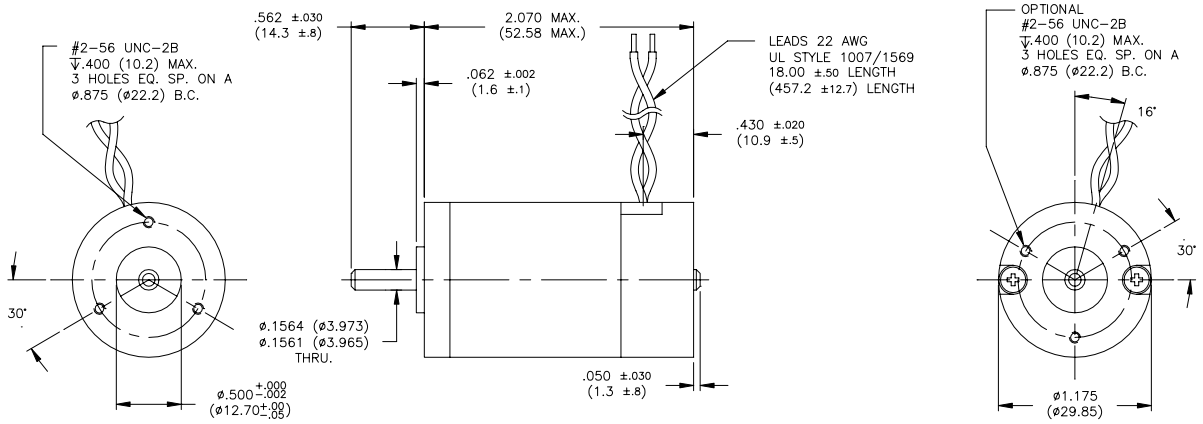
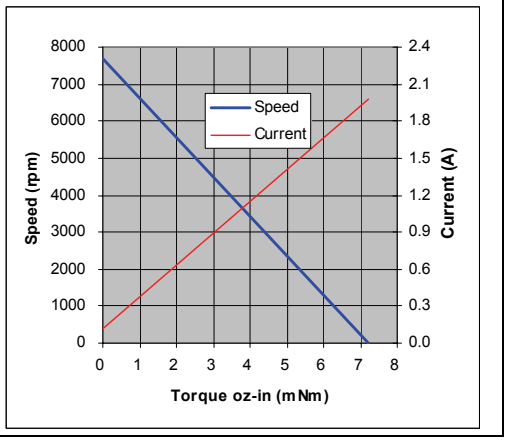
8222 SERIES BRUSH DC SERVO MOTOR



Motor Data	Symbol	Units	Winding Designation							
			9.55 V	12.0 V	15.2 V	19.1 V	24.0 V	30.3 V	38.2 V	48.0 V
Supply Voltage (Reference)	V_s	V	9.55	12.0	15.2	19.1	24.0	30.3	38.2	48.0
Continuous Torque	T_c	oz-in	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
		Nm	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
Speed @ Cont. Torque	S_c	rpm	5110	5240	5430	5400	5420	5430	5560	5470
Current @ Cont. Torque	I_c	A	1.69	1.35	1.08	0.86	0.67	0.54	0.42	0.34
Continuous Output Power	$P_{o,c}$	W	6.0	6.1	6.3	6.3	6.3	6.3	6.5	6.4
Motor Constant	K_M	oz-in/√W	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
		Nm/√W	0.0077	0.0078	0.0078	0.0079	0.0079	0.0079	0.0079	0.0079
Torque Constant	K_T	oz-in/A	1.55	1.94	2.42	3.07	3.88	4.88	6.18	7.76
		Nm/A	0.0109	0.0137	0.0171	0.0217	0.0274	0.0345	0.0436	0.0548
Voltage Constant	K_E	V/krpm	1.15	1.43	1.79	2.27	2.87	3.61	4.57	5.74
		V s/rad	0.0109	0.0137	0.0171	0.0217	0.0274	0.0345	0.0436	0.0548
Terminal Resistance	R_{mt}	Ω	2.01	3.10	4.81	7.61	12.1	19.1	30.3	48.0
Inductance	L	mH	1.00	1.57	2.45	3.93	6.27	9.92	15.9	25.1
No-Load Current	I_{nl}	A	0.31	0.25	0.20	0.16	0.12	0.10	0.070	0.060
No-Load Speed	S_{nl}	rpm	7630	7670	7800	7720	7700	7710	7740	7710
Peak Current (Stall)	I_{pk}	A	4.75	3.87	3.16	2.51	1.98	1.59	1.26	1.00
Peak Torque (Stall)	T_{pk}	oz-in	6.88	7.02	7.16	7.21	7.23	7.25	7.36	7.29
		Nm	0.0486	0.0496	0.0506	0.0509	0.0511	0.0512	0.0520	0.0515
Coulomb Friction Torque	T_f	oz-in	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35
		Nm	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025
Viscous Damping Factor	D	oz-in/krpm	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015
		Nm s/rad	1.0E-06	1.0E-06	1.0E-06	1.0E-06	1.0E-06	1.0E-06	1.0E-06	1.0E-06
Electrical Time Constant	τ_e	ms	0.50	0.51	0.51	0.52	0.52	0.52	0.52	0.52
Mechanical Time Constant	τ_m	ms	17	16	16	16	16	16	16	16
Thermal Time Constant	τ_{th}	min	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8
Thermal Resistance	R_{th}	°C/W	24	24	24	24	24	24	24	24
Max. Winding Temperature	θ_{max}	°C	155	155	155	155	155	155	155	155
Rotor Inertia	J_r	oz-in-sec^2	1.4E-04	1.4E-04	1.4E-04	1.4E-04	1.4E-04	1.4E-04	1.4E-04	1.4E-04
		kg m^2	9.9E-07	9.9E-07	9.9E-07	9.9E-07	9.9E-07	9.9E-07	9.9E-07	9.9E-07
Motor Weight (Mass)	w_M	oz	4.69	4.69	4.69	4.69	4.69	4.69	4.69	4.69
		g	133	133	133	133	133	133	133	133

Performance (24 V Winding)



Standard Features

- Sintered Bronze Bearings
- 2-pole Stator
- Ceramic Magnets
- 7-slot Armature
- Heavy-gauge Steel Housing
- Silicon Steel Laminations
- Copper-graphite Brushes
- Diamond-Turned Commutator

Complementary Products

- G32A Planetary Gearbox
- G32B Planetary Gearbox
- G35A Spur Gearbox
- E22A Optical Encoder
- E30A Optical Encoder
- E30B Optical Encoder
- E35A Optical Encoder

Notes:

[1] All values specified at 25°C ambient temperature and without heat sink.

[2] Peak values are theoretical and supplied for reference only.