



Project		Location	
Department/Author	Customer name	Customer ref.	Item name
Our ref.	Rev/Changed by	Date of issue	Saving ident
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No.	Definition	Data	Unit	Remarks
1	Product	TEFC, 3-phase, squirrel cage induction motor		
2	Product code	EMM16756-AP (3GAA163051-ADK+011+332+509)		
3	Type/Frame	M3AA 160 MLA 6		
4	Mounting	IM1001, B3(foot)		
5	Rated output P _N	7.5	kW	
6	Service factor	1		
7	Type of duty	S1(IEC) 100%		
8	Rated voltage U _N	400	VD	± 5 % (IEC 60034-1)
9	Rated frequency f _N	50	Hz	± 2 % (IEC 60034-1)
10	Rated speed n _N	980	r/min	
11	Rated current I _N	15.2	A	
12	No-load current	7.1	A	
13	Starting current I _s /I _N	7.9		Fullfilled IEC 60034-12 design N,H
14	Nominal torque T _N	73	Nm	
15	Locked rotor torque T _S /T _N	1.7		
16	Maximum torque T _{max} /T _N	3.3		
17	Minimum torque T _{min} /T _N	1.1		
18	Speed at minimum torque	180	r/min	
19	Load characteristics (IEC 60034-2-1:2007)	Load %	Current A	Efficiency %
20	PLL determined from residual loss	100	15.2	90.8 / IE3
21		75	12.3	91.5
22		50	9.7	91
23		Start	120	0.47
24	Maximum starting time from hot	20	s	
25	Maximum starting time from cold	40	s	
26	Insulation class / Temperature class	F / B		
27	Ambient temperature	40	°C	
28	Altitude	1000	m.a.s.l.	
29	Enclosure	IP55		
30	Cooling system	IC411 self ventilated		
31	Bearing DE/NDE	6309-2Z/C3 - 6209-2Z/C3		
32	Type of Grease	Greased for life		
33	Sound pressure level (LP dB(A) 1m)	59	dB(A)	at load
34	Moment of inertia J = ¼ GD2	0.114	kg-m2	
35	Balancing	Half Key		
36	Vibration class	Grade A		
37	Position of terminal box	Top		
38	Terminal box entries; no, dimens.	2xM40x1.5 + 1xM16x1.5		
39	Number of power terminals	6		
40	Direction of rotation	CW or CCW		
41	Total weight of motor	125	kg	
42				

Variant Codes / Definition

011 = Fulfilling CSA Energy Efficiency Verification IE3 (code 010 included)
 332 = Baldor catalog number
 509 = Fulfilling EISA Subtype I efficiency requirements, CC031A

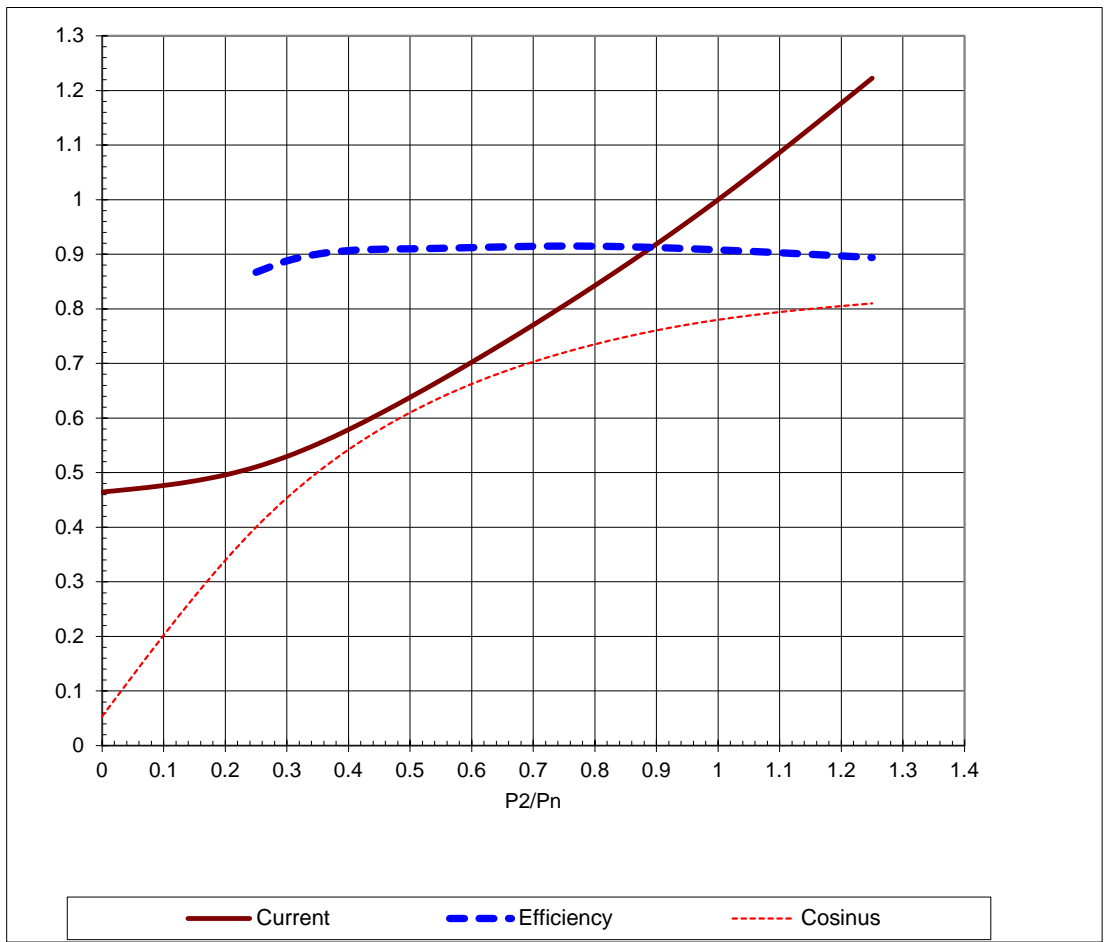
Remarks:

Data based on situation 6/18/2012
 All data subject to tolerances in accordance with IEC
 Guaranteed values on request


ABB Motors and Generators	Load Curves		
	Project	Location	
Department/Author	Customer name	Customer ref.	Item name
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Product TEFC, 3-phase, squirrel cage induction motor
Type/Frame M3AA 160 MLA 6
Product code EMM16756-AP
Rated output P_N 7.5 kW
Type of duty S1(IEC) 100%

Voltage (V) 400 **Current I_N (A)** 15.2 **Power factor at P_N** 0.78
Frequency (Hz) 50 **Speed (r/min)** 980 **Efficiency (%) at P_N** 90.8



Load characteristics (IEC 60034-2-1:2007)
 Data based on situation 6/18/2012
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ABB Motors and Generators	Starting Curves			
	Project	Location		
Department/Author	Customer name	Customer ref.	Item name	
Our ref.	Rev/Changed b Date of issue	Saving ident	Pages 3(3)	
Type of product	TEFC, 3-phase, squirrel cage induction motor			
Type/Frame	M3AA 160 MLA 6			
Product code	EMM16756-AP	Frequency (Hz)	50	
Rated output P _N	7.5 kW	Rated current I _N	15.2	A
Type of duty	S1(IEC) 100%			
J _{motor} (kgm ²)	0.11	Voltage (V) 100%	400	Voltage (V) 400V(100%)
J _{load} (kgm ²)		T _{start} /T _N	1.7	T _{start} /T _N 1.7
Speed (r/min)	980	Starting time (s)		Run-up time (s)
T _N (Nm)	73	Speed (r/min)		Speed (r/min)
T _{load} (Nm)		I _s /I _n	7.9	I _s /I _n 7.9
Nbr. of consecutive starts		T _{max} /T _n	3.3	T _{max} /T _n 3.3

The graph plots torque (Ts/Tn) on the left y-axis (0.0 to 4.5) and current (Is/In) on the right y-axis (0 to 9) against speed (r/min) on the x-axis (0 to 1250). The torque curve (solid blue and red lines) starts at approximately 1.7 at 0 r/min, reaches a minimum of about 1.1 at 200 r/min, and then rises to a peak of about 3.3 at 800 r/min before dropping to 0 at 1000 r/min. The current curve (dashed purple and green lines) starts at approximately 8.0 at 0 r/min and decreases steadily to 0 at 1000 r/min.

Load characteristics (IEC 60034-2-1:2007)
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No.	Definition	Data	Unit	Remarks
1	Product	TEFC, 3-phase, squirrel cage induction motor		
2	Product code	EMM16756-AP (3GAA163051-ADK+011+332+509)		
3	Type/Frame	M3AA 160 MLA 6		
4	Mounting	IM1001, B3(foot)		
5	Rated output P _N	7.5	kW	
6	Service factor	1		
7	Type of duty	S1(IEC) 100%		
8	Rated voltage U _N	415	VD	± 5 % (IEC 60034-1)
9	Rated frequency f _N	50	Hz	± 2 % (IEC 60034-1)
10	Rated speed n _N	981	r/min	
11	Rated current I _N	14.8	A	
12	No-load current	7.7	A	
13	Starting current I _s /I _N	8.4		Fullfilled IEC 60034-12 design N,H
14	Nominal torque T _N	73	Nm	
15	Locked rotor torque T _S /T _N	1.9		
16	Maximum torque T _{max} /T _N	3.6		
17	Minimum torque T _{min} /T _N	1.2		
18	Speed at minimum torque	180	r/min	
19	Load characteristics (IEC 60034-2-1:2007)	Load %	Current A	Efficiency %
20	PLL determined from residual loss	100	14.8	91.0 / IE3
21		75	12	91.5
22		50	9.7	90.7
23		Start	125	0.48
24	Maximum starting time from hot	20	s	
25	Maximum starting time from cold	40	s	
26	Insulation class / Temperature class	F / B		
27	Ambient temperature	40	°C	
28	Altitude	1000	m.a.s.l.	
29	Enclosure	IP55		
30	Cooling system	IC411 self ventilated		
31	Bearing DE/NDE	6309-2Z/C3 - 6209-2Z/C3		
32	Type of Grease	Greased for life		
33	Sound pressure level (LP dB(A) 1m)	59	dB(A)	at load
34	Moment of inertia J = ¼ GD2	0.114	kg-m2	
35	Balancing	Half Key		
36	Vibration class	Grade A		
37	Position of terminal box	Top		
38	Terminal box entries; no, dimens.	2xM40x1.5 + 1xM16x1.5		
39	Number of power terminals	6		
40	Direction of rotation	CW or CCW		
41	Total weight of motor	125	kg	
42				

Variant Codes / Definition

- 011 = Fulfilling CSA Energy Efficiency Verification IE3 (code 010 included)
- 332 = Baldor catalog number
- 509 = Fulfilling EISA Subtype I efficiency requirements, CC031A

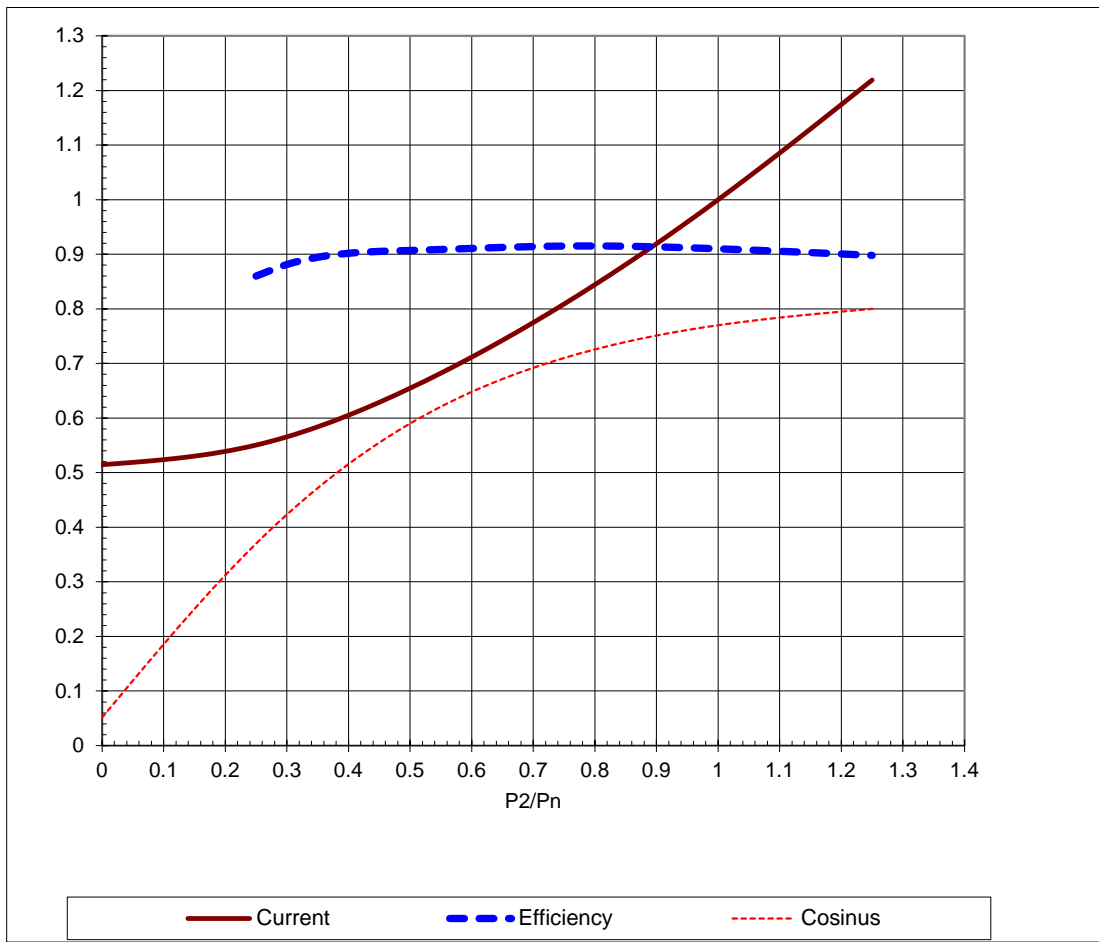
Remarks:

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ABB Motors and Generators	Load Curves		
	Project	Location	
Department/Author	Customer name	Customer ref.	Item name
Our ref.	Rev/Changed by	Date of issue	Saving ident
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Product TEFC, 3-phase, squirrel cage induction motor
Type/Frame M3AA 160 MLA 6
Product code EMM16756-AP
Rated output P_N 7.5 kW
Type of duty S1(IEC) 100%

Voltage (V) 415 **Current I_N (A)** 14.8 **Power factor at P_N** 0.77
Frequency (Hz) 50 **Speed (r/min)** 981 **Efficiency (%) at P_N** 91



Load characteristics (IEC 60034-2-1:2007)
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ABB Motors and Generators	Starting Curves			
	Project	Location		
Department/Author	Customer name	Customer ref.	Item name	
Our ref.	Rev/Changed b Date of issue	Saving ident	Pages 3(3)	
Type of product	TEFC, 3-phase, squirrel cage induction motor			
Type/Frame	M3AA 160 MLA 6			
Product code	EMM16756-AP	Frequency (Hz)	50	
Rated output P _N	7.5 kW	Rated current I _N	14.8	A
Type of duty	S1(IEC) 100%			
J _{motor} (kgm ²)	0.11	Voltage (V) 100%	415	Voltage (V) 415V(100%)
J _{load} (kgm ²)		T _{start} /T _N	1.9	T _{start} /T _N 1.9
Speed (r/min)	981	Starting time (s)		Run-up time (s)
T _N (Nm)	73	Speed (r/min)		Speed (r/min)
T _{load} (Nm)		I _s /I _n	8.4	I _s /I _n 8.4
Nbr. of consecutive starts		T _{max} /T _n	3.6	T _{max} /T _n 3.6

The graph plots torque (Ts/Tn) on the left y-axis (0.0 to 5.0) and current (Is/In) on the right y-axis (0 to 10) against speed (r/min) on the x-axis (0 to 1250). Two torque curves are shown: a solid blue line for T_{MotorUn} 415V and a solid red line for T_{MotorU2} 415V(100%). Two current curves are shown: a dashed purple line for I_{MotorUn} 415V and a dashed green line for I_{MotorU2} 415V(100%). The torque curves show a minimum around 200 r/min and a maximum around 850 r/min. The current curves show a peak around 850 r/min and drop to zero at 1000 r/min.

Load characteristics (IEC 60034-2-1:2007)
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No.	Definition	Data	Unit	Remarks
1	Product	TEFC, 3-phase, squirrel cage induction motor		
2	Product code	EMM16756-AP (3GAA163051-ADK+011+332+509)		
3	Type/Frame	M3AA 160 MLA 6		
4	Mounting	IM1001, B3(foot)		
5	Rated output P _N	7.5	kW	
6	Service factor	1		
7	Type of duty	S1(IEC) 100%		
8	Rated voltage U _N	690	VY	± 5 % (IEC 60034-1)
9	Rated frequency f _N	50	Hz	± 2 % (IEC 60034-1)
10	Rated speed n _N	980	r/min	
11	Rated current I _N	8.8	A	
12	No-load current	4.1	A	
13	Starting current I _s /I _N	7.9		Fullfilled IEC 60034-12 design N,H
14	Nominal torque T _N	73	Nm	
15	Locked rotor torque T _S /T _N	1.7		
16	Maximum torque T _{max} /T _N	3.3		
17	Minimum torque T _{min} /T _N	1.1		
18	Speed at minimum torque	180	r/min	
19	Load characteristics (IEC 60034-2-1:2007)	Load %	Current A	Efficiency %
20	PLL determined from residual loss	100	8.8	90.8 / IE3
21		75	7.1	91.5
22		50	5.6	91
23		Start	70	0.47
24	Maximum starting time from hot	20	s	
25	Maximum starting time from cold	40	s	
26	Insulation class / Temperature class	F / B		
27	Ambient temperature	40	°C	
28	Altitude	1000	m.a.s.l.	
29	Enclosure	IP55		
30	Cooling system	IC411 self ventilated		
31	Bearing DE/NDE	6309-2Z/C3 - 6209-2Z/C3		
32	Type of Grease	Greased for life		
33	Sound pressure level (LP dB(A) 1m)	59	dB(A)	at load
34	Moment of inertia J = ¼ GD2	0.114	kg-m2	
35	Balancing	Half Key		
36	Vibration class	Grade A		
37	Position of terminal box	Top		
38	Terminal box entries; no, dimens.	2xM40x1.5 + 1xM16x1.5		
39	Number of power terminals	6		
40	Direction of rotation	CW or CCW		
41	Total weight of motor	125	kg	
42				

Variant Codes / Definition

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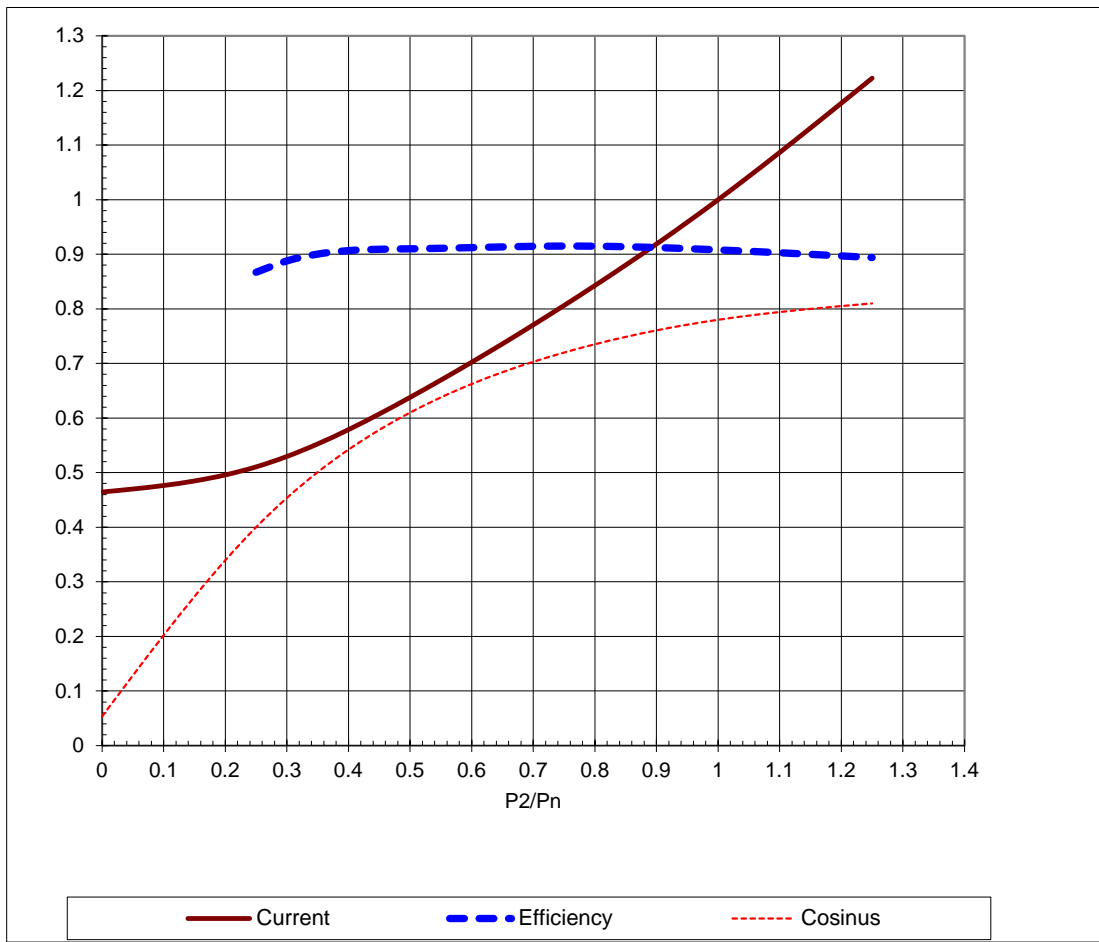
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ABB Motors and Generators	Load Curves		
	Project	Location	
Department/Author	Customer name	Customer ref.	Item name
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Product TEFC, 3-phase, squirrel cage induction motor
Type/Frame M3AA 160 MLA 6
Product code EMM16756-AP
Rated output P_N 7.5 kW
Type of duty S1(IEC) 100%

Voltage (V) 690 **Current I_N (A)** 8.8 **Power factor at P_N** 0.78
Frequency (Hz) 50 **Speed (r/min)** 980 **Efficiency (%) at P_N** 90.8

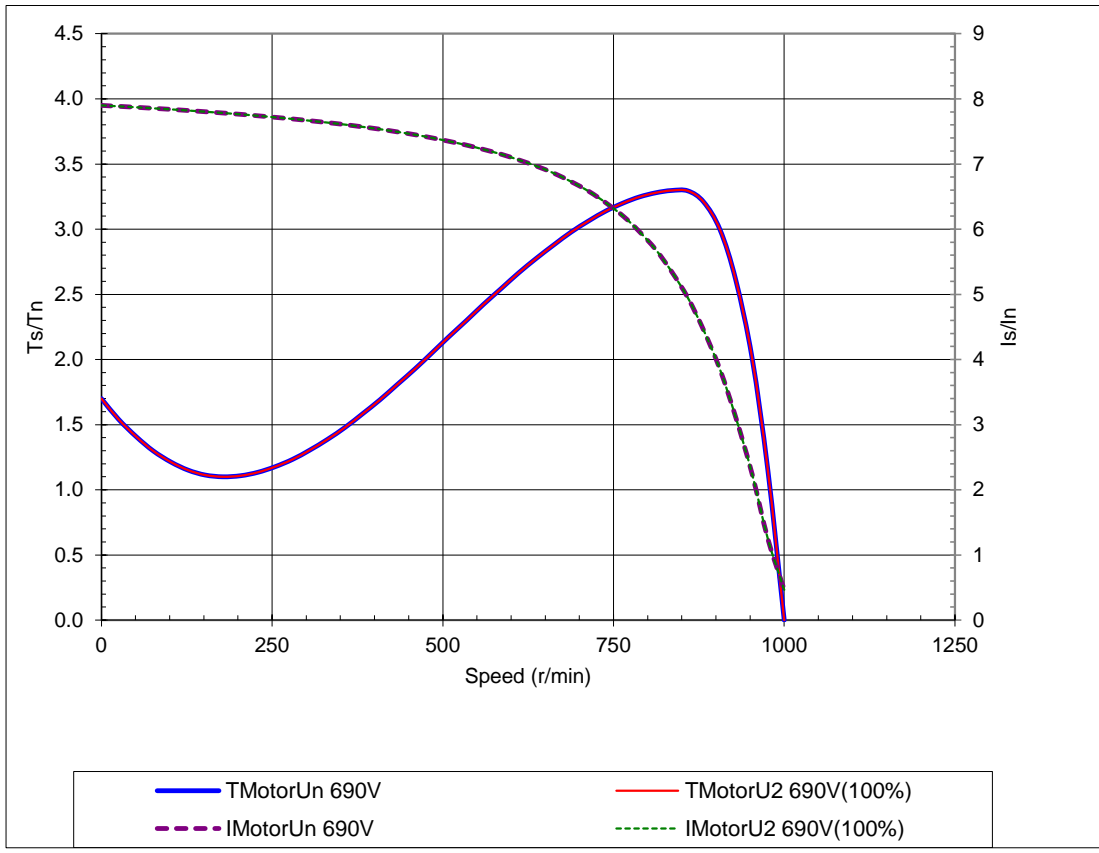


Load characteristics (IEC 60034-2-1:2007)
 Data based on situation 6/18/2012
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ABB Motors and Generators	Starting Curves		
	Project	Location	
Department/Author	Customer name	Customer ref.	Item name
Our ref.	Rev/Changed b Date of issue	Saving ident	Pages 3(3)

Type of product	TEFC, 3-phase, squirrel cage induction motor		
Type/Frame	M3AA 160 MLA 6		
Product code	EMM16756-AP	Frequency (Hz)	50
Rated output P _N	7.5 kW	Rated current I _N	8.8 A
Type of duty	S1(IEC) 100%		

J _{motor} (kgm ²)	0.11	Voltage (V) 100%	690	Voltage (V)	690V(100%)
J _{load} (kgm ²)		T _{start} /T _N	1.7	T _{start} /T _N	1.7
Speed (r/min)	980	Starting time (s)		Run-up time (s)	
T _N (Nm)	73	Speed (r/min)		Speed (r/min)	
T _{load} (Nm)		I _s /I _n	7.9	I _s /I _n	7.9
Nbr. of consecutive starts		T _{max} /T _n	3.3	T _{max} /T _n	3.3



Load characteristics (IEC 60034-2-1:2007)
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No.	Definition	Data	Unit	Remarks
1	Product	TEFC, 3-phase, squirrel cage induction motor		
2	Product code	EMM16756-AP (3GAA163051-ADK+011+332+509)		
3	Type/Frame	M3AA 160 MLA 6		
4	Mounting	IM1001, B3(foot)		
5	Rated output P _N	7.5	kW	
6	Service factor	1		
7	Type of duty	S1(IEC) 100%		
8	Rated voltage U _N	460	VD	± 5 % (IEC 60034-1)
9	Rated frequency f _N	60	Hz	± 2 % (IEC 60034-1)
10	Rated speed n _N	1182	r/min	
11	Rated current I _N	13.5	A	
12	No-load current	6.7	A	
13	Starting current I _s /I _N	8.6		Not within IEC 60034-12 design N,H
14	Nominal torque T _N	61	Nm	
15	Locked rotor torque T _S /T _N	1.8		
16	Maximum torque T _{max} /T _N	3.7		
17	Minimum torque T _{min} /T _N	1.2		
18	Speed at minimum torque	216	r/min	
19	Load characteristics (IEC 60034-2-1:2007)	Load %	Current A	Efficiency %
20	PLL determined from residual loss	100	13.5	91.4 / IE3
21		75	11	91.5
22		50	8.9	90.3
23		Start	116	0.42
24	Maximum starting time from hot	20	s	
25	Maximum starting time from cold	36	s	
26	Insulation class / Temperature class	F / B		
27	Ambient temperature	40	°C	
28	Altitude	1000	m.a.s.l.	
29	Enclosure	IP55		
30	Cooling system	IC411 self ventilated		
31	Bearing DE/NDE	6309-2Z/C3 - 6209-2Z/C3		
32	Type of Grease	Greased for life		
33	Sound pressure level (LP dB(A) 1m)	67	dB(A)	at load
34	Moment of inertia J = ¼ GD2	0.114	kg-m2	
35	Balancing	Half Key		
36	Vibration class	Grade A		
37	Position of terminal box	Top		
38	Terminal box entries; no, dimens.	2xM40x1.5 + 1xM16x1.5		
39	Number of power terminals	6		
40	Direction of rotation	CW or CCW		
41	Total weight of motor	125	kg	
42				

Variant Codes / Definition

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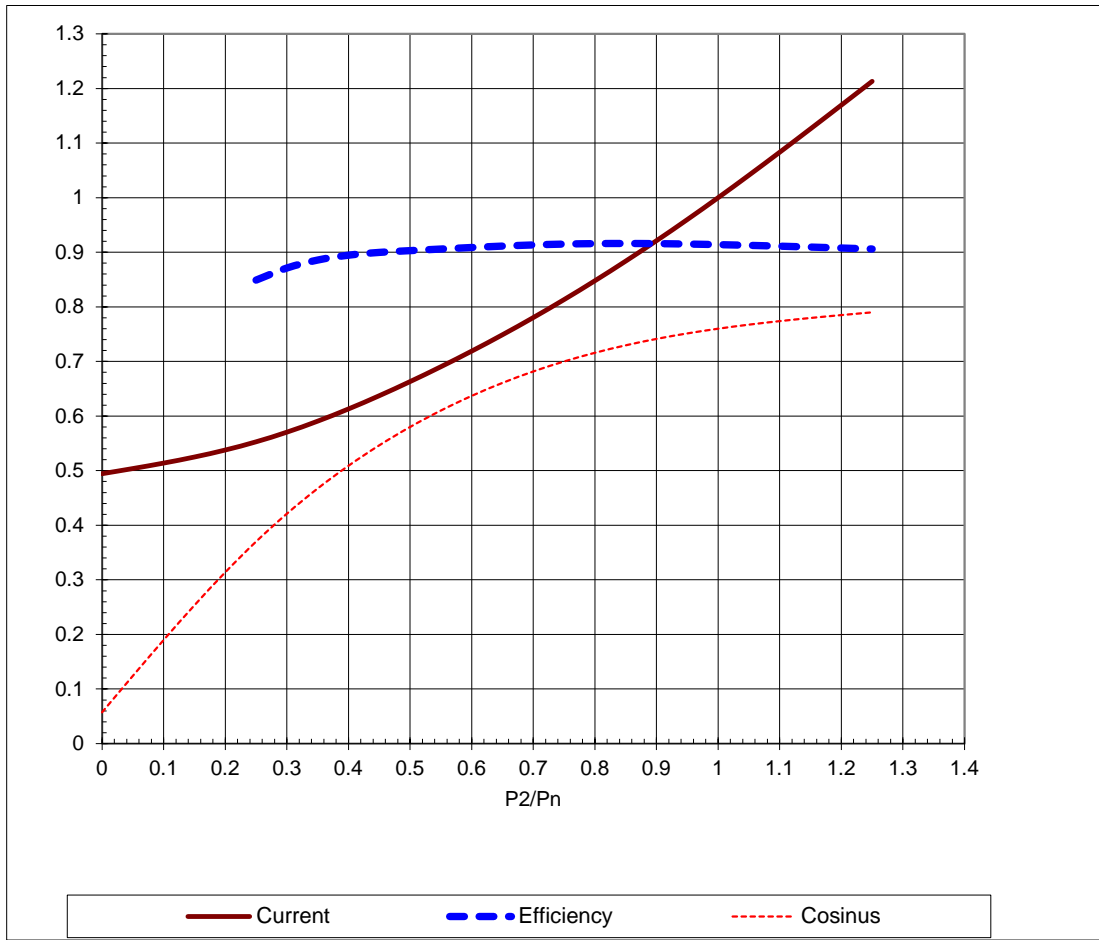
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Our ref.	Rev/Changed by	Date of issue	Saving ident
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Product TEFC, 3-phase, squirrel cage induction motor
Type/Frame M3AA 160 MLA 6
Product code EMM16756-AP
Rated output P_N 7.5 kW
Type of duty S1(IEC) 100%

Voltage (V) 460 **Current I_N (A)** 13.5 **Power factor at P_N** 0.76
Frequency (Hz) 60 **Speed (r/min)** 1182 **Efficiency (%) at P_N** 91.4



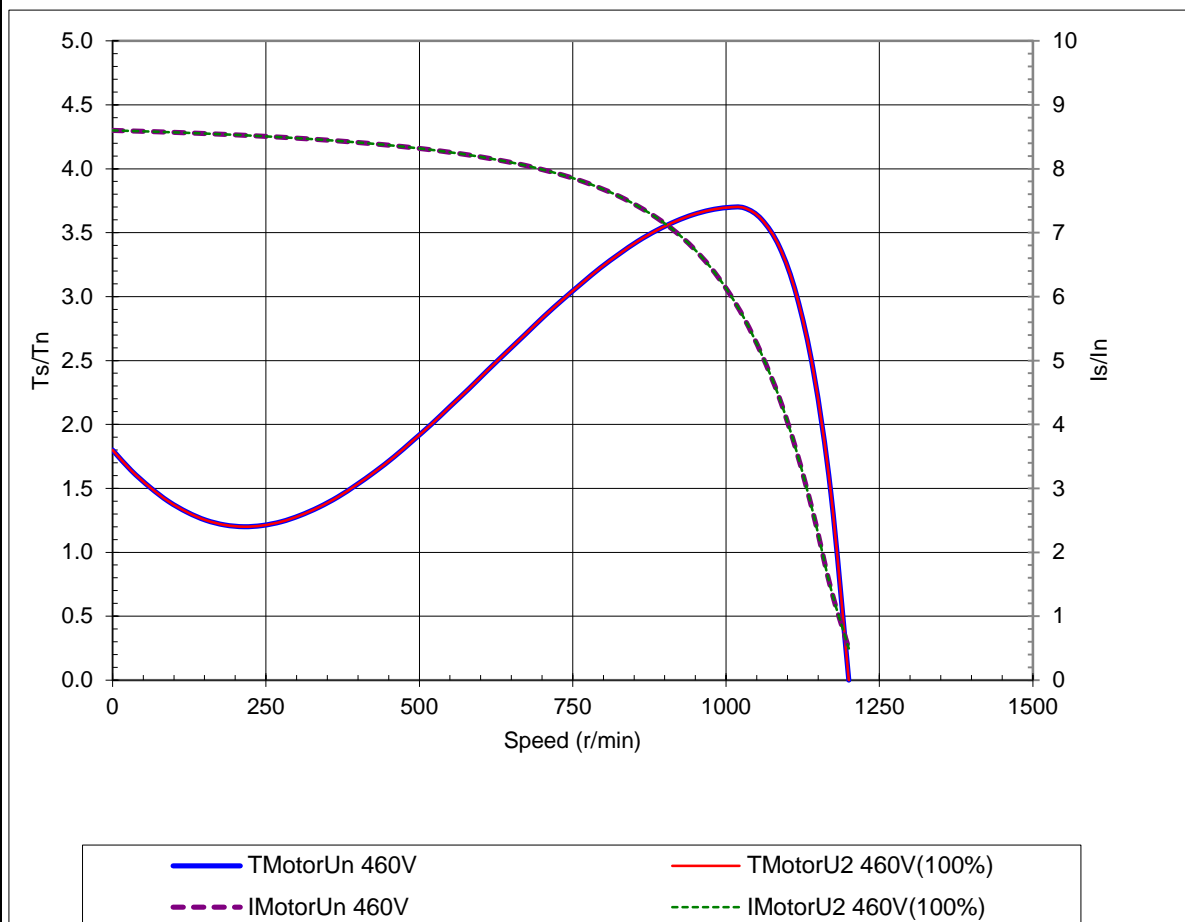
Load characteristics (IEC 60034-2-1:2007)
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	Project	Location	
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Our ref.	Rev/Changed b Date of issue	Saving ident	Pages 3(3)

Type of product	TEFC, 3-phase, squirrel cage induction motor		
Type/Frame	M3AA 160 MLA 6		
Product code	EMM16756-AP	Frequency (Hz)	60
Rated output P_N	7.5 kW	Rated current I_N	13.5 A
Type of duty	S1(IEC) 100%		

J_{motor} (kgm ²)	0.11	Voltage (V) 100%	460	Voltage (V)	460V(100%)
J_{load} (kgm ²)		T_{start}/T_N	1.8	T_{start}/T_N	1.8
Speed (r/min)	1182	Starting time (s)		Run-up time (s)	
T_N (Nm)	61	Speed (r/min)		Speed (r/min)	
T_{load} (Nm)		I_s/I_n	8.6	I_s/I_n	8.6
Nbr. of consecutive starts		T_{max}/T_n	3.7	T_{max}/T_n	3.7



Load characteristics (IEC 60034-2-1:2007)
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