

3-phase IPM Synchronous Motor

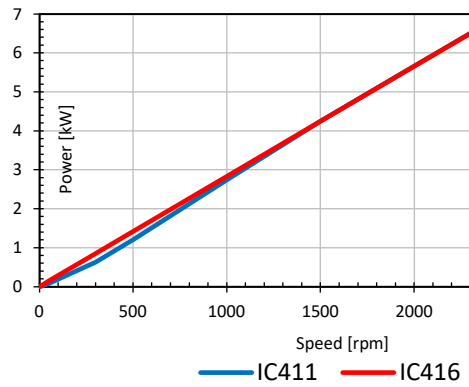
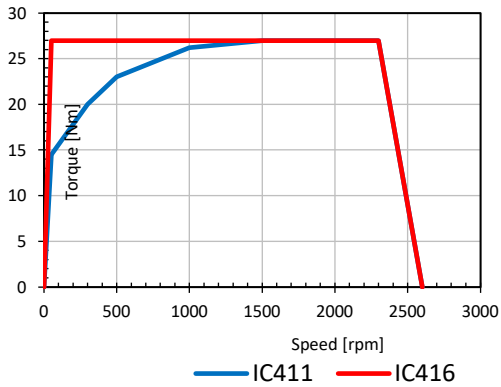
90LL (M370)

Inverter Input Voltage 400V			Star Connection	Delta Connection
MOTOR IC411 (self-ventilated)			6,5 kW	11,3 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	4800
Voltage Costant (Connection) $\pm 5\%$	K_e	[Vrms/krpm]	142 (Y)	82,5 (Δ)
Torque Costant $\pm 5\%$	K_t	[Nm/Arms]	2,35	1,37
Rated Torque	T_N	[Nm]	27	27
Rated Current	I_N	[Arms]	11,6	19,8
Rated Voltage	U_N	[Veff]	356	343
Efficiency pure sinus	η	[%]	96,2	97,3
Efficiency with inverter	η	[%]	93,8	94,0
Maximum Torque	T_{MAX}	[Nm]	54	54
Maximum Torque Current	I_{MAX}	[Arms]	23,7	41
Switching Frequency		[kHz]	4	4
Phase-Phase Resistance @20°C dc mode	R_{pp}	[Ω]	1,32	0,46
Phase-Phase Induttance @ 1 kHz	$L_{pp}/L_d/L_q$	[mH]	23,9/13,0/34,8	7,9/4,07/11,9
Rotor Inertia	J	[kgm ²]		0,0075
Motor Weight B3/B14/B5/B34/B35		[kg]	18,6/18,3/18,7/18,6/18,9	
Ambient Temperature		[°C]		-15 ÷ +40
Protection Class				55
Insulation Class				F
Overtemperature Class			F/B	F/F
Duty Type				S1
Standard Thermal Protection				PTC – 130°C

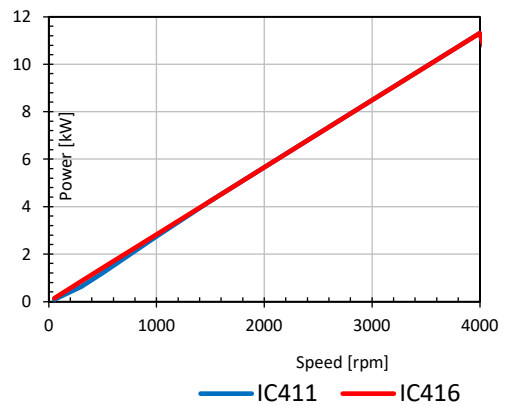
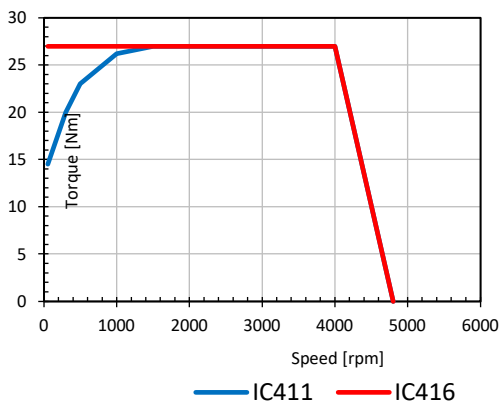
The efficiency values are terminated by line filters on 0,5 kHz and without harmonics components (only fundamental contributes). Switching frequency on test 4 kHz.

3-phase IPM Synchronous Motor

6,5 kW
2300 rpm



11,3 kW
4000 rpm



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