

BRUSHLESS MOTOR  
**NX86HMSD**  
 ELECTRONIC DRIVE  
**Drive 178/626 Arms**



No UL certification

Preliminary DATA

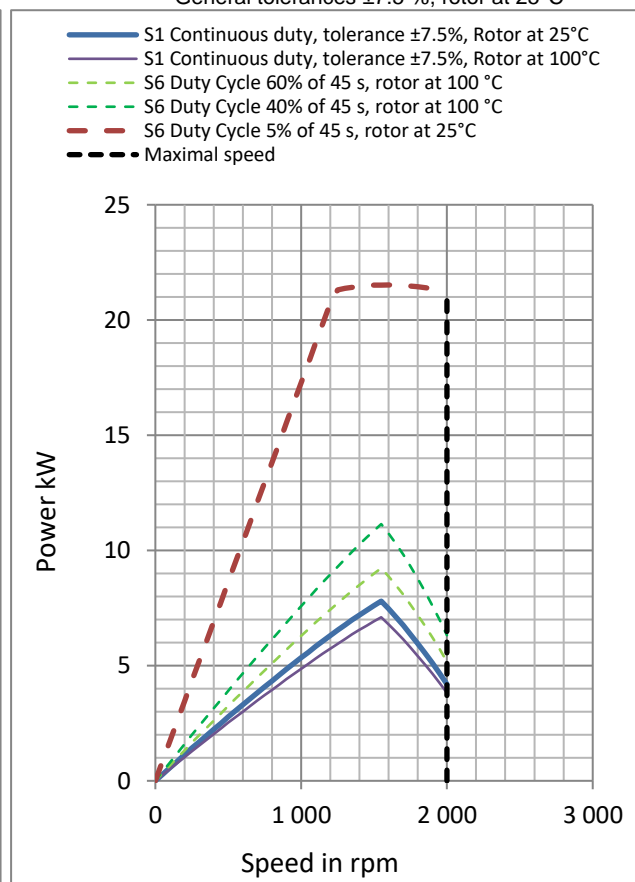
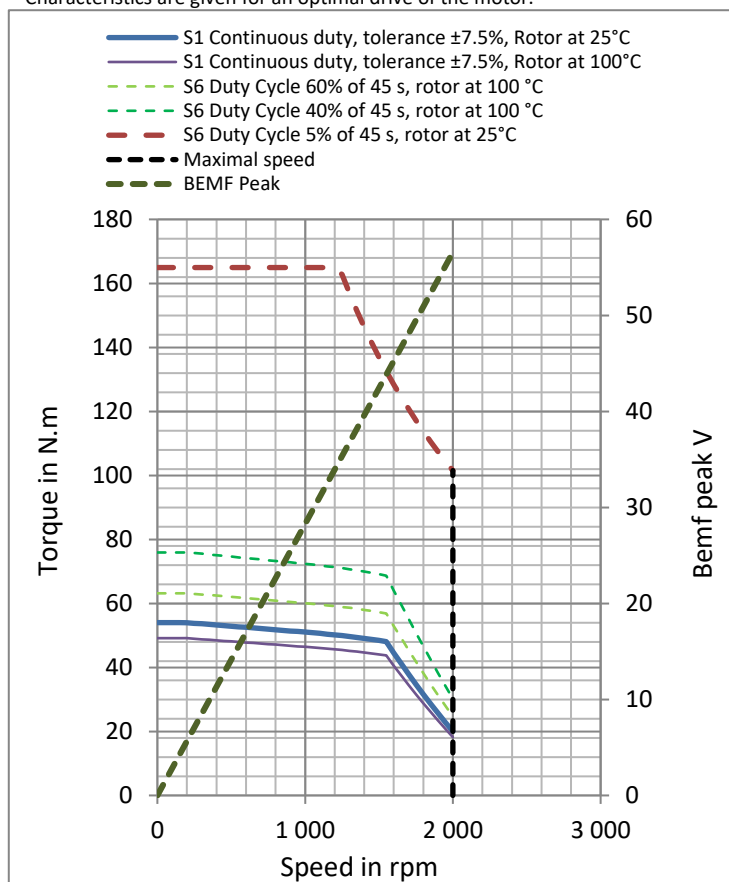
P <sub>n</sub>	Rated power **	7.41	kW	Cooling type : Natural Air cooling Exchange surface: 60°C
M <sub>n</sub>	Rated torque **	48.8	Nm	
N <sub>n</sub>	Rated speed	1450	rpm	
I <sub>n</sub>	Rated current	156	A <sub>rms</sub>	Environment : Ambient temperature : 40°C MAX Altitude : < 1000 m Insulation class : H (180°C) Max Winding Temperature : 150°C (according to IEC 60034-1)
U <sub>n</sub>	Rated voltage *	29.6	V <sub>rms</sub>	
U <sub>R</sub>	Voltage of the mains	40	V <sub>rms</sub>	
U	DC voltage supply when motor is loaded	48	V	Number of poles : 10 Electrical frequency @N <sub>p</sub> 167 Hz
M <sub>o</sub>	Low speed torque **	54	N.m	
I <sub>o</sub>	Permanent current at low speed	169	A <sub>rms</sub>	
M <sub>p</sub>	Max. torque **	165	Nm	Efficiency : at rated torque : 93.1 % at 75% of rated torque : 94.3 %
I <sub>p</sub>	Max. current	625	A <sub>rms</sub>	
N <sub>p</sub>	Max. speed	2000	rpm	
J	Rotor inertia	0.0092	kg.m <sup>2</sup>	
K <sub>e</sub>	Back emf constant at 1000 rpm (25°C)*	20	V <sub>rms</sub>	
K <sub>t</sub>	Torque sensitivity (rotor 25°C)	0.319	Nm/A <sub>rms</sub>	
R <sub>b</sub>	Winding resistance(25°C) *	0.0079	Ω	
L	Winding inductance *	0.093	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 **	7.41	kW	Ps1
Peak power **	21.5	kW	Ps6
Low speed torque **	54	N.m	Mo
Low speed peak torque **	165	N.m	MoS6
Nominal speed (S1)	1450	rpm	Nb
Max speed ****	2000	rpm	Nmax
DC voltage supply when motor is loaded	48	Vdc	Ū
Permanent current at low speed	169	Arms	Io
S6 current at low speed	625	Arms	IoS6

### Mechanical parameters

Rotor inertia	0.0092	kg.m <sup>2</sup>	J
Motor mass	27	kg	M
Maximum speed with Drive	2000	rpm	Nmax
Maximum mechanical speed	8000	rpm	Nmec

### Electrical parameters

Number of poles	10		
Winding resistance (25°C) *	0.0079	Ω	Rb
Back EMF voltage/ 1000 rpm *	20	Vrms / 1000 rpm	ke
Back EMF voltage / (rad/s) *	0.191	Vrms / (rad/s)	ku
Torque constant	0.319	N.m / Arms	Kt
Short circuit current	464	Arms	Icc
Inductance Lq (Back EMF voltage axis) *	0.093	mH	Lq
Inductance Ld *	0.0951	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