

4441S010

Brushless DC Servo Motor

Assembly Data	Symbol	Units	Value	
Reference Voltage	E	V	30.3	
No-Load Speed	S_{NL}	rpm (rad/s)	5,780	(605)
Continuous Torque (Max.) ¹	T_C	oz-in (N-m)	12	(8.4E-02)
Peak Torque (Stall) ²	T_{PK}	oz-in (N-m)	71	(5.0E-01)
Weight	W_M	oz (g)	17	(482)
Motor Data				
Torque Constant	K_T	oz-in/A (N-m/A)	7.05	(4.98E-02)
Back-EMF Constant	K_E	V/krpm (V/rad/s)	5.21	(4.98E-02)
Resistance	R_T	Ω	3.00	
Inductance	L	mH	0.54	
No-Load Current	I_{NL}	A	0.02	
Peak Current (Stall) ²	I_P	A	10.1	
Motor Constant ²	K_M	oz-in/ \sqrt{W} (N-m/ \sqrt{W})	4.07	(2.87E-02)
Friction Torque	T_F	oz-in (N-m)	0.15	(1.1E-03)
Rotor Inertia	J_M	oz-in-s ² (kg-m ²)	6.4E-04	(4.5E-06)
Electrical Time Constant	τ_E	ms	0.18	
Mechanical Time Constant	τ_M	ms	5.5	
Viscous Damping	D	oz-in/krpm (N-m-s)	0.038	(2.6E-06)
Damping Constant	K_D	oz-in/krpm (N-m-s)	12.3	(8.3E-04)
Maximum Winding Temperature	θ_{MAX}	$^{\circ}F$ ($^{\circ}C$)	266	(130)
Thermal Impedance	R_{TH}	$^{\circ}F/watt$ ($^{\circ}C/watt$)	44	(6.7)
Thermal Time Constant	τ_{TH}	min	22.8	
Gearbox Data				
Encoder Data				
Channels			3	
Resolution		CPR	500	

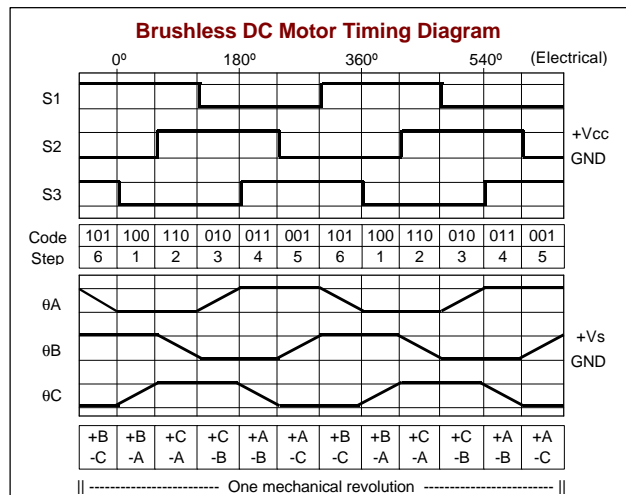
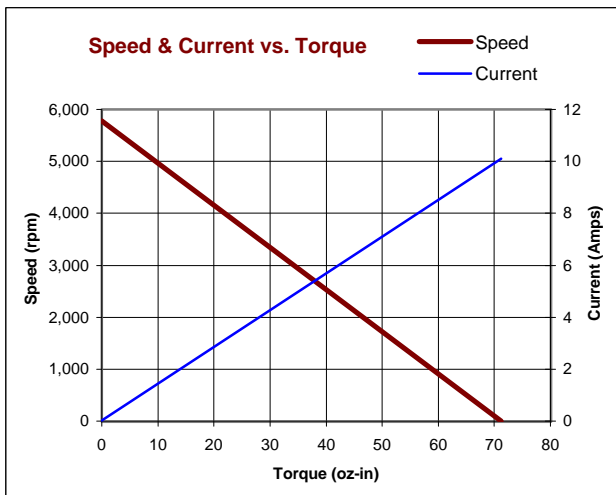
Included Features

- 4-Pole Rotor
- Neodymium Magnets
- 3-Phase Slotless Stator
- Rugged Metal Housings
- Stainless Steel Shaft
- Ball Bearings
- Hall Sensors

Customization Options

- Alternate Winding
- Modified Output Shaft
- Custom Cable Assembly
- Spur or Planetary Gearbox
- 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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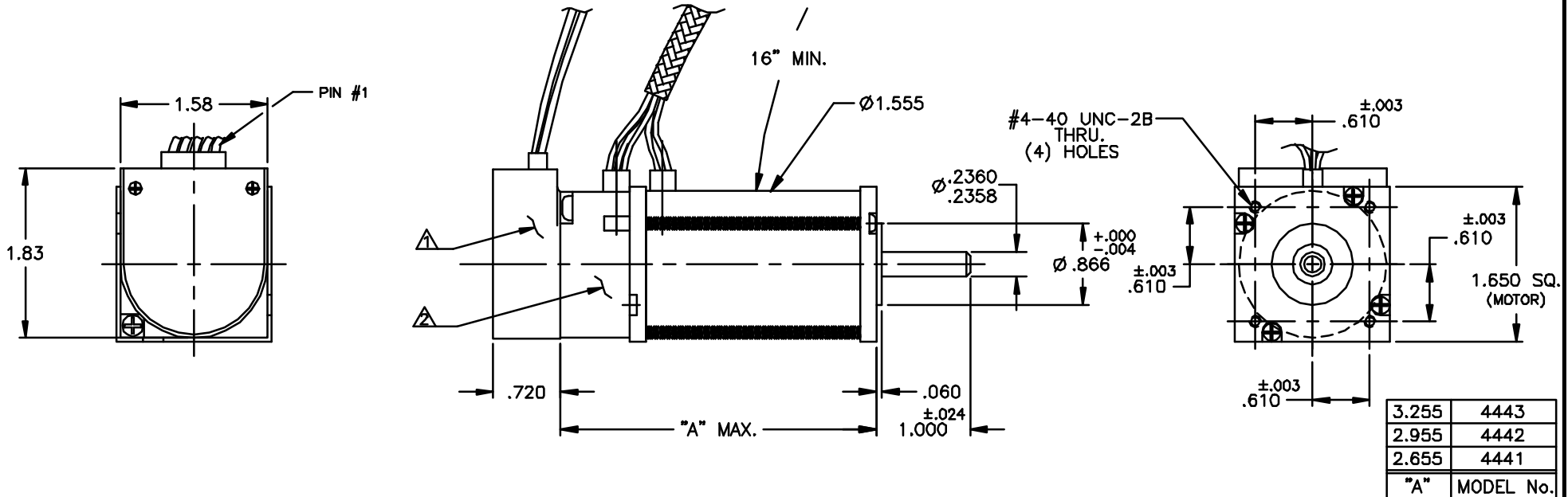
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REVISIONS				
LTR	DESCRIPTION	DRFT/ENGR	DATE	APPR
A	PRODUCTION RELEASE	DCS/DCS	3/10/99	RGR
B	-.004 WAS -.002	TJK/TJK		

ENCODER P/N CONNECTION CHART		
PIN No.	CONNECTION	COLOR
1	GROUND	BLACK
2	NC/INDEX	GREEN
3	CHANNEL A	YELLOW
4	Vcc	RED
5	CHANNEL B	BLUE

LEADWIRE & CONN. ASSY

LEAD FUNCTIONS		SENSOR			MOTOR			
3 PHASE	BLK(-) VID(+)	GRY(1)	BLU(2)	WHT(3)	BRN(A)	RED(B)	ORG(C)	
4 PHASE	BLK(-) VID(+)	GRY(1)	BLU(2)		BRN(A)	RED(B)	ORG(C)	YEL(D)



3.255	4443
2.955	4442
2.655	4441
"A"	MODEL No.

NOTE(S):

- 1. ENCLOSURE IS A HEWLETT PACKARD OPTICAL ENCODER MODEL HEDS-91X0.
- 2. ENCLOSURE IS A HALL SENSE ASSEMBLY.
- 3. BALL BEARINGS ARE PRELOADED PER P-107BL.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTION DECIMAL ANGLES ±1/64 .0015 ±1° XX ±0.015 XXX ±0.005 BREAK ALL SHARP EDGES		FILE: 150/605		TITLE: OUTLINE & MOUNTING DIMENSIONS STD. 40MM GOLD NEMA W91X0 & LEADS	
MATERIAL:	DRAFTED BY DCS DATE 3/4/99 ENGINEERED BY DCS 3/4/99 APPROVED BY RGR 3/10/99	DWG. NO. B- 150-605		REV. B	
FINISH:	NEXT ASSY:	USED ON:		SCALE: NONE SHEET 1	