ABB Motors and Generators	Technical Data Sheet - DOL			
	Project		Location	
Department/Author	Customer name		Customer ref.	Item name **1.00001**
Our ref.	Rev/Changed by **A**	Date of issue **1/19/2016**	Saving ident **untitled.xls**	Pages **1(3)**

No.	Definition	Data	Unit	Remarks	
1	Product	***TEFC, 3-phase, squirrel cage induction motor***			
2	Product code	***MM16114-PPN (3GBP162410-ADG+332+333)***		Calc. ref.	3GZF021016-253
3	Type/Frame	***M3BP 160MLA 4***			
4	Mounting	***IM1001, B3(foot)***			
5	Rated output P_N	***11***	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	***1466***	r/min		
11	Rated current I_N	***20.9***	A		
12	No-load current	***7.2***	A		
13	Starting current I_s/I_N	***6.8***		Fullfilled IEC 60034-12 design N,H	
14	Nominal torque T_N	***72***	Nm		
15	Locked rotor torque T_S/T_N	***2.2***			
16	Maximum torque T_{max}/T_N	***2.8***			
17	Minimum torque T_{min}/T_N	***1.4***			
18	Speed at minimum torque	***300***	r/min		
	Load characteristics (IEC 60034-2-1:2007)	Load %	Current A	Efficiency %	Power factor
19	PLL determined from residual loss	*100*	**20.9**	**90.4 / IE2**	**0.84**
20		*75*	**16.2**	**91.6**	**0.8**
21		*50*	**12.2**	**91.3**	**0.71**
22		*Start*	**142**		**0.48**
23	Maximum starting time from hot	***15***	s		
24	Maximum starting time from cold	***27***	s		
25	Insulation class / Temperature class	***F / B***			
26	Ambient temperature	***40***	°C		
27	Altitude	***1000***	m.a.s.l.		
28	Enclosure	***IP55***			
29	Cooling system	***IC411 self ventilated***			
30	Bearing DE/NDE	***6309/C3 - 6209/C3***			
31	Type of Grease				
32	Sound pressure level (LP dB(A) 1m)	***62***	dB(A)	at load	
33	Moment of inertia J = ¼ GD2	***0.081***	kg-m2		
34	Balancing				
35	Vibration class				
36	Position of terminal box	***Top***			
37	Terminal box entries; no, dimens.				
38	Number of power terminals				
39	Direction of rotation	***CW or CCW***			
40	Total weight of motor	***135***	kg		
41	Dimension drawing no.				
42					
43					
44					
45					
Ex-motors					
46					
47					
48					

Option Variant Codes / Definition

49	332 = Baldor Catalog number stamped on rating plate
50	333 = Not for use in the USA
51	
52	

Remarks:

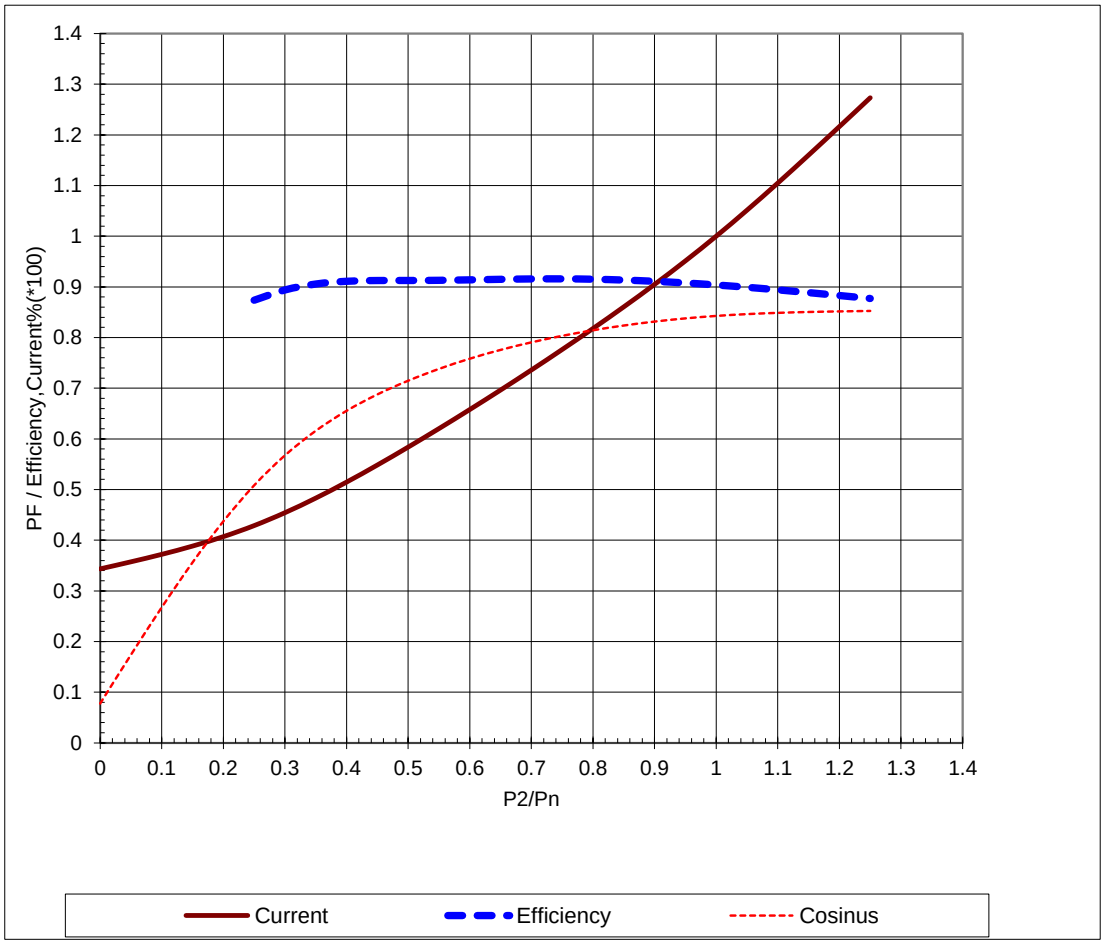
Data based on situation 8/7/2015
All data subject to tolerances in accordance with IEC
Guaranteed values on request

ABB Motors and Generators Load Curves

	Project	Location	
Department/Author	Customer name	Customer ref.	Item name **1.00001**
Our ref.	Rev/Changed by Date of issue **A** **1/19/2016**	Saving ident **untitled.xls**	Pages **2(3)**

Product	**TEFC, 3-phase, squirrel cage induction motor**		
Type/Frame	**M3BP 160MLA 4**	Calc. ref.	**3GZF021016-253**
Product code	**3GBP 162 410-ADG**		
Rated output P_N	**11** kW		
Type of duty	**S1(IEC) 100%**		

Voltage (V)	**400**	Current I_N (A)	**20.9**	Power factor at P_N	**0.84**
Frequency (Hz)	**50**	Speed (r/min)	**1466**	Efficiency (%) at P_N	**90.4**



Load characteristics (IEC 60034-2-1:2007)
Data based on situation 8/7/2015

All data subject to tolerances in accordance with IEC

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	Saving ident	Pages
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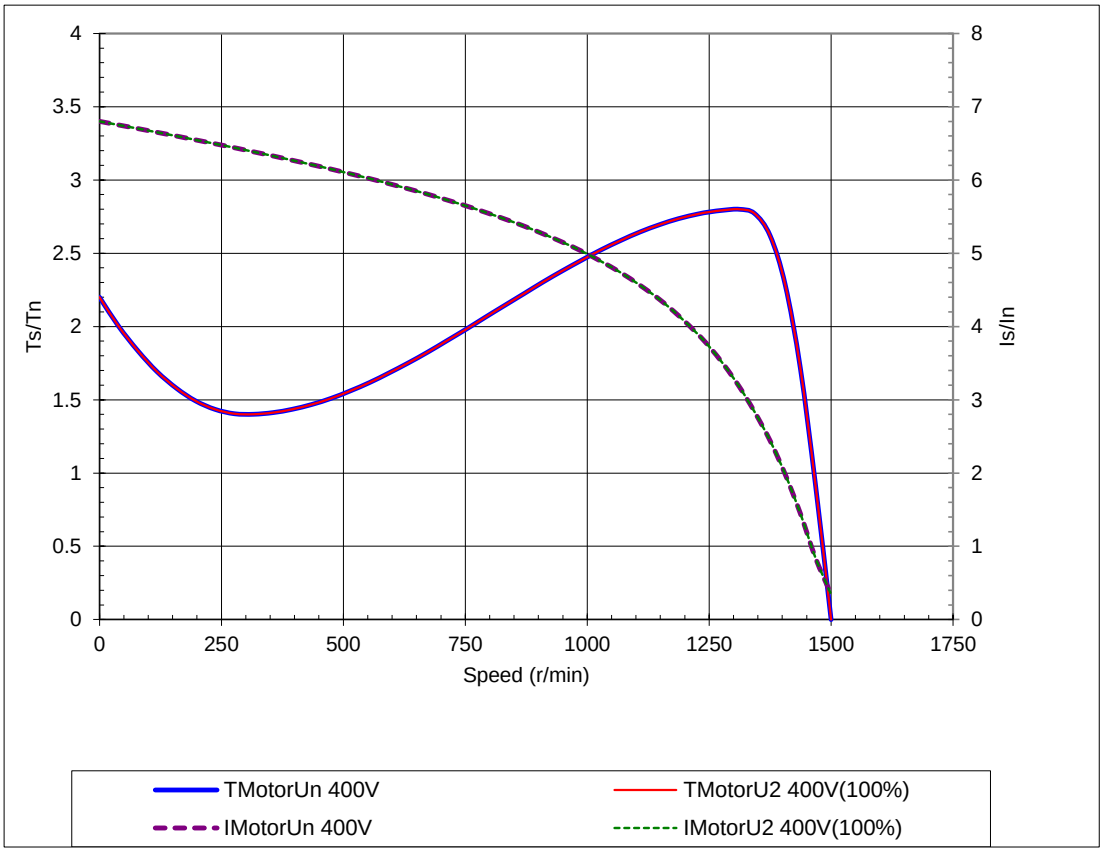
Type of product	**TEFC, 3-phase, squirrel cage induction motor**			
Type/Frame	**M3BP 160MLA 4**	Calc. ref.	3GZF021016-253	
Product code	**3GBP 162 410-ADG**	Frequency (Hz)	**50**	
Rated output P_N	**11** kW	Rated current I_N	**20.9**	A
Type of duty	**S1(IEC) 100%**			

J_{motor} (kgm2)	**0.081**	Voltage (V) 100%	***400***	Voltage (V)	***400V(100%)***
J_{load} (kgm2)		T_{start}/T_N	***2.2***	T_{start}/T_N	***2.2***
Speed (r/min)	**1466**	Starting time (s)		Starting time (s)	
T_N (Nm)	**72**	Speed (r/min)		Speed (r/min)	
T_{load} (Nm)		I_s/I_n	***6.8***	I_s/I_n	***6.8***
Nbr. of Consecutive Starts at UN		T_{max}/T_n	***2.8***	T_{max}/T_n	***2.8***



Load characteristics (IEC 60034-2-1:2007)
Data based on situation 8/7/2015

All data subject to tolerances in accordance with IEC

ABB Motors and Generators	Technical Data Sheet - DOL			
	Project		Location	
Department/Author	Customer name		Customer ref.	Item name **1.00001**
Our ref.	Rev/Changed by **A**	Date of issue **1/19/2016**	Saving ident **untitled.xls**	Pages **1(3)**

No.	Definition	Data	Unit	Remarks	
1	Product	***TEFC, 3-phase, squirrel cage induction motor***			
2	Product code	***MM16114-PPN (3GBP162410-ADG+332+333)***		Calc. ref.	3GZF021016-253
3	Type/Frame	***M3BP 160MLA 4***			
4	Mounting	***IM1001, B3(foot)***			
5	Rated output P_N	***11***	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	***1470***	r/min		
11	Rated current I_N	***20.3***	A		
12	No-load current	***7.8***	A		
13	Starting current I_s/I_N	***7.3***		Fullfilled IEC 60034-12 design N,H	
14	Nominal torque T_N	***71***	Nm		
15	Locked rotor torque T_S/T_N	***2.4***			
16	Maximum torque T_{max}/T_N	***3***			
17	Minimum torque T_{min}/T_N	***1.4***			
18	Speed at minimum torque	***300***	r/min		
	Load characteristics (IEC 60034-2-1:2007)	Load %	Current A	Efficiency %	Power factor
19	PLL determined from residual loss	*100*	**20.3**	**90.7 / IE2**	**0.83**
20		*75*	**16**	**91.6**	**0.78**
21		*50*	**12.3**	**91.1**	**0.69**
22		*Start*	**148**		**0.49**
23	Maximum starting time from hot	***15***	s		
24	Maximum starting time from cold	***27***	s		
25	Insulation class / Temperature class	***F / B***			
26	Ambient temperature	***40***	°C		
27	Altitude	***1000***	m.a.s.l.		
28	Enclosure	***IP55***			
29	Cooling system	***IC411 self ventilated***			
30	Bearing DE/NDE	***6309/C3 - 6209/C3***			
31	Type of Grease				
32	Sound pressure level (LP dB(A) 1m)	***62***	dB(A)	at load	
33	Moment of inertia J = ¼ GD2	***0.081***	kg-m2		
34	Balancing				
35	Vibration class				
36	Position of terminal box	***Top***			
37	Terminal box entries; no, dimens.				
38	Number of power terminals				
39	Direction of rotation	***CW or CCW***			
40	Total weight of motor	***135***	kg		
41	Dimension drawing no.				
42					
43					
44					
45					
Ex-motors					
46					
47					
48					

Option Variant Codes / Definition

49	332 = Baldor Catalog number stamped on rating plate
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Remarks:

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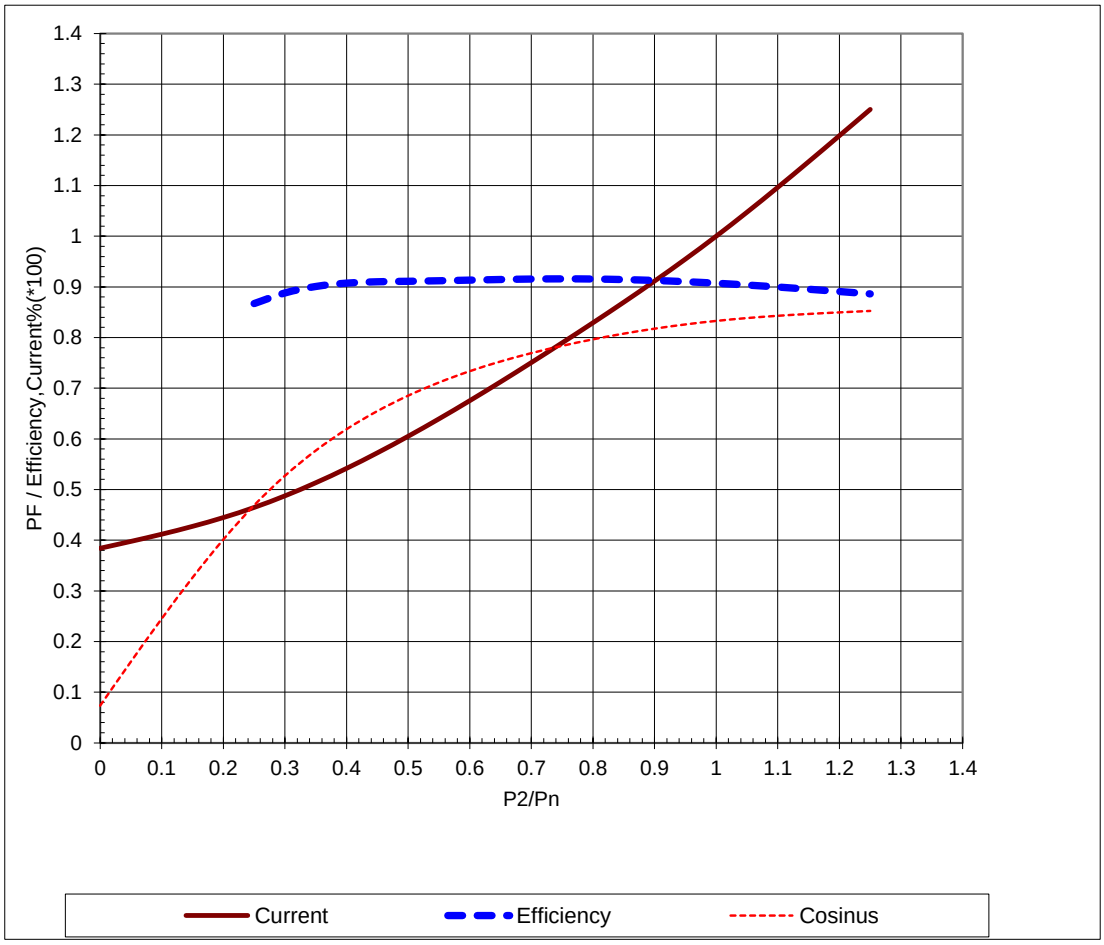
Guaranteed values on request

ABB Motors and Generators Load Curves

	Project	Location	
Department/Author	Customer name	Customer ref.	Item name **1.00001**
Our ref.	Rev/Changed by Date of issue **A** **1/19/2016**	Saving ident **untitled.xls**	Pages **2(3)**

Product	**TEFC, 3-phase, squirrel cage induction motor**		
Type/Frame	**M3BP 160MLA 4**	Calc. ref.	**3GZF021016-253**
Product code	**3GBP 162 410-ADG**		
Rated output P_N	**11** kW		
Type of duty	**S1(IEC) 100%**		

Voltage (V)	**415**	Current I_N (A)	**20.3**	Power factor at P_N	**0.83**
Frequency (Hz)	**50**	Speed (r/min)	**1470**	Efficiency (%) at P_N	**90.7**



Load characteristics (IEC 60034-2-1:2007)
Data based on situation 8/7/2015

All data subject to tolerances in accordance with IEC

ABB Motors and Generators Starting Curves

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Department/Author	Customer name	Customer ref.	Item name **1.00001**
Our ref.	Rev/Changed b Date of issue	Saving ident	Pages
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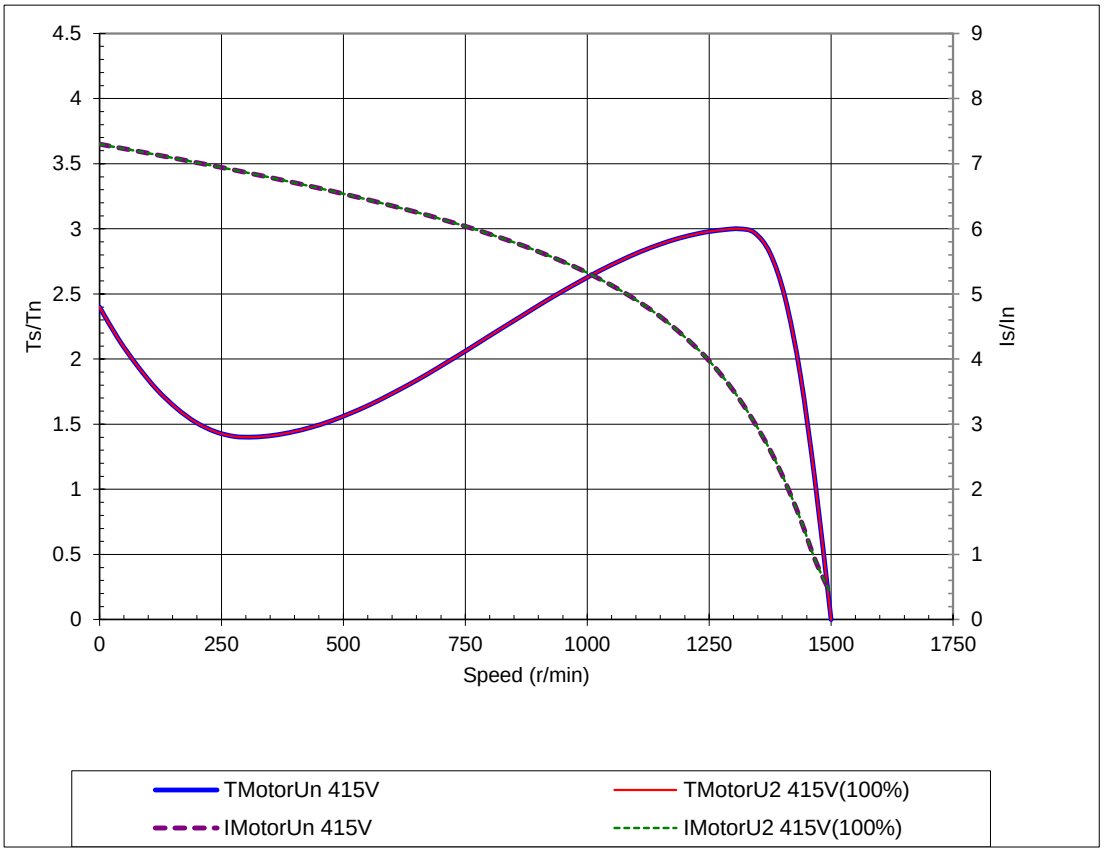
Type of product	**TEFC, 3-phase, squirrel cage induction motor**			
Type/Frame	**M3BP 160MLA 4**	Calc. ref.	3GZF021016-253	
Product code	**3GBP 162 410-ADG**	Frequency (Hz)	**50**	
Rated output P_N	**11** kW	Rated current I_N	**20.3**	A
Type of duty	**S1(IEC) 100%**			

J_{motor} (kgm2)	**0.081**	Voltage (V) 100%	***415***	Voltage (V)	***415V(100%)***
J_{load} (kgm2)		T_{start}/T_N	***2.4***	T_{start}/T_N	***2.4***
Speed (r/min)	**1470**	Starting time (s)		Starting time (s)	
T_N (Nm)	**71**	Speed (r/min)		Speed (r/min)	
T_{load} (Nm)		I_s/I_n	***7.3***	I_s/I_n	***7.3***
Nbr. of Consecutive Starts at UN		T_{max}/T_n	***3***	T_{max}/T_n	***3***



Load characteristics (IEC 60034-2-1:2007)
Data based on situation 8/7/2015

All data subject to tolerances in accordance with IEC

ABB Motors and Generators

Technical Data Sheet - DOL

	Project		Location	
Department/Author	Customer name		Customer ref.	Item name **1.00001**
Our ref.	Rev/Changed by **A**	Date of issue **1/19/2016**	Saving ident **untitled.xls**	Pages **1(3)**

No.	Definition	Data	Unit	Remarks	
1	Product	***TEFC, 3-phase, squirrel cage induction motor***			
2	Product code	***MM16114-PPN (3GBP162410-ADG+332+333)***		Calc. ref.	3GZF021016-253
3	Type/Frame	***M3BP 160MLA 4***			
4	Mounting	***IM1001, B3(foot)***			
5	Rated output P_N	***11***	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	***1466***	r/min		
11	Rated current I_N	***12.1***	A		
12	No-load current	***4.1***	A		
13	Starting current I_s/I_N	***6.8***		Fullfilled IEC 60034-12 design N,H	
14	Nominal torque T_N	***72***	Nm		
15	Locked rotor torque T_S/T_N	***2.2***			
16	Maximum torque T_{max}/T_N	***2.8***			
17	Minimum torque T_{min}/T_N	***1.5***			
18	Speed at minimum torque	***300***	r/min		
	Load characteristics (IEC 60034-2-1:2007)	Load %	Current A	Efficiency %	Power factor
19	PLL determined from residual loss	*100*	**12.1**	**90.4 / IE2**	**0.84**
20		*75*	**9.4**	**91.6**	**0.8**
21		*50*	**7.1**	**91.3**	**0.71**
22		*Start*	**82**		**0.48**
23	Maximum starting time from hot	***15***	s		
24	Maximum starting time from cold	***27***	s		
25	Insulation class / Temperature class	***F / B***			
26	Ambient temperature	***40***	°C		
27	Altitude	***1000***	m.a.s.l.		
28	Enclosure	***IP55***			
29	Cooling system	***IC411 self ventilated***			
30	Bearing DE/NDE	***6309/C3 - 6209/C3***			
31	Type of Grease				
32	Sound pressure level (LP dB(A) 1m)	***62***	dB(A)	at load	
33	Moment of inertia J = ¼ GD2	***0.081***	kg-m2		
34	Balancing				
35	Vibration class				
36	Position of terminal box	***Top***			
37	Terminal box entries; no, dimens.				
38	Number of power terminals				
39	Direction of rotation	***CW or CCW***			
40	Total weight of motor	***135***	kg		
41	Dimension drawing no.				
42					
43					
44					
45					
Ex-motors					
46					
47					
48					

Option Variant Codes / Definition

49	332 = Baldor Catalog number stamped on rating plate
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51	
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Remarks:

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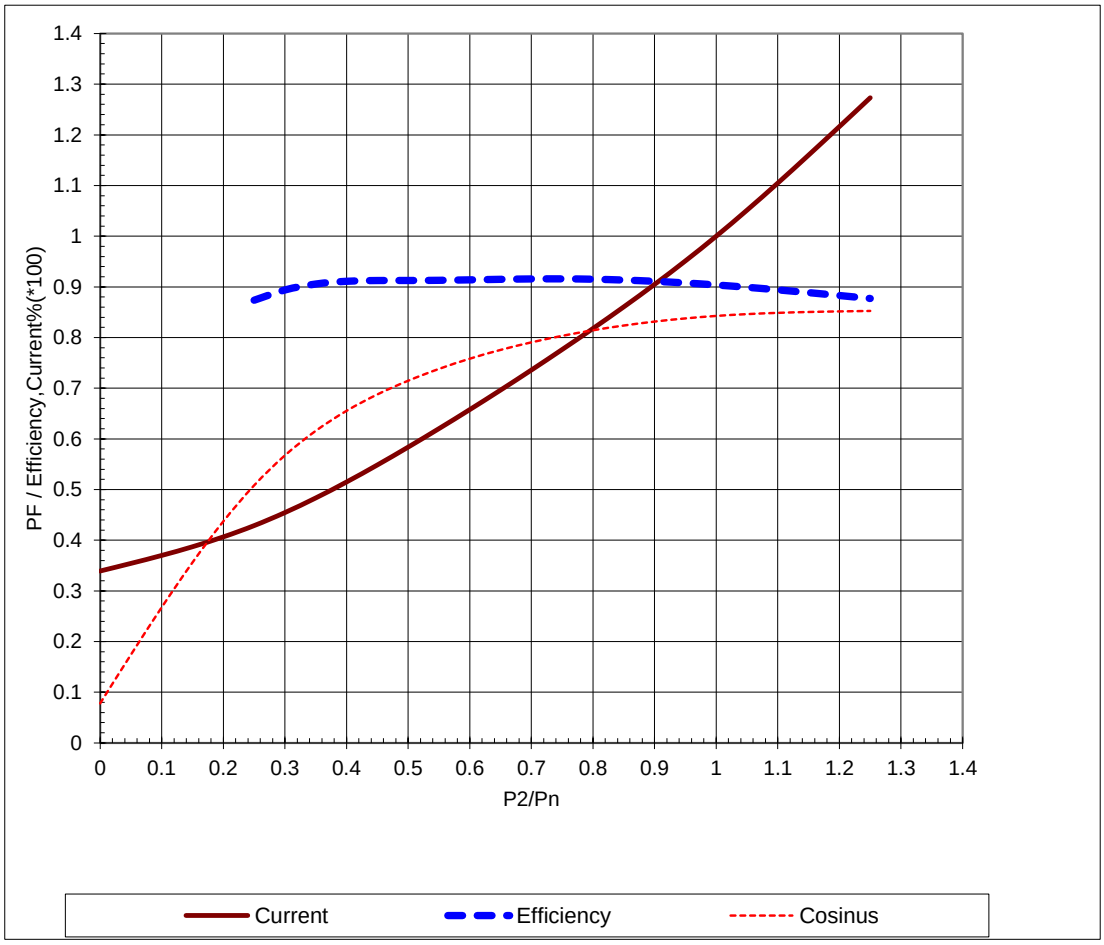
All data subject to tolerances in accordance with IEC
Guaranteed values on request

ABB Motors and Generators Load Curves

	Project	Location	
Department/Author	Customer name	Customer ref.	Item name **1.00001**
Our ref.	Rev/Changed by Date of issue **A** **1/19/2016**	Saving ident **untitled.xls**	Pages **2(3)**

Product	**TEFC, 3-phase, squirrel cage induction motor**		
Type/Frame	**M3BP 160MLA 4**	Calc. ref.	**3GZF021016-253**
Product code	**3GBP 162 410-ADG**		
Rated output P_N	**11** kW		
Type of duty	**S1(IEC) 100%**		

Voltage (V)	**690**	Current I_N (A)	**12.1**	Power factor at P_N	**0.84**
Frequency (Hz)	**50**	Speed (r/min)	**1466**	Efficiency (%) at P_N	**90.4**



Load characteristics (IEC 60034-2-1:2007)
Data based on situation 8/7/2015

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ABB Motors and Generators Starting Curves

	Project	Location	
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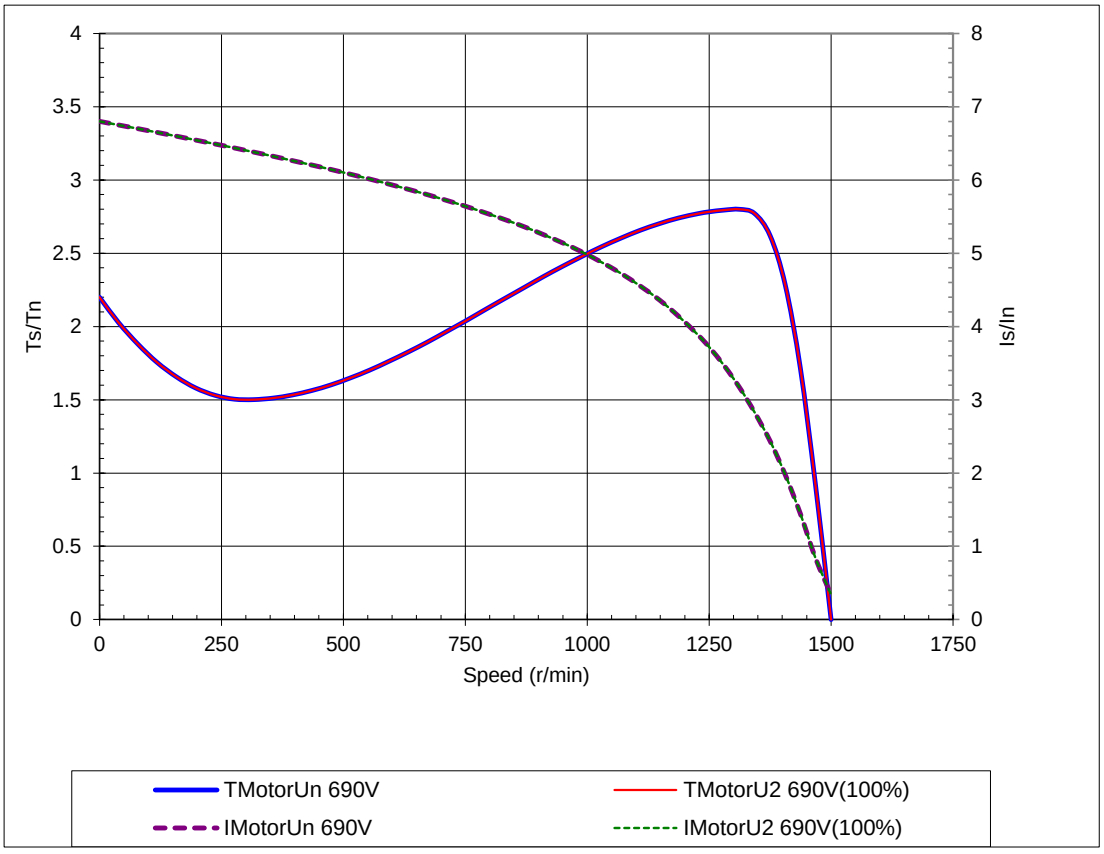
Type of product	**TEFC, 3-phase, squirrel cage induction motor**				
Type/Frame	**M3BP 160MLA 4**		Calc. ref.	3GZF021016-253	
Product code	**3GBP 162 410-ADG**		Frequency (Hz)	**50**	
Rated output P_N	**11**	kW	Rated current I_N	**12.1**	A
Type of duty	**S1(IEC) 100%**				

J_{motor} (kgm2)	**0.081**	Voltage (V) 100%	***690***	Voltage (V)	***690V(100%)***
J_{load} (kgm2)		T_{start}/T_N	***2.2***	T_{start}/T_N	***2.2***
Speed (r/min)	**1466**	Starting time (s)		Starting time (s)	
T_N (Nm)	**72**	Speed (r/min)		Speed (r/min)	
T_{load} (Nm)		I_s/I_n	***6.8***	I_s/I_n	***6.8***
Nbr. of Consecutive Starts at UN		T_{max}/T_n	***2.8***	T_{max}/T_n	***2.8***



Load characteristics (IEC 60034-2-1:2007)
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ABB Motors and Generators	Technical Data Sheet - DOL			
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No.	Definition	Data	Unit	Remarks	
1	Product	***TEFC, 3-phase, squirrel cage induction motor***			
2	Product code	***MM16114-PPN (3GBP162410-ADG+332+333)***		Calc. ref.	3GZF021016-253
3	Type/Frame	***M3BP 160MLA 4***			
4	Mounting	***IM1001, B3(foot)***			
5	Rated output P_N	***11***	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	***1772***	r/min		
11	Rated current I_N	***18.2***	A		
12	No-load current	***6.6***	A		
13	Starting current I_s/I_N	***7.7***		Fullfilled IEC 60034-12 design N,H	
14	Nominal torque T_N	***59***	Nm		
15	Locked rotor torque T_S/T_N	***2.4***			
16	Maximum torque T_{max}/T_N	***3.2***			
17	Minimum torque T_{min}/T_N	***1.7***			
18	Speed at minimum torque	***360***	r/min		
	Load characteristics (IEC 60034-2-1:2007)	Load %	Current A	Efficiency %	Power factor
19	PLL determined from residual loss	*100*	**18.2**	**91.3 / IE2**	**0.83**
20		*75*	**14.4**	**91.6**	**0.78**
21		*50*	**11**	**90.5**	**0.7**
22		*Start*	**140**		**0.44**
23	Maximum starting time from hot	***15***	s		
24	Maximum starting time from cold	***27***	s		
25	Insulation class / Temperature class	***F / B***			
26	Ambient temperature	***40***	°C		
27	Altitude	***1000***	m.a.s.l.		
28	Enclosure	***IP55***			
29	Cooling system	***IC411 self ventilated***			
30	Bearing DE/NDE	***6309/C3 - 6209/C3***			
31	Type of Grease				
32	Sound pressure level (LP dB(A) 1m)	***70***	dB(A)	at load	
33	Moment of inertia J = ¼ GD2	***0.081***	kg-m2		
34	Balancing				
35	Vibration class				
36	Position of terminal box	***Top***			
37	Terminal box entries; no, dimens.				
38	Number of power terminals				
39	Direction of rotation	***CW or CCW***			
40	Total weight of motor	***135***	kg		
41	Dimension drawing no.				
42					
43					
44					
45					
Ex-motors					
46					
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48					

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ABB Motors and Generators Load Curves

	Project	Location	
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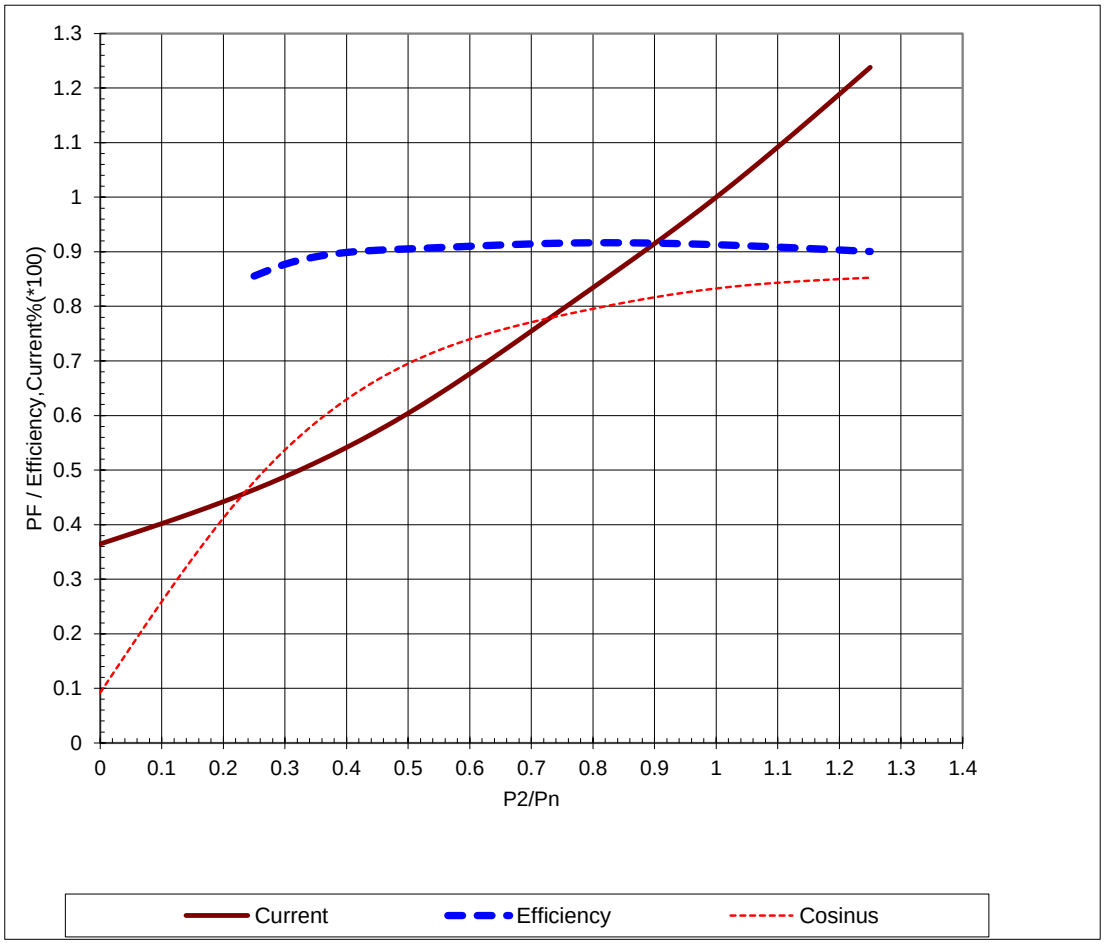
Product	**TEFC, 3-phase, squirrel cage induction motor**		
Type/Frame	**M3BP 160MLA 4**	Calc. ref.	**3GZF021016-253**
Product code	**3GBP 162 410-ADG**		
Rated output P_N	**11** kW		
Type of duty	**S1(IEC) 100%**		

Voltage (V)	**460**	Current I_N (A)	**18.2**	Power factor at P_N	**0.83**
Frequency (Hz)	**60**	Speed (r/min)	**1772**	Efficiency (%) at P_N	**91.3**



Load characteristics (IEC 60034-2-1:2007)
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ABB Motors and Generators Starting Curves

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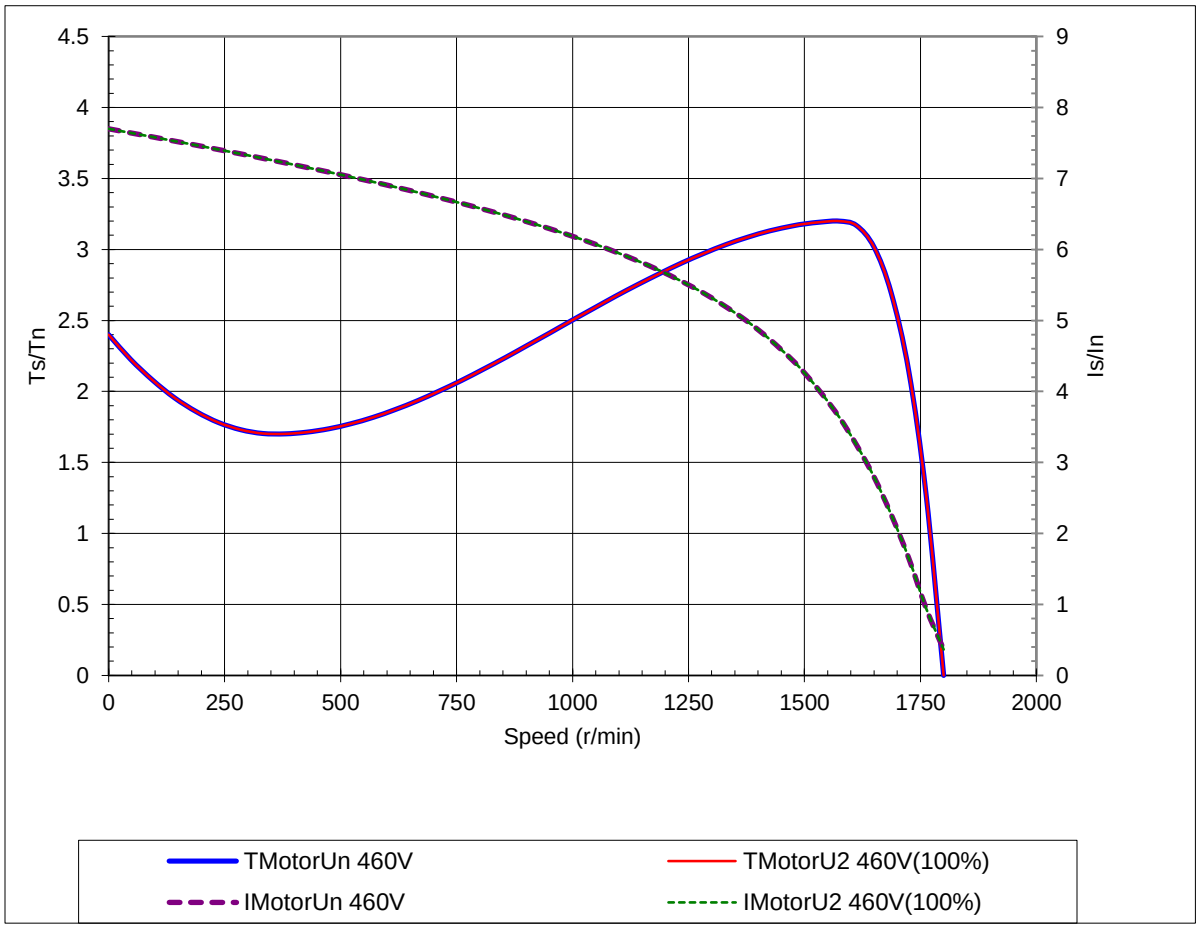
Type of product	**TEFC, 3-phase, squirrel cage induction motor**				
Type/Frame	**M3BP 160MLA 4**		Calc. ref.	3GZF021016-253	
Product code	**3GBP 162 410-ADG**		Frequency (Hz)	**60**	
Rated output P_N	**11**	kW	Rated current I_N	**18.2**	A
Type of duty	**S1(IEC) 100%**				

J_{motor} (kgm2)	**0.081**	Voltage (V) 100%	***460***	Voltage (V)	***460V(100%)***
J_{load} (kgm2)		T_{start}/T_N	***2.4***	T_{start}/T_N	***2.4***
Speed (r/min)	**1772**	Starting time (s)		Starting time (s)	
T_N (Nm)	**59**	Speed (r/min)		Speed (r/min)	
T_{load} (Nm)		I_s/I_n	***7.7***	I_s/I_n	***7.7***
Nbr. of Consecutive Starts at UN		T_{max}/T_n	***3.2***	T_{max}/T_n	***3.2***



Load characteristics (IEC 60034-2-1:2007)
Data based on situation 8/7/2015

All data subject to tolerances in accordance with IEC