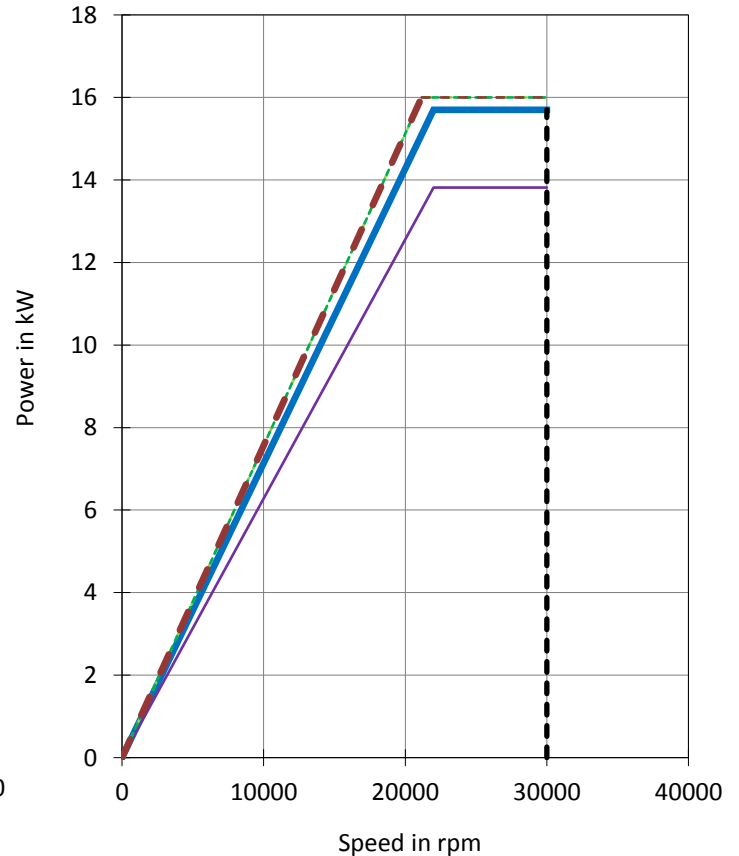
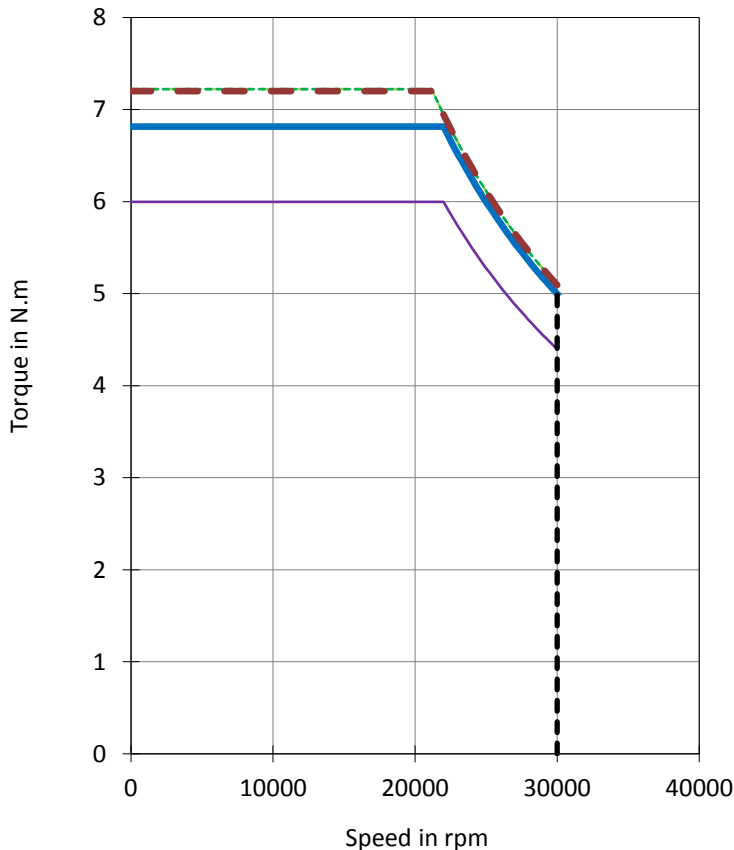
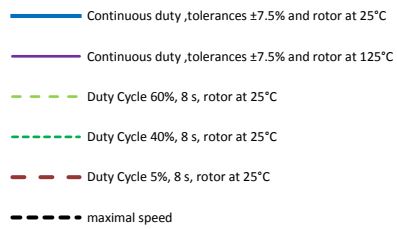


MGV430BAI
ELECTRONIC DRIVE
890SD-522450D



S1 power **/**	15.7 / 12.8	kW	Ps1
S6 power **/**	16 / 13.1	kW	Ps6
Low speed torque ** / ***	6.8 / 5.55	N.m	M ₀
Low speed S6 torque **/**	7.2 / 5.87	N.m	M ₀ S6
Base speed (S1)	22000	rpm	Nb
Max speed ****	30000	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	37.7	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



Main characteristics

<i>S1 power **/***</i>	15.7 / 12.8	<i>kW</i>	<i>Ps1</i>
<i>S6 power **/***</i>	16 / 13.1	<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>	7.2 / 5.87	<i>N.m</i>	<i>M₀S6</i>
<i>Base speed (S1)</i>	22000	<i>rpm</i>	<i>Nb</i>
<i>Max speed ****</i>	30000	<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>	37.7	<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>	30000	<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>	22	<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

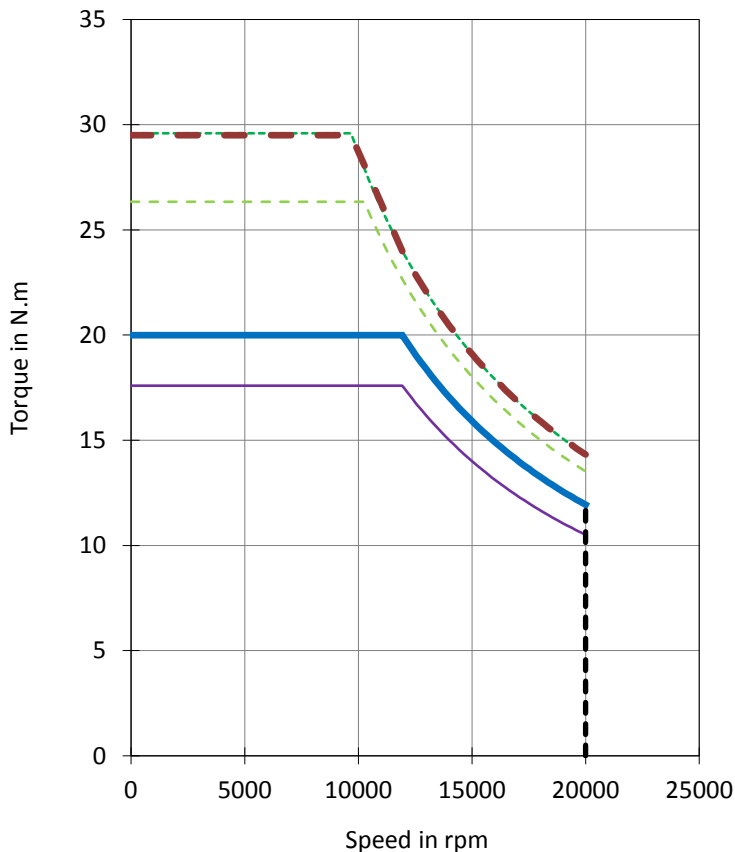
**** Speed limit due to the bearings:



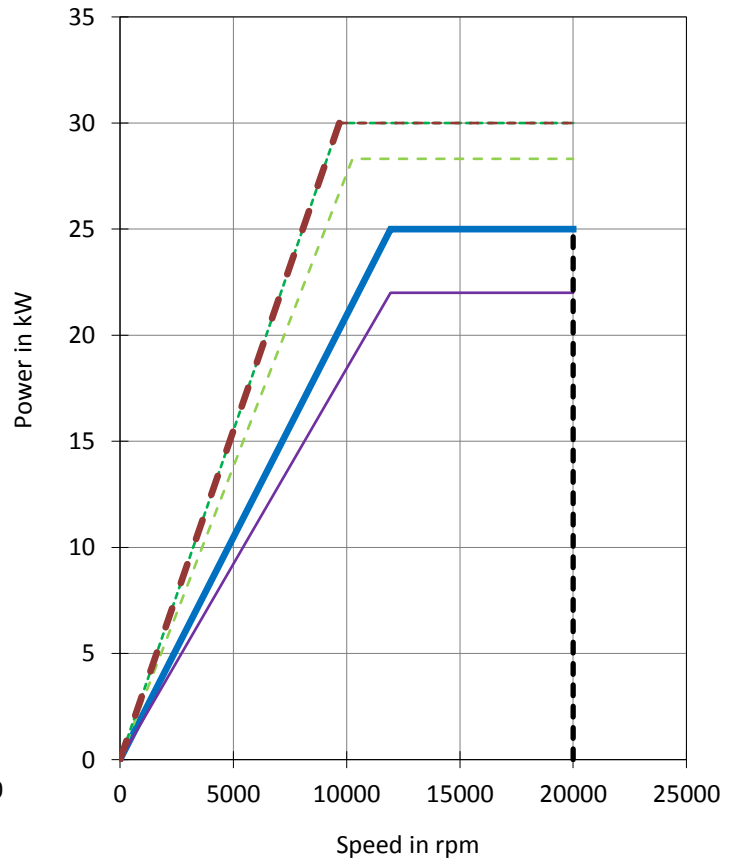
S1 power **/**	25 / 20.9	kW	Ps1
S6 power **/**	30 / 25.1	kW	Ps6
Low speed torque ** / ***	20 / 16.7	N.m	M ₀
Low speed S6 torque **/**	29.5 / 24.7	N.m	M ₀ S6
Base speed (S1)	11900	rpm	Nb
Max speed ****	20000	rpm	Nmax
DC voltage supply when motor is loaded	540	Vdc	Ū
Permanent current at low speed	49.4	Arms	I ₀
S6 current at low speed	73.1	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

- Continuous duty ,tolerances ±7.5% and rotor at 25°C
- Continuous duty ,tolerances ±7.5% and rotor at 125°C
- - - Duty Cycle 60%, 13 s, rotor at 25°C
- - - Duty Cycle 40%, 13 s, rotor at 25°C
- - - Duty Cycle 5%, 13 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 = 18500 rpm
Hybrid bearings limited to = 25000 rpm
X LIFE bearings limited to = 30000 rpm





Main characteristics

<i>S1 power **/***</i>	25 / 20.9	<i>kW</i>	<i>Ps1</i>
<i>S6 power **/***</i>	30 / 25.1	<i>kW</i>	<i>Ps6</i>
<i>Low speed torque ** / ***</i>	20 / 16.7	<i>N.m</i>	<i>M₀</i>
<i>Low speed S6 torque **/***</i>	29.5 / 24.7	<i>N.m</i>	<i>M₀S6</i>
<i>Base speed (S1)</i>	11900	<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>	49.4	<i>Arms</i>	<i>I₀</i>
<i>S6 current at low speed</i>	73.1	<i>Arms</i>	<i>I₀S6</i>

Mechanical parameters

<i>Rotor inertia</i>	0.00352	<i>kg.m²</i>	<i>J</i>
<i>Motor mass</i>	55	<i>kg</i>	<i>M</i>
<i>Maximum speed with steel bearings</i>	18500	<i>rpm</i>	<i>N₁</i>
<i>Maximum speed with hybrid bearings</i>	25000	<i>rpm</i>	<i>N₂</i>
<i>Maximum speed with X LIFE bearings</i>	30000	<i>rpm</i>	<i>N₃</i>
<i>Maximum speed with Drive</i>	20000	<i>rpm</i>	<i>Nmax</i>
<i>Maximum mechanical speed</i>	30000	<i>rpm</i>	<i>Nmec</i>

Electrical parameters

<i>Number of poles</i>	6		
<i>Winding resistance (25°C) *</i>	0.189	<i>Ω</i>	<i>Rb</i>
<i>Back EMF voltage phase to phase / 1000 rpm</i>	24.5	<i>Vrms / 1000 rpm</i>	<i>ke</i>
<i>Back EMF voltage phase to phase / (rad/s)</i>	0.234	<i>Vrms / (rad/s)</i>	<i>ku</i>
<i>Torque constant</i>	0.405	<i>N.m / Arms</i>	<i>Kt</i>
<i>Short circuit current</i>	53	<i>Arms</i>	<i>Icc</i>
<i>Inductance Lq phase to phase (Back EMF voltage axis) *</i>	1.93	<i>mH</i>	<i>Lq</i>
<i>Inductance Ld phase to phase *</i>	1.7	<i>mH</i>	<i>Ld</i>
<i>Optimal phasing at permanent current</i>	15	<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>	0.0753	<i>K/W</i>	<i>Rth</i>
<i>Motor thermal time constant</i>	1.5	<i>min</i>	<i>Tth</i>
<i>Winding thermal time constant</i>	0.57	<i>min</i>	<i>Tth w</i>
<i>Min water cooling flow (Inlet 25°C MAX, 30% glycol)</i>	5.6	<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

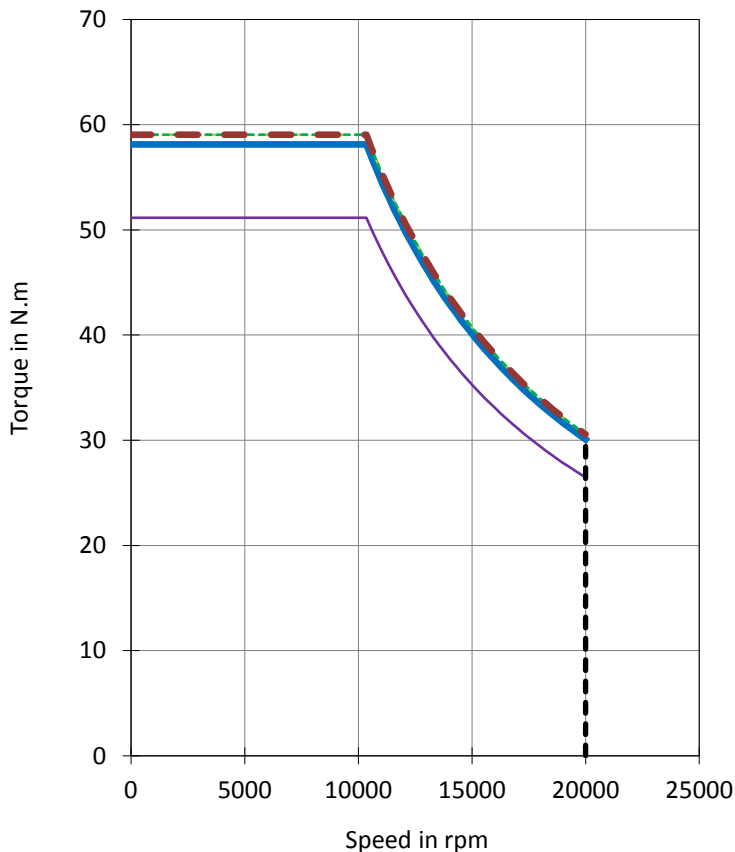
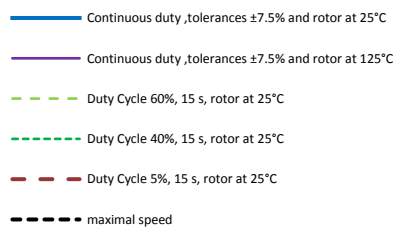
*** minimum value with rotor at 125°C

**** Speed limit due to the bearings:

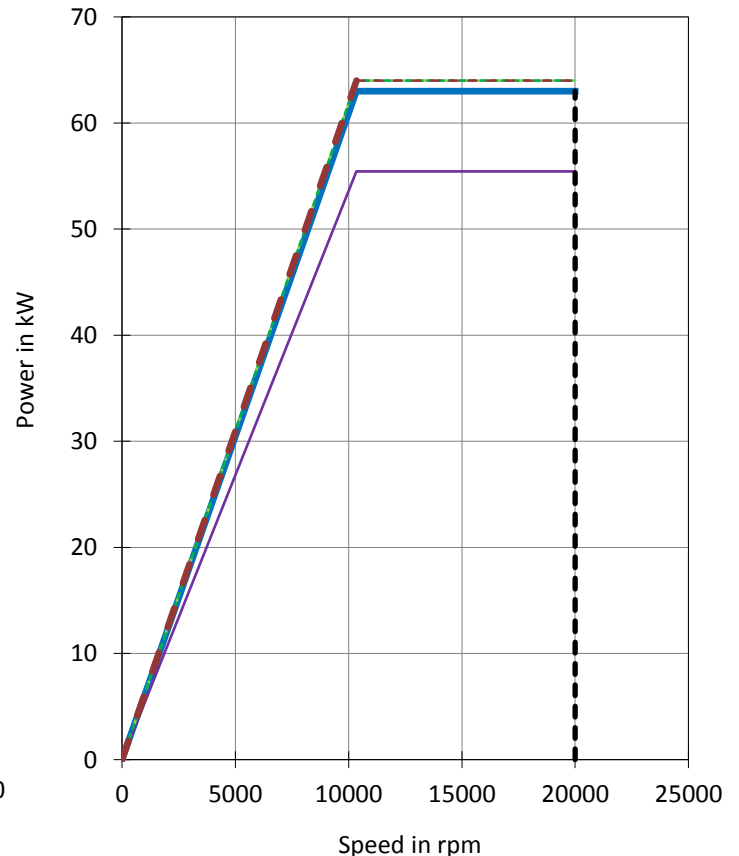


<i>S1 power **/**</i>	63 / 52.8	kW	<i>Ps1</i>
<i>S6 power **/**</i>	64 / 53.6	kW	<i>Ps6</i>
<i>Low speed torque ** / ***</i>	58 / 48.6	N.m	<i>M₀</i>
<i>Low speed S6 torque **/**</i>	59.5 / 49.9	N.m	<i>M₀S6</i>
<i>Base speed (S1)</i>	10400	rpm	<i>Nb</i>
<i>Max speed ****</i>	20000	rpm	<i>Nmax</i>
<i>DC voltage supply when motor is loaded</i>	540	Vdc	<i>Û</i>
<i>Permanent current at low speed</i>	123	Arms	<i>I₀</i>
<i>S6 current at low speed</i>	126	Arms	<i>I₀S6</i>
<i>Winding resistance(25°C) *</i>	0.0522	Ω	<i>Rb</i>
<i>Rotor inertia</i>	0.0186	kg.m ²	<i>J</i>
<i>Thermal time constant</i>	2.4	min	<i>Tth</i>
<i>Motor mass</i>	115	kg	<i>M</i>
<i>Min water cooling flow (Inlet 25°C MAX, 30% glycol)</i>	11	l/min	<i>Wf</i>

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



Main characteristics

<i>S1 power **/***</i>	63 / 52.8	<i>kW</i>	<i>Ps1</i>
<i>S6 power **/***</i>	64 / 53.6	<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>	59.5 / 49.9	<i>N.m</i>	<i>M₀S6</i>
<i>Base speed (S1)</i>	10400	<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>	123	<i>Arms</i>	<i>I₀</i>
<i>S6 current at low speed</i>	126	<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>	20000	<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

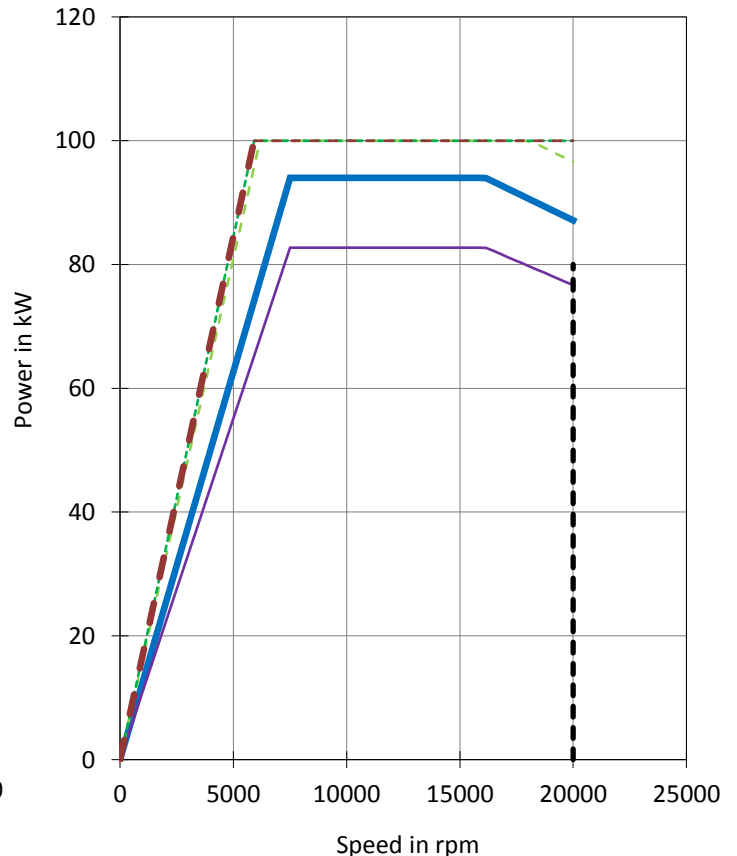
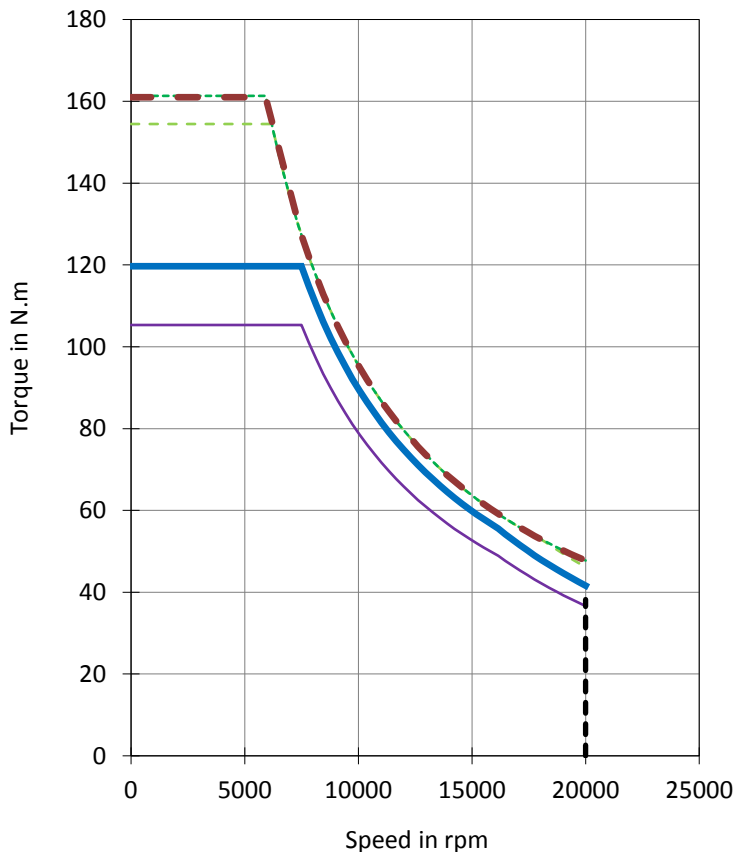
**** Speed limit due to the bearings:

/ Need protection module

<i>S1 power **/***</i>	94 / 76.3	kW	<i>Ps1</i>
<i>S6 power **/***</i>	100 / 81.2	kW	<i>Ps6</i>
<i>Low speed torque ** / ***</i>	120 / 97.4	N.m	<i>M₀</i>
<i>Low speed S6 torque **/***</i>	161 / 131	N.m	<i>M₀S6</i>
<i>Base speed (S1)</i>	7500	rpm	<i>Nb</i>
<i>Max speed ****</i>	20000	rpm	<i>Nmax</i>
<i>DC voltage supply when motor is loaded</i>	540	Vdc	<i>Û</i>
<i>Permanent current at low speed</i>	136	Arms	<i>I₀</i>
<i>S6 current at low speed</i>	189	Arms	<i>I₀S6</i>
<i>Winding resistance(25°C) *</i>	0.0717	Ω	<i>Rb</i>
<i>Rotor inertia</i>	0.0264	kg.m ²	<i>J</i>
<i>Thermal time constant</i>	2.4	min	<i>Tth</i>
<i>Motor mass</i>	135	kg	<i>M</i>
<i>Min water cooling flow (Inlet 25°C MAX, 30% glycol)</i>	17	l/min	<i>Wf</i>

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%, 14 s, rotor at 25°C
- - - Duty Cycle 40%, 14 s, rotor at 25°C
- - - Duty Cycle 5%, 14 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 = 14300 rpm

Hybrid bearings limited to = 18000 rpm

X LIFE bearings limited to = 24000 rpm



Main characteristics

<i>S1 power **/***</i>	94 / 76.3	<i>kW</i>	<i>Ps1</i>
<i>S6 power **/***</i>	100 / 81.2	<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>	161 / 131	<i>N.m</i>	<i>M₀S6</i>
<i>Base speed (S1)</i>	7500	<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>	136	<i>Arms</i>	<i>I₀</i>
<i>S6 current at low speed</i>	189	<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>	20000	<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

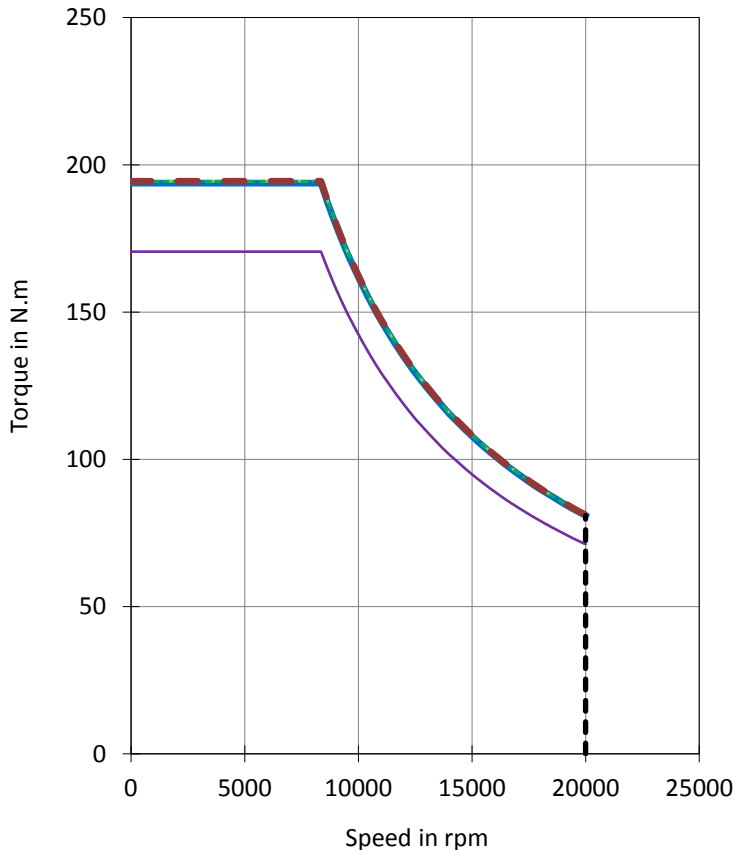
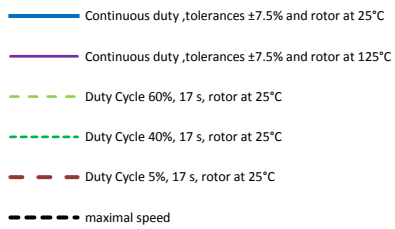
*** minimum value with rotor at 125°C

**** Speed limit due to the bearings:

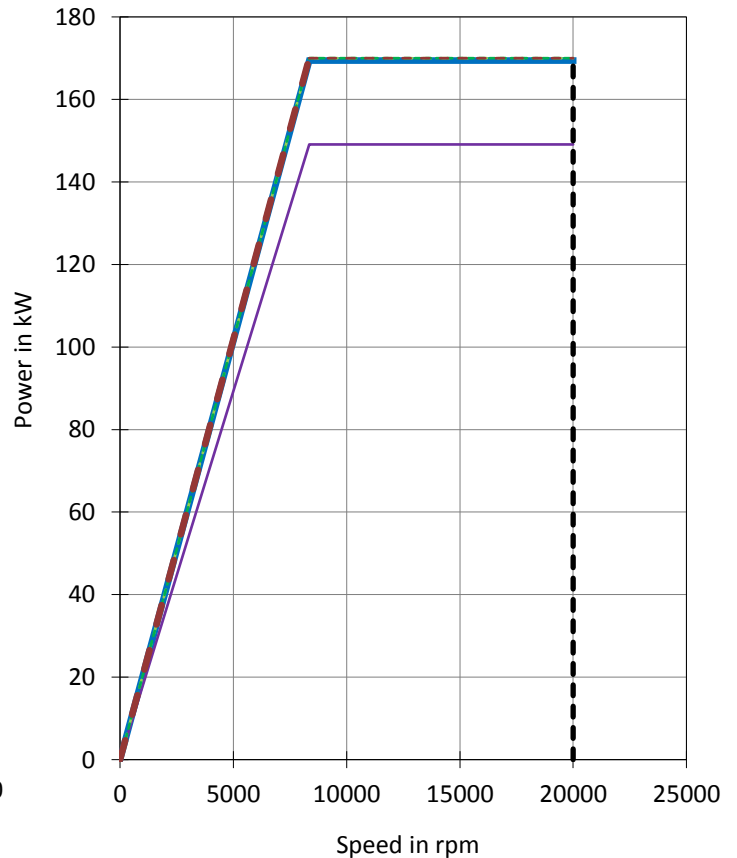


<i>S1 power **/***</i>	169 / 138	kW	<i>Ps1</i>
<i>S6 power **/***</i>	170 / 139	kW	<i>Ps6</i>
<i>Low speed torque ** / ***</i>	193 / 158	N.m	<i>M₀</i>
<i>Low speed S6 torque **/***</i>	195 / 159	N.m	<i>M₀S6</i>
<i>Base speed (S1)</i>	8350	rpm	<i>Nb</i>
<i>Max speed ****</i>	20000	rpm	<i>Nmax</i>
<i>DC voltage supply when motor is loaded</i>	540	Vdc	<i>Û</i>
<i>Permanent current at low speed</i>	435	Arms	<i>I₀</i>
<i>S6 current at low speed</i>	440	Arms	<i>I₀S6</i>
<i>Winding resistance(25°C) *</i>	0.00747	Ω	<i>Rb</i>
<i>Rotor inertia</i>	0.063	kg.m ²	<i>J</i>
<i>Thermal time constant</i>	3.2	min	<i>Tth</i>
<i>Motor mass</i>	270	kg	<i>M</i>
<i>Min water cooling flow (Inlet 25°C MAX, 30% glycol)</i>	18	l/min	<i>Wf</i>

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 = 11700 rpm
 Hybrid bearings limited to = 16000 rpm
 X LIFE bearings limited to = 20000 rpm



Main characteristics

<i>S1 power **/***</i>	169 / 138	<i>kW</i>	<i>Ps1</i>
<i>S6 power **/***</i>	170 / 139	<i>kW</i>	<i>Ps6</i>
<i>Low speed torque ** / ***</i>	193 / 158	<i>N.m</i>	<i>M₀</i>
<i>Low speed S6 torque **/***</i>	195 / 159	<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>	435	<i>Arms</i>	<i>I₀</i>
<i>S6 current at low speed</i>	440	<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>	0.444	<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>	20	<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:

*S1 power **/******250 / 193**

kW

*Ps1**S6 power **/******270 / 208**

kW

*Ps6**Low speed torque ** / ******520 / 400**

N.m

*M₀**Low speed S6 torque **/******535 / 412**

N.m

*M₀S6**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

*I₀**S6 current at low speed***520**

Arms

*I₀S6**Winding resistance(25°C) ****0.0135** Ω *Rb**Rotor inertia***0.076**kg.m²*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 $\pm 7.5\%$ and rotor at 25°C

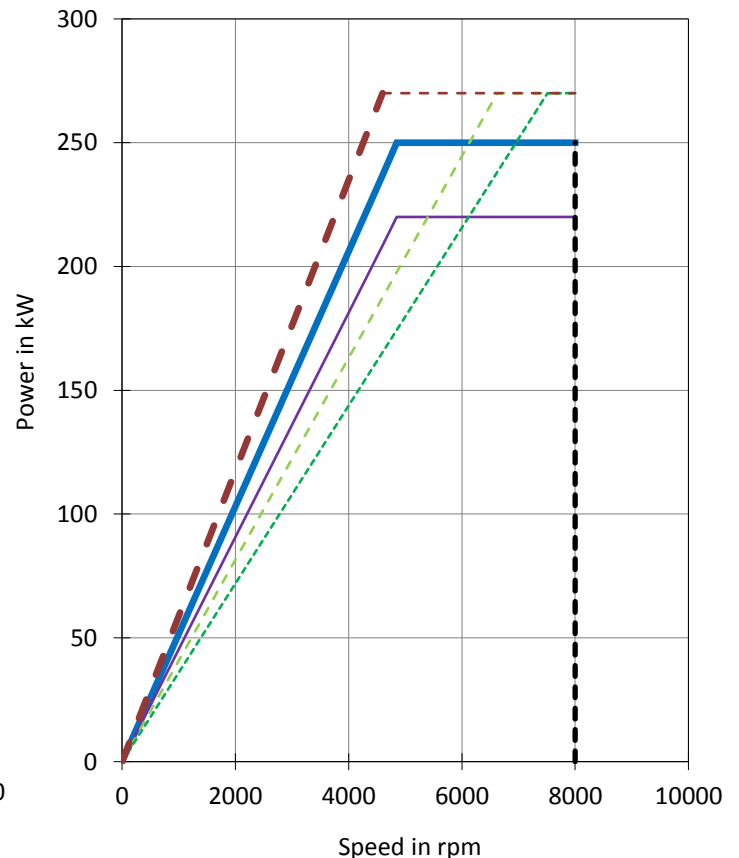
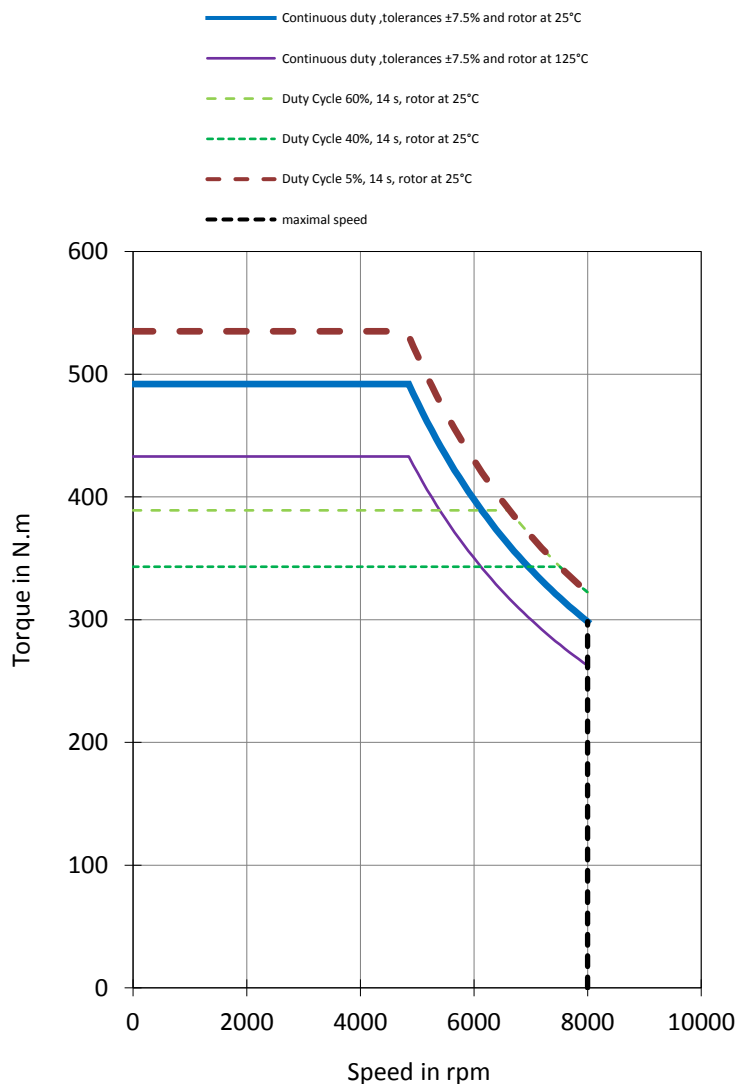
*** minimum value with rotor at 125°C

**** 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
890PXSA-43580M



Main characteristics

S1 power **/***	250 / 193	kW	Ps1
S6 power **/***	270 / 208	kW	Ps6
Low speed torque ** / ***	520 / 400	N.m	M ₀
Low speed S6 torque **/***	535 / 412	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	520	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	15	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:



S1 power **/***

240 / 199

kW

Ps1

S6 power **/***

244 / 203

kW

Ps6

Low speed torque ** / ***

412 / 342

N.m

 M_0

Low speed S6 torque **/***

416 / 345

N.m

 M_0S6

Base speed (S1)

5600

rpm

Nb

Max speed ****

11800

rpm

Nmax

DC voltage supply when motor is loaded

540

Vdc

 $\hat{U}$

Permanent current at low speed

519

Arms

 I_0

S6 current at low speed

525

Arms

 I_0S6

Winding resistance(25°C) *

0.00884

 Ω

Rb

Rotor inertia

0.292

kg.m²

J

Thermal time constant

4

min

Tth

Motor mass

395

kg

M

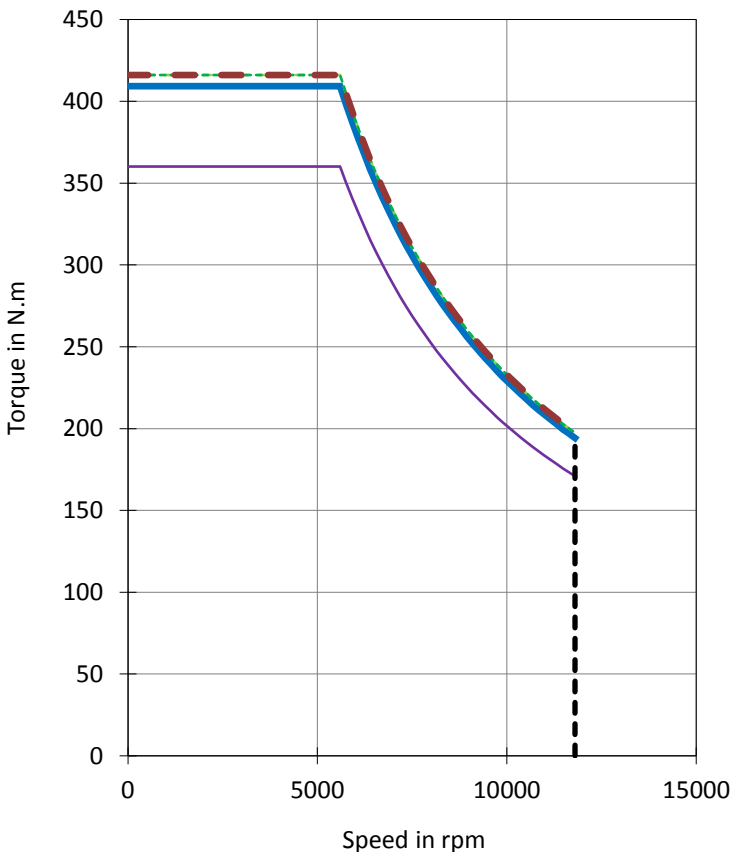
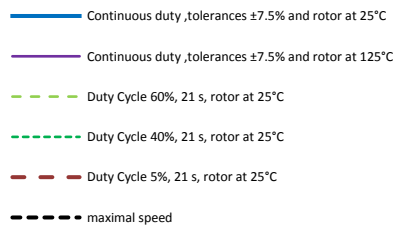
Min water cooling flow (Inlet 25°C MAX, 30% glycol)

28

l/min

Wf

All data are given in typical values under standard conditions



* Phase to phase

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

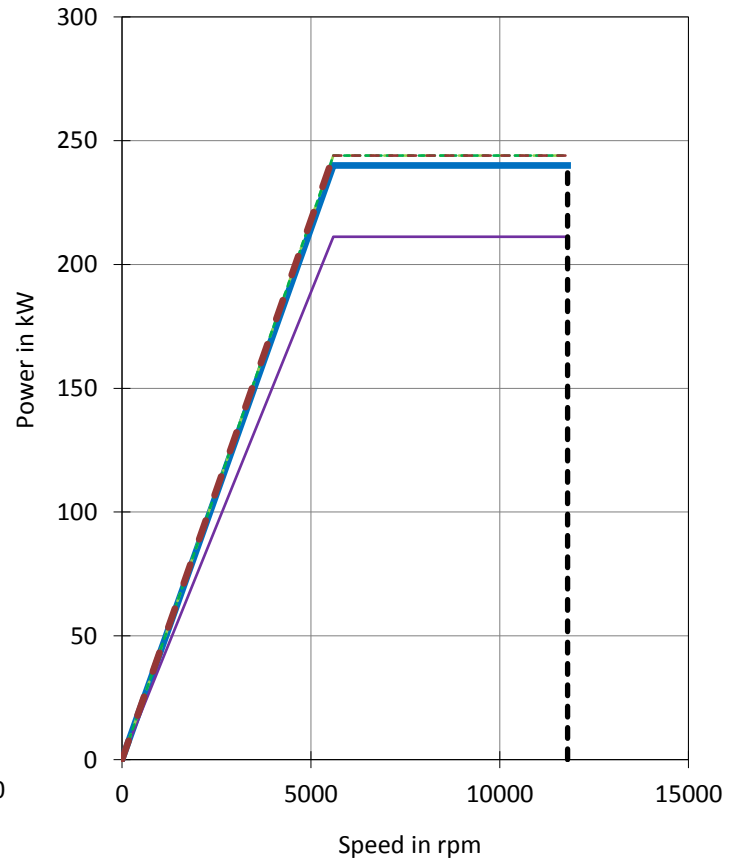
*** minimum value with rotor at 125°C

**** 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
890PXSA-43580M



Main characteristics

<i>S1 power **/***</i>	240 / 199	<i>kW</i>	<i>Ps1</i>
<i>S6 power **/***</i>	244 / 203	<i>kW</i>	<i>Ps6</i>
<i>Low speed torque ** / ***</i>	412 / 342	<i>N.m</i>	<i>M₀</i>
<i>Low speed S6 torque **/***</i>	416 / 345	<i>N.m</i>	<i>M₀S6</i>
<i>Base speed (S1)</i>	5600	<i>rpm</i>	<i>Nb</i>
<i>Max speed ****</i>	11800	<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>	519	<i>Arms</i>	<i>I₀</i>
<i>S6 current at low speed</i>	525	<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>	11800	<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>	0.794	<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:

*S1 power **/****

270 / 220

kW

*Ps1**S6 power **/****

273 / 222

kW

*Ps6**Low speed torque ** / ****

535 / 435

N.m

*M₀**Low speed S6 torque **/****

540 / 439

N.m

*M₀S6**Base speed (S1)*

4820

rpm

*Nb**Max speed *****

9180

rpm

*Nmax**DC voltage supply when motor is loaded*

540

Vdc

*Û**Permanent current at low speed*

520

Arms

*I₀**S6 current at low speed*

526

Arms

*I₀S6**Winding resistance(25°C) **

0.00931

 Ω *Rb**Rotor inertia*

0.292

kg.m²*J**Thermal time constant*

4

min

*Tth**Motor mass*

395

kg

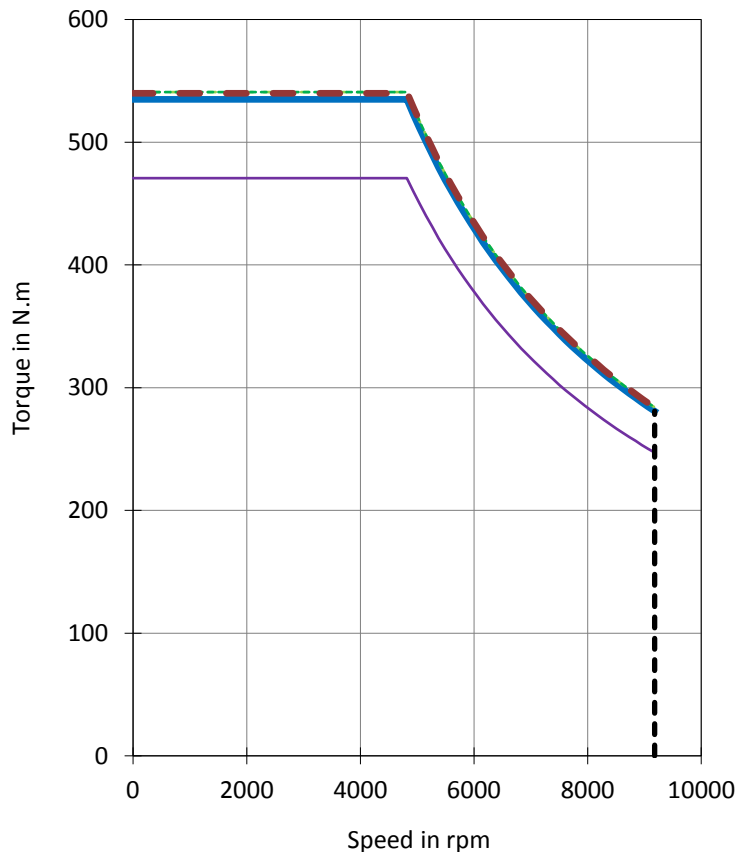
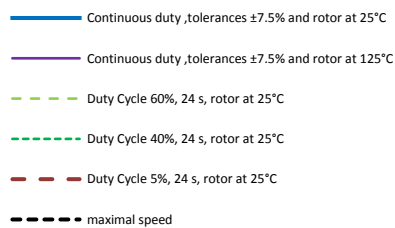
*M**Min water cooling flow (Inlet 25°C MAX, 30% glycol)*

28

l/min

Wf

All data are given in typical values under standard conditions



* Phase to phase

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

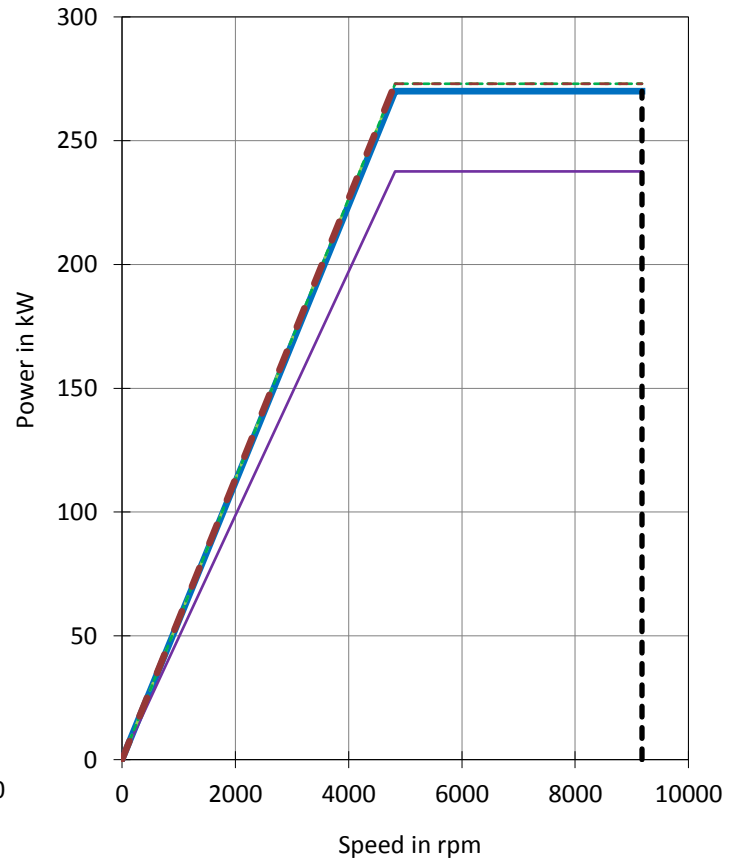
*** minimum value with rotor at 125°C

**** Speed limit due to the bearings:

Steel bearings limited to = 9200 rpm

Hybrid bearings limited to = 12000 rpm

X LIFE bearings limited to = ./. rpm





Main characteristics

<i>S1 power **/***</i>	270 / 220	<i>kW</i>	<i>Ps1</i>
<i>S6 power **/***</i>	273 / 222	<i>kW</i>	<i>Ps6</i>
<i>Low speed torque ** / ***</i>	535 / 435	<i>N.m</i>	<i>M₀</i>
<i>Low speed S6 torque **/***</i>	540 / 439	<i>N.m</i>	<i>M₀S6</i>
<i>Base speed (S1)</i>	4820	<i>rpm</i>	<i>Nb</i>
<i>Max speed ****</i>	9180	<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>	520	<i>Arms</i>	<i>I₀</i>
<i>S6 current at low speed</i>	526	<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>	9180	<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>	0.00931	<i>Ω</i>	<i>Rb</i>
<i>Back EMF voltage phase to phase / 1000 rpm</i>	66.1	<i>Vrms / 1000 rpm</i>	<i>ke</i>
<i>Back EMF voltage phase to phase / (rad/s)</i>	0.631	<i>Vrms / (rad/s)</i>	<i>ku</i>
<i>Torque constant</i>	1.03	<i>N.m / Arms</i>	<i>Kt</i>
<i>Short circuit current</i>	589	<i>Arms</i>	<i>Icc</i>
<i>Inductance Lq phase to phase (Back EMF voltage axis) *</i>	0.308	<i>mH</i>	<i>Lq</i>
<i>Inductance Ld phase to phase *</i>	0.31	<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>	0.011	<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>	1	<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

MGVB40HAA

ELECTRONIC DRIVE

2X890PXSA-43420M



S1 power **/***

350 / 283

kW

Ps1

S6 power **/***

380 / 308

kW

Ps6

Low speed torque ** / ***

1000 / 810

N.m

M₀

Low speed S6 torque **/***

1080 / 874

N.m

M₀S6

Base speed (S1)

3350

rpm

Nb

Max speed ****

6990

rpm

Nmax

DC voltage supply when motor is loaded

540

Vdc

Û

Permanent current at low speed

722

Arms

I₀

S6 current at low speed

780

Arms

I₀S6

Winding resistance(25°C) *

0.00617

Ω

Rb

Rotor inertia

0.84

kg.m²

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

* Phase to phase

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

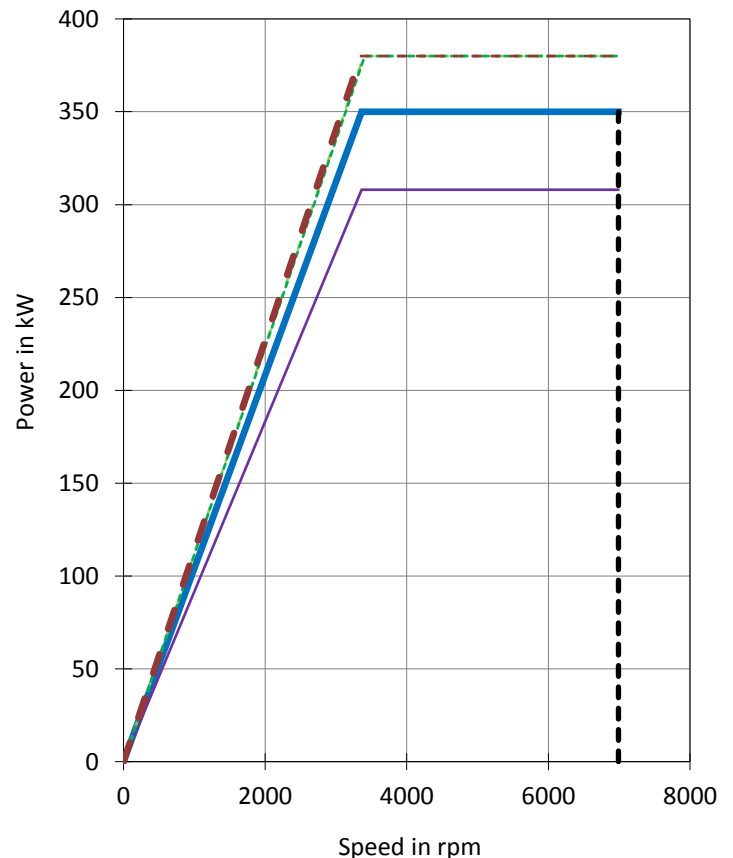
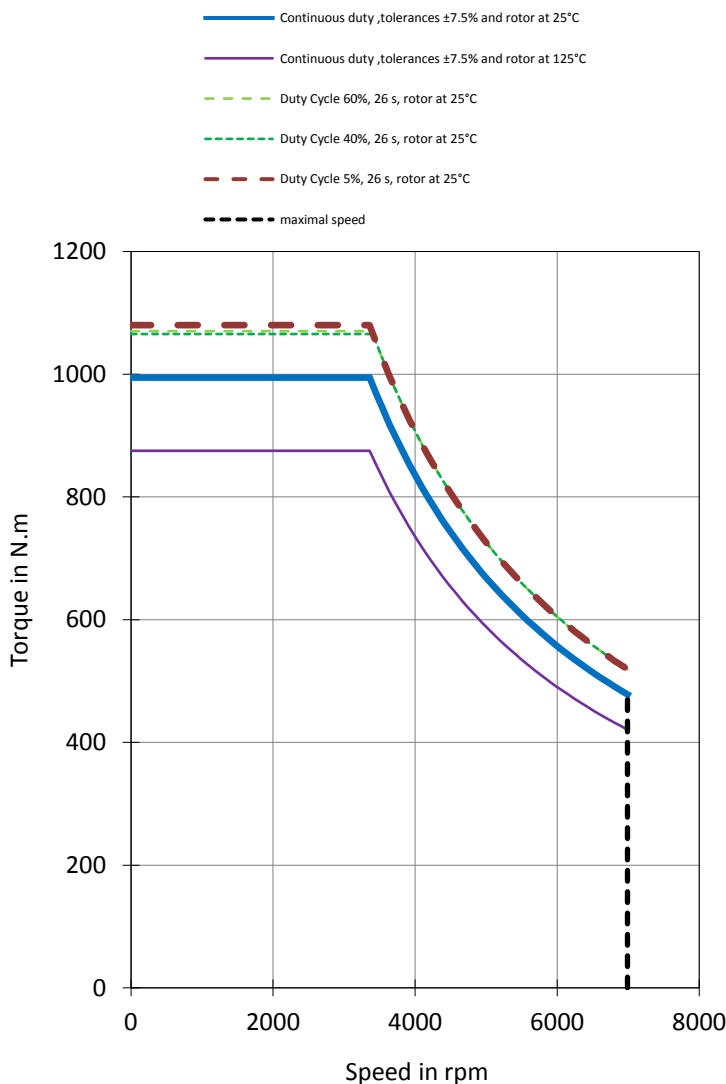
*** minimum value with rotor at 125°C

**** 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
2X890PXSA-43420M



Main characteristics

<i>S1 power **/***</i>	350 / 283	<i>kW</i>	<i>Ps1</i>
<i>S6 power **/***</i>	380 / 308	<i>kW</i>	<i>Ps6</i>
<i>Low speed torque ** / ***</i>	1000 / 810	<i>N.m</i>	<i>M₀</i>
<i>Low speed S6 torque **/***</i>	1080 / 874	<i>N.m</i>	<i>M₀S6</i>
<i>Base speed (S1)</i>	3350	<i>rpm</i>	<i>Nb</i>
<i>Max speed ****</i>	6990	<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>	780	<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>	6990	<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>	11	<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

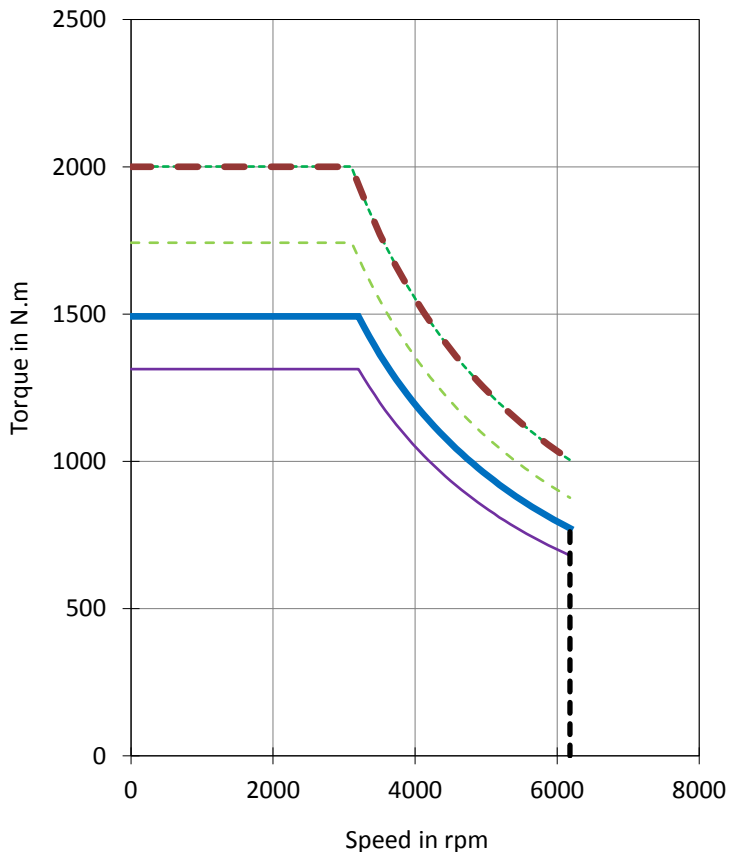
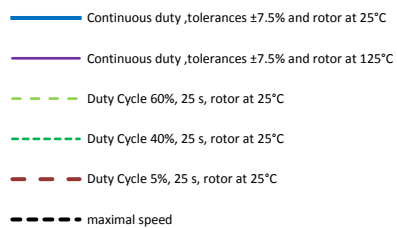
**** Speed limit due to the bearings:

MGVB50HBS
ELECTRONIC DRIVE
3X890PXSA-43580M

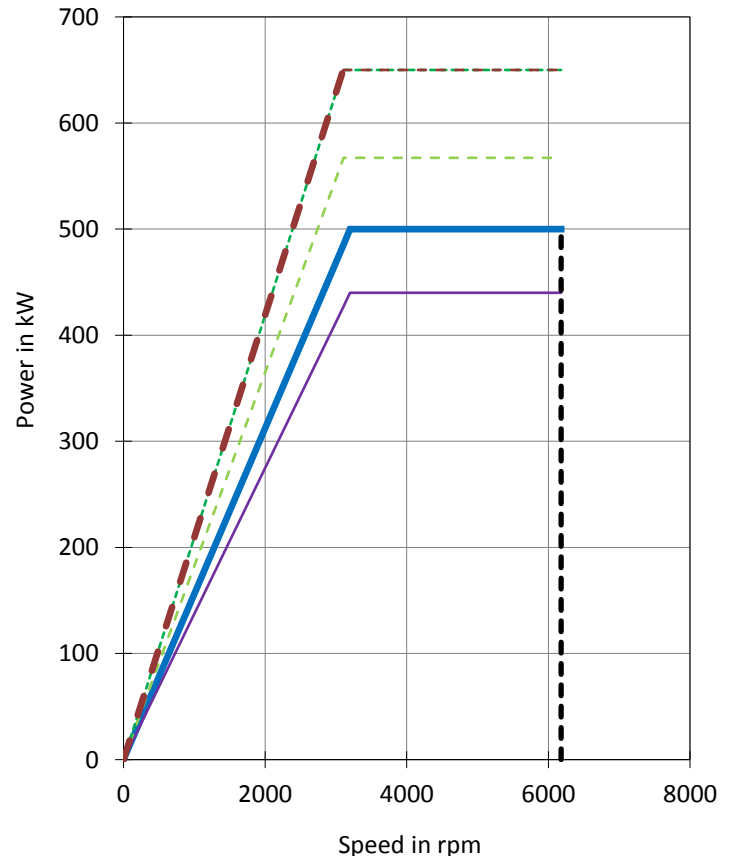


<i>S1 power **/***</i>	500 / 405	kW	<i>Ps1</i>
<i>S6 power **/***</i>	650 / 526	kW	<i>Ps6</i>
<i>Low speed torque ** / ***</i>	1500 / 1210	N.m	<i>M₀</i>
<i>Low speed S6 torque **/***</i>	2000 / 1620	N.m	<i>M₀S6</i>
<i>Base speed (S1)</i>	3200	rpm	<i>Nb</i>
<i>Max speed ****</i>	6180	rpm	<i>Nmax</i>
<i>DC voltage supply when motor is loaded</i>	540	Vdc	<i>Ū</i>
<i>Permanent current at low speed</i>	1010	Arms	<i>I₀</i>
<i>S6 current at low speed</i>	1340	Arms	<i>I₀S6</i>
<i>Winding resistance(25°C) *</i>	0.00417	Ω	<i>Rb</i>
<i>Rotor inertia</i>	1.04	kg.m ²	<i>J</i>
<i>Thermal time constant</i>	5	min	<i>Tth</i>
<i>Motor mass</i>	740	kg	<i>M</i>
<i>Min water cooling flow (Inlet 25°C MAX, 30% glycol)</i>	50	l/min	<i>Wf</i>

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 = ./ rpm
 Hybrid bearings limited to = ./ rpm
 X LIFE bearings limited to = 8000 rpm



High speed brushless motor

MGVB50HBS
ELECTRONIC DRIVE
3X890PXSA-43580M



Main characteristics

S1 power **/***	500 / 405	kW	Ps1
S6 power **/***	650 / 526	kW	Ps6
Low speed torque ** / ***	1500 / 1210	N.m	M ₀
Low speed S6 torque **/***	2000 / 1620	N.m	M ₀ S6
Base speed (S1)	3200	rpm	Nb
Max speed ****	6180	rpm	Nmax
DC voltage supply when motor is loaded	540	Vdc	Ū
Permanent current at low speed	1010	Arms	I ₀
S6 current at low speed	1340	Arms	I ₀ S6

Mechanical parameters

Rotor inertia	1.04	kg.m ²	J
Motor mass	740	kg	M
Maximum speed with steel bearings	-	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	6180	rpm	Nmax
Maximum mechanical speed	8000	rpm	Nmec

Electrical parameters

Number of poles	16		
Winding resistance (25°C) *	0.00417	Ω	Rb
Back EMF voltage phase to phase / 1000 rpm	97.2	Vrms / 1000 rpm	ke
Back EMF voltage phase to phase / (rad/s)	0.928	Vrms / (rad/s)	ku
Torque constant	1.49	N.m / Arms	Kt
Short circuit current	1290	Arms	Icc
Inductance Lq phase to phase (Back EMF voltage axis) *	0.125	mH	Lq
Inductance Ld phase to phase *	0.104	mH	Ld
Optimal phasing at permanent current	10	electrical degree	ψ ₀
Optimal phasing at S6 current	13	electrical degree	ψ _m

Thermal parameters

Motor thermal resistance	0.00624	K/W	Rth
Motor thermal time constant	5	min	Tth
Winding thermal time constant	1.1	min	Tth w
Min water cooling flow (Inlet 25°C MAX, 30% glycol)	50	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: