

motor type G4x2

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

input:

stack length	L	2,36	*0.1 inch
maximum Current	Imax [Arms]	14	Arms
connection of coils	D / S	S	
number of turns	#	13	
copper fill factor	Kcu	30,0%	
saturation at max. current	Satt	3,5%	
bus voltage	Udc	48	V
rated speed	Nn	6000	rpm
kt-variation factor	km	1,00	
ambiente temperature	Tu	25,00	°C
thermal resistance	Rth	3,269	°K/W

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

continuous stall torque	① Mo [Nm]	0,11	Nm
continuous stall current	① Io [Arms]	4,30	Arms
peak stall torque	Mmax [Nm]	0,3	Nm
peak stall current	Imax [Arms]	14,0	Arms

nominal values

rated torque	② Mn [Nm]	0,09	Nm
rated current	② In [Arms]	3,79	Arms
rated power	② Pn [W]	59	W
rated speed	② Nn [rpm]	6000	rpm

other data

theoretical no load speed	③ Ntheo [rpm]	22160	rpm
maximum speed	④ Nmax [rpm]	166220	rpm
torque constant	kt [Nm/Arms]	0,025	Nm/Arms
EMK-constant	ke [Vpk/rad/s]	0,021	Vpk/rad/s
terminal to terminal resistance	⑤ Rtt [Ohm]	0,731	Ohm
terminal to terminal inductance	⑤ Ltt [mH]	0,340	mH
inductance Ld	⑤ Ld [mH]	0,181	mH
inductance Lq	⑤ Lq [mH]	0,176	mH
thermal resistance	⑤ Rth [°C/W]	3,269	°C / W
electr. time constant	⑤ T [ms]	0,465	ms
inertia w/o brake	J [kgcm ²]	0,0585	kgcm ²
mass w/o brake	m [kg]	0,89	kg

brake

inertia with small brake	J [kgcm ²]	0,0785	kgcm ²
inertia with big brake	J [kgcm ²]	0,0585	kgcm ²
mass with small brake	m [kg]	1,09	kg
mass with big brake	m [kg]	1,09	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;

