

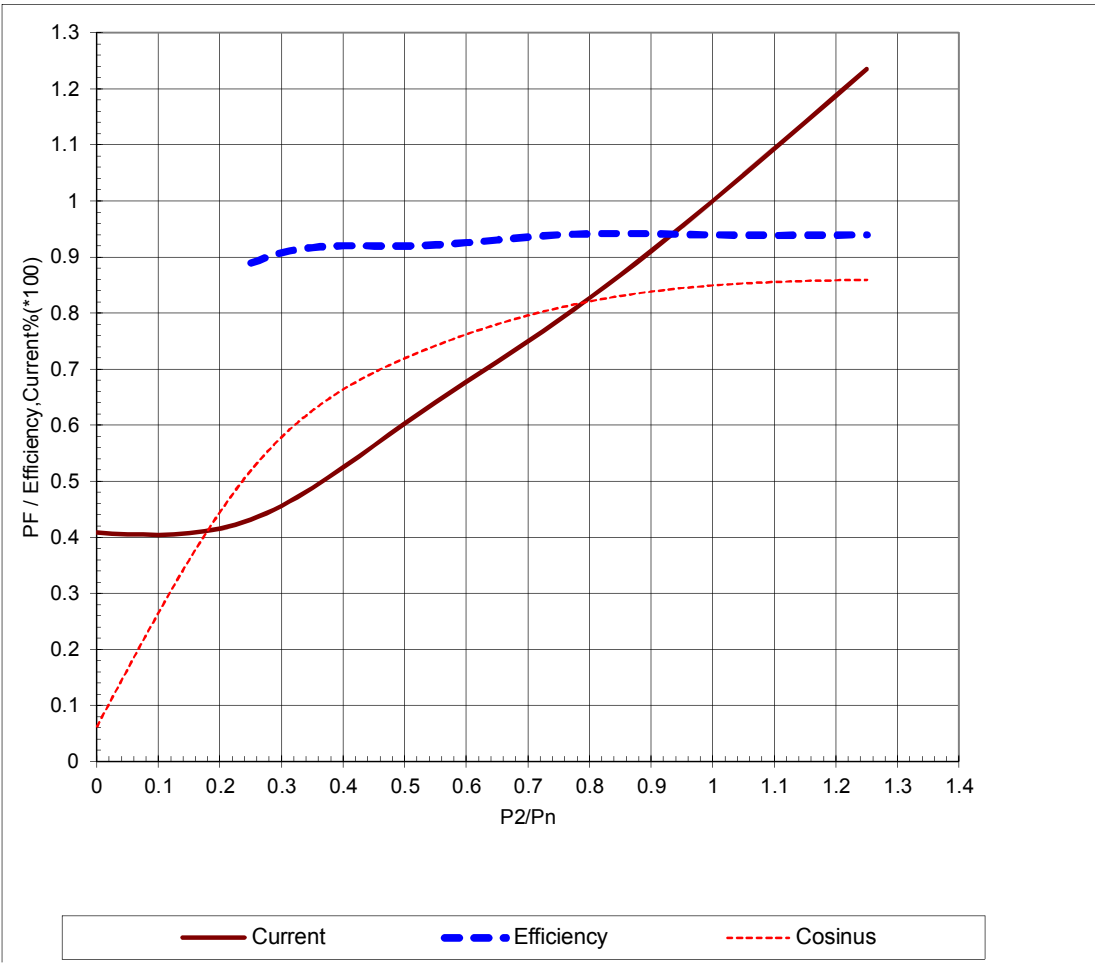



ABB Motors and Generators		Technical Data Sheet				
Department/Author		Project	Location		Item name	
Our ref.		Rev/Changed by	Date of issue	Saving ident	Pages	
		A	12/21/2017	untitled.xls	1.00022 1(3)	
No.	Definition	Data	Unit	Remarks		
1	Product	<b>TEFC, 3-phase, squirrel cage induction motor</b>				
2	Product code	<b>E2BA 315 SMB6-ADCIN</b>				
3	Type/Frame	<b>E2BA315SMB6</b>				
4	Mounting	<b>IM1001, B3(foot)</b>				
5	Rated output P <sub>N</sub>	<b>90</b>	kW			
6	Service factor	<b>1</b>				
7	Type of duty	<b>S1 100%</b>				
8	Rated voltage U <sub>N</sub>	<b>415</b>	VD	+10, -10 %		
9	Rated frequency f <sub>N</sub>	<b>50</b>	Hz	+5, -5 %		
10	Rated speed n <sub>N</sub>	<b>990</b>	r/min			
11	Rated current I <sub>N</sub>	<b>157</b>	A			
12	Method of starting	<b>DOL</b>				
13	Starting current I <sub>s</sub> /I <sub>N</sub>	<b>7</b>				
14	Nominal torque T <sub>N</sub>	<b>868</b>	Nm			
15	Locked rotor torque T <sub>s</sub> /T <sub>N</sub>	<b>2.4</b>				
16	Maximum torque T <sub>max</sub> /T <sub>N</sub>	<b>2.8</b>				
17						
18						
Load characteristics		Load %	Current A	Efficiency %	Power factor	
19	PLL determined from residual loss	<b>100</b>	<b>157</b>	<b>94.0 / IE2</b>	<b>0.85</b>	
20		<b>75</b>	<b>123</b>	<b>94</b>	<b>0.81</b>	
21		<b>50</b>	<b>94.5</b>	<b>92</b>	<b>0.72</b>	
22						
23	Thermal withstand time hot	<b>28</b>	s			
24	Thermal withstand time cold	<b>58</b>	s			
25	Insulation class / Temperature class	<b>F / B</b>				
26	Ambient temperature	<b>50</b>	°C			
27	Altitude	<b>1000</b>	m.a.s.l.			
28	Degree of protection	<b>IP55</b>				
29	Cooling system	<b>IC411 self ventilated</b>				
30	Bearing DE/NDE	<b>6319/C3 - 6316/C3</b>				
31	Sound pressure level (LP dB(A) 1m)	<b>85</b>	dB(A)	at no-load		
32	Moment of inertia J = ¼ GD2	<b>5.025</b>	kg-m2			
33	Position of terminal box	<b>Top</b>				
34	Direction of rotation	<b>Bi-directional</b>				
35	Total weight of motor	<b>1020</b>	kg			
36						
37						
38						
39						
40						
41						
42						
43						
44						
45						
Ex-motors						
46						
47						
48						
<b>Option Variant Codes / Definition</b>						
49	Application check not made in absence of load details.					
50	Efficiency level : IE2 as per IS12615 2018.					
51						
52						
Remarks:						

All performance values are subject to IS/IEC tolerances


<b>ABB Motors and Generators</b>	<b>Load Curves</b>		
	Project	Location	
Department/Author	Customer name	Customer ref.	Item name <b>1.00022</b>
Our ref.	Rev/Changed by <b>A</b>	Date of issue <b>12/21/2017</b>	Saving ident <b>untitled.xls</b>
Pages			<b>2(3)</b>
Product	<b>TEFC, 3-phase, squirrel cage induction motor</b>		
Type/Frame	<b>E2BA315SMB6</b>		
Product code	<b>E2BA315SMB6</b>		
Rated output P <sub>N</sub>	<b>90</b>	kW	
Type of duty	<b>S1 100%</b>		
Voltage (V)	<b>415</b>	Current I <sub>N</sub> (A)	<b>157</b>
Frequency (Hz)	<b>50</b>	Speed (r/min)	<b>990</b>
		Power factor at P <sub>N</sub>	<b>0.85</b>
		Efficiency (%) at P <sub>N</sub>	<b>94</b>
			
<p>All data subject to tolerances in accordance with IS/IEC 60034-1 : 2004</p>			

<b>ABB Motors and Generators</b>	<b>Starting Curves</b>		
	Project	Location	
Department/Author	Customer name	Customer ref.	Item name <b>1.00022</b>
Our ref.	Rev/Changed b Date of issue <b>A 12/21/2017</b>	Saving ident <b>untitled.xls</b>	Pages <b>3(3)</b>
Type of product	<b>TEFC, 3-phase, squirrel cage induction motor</b>		
Type/Frame	<b>E2BA315SMB6</b>		
Product code	<b>E2BA315SMB6</b>	Frequency (Hz)	<b>50</b>
Rated output P <sub>N</sub>	<b>90 kW</b>	Rated current I <sub>N</sub>	<b>157 A</b>
Type of duty	<b>S1 100%</b>		
J <sub>motor</sub> (kgm <sup>2</sup> )	<b>5</b>	Voltage (V) 100%	<b>415</b>
J <sub>load</sub> (kgm <sup>2</sup> )		Voltage (V)	<b>332V(80%)</b>
Speed (r/min)	<b>990</b>	T <sub>start</sub> /T <sub>N</sub>	<b>2.4</b>
T <sub>N</sub> (Nm)	<b>868</b>	T <sub>start</sub> /T <sub>N</sub>	<b>1.4</b>
T <sub>load</sub> (Nm)		Starting time (s)	<b>0.2</b>
		Speed (r/min)	<b>990</b>
		I <sub>s</sub> /I <sub>N</sub>	<b>7</b>
		I <sub>s</sub> /I <sub>N</sub>	<b>5.4</b>
		T <sub>max</sub> /T <sub>N</sub>	<b>2.8</b>
		T <sub>max</sub> /T <sub>N</sub>	<b>1.8</b>

The graph plots the starting torque ratio (Ts/Tn) and starting current ratio (Is/In) against speed in r/min. The x-axis ranges from 0 to 1250 r/min. The left y-axis (Ts/Tn) ranges from 0 to 4.5, and the right y-axis (Is/In) ranges from 0 to 9. Four curves are shown: a solid blue line for TMotorUn 415V, a solid red line for TMotorU2 332V(80%), a dashed purple line for IMotorUn 415V, and a dashed green line for IMotorU2 332V(80%). All curves show a sharp drop at 1000 r/min.


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 <b>1.00022</b>	
Our ref.	Rev/Changed b Date of issue <b>A 12/21/2017</b>	Saving ident <b>untitled.xls</b>	Pages <b>4(3)</b>	
Type of product	<b>TEFC, 3-phase, squirrel cage induction motor</b>			
Type/Frame	<b>E2BA315SMB6</b>			
Product code	<b>E2BA315SMB6</b>	Frequency (Hz)	<b>50</b>	
Rated output $P_N$	<b>90 kW</b>	Rated current $I_N$	<b>157</b>	<b>A</b>
Type of duty	<b>S1 100%</b>			
$J_{motor}$ (kgm <sup>2</sup> )	<b>5</b>	Voltage (V) 100%	<b>415</b>	Voltage (V) <b>332V(80%)</b>
$J_{load}$ (kgm <sup>2</sup> )		$T_{start}/T_N$	<b>2.4</b>	$T_{start}/T_N$ <b>1.4</b>
Speed (r/min)	<b>990</b>	Starting time (s)	<b>0.2</b>	Starting time (s)
$T_N$ (Nm)	<b>868</b>	Speed (r/min)		Speed (r/min)
$T_{load}$ (Nm)		$I_s/I_N$	<b>7</b>	$I_s/I_N$ <b>5.4</b>
		$T_{max}/T_N$	<b>2.8</b>	$T_{max}/T_N$ <b>1.8</b>

Starting Time [s]	Speed [rpm]	Current [A]
0.00	0	1100
0.05	200	1000
0.10	400	900
0.15	600	800
0.20	800	600
0.25	1000	100

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

<b>ABB Motors and Generators</b>	<b>Thermal Withstand Curve</b>			
	Project	Location		
Department/Author	Customer name	Customer ref.	Item name <b>1.00022</b>	
Our ref.	Rev/Changed b	Date of issue	Saving ident	Pages
	<b>A</b>	<b>12/21/2017</b>	<b>untitled.xls</b>	<b>5(3)</b>
Type of product	<b>TEFC, 3-phase, squirrel cage induction motor</b>			
Type/Frame	<b>E2BA315SMB6</b>			
Product code	<b>E2BA315SMB6</b>	Frequency (Hz)	<b>50</b>	
Rated output P <sub>N</sub>	<b>90 kW</b>	Rated current I <sub>N</sub>	<b>157</b>	<b>A</b>
Type of duty	<b>S1 100%</b>			
J <sub>motor</sub> (kgm <sup>2</sup> )	<b>5</b>	Voltage (V) 100%	<b>415</b>	Voltage (V) <b>332V(80%)</b>
J <sub>load</sub> (kgm <sup>2</sup> )		T <sub>start</sub> /T <sub>N</sub>	<b>2.4</b>	T <sub>start</sub> /T <sub>N</sub> <b>1.4</b>
Speed (r/min)	<b>990</b>	Starting time (s)	<b>0.2</b>	Starting time (s)
T <sub>N</sub> (Nm)	<b>868</b>	Speed (r/min)		Speed (r/min)
T <sub>load</sub> (Nm)		I <sub>s</sub> /I <sub>N</sub>	<b>7</b>	I <sub>s</sub> /I <sub>N</sub> <b>5.4</b>
		T <sub>max</sub> /T <sub>N</sub>	<b>2.8</b>	T <sub>max</sub> /T <sub>N</sub> <b>1.8</b>

Current [%]	Starting Time [s] (Running Hot)	Starting Time [s] (Running Cold)
100	~1500	~3000
200	~500	~1000
300	~250	~500
400	~150	~350
500	~100	~250
600	~75	~180
700	~60	~140
800	~50	~110
900	~45	~90

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