

BRUSHLESS MOTOR  
**NX84WMSD**  
 ELECTRONIC DRIVE  
**Drive 230/630 Arms**



No UL certification

Preliminary DATA - Water Cooled

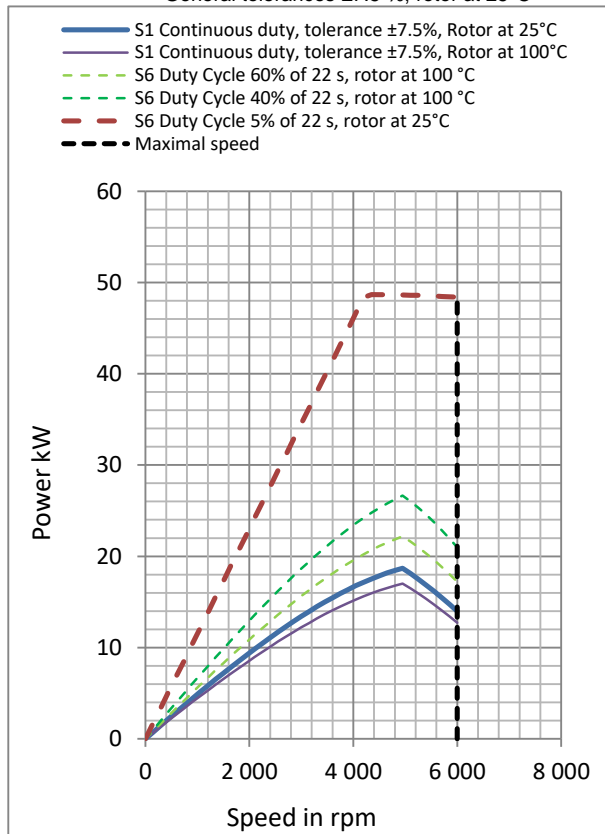
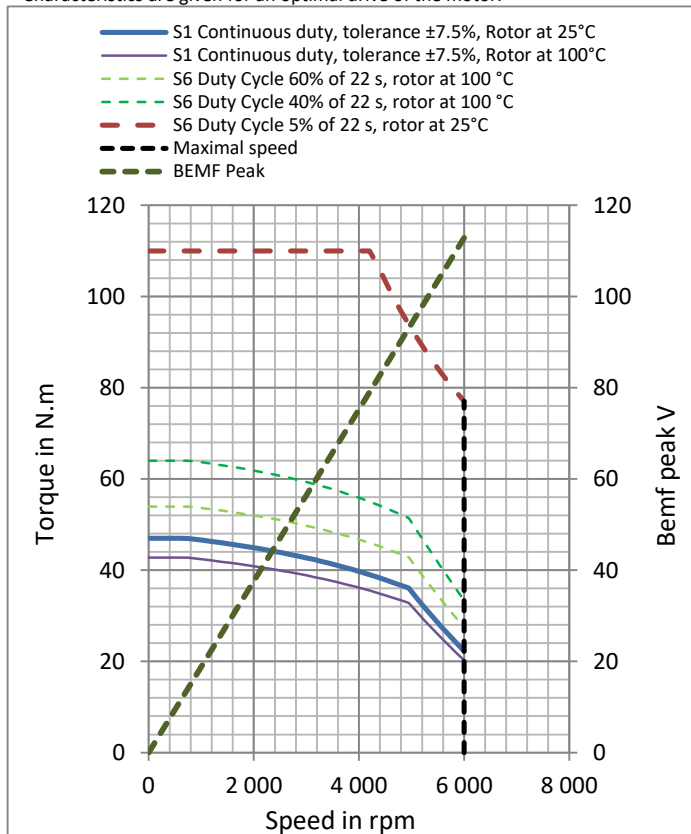
P <sub>n</sub>	<b>Rated power **</b>	18.4	<i>kW</i>	<b>Cooling type :</b> Water cooling IC 97 W Minimum flow: 1.4 l/min Max. Inlet Temperature: 60+/-5 °C Max. absolute pressure: 5 bars
M <sub>n</sub>	<b>Rated torque **</b>	36.7	<i>Nm</i>	
N <sub>n</sub>	<b>Rated speed</b>	4800	<i>rpm</i>	
I <sub>n</sub>	<b>Rated current</b>	186	<i>A<sub>rms</sub></i>	
U <sub>n</sub>	<b>Rated voltage *</b>	60.1	<i>V<sub>rms</sub></i>	
U <sub>R</sub>	<b>Voltage of the mains</b>	77	<i>V<sub>rms</sub></i>	<b>Environment :</b> 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	<i>V</i>	
M <sub>o</sub>	<b>Low speed torque **</b>	47	<i>N.m</i>	
I <sub>o</sub>	<b>Permanent current at low speed</b>	223	<i>A<sub>rms</sub></i>	
M <sub>p</sub>	Max. torque **	110	<i>Nm</i>	
I <sub>p</sub>	Max. current	626	<i>A<sub>rms</sub></i>	<b>Efficiency :</b> at rated torque : 95.2 % at 75% of rated torque : 95.3 %
N <sub>p</sub>	Max. speed	6000	<i>rpm</i>	
J	Rotor inertia	0.0062	<i>kg.m<sup>2</sup></i>	
K <sub>e</sub>	Back emf constant at 1000 rpm (25°C)*	13.3	<i>V<sub>rms</sub></i>	
K <sub>t</sub>	Torque sensitivity (rotor 25°C)	0.211	<i>Nm/A<sub>rms</sub></i>	
R <sub>b</sub>	Winding resistance(25°C) *	0.00592	<i>Ω</i>	
L	Winding inductance *	0.0608	<i>mH</i>	

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 **	18.4	kW	Ps1
Peak power **	48.7	kW	Ps6
Low speed torque **	47	N.m	Mo
Low speed peak torque **	110	N.m	MoS6
Nominal speed (S1)	4800	rpm	Nb
Max speed ****	6000	rpm	Nmax
DC voltage supply when motor is loaded	96	Vdc	Ū
Permanent current at low speed	223	Arms	Io
S6 current at low speed	626	Arms	IoS6

### Mechanical parameters

Rotor inertia	0.0062	kg.m <sup>2</sup>	J
Motor mass	20	kg	M
Maximum speed with Drive	6000	rpm	Nmax
Maximum mechanical speed	8000	rpm	Nmec

### Electrical parameters

Number of poles	10		
Winding resistance (25°C) *	0.00592	Ω	Rb
Back EMF voltage/ 1000 rpm *	13.3	Vrms / 1000 rpm	ke
Back EMF voltage / (rad/s) *	0.127	Vrms / (rad/s)	ku
Torque constant	0.211	N.m / Arms	Kt
Short circuit current	464	Arms	Icc
Inductance Lq (Back EMF voltage axis) *	0.0608	mH	Lq
Inductance Ld *	0.0634	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	0.112	K/W	Rth
Motor thermal time constant	240	s	Tth
Winding thermal time constant	58	s	Tthw
Water cooling / Minimum flow:	1.4 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