## **ABB Motors and Technical Data Sheet** Generators Project Location Department/Author Customer ref. Item name Customer name 1.00001 Rev/Changed by Our ref. Date of issue Saving ident Pages 12/8/2020 untitled.xlsm 1(3) Definition No. Data Unit Remarks Product TEFC, 3-phase, squirrel cage induction motor 3GBA 183 410-ADDIN 3GZH021018-18 2 Product code Calc. ref. 3 Type/Frame M2BAX 180MLA 6 Mounting IM1001, B3(foot) Rated output P<sub>N</sub> kW 15 5 6 Service factor S1 100% 7 Type of duty Rated voltage U<sub>N</sub> VD 8 415 +10, -10 % Rated frequency f<sub>N</sub> 9 50 Hz +5, -5 % Rated speed n<sub>N</sub> 972 10 r/min 11 Rated current IN 31.8 Α 12 13 Starting current I<sub>s</sub>/I<sub>N</sub> Nominal torque T<sub>N</sub> 147 Nm 14 Locked rotor torque T<sub>S</sub>/T<sub>N</sub> 15 1.8 Maximum torque T<sub>max</sub>/T<sub>N</sub> 2.8 16 17 18 Load characteristics Load % Current A Efficiency % Power factor 91.2 / IE3 19 PLL determined from residual loss 100 31.8 0.72 91.6 0.66 20 75 25.9 50 20.5 0.56 21 91 22 23 Thermal withstand time hot 20 s 24 Thermal withstand time cold 33 s F/B 25 Insulation class / Temperature class °C 50 26 Ambient temperature 27 Altitude 1000 m.a.s.l. Degree of protection IP55 28 29 Cooling system IC411 Bearing DE/NDE 6310-2Z/C3 - 6209-2Z/C3 30 Sound pressure level (LP dB(A) 1m) 31 77 dB(A) at no-load 32 Moment of inertia J = 1/4 GD2 0.212 kg-m2 Position of terminal box Тор 33 Direction of rotation Bi-directional 35 Weight of rotor 55 kg 190 36 Total weight of motor kg 37 38 39 40 41 42 43 44 45 Ex-motors 46 47 48 Variant Codes / Definition Option 49 50 51 52 Applicable standards: IS 12615:2018, IEC 60034-30-1:2014

## **ABB Motors and Load Curves** Generators Project Location Department/Author Customer name Customer ref. Item name 1.00001 Our ref. Rev/Changed by Date of issue Saving ident Pages 12/8/2020 untitled.xlsm 2(3) TEFC, 3-phase, squirrel cage induction motor Product M2BAX 180MLA 6 Type/Frame Calc. ref. 3GZH021018-18 Product code **3GBA 183 410-ADDIN** Rated output P<sub>N</sub> 15 kW Type of duty S1 100% Current I<sub>N</sub> (A) Voltage (V) 415 31.8 Power factor at P<sub>N</sub> **0.72** Frequency (Hz) Speed (r/min) Efficiency (%) at P<sub>N</sub> 91.2 50 972 1.3 1.2 1.1 1 0.4 0.3 0.2 0.1 0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.1 1.2 1.3 P2/Pn Current - - Efficiency ----- Cosinus Applicable standards: IS 12615:2018, IEC 60034-30-1:2014

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Type of product			rrel cage induction		0071100404040	
Type/Frame Product code		( 180MLA 6		Calc. ref.	3GZH021018-18	•
		183 410-ADDIN	•	Frequency (Hz)	50	٨
Rated output P <sub>N</sub>	15	kW		Rated current I <sub>N</sub>	31.8	Α
Гуре of duty	S1 100	70				
J <sub>motor</sub> (kgm2)	0.21		Voltage (V) 100%	415	Voltage (V)	415V(100%)
J <sub>load</sub> (kgm2)			T <sub>start</sub> /T <sub>N</sub>	1.8	$T_{\text{start}}/T_{\text{N}}$	1.8
Speed (r/min)	972		Starting time (s)	0.1	Starting time (s)	
T <sub>N</sub> (Nm)	147		Speed (r/min)		Speed (r/min)	1449
T <sub>load</sub> (Nm)			$I_s/I_n$	6	$I_s/I_n$	6
			$T_{max}/T_n$	2.8	$T_{max}/T_n$	2.8
2.5 E/S 2 1.5						5 4 <u>C</u> <u>C</u> <u>C</u> 3 3 2 2
0 +						
0		250	500 Speed	750 (r/min)	1000	1250
	TN	Motori in 415	1		TMotorU2 41EV/	100%)
	TMotorUn 415V			TMotorU2 415V(1		
	<b></b> IMotorUn 415V			IMotorU2 415V(1		( V 10/ )

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		Project		Location	Location		
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ype of product	TEEC	A 3-nhase sa	12/8/2020 uirrel cage induction	untitled.xlsm		4(3)	
ype/Frame		3-pnase, sq. ( 180MLA 6	uniter cage induction	Calc. ref.	3GZH021018-18	3	
roduct code		183 410-ADD	IN	Frequency (Hz)	50	,	
ated output P <sub>N</sub>	15	kW		Rated current I <sub>N</sub>	31.8	Α	
ype of duty	S1 100			IN	0.110	,	
(1,5,5,5,0)	2.24		V-1/ (V) 4000/	445	\/-\(\sigma = \cdot \O \O \)	4451//4000/1	
motor (kgm2)	0.21		Voltage (V) 100%	415	Voltage (V)	415V(100%)	
oad (kgm2)	0=0		T <sub>start</sub> /T <sub>N</sub>	1.8	T <sub>start</sub> /T <sub>N</sub>	1.8	
peed (r/min)	972		Starting time (s)	0.1	Starting time (s)	1110	
N (Nm)	147		Speed (r/min)		Speed (r/min)	1449	
<sub>load</sub> (Nm)			I <sub>s</sub> /I <sub>n</sub>	6	I <sub>s</sub> /I <sub>n</sub>	6	
			$T_{max}/T_n$	2.8	$T_{max}/T_n$	2.8	
1200						250	
						-	
						1	
1000						200	
						[ 200	
						-	
800							
						1 150	
[md						II	
Speed [rpm]						Current [A]	
) J						j jij	
<u>s</u>						100	
400						.55	
400							
						1	
						1 50	
200							
						)	
						' ]	
0						0	
0	0.01	0.02	0.03 0.0		0.06 0.0	0.08	
			Starting <sup>-</sup>	Time [s]			
			eed [rnm]		Current [A]		
		<b></b> 5p	eed [rpm]		Current [A]		

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Гуре/Frame		180MLA 6	rer dage induction i	Calc. ref.	3GZH021018-18	3	
Product code		83 410-ADDIN		Frequency (Hz)	50	•	
Rated output P <sub>N</sub>	15	kW		Rated current I <sub>N</sub>	31.8	Α	
ype of duty	S1 100°				31.0	Λ	
(kam2)	0.24		Voltage (V) 40001	445	\/olto== /\/\	44EV/4000/1	
J <sub>motor</sub> (kgm2)	0.21		Voltage (V) 100%	415	Voltage (V)	415V(100%)	
J <sub>load</sub> (kgm2)	•		T <sub>start</sub> /T <sub>N</sub>	1.8	T <sub>start</sub> /T <sub>N</sub>	1.8	
Speed (r/min)	972		Withstand cold(s)	33	Withstand hot (s	•	
Γ <sub>N</sub> (Nm)	147		Speed (r/min)		Speed (r/min)	1449	
Γ <sub>load</sub> (Nm)			$I_s/I_n$	6	$I_s/I_n$	6	
			$T_{max}/T_n$	2.8	$T_{max}/T_n$	2.8	
100							
Stall Time [s]		=====	_++	=======		=====	
Stall							
1							
		======	=				
0.1							
0	100	200	300 400 Curre	500 600 ent [%]	700	800 900	