


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	1/16/2019	untitled.xls	1.00001 1(3)	
No.	Definition	Data	Unit	Remarks		
1	Product	<i>TEFC, 3-phase, squirrel cage induction motor</i>				
2	Product code	3GBA 162 490-BDCIN			Calc. ref.	3GZH021016-4
3	Type/Frame	M2BAX 160MLJ 4				
4	Mounting	IM3001, B5(flange)				
5	Rated output P _N	9.3	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	1455	r/min			
11	Rated current I _N	17.9	A			
12						
13	Starting current I _s /I _N	7				
14	Nominal torque T _N	61	Nm			
15	Locked rotor torque T _S /T _N	2				
16	Maximum torque T _{max} /T _N	2.9				
17						
18						
Load characteristics		Load %	Current A	Efficiency %	Power factor	
19	PLL determined from residual loss	100	17.9	89.3 / IE2	0.81	
20		75	14	89.8	0.77	
21		50	10.8	88	0.68	
22						
23	Thermal withstand time hot	11	s			
24	Thermal withstand time cold	18	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	6209-2Z/C3 - 6209-2Z/C3				
31	Sound pressure level (LP dB(A) 1m)	75	dB(A)	at no-load		
32	Moment of inertia J = ¼ GD ²	0.0738	kg·m ²			
33	Position of terminal box	Top				
34	Direction of rotation	Bi-directional				
35	Weight of rotor	29	kg			
36	Total weight of motor	107	kg			
37						
38						
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40						
41						
42						
43						
44						
45						
Ex-motors						
46						
47						
48						
Option Variant Codes / Definition						
49						
50						
51						
52						
Remarks:						
Data based on situation 9/19/2015						

All performance values are subject to IS/IEC tolerances


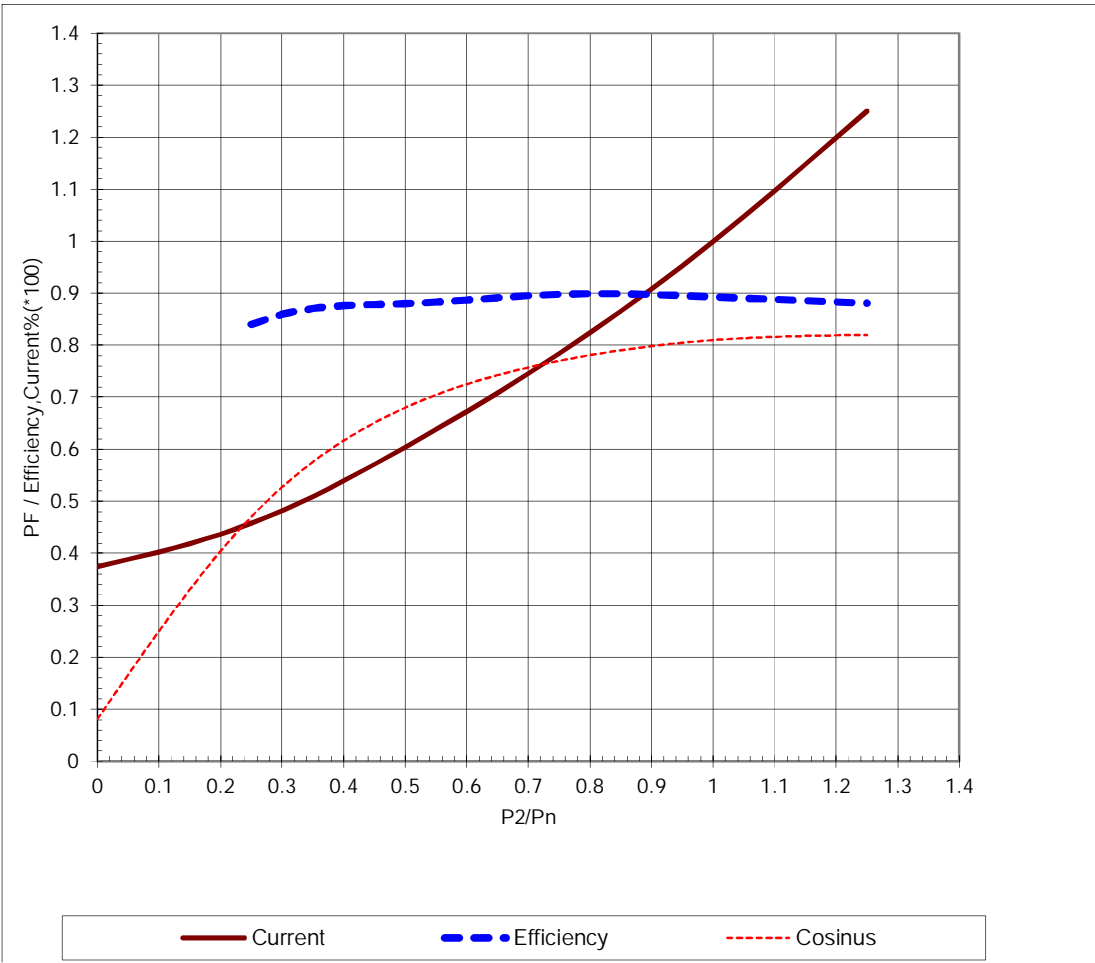

ABB Motors and Generators	Load Curves		
	Project	Location	
Department/Author	Customer name	Customer ref.	Item name 1.00001
Our ref.	Rev/Changed by A	Date of issue 1/16/2019	Saving ident untitled.xls
Pages 2(3)	Product TEFC, 3-phase, squirrel cage induction motor		
Type/Frame	M2BAX 160MLJ 4	Calc. ref.	3GZH021016-4
Product code	3GBA 162 490-BDCIN		
Rated output P _N	9.3 kW		
Type of duty	S1 100%		
Voltage (V)	415	Current I _N (A)	17.9
Frequency (Hz)	50	Speed (r/min)	1455
		Power factor at P _N	0.81
		Efficiency (%) at P _N	89.3
			
<p>Data based on situation 9/19/2015</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 A	Date of issue 1/16/2019	Saving ident untitled.xls	Pages 3(3)
Type of product	TEFC, 3-phase, squirrel cage induction motor			
Type/Frame	M2BAX 160MLJ 4	Calc. ref.	3GZH021016-4	
Product code	3GBA 162 490-BDCIN	Frequency (Hz)	50	
Rated output P _N	9.3 kW	Rated current I _N	17.9	A
Type of duty	S1 100%			
J _{motor} (kgm ²)	0.074	Voltage (V) 100%	415	Voltage (V) 415V(100%)
J _{load} (kgm ²)		T _{start} /T _N	2	T _{start} /T _N 2
Speed (r/min)	1455	Starting time (s)	0.1	Starting time (s)
T _N (Nm)	61	Speed (r/min)		Speed (r/min)
T _{load} (Nm)		I _s /I _N	7	I _s /I _N 7
		T _{max} /T _N	2.9	T _{max} /T _N 2.9

The graph plots torque ratios (Ts/Tn) and current ratios (Is/In) against speed in r/min. The x-axis ranges from 0 to 1750 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. Two sets of curves are shown: one for 415V (solid lines) and one for 415V(100%) (dashed lines). The torque curves (Ts/Tn) show a peak around 1250 r/min, while the current curves (Is/In) show a peak around 1000 r/min. The 415V(100%) curves generally show higher torque and lower current ratios compared to the 415V curves.

Speed (r/min)	Ts/Tn (415V)	Ts/Tn (415V(100%))	Is/In (415V)	Is/In (415V(100%))
0	2.0	2.0	7.0	7.0
250	1.9	1.9	6.5	6.5
500	2.0	2.0	6.0	6.0
750	2.3	2.3	5.5	5.5
1000	2.7	2.7	5.0	5.0
1250	2.9	2.9	4.0	4.0
1500	0.0	0.0	0.0	0.0

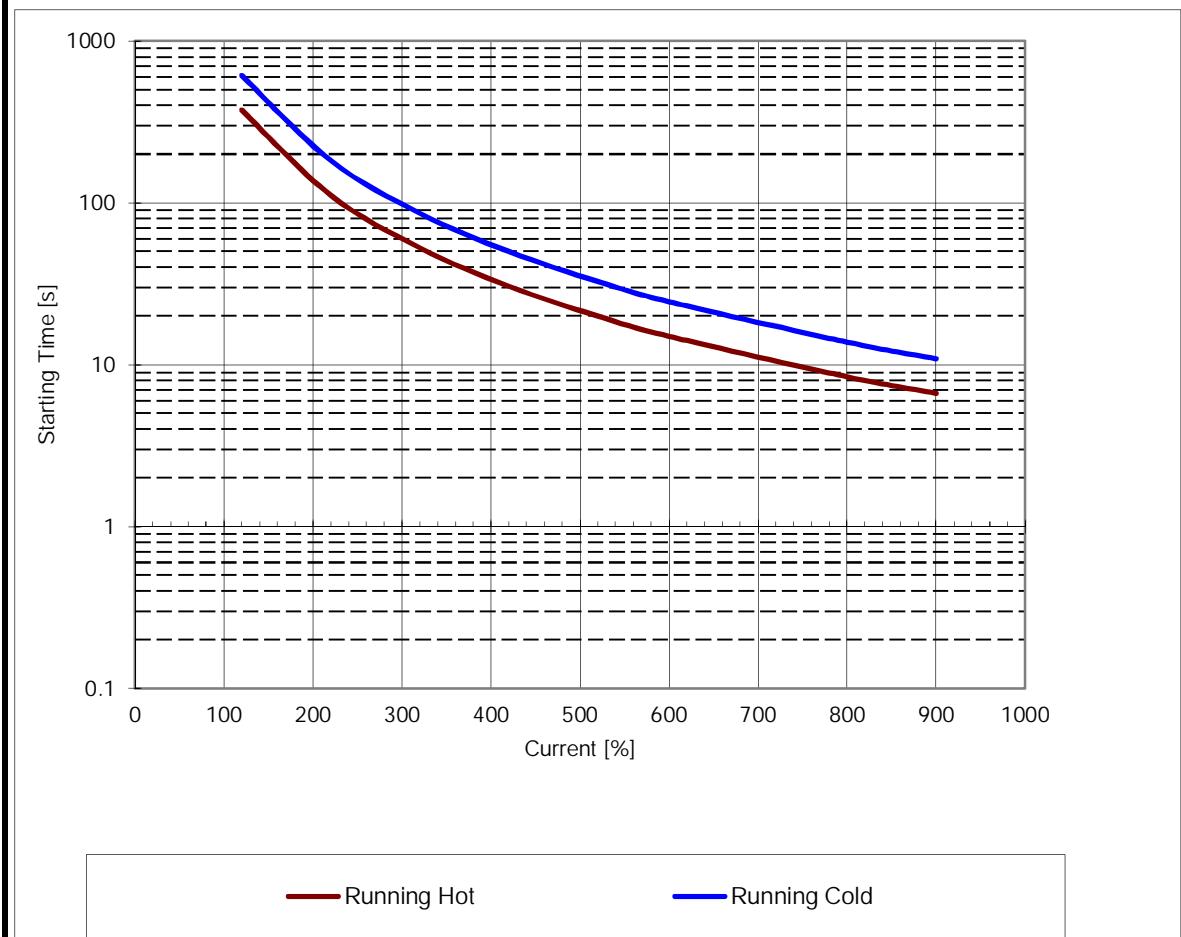
Data based on situation 9/19/2015

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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 1/16/2019	Saving ident untitled.xls
			Pages 5(3)

Type of product	TEFC, 3-phase, squirrel cage induction motor		
Type/Frame	M2BAX 160MLJ 4	Calc. ref.	3GZH021016-4
Product code	3GBA 162 490-BDCIN	Frequency (Hz)	50
Rated output P _N	9.3 kW	Rated current I _N	17.9 A
Type of duty	S1 100%		

J _{motor} (kgm ²)	0.074	Voltage (V) 100%	415	Voltage (V)	415V(100%)
J _{load} (kgm ²)		T _{start} /T _N	2	T _{start} /T _N	2
Speed (r/min)	1455	Starting time (s)	0.1	Starting time (s)	
T _N (Nm)	61	Speed (r/min)		Speed (r/min)	
T _{load} (Nm)		I _s /I _N	7	I _s /I _N	7
		T _{max} /T _n	2.9	T _{max} /T _n	2.9



Data based on situation 9/19/2015
 All data subject to tolerances in accordance with IS/IEC 60034-1 : 2004