

BRUSHLESS MOTOR
NX84HMSF
 ELECTRONIC DRIVE
Drive 130/418 Arms



No UL certification

Preliminary DATA

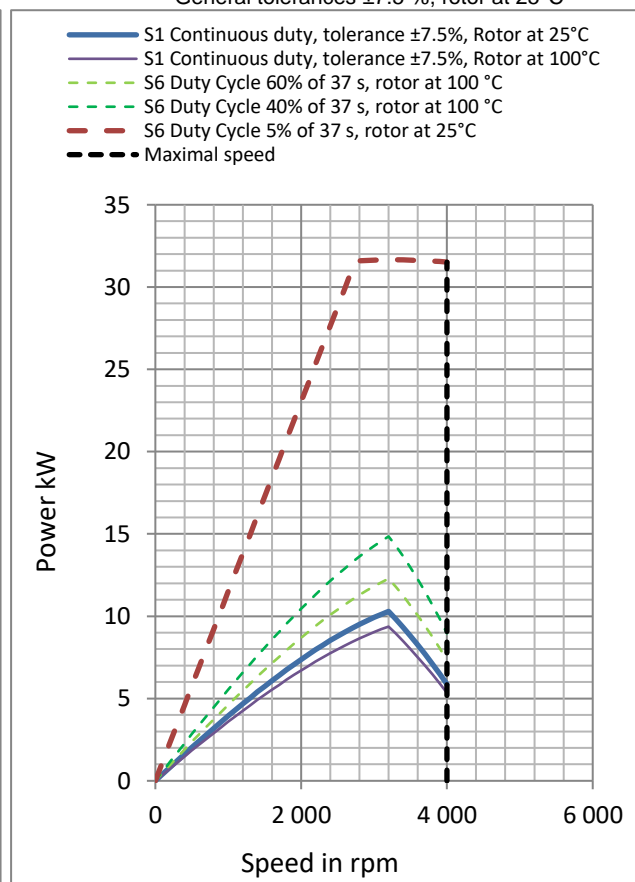
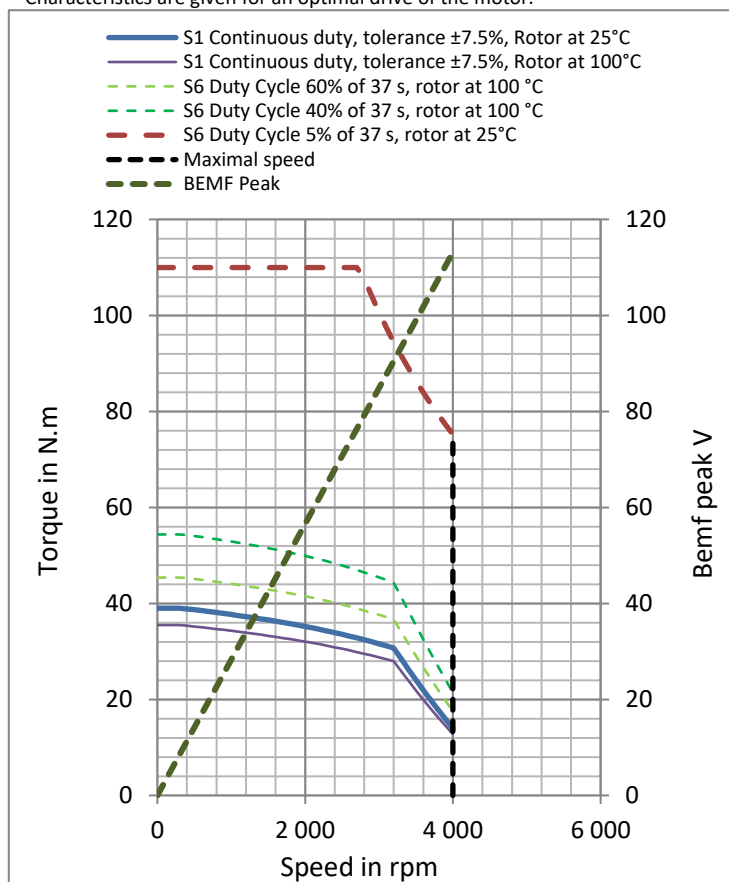
| | | | | |
|----------------|--|--------|---------------------|---|
| P _n | Rated power ** | 9.72 | kW | Cooling type : Natural Air cooling Exchange surface: 60°C |
| M _n | Rated torque ** | 32 | Nm | |
| N _n | Rated speed | 2900 | rpm | |
| I _n | Rated current | 102 | A _{rms} | Environment : Ambient 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 * | 58.5 | V _{rms} | |
| U _R | Voltage of the mains | 77 | V _{rms} | |
| U | DC voltage supply when motor is loaded | 96 | V | Number of poles : 10 Electrical frequency @N _p 333 Hz |
| M _o | Low speed torque ** | 39 | N.m | |
| I _o | Permanent current at low speed | 123 | A _{rms} | |
| M _p | Max. torque ** | 110 | Nm | Efficiency : at rated torque : 94.9 % at 75% of rated torque : 95.2 % |
| I _p | Max. current | 417 | A _{rms} | |
| N _p | Max. speed | 4000 | rpm | |
| J | Rotor inertia | 0.0062 | kg.m ² | |
| K _e | Back emf constant at 1000 rpm (25°C)* | 20 | V _{rms} | |
| K _t | Torque sensitivity (rotor 25°C) | 0.318 | Nm/A _{rms} | |
| R _b | Winding resistance(25°C) * | 0.0133 | Ω | |
| L | Winding inductance * | 0.139 | 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 ** | 9.72 | kW | Ps1 |
| Peak power ** | 31.7 | kW | Ps6 |
| Low speed torque ** | 39 | N.m | Mo |
| Low speed peak torque ** | 110 | N.m | MoS6 |
| Nominal speed (S1) | 2900 | rpm | Nb |
| Max speed **** | 4000 | rpm | Nmax |
| DC voltage supply when motor is loaded | 96 | Vdc | Ū |
| Permanent current at low speed | 123 | Arms | Io |
| S6 current at low speed | 417 | 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) * | 0.0133 | 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 | 0.318 | N.m / Arms | Kt |
| Short circuit current | 309 | Arms | Icc |
| Inductance Lq (Back EMF voltage axis) * | 0.139 | mH | Lq |
| Inductance Ld * | 0.143 | 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 | 0.181 | K/W | Rth |
| Motor thermal time constant | 1730 | s | Tth |
| Winding thermal time constant | 94 | 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