

motor type

G4x1

These are calculated curves.
The actual motor performance might vary up to 5%

input:

| | | | |
|----------------------------|-------------|-------|-----------|
| stack length | L | 4 | *0.1 inch |
| maximum Current | Imax [Arms] | 15 | Arms |
| connection of coils | D / S | S | |
| number of turns | # | 12 | |
| copper fill factor | Kcu | 34,1% | |
| saturation at max. current | Satt | 9,0% | |
| bus voltage | Udc | 48 | V |
| rated speed | Nn | 4000 | rpm |
| kt-variation factor | km | 1,00 | |
| ambiente temperature | Tu | 25,00 | °C |
| thermal resistance | Rth | 1,893 | °K/W |

stall data
continuous data with:
Duty Cycle = 100 %
dT = 130 °K

| | | | |
|--------------------------|-------------|------|------|
| continuous stall torque | ① Mo [Nm] | 0,48 | Nm |
| continuous stall current | ① Io [Arms] | 4,34 | Arms |
| peak stall torque | Mmax [Nm] | 1,5 | Nm |
| peak stall current | Imax [Arms] | 15,0 | Arms |

nominal values

| | | | |
|---------------|-------------|------|------|
| rated torque | ② Mn [Nm] | 0,43 | Nm |
| rated current | ② In [Arms] | 3,84 | Arms |
| rated power | ② Pn [W] | 179 | W |
| rated speed | ② Nn [rpm] | 4000 | rpm |

other data

| | | | |
|---------------------------------|----------------|--------|-----------|
| theoretical no load speed | ③ Ntheo [rpm] | 5010 | rpm |
| maximum speed | ④ Nmax [rpm] | 37570 | rpm |
| torque constant | kt [Nm/Arms] | 0,111 | Nm/Arms |
| EMK-constant | ke [Vpk/rad/s] | 0,092 | Vpk/rad/s |
| terminal to terminal resistance | ⑤ Rtt [Ohm] | 1,243 | Ohm |
| terminal to terminal inductance | ⑤ Ltt [mH] | 0,862 | mH |
| inductance Ld | ⑤ Ld [mH] | 0,473 | mH |
| inductance Lq | ⑤ Lq [mH] | 0,473 | mH |
| thermal resistance | ⑤ Rth [°C/W] | 1,893 | °C / W |
| electr. time constant | ⑤ T [ms] | 0,693 | ms |
| inertia w/o brake | J [kgcm²] | 0,2348 | kgcm² |
| mass w/o brake | m [kg] | 0,46 | kg |

brake

| | | | |
|--------------------------|-----------|--------|-------|
| inertia with small brake | J [kgcm²] | 0,2348 | kgcm² |
| inertia with big brake | J [kgcm²] | 0,2348 | kgcm² |
| mass with small brake | m [kg] | 0,46 | kg |
| mass with big brake | m [kg] | 0,46 | kg |

- ① With motor mounted on a steel plate 300 x 300 x 12 mm and 130 °K dT between windings and still air ambient
- ② nominal speed at maximum continuous output power
- ③ speed, where EMF is equal to bus voltage 48 V
- ④ speed, where EMF is 50 volts
- ⑤ measured at 25°C

ideal motor characteristic;

