

BRUSHLESS MOTOR
NX84WMSC
 ELECTRONIC DRIVE
Drive 310/840 Arms



No UL certification

Preliminary DATA - Water Cooled

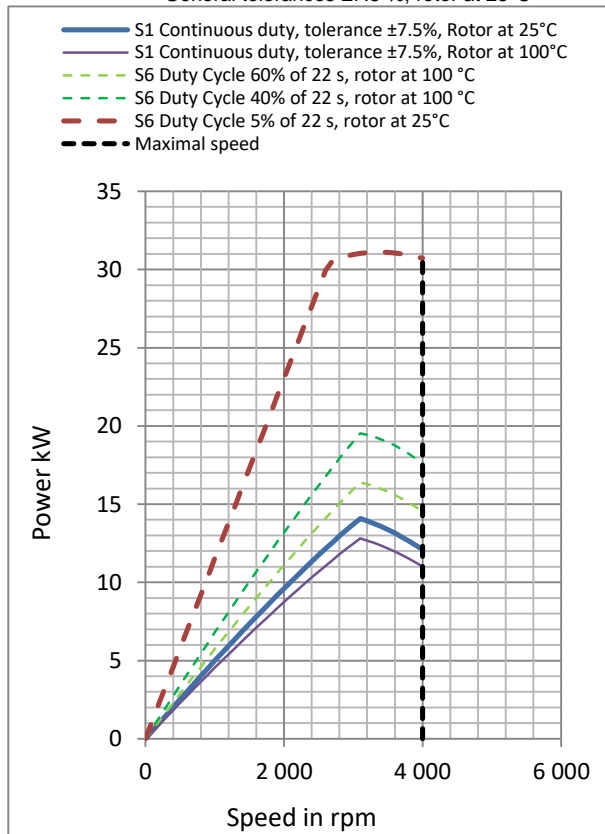
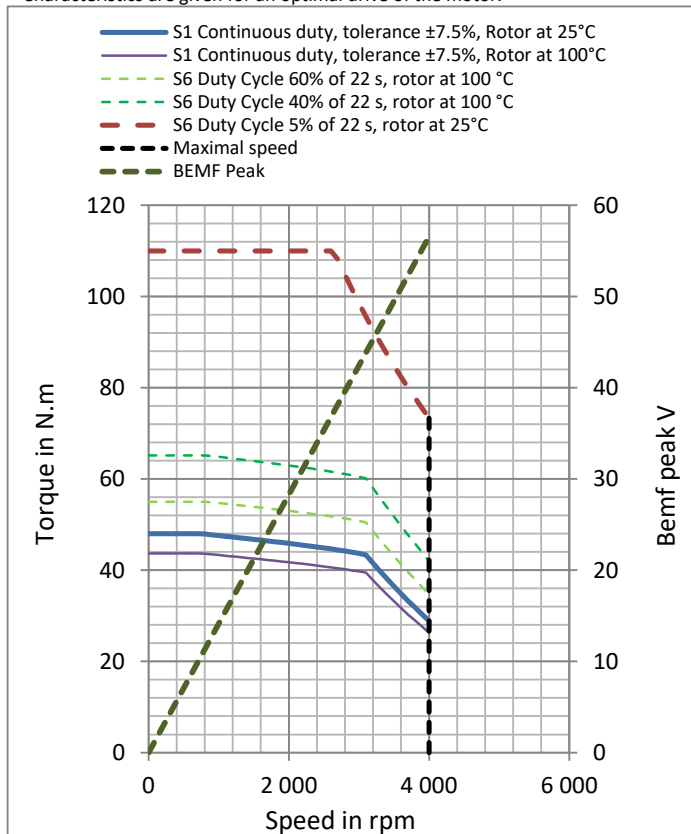
P _n	Rated power **	14.1	<i>kW</i>	Cooling type : Water cooling IC 97 W Minimum flow: 1.3 l/min Max. Inlet Temperature: 60+/-5 °C Max. absolute pressure: 5 bars
M _n	Rated torque **	43.4	<i>Nm</i>	
N _n	Rated speed	3100	<i>rpm</i>	
I _n	Rated current	284	<i>A_{rms}</i>	
U _n	Rated voltage *	30.8	<i>V_{rms}</i>	
U _R	Voltage of the mains	40	<i>V_{rms}</i>	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	48	<i>V</i>	
M _o	Low speed torque **	48	<i>N.m</i>	
I _o	Permanent current at low speed	304	<i>A_{rms}</i>	
M _p	Max. torque **	110	<i>Nm</i>	
I _p	Max. current	834	<i>A_{rms}</i>	Efficiency : at rated torque : 94.3 % at 75% of rated torque : 95.2 %
N _p	Max. speed	4000	<i>rpm</i>	
J	Rotor inertia	0.0062	<i>kg.m²</i>	
K _e	Back emf constant at 1000 rpm (25°C)*	10	<i>V_{rms}</i>	
K _t	Torque sensitivity (rotor 25°C)	0.158	<i>Nm/A_{rms}</i>	
R _b	Winding resistance(25°C) *	0.00333	<i>Ω</i>	
L	Winding inductance *	0.0341	<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 **	14.1	kW	Ps1
Peak power **	31.1	kW	Ps6
Low speed torque **	48	N.m	Mo
Low speed peak torque **	110	N.m	MoS6
Nominal speed (S1)	3100	rpm	Nb
Max speed ****	4000	rpm	Nmax
DC voltage supply when motor is loaded	48	Vdc	Ū
Permanent current at low speed	304	Arms	Io
S6 current at low speed	834	Arms	IoS6

Mechanical parameters

Rotor inertia	0.0062	kg.m ²	J
Motor mass	20	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) *	0.00333	Ω	Rb
Back EMF voltage/ 1000 rpm *	10	Vrms / 1000 rpm	ke
Back EMF voltage / (rad/s) *	0.0955	Vrms / (rad/s)	ku
Torque constant	0.158	N.m / Arms	Kt
Short circuit current	619	Arms	Icc
Inductance Lq (Back EMF voltage axis) *	0.0341	mH	Lq
Inductance Ld *	0.0357	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:	1.3 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