

## 3-phase IPM Synchronous Motor

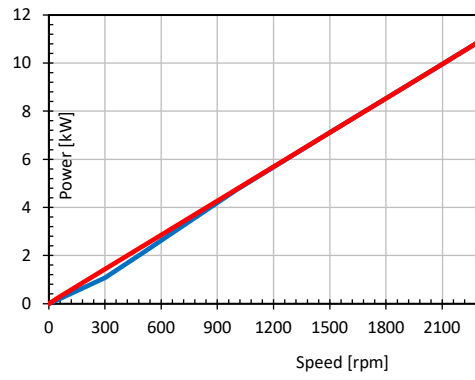
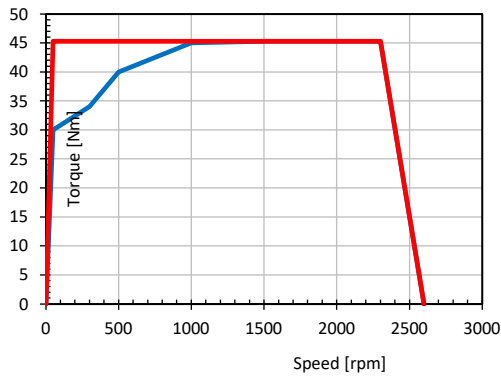
## 112M (M370)

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 ( $\Delta$ )
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	$\eta$	[%]	95,7	98,2
Efficiency with inverter	$\eta$	[%]	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	$R_{pp}$	[ $\Omega$ ]	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 <sup>2</sup> ]		0,02486
Motor Weight B3/B14/B5/B34/B35		[kg]	34,7/34,5/35,1/35,1/35,5	
Ambient Temperature		[°C]		-15 ÷ +40
Protection Class				55
Insulation Class				F
Overtemperature Class			F/B	F/B
Duty Type				S1
Thermal Protection				PTC130

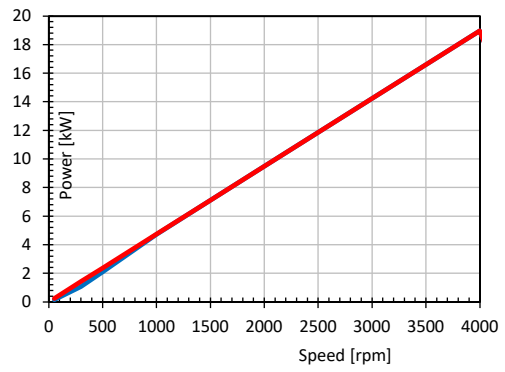
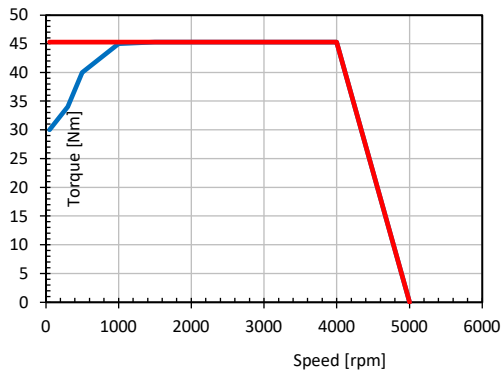
The efficiency values are terminated by line filters on 0,5 kHz and without harmonics components (only fundamental contributes). Switching frequency on test 4 kHz.

# 3-phase IPM Synchronous Motor

10,9 kW  
2300 rpm



18,9 kW  
4000 rpm



--- IC411 (self-ventilated) --- IC416 (external fan)