

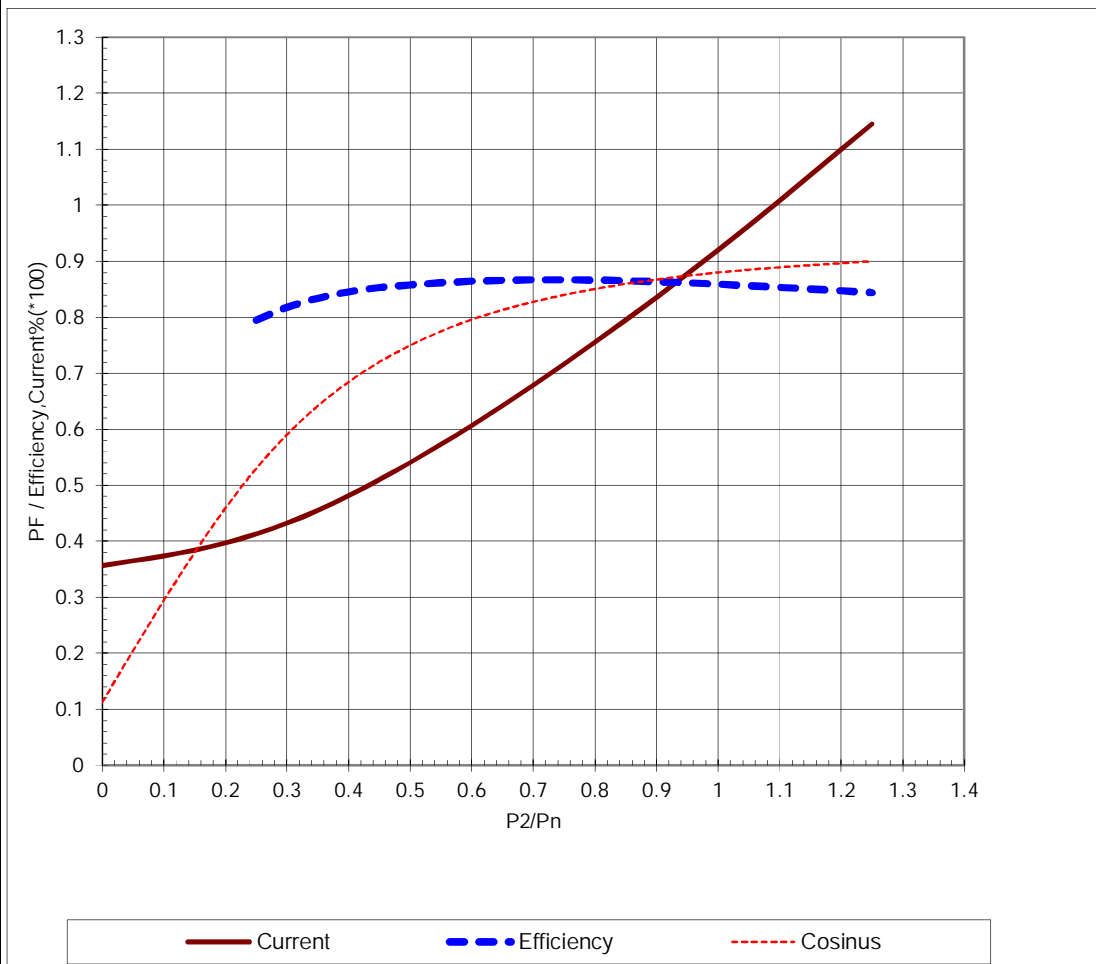


ABB Motors and Generators		Technical Data Sheet				
Department/Author		Project	Location		Item name	
Our ref.		Rev/Changed by	Date of issue	Saving ident	Pages	
		A	1/18/2019	untitled.xls	1(3)	
No.	Definition	Data	Unit	Remarks		
1	Product	<i>TEFC, 3-phase, squirrel cage induction motor</i>				
2	Product code	<i>3GBA 091 010-HDDIN</i>			Calc. ref.	3GZC021009-94
3	Type/Frame	<i>M2BAX 90SLA 2</i>				
4	Mounting	<i>IM2001, B35(foot-flange)</i>				
5	Rated output P _N	2.2	kW			
6	Service factor	1				
7	Type of duty	<i>S1 100%</i>				
8	Rated voltage U _N	415	VD	+10, -10 %		
9	Rated frequency f _N	50	Hz	+5, -5 %		
10	Rated speed n _N	2890	r/min			
11	Rated current I _N	4.4	A			
12						
13	Starting current I _s /I _N	7				
14	Nominal torque T _N	7.3	Nm			
15	Locked rotor torque T _S /T _N	3				
16	Maximum torque T _{max} /T _N	3.5				
17						
18						
Load characteristics		Load %	Current A	Efficiency %	Power factor	
19	PLL determined from residual loss	100	4.4	85.9 / IE3	0.88	
20		75	3.2	86.7	0.84	
21		50	2.4	85.8	0.75	
22						
23	Thermal withstand time hot	5	s			
24	Thermal withstand time cold	8	s			
25	Insulation class / Temperature class	<i>F / B</i>				
26	Ambient temperature	50	°C			
27	Altitude	1000	m.a.s.l.			
28	Degree of protection	<i>IP55</i>				
29	Cooling system	<i>IC411 self ventilated</i>				
30	Bearing DE/NDE	<i>6205-2Z/C3 - 6204-2Z/C3</i>				
31	Sound pressure level (LP dB(A) 1m)	74	dB(A)	at no-load		
32	Moment of inertia J = ¼ GD ²	0.00304	kg·m ²			
33	Position of terminal box	<i>Top</i>				
34	Direction of rotation	<i>Bi-directional</i>				
35	Weight of rotor	5	kg			
36	Total weight of motor	25	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 12/23/2015						

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 90SLA 2	Calc. ref.	3GZC021009-94
Product code	3GBA 091 010-HDDIN		
Rated output P _N	2.2 kW		
Type of duty	S1 100%		

Voltage (V)	415	Current I _N (A)	4.4	Power factor at P _N	0.88
Frequency (Hz)	50	Speed (r/min)	2890	Efficiency (%) at P _N	85.9



Data based on situation 12/23/2015

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


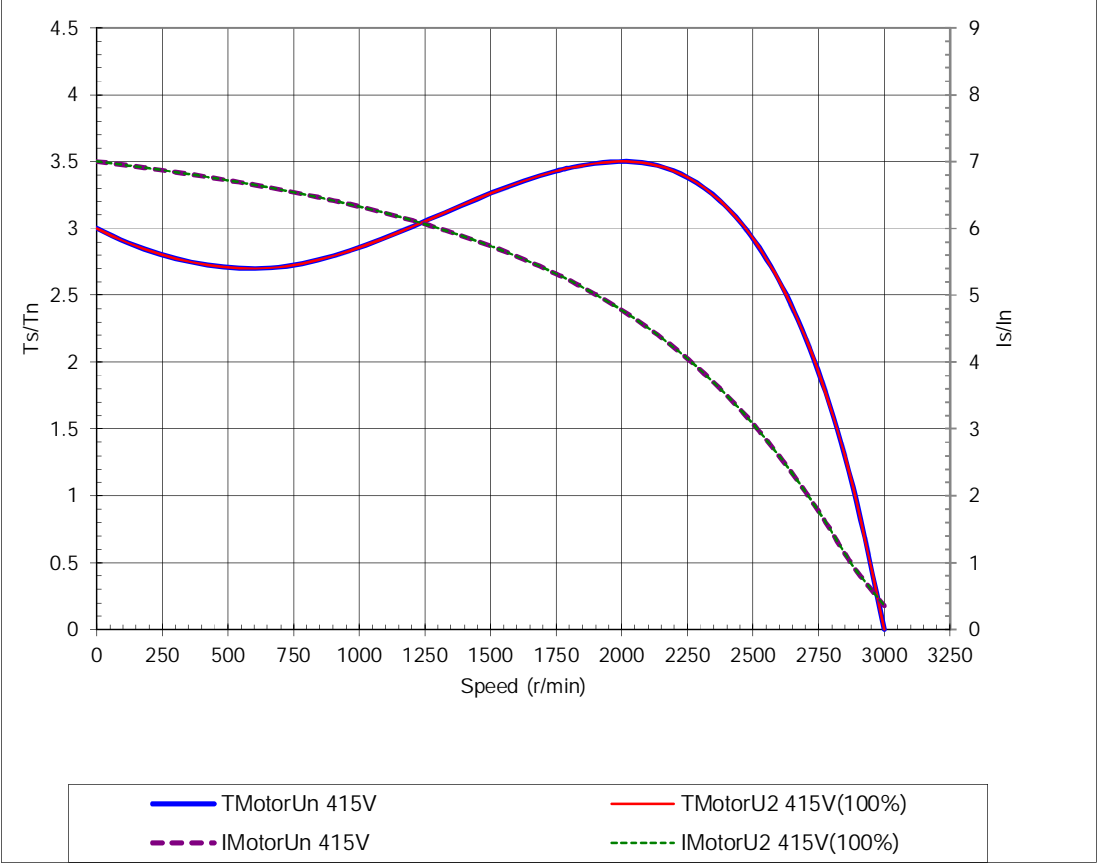

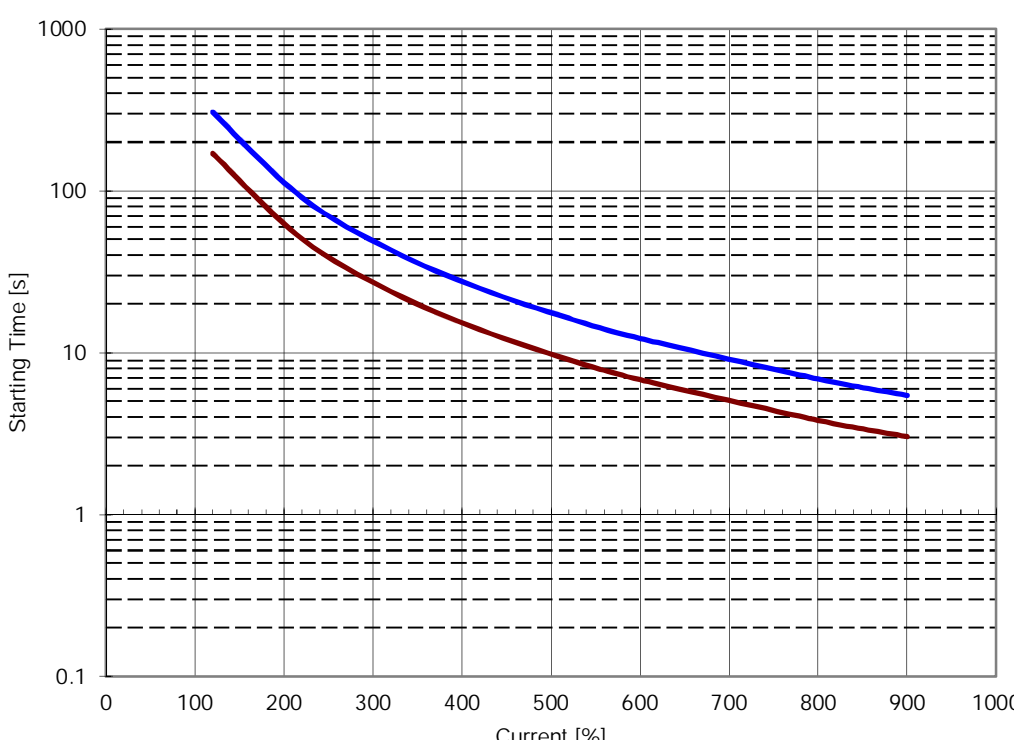
ABB Motors and Generators	Starting Curves			
	Project	Location		
Department/Author	Customer name	Customer ref.		Item name 1.00001
Our ref.	Rev/Changed by A	Date of issue 1/18/2019	Saving ident untitled.xls	Pages 3(3)
Type of product	TEFC, 3-phase, squirrel cage induction motor			
Type/Frame	M2BAX 90SLA 2	Calc. ref.	3GZC021009-94	
Product code	3GBA 091 010-HDDIN	Frequency (Hz)	50	
Rated output P _N	2.2 kW	Rated current I _N	4.4	A
Type of duty	S1 100%			
J _{motor} (kgm ²)	0.003	Voltage (V) 100%	415	Voltage (V) 415V(100%)
J _{load} (kgm ²)		T _{start} /T _N	3	T _{start} /T _N 3
Speed (r/min)	2890	Starting time (s)	0.1	Starting time (s)
T _N (Nm)	7.3	Speed (r/min)		Speed (r/min) 939
T _{load} (Nm)		I _s /I _N	7	I _s /I _N 7
		T _{max} /T _N	3.5	T _{max} /T _N 3.5
 <p>The graph plots torque (T_s/T_N) and current (I_s/I_N) against speed (r/min) for a 415V motor. The x-axis ranges from 0 to 3250 r/min. The left y-axis (T_s/T_N) ranges from 0 to 4.5, and the right y-axis (I_s/I_N) ranges from 0 to 9. The torque curve (solid lines) starts at 3.0 at 0 r/min, dips to a minimum of ~2.7 at 750 r/min, rises to a peak of 3.5 at 2000 r/min, and then drops to 0 at 3000 r/min. The current curve (dashed lines) starts at 7.0 at 0 r/min and decreases steadily to 0 at 3000 r/min. The legend indicates: T_{MotorUn} 415V (solid blue), T_{MotorU2} 415V(100%) (solid red), I_{MotorUn} 415V (dashed purple), and I_{MotorU2} 415V(100%) (dashed green).</p>				
Data based on situation 12/23/2015				
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 90SLA 2	Calc. ref.	3GZC021009-94
Product code	3GBA 091 010-HDDIN	Frequency (Hz)	50
Rated output P _N	2.2 kW	Rated current I _N	4.4 A
Type of duty	S1 100%		
J _{motor} (kgm ²)	0.003	Voltage (V) 100%	415
J _{load} (kgm ²)		Voltage (V)	415V(100%)
Speed (r/min)	2890	T _{start} /T _N	3
T _N (Nm)	7.3	Starting time (s)	0.1
T _{load} (Nm)		Speed (r/min)	939
		I _s /I _n	7
		T _{max} /T _n	3.5
		I _s /I _n	7
		T _{max} /T _n	3.5



Current [%]	Running Hot [s]	Running Cold [s]
100	150	250
200	60	100
300	35	60
400	25	45
500	18	35
600	13	28
700	10	22
800	8	18
900	6	15

— Running Hot — Running Cold

Data based on situation 12/23/2015

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