



5441S006

Brushless DC Servo Motor

Assembly Data	Symbol	Units	Value	
Reference Voltage	E	V	24	
No-Load Speed	S _{NL}	rpm (rad/s)	5,025	(526)
Continuous Torque (Max.) ¹	T _C	oz-in (N-m)	25	(1.8E-01)
Peak Torque (Stall) ²	T _{PK}	oz-in (N-m)	171	(1.2E+00)
Weight	W _M	oz (g)	25	(709)
Motor Data				
Torque Constant	K _T	oz-in/A (N-m/A)	6.46	(4.56E-02)
Back-EMF Constant	K _E	V/krpm (V/rad/s)	4.77	(4.56E-02)
Resistance	R _T	Ω	0.88	
Inductance	L	mH	0.27	
No-Load Current	I _{NL}	A	0.07	
Peak Current (Stall) ²	I _P	A	27.3	
Motor Constant ²	K _M	oz-in/√W (N-m/√W)	6.88	(4.86E-02)
Friction Torque	T _F	oz-in (N-m)	0.42	(3.0E-03)
Rotor Inertia	J _M	oz-in-s ² (kg-m ²)	2.5E-03	(1.7E-05)
Electrical Time Constant	τ _E	ms	0.30	
Mechanical Time Constant	τ _M	ms	7.4	
Viscous Damping	D	oz-in/krpm (N-m-s)	0.190	(1.3E-05)
Damping Constant	K _D	oz-in/krpm (N-m-s)	35.0	(2.4E-03)
Maximum Winding Temperature	θ _{MAX}	°F (°C)	266	(130)
Thermal Impedance	R _{TH}	°F/watt (°C/watt)	41	(4.8)
Thermal Time Constant	τ _{TH}	min	14.0	
Gearbox Data				
Encoder Data				
Channels			3	
Resolution		CPR	500	

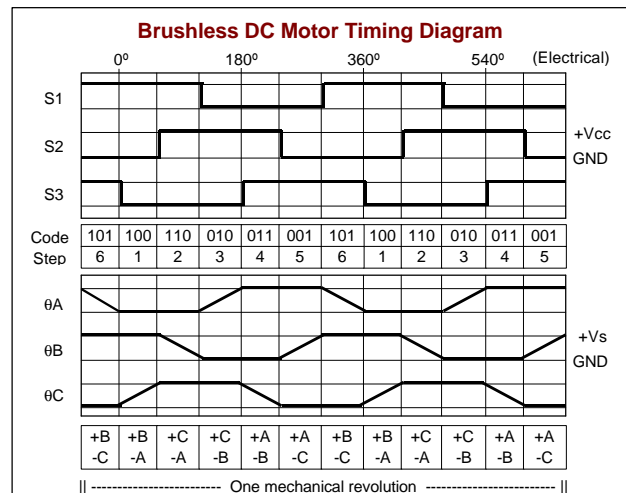
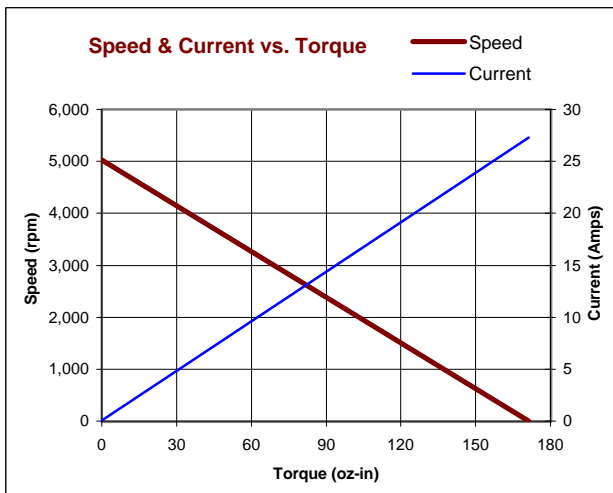
Included Features

- 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.



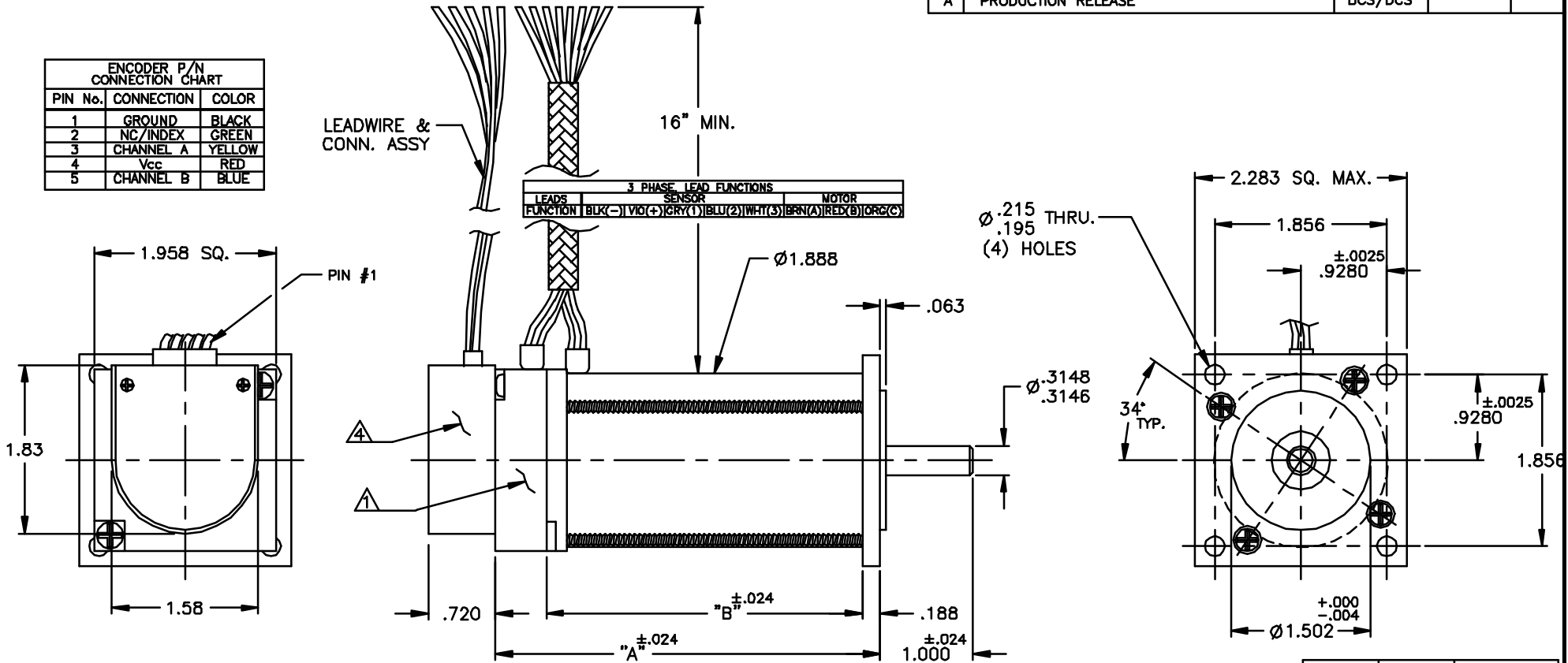
All values are nominal. Specifications subject to change without notice. Graphs are shown for reference only.

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REVISIONS				
LTR	DESCRIPTION	DRFT/ENGR	DATE	APPR
A	PRODUCTION RELEASE	DCS/DCS		

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



3.405	4.158	5443
2.905	3.658	5442
2.405	3.158	5441
"B"	"A"	MODEL

NOTES:

- ▲ SHAFT ANGLE SENSOR LOCATION.
- 2. BALL BEARINGS ARE PRELOADED PER P-107BL.
- 3. MOUNTING FLANGE TO CONFORM TO NEMA 23 STANDARDS.
- ▲ ENCLOSED IS A HEWLETT PACKARD OPTICAL ENCODER MODEL HEDS-91X0.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTION DECIMAL ANGLES ±1/64 .015 ±1° XX ±0.015 XXX ±0.008		FILE: 150\617	
BREAK ALL SHARP EDGES		DRAFTED BY DCS DATE 8/9/99	
MATERIAL:	APPROVED BY	ENGINEERED BY DCS 8/9/99	TITLE: OUTLINE & MOUNTING DIMENSIONS 544X STANDARD W/LEAD WIRE
FINISH:	NEXT ASSY:	USED ON:	
		DWG. NO. B-150-617	REV. A
		SCALE: NONE	SHEET 1 of 1