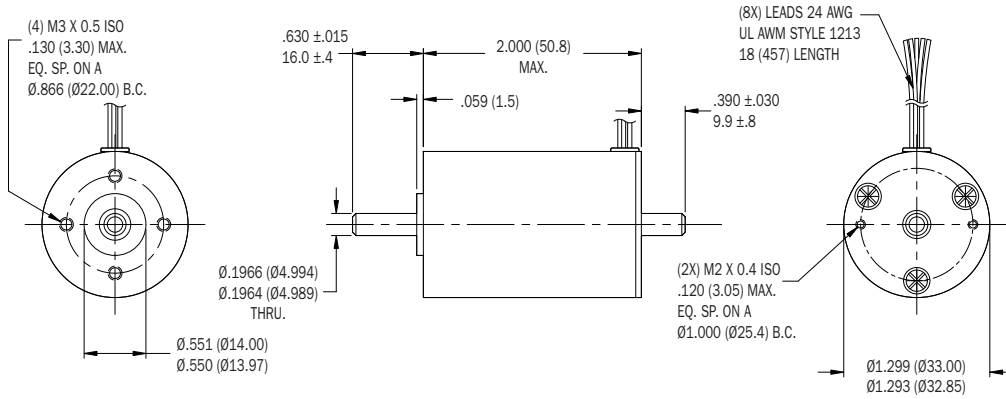


1302 BRUSHLESS DC SERVOMOTOR



Motor Connection Chart

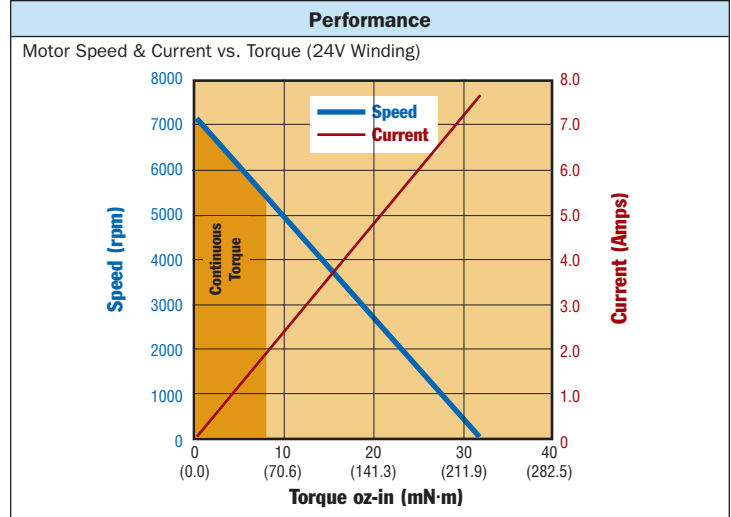
Color	Function
Brown	Motor ØA
Red	Motor ØB
Orange	Motor ØC
Grey	Sensor 1
Blue	Sensor 2
White	Sensor 3
Violet	Vcc (+5 to 24 VDC)
Black	Ground



Winding Data	Symbol	Units	1302													
Reference Voltage	E	V	9.55	12.00	15.20	19.10	24.00	30.30	38.20	48.00						
Torque Constant	K_T	oz-in/A N-m/A	1.76	2.20	2.86	3.52	4.40	5.72	7.04	8.80						
Back-EMF Constant	K_E	V/krpm V/rad/s	1.30	1.63	2.11	2.60	3.25	4.23	5.21	6.51						
Resistance	R_T	Ω	0.58	0.87	1.35	2.06	3.13	5.12	7.88	12.1						
Inductance	L	mH	0.27	0.42	0.71	1.1	1.7	2.9	4.3	6.8						
No-Load Current	I_{NL}	A	0.34	0.27	0.21	0.17	0.14	0.10	0.09	0.07						
Peak Current (Stall)	I_{PK}	A	16	14	11	9.3	7.7	5.9	4.8	4.0						

Motor Data	Symbol	Units	1302
Continuous Torque (Max.) ¹	T_C	oz-in N-m	7.0 0.049
Peak Torque (Stall) ²	T_{PK}	oz-in N-m	32.0 0.226
Motor Constant ²	K_M	oz-in/vW N-m/vW	2.45 0.0173
No-Load Speed	S_{NL}	rpm rad/s	7180 752
Friction Torque	T_F	oz-in N-m	0.60 0.0042
Rotor Inertia	J_M	oz-in-s ² kg-m ²	2.8E-04 1.9E-06
Electrical Time Constant	τ_E	ms	0.53
Mechanical Time Constant	τ_M	ms	6
Viscous Damping—Infinite Source Impedance	D	oz-in/krpm N-m/rad/s	0.023 1.6E-06
Viscous Damping—Zero Source Impedance	K_D	oz-in/krpm N-m/rad/s	4.5 3.0E-04
Maximum Winding Temp.	θ_{MAX}	°F °C	266 130
Thermal Impedance	R_{TH}	°F/watt °C/watt	41 23
Thermal Time Constant	τ_{TH}	min	9.0
Motor Weight (Mass)	W_M	oz g	6.50 184

¹ Continuous torque specified at 25°C ambient temperature and without additional heat sink.
² Theoretical values supplied for reference only.



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	

Available through the MotionExpress program.