



GM8724S023

Lo-Cog® DC Servo Gearmotor

Assembly Data	Symbol	Units	Value	
Reference Voltage	E	V	24	
No-Load Speed	S_{NL}	rpm (rad/s)	75	(7.9)
Continuous Torque (Max.) ¹	T_C	oz-in (N-m)	113	(8.0E-01)
Peak Torque (Stall) ²	T_{PK}	oz-in (N-m)	328	(2.3E+00)
Weight	W_M	oz (g)	11.4	(324)
Motor Data				
Torque Constant	K_T	oz-in/A (N-m/A)	6.18	(4.36E-02)
Back-EMF Constant	K_E	V/krpm (V/rad/s)	4.57	(4.36E-02)
Resistance	R_T	Ω	17.0	
Inductance	L	mH	9.35	
No-Load Current	I_{NL}	A	0.09	
Peak Current (Stall) ²	I_P	A	1.41	
Motor Constant	K_M	oz-in/ \sqrt{W} (N-m/ \sqrt{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}	$^{\circ}F$ ($^{\circ}C$)	311	(155)
Thermal Impedance	R_{TH}	$^{\circ}F/watt$ ($^{\circ}C/watt$)	70.5	(21.4)
Thermal Time Constant	τ_{TH}	min	10.7	
Gearbox Data				
Reduction Ratio			60.5	
Efficiency ³			0.78	
Maximum Allowable Torque		oz-in (N-m)	175	(1.24)
Encoder Data				
Channels			3	
Resolution		CPR	500	

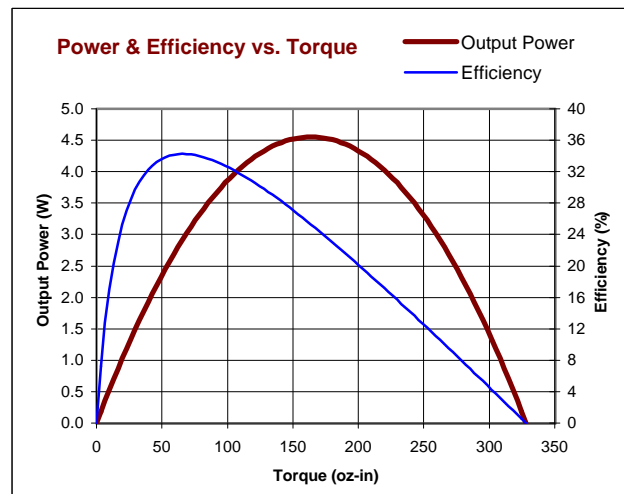
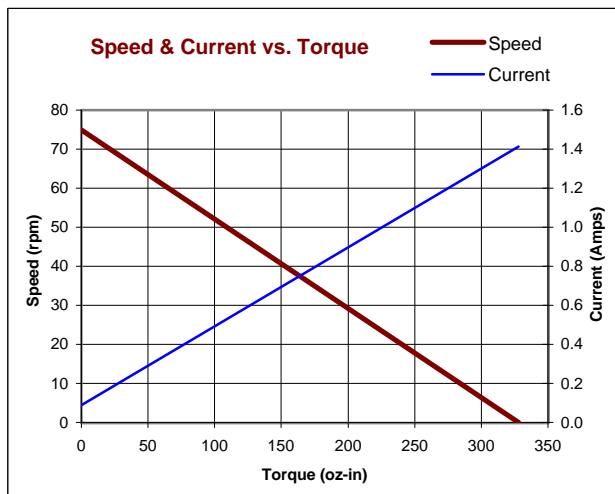
1 - Specified at max. winding temperature at 25°C ambient without heat sink. 2 - Theoretical values supplied for reference only.
3 - Effective gearbox efficiency for this unit improved by use of ball bearings.

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
- 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

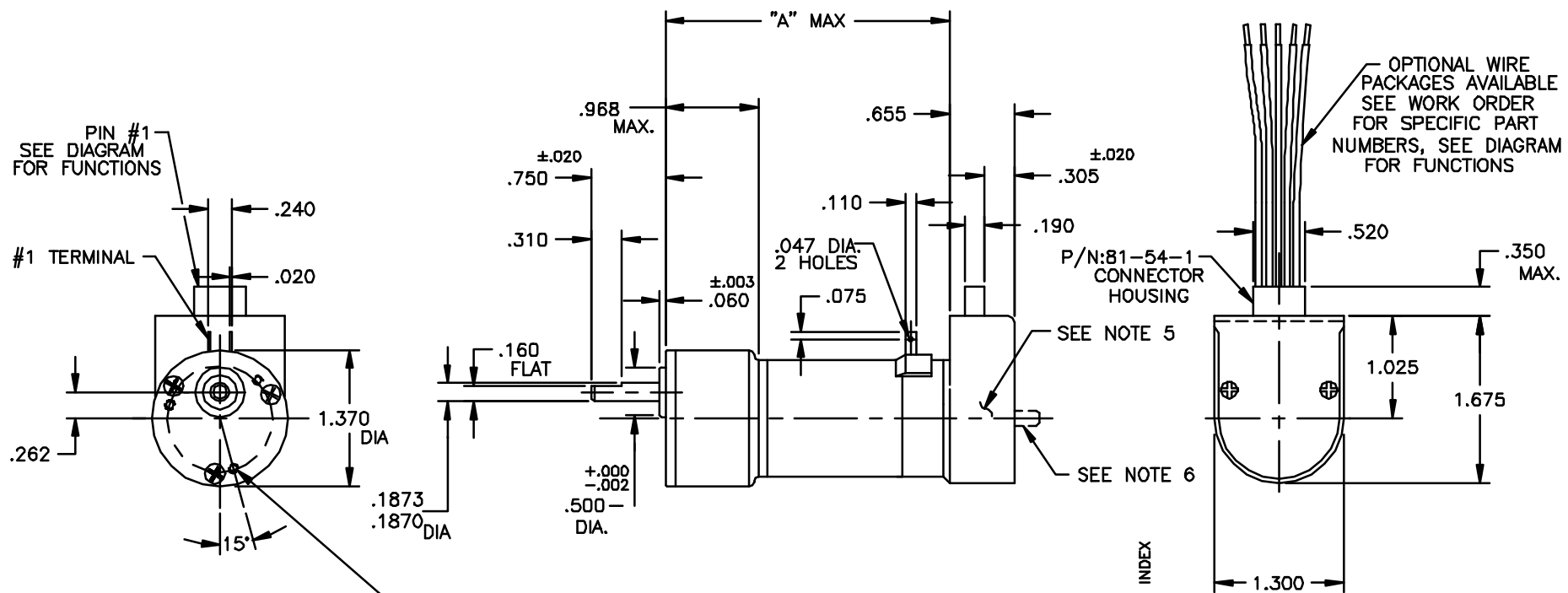


All values are nominal. Specifications subject to change without notice. Graphs are shown for reference only.

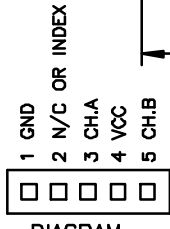
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REVISIONS				
LTR	DESCRIPTION	DRFT/ENGR	DATE	APPR
B	REDRAWN, UPDATED	DLF/DLF		



#4-40 UNC-2B
.210 DP. REF.
3 HOLES EQ. SP.
ON A 1.062
DIA. B.C.



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	

- 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.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:		FILE: 150\306
FRACTION ±1/84	DECIMAL ±.015	DRAFTED BY: DLF
ANGLES ±1°	±.010	DATE: 15 JUL 94
BREAK ALL SHARP EDGES	±.010	ENGINEERED BY: DLF
	±.005	DATE: 15 JUL 94
MATERIAL:	APPROVED BY:	
	NEXT ASSY:	
FINISH:	USED ON:	

PITTMAN PENN ENGINEERING & MANUFACTURING CORP. 2800 East 10th Street, Erie, PA 16510	
TITLE: OUTLINE AND MOUNTING DIMENSIONS GM8700 W/9100, STANDARD	
DWG. NO. B- 150-306	REV. B
SCALE: NONE	SHEET 1 OF 1