


ABB Motors and Generators		Technical Data Sheet				
Project		Location				
Department/Author		Customer name		Customer ref.		Item name
Our ref.		Rev/Changed by <b>A</b>		Date of issue <b>1/18/2019</b>		Pages <b>1(3)</b>
Saving ident <b>untitled.xls</b>		Item name <b>1.00001</b>		Pages <b>1(3)</b>		
No.	Definition	Data	Unit	Remarks		
1	Product	<b>TEFC, 3-phase, squirrel cage induction motor</b>				
2	Product code	<b>3GBA 092 120-HSDIN</b>		Calc. ref.	<b>3GZC021009-95</b>	
3	Type/Frame	<b>M2BAX 90SB 4</b>				
4	Mounting	<b>IM2001, B35(foot-flange)</b>				
5	Rated output P <sub>N</sub>	<b>1.1</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>	VY	+10, -10 %		
9	Rated frequency f <sub>N</sub>	<b>50</b>	Hz	+5, -5 %		
10	Rated speed n <sub>N</sub>	<b>1435</b>	r/min			
11	Rated current I <sub>N</sub>	<b>2.6</b>	A			
12						
13	Starting current I <sub>s</sub> /I <sub>N</sub>	<b>6</b>				
14	Nominal torque T <sub>N</sub>	<b>7.3</b>	Nm			
15	Locked rotor torque T <sub>S</sub> /T <sub>N</sub>	<b>3</b>				
16	Maximum torque T <sub>max</sub> /T <sub>N</sub>	<b>3.7</b>				
17						
18						
Load characteristics		Load %	Current A	Efficiency %	Power factor	
19	PLL determined from residual loss	<b>100</b>	<b>2.6</b>	<b>84.1 / IE3</b>	<b>0.7</b>	
20		<b>75</b>	<b>2.2</b>	<b>83.7</b>	<b>0.61</b>	
21		<b>50</b>	<b>2</b>	<b>81</b>	<b>0.47</b>	
22						
23	Thermal withstand time hot	<b>10</b>	s			
24	Thermal withstand time cold	<b>17</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>6205-2Z/C3 - 6204-2Z/C3</b>				
31	Sound pressure level (LP dB(A) 1m)	<b>66</b>	dB(A)	at no-load		
32	Moment of inertia J = ¼ GD <sup>2</sup>	<b>0.00397</b>	kg·m <sup>2</sup>			
33	Position of terminal box	<b>Top</b>				
34	Direction of rotation	<b>Bi-directional</b>				
35	Weight of rotor	<b>5</b>	kg			
36	Total weight of motor	<b>22</b>	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 12/21/2015						

All performance values are subject to IS/IEC tolerances


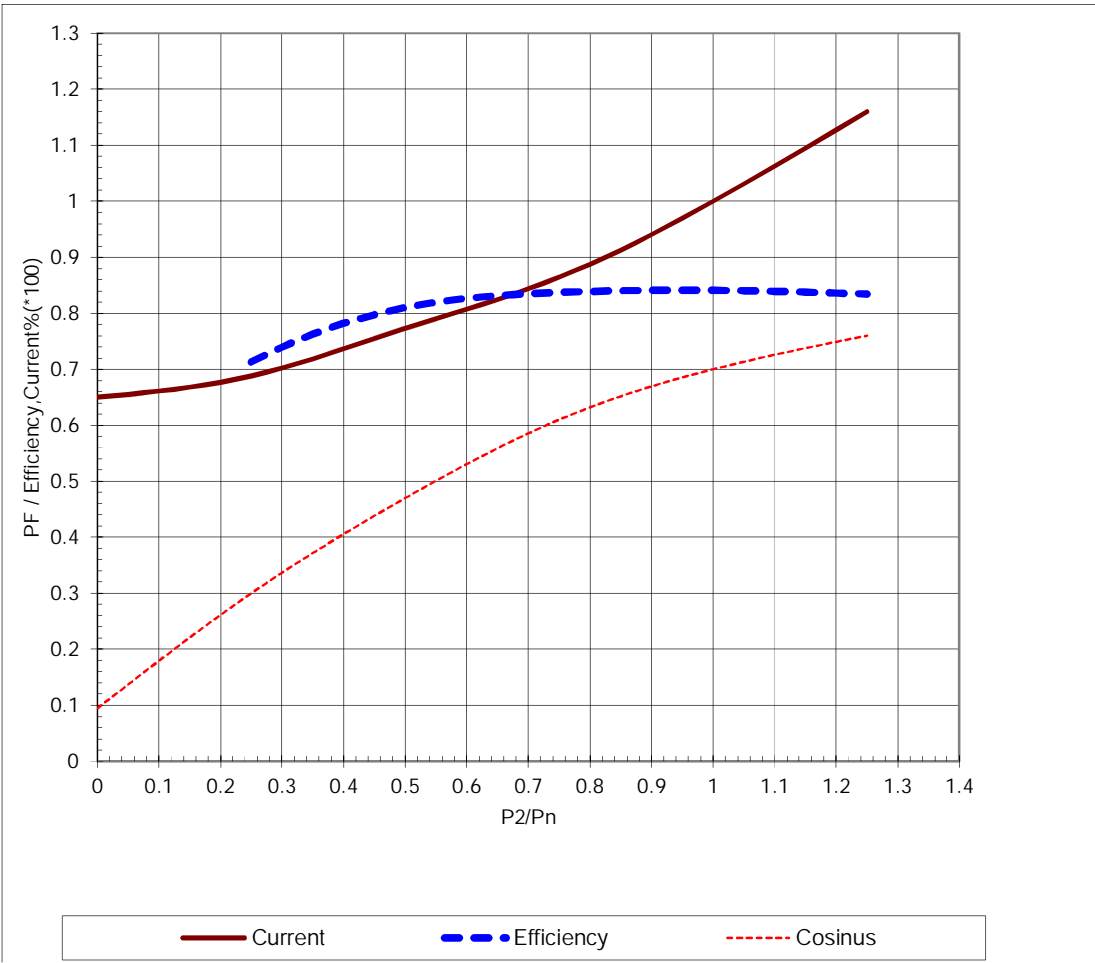

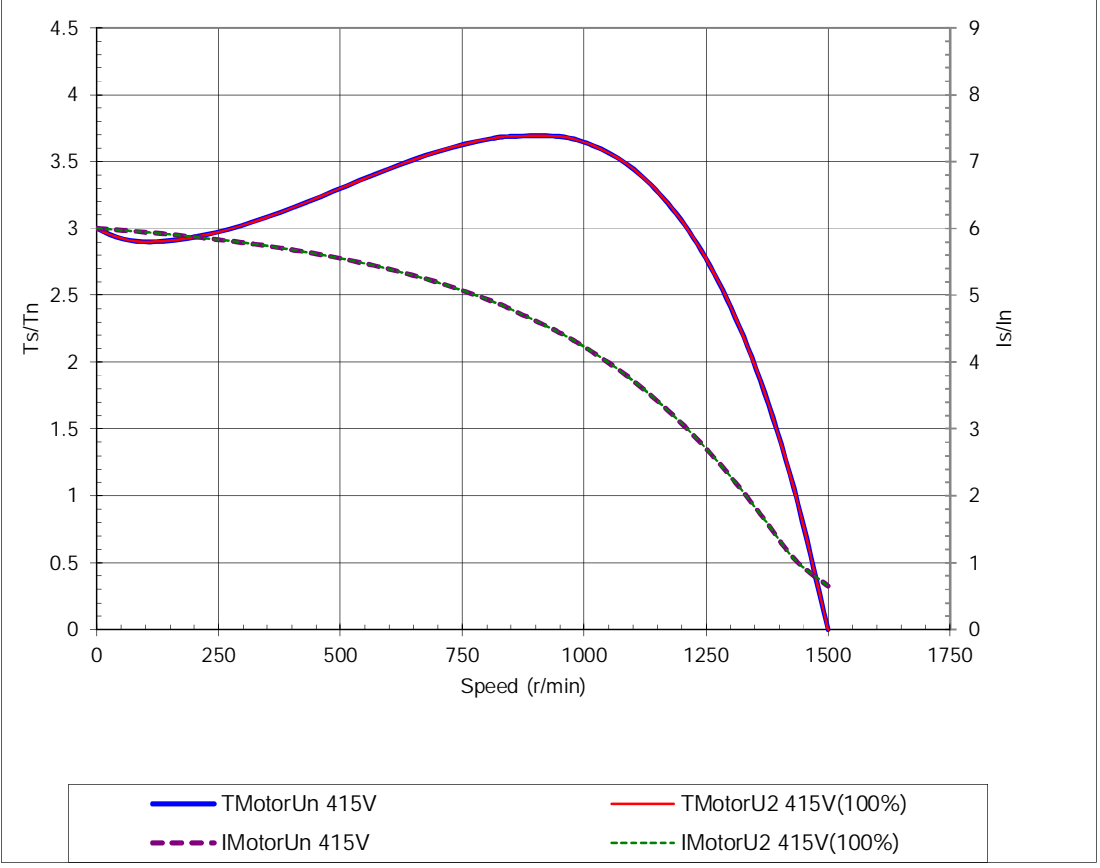

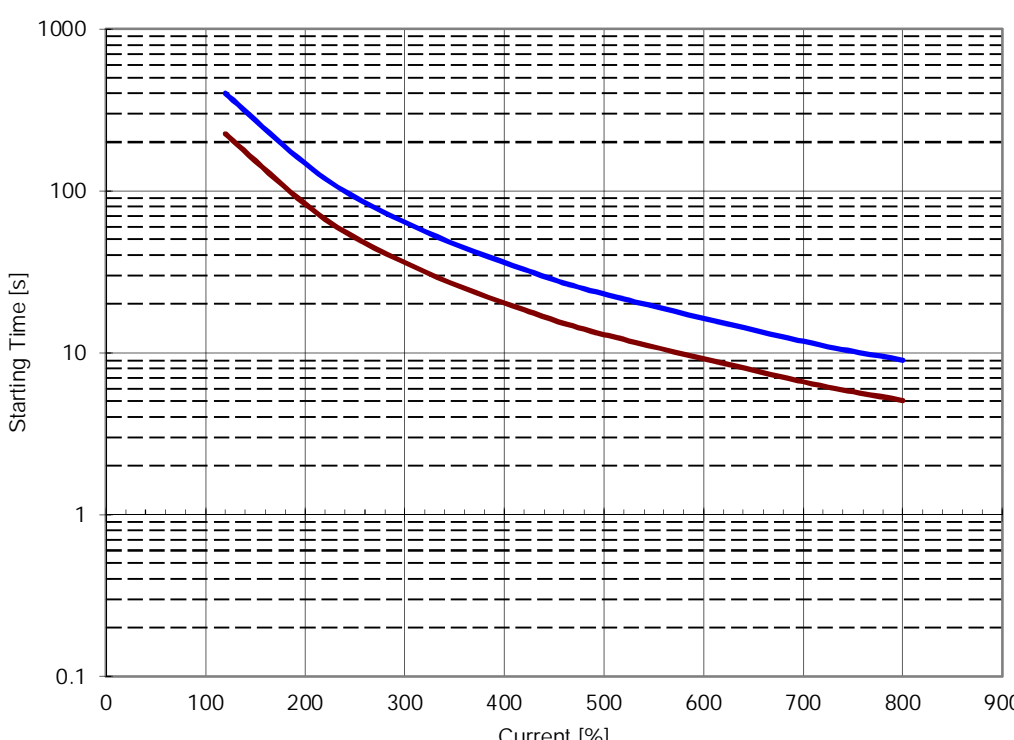
<b>ABB Motors and Generators</b>	<b>Load Curves</b>		
	Project	Location	
Department/Author	Customer name	Customer ref.	Item name <b>1.00001</b>
Our ref.	Rev/Changed by <b>A</b>	Date of issue <b>1/18/2019</b>	Saving ident <b>untitled.xls</b>
Pages <b>2(3)</b>	Product <b>TEFC, 3-phase, squirrel cage induction motor</b>		
Type/Frame	<b>M2BAX 90SB 4</b>	Calc. ref.	<b>3GZC021009-95</b>
Product code	<b>3GBA 092 120-HSDIN</b>		
Rated output P <sub>N</sub>	<b>1.1 kW</b>		
Type of duty	<b>S1 100%</b>		
Voltage (V)	<b>415</b>	Current I <sub>N</sub> (A)	<b>2.6</b>
Frequency (Hz)	<b>50</b>	Speed (r/min)	<b>1435</b>
		Power factor at P <sub>N</sub>	<b>0.7</b>
		Efficiency (%) at P <sub>N</sub>	<b>84.1</b>
 <p>The graph plots PF / Efficiency, Current% (* 100) on the y-axis (0 to 1.3) against P2/Pn on the x-axis (0 to 1.4). Three curves are shown: Current (solid red line), Efficiency (dashed blue line), and Cosinus (dotted red line). The Current curve starts at approximately 0.65 and rises to 1.15. The Efficiency curve starts at 0.7 and levels off around 0.84. The Cosinus curve starts at 0.1 and rises to 0.75.</p>			
<p>Data based on situation 12/21/2015</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 <b>1.00001</b>
Our ref.	Rev/Changed by <b>A</b>	Date of issue <b>1/18/2019</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>M2BAX 90SB 4</b>	Calc. ref.	<b>3GZC021009-95</b>	
Product code	<b>3GBA 092 120-HSDIN</b>	Frequency (Hz)	<b>50</b>	
Rated output P <sub>N</sub>	<b>1.1 kW</b>	Rated current I <sub>N</sub>	<b>2.6</b>	<b>A</b>
Type of duty	<b>S1 100%</b>			
J <sub>motor</sub> (kgm <sup>2</sup> )	<b>0.004</b>	Voltage (V) 100%	<b>415</b>	Voltage (V) <b>415V(100%)</b>
J <sub>load</sub> (kgm <sup>2</sup> )		T <sub>start</sub> /T <sub>N</sub>	<b>3</b>	T <sub>start</sub> /T <sub>N</sub> <b>3</b>
Speed (r/min)	<b>1435</b>	Starting time (s)		Starting time (s)
T <sub>N</sub> (Nm)	<b>7.3</b>	Speed (r/min)		Speed (r/min) <b>939</b>
T <sub>load</sub> (Nm)		I <sub>s</sub> /I <sub>N</sub>	<b>6</b>	I <sub>s</sub> /I <sub>N</sub> <b>6</b>
		T <sub>max</sub> /T <sub>N</sub>	<b>3.7</b>	T <sub>max</sub> /T <sub>N</sub> <b>3.7</b>
 <p>The graph plots torque (T<sub>s</sub>/T<sub>N</sub>) and current (I<sub>s</sub>/I<sub>N</sub>) against speed (r/min). The x-axis ranges from 0 to 1750 r/min. The left y-axis (T<sub>s</sub>/T<sub>N</sub>) ranges from 0 to 4.5, and the right y-axis (I<sub>s</sub>/I<sub>N</sub>) ranges from 0 to 9. A solid blue line represents T<sub>MotorUn</sub> 415V, a solid red line represents T<sub>MotorU2</sub> 415V(100%), a dashed purple line represents I<sub>MotorUn</sub> 415V, and a dashed green line represents I<sub>MotorU2</sub> 415V(100%). The torque curves peak at approximately 3.7 around 900 r/min. The current curves peak at 6 around 900 r/min. The motor speed is indicated as 1435 r/min.</p>				
Data based on situation 12/21/2015				
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>1.00001</b>
Our ref.	Rev/Changed by <b>A</b>	Date of issue <b>1/18/2019</b>	Saving ident <b>untitled.xls</b>
Pages <b>5(3)</b>			
Type of product	<b>TEFC, 3-phase, squirrel cage induction motor</b>		
Type/Frame	<b>M2BAX 90SB 4</b>	Calc. ref.	<b>3GZC021009-95</b>
Product code	<b>3GBA 092 120-HSDIN</b>	Frequency (Hz)	<b>50</b>
Rated output P <sub>N</sub>	<b>1.1 kW</b>	Rated current I <sub>N</sub>	<b>2.6 A</b>
Type of duty	<b>S1 100%</b>		
J <sub>motor</sub> (kgm <sup>2</sup> )	<b>0.004</b>	Voltage (V) 100%	<b>415</b>
J <sub>load</sub> (kgm <sup>2</sup> )		Voltage (V)	<b>415V(100%)</b>
Speed (r/min)	<b>1435</b>	T <sub>start</sub> /T <sub>N</sub>	<b>3</b>
T <sub>N</sub> (Nm)	<b>7.3</b>	Starting time (s)	<b>3</b>
T <sub>load</sub> (Nm)		Speed (r/min)	<b>939</b>
		I <sub>s</sub> /I <sub>n</sub>	<b>6</b>
		I <sub>s</sub> /I <sub>n</sub>	<b>6</b>
		T <sub>max</sub> /T <sub>n</sub>	<b>3.7</b>
		T <sub>max</sub> /T <sub>n</sub>	<b>3.7</b>



Current [%]	Starting Time [s] - Running Hot	Starting Time [s] - Running Cold
100	~200	~300
200	~100	~150
300	~60	~100
400	~40	~70
500	~30	~55
600	~22	~45
700	~18	~38
800	~14	~32

Data based on situation 12/21/2015  
All data subject to tolerances in accordance with IS/IEC 60034-1 : 2004