



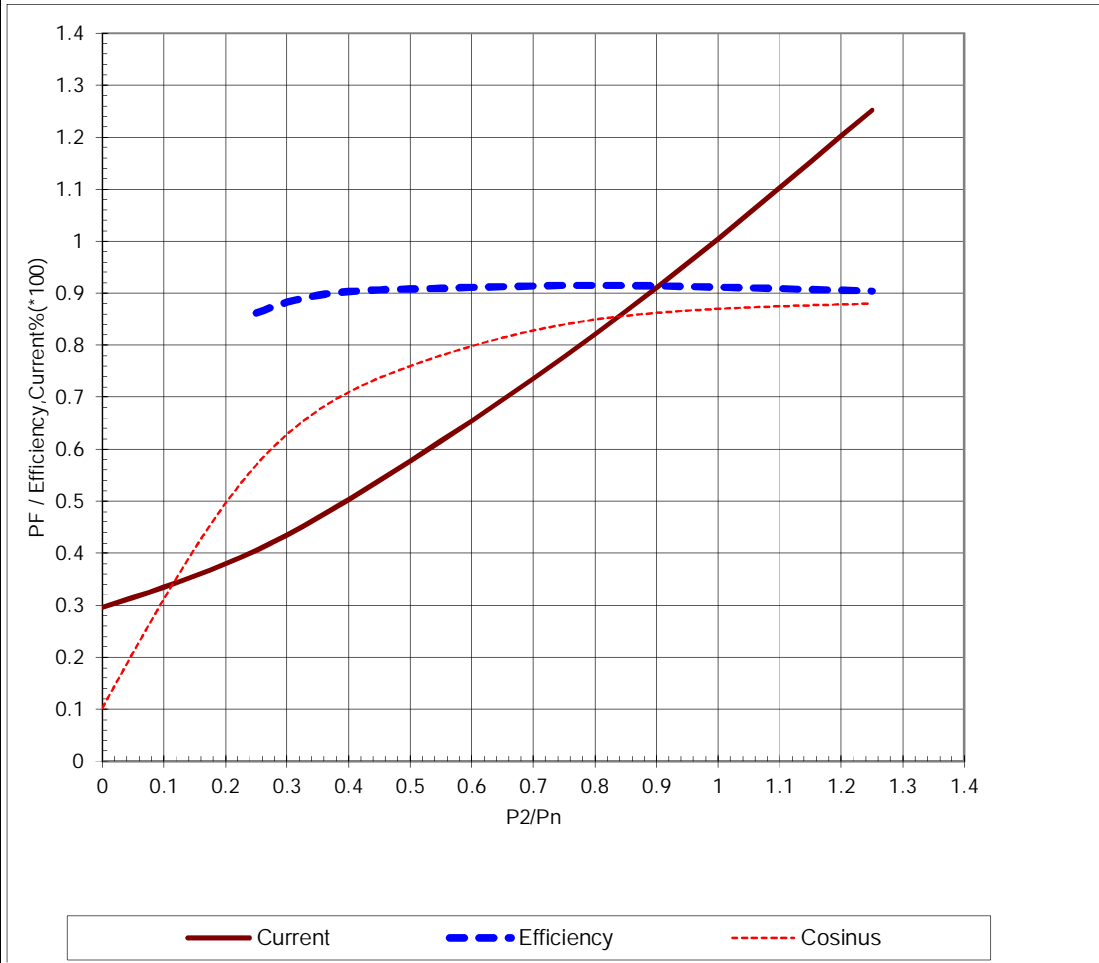
ABB Motors and Generators		Technical Data Sheet				
Project		Location				
Department/Author		Customer name		Customer ref.		
Our ref.		Rev/Changed by A		Date of issue 1/18/2019		
		Saving ident untitled.xls		Item name 1.00001		
				Pages 1(3)		
No.	Definition	Data	Unit	Remarks		
1	Product	TEFC, 3-phase, squirrel cage induction motor				
2	Product code	3GBA 161 410-BDDIN				
3	Type/Frame	M2BAX 160MLA 2				
4	Mounting	IM3001, B5(flange)				
5	Rated output P _N	11	kW			
6	Service factor	1				
7	Type of duty	S1 100%				
8	Rated voltage U _N	415	VD	+10, -10 %		
9	Rated frequency f _N	50	Hz	+5, -5 %		
10	Rated speed n _N	2935	r/min			
11	Rated current I _N	19.2	A			
12						
13	Starting current I _s /I _N	7.7				
14	Nominal torque T _N	35.8	Nm			
15	Locked rotor torque T _S /T _N	2.4				
16	Maximum torque T _{max} /T _N	3.2				
17						
18						
Load characteristics		Load %	Current A	Efficiency %	Power factor	
19	PLL determined from residual loss	100	19.2	91.2 / IE3	0.87	
20		75	14.9	91.5	0.84	
21		50	11.1	90.8	0.76	
22						
23	Thermal withstand time hot	16	s			
24	Thermal withstand time cold	26	s			
25	Insulation class / Temperature class	F / B				
26	Ambient temperature	50	°C			
27	Altitude	1000 m.a.s.l.				
28	Degree of protection	IP55				
29	Cooling system	IC411 self ventilated				
30	Bearing DE/NDE	6209-2Z/C3 - 6209-2Z/C3				
31	Sound pressure level (LP dB(A) 1m)	77	dB(A)	at no-load		
32	Moment of inertia J = ¼ GD ²	0.057	kg·m ²			
33	Position of terminal box	Top				
34	Direction of rotation	Bi-directional				
35	Total weight of motor	118	kg			
36		User defined motor				
37						
38						
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40						
41						
42						
43						
44						
45						
Ex-motors						
46						
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48						
Option Variant Codes / Definition						
49						
50						
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52						
Remarks:						
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ABB Motors and Generators	Load Curves		
	Project	Location	
Department/Author	Customer name	Customer ref.	Item name 1.00001
Our ref.	Rev/Changed by A	Date of issue 1/18/2019	Saving ident untitled.xls
			Pages 2(3)

Product TEFC, 3-phase, squirrel cage induction motor
Type/Frame M2BAX 160MLA 2
Product code 3GBA 161 410-BDDIN
Rated output P_N 11 kW
Type of duty S1 100%

Voltage (V) 415 **Current I_N (A)** 19.2 **Power factor at P_N** 0.87
Frequency (Hz) 50 **Speed (r/min)** 2935 **Efficiency (%) at P_N** 91.2



Data based on situation 10/28/2015
 All data subject to tolerances in accordance with IS/IEC 60034-1 : 2004


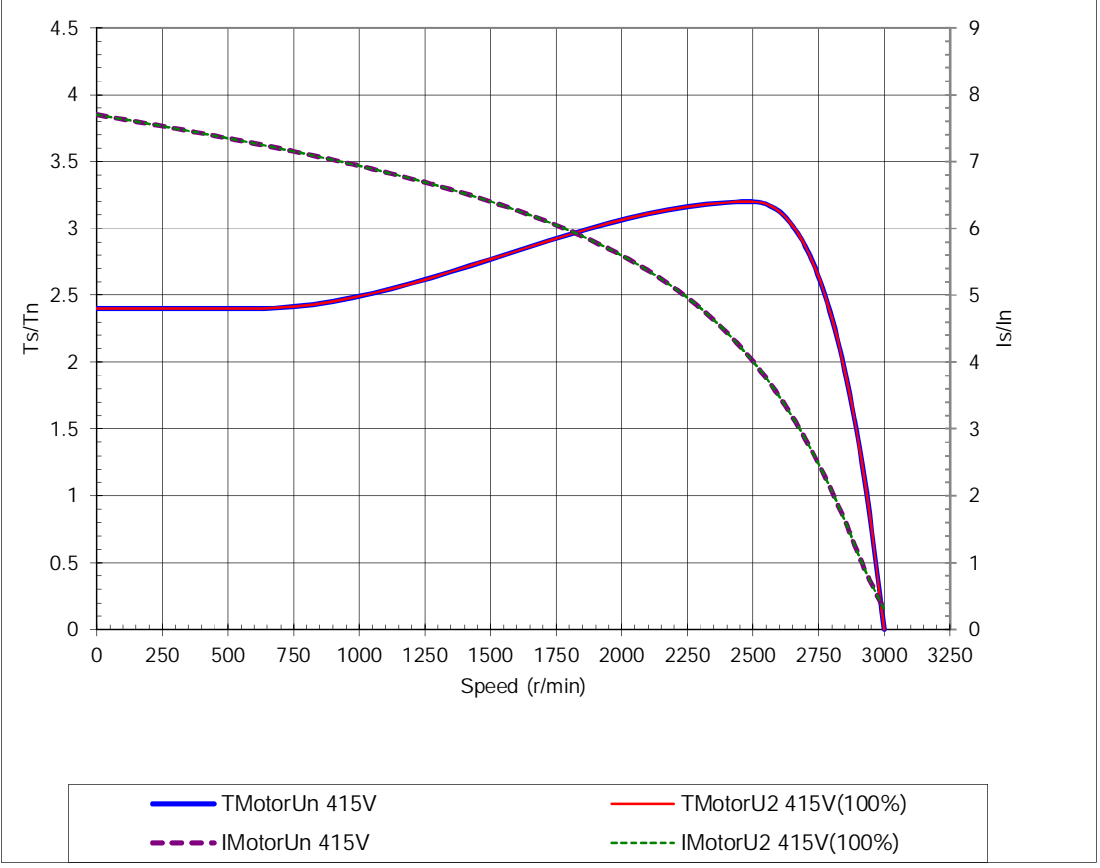

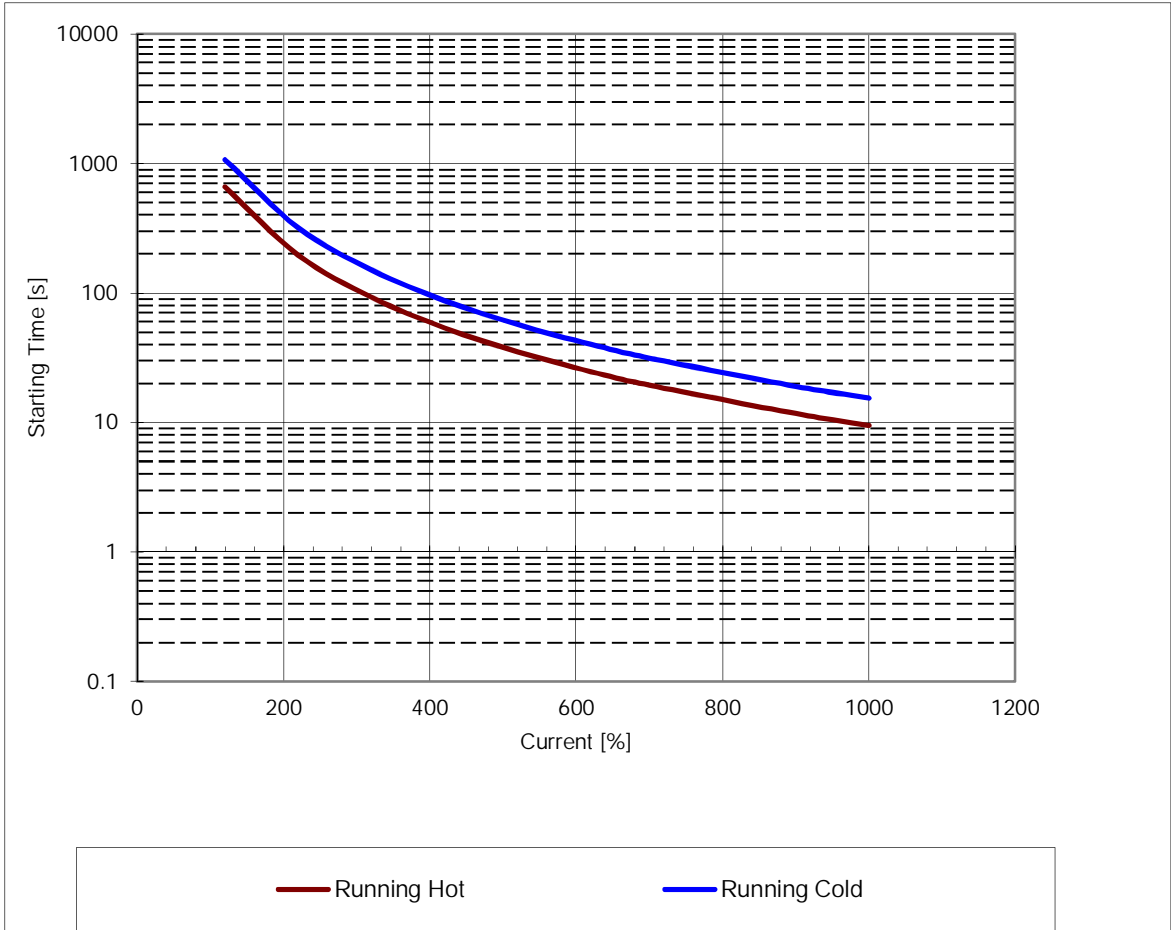
ABB Motors and Generators	Starting Curves			
	Project	Location		
Department/Author	Customer name	Customer ref.		Item name 1.00001
Our ref.	Rev/Changed by A	Date of issue 1/18/2019	Saving ident untitled.xls	Pages 3(3)
Type of product	TEFC, 3-phase, squirrel cage induction motor			
Type/Frame	M2BAX 160MLA 2			
Product code	3GBA 161 410-BDDIN	Frequency (Hz)	50	
Rated output P _N	11 kW	Rated current I _N	19.2	A
Type of duty	S1 100%			
J _{motor} (kgm ²)	0.057	Voltage (V) 100%	415	Voltage (V) 415V(100%)
J _{load} (kgm ²)		T _{start} /T _N	2.4	T _{start} /T _N 2.4
Speed (r/min)	2935	Starting time (s)	0.2	Starting time (s)
T _N (Nm)	36	Speed (r/min)		Speed (r/min)
T _{load} (Nm)		I _s /I _N	7.7	I _s /I _N 7.7
		T _{max} /T _N	3.2	T _{max} /T _N 3.2
 <p>The graph plots torque ratios (Ts/Tn) and current ratios (Is/In) against speed (r/min) from 0 to 3250. The left y-axis represents Ts/Tn (0 to 4.5) and the right y-axis represents Is/In (0 to 9). The x-axis represents Speed (r/min) (0 to 3250). Two sets of curves are shown: a solid blue line for T_{MotorUn} 415V, a solid red line for T_{MotorU2} 415V(100%), a dashed purple line for I_{MotorUn} 415V, and a dashed green line for I_{MotorU2} 415V(100%). The torque curves start at approximately 2.4 at 0 r/min and rise to a peak of about 3.2 at 2500 r/min before dropping to 0 at 3000 r/min. The current curves start at approximately 7.7 at 0 r/min and decrease to about 3.2 at 2500 r/min, then drop sharply to 0 at 3000 r/min.</p>				
Data based on situation 10/28/2015				
All data subject to tolerances in accordance with IS/IEC 60034-1 : 2004				

ABB Motors and Generators	Thermal Withstand Curve		
	Project	Location	
Department/Author	Customer name	Customer ref.	Item name 1.00001
Our ref.	Rev/Changed by A	Date of issue 1/18/2019	Saving ident untitled.xls
			Pages 5(3)

Type of product	TEFC, 3-phase, squirrel cage induction motor			
Type/Frame	M2BAX 160MLA 2			
Product code	3GBA 161 410-BDDIN	Frequency (Hz)	50	
Rated output P _N	11 kW	Rated current I _N	19.2	A
Type of duty	S1 100%			

J _{motor} (kgm ²)	0.057	Voltage (V) 100%	415	Voltage (V)	415V(100%)
J _{load} (kgm ²)		T _{start} /T _N	2.4	T _{start} /T _N	2.4
Speed (r/min)	2935	Starting time (s)	0.2	Starting time (s)	
T _N (Nm)	36	Speed (r/min)		Speed (r/min)	
T _{load} (Nm)		I _s /I _N	7.7	I _s /I _N	7.7
		T _{max} /T _n	3.2	T _{max} /T _n	3.2



Data based on situation 10/28/2015

All data subject to tolerances in accordance with IS/IEC 60034-1 : 2004