



GM8724S015

Lo-Cog® DC Servo Gearmotor

Assembly Data	Symbol	Units	Value	
Reference Voltage	E	V	12	
No-Load Speed	S _{NL}	rpm (rad/s)	230	(24.1)
Continuous Torque (Max.) ¹	T _C	oz-in (N-m)	42	(2.9E-01)
Peak Torque (Stall) ²	T _{PK}	oz-in (N-m)	117	(8.3E-01)
Weight	W _M	oz (g)	11.3	(320)
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			19.5	
Efficiency ³			0.87	
Maximum Allowable Torque		oz-in (N-m)	175	(1.24)
Encoder Data				
Channels			3	
Resolution		CPR	500	

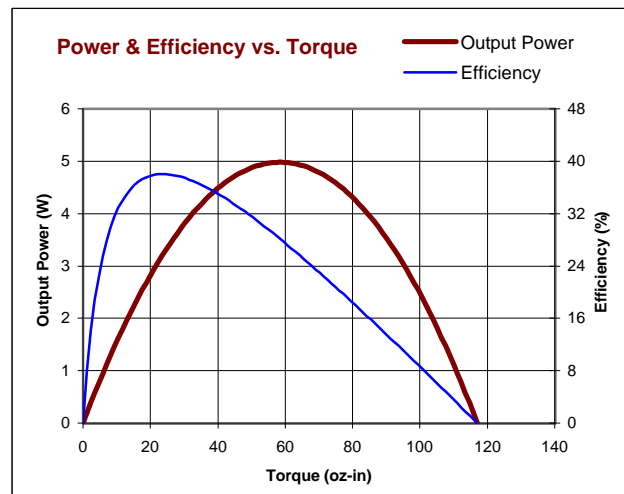
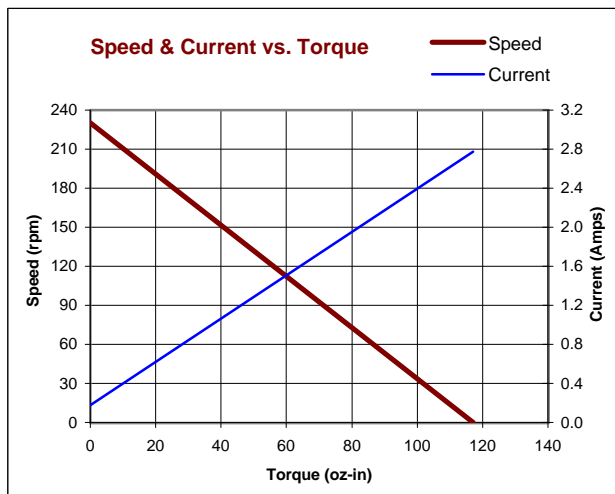
1 - Specified at max. winding temperature at 25°C ambient without heat sink. 2 - Theoretical values supplied for reference only.
3 - Effective gearbox efficiency for this unit improved by use of ball bearings.

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

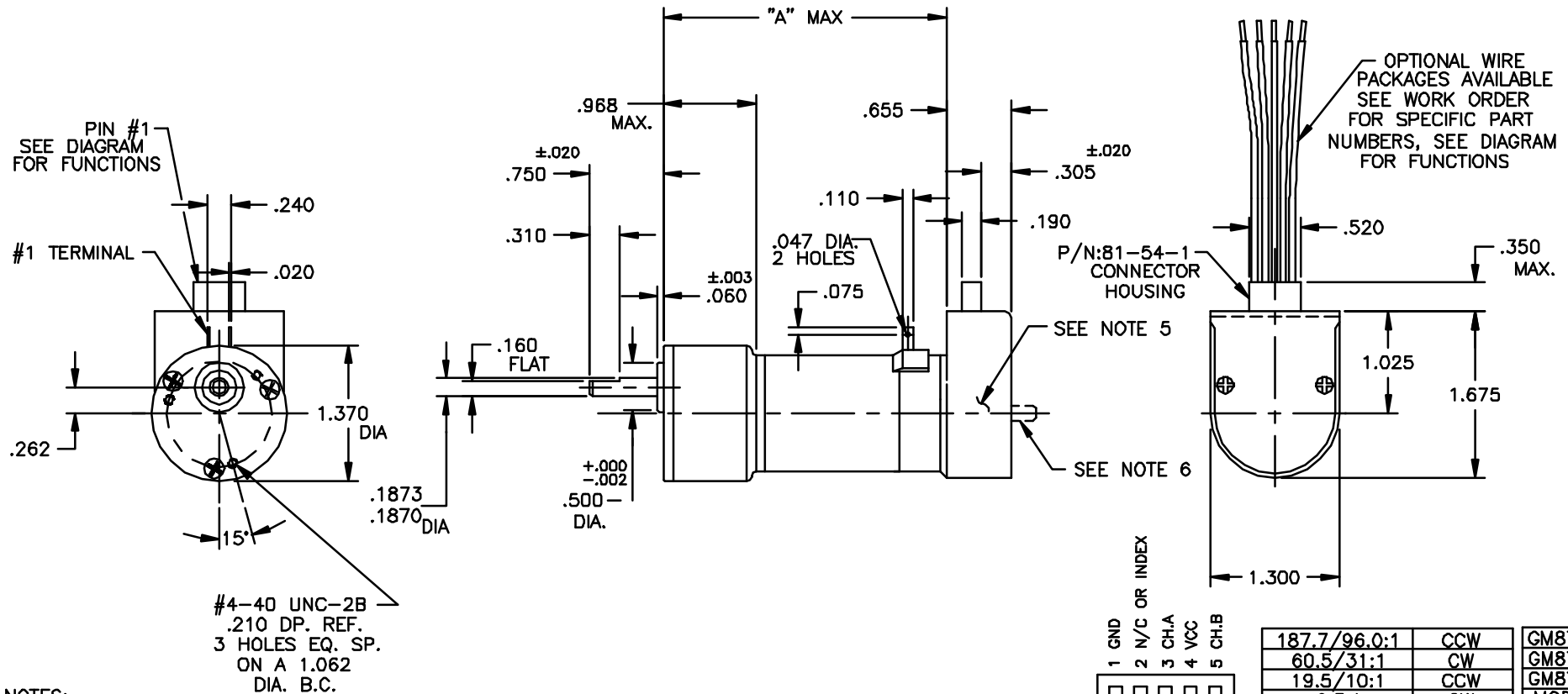


All values are nominal. Specifications subject to change without notice. Graphs are shown for reference only.

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



- NOTES:
- SHAFT ROTATION IS DETERMINED WITH POSITIVE VOLTAGE (+) ON #1 TERMINAL, WHILE LOOKING AT MOUNTING END.
 - MOTOR IS PRELOADED BALL BEARINGS PER P-107,.020 MAX. ON OUTPUT SHAFT.
 - MAX. GEARBOX TORQUE RATING IS 100 oz.in. STANDARD GEARBOX, 160 oz.in. FOR CUT STEEL.
 - TERMINALS ARE TIN PLATED FOR SOLDERING, WILL MATE WITH .110 PUSH-ON RECEPTACLE.
 - ENCLOSED IS A HEDS-91X0 OPTICAL ENCODER.
 - OPTIONAL REAR SHAFT EXTENSIONS AVAILABLE.
 - 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: FRACTION DECIMAL ANGLES ±1/64 ±.015 ±15° ±.010 ±.010 ±15° ±.005 ±.005 ±15° BREAK ALL SHARP EDGES	FILE: 150\306	
	DRAFTED BY: DLF DATE: 15 JUL 94	
MATERIAL:	ENGINEERED BY: DLF DATE: 15 JUL 94	DWG. NO. B-150-306
FINISH:	APPROVED BY:	REV. B
	NEXT ASSY:	SCALE: NONE SHEET 1 OF 1
	USED ON:	