



GM8724S009

Lo-Cog® DC Servo Gearmotor

Assembly Data	Symbol	Units	Value	
Reference Voltage	E	V	12	
No-Load Speed	S _{NL}	rpm (rad/s)	720	(75.4)
Continuous Torque (Max.) ¹	T _C	oz-in (N-m)	15	(1.0E-01)
Peak Torque (Stall) ²	T _{PK}	oz-in (N-m)	42	(3.0E-01)
Weight	W _M	oz (g)	11.2	(316)
Motor Data				
Torque Constant	K _T	oz-in/A (N-m/A)	3.09	(2.18E-02)
Back-EMF Constant	K _E	V/krpm (V/rad/s)	2.29	(2.18E-02)
Resistance	R _T	Ω	4.33	
Inductance	L	mH	2.34	
No-Load Current	I _{NL}	A	0.18	
Peak Current (Stall) ²	I _P	A	2.77	
Motor Constant	K _M	oz-in/√W (N-m/√W)	1.49	(1.05E-02)
Friction Torque	T _F	oz-in (N-m)	0.35	(2.5E-03)
Rotor Inertia	J _M	oz-in-s ² (kg-m ²)	2.3E-04	(1.6E-06)
Electrical Time Constant	τ _E	ms	0.54	
Mechanical Time Constant	τ _M	ms	14.7	
Viscous Damping	D	oz-in/krpm (N-m-s)	0.020	(1.4E-06)
Damping Constant	K _D	oz-in/krpm (N-m-s)	1.6	(1.1E-04)
Maximum Winding Temperature	θ _{MAX}	°F (°C)	311	(155)
Thermal Impedance	R _{TH}	°F/watt (°C/watt)	70.5	(21.4)
Thermal Time Constant	τ _{TH}	min	10.7	
Gearbox Data				
Reduction Ratio			6.3	
Efficiency ³			0.95	
Maximum Allowable Torque		oz-in (N-m)	100	(0.71)
Encoder Data				
Channels			3	
Resolution		CPR	500	

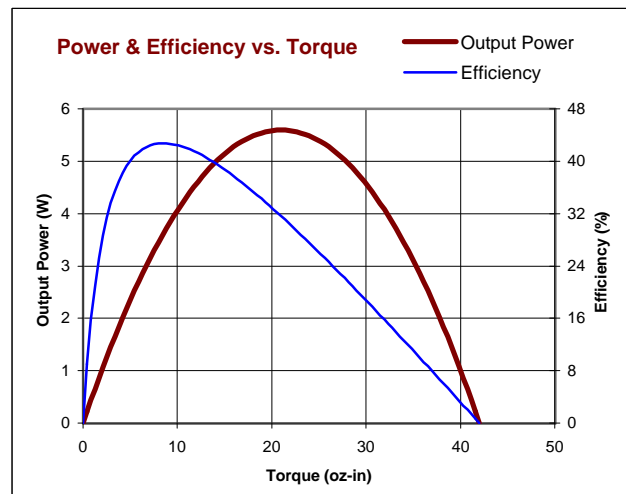
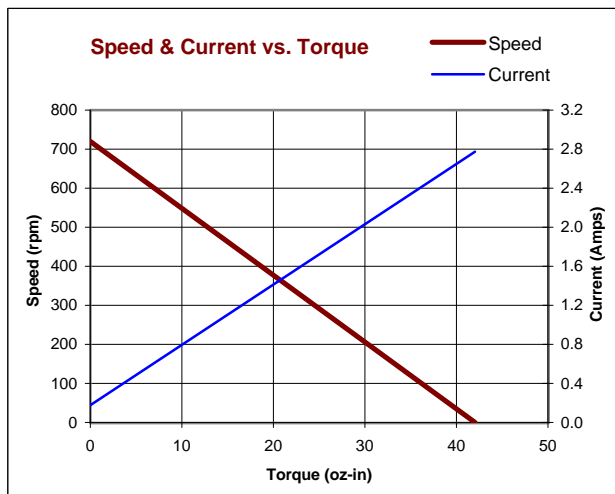
1 - Specified at max. winding temperature at 25°C ambient without heat sink. 2 - Theoretical values supplied for reference only.
3 - Effective gearbox efficiency for this unit improved by use of ball bearings.

Included Features

- 2-Pole Stator
- Ceramic Magnets
- Heavy-Gauge Steel Housing
- 7-Slot Armature
- Silicon Steel Laminations
- Stainless Steel Shaft
- Copper-Graphite Brushes
- Diamond Turned Commutator
- Motor Ball Bearings
- Output Ball Bearing
- Standard 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

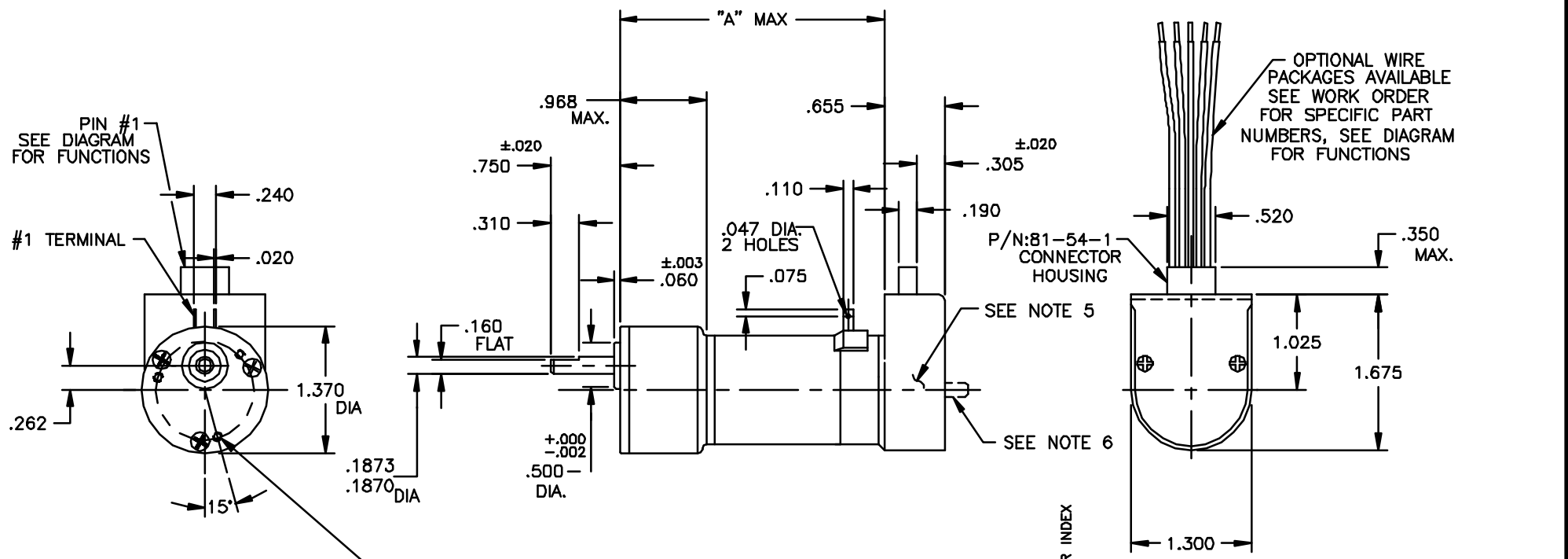


All values are nominal. Specifications subject to change without notice. Graphs are shown for reference only.

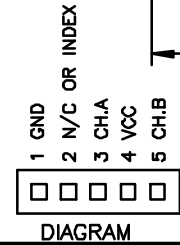
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REVISIONS				
LTR	DESCRIPTION	DRFT/ENGR	DATE	APPR
B	REDRAWN, UPDATED	DLF/DLF		



- NOTES:
1. SHAFT ROTATION IS DETERMINED WITH POSITIVE VOLTAGE (+) ON #1 TERMINAL, WHILE LOOKING AT MOUNTING END.
 2. MOTOR IS PRELOADED BALL BEARINGS PER P-107,.020 MAX. ON OUTPUT SHAFT.
 3. MAX. GEARBOX TORQUE RATING IS 100 oz.in. STANDARD GEARBOX, 160 oz.in. FOR CUT STEEL.
 4. TERMINALS ARE TIN PLATED FOR SOLDERING, WILL MATE WITH .110 PUSH-ON RECEPTACLE.
 5. ENCLOSED IS A HEDS-91X0 OPTICAL ENCODER.
 6. OPTIONAL REAR SHAFT EXTENSIONS AVAILABLE.
 7. ENCODER LEAD CONNECTIONS TO BE DONE PER INDIVIDUAL LEAD WIRE DRAWING.



187.7/96.0:1	CCW	GM87X4	3.230
60.5/31:1	CW	GM87X3	2.980
19.5/10:1	CCW	GM87X2	2.855
6.3:1	CW	MODEL	"A"
GEAR RATIO	SHAFT ROTATION	"A" MAX	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:		FILE: 150\306			
FRACTION	DECIMAL	ANGLES			
±1/84	±.015	±1°		DRAFTED BY: DLF	DATE: 15 JUL 94
BREAK ALL SHARP EDGES	±.010	±.005		ENGINEERED BY: DLF	DATE: 15 JUL 94
MATERIAL:				APPROVED BY:	
FINISH:				NEXT ASSY:	
				USED ON:	
TITLE: OUTLINE AND MOUNTING DIMENSIONS GM8700 W/9100, STANDARD				DWG. NO. B-150-306	
SCALE: NONE				SHEET 1 OF 1	