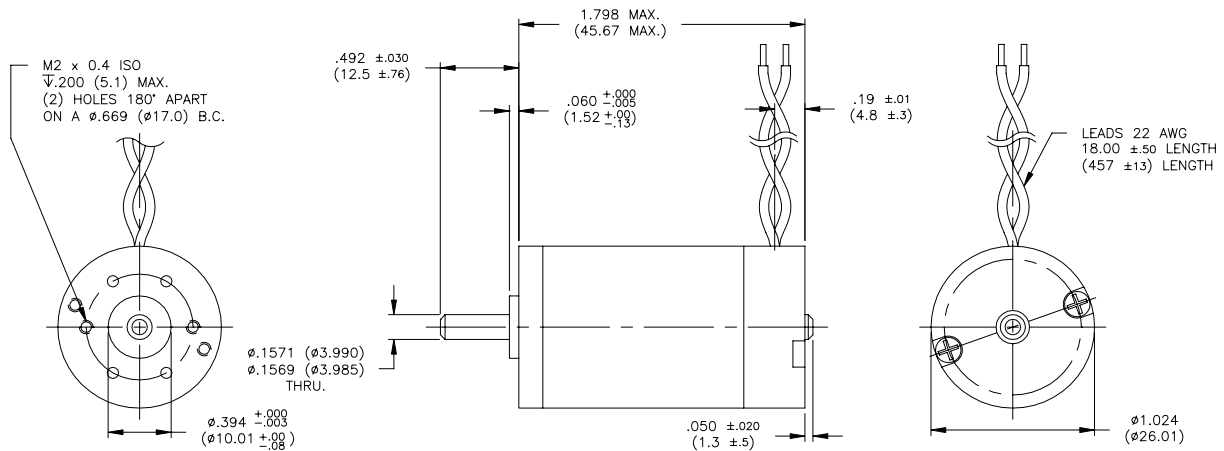
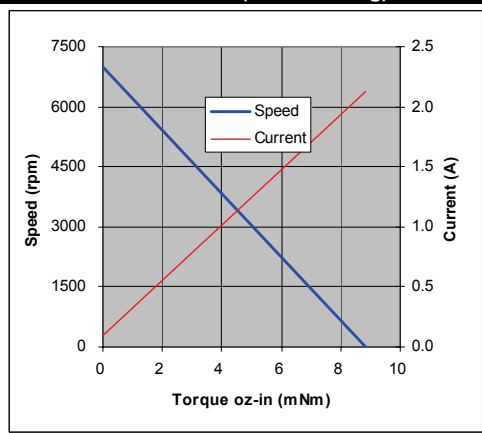


# 8691 SERIES BRUSH DC SERVO MOTOR



Motor Data	Symbol	Units	Winding Designation							
			6.0 V	7.58 V	9.55 V	12.0 V	15.2 V	19.1 V	24.0 V	30.3 V
Supply Voltage (Reference)	$V_s$	V	6.00	7.58	9.55	12.0	15.2	19.1	24.0	30.3
Continuous Torque	$T_c$	oz-in	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
		Nm	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014
Speed @ Cont. Torque	$S_c$	rpm	4560	4720	4830	4910	5060	5020	5020	5030
Current @ Cont. Torque	$I_c$	A	2.43	1.92	1.52	1.22	0.97	0.77	0.60	0.48
Continuous Output Power	$P_{o,c}$	W	6.5	6.7	6.9	7.0	7.2	7.2	7.2	7.2
Motor Constant	$K_M$	oz-in/ $\sqrt{W}$	1.2	1.2	1.3	1.3	1.3	1.3	1.3	1.3
		Nm/ $\sqrt{W}$	0.0085	0.0088	0.0090	0.0090	0.0091	0.0091	0.0092	0.0092
Torque Constant	$K_T$	oz-in/A	1.08	1.37	1.74	2.17	2.71	3.44	4.35	5.47
		Nm/A	0.0076	0.0097	0.0123	0.0153	0.0191	0.0243	0.0307	0.0386
Voltage Constant	$K_E$	V/krpm	0.80	1.01	1.29	1.60	2.00	2.54	3.22	4.04
		V s/rad	0.0076	0.0097	0.0123	0.0153	0.0191	0.0243	0.0307	0.0386
Terminal Resistance	$R_{mt}$	$\Omega$	0.80	1.22	1.87	2.89	4.47	7.08	11.3	17.8
Inductance	L	mH	0.41	0.66	1.05	1.63	2.55	4.10	6.55	10.2
No-Load Current	$I_{nl}$	A	0.39	0.31	0.25	0.20	0.16	0.13	0.095	0.080
No-Load Speed	$S_{nl}$	rpm	6980	6970	6920	6980	7080	7000	6990	7000
Peak Current (Stall)	$I_{pk}$	A	7.50	6.21	5.11	4.15	3.40	2.70	2.13	1.71
Peak Torque (Stall)	$T_{pk}$	oz-in	7.68	8.09	8.45	8.58	8.78	8.83	8.86	8.89
		Nm	0.0542	0.0571	0.0597	0.0606	0.0620	0.0624	0.0626	0.0628
Coulomb Friction Torque	$T_f$	oz-in	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
		Nm	0.0021	0.0021	0.0021	0.0021	0.0021	0.0021	0.0021	0.0021
Viscous Damping Factor	D	oz-in/krpm	0.0087	0.0087	0.0087	0.0087	0.0087	0.0087	0.0087	0.0087
		Nm s/rad	5.9E-07	5.9E-07	5.9E-07	5.9E-07	5.9E-07	5.9E-07	5.9E-07	5.9E-07
Electrical Time Constant	$\tau_e$	ms	0.51	0.54	0.56	0.56	0.57	0.58	0.58	0.58
Mechanical Time Constant	$\tau_m$	ms	14	13	12	12	12	12	12	12
Thermal Time Constant	$\tau_{th}$	min	13	13	13	13	13	13	13	13
Thermal Resistance	$R_{th}$	$^{\circ}C/W$	19	19	19	19	19	19	19	19
Max. Winding Temperature	$\theta_{max}$	$^{\circ}C$	130	130	130	130	130	130	130	130
Rotor Inertia	$J_r$	oz-in-sec <sup>2</sup>	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 <sup>2</sup>	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	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
		g	76	76	76	76	76	76	76	76

Performance (24 V Winding)



### Standard Features

- Ball Bearings
- 2-pole Stator
- Neodymium 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:

- <sup>1</sup> All values specified at 25 $^{\circ}C$  ambient temperature and without heat sink.
- <sup>2</sup> Peak values are theoretical and supplied for reference only.