



GM8212S030

Lo-Cog® DC Gearmotor

Assembly Data	Symbol	Units	Value	
Reference Voltage	E	V	24	
No-Load Speed	S _{NL}	rpm (rad/s)	41	(4.3)
Continuous Torque (Max.) ¹	T _C	oz-in (N-m)	100	(7.1E-01)
Peak Torque (Stall) ²	T _{PK}	oz-in (N-m)	557	(3.9E+00)
Weight	W _M	oz (g)	7.3	(206)
Motor Data				
Torque Constant	K _T	oz-in/A (N-m/A)	3.87	(2.73E-02)
Back-EMF Constant	K _E	V/krpm (V/rad/s)	2.86	(2.73E-02)
Resistance	R _T	Ω	17.2	
Inductance	L	mH	8.62	
No-Load Current	I _{NL}	A	0.11	
Peak Current (Stall) ²	I _P	A	1.40	
Motor Constant	K _M	oz-in/√W (N-m/√W)	0.93	(6.57E-03)
Friction Torque	T _F	oz-in (N-m)	0.35	(2.5E-03)
Rotor Inertia	J _M	oz-in-s ² (kg-m ²)	1.3E-04	(9.2E-07)
Electrical Time Constant	τ _E	ms	0.50	
Mechanical Time Constant	τ _M	ms	21.5	
Viscous Damping	D	oz-in/krpm (N-m-s)	0.009	(5.9E-07)
Damping Constant	K _D	oz-in/krpm (N-m-s)	0.64	(4.3E-05)
Maximum Winding Temperature	θ _{MAX}	°F (°C)	311	(155)
Thermal Impedance	R _{TH}	°F/watt (°C/watt)	75.9	(24.4)
Thermal Time Constant	τ _{TH}	min	7.8	
Gearbox Data				
Reduction Ratio			187.7	
Efficiency			0.59	
Maximum Allowable Torque		oz-in (N-m)	100	(0.71)
Encoder Data				

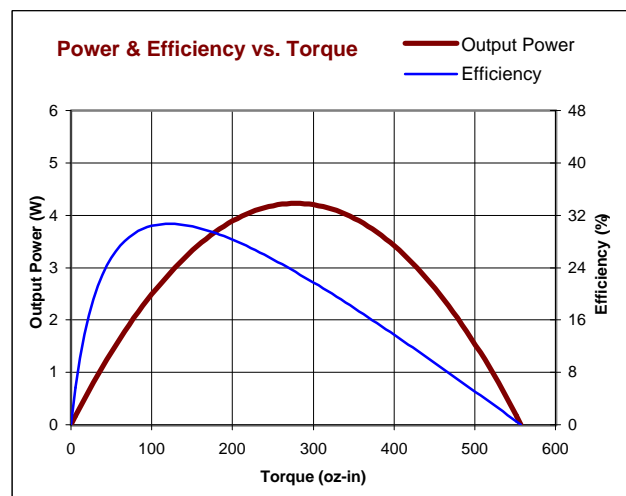
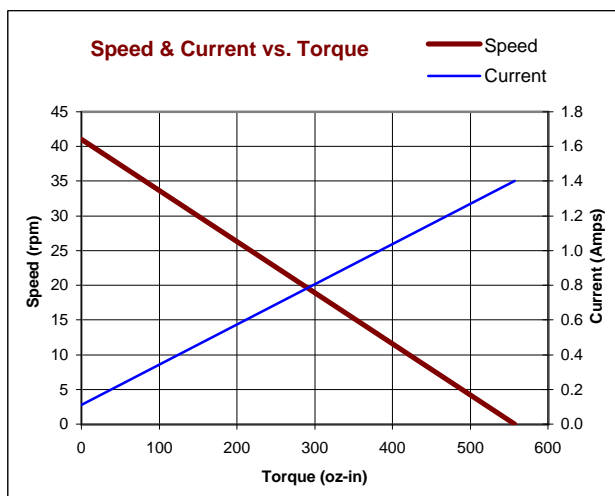
Included Features

- 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 Sleeve Bearings
- Output Sleeve 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

1 - Specified at max. winding temperature at 25°C ambient without heat sink. 2 - Theoretical values supplied for reference only.



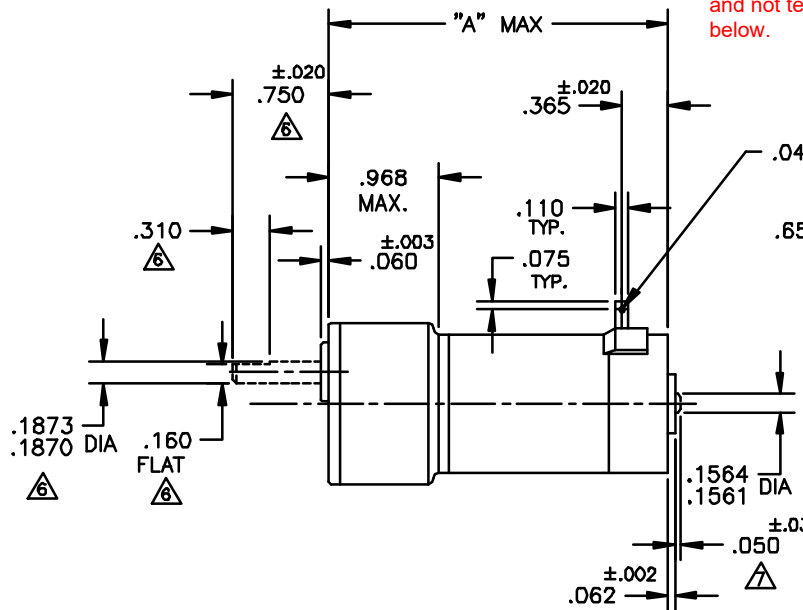
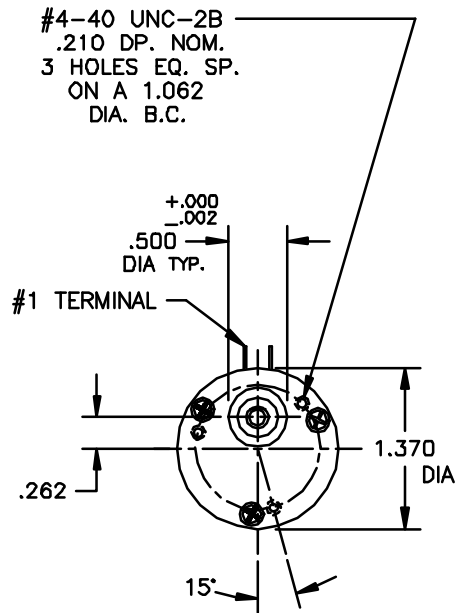
All values are nominal. Specifications subject to change without notice. Graphs are shown for reference only.

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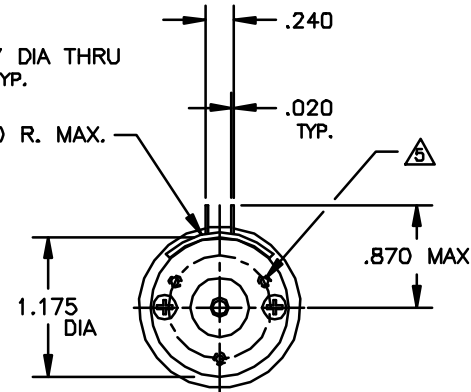
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REVISIONS				
LTR	DESCRIPTION	DRFT/ENGR	DATE	APPR
H	REDRAWN, UPDATED TO CURRENT STD.	DLF	6/28/94	JVM
J	UPDATED TO CURRENT STD.	RJS/RJS		



*Please Note: Actual motor will ship with 18 inch leads and not terminals as shown below.



NOTES:

1. SHAFT ROTATION IS SHOWN WHILE VIEWING MOUNTING END, WITH POSITIVE (+) VOLTAGE APPLIED TO # 1 TERMINAL.
 2. TERMINALS ARE PLATED FOR SOLDERING.
 3. MAX. GEARBOX TORQUE RATING IS 100 OZ.IN., STANDARD SINTERED GEARS. MAX. GEARBOX TORQUE RATING IS 160 OZ.IN., CUT STEEL GEARS.
 4. ENDPLAY .020 MAX. ON OUTPUT SHAFT, .015 MAX. ON MOTOR SHAFT.
- △ OPTIONAL MOUNTING PATTERN #2-56 UNC-2B, (3) HOLES EQUALLY SPACED ON A .875 DIA. B.C., .125 MAX. THREAD DEPTH.
- △ ALL SHAFT DIMENSIONS SHOWN ARE STD. (10-385). FOR ALL OTHER CONFIGURATIONS REFER TO DATA SHEET FOR PART NUMBERS.
- △ OPTIONAL REAR SHAFT EXTENSIONS AVAILABLE.

GEAR RATIO	DIRECTION		
187/96:1	CCW	3.285	GM87X4
60.5/31:1	CW	3.035	GM87X3
19.5/10:1	CCW	2.910	GM87X2
6.3:1	CW	"A" MAX.	MODEL NO.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTION DECIMAL ANGLES ±1/64 .015 ±1° XX ±.010 XXX ±.005	FILE: 150/28	
	DRAFTED BY: DLF DATE: 6/24/94	
BREAK ALL SHARP EDGES	ENGINEERED BY: DLF DATE: 6/24/94	TITLE: OUTLINE & MOUNTING DIMENSIONS GM87XX STD. GEARBOX
MATERIAL:	APPROVED BY: JVM DATE: 6/28/94	
FINISH:	NEXT ASSY:	DWG. NO. B- 150-28
	USED ON:	REV. J
		SCALE: D.N.S. SHEET 1 OF 1