

BRUSHLESS MOTOR
NX86HMSC
 ELECTRONIC DRIVE
Drive 242/834 Arms



No UL certification

Preliminary DATA

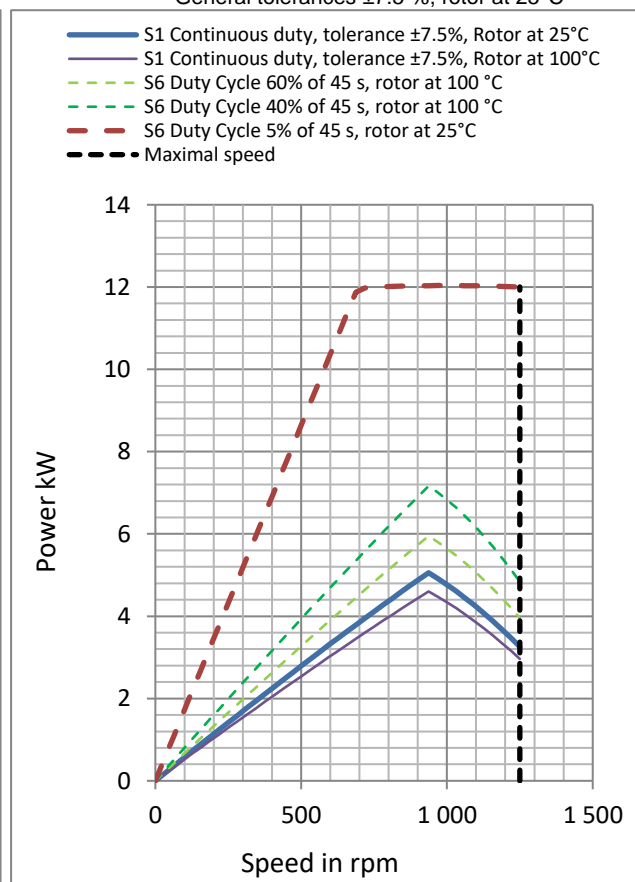
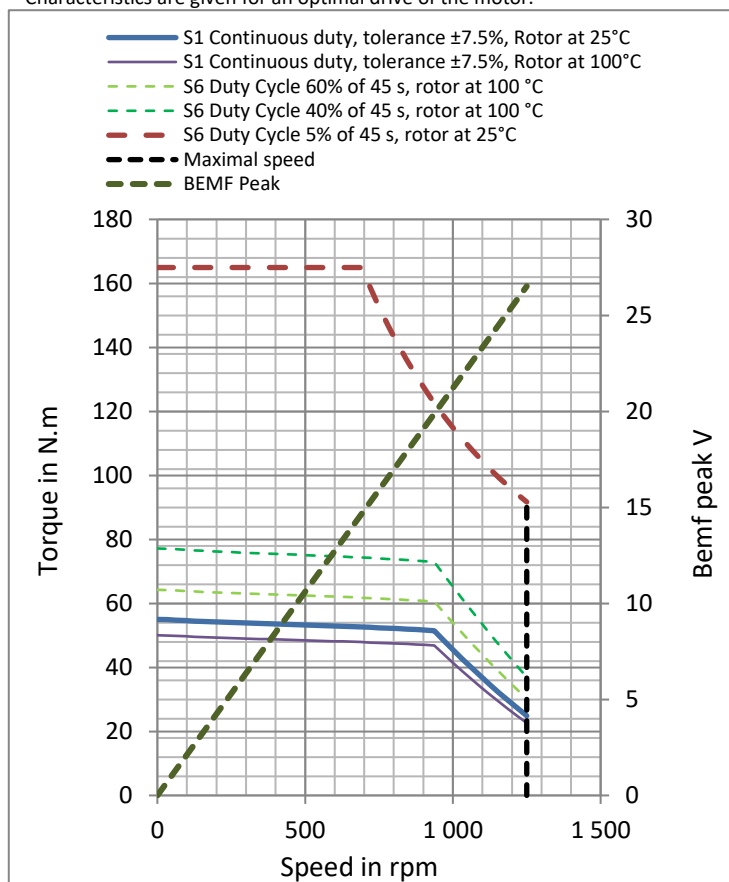
P _n	Rated power **	4.9	kW	Cooling type : Natural Air cooling Exchange surface: 60°C
M _n	Rated torque **	51.7	Nm	
N _n	Rated speed	906	rpm	
I _n	Rated current	219	A _{rms}	Environment : Ambient temperature : 40°C MAX Altitude : < 1000 m Insulation class : H (180°C) Max Winding Temperature : 150°C (according to IEC 60034-1)
U _n	Rated voltage *	14.5	V _{rms}	
U _R	Voltage of the mains	22	V _{rms}	
U	DC voltage supply when motor is loaded	24	V	Number of poles : 10 Electrical frequency @N _p 104 Hz
M _o	Low speed torque **	55	N.m	
I _o	Permanent current at low speed	230	A _{rms}	
M _p	Max. torque **	165	Nm	Efficiency : at rated torque : 90.1 % at 75% of rated torque : 92.4 %
I _p	Max. current	834	A _{rms}	
N _p	Max. speed	1250	rpm	
J	Rotor inertia	0.0092	kg.m ²	
K _e	Back emf constant at 1000 rpm (25°C)*	15	V _{rms}	
K _t	Torque sensitivity (rotor 25°C)	0.239	Nm/A _{rms}	
R _b	Winding resistance(25°C) *	0.00444	Ω	
L	Winding inductance *	0.0523	mH	

All data are given in typical values under standard conditions.

* Phase to Phase

Characteristics are given for an optimal drive of the motor.

** General tolerances ±7.5 %, rotor at 25°C



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Main characteristics

Rated power **	4.9	kW	Ps1
Peak power **	12	kW	Ps6
Low speed torque **	55	N.m	Mo
Low speed peak torque **	165	N.m	MoS6
Nominal speed (S1)	906	rpm	Nb
Max speed ****	1250	rpm	Nmax
DC voltage supply when motor is loaded	24	Vdc	Ū
Permanent current at low speed	230	Arms	Io
S6 current at low speed	834	Arms	IoS6

Mechanical parameters

Rotor inertia	0.0092	kg.m ²	J
Motor mass	27	kg	M
Maximum speed with Drive	1250	rpm	Nmax
Maximum mechanical speed	8000	rpm	Nmec

Electrical parameters

Number of poles	10		
Winding resistance (25°C) *	0.00444	Ω	Rb
Back EMF voltage/ 1000 rpm *	15	Vrms / 1000 rpm	ke
Back EMF voltage / (rad/s) *	0.143	Vrms / (rad/s)	ku
Torque constant	0.239	N.m / Arms	Kt
Short circuit current	619	Arms	Icc
Inductance Lq (Back EMF voltage axis) *	0.0523	mH	Lq
Inductance Ld *	0.0535	mH	Ld
Optimal phasing at permanent current	10	electrical degree	ψo
Optimal phasing at S6 current	20	electrical degree	ψm

Thermal parameters

Motor thermal resistance	0.167	K/W	Rth
Motor thermal time constant	2170	s	Tth
Winding thermal time constant	120	s	Tthw
Natural Air cooling / Exchange surface: 60°C			

Thermal class according to IEC 60034-1 H

* Phase to phase

** Tolerances ± 7.5% and rotor at 25°C