



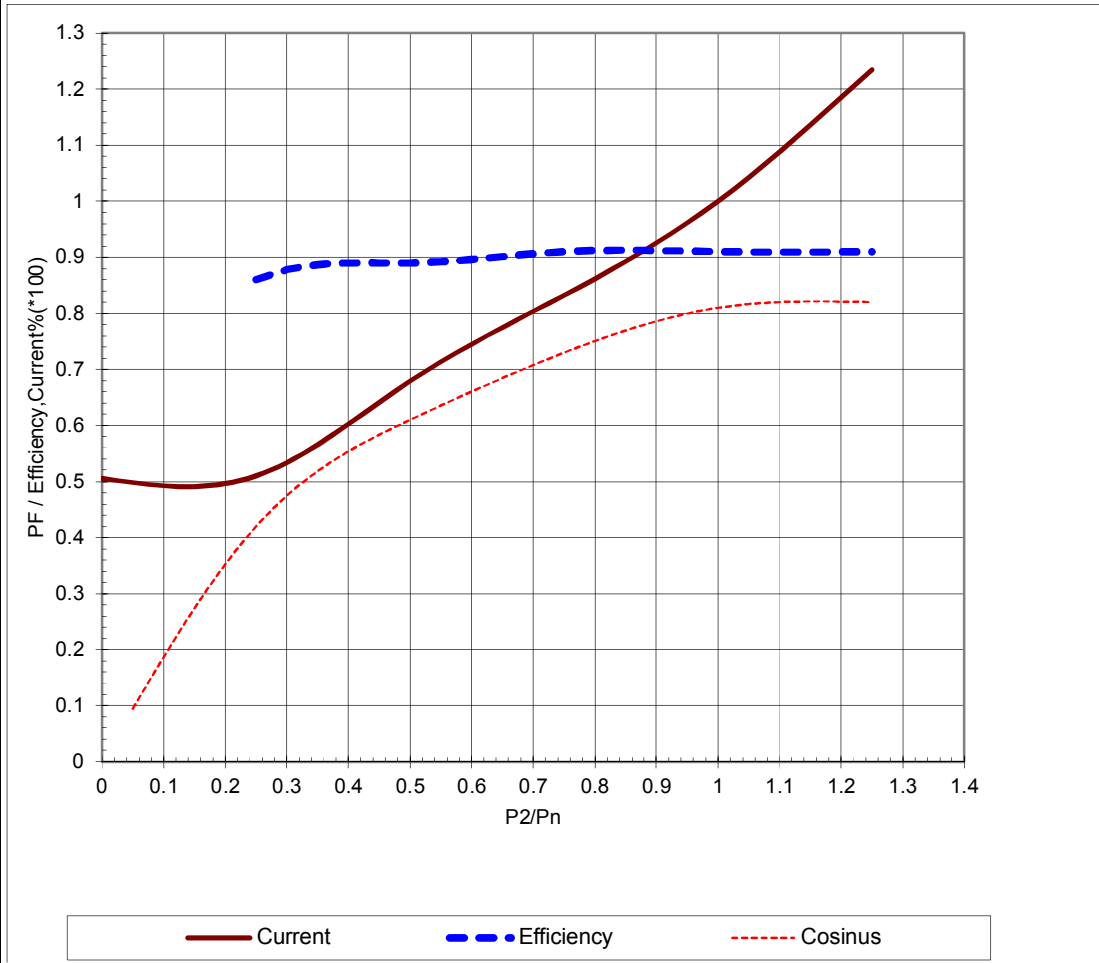
ABB Motors and Generators		Technical Data Sheet				
Department/Author		Project	Location		Item name	
Our ref.		Rev/Changed by	Date of issue	Saving ident	Pages	
		A	1/17/2019	untitled.xls	1.00003 1(3)	
No.	Definition	Data	Unit	Remarks		
1	Product	TEFC, 3-phase, squirrel cage induction motor				
2	Product code	E2BA315SMA8				
3	Type/Frame	E2BA315SMA8				
4	Mounting	IM1001, B3(foot)				
5	Rated output P_N	55	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	740	r/min			
11	Rated current I_N	104	A			
12	Method of starting	DOL				
13	Starting current I_s/I_N	7				
14	Nominal torque T_N	710	Nm			
15	Locked rotor torque T_s/T_N	2.1				
16	Maximum torque T_{max}/T_N	2.8				
17						
18						
Load characteristics		Load %	Current A	Efficiency %	Power factor	
19	PLL determined from residual loss	100	104	91	0.81	
20		75	86.4	91	0.73	
21		50	70.5	89	0.61	
22						
23	Thermal withstand time hot	29	s			
24	Thermal withstand time cold	59	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	6319/C3 - 6316/C3				
31	Sound pressure level (LP dB(A) 1m)	85	dB(A)	at no-load		
32	Moment of inertia $J = \frac{1}{4} GD^2$	3.25	kg-m ²			
33	Position of terminal box	Top				
34	Direction of rotation	Bi-directional				
35	Total weight of motor	830	kg			
36						
37						
38						
39						
40						
41						
42						
43						
44						
45						
Ex-motors						
46						
47						
48						
Option Variant Codes / Definition						
49	Application check not made in absence of load details					
50	Efficiency level: IE2 as per IS 12615 2018					
51						
52						
Remarks:						
Data based on situation 9/4/2014						

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 1.00003
Our ref.	Rev/Changed by A	Date of issue 1/17/2019	Saving ident untitled.xls
			Pages 2(3)

Product TEFC, 3-phase, squirrel cage induction motor
Type/Frame E2BA315SMA8
Product code E2BA315SMAAD8
Rated output P_N 55 kW
Type of duty S1 100%

Voltage (V) 415 **Current I_N (A)** 104 **Power factor at P_N** 0.81
Frequency (Hz) 50 **Speed (r/min)** 740 **Efficiency (%) at P_N** 91



Data based on situation 9/4/2014
 All data subject to tolerances in accordance with IS/IEC 60034-1 : 2004


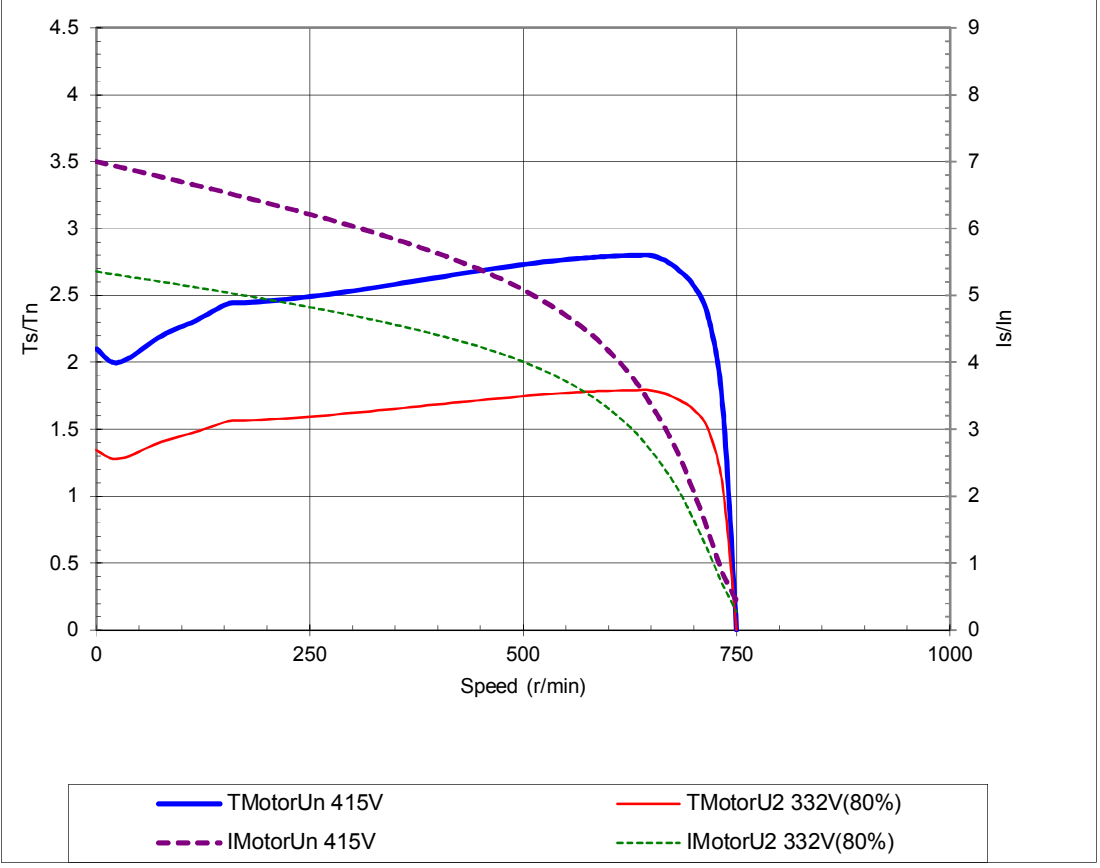
ABB Motors and Generators	Starting Curves			
	Project	Location		
Department/Author	Customer name	Customer ref.		Item name 1.00003
Our ref.	Rev/Changed b	Date of issue	Saving ident	Pages
	A	1/17/2019	untitled.xls	3(3)
Type of product	TEFC, 3-phase, squirrel cage induction motor			
Type/Frame	E2BA315SMA8			
Product code	E2BA315SMAAD8	Frequency (Hz)	50	
Rated output P _N	55 kW	Rated current I _N	104	A
Type of duty	S1 100%			
J _{motor} (kgm ²)	3.3	Voltage (V) 100%	415	Voltage (V) 332V(80%)
J _{load} (kgm ²)		T _{start} /T _N	2.1	T _{start} /T _N 1.2
Speed (r/min)	740	Starting time (s)		Starting time (s)
T _N (Nm)	710	Speed (r/min)		Speed (r/min)
T _{load} (Nm)		I _s /I _n	7	I _s /I _n 5.4
		T _{max} /T _n	2.8	T _{max} /T _n 1.8
 <p>The graph plots torque ratio (Ts/Tn) and current ratio (Is/In) against speed (r/min) from 0 to 1000. 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 1000). Four curves are shown: a solid blue line for T_{MotorUn} 415V, a solid red line for T_{MotorU2} 332V(80%), a dashed purple line for I_{MotorUn} 415V, and a dashed green line for I_{MotorU2} 332V(80%). The blue and red torque curves show a peak around 700 r/min before dropping to zero at 740 r/min. The purple and green current curves show a peak around 700 r/min before dropping to zero at 740 r/min.</p>				
Data based on situation 9/4/2014				
All data subject to tolerances in accordance with IS/IEC 60034-1 : 2004				


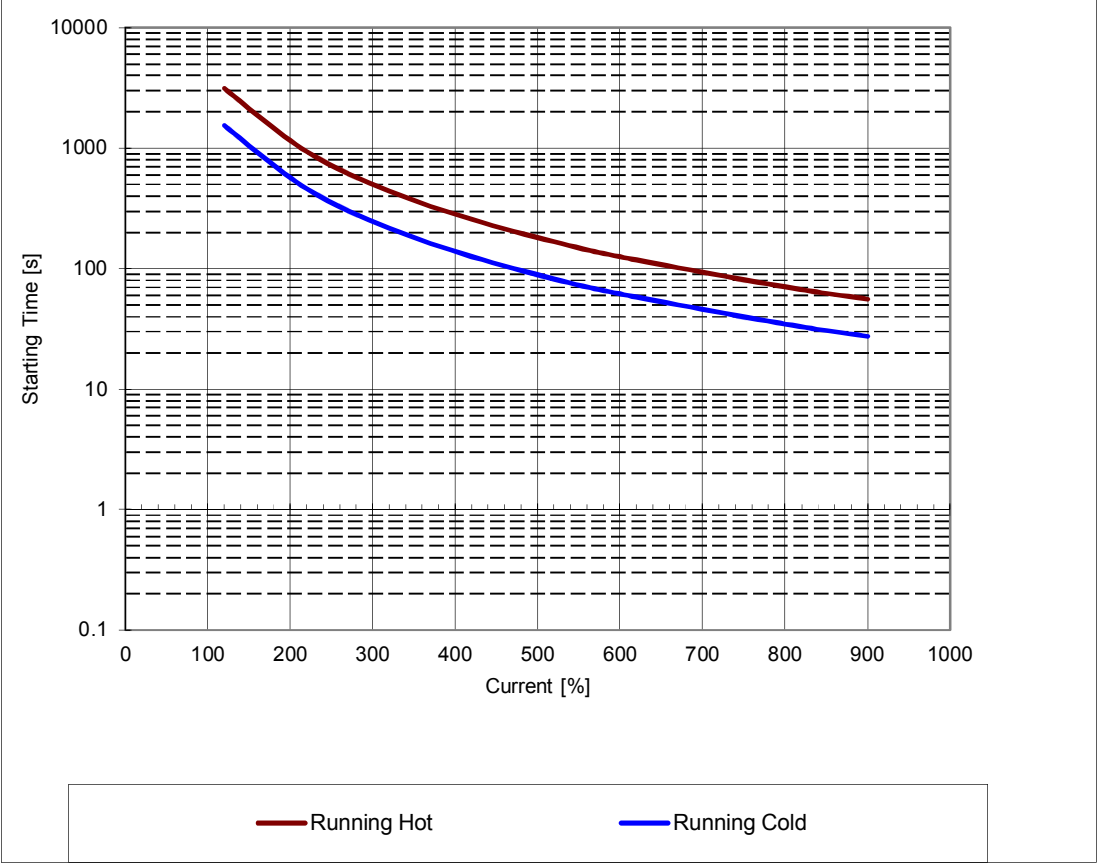

ABB Motors and Generators	Thermal Withstand Curve			
	Project	Location		
Department/Author	Customer name	Customer ref.		Item name 1.00003
Our ref.	Rev/Changed b	Date of issue	Saving ident	Pages
	A	1/17/2019	untitled.xls	5(3)
Type of product	TEFC, 3-phase, squirrel cage induction motor			
Type/Frame	E2BA315SMA8			
Product code	E2BA315SMAAD8	Frequency (Hz)	50	
Rated output P _N	55 kW	Rated current I _N	104	A
Type of duty	S1 100%			
J _{motor} (kgm ²)	3.3	Voltage (V) 100%	415	Voltage (V) 332V(80%)
J _{load} (kgm ²)		T _{start} /T _N	2.1	T _{start} /T _N 1.2
Speed (r/min)	740	Starting time (s)		Starting time (s)
T _N (Nm)	710	Speed (r/min)		Speed (r/min)
T _{load} (Nm)		I _s /I _N	7	I _s /I _N 5.4
		T _{max} /T _N	2.8	T _{max} /T _N 1.8
 <p>The graph plots Starting Time [s] on a logarithmic y-axis (0.1 to 10000) against Current [%] on a linear x-axis (0 to 1000). Two curves are shown: a red line for 'Running Hot' and a blue line for 'Running Cold'. Both curves show a decrease in starting time as current increases. The 'Running Hot' curve starts at approximately 3000s at 100% current and drops to about 60s at 900% current. The 'Running Cold' curve starts at approximately 1500s at 100% current and drops to about 30s at 900% current.</p>				
Data based on situation 9/4/2014				
All data subject to tolerances in accordance with IS/IEC 60034-1 : 2004				

ABB Motors and Generators	Current & Speed Vs Time			
	Project	Location		
Department/Author	Customer name	Customer ref.	Item name 1.00012	
Our ref.	Rev/Changed b	Date of issue	Saving ident	Pages
	A	1/17/2019	untitled.xls	4(3)
Type of product	TEFC, 3-phase, squirrel cage induction motor			
Type/Frame	E2BA315SMA8			
Product code	E2BA315SMA8		Frequency (Hz)	50
Rated output P _N	55 kW	Rated current I _N	104	A
Type of duty	S1 100%			
J _{motor} (kgm ²)	3.3	Voltage (V) 100%	415	Voltage (V) 332V(80%)
J _{load} (kgm ²)		T _{start} /T _N	2.1	T _{start} /T _N 1.2
Speed (r/min)	740	Starting time (s)	0.2	Starting time (s) 0.4
T _N (Nm)	710	Speed (r/min)	740	Speed (r/min) 732
T _{load} (Nm)	710	I _s /I _N	7	I _s /I _N 5.6
		T _{max} /T _N	2.8	T _{max} /T _N 1.8

Starting Time [s]	Speed [rpm]	Current [A]
0.00	0	730
0.02	150	710
0.04	250	680
0.06	350	650
0.08	450	610
0.10	550	560
0.12	650	500
0.14	700	400
0.16	730	200
0.18	750	60

Data based on situation 10/1/2014

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