


ABB Motors and Generators		Technical Data Sheet			
Project		Location			
Department/Author		Customer name		Customer ref.	Item name
Our ref.		Rev/Changed by	Date of issue	Saving ident	Pages
		A	12/8/2020	untitled.xlsm	1(3)
No.	Definition	Data	Unit	Remarks	
1	Product	TEFC, 3-phase, squirrel cage induction motor			
2	Product code	3GBA 162 420-ADCIN		Calc. ref.	3GZH021016-6
3	Type/Frame	M2BAX 160MLB 4			
4	Mounting	IM1001, B3(foot)			
5	Rated output P _N	15	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	1460	r/min		
11	Rated current I _N	28.4	A		
12					
13	Starting current I _s /I _N	7			
14	Nominal torque T _N	98	Nm		
15	Locked rotor torque T _s /T _N	2.5			
16	Maximum torque T _{max} /T _N	3			
17					
18					
Load characteristics		Load %	Current A	Efficiency %	Power factor
19	PLL determined from residual loss	100	28.4	90.6 / IE2	0.81
20		75	22.6	91.2	0.76
21		50	17.5	90.2	0.66
22					
23	Thermal withstand time hot	10	s		
24	Thermal withstand time cold	16	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			
30	Bearing DE/NDE	6209-2Z/C3 - 6209-2Z/C3			
31	Sound pressure level (LP dB(A) 1m)	77	dB(A)	at no-load	
32	Moment of inertia J = ¼ GD2	0.1025	kg-m2		
33	Position of terminal box	Top			
34	Direction of rotation	Bi-directional			
35	Weight of rotor	38	kg		
36	Total weight of motor	134	kg		
37					
38					
39					
40					
41					
42					
43					
44					
45					
Ex-motors					
46					
47					
48					
Option Variant Codes / Definition					
49					
50					
51					
52					
Remarks:					
Applicable standards: IS 12615:2018, IEC 60034-30-1:2014					

All performance values are subject to IS/IEC tolerances


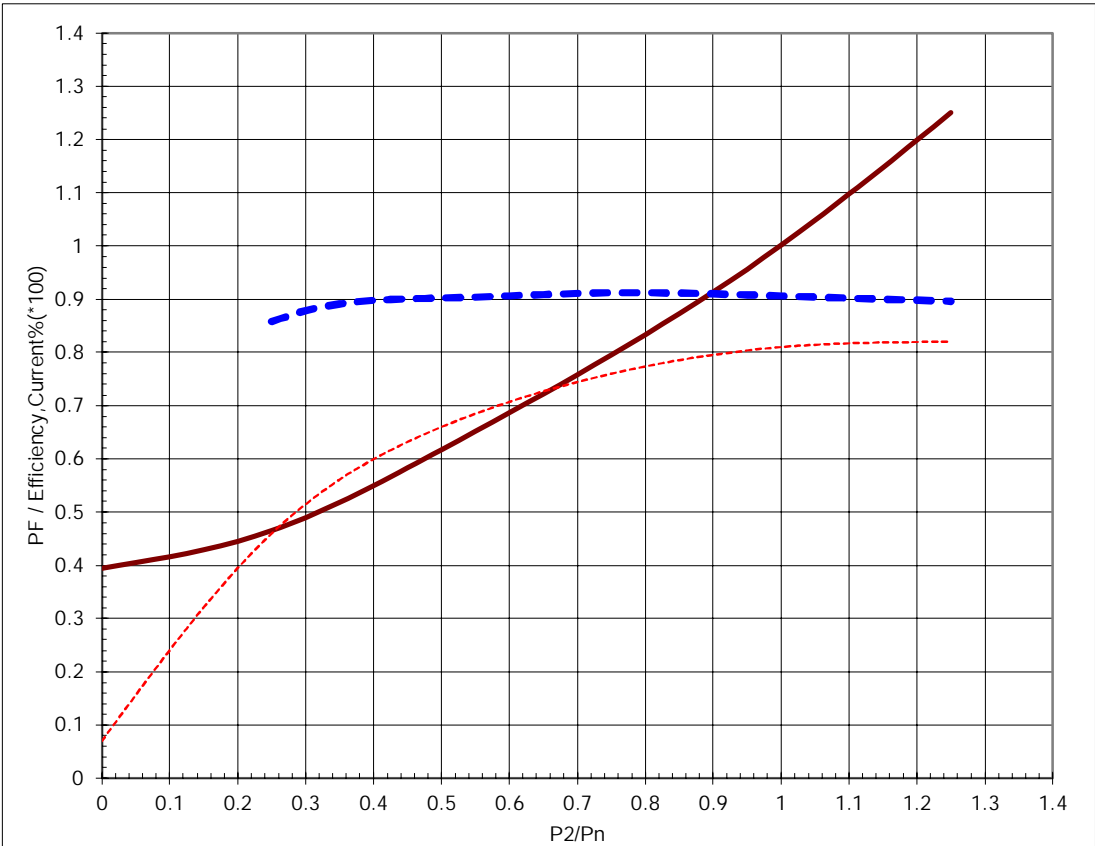

ABB Motors and Generators	Load Curves		
	Project	Location	
Department/Author	Customer name	Customer ref.	Item name 1.00001
Our ref.	Rev/Changed by A	Date of issue 12/8/2020	Saving ident untitled.xlsm
Pages 2(3)	Product TEFC, 3-phase, squirrel cage induction motor		
Type/Frame M2BAX 160MLB 4	Calc. ref. 3GZH021016-6		
Product code 3GBA 162 420-ADCIN			
Rated output P _N 15 kW			
Type of duty S1 100%			
Voltage (V) 415	Current I _N (A) 28.4	Power factor at P _N 0.81	
Frequency (Hz) 50	Speed (r/min) 1460	Efficiency (%) at P _N 90.6	
			
<p style="text-align: center;"> — Current - - - Efficiency . . . Cosinus </p>			
Applicable standards: IS 12615:2018, IEC 60034-30-1:2014			

ABB Motors and Generators	Starting Curves		
	Project	Location	
Department/Author	Customer name	Customer ref.	Item name 1.00001
Our ref.	Rev/Changed b Date of issue A 12/8/2020	Saving ident untitled.xlsm	Pages 3(3)
Type of product	TEFC, 3-phase, squirrel cage induction motor		
Type/Frame	M2BAX 160MLB 4	Calc. ref.	3GZH021016-6
Product code	3GBA 162 420-ADCIN	Frequency (Hz)	50
Rated output P _N	15 kW	Rated current I _N	28.4 A
Type of duty	S1 100%		
J _{motor} (kgm ²)	0.1	Voltage (V) 100%	415 Voltage (V) 415V(100%)
J _{load} (kgm ²)		T _{start} /T _N	2.5 T _{start} /T _N 2.5
Speed (r/min)	1460	Starting time (s)	0.1 Starting time (s)
T _N (Nm)	98	Speed (r/min)	Speed (r/min) 1449
T _{load} (Nm)		I _s /I _n	7 I _s /I _n 7
		T _{max} /T _n	3 T _{max} /T _n 3

The graph plots torque ratios (T_s/T_n and T_{max}/T_n) and current ratio (I_s/I_n) against speed (r/min). The left y-axis represents T_s/T_n (0 to 4.5) and the right y-axis represents I_s/I_n (0 to 9). The x-axis represents Speed (r/min) from 0 to 1750. Two sets of curves are shown: a solid blue line for T_{MotorUn} 415V and a dashed green line for I_{MotorUn} 415V (left set); and a solid red line for T_{MotorU2} 415V(100%) and a dashed green line for I_{MotorU2} 415V(100%) (right set). The 415V curves peak at approximately 1100 r/min, while the 415V(100%) curves peak at approximately 1400 r/min.

Applicable standards: IS 12615:2018, IEC 60034-30-1:2014


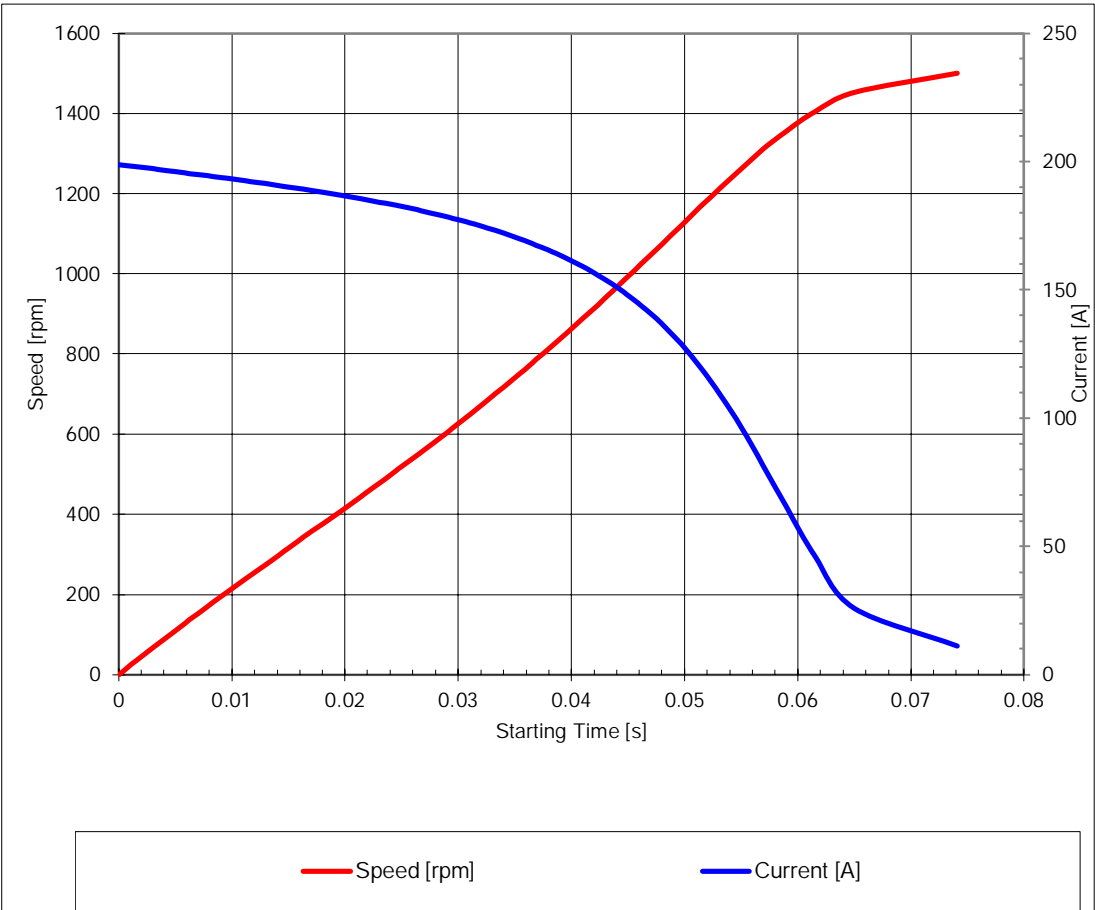

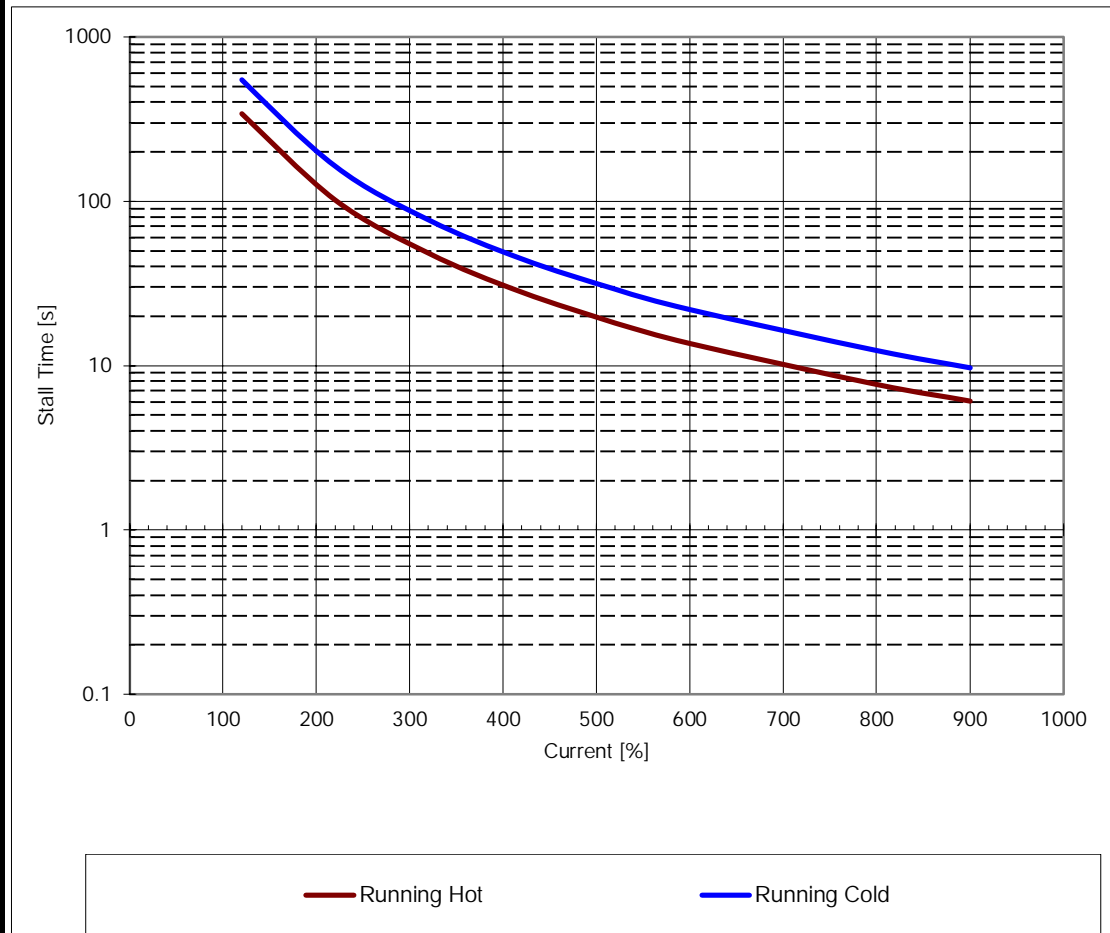
ABB Motors and Generators	Current & Speed Vs Time		
	Project	Location	
Department/Author	Customer name	Customer ref.	Item name 1.00001
Our ref.	Rev/Changed b Date of issue A 12/8/2020	Saving ident untitled.xlsm	Pages 4(3)
Type of product	TEFC, 3-phase, squirrel cage induction motor		
Type/Frame	M2BAX 160MLB 4	Calc. ref.	3GZH021016-6
Product code	3GBA 162 420-ADCIN	Frequency (Hz)	50
Rated output P _N	15 kW	Rated current I _N	28.4 A
Type of duty	S1 100%		
J _{motor} (kgm ²)	0.1	Voltage (V) 100%	415 Voltage (V) 415V(100%)
J _{load} (kgm ²)		T _{start} /T _N	2.5 T _{start} /T _N 2.5
Speed (r/min)	1460	Starting time (s)	0.1 Starting time (s)
T _N (Nm)	98	Speed (r/min)	1449
T _{load} (Nm)		I _s /I _n	7 I _s /I _n 7
		T _{max} /T _n	3 T _{max} /T _n 3
 <p>Speed [rpm] vs Starting Time [s] and Current [A].</p>			
Applicable standards: IS 12615:2018, IEC 60034-30-1:2014			

ABB Motors and Generators	Thermal Withstand Curve		
	Project	Location	
Department/Author	Customer name	Customer ref.	Item name 1.00001
Our ref.	Rev/Changed b Date of issue A 12/8/2020	Saving ident untitled.xlsm	Pages 5(3)
Type of product	TEFC, 3-phase, squirrel cage induction motor		
Type/Frame	M2BAX 160MLB 4	Calc. ref.	3GZH021016-6
Product code	3GBA 162 420-ADCIN	Frequency (Hz)	50
Rated output P _N	15 kW	Rated current I _N	28.4 A
Type of duty	S1 100%		

J _{motor} (kgm ²)	0.1	Voltage (V) 100%	415	Voltage (V)	415V(100%)
J _{load} (kgm ²)		T _{start} /T _N	2.5	T _{start} /T _N	2.5
Speed (r/min)	1460	Withstand cold(s)	16	Withstand hot (s)	10
T _N (Nm)	98	Speed (r/min)		Speed (r/min)	1449
T _{load} (Nm)		I _s /I _n	7	I _s /I _n	7
		T _{max} /T _n	3	T _{max} /T _n	3



Applicable standards: IS 12615:2018, IEC 60034-30-1:2014