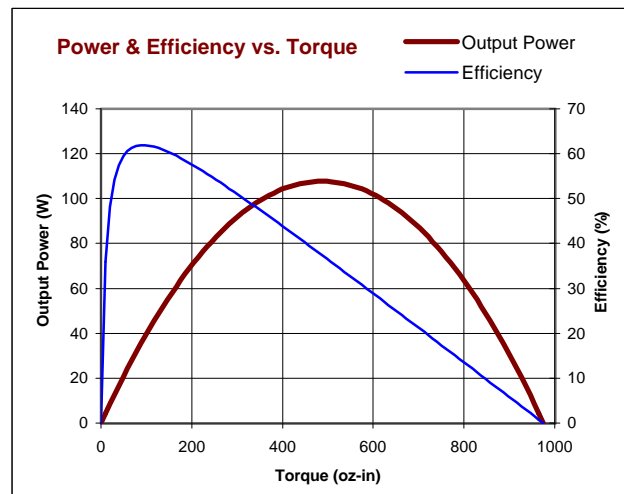
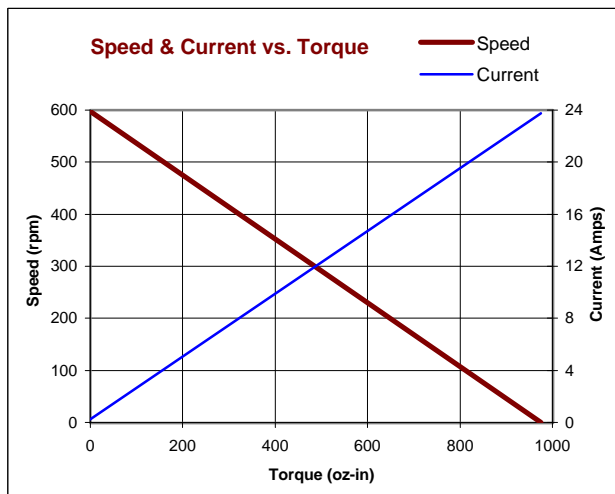
1 - Specified at max. winding temperature at 25°C ambient without heat sink. 2 - Theoretical values supplied for reference only.
3 - Effective gearbox efficiency for this unit improved by use of ball bearings.

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
- High Torque 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

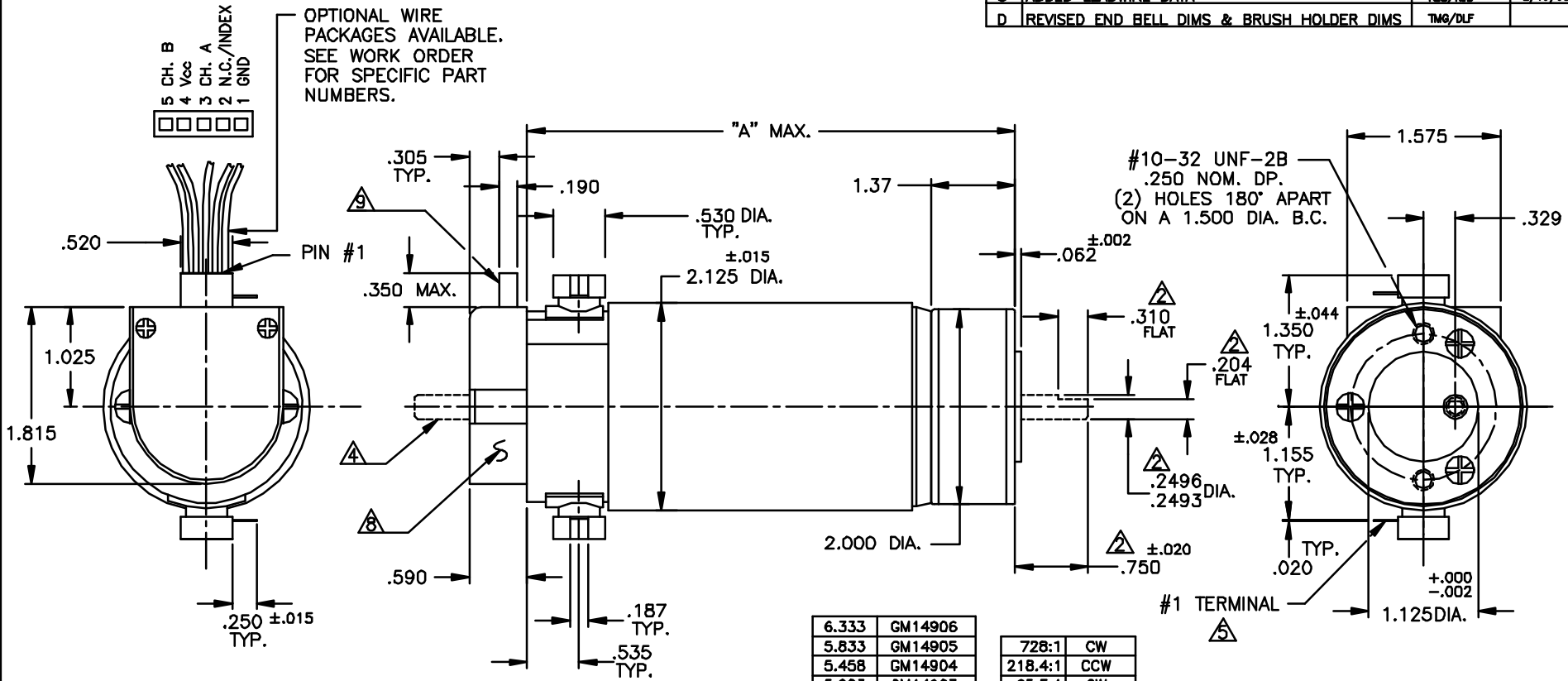


All values are nominal. Specifications subject to change without notice. Graphs are shown for reference only.

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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:
- 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.
 - 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.
 - MOTOR BALL BEARINGS: PRELOAD PER P-107.
 - OUTPUT SHAFT ENDPLAY: .020 MAX.
 - ENCLOSED IS A H.P. HEDS-91X0 OPTICAL ENCODER MODULE. SEE DATA SHEET FOR PART NUMBERS.
 - MOLEX CENTER CRIMP TERMINAL HOUSING, (2695 SERIES), WILL ACCEPT MOLEX MATING TERMINALS (2759).

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:		FILE: 150\314	
FRACTION ±1/84	DECIMAL ±.015	ANGLES ±1°	
BREAK ALL SHARP EDGES		DRAFTED BY DCS	DATE 11/9/95
MATERIAL:		ENGINEERED BY DCS	11/9/95
FINISH:		APPROVED BY JRM	XX/XX/97
		NEXT ASSY:	
		USED ON:	
PITTMAN			
TITLE: OUTLINE AND MOUNTING DIMENSIONS GM149XX STANDARD W/H.P. 91X0 ENC.			
DWG. NO. B-		REV. D	
SCALE: D.N.S.		SHEET	