

# 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	$I_{max}$ [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 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	I <sub>max</sub> [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 <sup>2</sup> ]	0,0585	kgcm <sup>2</sup>
	mass w/o brake	m [kg]	0,89	kg

brake	inertia with small brake	J [kgcm <sup>2</sup> ]	0,0785	kgcm <sup>2</sup>
	inertia with big brake	J [kgcm <sup>2</sup> ]	0,0585	kgcm <sup>2</sup>
	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;

