

High speed brushless motor

MGV430BAI

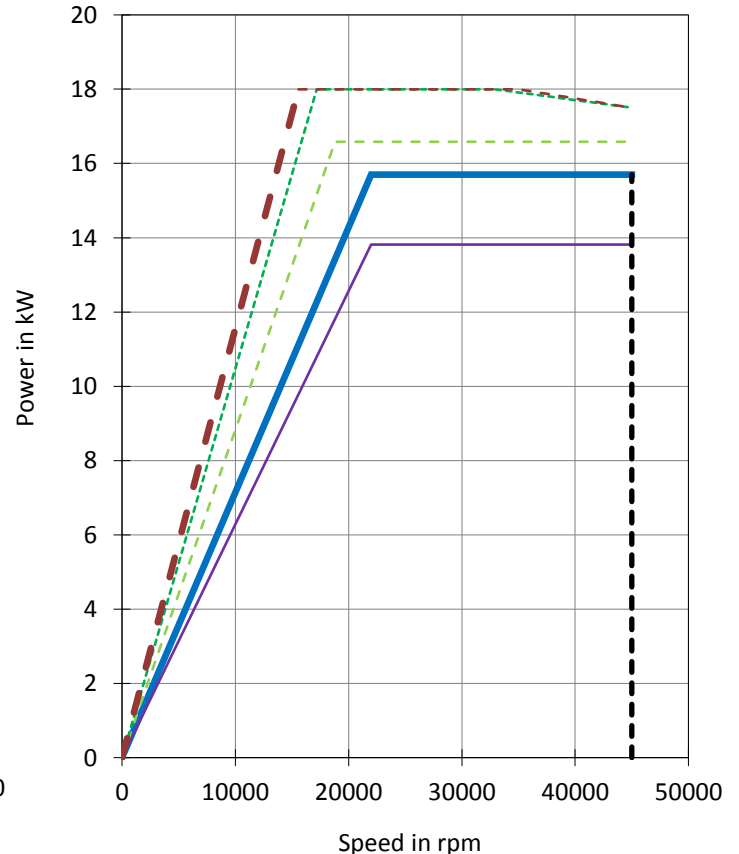
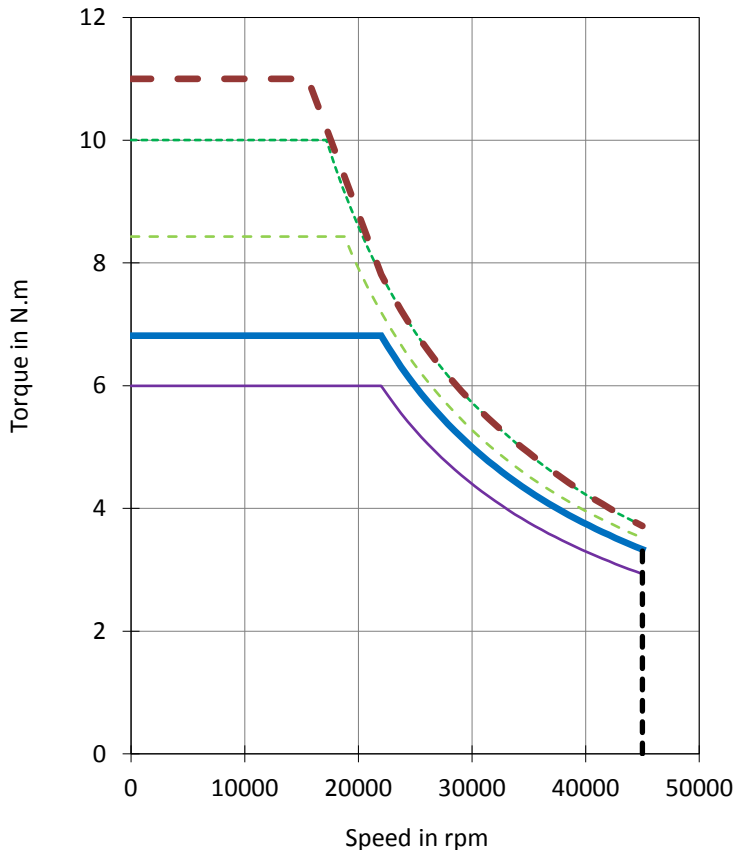
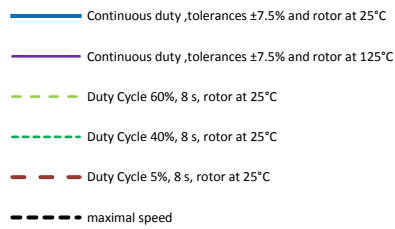
ELECTRONIC DRIVE

DRIVE 36/79 - 400



S1 power **/**	15.7 / 12.8	kW	Ps1
S6 power **/**	18 / 14.7	kW	Ps6
Low speed torque ** / ***	6.8 / 5.55	N.m	M ₀
Low speed S6 torque **/**	11 / 8.97	N.m	M ₀ S6
Base speed (S1)	22000	rpm	Nb
Max speed ****	45000	rpm	Nmax
DC voltage supply when motor is loaded	540	Vdc	Û
Permanent current at low speed	35	Arms	I ₀
S6 current at low speed	78.1	Arms	I ₀ S6
Winding resistance(25°C) *	0.205	Ω	Rb
Rotor inertia	0.00089	kg.m ²	J
Thermal time constant	1	min	Tth
Motor mass	35	kg	M
Min water cooling flow (Inlet 25°C MAX, 30% glycol)	3.3	l/min	Wf

All data are given in typical values under standard conditions



* Phase to phase

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

*** minimum value with rotor at 125°C

**** Speed limit due to the bearings:

Steel bearings limited to = 26000 rpm

Hybrid bearings limited to = 33000 rpm

X LIFE bearings limited to = 45000 rpm

High speed brushless motor

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DRIVE 36/79 - 400



Main characteristics

<i>S1 power **/***</i>	15.7 / 12.8	<i>kW</i>	<i>Ps1</i>
<i>S6 power **/***</i>	18 / 14.7	<i>kW</i>	<i>Ps6</i>
<i>Low speed torque ** / ***</i>	6.8 / 5.55	<i>N.m</i>	<i>M₀</i>
<i>Low speed S6 torque **/***</i>	11 / 8.97	<i>N.m</i>	<i>M₀S6</i>
<i>Base speed (S1)</i>	22000	<i>rpm</i>	<i>Nb</i>
<i>Max speed ****</i>	45000	<i>rpm</i>	<i>Nmax</i>
<i>DC voltage supply when motor is loaded</i>	540	<i>Vdc</i>	<i>Ū</i>
<i>Permanent current at low speed</i>	35	<i>Arms</i>	<i>I₀</i>
<i>S6 current at low speed</i>	78.1	<i>Arms</i>	<i>I₀S6</i>

Mechanical parameters

<i>Rotor inertia</i>	0.00089	<i>kg.m²</i>	<i>J</i>
<i>Motor mass</i>	35	<i>kg</i>	<i>M</i>
<i>Maximum speed with steel bearings</i>	26000	<i>rpm</i>	<i>N₁</i>
<i>Maximum speed with hybrid bearings</i>	33000	<i>rpm</i>	<i>N₂</i>
<i>Maximum speed with X LIFE bearings</i>	45000	<i>rpm</i>	<i>N₃</i>
<i>Maximum speed with Drive</i>	45000	<i>rpm</i>	<i>Nmax</i>
<i>Maximum mechanical speed</i>	50000	<i>rpm</i>	<i>Nmec</i>

Electrical parameters

<i>Number of poles</i>	4		
<i>Winding resistance (25°C) *</i>	0.205	<i>Ω</i>	<i>Rb</i>
<i>Back EMF voltage phase to phase / 1000 rpm</i>	11.7	<i>Vrms / 1000 rpm</i>	<i>ke</i>
<i>Back EMF voltage phase to phase / (rad/s)</i>	0.112	<i>Vrms / (rad/s)</i>	<i>ku</i>
<i>Torque constant</i>	0.194	<i>N.m / Arms</i>	<i>Kt</i>
<i>Short circuit current</i>	31.6	<i>Arms</i>	<i>Icc</i>
<i>Inductance Lq phase to phase (Back EMF voltage axis) *</i>	2.35	<i>mH</i>	<i>Lq</i>
<i>Inductance Ld phase to phase *</i>	2.05	<i>mH</i>	<i>Ld</i>
<i>Optimal phasing at permanent current</i>	20	<i>electrical degree</i>	<i>ψ₀</i>
<i>Optimal phasing at S6 current</i>	30	<i>electrical degree</i>	<i>ψ_m</i>

Thermal parameters

<i>Motor thermal resistance</i>	0.0818	<i>K/W</i>	<i>Rth</i>
<i>Motor thermal time constant</i>	1	<i>min</i>	<i>Tth</i>
<i>Winding thermal time constant</i>	0.38	<i>min</i>	<i>Tth w</i>
<i>Min water cooling flow (Inlet 25°C MAX, 30% glycol)</i>	3.3	<i>l/min</i>	<i>Wf</i>
<i>Thermal class according to IEC 60034-1</i>	F		

All data are given in typical values under standard conditions

* Phase to phase

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

*** minimum value with rotor at 125°C

**** Speed limit due to the bearings:

High speed brushless motor

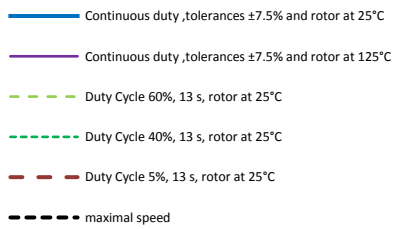
MGV635CAD
ELECTRONIC DRIVE
DRIVE 50/75 - 400



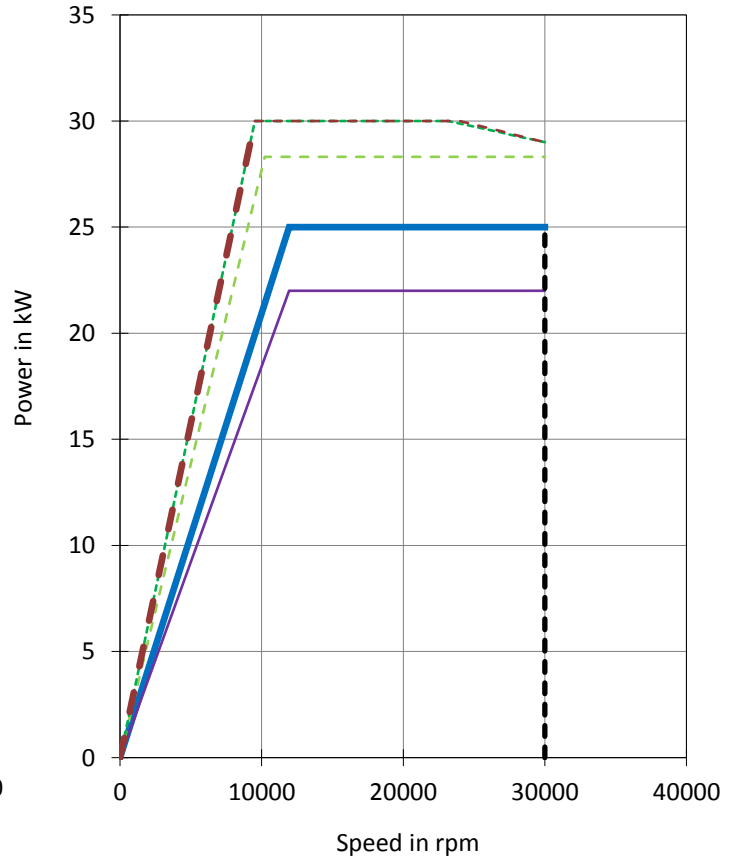
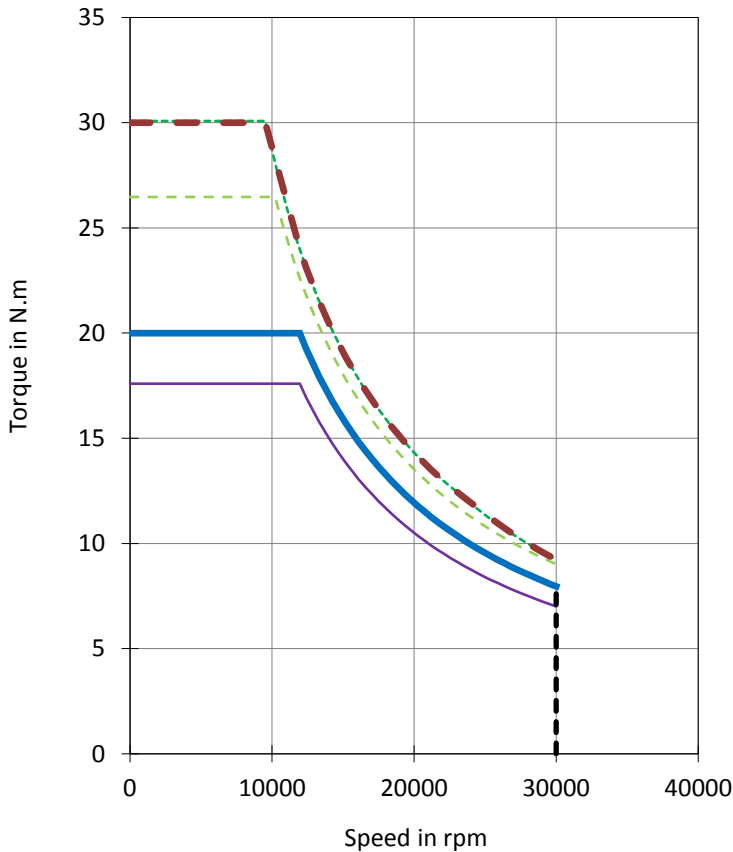
/ Need protection module

S1 power **/**	25 / 20.9	kW	Ps1
S6 power **/**	30 / 25.1	kW	Ps6
Low speed torque ** / **	20 / 16.7	N.m	M ₀
Low speed S6 torque **/**	30 / 25.1	N.m	M ₀ S6
Base speed (S1)	11900	rpm	Nb
Max speed ****	30000	rpm	Nmax
DC voltage supply when motor is loaded	540	Vdc	Û
Permanent current at low speed	49.4	Arms	I ₀
S6 current at low speed	74.3	Arms	I ₀ S6
Winding resistance(25°C) *	0.189	Ω	Rb
Rotor inertia	0.00352	kg.m ²	J
Thermal time constant	1.5	min	Tth
Motor mass	55	kg	M
Min water cooling flow (Inlet 25°C MAX, 30% glycol)	5.6	l/min	Wf

All data are given in typical values under standard conditions



- * Phase to phase
- ** Tolerances ± 7.5% and rotor at 25°C
- *** minimum value with rotor at 125°C
- **** Speed limit due to the bearings:
Steel bearings limited to = 18500 rpm
Hybrid bearings limited to = 25000 rpm
X LIFE bearings limited to = 30000 rpm



High speed brushless motor

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Main characteristics

S1 power **/***	25 / 20.9	kW	Ps1
S6 power **/***	30 / 25.1	kW	Ps6
Low speed torque ** / ***	20 / 16.7	N.m	M ₀
Low speed S6 torque **/***	30 / 25.1	N.m	M ₀ S6
Base speed (S1)	11900	rpm	Nb
Max speed ****	30000	rpm	Nmax
DC voltage supply when motor is loaded	540	Vdc	Ū
Permanent current at low speed	49.4	Arms	I ₀
S6 current at low speed	74.3	Arms	I ₀ S6

Mechanical parameters

Rotor inertia	0.00352	kg.m ²	J
Motor mass	55	kg	M
Maximum speed with steel bearings	18500	rpm	N ₁
Maximum speed with hybrid bearings	25000	rpm	N ₂
Maximum speed with X LIFE bearings	30000	rpm	N ₃
Maximum speed with Drive	30000	rpm	Nmax
Maximum mechanical speed	30000	rpm	Nmec

Electrical parameters

Number of poles	6		
Winding resistance (25°C) *	0.189	Ω	Rb
Back EMF voltage phase to phase / 1000 rpm	24.5	Vrms / 1000 rpm	ke
Back EMF voltage phase to phase / (rad/s)	0.234	Vrms / (rad/s)	ku
Torque constant	0.405	N.m / Arms	Kt
Short circuit current	53	Arms	Icc
Inductance Lq phase to phase (Back EMF voltage axis) *	1.93	mH	Lq
Inductance Ld phase to phase *	1.7	mH	Ld
Optimal phasing at permanent current	15	electrical degree	ψ ₀
Optimal phasing at S6 current	20	electrical degree	ψ _m

Thermal parameters

Motor thermal resistance	0.0753	K/W	Rth
Motor thermal time constant	1.5	min	Tth
Winding thermal time constant	0.57	min	Tth w
Min water cooling flow (Inlet 25°C MAX, 30% glycol)	5.6	l/min	Wf
Thermal class according to IEC 60034-1	F		

All data are given in typical values under standard conditions

* Phase to phase

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

*** minimum value with rotor at 125°C

**** Speed limit due to the bearings:

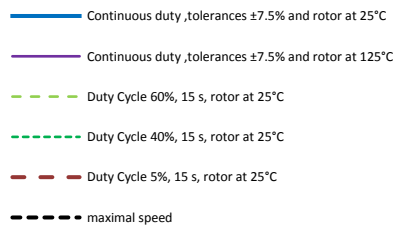
High speed brushless motor
MGV840CAD
 ELECTRONIC DRIVE
DRIVE 124/228 - 400



/ Need protection module

S1 power **/**	63 / 52.8	kW	Ps1
S6 power **/**	80 / 67	kW	Ps6
Low speed torque ** / ***	58 / 48.6	N.m	M ₀
Low speed S6 torque **/**	100 / 83.8	N.m	M ₀ S6
Base speed (S1)	10400	rpm	Nb
Max speed ****	24000	rpm	Nmax
DC voltage supply when motor is loaded	540	Vdc	Û
Permanent current at low speed	123	Arms	I ₀
S6 current at low speed	227	Arms	I ₀ S6
Winding resistance(25°C) *	0.0522	Ω	Rb
Rotor inertia	0.0186	kg.m ²	J
Thermal time constant	2.4	min	Tth
Motor mass	115	kg	M
Min water cooling flow (Inlet 25°C MAX, 30% glycol)	11	l/min	Wf

All data are given in typical values under standard conditions



* Phase to phase

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

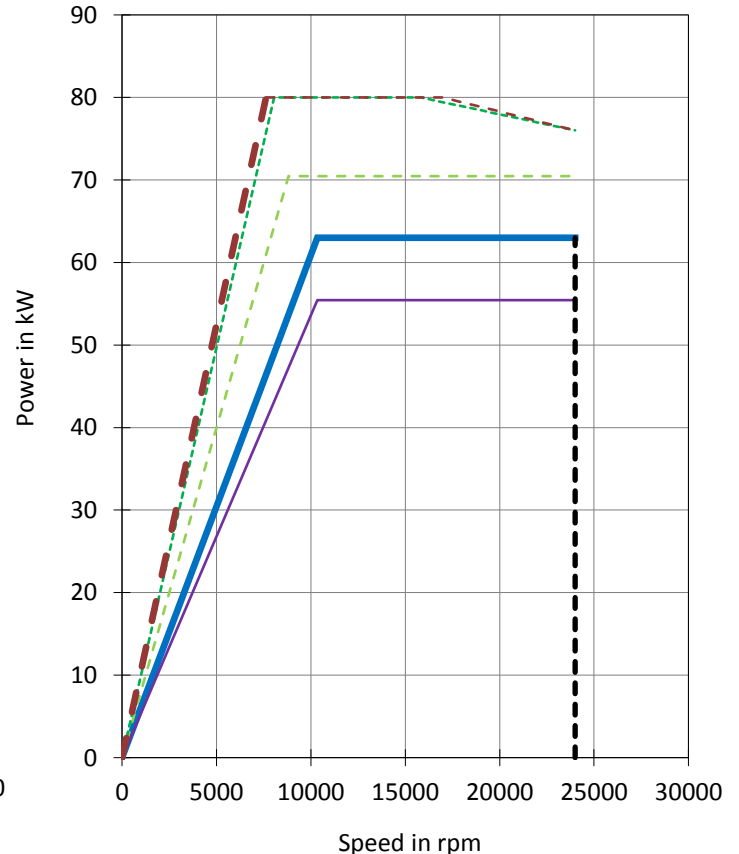
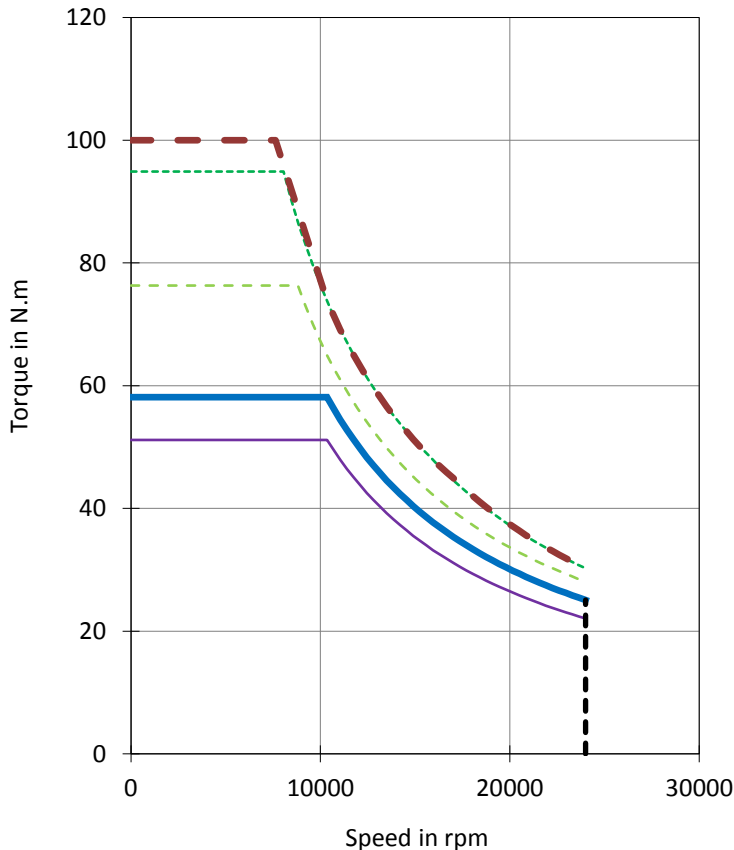
*** minimum value with rotor at 125°C

**** Speed limit due to the bearings:

Steel bearings limited to = 14300 rpm

Hybrid bearings limited to = 18000 rpm

X LIFE bearings limited to = 24000 rpm



High speed brushless motor

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ELECTRONIC DRIVE
DRIVE 124/228 - 400



Main characteristics

<i>S1 power **/***</i>	63 / 52.8	<i>kW</i>	<i>Ps1</i>
<i>S6 power **/***</i>	80 / 67	<i>kW</i>	<i>Ps6</i>
<i>Low speed torque ** / ***</i>	58 / 48.6	<i>N.m</i>	<i>M₀</i>
<i>Low speed S6 torque **/***</i>	100 / 83.8	<i>N.m</i>	<i>M₀S6</i>
<i>Base speed (S1)</i>	10400	<i>rpm</i>	<i>Nb</i>
<i>Max speed ****</i>	24000	<i>rpm</i>	<i>Nmax</i>
<i>DC voltage supply when motor is loaded</i>	540	<i>Vdc</i>	<i>Û</i>
<i>Permanent current at low speed</i>	123	<i>Arms</i>	<i>I₀</i>
<i>S6 current at low speed</i>	227	<i>Arms</i>	<i>I₀S6</i>

Mechanical parameters

<i>Rotor inertia</i>	0.0186	<i>kg.m²</i>	<i>J</i>
<i>Motor mass</i>	115	<i>kg</i>	<i>M</i>
<i>Maximum speed with steel bearings</i>	14300	<i>rpm</i>	<i>N₁</i>
<i>Maximum speed with hybrid bearings</i>	18000	<i>rpm</i>	<i>N₂</i>
<i>Maximum speed with X LIFE bearings</i>	24000	<i>rpm</i>	<i>N₃</i>
<i>Maximum speed with Drive</i>	24000	<i>rpm</i>	<i>Nmax</i>
<i>Maximum mechanical speed</i>	24000	<i>rpm</i>	<i>Nmec</i>

Electrical parameters

<i>Number of poles</i>	6		
<i>Winding resistance (25°C) *</i>	0.0522	<i>Ω</i>	<i>Rb</i>
<i>Back EMF voltage phase to phase / 1000 rpm</i>	28.3	<i>Vrms / 1000 rpm</i>	<i>ke</i>
<i>Back EMF voltage phase to phase / (rad/s)</i>	0.27	<i>Vrms / (rad/s)</i>	<i>ku</i>
<i>Torque constant</i>	0.472	<i>N.m / Arms</i>	<i>Kt</i>
<i>Short circuit current</i>	130	<i>Arms</i>	<i>Icc</i>
<i>Inductance Lq phase to phase (Back EMF voltage axis) *</i>	0.96	<i>mH</i>	<i>Lq</i>
<i>Inductance Ld phase to phase *</i>	0.8	<i>mH</i>	<i>Ld</i>
<i>Optimal phasing at permanent current</i>	20	<i>electrical degree</i>	<i>ψ₀</i>
<i>Optimal phasing at S6 current</i>	20	<i>electrical degree</i>	<i>ψ_m</i>

Thermal parameters

<i>Motor thermal resistance</i>	0.0391	<i>K/W</i>	<i>Rth</i>
<i>Motor thermal time constant</i>	2.4	<i>min</i>	<i>Tth</i>
<i>Winding thermal time constant</i>	0.64	<i>min</i>	<i>Tth w</i>
<i>Min water cooling flow (Inlet 25°C MAX, 30% glycol)</i>	11	<i>l/min</i>	<i>Wf</i>
<i>Thermal class according to IEC 60034-1</i>	F		

All data are given in typical values under standard conditions

* Phase to phase

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

*** minimum value with rotor at 125°C

**** Speed limit due to the bearings:

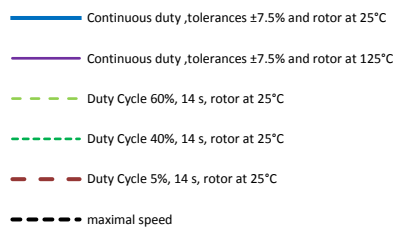
High speed brushless motor
MGV860CBD
 ELECTRONIC DRIVE
DRIVE 231/405 - 400



/ Need protection module

S1 power **/**	94 / 76.3	kW	Ps1
S6 power **/**	120 / 97.4	kW	Ps6
Low speed torque ** / **	120 / 97.4	N.m	M ₀
Low speed S6 torque **/**	170 / 138	N.m	M ₀ S6
Base speed (S1)	7500	rpm	Nb
Max speed ****	24000	rpm	Nmax
DC voltage supply when motor is loaded	540	Vdc	Û
Permanent current at low speed	136	Arms	I ₀
S6 current at low speed	202	Arms	I ₀ S6
Winding resistance(25°C) *	0.0717	Ω	Rb
Rotor inertia	0.0264	kg.m ²	J
Thermal time constant	2.4	min	Tth
Motor mass	135	kg	M
Min water cooling flow (Inlet 25°C MAX, 30% glycol)	17	l/min	Wf

All data are given in typical values under standard conditions



* Phase to phase

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

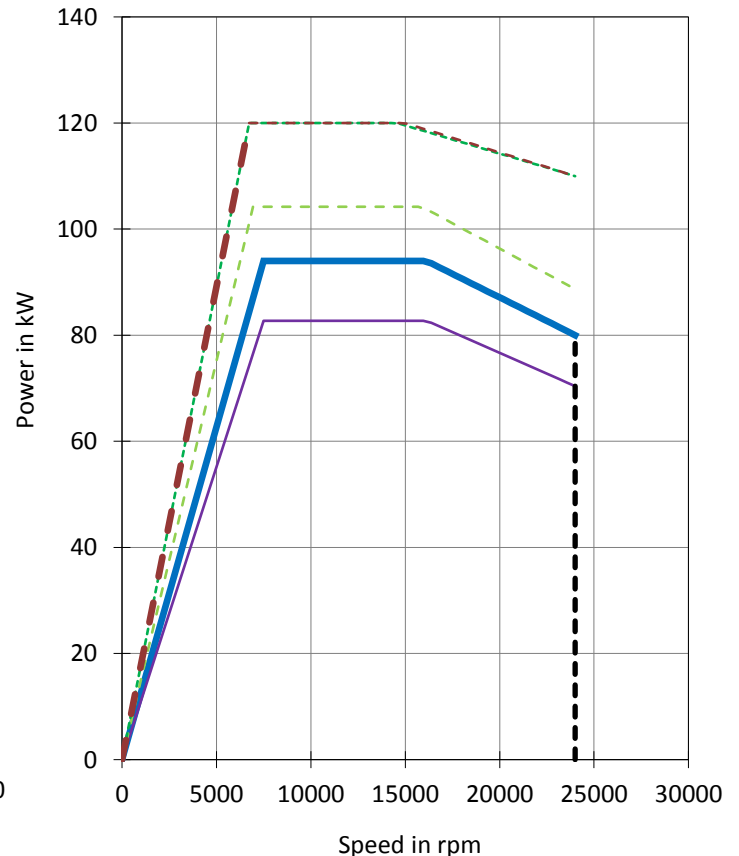
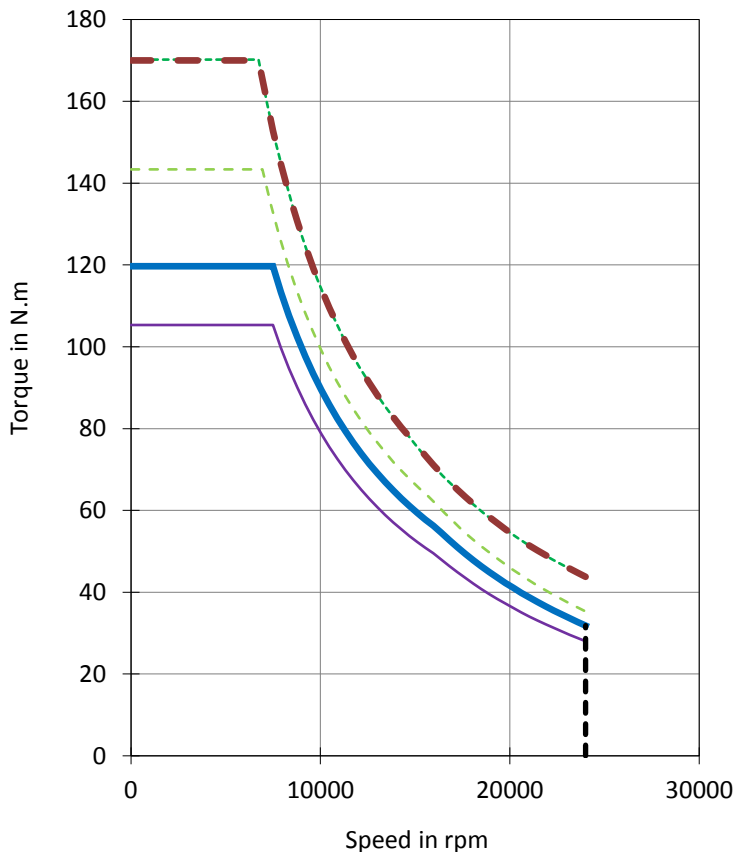
*** minimum value with rotor at 125°C

**** Speed limit due to the bearings:

Steel bearings limited to = 14300 rpm

Hybrid bearings limited to = 18000 rpm

X LIFE bearings limited to = 24000 rpm



High speed brushless motor

MGV860CBD
ELECTRONIC DRIVE
DRIVE 231/405 - 400



Main characteristics

<i>S1 power **/***</i>	94 / 76.3	<i>kW</i>	<i>Ps1</i>
<i>S6 power **/***</i>	120 / 97.4	<i>kW</i>	<i>Ps6</i>
<i>Low speed torque ** / ***</i>	120 / 97.4	<i>N.m</i>	<i>M₀</i>
<i>Low speed S6 torque **/***</i>	170 / 138	<i>N.m</i>	<i>M₀S6</i>
<i>Base speed (S1)</i>	7500	<i>rpm</i>	<i>Nb</i>
<i>Max speed ****</i>	24000	<i>rpm</i>	<i>Nmax</i>
<i>DC voltage supply when motor is loaded</i>	540	<i>Vdc</i>	<i>Ū</i>
<i>Permanent current at low speed</i>	136	<i>Arms</i>	<i>I₀</i>
<i>S6 current at low speed</i>	202	<i>Arms</i>	<i>I₀S6</i>

Mechanical parameters

<i>Rotor inertia</i>	0.0264	<i>kg.m²</i>	<i>J</i>
<i>Motor mass</i>	135	<i>kg</i>	<i>M</i>
<i>Maximum speed with steel bearings</i>	14300	<i>rpm</i>	<i>N₁</i>
<i>Maximum speed with hybrid bearings</i>	18000	<i>rpm</i>	<i>N₂</i>
<i>Maximum speed with X LIFE bearings</i>	24000	<i>rpm</i>	<i>N₃</i>
<i>Maximum speed with Drive</i>	24000	<i>rpm</i>	<i>Nmax</i>
<i>Maximum mechanical speed</i>	24000	<i>rpm</i>	<i>Nmec</i>

Electrical parameters

<i>Number of poles</i>	6		
<i>Winding resistance (25°C) *</i>	0.0717	<i>Ω</i>	<i>Rb</i>
<i>Back EMF voltage phase to phase / 1000 rpm</i>	54.3	<i>Vrms / 1000 rpm</i>	<i>ke</i>
<i>Back EMF voltage phase to phase / (rad/s)</i>	0.519	<i>Vrms / (rad/s)</i>	<i>ku</i>
<i>Torque constant</i>	0.882	<i>N.m / Arms</i>	<i>Kt</i>
<i>Short circuit current</i>	177	<i>Arms</i>	<i>Icc</i>
<i>Inductance Lq phase to phase (Back EMF voltage axis) *</i>	1.31	<i>mH</i>	<i>Lq</i>
<i>Inductance Ld phase to phase *</i>	1.13	<i>mH</i>	<i>Ld</i>
<i>Optimal phasing at permanent current</i>	20	<i>electrical degree</i>	<i>ψ₀</i>
<i>Optimal phasing at S6 current</i>	20	<i>electrical degree</i>	<i>ψ_m</i>

Thermal parameters

<i>Motor thermal resistance</i>	0.0261	<i>K/W</i>	<i>Rth</i>
<i>Motor thermal time constant</i>	2.4	<i>min</i>	<i>Tth</i>
<i>Winding thermal time constant</i>	0.59	<i>min</i>	<i>Tth w</i>
<i>Min water cooling flow (Inlet 25°C MAX, 30% glycol)</i>	17	<i>l/min</i>	<i>Wf</i>
<i>Thermal class according to IEC 60034-1</i>	F		

All data are given in typical values under standard conditions

* Phase to phase

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

*** minimum value with rotor at 125°C

**** Speed limit due to the bearings:

High speed brushless motor

MGV950CAX
ELECTRONIC DRIVE
DRIVE 455/822 - 400

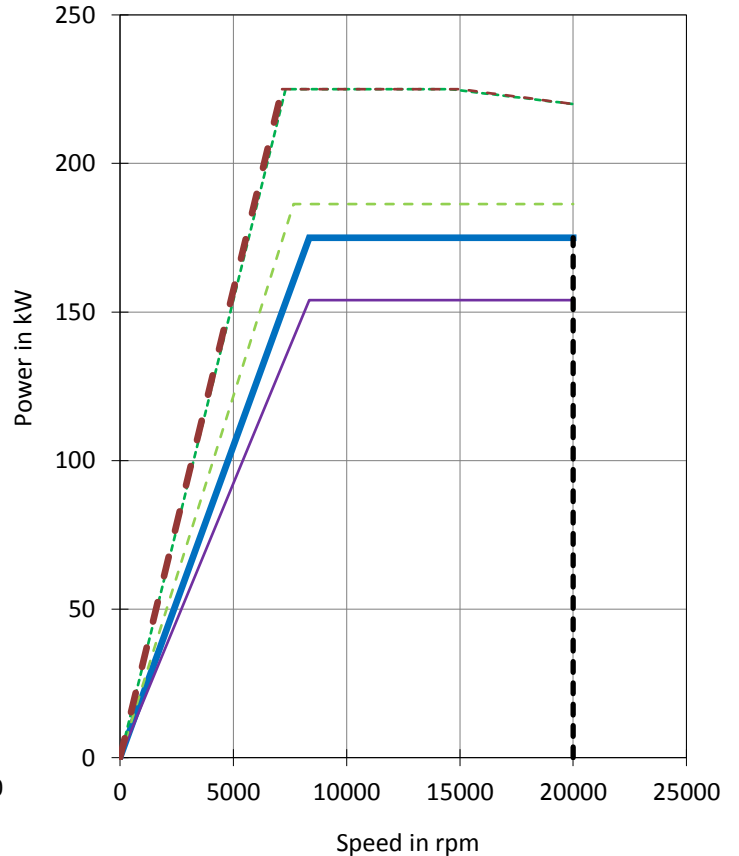
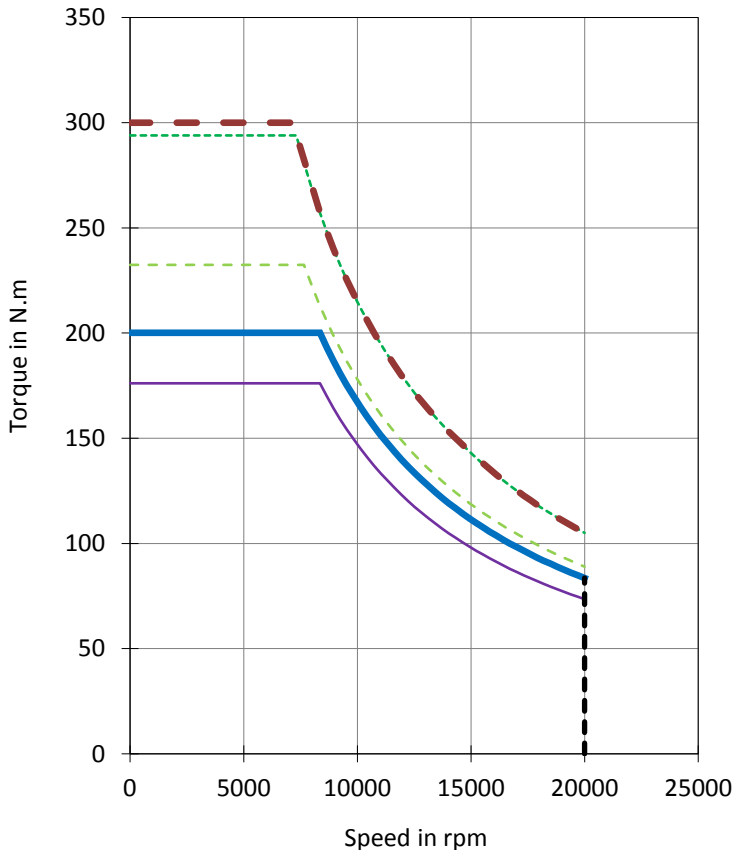


S1 power **/**	175 / 143	kW	Ps1
S6 power **/**	225 / 183	kW	Ps6
Low speed torque ** / **	200 / 163	N.m	M _o
Low speed S6 torque **/**	300 / 244	N.m	M _o S6
Base speed (S1)	8350	rpm	Nb
Max speed ****	20000	rpm	Nmax
DC voltage supply when motor is loaded	540	Vdc	Û
Permanent current at low speed	454	Arms	I _o
S6 current at low speed	821	Arms	I _o S6
Winding resistance(25°C) *	0.00747	Ω	Rb
Rotor inertia	0.063	kg.m ²	J
Thermal time constant	3.2	min	Tth
Motor mass	270	kg	M
Min water cooling flow (Inlet 25°C MAX, 30% glycol)	18	l/min	Wf

All data are given in typical values under standard conditions

- Continuous duty ,tolerances ±7.5% and rotor at 25°C
- Continuous duty ,tolerances ±7.5% and rotor at 125°C
- - - Duty Cycle 60%, 17 s, rotor at 25°C
- - - Duty Cycle 40%, 17 s, rotor at 25°C
- - - Duty Cycle 5%, 17 s, rotor at 25°C
- - - maximal speed

- * Phase to phase
- ** Tolerances ± 7.5% and rotor at 25°C
- *** minimum value with rotor at 125°C
- **** Speed limit due to the bearings:
Steel bearings limited to = 11700 rpm
Hybrid bearings limited to = 16000 rpm
X LIFE bearings limited to = 20000 rpm



High speed brushless motor

MGV950CAX
ELECTRONIC DRIVE
DRIVE 455/822 - 400



Main characteristics

<i>S1 power **/***</i>	175 / 143	<i>kW</i>	<i>Ps1</i>
<i>S6 power **/***</i>	225 / 183	<i>kW</i>	<i>Ps6</i>
<i>Low speed torque ** / ***</i>	200 / 163	<i>N.m</i>	<i>M₀</i>
<i>Low speed S6 torque **/***</i>	300 / 244	<i>N.m</i>	<i>M₀S6</i>
<i>Base speed (S1)</i>	8350	<i>rpm</i>	<i>Nb</i>
<i>Max speed ****</i>	20000	<i>rpm</i>	<i>Nmax</i>
<i>DC voltage supply when motor is loaded</i>	540	<i>Vdc</i>	<i>Ū</i>
<i>Permanent current at low speed</i>	454	<i>Arms</i>	<i>I₀</i>
<i>S6 current at low speed</i>	821	<i>Arms</i>	<i>I₀S6</i>

Mechanical parameters

<i>Rotor inertia</i>	0.063	<i>kg.m²</i>	<i>J</i>
<i>Motor mass</i>	270	<i>kg</i>	<i>M</i>
<i>Maximum speed with steel bearings</i>	11700	<i>rpm</i>	<i>N₁</i>
<i>Maximum speed with hybrid bearings</i>	16000	<i>rpm</i>	<i>N₂</i>
<i>Maximum speed with X LIFE bearings</i>	20000	<i>rpm</i>	<i>N₃</i>
<i>Maximum speed with Drive</i>	20000	<i>rpm</i>	<i>Nmax</i>
<i>Maximum mechanical speed</i>	20000	<i>rpm</i>	<i>Nmec</i>

Electrical parameters

<i>Number of poles</i>	6		
<i>Winding resistance (25°C) *</i>	0.00747	<i>Ω</i>	<i>Rb</i>
<i>Back EMF voltage phase to phase / 1000 rpm</i>	27.8	<i>Vrms / 1000 rpm</i>	<i>ke</i>
<i>Back EMF voltage phase to phase / (rad/s)</i>	0.265	<i>Vrms / (rad/s)</i>	<i>ku</i>
<i>Torque constant</i>	0.441	<i>N.m / Arms</i>	<i>Kt</i>
<i>Short circuit current</i>	368	<i>Arms</i>	<i>Icc</i>
<i>Inductance Lq phase to phase (Back EMF voltage axis) *</i>	0.294	<i>mH</i>	<i>Lq</i>
<i>Inductance Ld phase to phase *</i>	0.278	<i>mH</i>	<i>Ld</i>
<i>Optimal phasing at permanent current</i>	20	<i>electrical degree</i>	<i>ψ₀</i>
<i>Optimal phasing at S6 current</i>	30	<i>electrical degree</i>	<i>ψ_m</i>

Thermal parameters

<i>Motor thermal resistance</i>	0.0137	<i>K/W</i>	<i>Rth</i>
<i>Motor thermal time constant</i>	3.2	<i>min</i>	<i>Tth</i>
<i>Winding thermal time constant</i>	0.74	<i>min</i>	<i>Tth w</i>
<i>Min water cooling flow (Inlet 25°C MAX, 30% glycol)</i>	18	<i>l/min</i>	<i>Wf</i>
<i>Thermal class according to IEC 60034-1</i>	F		

All data are given in typical values under standard conditions

* Phase to phase

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

*** minimum value with rotor at 125°C

**** Speed limit due to the bearings:

High speed brushless motor

MGV966DAX

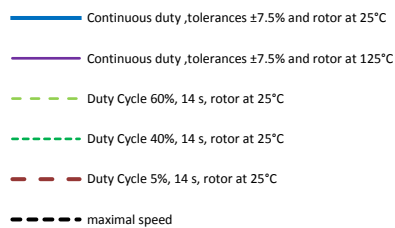
ELECTRONIC DRIVE

Drive 506/983 - 400



S1 power **/**	250 / 203	kW	Ps1
S6 power **/**	380 / 309	kW	Ps6
Low speed torque ** / **	520 / 422	N.m	M ₀
Low speed S6 torque **/**	900 / 731	N.m	M ₀ S6
Base speed (S1)	4600	rpm	Nb
Max speed ****	8000	rpm	Nmax
DC voltage supply when motor is loaded	540	Vdc	Û
Permanent current at low speed	505	Arms	I ₀
S6 current at low speed	982	Arms	I ₀ S6
Winding resistance(25°C) *	0.0135	Ω	Rb
Rotor inertia	0.076	kg.m ²	J
Thermal time constant	3	min	Tth
Motor mass	300	kg	M
Min water cooling flow (Inlet 25°C MAX, 30% glycol)	28	l/min	Wf

All data are given in typical values under standard conditions



* Phase to phase

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

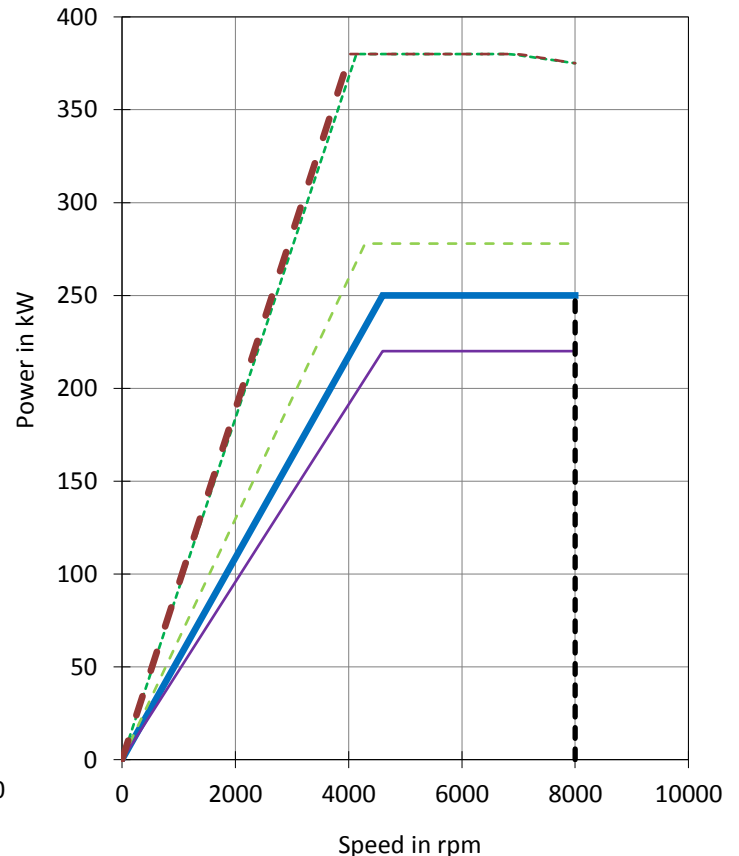
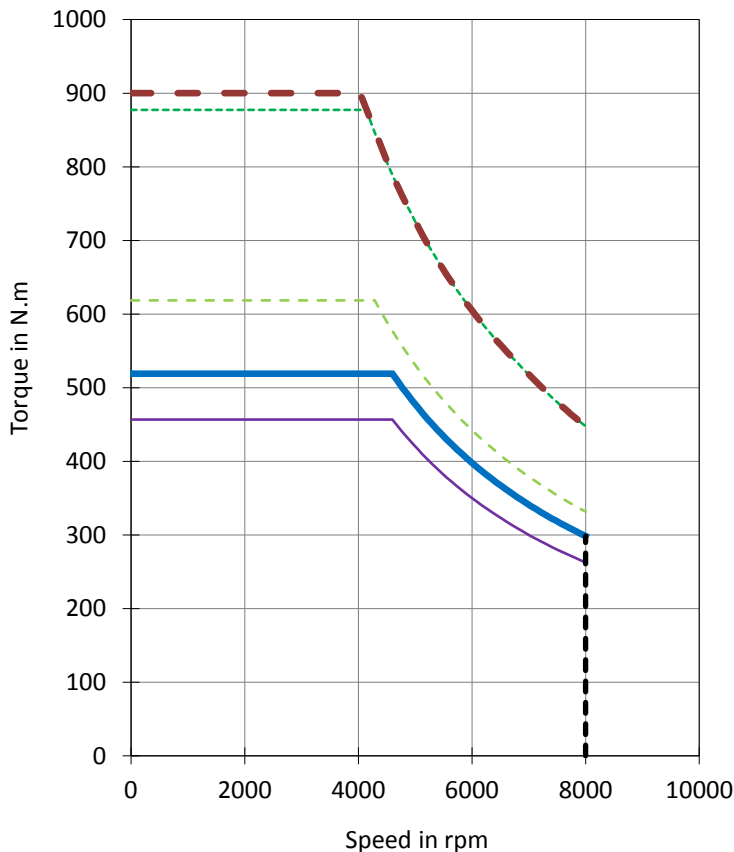
*** minimum value with rotor at 125°C

**** Speed limit due to the bearings:

Steel bearings limited to = 7000 rpm

Hybrid bearings limited to = ./. rpm

X LIFE bearings limited to = 8000 rpm



High speed brushless motor

MGV966DAX

ELECTRONIC DRIVE

Drive 506/983 - 400



Main characteristics

S1 power **/***	250 / 203	kW	Ps1
S6 power **/***	380 / 309	kW	Ps6
Low speed torque ** / ***	520 / 422	N.m	M ₀
Low speed S6 torque **/***	900 / 731	N.m	M ₀ S6
Base speed (S1)	4600	rpm	Nb
Max speed ****	8000	rpm	Nmax
DC voltage supply when motor is loaded	540	Vdc	Ū
Permanent current at low speed	505	Arms	I ₀
S6 current at low speed	982	Arms	I ₀ S6

Mechanical parameters

Rotor inertia	0.076	kg.m ²	J
Motor mass	300	kg	M
Maximum speed with steel bearings	7000	rpm	N ₁
Maximum speed with hybrid bearings	-	rpm	N ₂
Maximum speed with X LIFE bearings	8000	rpm	N ₃
Maximum speed with Drive	8000	rpm	Nmax
Maximum mechanical speed	8000	rpm	Nmec

Electrical parameters

Number of poles	8		
Winding resistance (25°C) *	0.0135	Ω	Rb
Back EMF voltage phase to phase / 1000 rpm	64.1	Vrms / 1000 rpm	ke
Back EMF voltage phase to phase / (rad/s)	0.612	Vrms / (rad/s)	ku
Torque constant	1.03	N.m / Arms	Kt
Short circuit current	665	Arms	Icc
Inductance Lq phase to phase (Back EMF voltage axis) *	0.299	mH	Lq
Inductance Ld phase to phase *	0.266	mH	Ld
Optimal phasing at permanent current	15	electrical degree	ψ ₀
Optimal phasing at S6 current	20	electrical degree	ψ _m

Thermal parameters

Motor thermal resistance	0.0099	K/W	Rth
Motor thermal time constant	3	min	Tth
Winding thermal time constant	0.62	min	Tth w
Min water cooling flow (Inlet 25°C MAX, 30% glycol)	28	l/min	Wf
Thermal class according to IEC 60034-1	F		

All data are given in typical values under standard conditions

* Phase to phase

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

*** minimum value with rotor at 125°C

**** Speed limit due to the bearings:

High speed brushless motor

MGVA50DAX

ELECTRONIC DRIVE

DRIVE 559/799 - 400

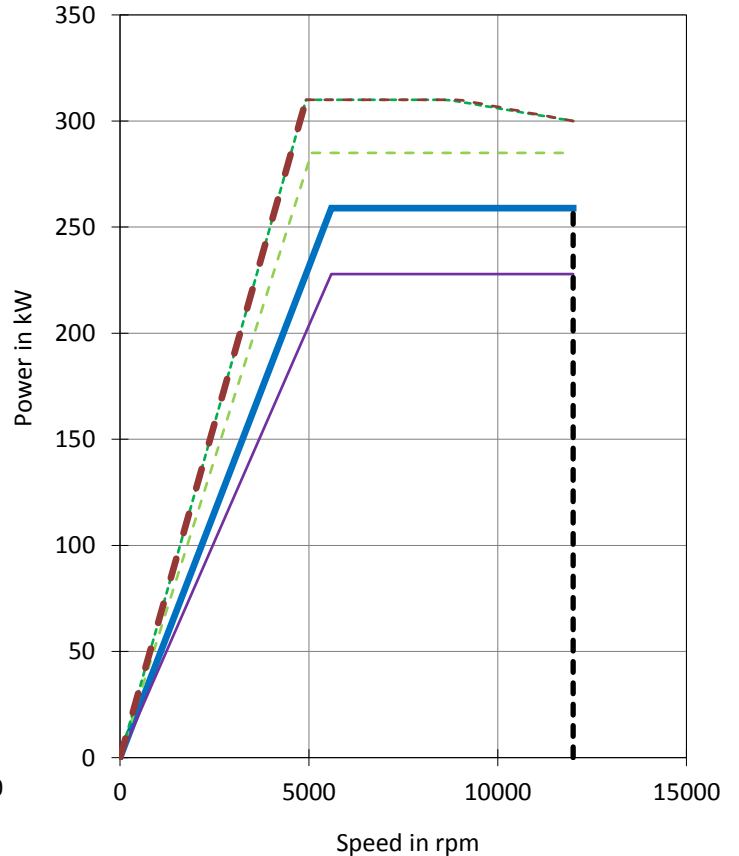
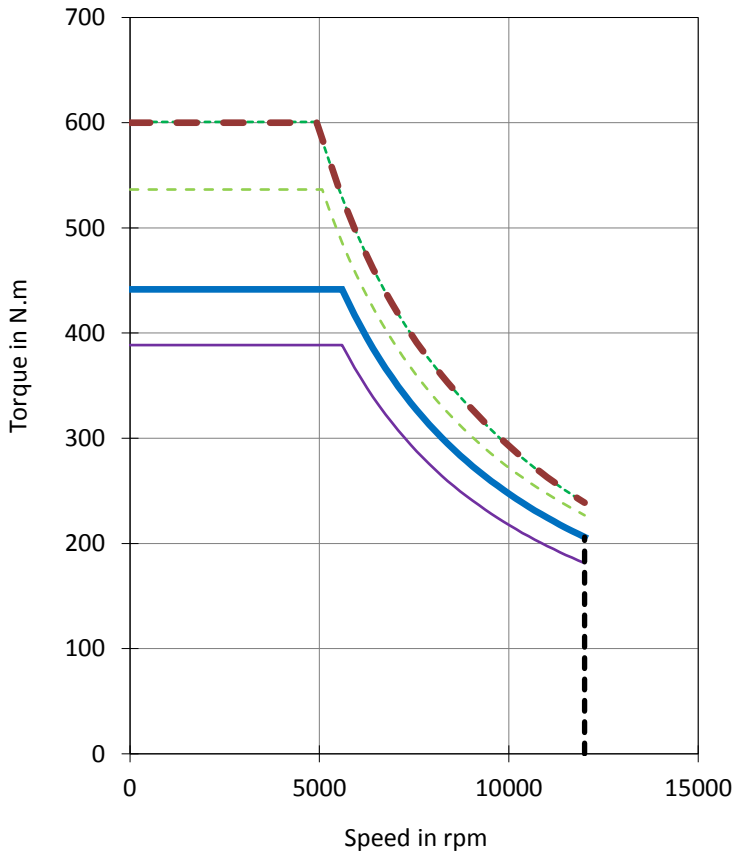


S1 power **/**	259 / 217	kW	Ps1
S6 power **/**	310 / 260	kW	Ps6
Low speed torque ** / **	440 / 369	N.m	M _o
Low speed S6 torque **/**	600 / 503	N.m	M _o S6
Base speed (S1)	5600	rpm	Nb
Max speed ****	12000	rpm	Nmax
DC voltage supply when motor is loaded	540	Vdc	Û
Permanent current at low speed	558	Arms	I _o
S6 current at low speed	798	Arms	I _o S6
Winding resistance(25°C) *	0.00884	Ω	Rb
Rotor inertia	0.292	kg.m ²	J
Thermal time constant	4	min	Tth
Motor mass	395	kg	M
Min water cooling flow (Inlet 25°C MAX, 30% glycol)	28	l/min	Wf

All data are given in typical values under standard conditions

- Continuous duty ,tolerances ±7.5% and rotor at 25°C
- Continuous duty ,tolerances ±7.5% and rotor at 125°C
- - - Duty Cycle 60%, 21 s, rotor at 25°C
- - - Duty Cycle 40%, 21 s, rotor at 25°C
- - - Duty Cycle 5%, 21 s, rotor at 25°C
- - - maximal speed

- * Phase to phase
- ** Tolerances ± 7.5% and rotor at 25°C
- *** minimum value with rotor at 125°C
- **** Speed limit due to the bearings:
 Steel bearings limited to = 9200 rpm
 Hybrid bearings limited to = 12000 rpm
 X LIFE bearings limited to = . / . rpm



High speed brushless motor

MGVA50DAX
ELECTRONIC DRIVE
DRIVE 559/799 - 400



Main characteristics

<i>S1 power **/***</i>	259 / 217	<i>kW</i>	<i>Ps1</i>
<i>S6 power **/***</i>	310 / 260	<i>kW</i>	<i>Ps6</i>
<i>Low speed torque ** / ***</i>	440 / 369	<i>N.m</i>	<i>M₀</i>
<i>Low speed S6 torque **/***</i>	600 / 503	<i>N.m</i>	<i>M₀S6</i>
<i>Base speed (S1)</i>	5600	<i>rpm</i>	<i>Nb</i>
<i>Max speed ****</i>	12000	<i>rpm</i>	<i>Nmax</i>
<i>DC voltage supply when motor is loaded</i>	540	<i>Vdc</i>	<i>Ū</i>
<i>Permanent current at low speed</i>	558	<i>Arms</i>	<i>I₀</i>
<i>S6 current at low speed</i>	798	<i>Arms</i>	<i>I₀S6</i>

Mechanical parameters

<i>Rotor inertia</i>	0.292	<i>kg.m²</i>	<i>J</i>
<i>Motor mass</i>	395	<i>kg</i>	<i>M</i>
<i>Maximum speed with steel bearings</i>	9200	<i>rpm</i>	<i>N₁</i>
<i>Maximum speed with hybrid bearings</i>	12000	<i>rpm</i>	<i>N₂</i>
<i>Maximum speed with X LIFE bearings</i>	-	<i>rpm</i>	<i>N₃</i>
<i>Maximum speed with Drive</i>	12000	<i>rpm</i>	<i>Nmax</i>
<i>Maximum mechanical speed</i>	13000	<i>rpm</i>	<i>Nmec</i>

Electrical parameters

<i>Number of poles</i>	8		
<i>Winding resistance (25°C) *</i>	0.00884	<i>Ω</i>	<i>Rb</i>
<i>Back EMF voltage phase to phase / 1000 rpm</i>	50.9	<i>Vrms / 1000 rpm</i>	<i>ke</i>
<i>Back EMF voltage phase to phase / (rad/s)</i>	0.486	<i>Vrms / (rad/s)</i>	<i>ku</i>
<i>Torque constant</i>	0.789	<i>N.m / Arms</i>	<i>Kt</i>
<i>Short circuit current</i>	520	<i>Arms</i>	<i>Icc</i>
<i>Inductance Lq phase to phase (Back EMF voltage axis) *</i>	0.272	<i>mH</i>	<i>Lq</i>
<i>Inductance Ld phase to phase *</i>	0.27	<i>mH</i>	<i>Ld</i>
<i>Optimal phasing at permanent current</i>	20	<i>electrical degree</i>	<i>ψ₀</i>
<i>Optimal phasing at S6 current</i>	20	<i>electrical degree</i>	<i>ψ_m</i>

Thermal parameters

<i>Motor thermal resistance</i>	0.01055	<i>K/W</i>	<i>Rth</i>
<i>Motor thermal time constant</i>	4	<i>min</i>	<i>Tth</i>
<i>Winding thermal time constant</i>	0.92	<i>min</i>	<i>Tth w</i>
<i>Min water cooling flow (Inlet 25°C MAX, 30% glycol)</i>	28	<i>l/min</i>	<i>Wf</i>
<i>Thermal class according to IEC 60034-1</i>	F		

All data are given in typical values under standard conditions

* Phase to phase

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

*** minimum value with rotor at 125°C

**** Speed limit due to the bearings:

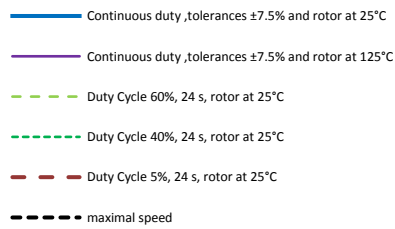
High speed brushless motor
MGVA50DBY
 ELECTRONIC DRIVE
DRIVE 560/870 - 400



/ Need protection module

S1 power **/**	290 / 237	kW	Ps1
S6 power **/**	350 / 287	kW	Ps6
Low speed torque ** / **	570 / 467	N.m	M _o
Low speed S6 torque **/**	800 / 656	N.m	M _o S6
Base speed (S1)	4820	rpm	Nb
Max speed ****	12000	rpm	Nmax
DC voltage supply when motor is loaded	540	Vdc	Û
Permanent current at low speed	560	Arms	I _o
S6 current at low speed	870	Arms	I _o S6
Winding resistance(25°C) *	0.00931	Ω	Rb
Rotor inertia	0.292	kg.m ²	J
Thermal time constant	4	min	Tth
Motor mass	395	kg	M
Min water cooling flow (Inlet 25°C MAX, 30% glycol)	28	l/min	Wf

All data are given in typical values under standard conditions



* Phase to phase

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

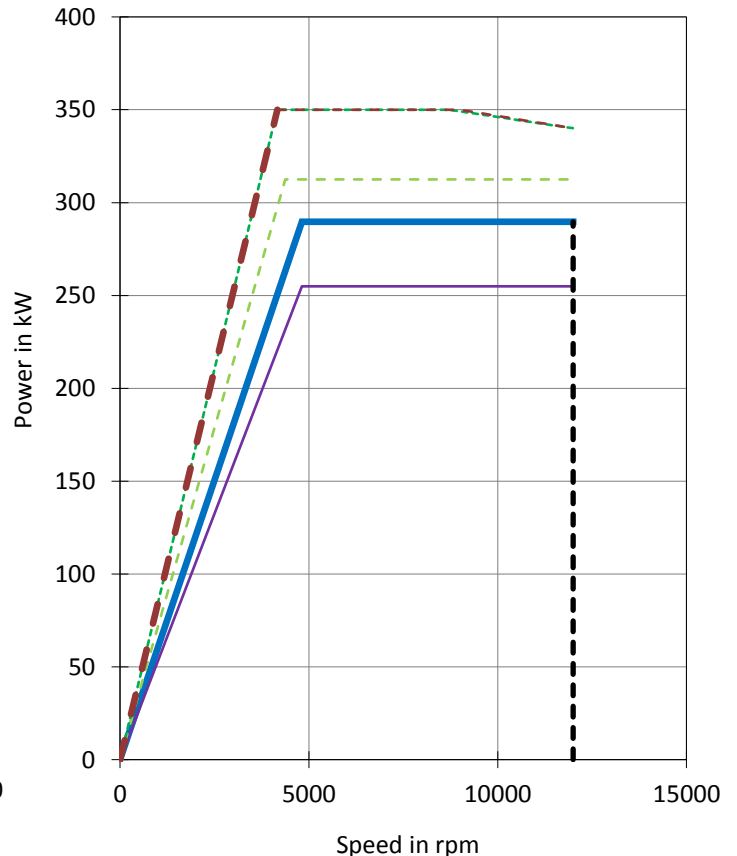
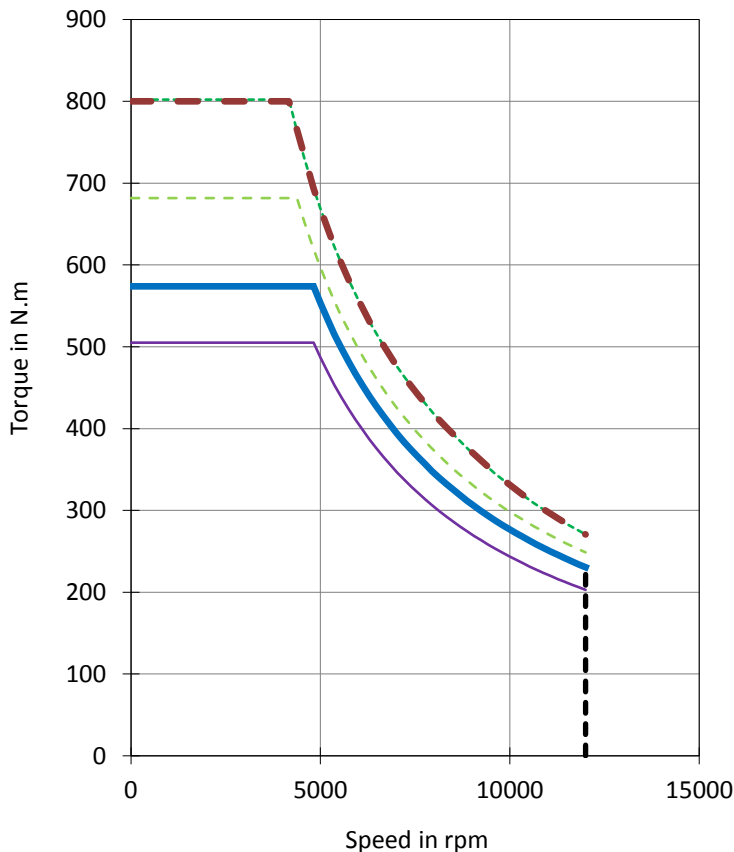
*** minimum value with rotor at 125°C

**** Speed limit due to the bearings:

Steel bearings limited to = 9200 rpm

Hybrid bearings limited to = 12000 rpm

X LIFE bearings limited to = ./. rpm



High speed brushless motor

MGVA50DBY
ELECTRONIC DRIVE
DRIVE 560/870 - 400



Main characteristics

S1 power **/***	290 / 237	kW	Ps1
S6 power **/***	350 / 287	kW	Ps6
Low speed torque ** / ***	570 / 467	N.m	M ₀
Low speed S6 torque **/***	800 / 656	N.m	M ₀ S6
Base speed (S1)	4820	rpm	Nb
Max speed ****	12000	rpm	Nmax
DC voltage supply when motor is loaded	540	Vdc	Ū
Permanent current at low speed	560	Arms	I ₀
S6 current at low speed	870	Arms	I ₀ S6

Mechanical parameters

Rotor inertia	0.292	kg.m ²	J
Motor mass	395	kg	M
Maximum speed with steel bearings	9200	rpm	N ₁
Maximum speed with hybrid bearings	12000	rpm	N ₂
Maximum speed with X LIFE bearings	-	rpm	N ₃
Maximum speed with Drive	12000	rpm	Nmax
Maximum mechanical speed	13000	rpm	Nmec

Electrical parameters

Number of poles	8		
Winding resistance (25°C) *	0.00931	Ω	Rb
Back EMF voltage phase to phase / 1000 rpm	66.1	Vrms / 1000 rpm	ke
Back EMF voltage phase to phase / (rad/s)	0.631	Vrms / (rad/s)	ku
Torque constant	1.02	N.m / Arms	Kt
Short circuit current	589	Arms	Icc
Inductance Lq phase to phase (Back EMF voltage axis) *	0.308	mH	Lq
Inductance Ld phase to phase *	0.31	mH	Ld
Optimal phasing at permanent current	20	electrical degree	ψ ₀
Optimal phasing at S6 current	20	electrical degree	ψ _m

Thermal parameters

Motor thermal resistance	0.011	K/W	Rth
Motor thermal time constant	4	min	Tth
Winding thermal time constant	1	min	Tth w
Min water cooling flow (Inlet 25°C MAX, 30% glycol)	28	l/min	Wf
Thermal class according to IEC 60034-1	F		

All data are given in typical values under standard conditions

* Phase to phase

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

*** minimum value with rotor at 125°C

**** Speed limit due to the bearings:

High speed brushless motor
MGVB40HAA
 ELECTRONIC DRIVE
DRIVE 722/1410 - 400



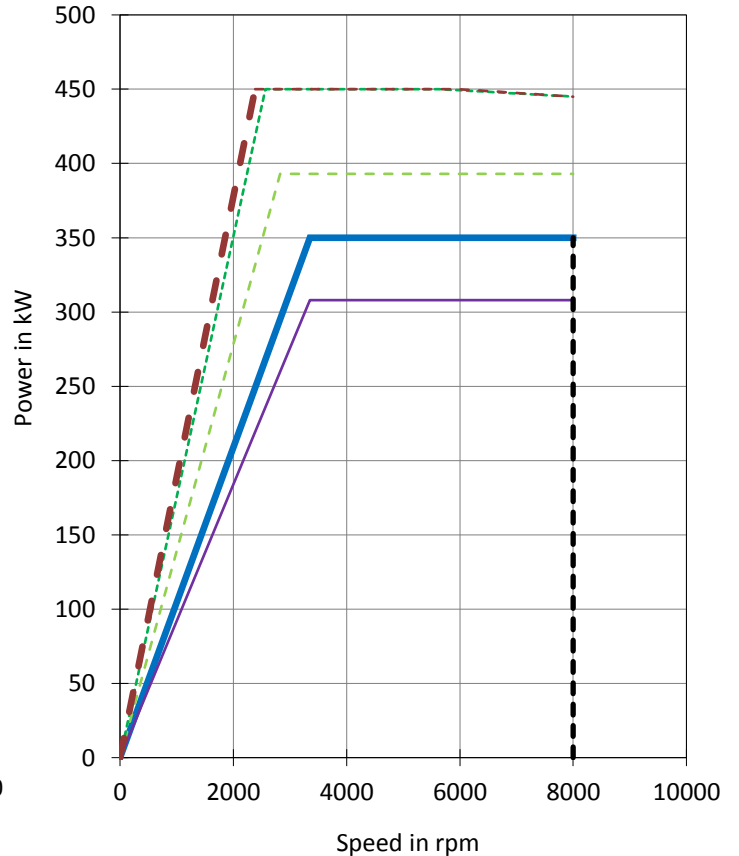
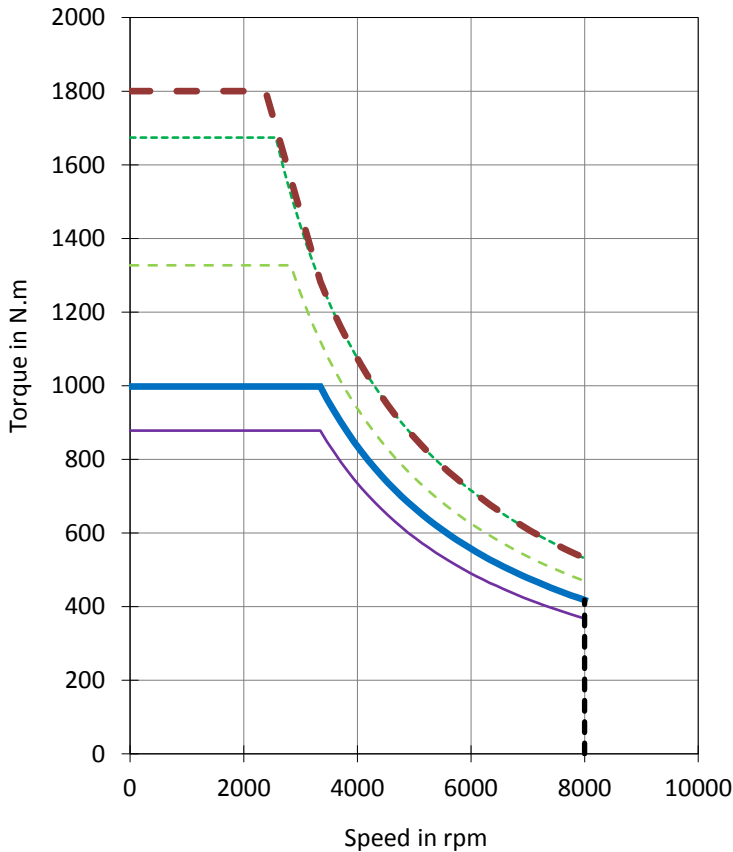
/ Need protection module

S1 power **/**	350 / 284	kW	Ps1
S6 power **/**	450 / 365	kW	Ps6
Low speed torque ** / **	1000 / 812	N.m	M _o
Low speed S6 torque **/**	1800 / 1460	N.m	M _o S6
Base speed (S1)	3350	rpm	Nb
Max speed ****	8000	rpm	Nmax
DC voltage supply when motor is loaded	540	Vdc	Û
Permanent current at low speed	722	Arms	I _o
S6 current at low speed	1410	Arms	I _o S6
Winding resistance(25°C) *	0.00617	Ω	Rb
Rotor inertia	0.84	kg.m ²	J
Thermal time constant	5	min	Tth
Motor mass	650	kg	M
Min water cooling flow (Inlet 25°C MAX, 30% glycol)	40	l/min	Wf

All data are given in typical values under standard conditions

- Continuous duty ,tolerances ±7.5% and rotor at 25°C
- Continuous duty ,tolerances ±7.5% and rotor at 125°C
- - - Duty Cycle 60%, 26 s, rotor at 25°C
- - - Duty Cycle 40%, 26 s, rotor at 25°C
- - - Duty Cycle 5%, 26 s, rotor at 25°C
- - - maximal speed

- * Phase to phase
- ** Tolerances ± 7.5% and rotor at 25°C
- *** minimum value with rotor at 125°C
- **** Speed limit due to the bearings:
 Steel bearings limited to = ./. rpm
 Hybrid bearings limited to = ./. rpm
 X LIFE bearings limited to = 8000 rpm



High speed brushless motor

MGVB40HAA
ELECTRONIC DRIVE
DRIVE 722/1410 - 400



Main characteristics

<i>S1 power **/***</i>	350 / 284	<i>kW</i>	<i>Ps1</i>
<i>S6 power **/***</i>	450 / 365	<i>kW</i>	<i>Ps6</i>
<i>Low speed torque ** / ***</i>	1000 / 812	<i>N.m</i>	<i>M₀</i>
<i>Low speed S6 torque **/***</i>	1800 / 1460	<i>N.m</i>	<i>M₀S6</i>
<i>Base speed (S1)</i>	3350	<i>rpm</i>	<i>Nb</i>
<i>Max speed ****</i>	8000	<i>rpm</i>	<i>Nmax</i>
<i>DC voltage supply when motor is loaded</i>	540	<i>Vdc</i>	<i>Ū</i>
<i>Permanent current at low speed</i>	722	<i>Arms</i>	<i>I₀</i>
<i>S6 current at low speed</i>	1410	<i>Arms</i>	<i>I₀S6</i>

Mechanical parameters

<i>Rotor inertia</i>	0.84	<i>kg.m²</i>	<i>J</i>
<i>Motor mass</i>	650	<i>kg</i>	<i>M</i>
<i>Maximum speed with steel bearings</i>	-	<i>rpm</i>	<i>N₁</i>
<i>Maximum speed with hybrid bearings</i>	-	<i>rpm</i>	<i>N₂</i>
<i>Maximum speed with X LIFE bearings</i>	8000	<i>rpm</i>	<i>N₃</i>
<i>Maximum speed with Drive</i>	8000	<i>rpm</i>	<i>Nmax</i>
<i>Maximum mechanical speed</i>	8000	<i>rpm</i>	<i>Nmec</i>

Electrical parameters

<i>Number of poles</i>	16		
<i>Winding resistance (25°C) *</i>	0.00617	<i>Ω</i>	<i>Rb</i>
<i>Back EMF voltage phase to phase / 1000 rpm</i>	86.1	<i>Vrms / 1000 rpm</i>	<i>ke</i>
<i>Back EMF voltage phase to phase / (rad/s)</i>	0.822	<i>Vrms / (rad/s)</i>	<i>ku</i>
<i>Torque constant</i>	1.39	<i>N.m / Arms</i>	<i>Kt</i>
<i>Short circuit current</i>	764	<i>Arms</i>	<i>Icc</i>
<i>Inductance Lq phase to phase (Back EMF voltage axis) *</i>	0.185	<i>mH</i>	<i>Lq</i>
<i>Inductance Ld phase to phase *</i>	0.156	<i>mH</i>	<i>Ld</i>
<i>Optimal phasing at permanent current</i>	10	<i>electrical degree</i>	<i>ψ₀</i>
<i>Optimal phasing at S6 current</i>	20	<i>electrical degree</i>	<i>ψ_m</i>

Thermal parameters

<i>Motor thermal resistance</i>	0.0078	<i>K/W</i>	<i>Rth</i>
<i>Motor thermal time constant</i>	5	<i>min</i>	<i>Tth</i>
<i>Winding thermal time constant</i>	1.1	<i>min</i>	<i>Tth w</i>
<i>Min water cooling flow (Inlet 25°C MAX, 30% glycol)</i>	40	<i>l/min</i>	<i>Wf</i>
<i>Thermal class according to IEC 60034-1</i>	F		

All data are given in typical values under standard conditions

* Phase to phase

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

*** minimum value with rotor at 125°C

**** Speed limit due to the bearings:

High speed brushless motor
MGVB50HBS
 ELECTRONIC DRIVE
DRIVE 1160/2460 - 400



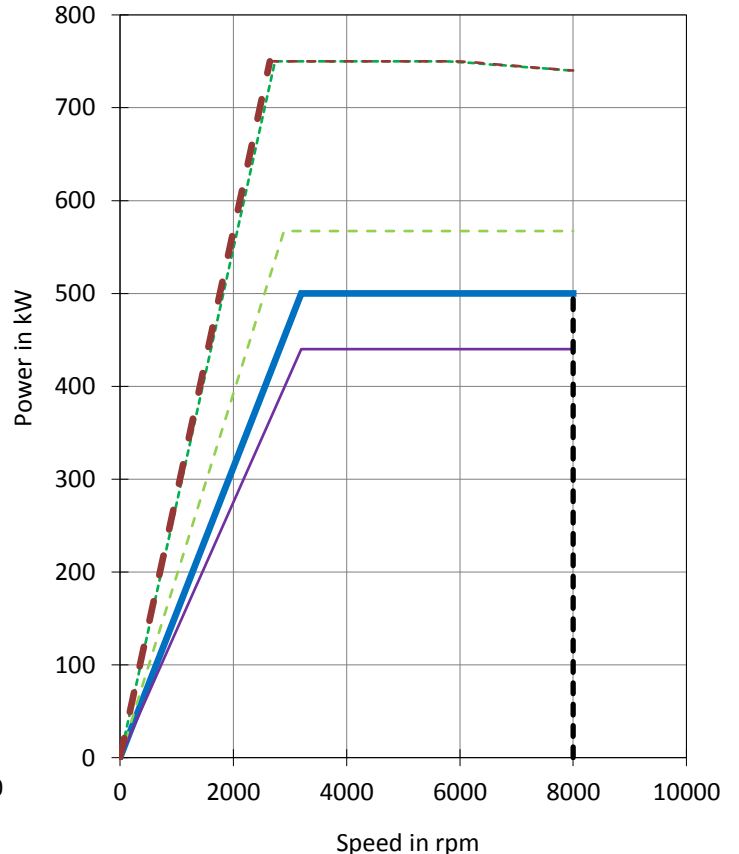
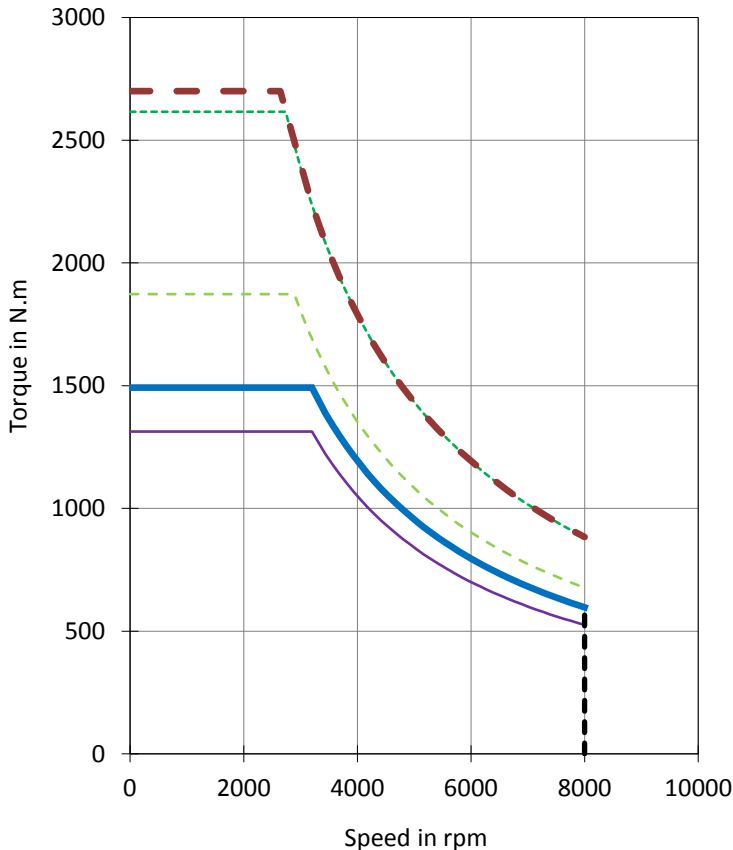
/ Need protection module

S1 power **/**	500 / 405	kW	Ps1
S6 power **/**	750 / 607	kW	Ps6
Low speed torque ** / ***	1500 / 1210	N.m	M ₀
Low speed S6 torque **/**	2700 / 2190	N.m	M ₀ S6
Base speed (S1)	3200	rpm	Nb
Max speed ****	8000	rpm	Nmax
DC voltage supply when motor is loaded	540	Vdc	Û
Permanent current at low speed	1010	Arms	I ₀
S6 current at low speed	1900	Arms	I ₀ S6
Winding resistance(25°C) *	0.00417	Ω	Rb
Rotor inertia	1.04	kg.m ²	J
Thermal time constant	5	min	Tth
Motor mass	740	kg	M
Min water cooling flow (Inlet 25°C MAX, 30% glycol)	50	l/min	Wf

All data are given in typical values under standard conditions

- Continuous duty ,tolerances ±7.5% and rotor at 25°C
- Continuous duty ,tolerances ±7.5% and rotor at 125°C
- - - Duty Cycle 60%, 25 s, rotor at 25°C
- - - Duty Cycle 40%, 25 s, rotor at 25°C
- - - Duty Cycle 5%, 25 s, rotor at 25°C
- - - - maximal speed

- * Phase to phase
- ** Tolerances ± 7.5% and rotor at 25°C
- *** minimum value with rotor at 125°C
- **** Speed limit due to the bearings:
 Steel bearings limited to = ./. rpm
 Hybrid bearings limited to = ./. rpm
 X LIFE bearings limited to = 8000 rpm



High speed brushless motor

MGVB50HBS
ELECTRONIC DRIVE
DRIVE 1160/2460 - 400



Main characteristics

<i>S1 power **/***</i>	500 / 405	<i>kW</i>	<i>Ps1</i>
<i>S6 power **/***</i>	750 / 607	<i>kW</i>	<i>Ps6</i>
<i>Low speed torque ** / ***</i>	1500 / 1210	<i>N.m</i>	<i>M₀</i>
<i>Low speed S6 torque **/***</i>	2700 / 2190	<i>N.m</i>	<i>M₀S6</i>
<i>Base speed (S1)</i>	3200	<i>rpm</i>	<i>Nb</i>
<i>Max speed ****</i>	8000	<i>rpm</i>	<i>Nmax</i>
<i>DC voltage supply when motor is loaded</i>	540	<i>Vdc</i>	<i>Û</i>
<i>Permanent current at low speed</i>	1010	<i>Arms</i>	<i>I₀</i>
<i>S6 current at low speed</i>	1900	<i>Arms</i>	<i>I₀S6</i>

Mechanical parameters

<i>Rotor inertia</i>	1.04	<i>kg.m²</i>	<i>J</i>
<i>Motor mass</i>	740	<i>kg</i>	<i>M</i>
<i>Maximum speed with steel bearings</i>	-	<i>rpm</i>	<i>N₁</i>
<i>Maximum speed with hybrid bearings</i>	-	<i>rpm</i>	<i>N₂</i>
<i>Maximum speed with X LIFE bearings</i>	8000	<i>rpm</i>	<i>N₃</i>
<i>Maximum speed with Drive</i>	8000	<i>rpm</i>	<i>Nmax</i>
<i>Maximum mechanical speed</i>	8000	<i>rpm</i>	<i>Nmec</i>

Electrical parameters

<i>Number of poles</i>	16		
<i>Winding resistance (25°C) *</i>	0.00417	Ω	<i>Rb</i>
<i>Back EMF voltage phase to phase / 1000 rpm</i>	97.2	<i>Vrms / 1000 rpm</i>	<i>ke</i>
<i>Back EMF voltage phase to phase / (rad/s)</i>	0.928	<i>Vrms / (rad/s)</i>	<i>ku</i>
<i>Torque constant</i>	1.49	<i>N.m / Arms</i>	<i>Kt</i>
<i>Short circuit current</i>	1290	<i>Arms</i>	<i>Icc</i>
<i>Inductance Lq phase to phase (Back EMF voltage axis) *</i>	0.125	<i>mH</i>	<i>Lq</i>
<i>Inductance Ld phase to phase *</i>	0.104	<i>mH</i>	<i>Ld</i>
<i>Optimal phasing at permanent current</i>	10	<i>electrical degree</i>	ψ_0
<i>Optimal phasing at S6 current</i>	19	<i>electrical degree</i>	ψ_m

Thermal parameters

<i>Motor thermal resistance</i>	0.00624	<i>K/W</i>	<i>Rth</i>
<i>Motor thermal time constant</i>	5	<i>min</i>	<i>Tth</i>
<i>Winding thermal time constant</i>	1.1	<i>min</i>	<i>Tth w</i>
<i>Min water cooling flow (Inlet 25°C MAX, 30% glycol)</i>	50	<i>l/min</i>	<i>Wf</i>
<i>Thermal class according to IEC 60034-1</i>	F		

All data are given in typical values under standard conditions

* Phase to phase

** Tolerances $\pm 7.5\%$ and rotor at 25°C

*** minimum value with rotor at 125°C

**** Speed limit due to the bearings: