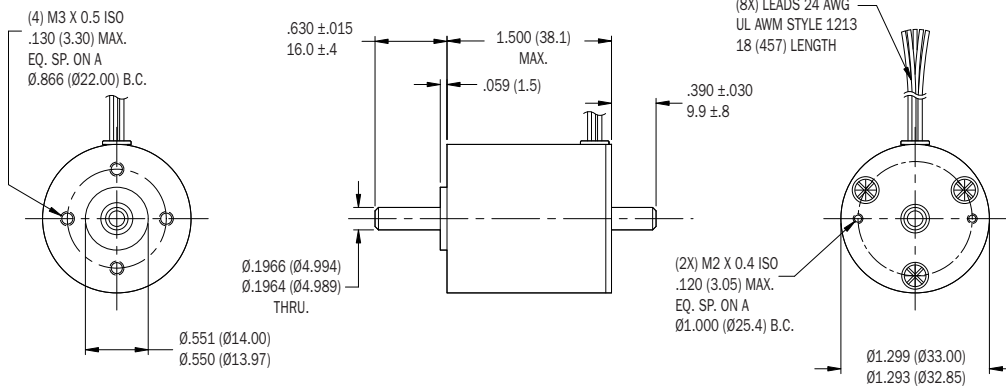


1301 BRUSHLESS DC SERVOMOTOR



Motor Connection Chart

Color	Function
Brown	Motor ØA
Red	Motor ØB
Orange	Motor ØC
Grey	Sensor 1
Blue	Sensor 2
White	Sensor 3
Violet	Vcc (+5 to 24 VDC)
Black	Ground



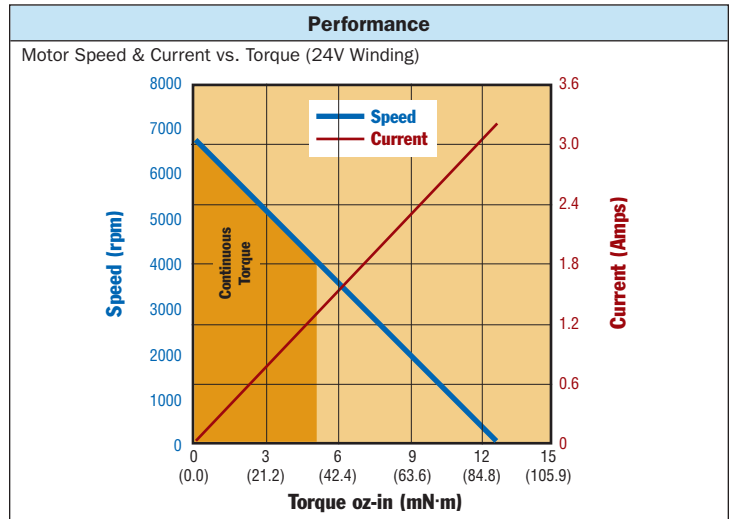
Winding Data	Symbol	Units	1301									
			4.78	6.00	7.58	9.55	12.00	15.20	19.10	24.00		
Reference Voltage	E	V	4.78	6.00	7.58	9.55	12.00	15.20	19.10	24.00		
Torque Constant	K_T	oz-in/A	0.880	1.10	1.43	1.76	2.20	2.86	3.52	4.40		
		N-m/A	0.0062	0.0078	0.0101	0.0124	0.0155	0.0202	0.0249	0.0311		
Back-EMF Constant	K_E	V/krpm	0.651	0.813	1.06	1.30	1.63	2.11	2.60	3.25		
		V/rad/s	0.0062	0.0078	0.0101	0.0124	0.0155	0.0202	0.0249	0.0311		
Resistance	R_T	Ω	0.39	0.57	0.86	1.29	1.94	3.14	4.81	7.36		
Inductance	L	mH	0.14	0.22	0.38	0.57	0.90	1.5	2.3	3.6		
No-Load Current	I_{NL}	A	0.45	0.36	0.28	0.23	0.18	0.14	0.11	0.09		
Peak Current (Stall)	I_{PK}	A	12	11	8.8	7.4	6.2	4.8	4.0	3.3		

Motor Data	Symbol	Units	1301
Continuous Torque (Max.) ¹	T_C	oz-in	5.0
		N-m	0.035
Peak Torque (Stall) ²	T_{PK}	oz-in	12.6
		N-m	0.0890
Motor Constant ²	K_M	oz-in/vW	1.55
		N-m/vW	0.0109
No-Load Speed	S_{NL}	rpm	7090
		rad/s	742
Friction Torque	T_F	oz-in	0.40
		N-m	0.0028
Rotor Inertia	J_M	oz-in-s ²	1.7E-04
		kg-m ²	1.2E-06
Electrical Time Constant	τ_E	ms	0.44
Mechanical Time Constant	τ_M	ms	10
Viscous Damping— Infinite Source Impedance	D	oz-in/krpm	0.014
		N-m/rad/s	9.4E-07
Viscous Damping— Zero Source Impedance	K_D	oz-in/krpm	1.8
		N-m/rad/s	1.19E-04
Maximum Winding Temp.	θ_{MAX}	°F	266
		°C	130
Thermal Impedance	R_{TH}	°F/watt	44
		°C/watt	24
Thermal Time Constant	τ_{TH}	min	7.8
Motor Weight (Mass)	W_M	oz	4.50
		g	128

¹ Continuous torque specified at 25°C ambient temperature and without additional heat sink.

² Theoretical values supplied for reference only.

Available through the MotionExpress program.



Standard Features	
• Shielded Ball Bearings	• 3-Phase Stator
• 4-Pole Rotor	• Hall Sensors
• Neodymium Magnets	• Aluminum Housing

Complementary Products (See Bulletin CP)	
• G32A Planetary Gearbox	• G32B Planetary Gearbox
• G35A Spur Gearbox	• E22A Optical Encoder
• E30A Optical Encoder	• E30B Optical Encoder
• E35A Optical Encoder	