

BRUSHLESS MOTOR
NX86WMSD
 ELECTRONIC DRIVE
Drive 230/630 Arms



No UL certification

Preliminary DATA - Water Cooled

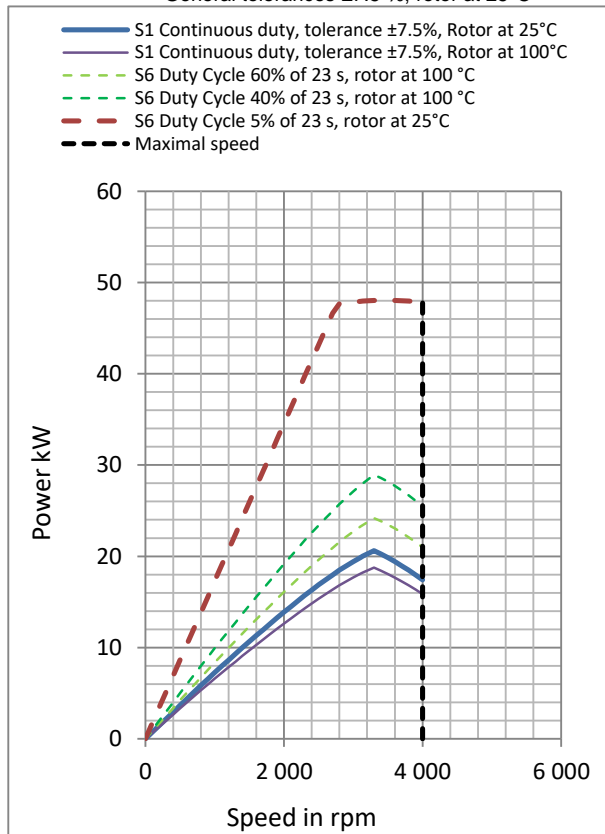
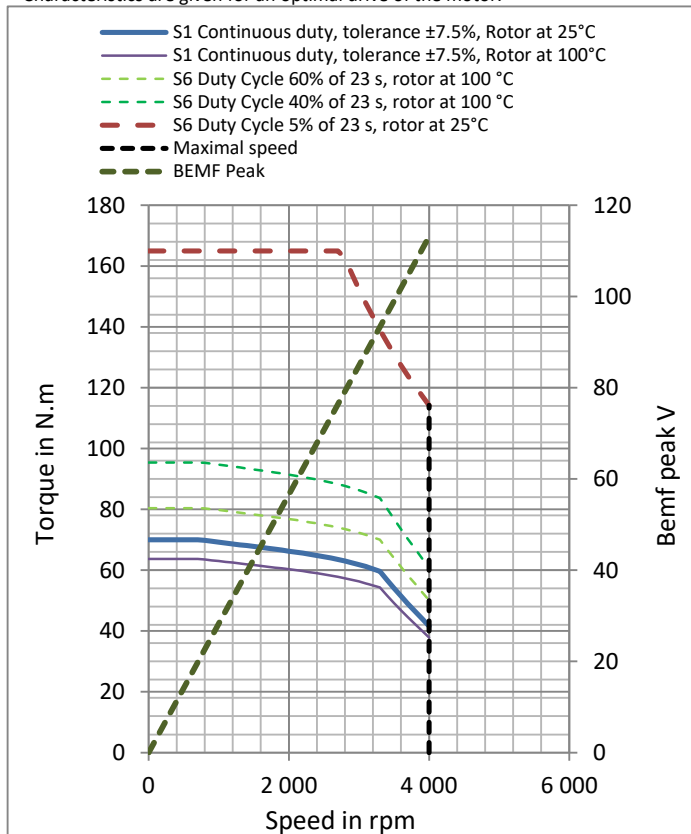
P _n	Rated power **	20.1	kW	Cooling type : Water cooling IC 97 W Minimum flow: 1.6 l/min Max. Inlet Temperature: 60+/-5 °C Max. absolute pressure: 5 bars
M _n	Rated torque **	60.8	Nm	
N _n	Rated speed	3150	rpm	
I _n	Rated current	202	A _{rms}	
U _n	Rated voltage *	60.8	V _{rms}	
U _R	Voltage of the mains	77	V _{rms}	Environment : Ambient temperature : 65°C MAX Altitude : < 1000 m Insulation class : H Max Winding Temperature : 150°C (according to IEC 60034-1)
U	DC voltage supply when motor is loaded	96	V	
M _o	Low speed torque **	70	N.m	
I _o	Permanent current at low speed	221	A _{rms}	
M _p	Max. torque **	165	Nm	
I _p	Max. current	625	A _{rms}	Number of poles : 10 Electrical frequency @N _p 333 Hz Efficiency : at rated torque : 94.8 % at 75% of rated torque : 95.5 %
N _p	Max. speed	4000	rpm	
J	Rotor inertia	0.0092	kg.m ²	
K _e	Back emf constant at 1000 rpm (25°C)*	20	V _{rms}	
K _t	Torque sensitivity (rotor 25°C)	0.316	Nm/A _{rms}	
R _b	Winding resistance(25°C) *	0.0079	Ω	
L	Winding inductance *	0.0912	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 **	20.1	kW	Ps1
Peak power **	48.1	kW	Ps6
Low speed torque **	70	N.m	Mo
Low speed peak torque **	165	N.m	MoS6
Nominal speed (S1)	3150	rpm	Nb
Max speed ****	4000	rpm	Nmax
DC voltage supply when motor is loaded	96	Vdc	Ū
Permanent current at low speed	221	Arms	Io
S6 current at low speed	625	Arms	IoS6

Mechanical parameters

Rotor inertia	0.0092	kg.m ²	J
Motor mass	27	kg	M
Maximum speed with Drive	4000	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	0.316	N.m / Arms	Kt
Short circuit current	464	Arms	Icc
Inductance Lq (Back EMF voltage axis) *	0.0912	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	0.087	K/W	Rth
Motor thermal time constant	294	s	Tth
Winding thermal time constant	60	s	Tthw
Water cooling / Minimum flow:	1.6 l/min		
Maximum Inlet Temperature:			
Max. absolute pressure:	5 bars		
Thermal class according to IEC 60034-1	H		

* Phase to phase

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