

4441S009

Brushless DC Servo Motor

Assembly Data	Symbol	Units	Value
Reference Voltage	E	V	15.1
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)	3.53 (2.49E-02)
Back-EMF Constant	K _E	V/krpm (V/rad/s)	2.61 (2.49E-02)
Resistance	R _T	Ω	0.75
Inductance	L	mH	0.14
No-Load Current	I _{NL}	A	0.04
Peak Current (Stall) ²	I _P	A	20.2
Motor Constant ²	K _M	oz-in/√W (N-m/√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}	°F (°C)	266 (130)
Thermal Impedance	R _{TH}	°F/watt (°C/watt)	44 (6.7)
Thermal Time Constant	τ _{TH}	min	22.8
Gearbox Data			
Encoder Data			
Channels			3
Resolution		CPR	500

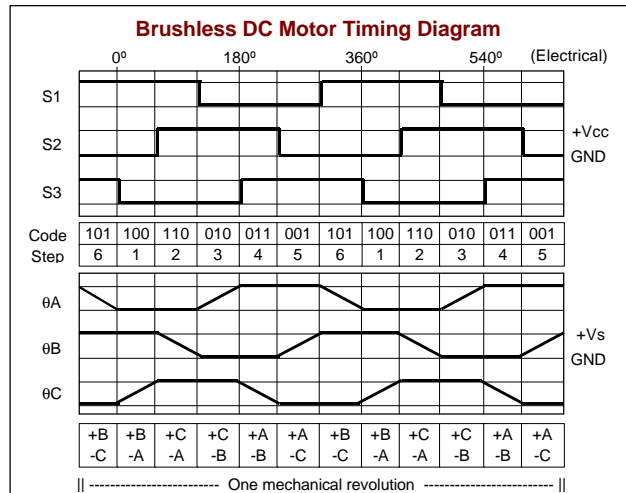
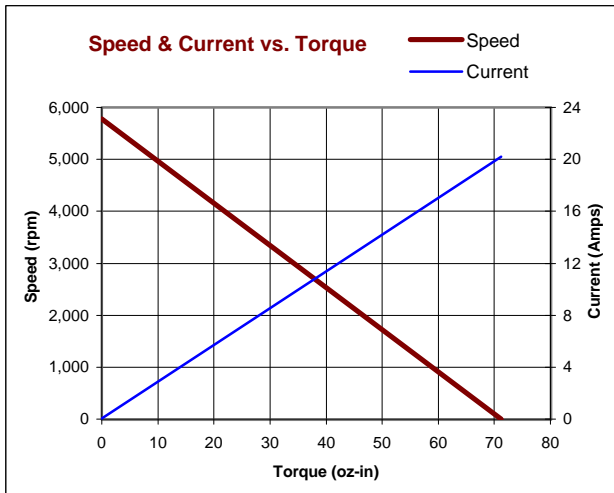
1 - Specified at max. winding temperature at 25°C ambient without heat sink. 2 - Theoretical values supplied for reference only.

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



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

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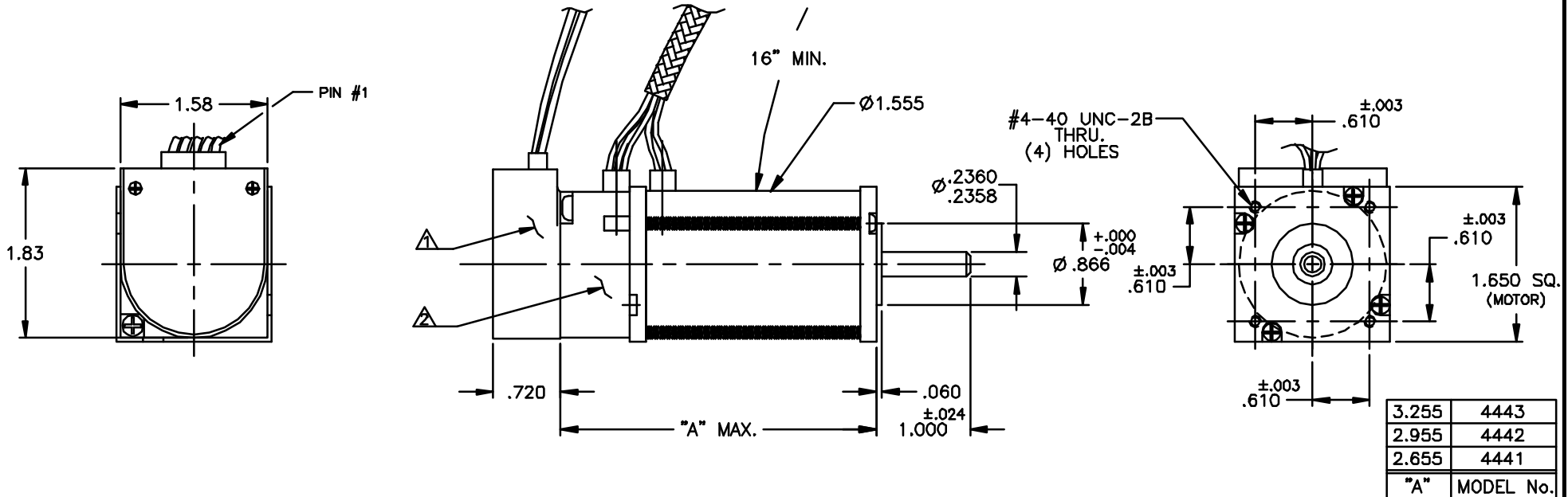
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REVISIONS				
LTR	DESCRIPTION	DRFT/ENGR	DATE	APPR
A	PRODUCTION RELEASE	DCS/DCS	3/10/99	RGR
B	-.004 WAS -.002	TJK/TJK		

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)	



- NOTE(S):
- 1. ENCLOSED IS A HEWLETT PACKARD OPTICAL ENCODER MODEL HEDS-91X0.
 - 2. ENCLOSED 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 .015 ±1° XX ±.010 XXX ±.005		FILE: 150/605	
BREAK ALL SHARP EDGES		DRAFTED BY DCS DATE 3/4/99	
MATERIAL:		ENGINEERED BY DCS 3/4/99	TITLE: OUTLINE & MOUNTING DIMENSIONS STD. 40MM GOLD NEMA W91X0 & LEADS DWG. NO. B- 150-605 SCALE: NONE SHEET 1
FINISH:		APPROVED BY RGR 3/10/99	
		NEXT ASSY:	REV. B
		USED ON:	