


ABB Motors and Generators		Technical Data Sheet				
Department/Author		Project	Location		Item name	
Our ref.		Rev/Changed by	Date of issue	Saving ident	Pages	
		A	1/18/2019	untitled.xls	1.00001 1(3)	
No.	Definition	Data	Unit	Remarks		
1	Product	TEFC, 3-phase, squirrel cage induction motor				
2	Product code	3GBA 222 210-BDDIN			Calc. ref.	3GZH021022-16
3	Type/Frame	M2BAX 225SMA 4				
4	Mounting	IM3001, B5(flange)				
5	Rated output P _N	37	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	1480	r/min			
11	Rated current I _N	68.5	A			
12						
13	Starting current I _s /I _N	7.5				
14	Nominal torque T _N	239	Nm			
15	Locked rotor torque T _S /T _N	2.8				
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	68.5	93.9 / IE3	0.8	
20		75	54.7	94.2	0.75	
21		50	42.2	93.8	0.65	
22						
23	Thermal withstand time hot	18	s			
24	Thermal withstand time cold	29	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	6313-2Z/C3 - 6210-2Z/C3				
31	Sound pressure level (LP dB(A) 1m)	69	dB(A)	at no-load		
32	Moment of inertia J = ¼ GD ²	0.427	kg·m ²			
33	Position of terminal box	Top				
34	Direction of rotation	Bi-directional				
35	Weight of rotor	78	kg			
36	Total weight of motor	274	kg			
37						
38						
39						
40						
41						
42						
43						
44						
45						
Ex-motors						
46						
47						
48						
Option Variant Codes / Definition						
49						
50						
51						
52						
Remarks:						
Data based on situation 9/18/2015						

All performance values are subject to IS/IEC tolerances


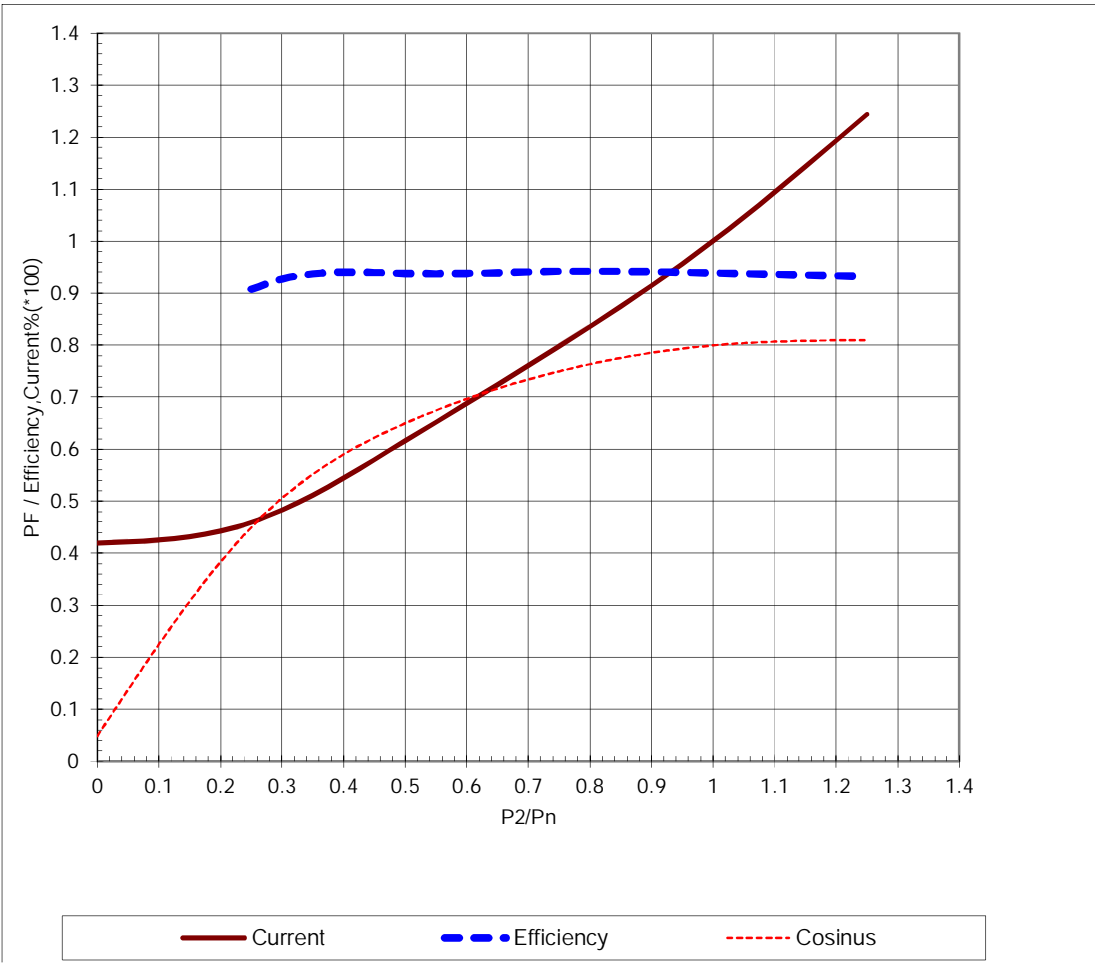
ABB Motors and Generators	Load Curves		
	Project	Location	
Department/Author	Customer name	Customer ref.	Item name 1.00001
Our ref.	Rev/Changed by A	Date of issue 1/18/2019	Saving ident untitled.xls
Pages 2(3)	Product TEFC, 3-phase, squirrel cage induction motor		
Type/Frame	M2BAX 225SMA 4	Calc. ref.	3GZH021022-16
Product code	3GBA 222 210-BDDIN		
Rated output P _N	37 kW		
Type of duty	S1 100%		
Voltage (V)	415	Current I _N (A)	68.5
Frequency (Hz)	50	Speed (r/min)	1480
		Power factor at P _N	0.8
		Efficiency (%) at P _N	93.9
			
<p>Data based on situation 9/18/2015</p> <p style="text-align: center;">All data subject to tolerances in accordance with IS/IEC 60034-1 : 2004</p>			


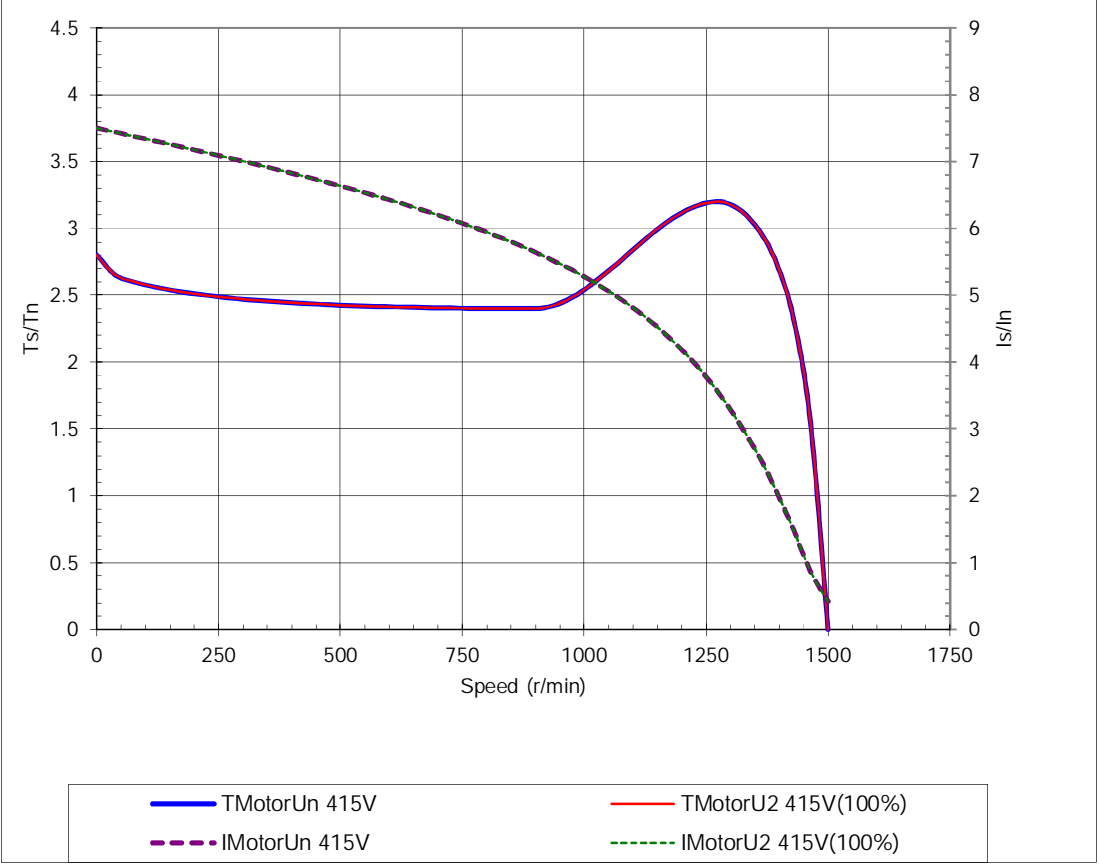

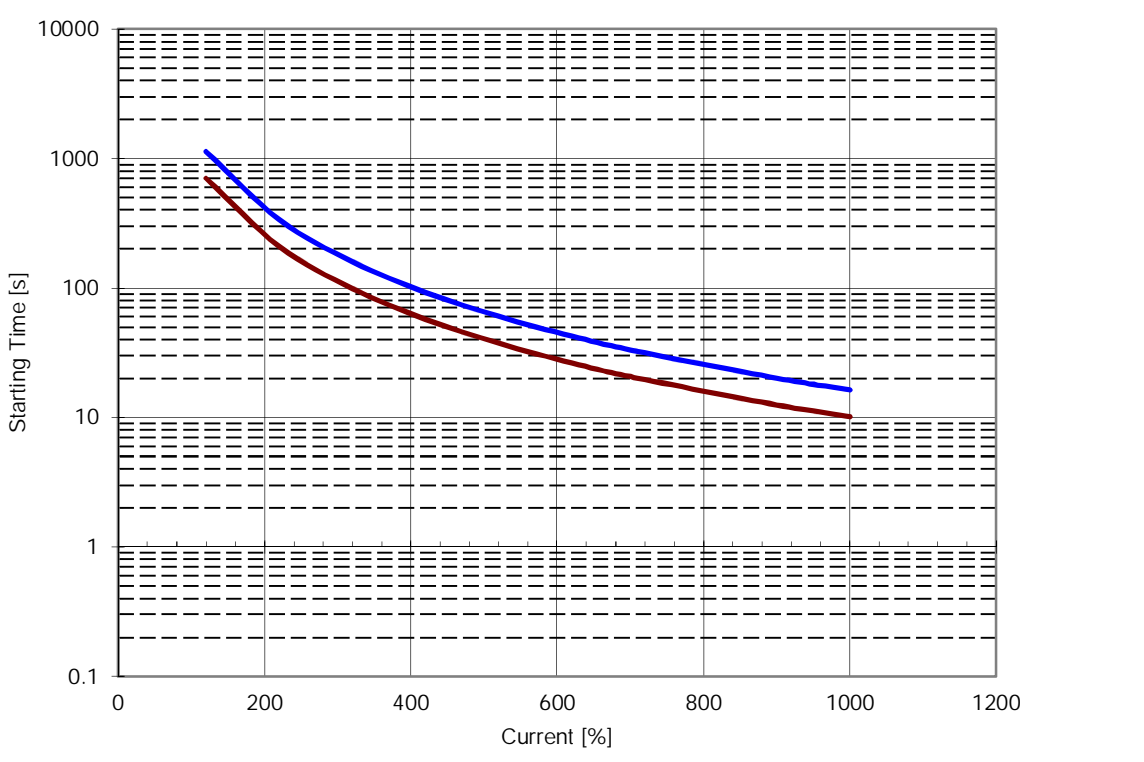
ABB Motors and Generators		Starting Curves			
		Project	Location		
Department/Author	Customer name	Customer ref.	Item name 1.00001		
Our ref.	Rev/Changed by	Date of issue	Saving ident	Pages	
	A	1/18/2019	untitled.xls	3(3)	
Type of product	TEFC, 3-phase, squirrel cage induction motor				
Type/Frame	M2BAX 225SMA 4	Calc. ref.	3GZH021022-16		
Product code	3GBA 222 210-BDDIN	Frequency (Hz)	50		
Rated output P _N	37 kW	Rated current I _N	68.5	A	
Type of duty	S1 100%				
J _{motor} (kgm ²)	0.43	Voltage (V) 100%	415	Voltage (V)	415V(100%)
J _{load} (kgm ²)		T _{start} /T _N	2.8	T _{start} /T _N	2.8
Speed (r/min)	1480	Starting time (s)	0.1	Starting time (s)	
T _N (Nm)	239	Speed (r/min)		Speed (r/min)	939
T _{load} (Nm)		I _s /I _N	7.5	I _s /I _N	7.5
		T _{max} /T _N	3.2	T _{max} /T _N	3.2
					
Data based on situation 9/18/2015					
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 225SMA 4	Calc. ref.	3GZH021022-16
Product code	3GBA 222 210-BDDIN	Frequency (Hz)	50
Rated output P _N	37 kW	Rated current I _N	68.5 A
Type of duty	S1 100%		
J _{motor} (kgm ²)	0.43	Voltage (V) 100%	415
J _{load} (kgm ²)		Voltage (V)	415V(100%)
Speed (r/min)	1480	T _{start} /T _N	2.8
T _N (Nm)	239	Starting time (s)	0.1
T _{load} (Nm)		Speed (r/min)	939
		I _s /I _n	7.5
		T _{max} /T _n	3.2
		I _s /I _n	7.5
		T _{max} /T _n	3.2



The graph plots Starting Time [s] on a logarithmic y-axis (0.1 to 10000) against Current [%] on a linear x-axis (0 to 1200). Two curves are shown: a blue line for 'Running Cold' and a red line for 'Running Hot'. Both curves show a decrease in starting time as current increases. The 'Running Cold' curve starts at approximately 1000s at 100% current and drops to about 15s at 1000% current. The 'Running Hot' curve starts at approximately 800s at 100% current and drops to about 10s at 1000% current.

Current [%]	Starting Time [s] (Running Cold)	Starting Time [s] (Running Hot)
100	~1000	~800
200	~300	~200
400	~100	~70
600	~50	~40
800	~30	~25
1000	~15	~10

Data based on situation 9/18/2015
All data subject to tolerances in accordance with IS/IEC 60034-1 : 2004