


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	1.00019 1(3)	
No.	Definition	Data	Unit	Remarks		
1	Product	TEFC, 3-phase, squirrel cage induction motor				
2	Product code	E2HX280SMA6				
3	Type/Frame	E2HX280SMA6				
4	Mounting	IM1001, B3(foot)				
5	Rated output P _N	45	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	988	r/min			
11	Rated current I _N	80.4	A			
12	Method of starting	DOL				
13	Starting current I _s /I _N	7				
14	Nominal torque T _N	435	Nm			
15	Locked rotor torque T _S /T _N	2.2				
16	Maximum torque T _{max} /T _N	2.4				
17						
18						
Load characteristics		Load %	Current A	Efficiency %	Power factor	
19	PLL determined from residual loss	100	80.4	92.7 / IE2	0.84	
20		75	63.3	92.7	0.8	
21		50	48.6	90.7	0.71	
22						
23	Thermal withstand time hot	22	s			
24	Thermal withstand time cold	38	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	6316/C3 - 6315/C3				
31	Sound pressure level (LP dB(A) 1m)	85	dB(A)	at no-load		
32	Moment of inertia J = ¼ GD ²	1.8	kg-m ²			
33	Position of terminal box	Top				
34	Direction of rotation	Bi-directional				
35	Total weight of motor	590	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 IS12615 2018.					
51						
52						
Remarks:						

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 1.00019			
Our ref.	Rev/Changed by A	Date of issue 12/21/2017	Saving ident untitled.xls			
Pages 2(3)	Product TEFC, 3-phase, squirrel cage induction motor					
Type/Frame E2HX280SMA6						
Product code E2HX280SMA6						
Rated output P _N 45 kW						
Type of duty S1 100%						
Voltage (V)	415	Current I _N (A)	80.4			
Frequency (Hz)	50	Speed (r/min)	988			
		Power factor at P _N	0.84			
		Efficiency (%) at P _N	92.7			
<table border="0"> <tr> <td style="text-align: center;">— Current</td> <td style="text-align: center;">- - - Efficiency</td> <td style="text-align: center;">- - - Cosinus</td> </tr> </table>				— Current	- - - Efficiency	- - - Cosinus
— Current	- - - Efficiency	- - - Cosinus				
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 1.00019		
Our ref.	Rev/Changed b	Date of issue	Saving ident	Pages	
	A	12/21/2017	untitled.xls	3(3)	
Type of product	TEFC, 3-phase, squirrel cage induction motor				
Type/Frame	E2HX280SMA6				
Product code	E2HX280SMA6		Frequency (Hz)	50	
Rated output P _N	45	kW	Rated current I _N	80.4	A
Type of duty	S1 100%				
J _{motor} (kgm ²)	1.8	Voltage (V) 100%	415	Voltage (V)	332V(80%)
J _{load} (kgm ²)		T _{start} /T _N	2.2	T _{start} /T _N	1.3
Speed (r/min)	988	Starting time (s)	0.2	Starting time (s)	0.5
T _N (Nm)	435	Speed (r/min)	988	Speed (r/min)	977
T _{load} (Nm)		I _s /I _N	7	I _s /I _N	5.4
		T _{max} /T _N	2.4	T _{max} /T _N	1.5


The graph plots normalized torque (Ts/Tn) and normalized starting current (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. The legend indicates: Torque load (solid red), TMotorUn 415V (solid blue), TMotorU2 332V(80%) (solid orange), IMotorUn 415V (dashed purple), and IMotorU2 332V(80%) (dashed green).

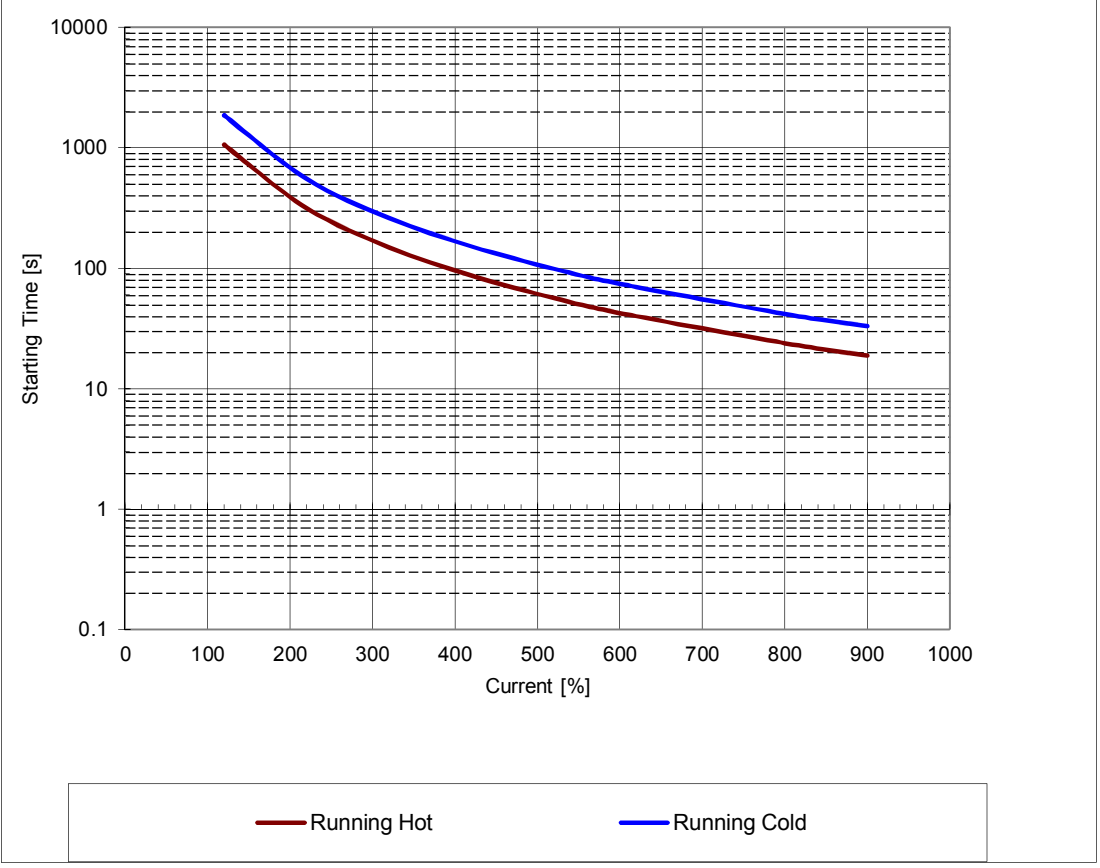
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ABB Motors and Generators	Current & Speed Vs Time			
	Project	Location		
Department/Author	Customer name	Customer ref.	Item name 1.00019	
Our ref.	Rev/Changed b	Date of issue	Saving ident	Pages
	A	12/21/2017	untitled.xls	4(3)
Type of product	TEFC, 3-phase, squirrel cage induction motor			
Type/Frame	E2HX280SMA6			
Product code	E2HX280SMA6	Frequency (Hz)	50	
Rated output P_N	45 kW	Rated current I_N	80.4	A
Type of duty	S1 100%			
J_{motor} (kgm ²)	1.8	Voltage (V) 100%	415	Voltage (V) 332V(80%)
J_{load} (kgm ²)		T_{start}/T_N	2.2	T_{start}/T_N 1.3
Speed (r/min)	988	Starting time (s)	0.2	Starting time (s) 0.5
T_N (Nm)	435	Speed (r/min)	988	Speed (r/min) 977
T_{load} (Nm)		I_s/I_N	7	I_s/I_N 5.4
		T_{max}/T_N	2.4	T_{max}/T_N 1.5

Starting Time [s]	Speed [rpm]	Current [A]
0.00	0	1100
0.05	250	900
0.10	450	750
0.15	650	600
0.20	850	450
0.25	977	50

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ABB Motors and Generators	Thermal Withstand Curve			
	Project	Location		
Department/Author	Customer name	Customer ref.		Item name 1.00019
Our ref.	Rev/Changed b	Date of issue	Saving ident	Pages
	A	12/21/2017	untitled.xls	5(3)
Type of product	TEFC, 3-phase, squirrel cage induction motor			
Type/Frame	E2HX280SMA6			
Product code	E2HX280SMA6		Frequency (Hz)	50
Rated output P_N	45 kW	Rated current I_N	80.4	A
Type of duty	S1 100%			
J_{motor} (kgm ²)	1.8	Voltage (V) 100%	415	Voltage (V) 332V(80%)
J_{load} (kgm ²)		T_{start}/T_N	2.2	T_{start}/T_N 1.3
Speed (r/min)	988	Starting time (s)	0.2	Starting time (s) 0.5
T_N (Nm)	435	Speed (r/min)	988	Speed (r/min) 977
T_{load} (Nm)		I_s/I_n	7	I_s/I_n 5.4
		T_{max}/T_n	2.4	T_{max}/T_n 1.5



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