



GM14904S016

Lo-Cog® DC Servo Gearmotor

Assembly Data	Symbol	Units	Value	
Reference Voltage	E	V	24	
No-Load Speed	S _{NL}	rpm (rad/s)	179	(18.7)
Continuous Torque (Max.) ¹	T _C	oz-in (N-m)	374	(2.6)
Peak Torque (Stall) ²	T _{PK}	oz-in (N-m)	2934	(20.7)
Weight	W _M	oz (g)	44.7	(1268)
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/√W (N-m/√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}	°F (°C)	311	(155)
Thermal Impedance	R _{TH}	°F/watt (°C/watt)	45.9	(7.7)
Thermal Time Constant	τ _{TH}	min	28.8	
Gearbox Data				
Reduction Ratio			19.7	
Efficiency ³			0.84	
Maximum Allowable Torque		oz-in (N-m)	500	(3.53)
Encoder Data				
Channels			3	
Resolution		CPR	500	

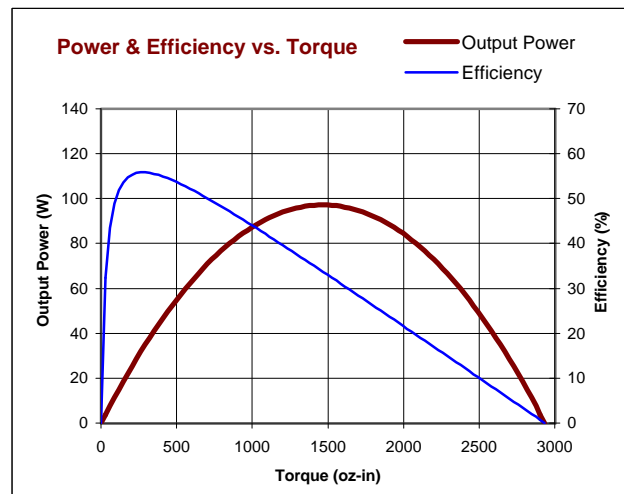
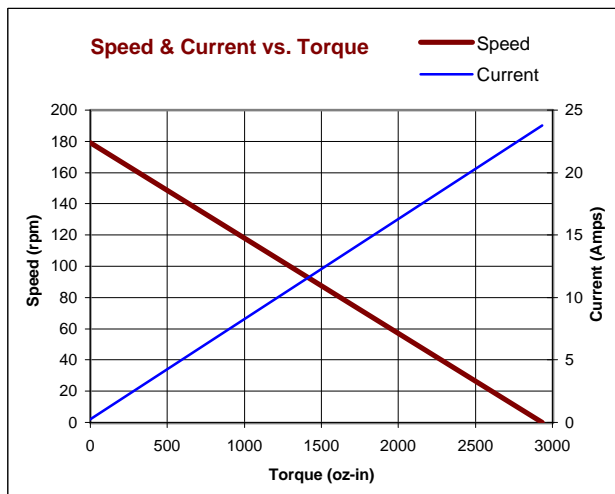
1 - Specified at max. winding temperature at 25°C ambient without heat sink. 2 - Theoretical values supplied for reference only.
3 - Effective gearbox efficiency for this unit improved by use of ball bearings.

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
- 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

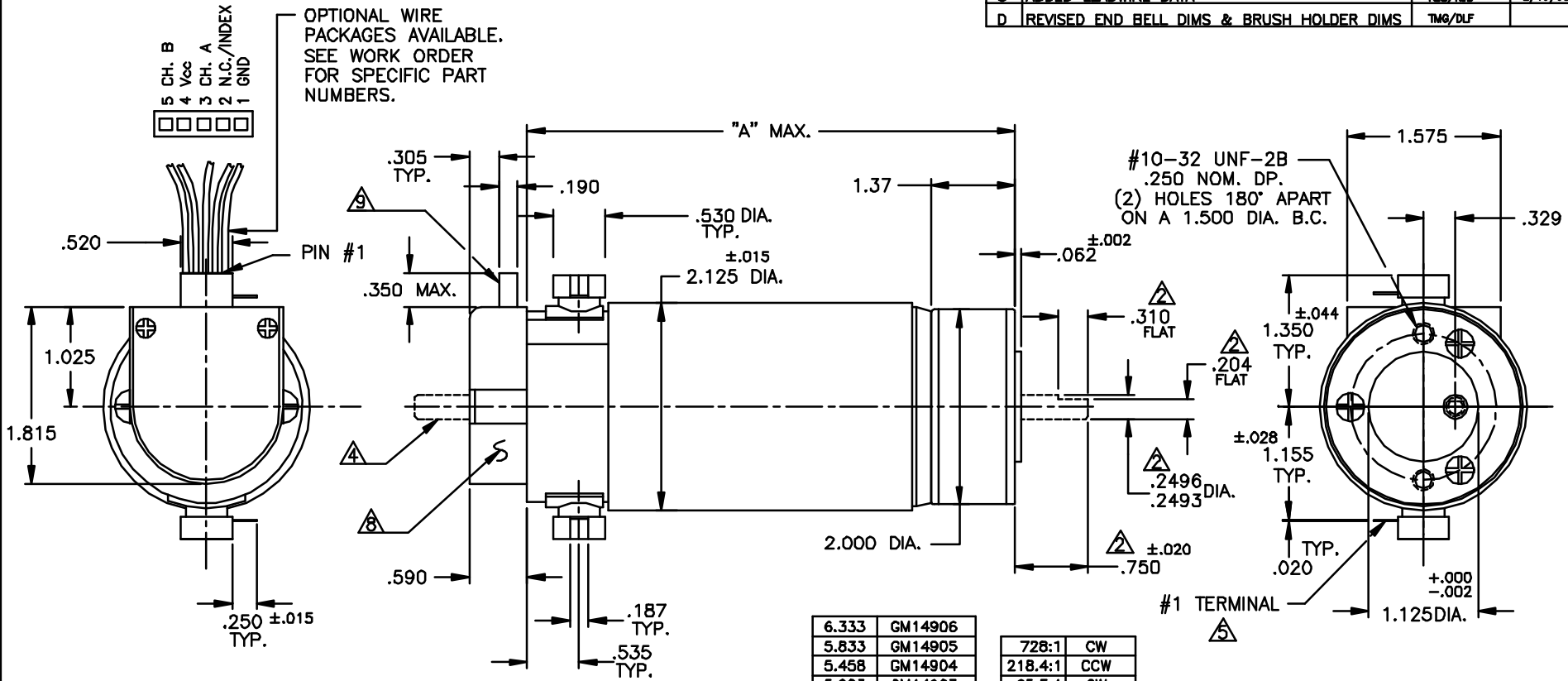


All values are nominal. Specifications subject to change without notice. Graphs are shown for reference only.

© 2001 Pittman.

NOTICE: CONFIDENTIAL PROPRIETARY INFORMATION THIS PRINT CONTAINS IDEAS, INFORMATION, AND INTELLECTUAL PROPERTY WHICH ARE THE EXCLUSIVE PROPERTY OF PITTMAN, DIVISION OF PENN ENGINEERING & MANUFACTURING CORP. RECIPIENT MUST KEEP THE INFORMATION DISCLOSED HEREIN CONFIDENTIAL AND RECIPIENT IS EXPRESSLY PROHIBITED FROM COPYING OR PUBLICATION OF THIS PRINT EXCEPT TO OTHERS IN THEIR ORGANIZATION ON A NEED-TO-KNOW BASIS.

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		



- NOTES:
- * 1. 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.
 - 3. 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.
 - 6. MOTOR BALL BEARINGS: PRELOAD PER P-107.
 - 7. OUTPUT SHAFT ENDPLAY: .020 MAX.
 - △ ENCLOSED IS A H.P. HEDS-91X0 OPTICAL ENCODER MODULE. SEE DATA SHEET FOR PART NUMBERS.
 - 9. 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 ±1/8"	DECIMAL ±.015	DRAFTED BY DCS	DATE 11/9/95
ANGLE ±1°	±.010	ENGINEERED BY DCS	11/9/95
BREAK ALL SHARP EDGES	±.010	APPROVED BY JRM	XX/XX/97
MATERIAL:		NEXT ASSY:	
FINISH:		USED ON:	

PITTMAN
PENN ENGINEERING & MANUFACTURING CORP.
2800 East Main Street, PA 15106

TITLE: OUTLINE AND MOUNTING DIMENSIONS GM149XX STANDARD W/H.P. 91X0 ENC.	
DWG. NO. B-150-314	REV. D
SCALE: D.N.S.	SHEET