

3-phase IPM Synchronous Motor



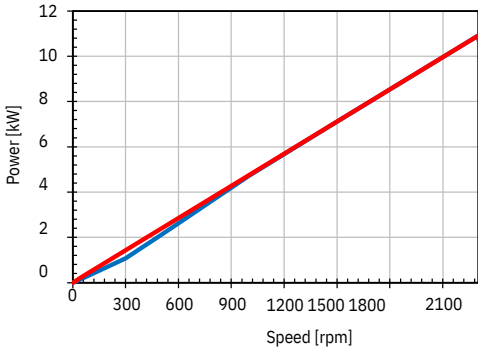
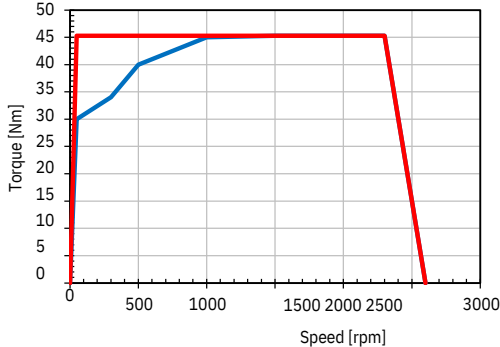
MPM 112M

Inverter Input Voltage 400V			Star Connection	Delta Connection
MOTOR IC411 (self-ventilated)			10,9 kW	18,9 kW
Description	Symbol	Unit of measure	Rated Speed (n_N)	Rated Speed (n_N)
			2300 rpm	4000 rpm
Frequency	f	[Hz]	115	200
Number Poles			6	6
Maximum Speed (@ no load)	n_{MAX}	[rpm]	2600	5000
Voltage Costant (Connection) $\pm 5\%$	K_e	[Vrms/krpm]	132,5 (Y)	76,5 (Δ)
Torque Costant $\pm 5\%$	K_t	[Nm/Arms]	2,19	1,27
Rated Torque	T_N	[Nm]	45,3	45,3
Rated Current	I_N	[Arms]	20,0	34,6
Rated Voltage	U_N	[Veff]	345	342
Efficiency pure sinus	η	[%]	95,7	98,2
Efficiency with inverter	η	[%]	95,1	95,2
Maximum Torque	T_{MAX}	[Nm]	90,6	90,6
Maximum Torque Current	I_{MAX}	[Arms]	45,5	78,5
Switching Frequency		[kHz]	4	4
Phase-Phase Resistance @ 20°C dc mode	R_{pp}	[Ω]	0,63	0,19
Phase-Phase Inductance @ 1 kHz	$L_{pp}/L_d/L_q$	[mH]	15,3/8,9/21,6	5,0/2,9/7,0
Rotor Inertia	J	[kgm ²]	0,02486	
Motor Weight B3/B14/B5/B34/B35		[kg]	34,7/34,5/35,1/35,1/35,5	
Ambient Temperature		[°C]	-15 \div +40	
Protection Class			55	
Insulation Class			F	
Overtemperature Class			F/B	F/B
Duty Type			S1	
Thermal Protection			PTC130	

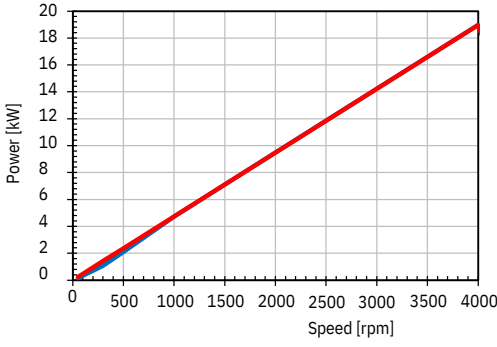
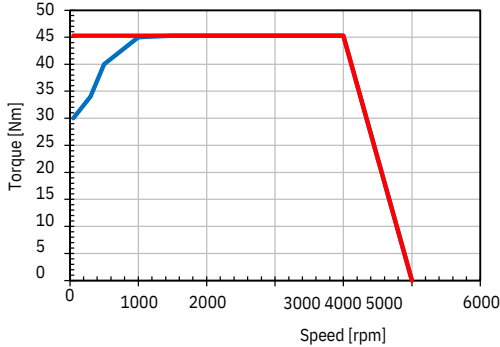
The efficiency values are terminated by line filters on 0,5 kHz and without harmonics components (only fundamental contributes). Switching frequency on test 4 kHz.
The efficiency will decrease by 0.25% when an external fan is added.

3-phase IPM Synchronous Motor

10,9 kW
2300 rpm



18,9 kW
4000 rpm



--- IC411 (selfventilated) --- IC416 (external fan)