

# N2342S003

Brushless DC Servo Motor



Assembly Data	Symbol	Units	Value	
Reference Voltage	E	V	12	
No-Load Speed	S <sub>NL</sub>	rpm (rad/s)	6,431	(673)
Continuous Torque (Max.) <sup>1</sup>	T <sub>C</sub>	oz-in (N-m)	27	(1.9E-01)
Peak Torque (Stall) <sup>1,2</sup>	T <sub>PK</sub>	oz-in (N-m)	70	(4.9E-01)
Weight	W <sub>M</sub>	oz (g)	22	(610)
Motor Data				
Torque Constant	K <sub>T</sub>	oz-in/A (N-m/A)	2.42	(1.71E-02)
Back-EMF Constant	K <sub>E</sub>	V/krpm (V/rad/s)	1.79	(1.71E-02)
Resistance	R <sub>T</sub>	Ω	0.15	
Inductance	L	mH	0.31	
No-Load Current	I <sub>NL</sub>	A	0.23	
Peak Current (Stall) <sup>1,2</sup>	I <sub>P</sub>	A	25.9	
Motor Constant <sup>1,2</sup>	K <sub>M</sub>	oz-in/√W (N-m/√W)	5.30	(3.74E-02)
Friction Torque	T <sub>F</sub>	oz-in (N-m)	1.20	(8.5E-03)
Rotor Inertia	J <sub>M</sub>	oz-in-s <sup>2</sup> (kg-m <sup>2</sup> )	1.7E-03	(1.2E-05)
Electrical Time Constant	τ <sub>E</sub>	ms	2.10	
Mechanical Time Constant	τ <sub>M</sub>	ms	8.5	
Viscous Damping	D	oz-in/krpm (N-m-s)	0.32	(2.2E-05)
Damping Constant	K <sub>D</sub>	oz-in/krpm (N-m-s)	0.029	(2.0E-06)
Maximum Winding Temperature	θ <sub>MAX</sub>	°F (°C)	266	(130)
Thermal Impedance	R <sub>TH</sub>	°F/watt (°C/watt)	40	(4.2)
Thermal Time Constant	τ <sub>TH</sub>	min	17.0	
Gearbox Data				
Encoder Data				
Channels			3	
Resolution		CPR	1000	

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

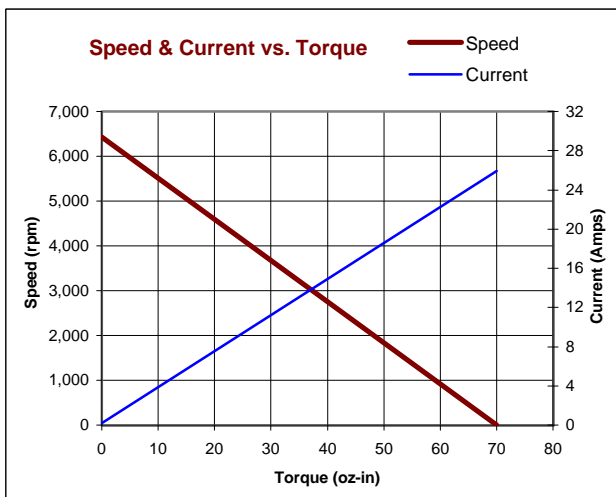
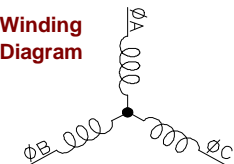
### Included Features

- 4-Pole Rotor
- Neodymium Magnets
- 3-Phase Slotted Stator
- 6-Slot Laminations
- Stainless Steel Shaft
- NEMA 23 Mounting
- Ball Bearings
- Hall Sensors

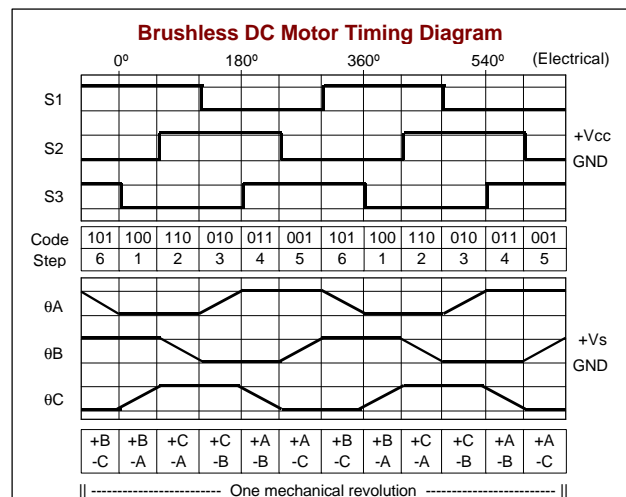
### Customization Options

- Alternate Winding
- Modified Output Shaft
- Custom Cable Assembly
- Spur or Planetary Gearbox
- Optional Encoder
- Fail-Safe Brake
- Integral Electronics

### Winding Diagram



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



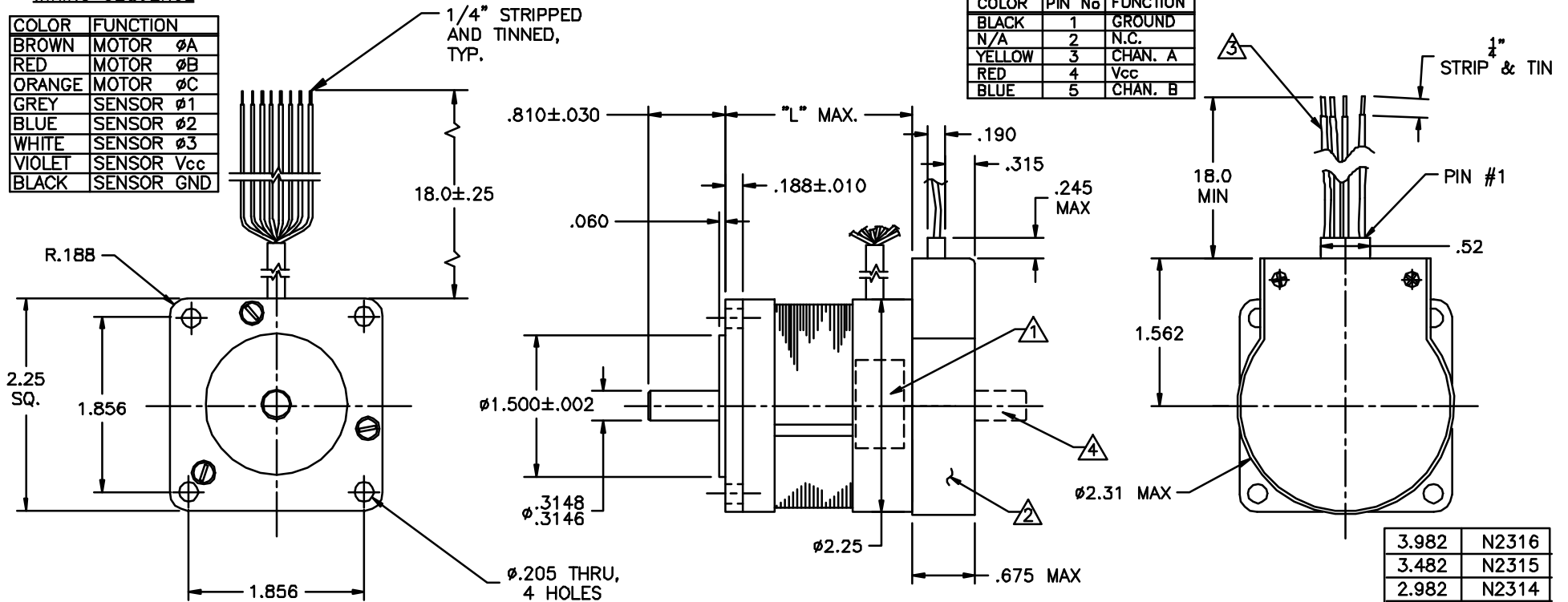
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REVISIONS				
LTR	DESCRIPTION	DRFT/ENGR	DATE	APPR
A	PRODUCTION RELEASE	KJP		

WIRING SEQUENCE

COLOR	FUNCTION
BROWN	MOTOR $\phi$ A
RED	MOTOR $\phi$ B
ORANGE	MOTOR $\phi$ C
GREY	SENSOR $\phi$ 1
BLUE	SENSOR $\phi$ 2
WHITE	SENSOR $\phi$ 3
VIOLET	SENSOR Vcc
BLACK	SENSOR GND

ENCODER CONNECTION CHART		
COLOR	PIN No	FUNCTION
BLACK	1	GROUND
N/A	2	N.C.
YELLOW	3	CHAN. A
RED	4	Vcc
BLUE	5	CHAN. B



3.982	N2316
3.482	N2315
2.982	N2314
2.482	N2313
1.982	N2312
1.532	N2311
"L"	MOTOR

- NOTES:
- ① UNITS LABELED AS FOLLOWS WITH LABEL PLACED ON SIDE OF REAR ENDBELL. ROTATIONAL ORIENTATION VARIABLE.  
MODEL No.  
LOT No.  
DATE CODE
  - ② ENCLOSED IS A H.P. HEDS-90X0 OPTICAL ENCODER MODULE.
  - ③ OPTIONAL LEAD WIRE PACKAGE IS AVAILABLE, P/N 82-167-□ & 82-65-□  
REFER TO DATA SHEET FOR PART NUMBERS.
  - ④ OPTIONAL REAR SHAFT EXTENSION AVAILABLE, .3146/.3148 DIA.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTION DECIMAL ANGLES $\pm 1/84$ $\pm .015$ $\pm 16$ XX $\pm .010$ XXX $\pm .005$ BREAK ALL SHARP EDGES		FILE: 150/663		
MATERIAL:		DRAFTED BY: KJP	DATE: 7/12/00	<b>TITLE:</b> N2300 MOTOR OUTLINE WITH 9000 ENCODER
FINISH:		ENGINEERED BY: KJP	7/12/00	
NEXT ASSY:		APPROVED BY:		<b>DWG. NO.</b> B- 150-663
USED ON:				REV. A
SCALE:			SHEET 1 OF 1	