Brush Motor

TGB2020 Brush Motor

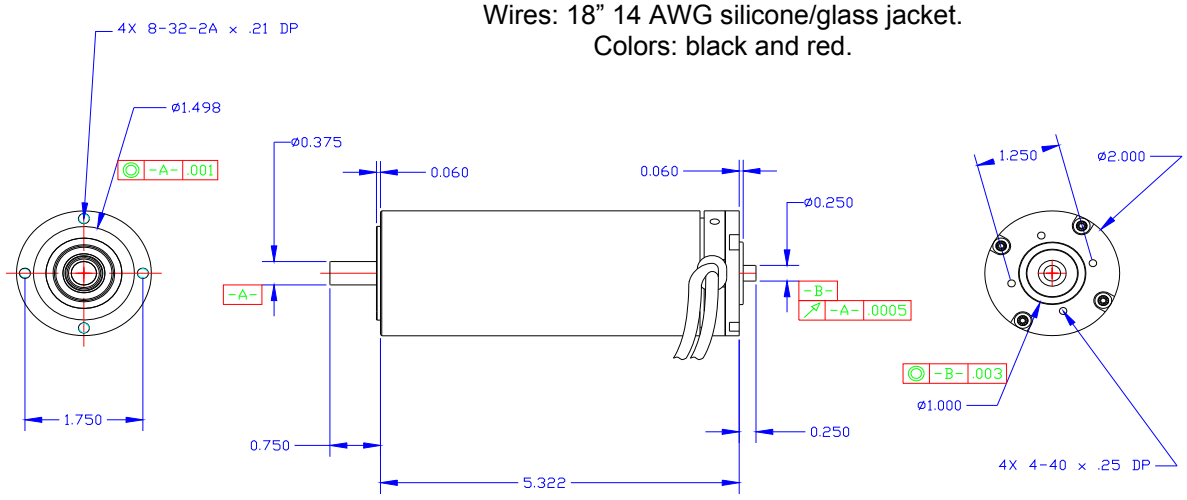
- High power density
- High efficiency
- Ironless core
- Zero cogging
- Zero hysteresis
- Zero iron losses
- Zero lamination ringing
- Rapid acceleration
- Low-inductance armature

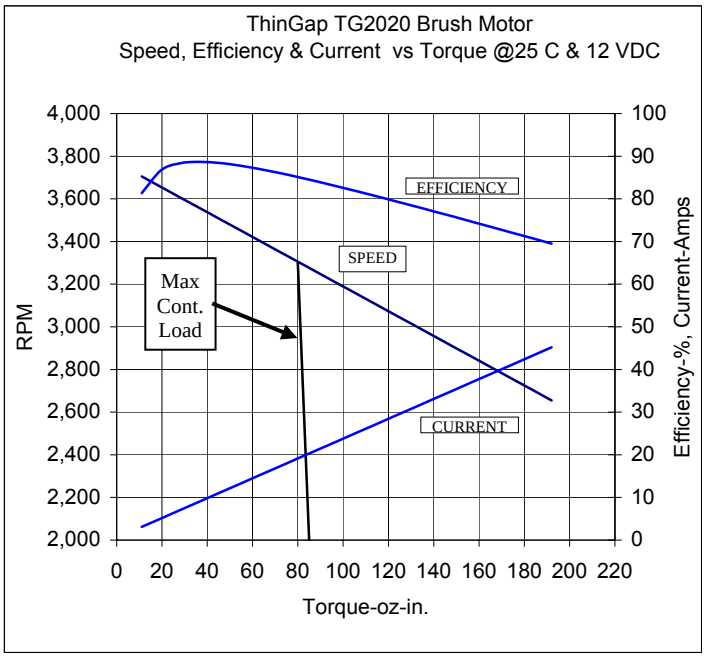
TGB2020 Brush Motor	
Peak torque (T_{peak})	425 oz-in.
Continuous shaft power (P_{cont})	440 W
Voltage (V_{cont})	24 V_{DC}
Speed (ω_{cont})	7,407 rpm
Torque (T_{cont})	80 oz-in.
Current (I_{cont})	20.4 amps
Max efficiency @ 25 °C	90%
Max speed (ω_{max})	12,000 rpm
No load speed (ω)	7,565 rpm @ 24 V_{DC}
No load current (I_o)	0.80 amps @ 24 V_{DC}
Motor constant (K_m)	15.2 oz-in./sqrt (W)
Motor constant/inertia ratio (K_m/J)	1,500/s [sqrt (W)]
Torque constant (K_t)	4.29 oz-in./amp
Back EMF constant (K_e)	352 rpm/V
Terminal resistance (R_t)	0.08 Ω
Cogging and hysteresis torque (T_c)	0 oz-in.
Viscous drag torque (T_{ac})	0.34 oz-in./krpm
Friction torque (T_{fr})	1.0 oz-in.
Max armature temperature*	110 °C
Thermal resistance (TPR)	1.49 deg °C/W
Armature inductance (L)	4 μH
Starting current (I)	0.23 amps @ 0.1 V_{DC}
Armature weight (W_a)	8.3 oz
Motor weight (W_t)	53 oz
Armature inertia (J)	9.07×10^{-3} oz-in.-s^2

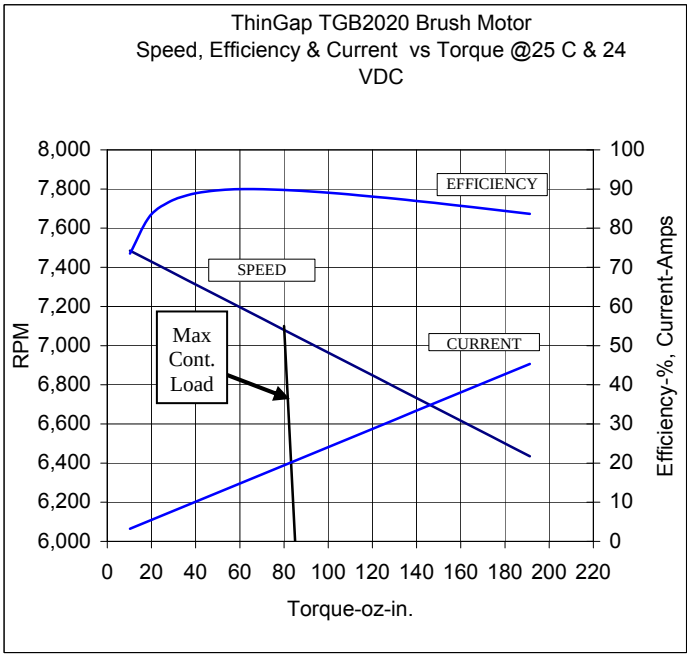
*Max continuous winding temperature is limited by maximum magnet temperature of 120 °C.
Peak power is limited by the temperature rise of the armature.
Magnet material: Neodymium. Bearing type: Ball. Brush: Silver graphite. Poles: 2.
Motor testing performed at 25 °C ambient with mounting heat sink of 3" x 3/8" x 8" aluminum.

Outline Drawing

Wires: 18” 14 AWG silicone/glass jacket.
Colors: black and red.







THINGAP CORPORATION
(805) 477-9741
(805) 477-7535 Fax

