

## 3-phase IPM Synchronous Motor



## MPM 160Lb

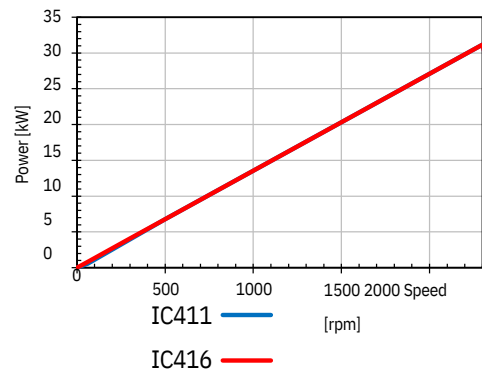
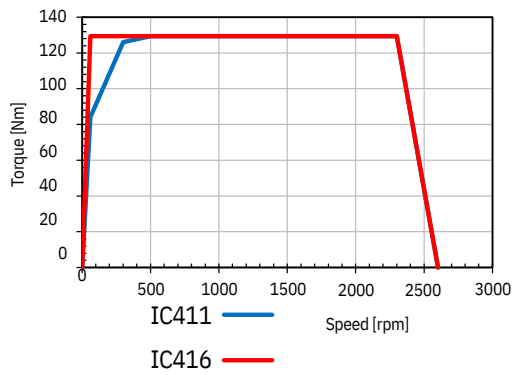
Inverter Input Voltage 400V			Star Connection	Delta Connection
MOTOR IC411 (self-ventilated)			31,2 kW	54 kW
			Rated Speed ( $n_N$ )	Rated Speed ( $n_N$ )
Description	Symbol	Unit of measure	2300 rpm	4000 rpm
Frequency	f	[Hz]	115	200
Number Poles			6	6
Maximum Speed (@ no load)	$n_{MAX}$	[rpm]	2600	4500
Voltage Costant (Connection) $\pm 5\%$	$K_e$	[Vrms/krpm]	147 (Y)	85 ( $\Delta$ )
Torque Costant $\pm 5\%$	$K_t$	[Nm/Arms]	2,43	1,41
Rated Torque	$T_N$	[Nm]	129,5	129,5
Rated Current	$I_N$	[Arms]	58,6	101,0
Rated Voltage	$U_N$	[Veff]	397	386
Efficiency pure sinus	$\eta$	[%]	96,7	95,1
Efficiency with inverter	$\eta$	[%]	96,0	94,4
Maximum Torque	$T_{MAX}$	[Nm]	259	259
Maximum Torque Current	$I_{MAX}$	[Arms]	117,2	203,0
Switching Frequency		[kHz]	4	4
Phase-Phase Resistance @20°C dc mode	$R_{pp}$	[ $\Omega$ ]	0,112	0,038
Phase-Phase Induttance @ 1 kHz	$L_{pp}/L_d/L_q$	[mH]	4,8/3,7/5,9	1,5/1,1/1,8
Rotor Inertia	J	[kgm <sup>2</sup> ]		0,1160
Motor Weight B3/B14/B5/B34/B35		[kg]	98/102,6/99,5/102,8/99,6	
Ambient Temperature		[°C]	-15 $\div$ +40	
Protection Class			S5	
Insulation Class			F	
Overtemperature Class			F/B	F/B
Duty Type			S1	
Standard Thermal Protection			PTC – 130°C	

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.

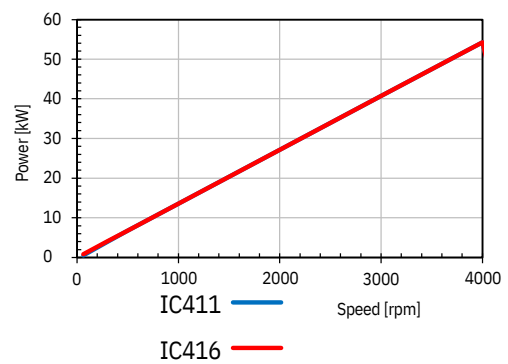
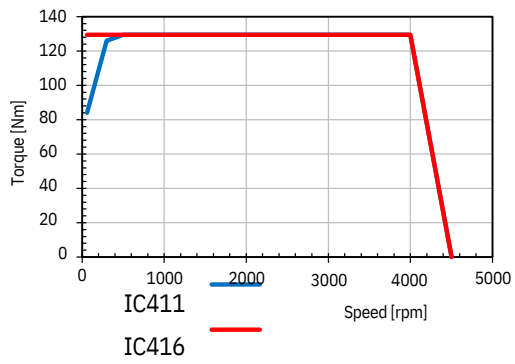
The efficiency will decrease by 0.25% when an external fan is added.

# 3-phase IPM Synchronous Motor

31,2 kW  
2300 rpm



54 kW  
4000 rpm



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