

Catalog | October 2015

Low voltage
General performance cast iron
motors designed for 400 and
415 V 50 Hz

With expertise, and a comprehensive portfolio of products and life-cycle services, we help value-minded industrial customers improve their energy efficiency and productivity.



Low voltage General performance cast iron motors designed for 400 and 415 V 50 Hz

Sizes 71 to 250, 0.18 to 55 kW

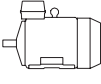
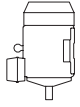
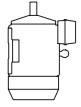
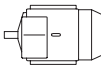
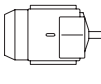
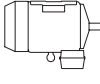
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General information

Mounting arrangements

Foot-mounted motor

Code I / code II

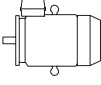
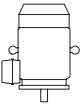
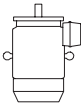
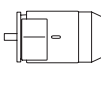
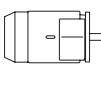
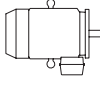
					
IM B3	IM V5	IM V6	IM B6	IM B7	IM B8
IM 1001	IM 1011	IM 1031	IM 1051	IM 1061	IM 1071

Product code pos. 12

A: foot-mounted, term.box top

Flange-mounted motor, large flange

Code I / code II

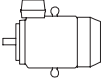
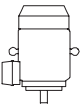
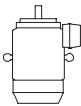
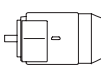
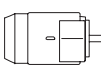
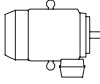
					
IM B5	IM V1	IM V3	*)	*)	*)
IM 3001	IM 3011	IM 3031	IM 3051	IM 3061	IM 3071

Product code pos. 12

B: flange mounted, large flange

Flange-mounted motor, small flange

Code I / code II

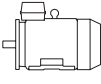
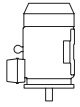
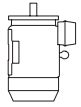
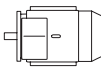
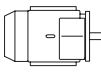
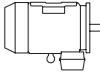
					
IM B14	IM V18	IM V19	*)	*)	*)
IM 3601	IM 3611	IM 3631	IM 3651	IM 3661	IM 3671

Product code pos. 12

047=B14 from B5

Foot- and flange-mounted motor with feet, large flange

Code I / code II

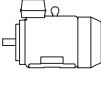
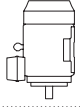
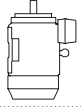
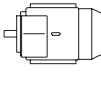
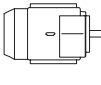
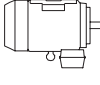
					
IM B35	IM V15	IM V35	*)	*)	*)
IM 2001	IM 2011	IM 2031	IM 2051	IM 2061	IM 2071

Product code pos. 12

009=B35 from B3

Foot- and flange-mounted motor with feet, small flange

Code I / code II

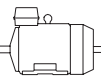
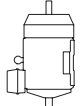
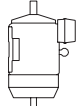
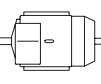
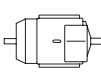
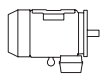
					
IM B34	IM V17	IM 2131	IM 2151	IM 2161	IM 2171
IM 2101	IM 2111	IM 2131	IM 2151	IM 2161	IM 2171

Product code pos. 12

008=B34 from B3

Foot-mounted motor, shaft with free extensions

Code I / code II

					
IM 1002	IM 1012	IM 1032	IM 1052	IM 1062	IM 1072

Product code pos. 12

*) Not stated in IEC 60034-7.

Note: If the motor is mounted shaft upwards, take measures to prevent water or any other liquid from running down the shaft into the motor.

General information

Cooling

Designation system concerning methods of cooling refers to standard IEC 60034-6.

Explanation of the product code

International Cooling	Circuit arrangement	Primary coolant	Method of movement of primary coolant	Secondary coolant	Method of movement of secondary coolant
IC	4	(A)	1	(A)	6
	1	2	3	4	5

Position 1

0:	Free circulation (open circuit)
4:	Free circulation (open circuit)

Position 2

A:	For air (omitted for simplified designation)
----	--

Position 3

0:	Free convection
1:	Self-circulation
6:	Machine-mounted independent component

Position 4

A:	For air (omitted for simplified designation)
W:	For water

Position 5

0:	Free convection
1:	Self-circulation
6:	Machine-mounted independent component
8:	Relative displacement

General information

Degrees of protection: IP code/IK code

Classification of degrees of protection provided by enclosures of rotating machines refers to:

- Standard IEC 60034-5 or EN 60529 for IP code
- Standard EN 50102 for IK code

IP protection

Protection of persons against getting in contact with (or approaching) live parts and against contact with moving parts inside the enclosure. Also protection of the machine against ingress of solid foreign objects. Protection of machines against the harmful effects due to the ingress of water.

Explanation of the IP code

Ingress protection	Degree of protection to persons and to parts of the motors inside the enclosure	Degree of protection provided by the enclosure with respect to harmful effects due to ingress of water
IP	5	5
	1	2

Position 1

2:	Motors protected against solid objects greater than 12 mm
4:	Motors protected against solid objects greater than 1 mm
5:	Dust-protected motors
6:	Dust-tight motors

Position 2

3:	Motors protected against spraying water
4:	Motors protected against splashing water
5:	Motors protected against water jets
6:	Motors protected against heavy seas

IK code

Classification of degrees of protection provided by enclosure for motors against external mechanical impacts.

Explanation of the IK code

International mechanical protection	Characteristic group
IK	08
	1

Position 1

Relation between IK code and impact energy:

IK code	Impact energy/Joule
0:	Not protected according to EN 50102
01:	0.15
02:	0.2
03:	0.35
04:	0.5
05:	0.7
06:	1
07:	2
08:	5 (ABB Standard)
09:	10
10:	20

General information

Insulation

ABB uses class F insulation, which, with temperature rise B, is the most common requirement among industry today.

The use of class F insulation with class B temperature rise gives ABB products a 25 °C safety margin. This can be used to increase the loading for limited periods, to operate at higher ambient temperatures or altitudes, or with greater voltage and frequency tolerances. It can also be used to extend insulation life. For instance, a 10 K temperature reduction will extend the insulation life.

Thermal class 130 (B)

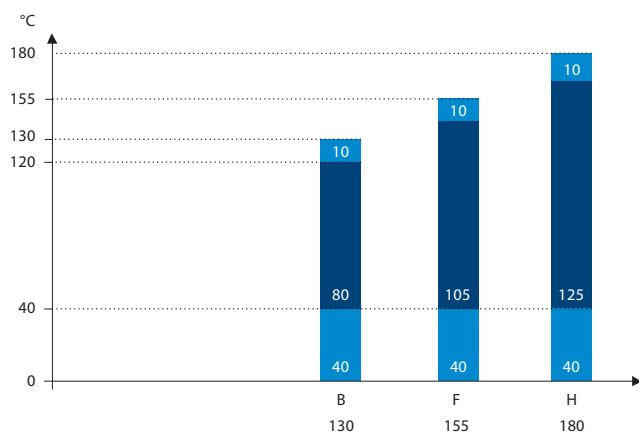
- Nominal ambient temperature 40 °C
- Max permissible temperature rise 80 K
- Hot spot temperature margin 10 K

Thermal class 155 (F)

- Nominal ambient temperature 40 °C
- Max permissible temperature rise 105 K
- Hot spot temperature margin 10 K

Thermal class 180 (H)

- Nominal ambient temperature 40 °C
- Max permissible temperature rise 125 K
- Hot spot temperature margin 10 K



Safety margins per thermal class

General information

Voltage and frequency

The impact on temperature rise caused by voltage and frequency fluctuation is defined in IEC 60034-1. The standard divides the combinations into two zones, A and B. Zone A is the combination of voltage deviation of +/-5 % and frequency deviation of +/-2 %. Zone B is the combination of voltage deviation of +/-10 % and frequency deviation of +/-3%. This is illustrated in figure below.

Motors are capable of supplying the rated torque in both zones A and B, but the temperature rise will be higher than at rated voltage and frequency. Motors can be run in zone B only for a short period of time.

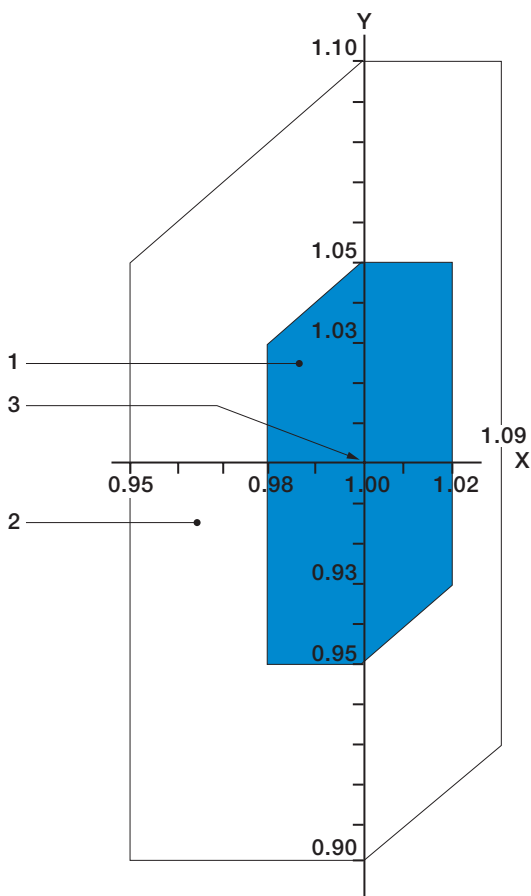


Figure Voltage and frequency deviation in zones A and B.

Key	
X axis	frequency p.u.
Y axis	voltage p.u.
1	zone A
2	zone B (outside zone A)
3	rating point

General performance IE1, IE2 and IE3 cast iron motors

Sizes 71 to 250, 0.18 to 55 kW

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Ordering information

Explanation of the product code

Motor type	Motor size	Product code	Mounting arrangement code, Voltage and frequency code, Generation code	Variant codes
M2BAX	112MA	3GBA 112 310	- ADD	002, etc.
		1 2 3 4 5 6 7 8 9 10 11 12 13 14		

When placing an order, specify motor type, size and product code according to the following example.

Example	
Motor type	M2BAX 112 MA
Pole number	4
Mounting arrangement (IM-code)	IM B3 (IM 1001)
Rated output	4 kW
Product code	3GBA 112 310-ADD
Variant codes if needed	

Positions 1 to 4

3GBA: Totally enclosed fan cooled squirrel cage motor with cast iron frame

Positions 5 and 6

IEC size	
07:	71
08:	80
09:	90
10:	100
11:	112
13:	132
16:	160
18:	180
20:	200
22:	225
25:	250
28:	280
31:	315
35:	355

Position 7

Speed (Pole pairs)	
1:	2 poles
2:	4 poles
3:	6 poles

Positions 8 to 10

Running number

Position 11

-(dash)

Position 12 (marked with black dot in data tables)

Mounting arrangement	
A:	Foot-mounted, top-mounted terminal box
B:	Flange-mounted, large flange

Position 13 (marked with black dot in data tables)

Voltage and frequency	
Single-speed motors	
D:	415 VΔ, 400 VΔ, 50 Hz
S:	415 VY, 400VΔ, 50 Hz

Position 14





A, B, C, E...= Generation code (with prefix IN for Indian design) followed by variant codes

Efficiency values are given according to IEC 60034-2-1; 2014





For detailed dimension drawings please see our web-pages 'www.abb.com/motors&generators' or contact ABB.

Rating plates

The motor's main rating plate shows the motor's performance values with various connections at nominal speed. The rating plate also shows the efficiency level (IE1, IE2, IE3), year of manufacture, and the lowest nominal efficiency at 100 % nominal load.

 IE1									
3 ~ Motor					M2BAX 160MLB6 IMB3/IM1001				
					↶				
2015					No.				
Amb 50°C					Ins.cl. F			IP 55	
V	Hz	r/min	kW	hp	A	cos φ	Eff.	Duty	
415 D ±10%	50±5%	972	11	15	22.9	0.78	86.4	S1	
Prod. code 3GBA163045-ADEIN									
					Nmax		r/min		
6209 2Z C3 					6209 2Z C3		138 kg		
 ABB Ref-IS 12615:2011 									

Rating plate for IE1 General performance cast iron M2BAX motor, size 160

 IE2									
3 ~ Motor					M2BAX 160MLB6 IMB3/IM1001				
					↶				
2015					No.				
Amb 50°C					Ins.cl. F			IP 55	
V	Hz	r/min	kW	hp	A	cos φ	Eff.	Duty	
415 D ±10%	50±5%	970	11	15	22.3	0.78	88.7	S1	
Prod. code 3GBA163420-ADCIN									
					Nmax		r/min		
6209 2Z C3 					6209 2Z C3		147 kg		
 ABB Ref-IS 12615:2011 									

Rating plate for IE2 General performance cast iron M2BAX motor, size 160

Technical data

IE1 cast iron 400V, 50Hz motors, 3000 and 1500 r/min

IP 55 - IC 411 - Insulation class F, temperature rise class B
IE1 efficiency class according to IEC 60034-30-1; 2014

Output kW	Motor type	Product code	Speed r/min	Efficiency IEC 60034-30-1; 2014			Power factor Cosφ	Current Torque					Moment of inertia J = 1/4 GD ² kgm ²	Weight kg	Sound pressure Level L _{PA} dB
				Full load 100%	3/4 load 75%	1/2 load 50%		I _N A	I _s /I _N	T _N Nm	T _f /T _N	T _v /T _N			
3000 r/min = 2 poles				400 V 50 Hz			CENELEC-design								
11	M2BAX 160MLA 2	3GBA161044-••EIN	2906	87.6	88.1	87.3	0.88	20.9	5.6	36.11	1.9	2.5	0.0350	98	85
15	M2BAX 160MLB 2	3GBA161045-••EIN	2918	88.7	89.2	88.7	0.91	26.7	6.0	49.1	2.1	2.9	0.0480	115	85
18.5	M2BAX 160MLC 2	3GBA161046-••EIN	2918	89.3	90.0	89.4	0.91	32.9	6.0	60.5	2.3	2.9	0.0520	122	85
22	M2BAX 180MLA 2	3GBA181041-••EIN	2918	89.9	91.0	91.3	0.91	38.6	6.0	71.8	2.6	3.0	0.0620	145	85
30	M2BAX 200MLA 2	3GBA201043-••EIN	2935	90.7	91.3	91.3	0.90	53.3	6.0	97.6	2.6	3.4	0.0990	189	87
37	M2BAX 200MLB 2	3GBA201044-••EIN	2940	91.2	91.6	91.1	0.91	64.4	6.0	120	2.4	3.1	0.133	231	86
45	M2BAX 225SMA 2	3GBA221041-••EIN	2950	91.7	92.2	91.9	0.90	79.0	5.8	146	2.5	2.7	0.213	279	85
55	M2BAX 250SMA 2	3GBA251042-••EIN	2962	92.1	92.2	91.5	0.90	92.6	6.0	178	2.7	2.8	0.293	331	89

Output kW	Motor type	Product code	Speed r/min	Efficiency IEC 60034-30-1; 2014			Power factor Cosφ	Current Torque					Moment of inertia J = 1/4 GD ² kgm ²	Weight kg	Sound pressure Level L _{PA} dB
				Full load 100%	3/4 load 75%	1/2 load 50%		I _N A	I _s /I _N	T _N Nm	T _f /T _N	T _v /T _N			
1500 r/min = 4 poles				400 V 50 Hz			CENELEC-design								
11	M2BAX 160MLA 4	3GBA162044-••EIN	1456	87.6	89.0	89.2	0.85	21.0	5.8	72.2	2.0	2.7	0.0790	113	70
15	M2BAX 160MLB 4	3GBA162045-••EIN	1459	88.7	89.8	89.8	0.83	29.0	6.0	98.3	2.3	3.0	0.090	121	73
18.5	M2BAX 180MLA 4	3GBA182042-••EIN	1458	89.3	90.4	90.6	0.85	34.9	6.0	121	2.3	2.9	0.112	148	75
22	M2BAX 180MLB 4	3GBA182043-••EIN	1459	89.9	90.6	90.5	0.83	42.3	5.7	144	2.4	2.8	0.140	170	76
30	M2BAX 200MLA 4	3GBA202043-••EIN	1469	90.7	91.9	92.4	0.84	56.8	5.5	195	2.2	2.4	0.249	226	75
37	M2BAX 225SMA 4	3GBA222041-••EIN	1475	91.2	91.9	91.7	0.85	67.7	5.6	240	2.1	2.5	0.348	262	72
45	M2BAX 225SMB 4	3GBA222042-••EIN	1475	91.7	92.4	92.2	0.86	81.7	5.6	292	2.1	2.4	0.406	293	74
55	M2BAX 250SMA 4	3GBA252042-••EIN	1475	92.1	92.7	92.6	0.87	98.9	5.6	356	2.2	2.6	0.514	357	78

Technical data

IE1 cast iron 400V, 50Hz motors, 1000 and 750 r/min

IP 55 - IC 411 - Insulation class F, temperature rise class B
IE1 efficiency class according to IEC 60034-30-1; 2014

Output kW	Motor type	Product code	Speed r/min	Efficiency IEC 60034-30-1; 2014			Power factor Cosφ	Current Torque					Moment of inertia J = 1/4 GD ² kgm ²	Weight kg	Sound pressure Level L _{PA} dB
				Full load 100%	3/4 load 75%	1/2 load 50%		I _N A	I _S /I _N	T _N Nm	T _f /T _N	T _b /T _N			
1000 r/min = 6 poles				400 V 50 Hz				CENELEC-design							
7.5	M2BAX 160MLA 6	3GBA163043-••EIN	961	84.7	85.9	85.8	0.79	15.9	5.7	74.3	1.9	2.7	0.0750	113	67
11	M2BAX 160MLB 6	3GBA163045-••EIN	970	86.4	87.4	87.2	0.78	23.4	6.0	109	1.9	2.8	0.119	138	67
15	M2BAX 180MLA 6	3GBA183041-••EIN	970	87.7	88.6	88.4	0.77	32.3	6.1	148	2.3	2.8	0.152	170	72
18.5	M2BAX 200MLA 6	3GBA203042-••EIN	970	88.6	89.4	89.2	0.77	38.6	5.2	182	1.6	2.4	0.173	178	72
30	M2BAX 225SMA 6	3GBA223041-••EIN	983	90.2	91.1	91.1	0.84	56.3	5.2	291	1.8	2.5	0.532	267	71
37	M2BAX 250SMA 6	3GBA253042-••EIN	984	90.8	91.6	91.5	0.83	71.1	5.2	359	1.9	2.5	0.718	317	72

Output kW	Motor type	Product code	Speed r/min	Efficiency IEC 60034-30-1; 2014			Power factor Cosφ	Current Torque					Moment of inertia J = 1/4 GD ² kgm ²	Weight kg	Sound pressure Level L _{PA} dB
				Full load 100%	3/4 load 75%	1/2 load 50%		I _N A	I _S /I _N	T _N Nm	T _f /T _N	T _b /T _N			
750 r/min = 8 poles				400 V 50 Hz				CENELEC-design							
3.7	M2BAX 160MLA 8	3GBA164044-••EIN	713	78.7	79.4	77.9	0.68	9.6	4.7	48.8	1.6	2.3	0.0590	100	72
5.5	M2BAX 160MLB 8	3GBA164045-••EIN	722	81.4	82.6	81.9	0.68	13.8	4.7	72.7	1.5	2.3	0.0940	127	68
7.5	M2BAX 160MLC 8	3GBA164046-••EIN	722	83.1	84.0	83.4	0.66	19.5	4.7	99.1	1.7	2.5	0.117	143	72
11	M2BAX 180MLB 8	3GBA184046-••EIN	722	85.0	86.1	85.8	0.66	28.6	4.7	146	1.6	2.2	0.157	174	74
15	M2BAX 200MLA 8	3GBA204041-••EIN	728	86.2	86.8	85.8	0.63	39.5	4.7	197	1.5	2.3	0.272	231	78
18.5	M2BAX 225SMA 8	3GBA224041-••EIN	733	86.9	87.9	87.6	0.76	39.3	4.7	241	1.9	2.1	0.495	254	69
22	M2BAX 225SMB 8	3GBA224042-••EIN	733	87.4	88.6	88.5	0.77	46.2	4.7	287	1.7	2.0	0.587	286	68
30	M2BAX 250SMA 8	3GBA254042-••EIN	735	88.3	89.3	89.1	0.75	64.0	4.7	391	1.7	2.0	0.862	348	73

Technical data

IE2 cast iron 400V, 50Hz motors, 3000 and 1500 r/min

IP 55 - IC 411 - Insulation class F, temperature rise class B
IE2 efficiency class according to IEC 60034-30-1; 2014

Output kW	Motor type	Product code	Speed r/min	Efficiency IEC 60034-30-1; 2014			Power factor Cosφ	Current Torque					Moment of inertia J = 1/4 GD ² kgm ²	Weight kg	Sound pressure Level L _{PA} dB
				Full load 100%	3/4 load 75%	1/2 load 50%		I _N A	I _S /I _N	T _N Nm	T _f /T _N	T _b /T _N			
3000 r/min = 2 poles				400 V 50 Hz				CENELEC-design							
0.37	M2BA 71 MA 2	3GBA 071 211-••B	2660	69.2	73.5	73.7	0.80	0.96	3.9	1.32	2.2	2.3	0.000390	11	58
0.55	M2BA 71 MB 2	3GBA 071 212-••B	2680	73.2	77.3	79.3	0.85	1.27	4.3	1.95	2.4	2.5	0.000510	11	56
0.75	M2BA 80 MB 2	3GBA 081 212-••B	2895	80.6	79.9	76.2	0.74	1.81	7.7	2.4	4.2	4.2	0.0010	16	57
1.1	M2BA 80 MC 2	3GBA 081 213-••B	2870	81.8	82.4	80.2	0.80	2.4	7.5	3.6	2.7	3.5	0.00120	18	60
1.5	M2BA 90 S 2	3GBA 091 101-••B	2890	82.2	82.5	80.3	0.81	3.2	7.2	4.9	2.5	3.0	0.00199	22	63
1.5	M2BA 90 SLB 2	3GBA 091 212-••B	2900	82.2	84.1	82.7	0.86	3.0	7.5	4.9	2.5	2.6	0.00254	24	69
2.2	M2BA 90 SLC 2	3GBA 091 213-••B	2885	84.7	86.7	85.7	0.87	4.3	6.8	7.2	1.9	2.5	0.00280	25	64
3	M2BA 100 LB 2	3GBA 101 212-••B	2925	85.2	84.9	82.8	0.86	5.9	9.1	9.7	3.1	3.5	0.00528	36	68
4	M2BA 112 MB 2	3GBA 111 212-••B	2895	86.1	87.0	86.6	0.86	7.7	8.1	13.1	2.9	3.2	0.00575	37	70
5.5	M2BA 132 SMB 2	3GBA 131 212-••B	2865	88.0	88.6	88.0	0.86	10.4	7.0	18.3	2.0	2.7	0.0128	68	70
7.5	M2BA 132 SMC 2	3GBA 131 214-••B	2890	88.6	88.8	87.5	0.84	14.5	7.3	24.7	2.0	3.6	0.0136	70	70
11	M2BAX 160MLA 2	3GBA161410-••CIN	2917	89.4	89.7	88.5	0.89	20.0	6.5	36.1	2.2	2.8	0.0415	105	79
15	M2BAX 160MLB 2	3GBA161420-••CIN	2923	90.3	90.8	90.2	0.90	26.6	6.5	49.1	2.2	2.8	0.0544	120	77
18.5	M2BAX 160MLC 2	3GBA161430-••CIN	2926	90.9	91.7	91.5	0.90	32.7	6.5	60.2	2.4	2.9	0.0581	131	80
22	M2BAX 180MLA 2	3GBA181410-••CIN	2929	91.3	92.2	92.4	0.91	38.1	6.5	72.2	2.8	3.2	0.0679	152	78
30	M2BAX 200MLA 2	3GBA201410-••CIN	2935	92.0	92.7	92.8	0.91	52.1	6.5	97.2	2.3	3.0	0.108	198	80
37	M2BAX 200MLB 2	3GBA201420-••CIN	2946	92.5	92.8	92.1	0.90	64.3	6.5	120	2.7	3.5	0.133	232	84
45	M2BAX 225SMA 2	3GBA221210-••CIN	2952	92.9	93.3	92.9	0.90	78.2	7.0	145	2.2	3.0	0.244	295	84
55	M2BAX 250SMA 2	3GBA251210-••CIN	2957	93.2	93.4	92.9	0.90	93.9	6.5	177	2.4	2.8	0.316	344	79

Output kW	Motor type	Product code	Speed r/min	Efficiency IEC 60034-30-1; 2014			Power factor Cosφ	Current Torque					Moment of inertia J = 1/4 GD ² kgm ²	Weight kg	Sound pressure Level L _{PA} dB
				Full load 100%	3/4 load 75%	1/2 load 50%		I _N A	I _S /I _N	T _N Nm	T _f /T _N	T _b /T _N			
1500 r/min = 4 poles				400 V 50 Hz				CENELEC-design							
0.25	M2BA 71 MA 4	3GBA 072 211-••B	1365	68.3	70.8	69.7	0.81	0.65	3.5	1.74	1.9	2.0	0.000740	10	45
0.37	M2BA 71 MB 4	3GBA 072 212-••B	1380	72.4	74.5	74.6	0.83	0.88	4.0	2.5	1.6	2.1	0.000880	11	45
0.55	M2BA 80 MA 4	3GBA 082 211-••B	1415	74.5	73.8	70.0	0.73	1.45	5.0	3.7	2.0	2.8	0.00144	15	45
0.75	M2BA 80 MD 4	3GBA 082 214-••B	1430	81.0	80.7	77.3	0.73	1.83	5.3	5.0	2.7	3.2	0.00205	17	50
1.1	M2BA 90 SLB 4	3GBA 092 212-••B	1435	83.6	84.5	83.2	0.80	2.3	6.1	7.3	2.7	3.4	0.00440	25	50
1.5	M2BA 90 SLD 4	3GBA 092 215-••B	1430	84.3	85.6	84.7	0.83	3.0	6.3	10.0	2.7	3.4	0.00530	27	56
2.2	M2BA 100 LC 4	3GBA 102 213-••B	1450	85.9	85.1	83.4	0.78	4.7	6.4	14.4	2.9	3.6	0.00948	36	56
3	M2BA 100 LD 4	3GBA 102 214-••B	1450	86.8	87.0	85.4	0.79	6.3	7.7	19.7	2.9	3.4	0.0110	38	58
4	M2BA 112 MB 4	3GBA 112 212-••B	1440	86.8	87.7	87.3	0.81	8.2	7.0	26.5	2.5	2.9	0.0125	44	59
5.5	M2BA 132 SMB 4	3GBA 132 212-••B	1460	89.0	89.8	88.9	0.80	11.1	5.9	35.9	1.7	2.4	0.0328	70	67
7.5	M2BA 132 SMC 4	3GBA 132 213-••B	1450	89.3	90.1	90.0	0.81	14.9	5.6	49.3	1.6	2.4	0.0366	73	64
11	M2BAX 160MLA 4	3GBA162410-••CIN	1459	89.8	91.6	91.8	0.85	21.1	6.5	72.2	2.1	2.7	0.084	115	75
15	M2BAX 160MLB 4	3GBA162420-••CIN	1459	90.6	91.7	91.8	0.84	28.5	7.0	98.3	2.3	2.8	0.103	134	72
18.5	M2BAX 180MLA 4	3GBA182410-••CIN	1460	91.2	92.0	92.1	0.84	35.0	6.5	121	2.6	3.2	0.122	155	67
22	M2BAX 180MLB 4	3GBA182420-••CIN	1461	91.6	92.3	92.2	0.83	42.4	6.5	143	2.3	2.9	0.140	171	73
30	M2BAX 200MLA 4	3GBA202410-••CIN	1471	92.3	93.1	93.3	0.84	56.9	6.5	194	2.4	3.2	0.257	229	73
37	M2BAX 225SMA 4	3GBA222210-••CIN	1476	92.7	93.3	93.3	0.85	67.9	6.0	239	2.1	2.5	0.361	267	75
45	M2BAX 225SMB 4	3GBA222220-••CIN	1476	93.1	93.6	93.4	0.84	83.2	6.5	291	2.2	2.7	0.431	304	79
55	M2BAX 250SMA 4	3GBA252210-••CIN	1476	93.5	93.9	93.7	0.85	100	6.5	356	2.5	2.8	0.533	342	75

Technical data

IE2 cast iron 400V, 50Hz motors, 1000 r/min

IP 55 - IC 411 - Insulation class F, temperature rise class B
IE2 efficiency class according to IEC 60034-30-1; 2014

Output kW	Motor type	Product code	Speed r/min	Efficiency IEC 60034-30-1; 2014			Power factor Cosφ	Current Torque					Moment of inertia J = 1/4 GD ² kgm ²	Weight kg	Sound pressure Level L _{PA} dB
				Full load 100%	3/4 load 75%	1/2 load 50%		I _N A	I _s /I _N	T _N Nm	T _f /T _N	T _b /T _N			
1000 r/min = 6 poles				400 V 50 Hz				CENELEC-design							
0.18	M2BA 71 MA 6	3GBA 073 211-••B	900	63.7	63.8	59.0	0.71	0.57	3.1	1.9	2.0	2.1	0.000890	10	42
0.25	M2BA 71 MB 6	3GBA 073 212-••B	895	67.2	67.2	62.6	0.69	0.77	3.4	2.6	2.2	2.3	0.00110	12	42
0.37	M2BA 80 MA 6	3GBA 083 211-••B	915	71.0	71.1	67.0	0.69	1.09	3.6	3.8	1.8	2.2	0.00187	15	47
0.55	M2BA 80 MB 6	3GBA 083 212-••B	920	73.9	75.0	72.8	0.71	1.51	3.8	5.7	1.8	2.2	0.00239	17	47
0.75	M2BA 90 SLC 6	3GBA 093 213-••B	960	78.7	77.3	72.5	0.58	2.3	4.5	7.4	2.3	3.1	0.00491	25	44
1.1	M2BA 90 SLE 6	3GBA 093 214-••B	930	78.2	78.6	76.4	0.66	3.0	4.0	11.2	1.9	2.3	0.00540	28	44
1.5	M2BA 100 L 6	3GBA 103 212-••B	950	82.2	82.9	81.6	0.69	3.8	4.0	15.0	1.5	1.1	0.00873	37	49
2.2	M2BA 112 MB 6	3GBA 113 212-••B	950	82.5	83.8	81.7	0.69	5.5	4.4	22.1	1.7	2.3	0.0125	44	66
3	M2BA 132 SMB 6	3GBA 133 211-••B	975	85.3	84.5	81.3	0.63	8.0	5.5	29.3	1.8	2.9	0.0334	69	57
4	M2BA 132 SMB 6	3GBA 133 212-••B	960	84.9	85.3	83.9	0.68	10.0	4.6	39.7	1.5	2.2	0.0334	69	57
5.5	M2BA 132 SMF 6	3GBA 133 214-••B	965	86.1	86.6	85.5	0.71	12.9	5.1	54.4	2.0	2.3	0.0487	86	57
7.5	M2BAX 160MLA 6	3GBA163410-••CIN	964	87.2	88.4	88.7	0.80	15.7	6.0	74.2	1.7	2.3	0.0890	122	70
11	M2BAX 160MLB 6	3GBA163420-••CIN	968	88.7	89.5	89.4	0.79	22.9	6.5	108	2.1	2.8	0.129	147	70
15	M2BAX 180MLA 6	3GBA183410-••CIN	970	89.7	90.4	90.3	0.77	31.5	6.5	147	2.1	2.7	0.152	173	70
18.5	M2BAX 200MLA 6	3GBA203410-••CIN	970	90.4	91.5	91.7	0.80	37.3	5.6	182	1.5	2.3	0.198	190	71
22	M2BAX 200MLB 6	3GBA203420-••CIN	970	90.9	91.9	92.1	0.80	44.1	5.6	217	1.6	2.3	0.238	212	72
30	M2BAX 225SMA 6	3GBA223210-••CIN	983	91.7	92.4	92.4	0.84	56.3	6.0	292	2.1	2.6	0.569	284	73
37	M2BAX 250SMA 6	3GBA253210-••CIN	984	92.2	92.9	92.8	0.82	71.0	5.6	360	1.8	2.4	0.804	337	68

Technical data

IE3 cast iron 400V, 50Hz motors, 3000 and 1500 r/min

IP 55 - IC 411 - Insulation class F, temperature rise class B
IE3 efficiency class according to IEC 60034-30-1; 2014

Output kW	Motor type	Product code	Speed r/min	Efficiency IEC 60034-30-1; 2014			Power factor Cosφ	Current Torque					Moment of inertia J = 1/4 GD ² kgm ²	Weight kg	Sound pressure Level L _{PA} dB
				Full load 100%	3/4 load 75%	1/2 load 50%		I _N A	I _s /I _N	T _N Nm	T _f /T _N	T _v /T _N			
3000 r/min = 2 poles				400 V 50 Hz				CENELEC-design							
11	M2BAX 160MLA 2	3GBA161410-••DIN	2938	91.2	91.5	90.7	0.91	19.2	7.2	35.8	2.6	3.3	0.0570	118	77
15	M2BAX 160MLB 2	3GBA161420-••DIN	2940	91.9	92.2	91.5	0.89	26.3	7.3	48.7	2.8	3.7	0.0630	126	73
18.5	M2BAX 160MLC 2	3GBA161430-••DIN	2942	92.4	92.8	92.4	0.91	32.1	7.2	59.9	2.8	3.6	0.0760	144	74
22	M2BAX 180MLA 2	3GBA181410-••DIN	2951	92.7	93.0	92.5	0.91	38.0	7.2	71.1	2.8	3.4	0.110	181	78
30	M2BAX 200MLA 2	3GBA201410-••DIN	2953	93.3	93.8	93.6	0.90	52.1	6.5	96.9	2.7	3.1	0.182	230	80
37	M2BAX 200MLB 2	3GBA201420-••DIN	2954	93.7	94.2	94.0	0.91	63.7	6.5	119	2.7	3.2	0.222	257	71
45	M2BAX 225SMA 2	3GBA221210-••DIN	2963	94.0	93.9	92.9	0.88	78.5	6.6	145	2.7	3.2	0.296	287	84
55	M2BAX 250SMA 2	3GBA251210-••DIN	2967	94.3	94.3	93.7	0.90	95.0	6.3	177	2.6	2.9	0.426	344	79

Output kW	Motor type	Product code	Speed r/min	Efficiency IEC 60034-30-1; 2014			Power factor Cosφ	Current Torque					Moment of inertia J = 1/4 GD ² kgm ²	Weight kg	Sound pressure Level L _{PA} dB
				Full load 100%	3/4 load 75%	1/2 load 50%		I _N A	I _s /I _N	T _N Nm	T _f /T _N	T _v /T _N			
1500 r/min = 4 poles				400 V 50 Hz				CENELEC-design							
11	M2BAX 160MLA 4	3GBA162410-••DIN	1472	91.4	91.5	90.3	0.81	21.8	7.0	71.1	2.7	3.5	0.110	134	72
15	M2BAX 160MLB 4	3GBA162420-••DIN	1473	92.1	92.1	90.9	0.81	29.2	7.0	97.0	2.7	3.6	0.135	159	68
18.5	M2BAX 180MLA 4	3GBA182410-••DIN	1477	92.6	93.2	93.0	0.83	8.0	7.0	119	2.5	3.0	0.219	192	67
22	M2BAX 180MLB 4	3GBA182420-••DIN	1477	93.0	93.5	93.3	0.83	41.6	7.0	142	2.7	3.2	0.243	205	72
30	M2BAX 200MLA 4	3GBA202410-••DIN	1480	93.6	93.9	93.4	0.84	54.6	7.0	193	2.8	3.1	0.385	259	73
37	M2BAX 225SMA 4	3GBA222210-••DIN	1480	93.9	94.1	93.6	0.84	68.8	7.0	239	2.7	3.0	0.427	274	69
45	M2BAX 225SMB 4	3GBA222220-••DIN	1480	94.2	94.5	94.1	0.84	82.5	6.4	290	2.5	2.9	0.525	307	73
55	M2BAX 250SMA 4	3GBA252210-••DIN	1480	94.6	94.7	94.0	0.85	100	6.6	355	2.8	3.2	0.694	358	74

Technical data

IE3 cast iron 400V, 50Hz motors, 1000 r/min

IP 55 - IC 411 - Insulation class F, temperature rise class B
IE3 efficiency class according to IEC 60034-30-1; 2014

Output kW	Motor type	Product code	Speed r/min	Efficiency IEC 60034-30-1; 2014			Power factor $\cos\phi$	Current Torque					Moment of inertia $J = 1/4$ GD^2/kgm^2	Weight kg	Sound pressure Level L_{PA} dB
				Full load 100%	3/4 load 75%	1/2 load 50%		I_N A	I_s/I_N	T_N Nm	T_l/T_N	T_b/T_N			
1000 r/min = 6 poles				400 V 50 Hz				CENELEC-design							
7.5	M2BAX 160MLA 6	3GBA163410-••DIN	970	89.1	89.8	89.5	0.76	16.1	6.0	73.5	1.9	2.8	0.089	119	70
11	M2BAX 160MLB 6	3GBA163420-••DIN	976	90.3	91.0	90.8	0.76	23.7	5.6	108	1.6	2.6	0.138	160	68
15	M2BAX 180MLA 6	3GBA183410-••DIN	977	91.2	91.8	91.3	0.78	31.2	4.7	146	1.4	2.4	0.212	190	72
18.5	M2BAX 200MLA 6	3GBA203410-••DIN	987	91.7	91.9	91.1	0.82	35.3	6.6	179	2.2	2.9	0.496	238	72
22	M2BAX 200MLB 6	3GBA203420-••DIN	988	92.2	92.2	91.2	0.82	41.9	7.0	212	2.4	3.3	0.585	263	71
30	M2BAX 225SMA 6	3GBA223210-••DIN	988	92.9	92.9	91.8	0.79	59.7	6.7	291	2.4	3.1	0.724	285	73
37	M2BAX 250SMA 6	3GBA253210-••DIN	989	93.3	93.7	93.4	0.83	69.9	5.6	357	2.1	2.3	1.30	379	75

Technical data

IE1 cast iron 415V, 50Hz motors, 3000 and 1500 r/min

IP 55 - IC 411 - Insulation class F, temperature rise class B
IE1 efficiency class according to IEC 60034-30-1; 2014

Output kW	Motor type	Product code	Speed r/min	Efficiency IEC 60034-30-1; 2014			Power factor Cosφ	Current Torque					Moment of inertia J = 1/4 GD ² kgm ²	Weight kg	Sound pressure Level L _{PA} dB
				Full load 100%	3/4 load 75%	1/2 load 50%		I _N A	I _s /I _N	T _N Nm	T _f /T _N	T _v /T _N			
3000 r/min = 2 poles				415 V 50 Hz			CENELEC-design								
11	M2BAX 160MLA 2	3GBA161044-••EIN	2915	87.6	87.5	85.8	0.88	20.5	6.0	36.0	2.0	2.7	0.035	98	85
15	M2BAX 160MLB 2	3GBA161045-••EIN	2925	88.7	88.7	87.3	0.90	26.3	6.5	49.0	2.3	3.1	0.048	115	85
18.5	M2BAX 160MLC 2	3GBA161046-••EIN	2925	89.3	89.8	88.9	0.90	32.0	6.5	60.3	2.5	3.1	0.052	122	85
22	M2BAX 180MLA 2	3GBA181041-••EIN	2925	89.9	90.7	90.3	0.91	37.5	6.5	71.6	2.8	3.2	0.062	145	85
30	M2BAX 200MLA 2	3GBA201043-••EIN	2940	90.7	90.6	89.3	0.90	52.0	6.5	97.4	2.8	3.7	0.099	189	87
37	M2BAX 200MLB 2	3GBA201044-••EIN	2945	91.2	91.4	90.5	0.91	62.5	6.5	120	2.6	3.4	0.133	231	86
45	M2BAX 225SMA 2	3GBA221041-••EIN	2955	91.7	91.9	90.9	0.89	76.5	6.2	146	2.7	2.9	0.213	279	85
55	M2BAX 250SMA 2	3GBA251042-••EIN	2965	92.1	91.9	90.5	0.89	92.6	6.5	178	2.9	3.0	0.293	331	89

Output kW	Motor type	Product code	Speed r/min	Efficiency IEC 60034-30-1; 2014			Power factor Cosφ	Current Torque					Moment of inertia J = 1/4 GD ² kgm ²	Weight kg	Sound pressure Level L _{PA} dB
				Full load 100%	3/4 load 75%	1/2 load 50%		I _N A	I _s /I _N	T _N Nm	T _f /T _N	T _v /T _N			
1500 r/min = 4 poles				415 V 50 Hz			CENELEC-design								
11	M2BAX 160MLA 4	3GBA162044-••EIN	1460	87.6	88.7	88.5	0.84	20.4	6.2	72.0	2.2	2.9	0.079	113	70
15	M2BAX 160MLB 4	3GBA162045-••EIN	1462	88.7	89.6	89.2	0.83	28.2	6.5	98.0	2.5	3.3	0.090	121	73
18.5	M2BAX 180MLA 4	3GBA182042-••EIN	1462	89.3	90.1	89.9	0.84	34.1	6.5	121	2.5	3.1	0.112	148	75
22	M2BAX 180MLB 4	3GBA182043-••EIN	1462	89.9	90.7	90.2	0.83	40.9	6.1	144	2.6	3.1	0.140	170	76
30	M2BAX 200MLA 4	3GBA202043-••EIN	1472	90.7	91.5	91.6	0.84	54.8	6.0	195	2.4	2.6	0.249	226	75
37	M2BAX 225SMA 4	3GBA222041-••EIN	1477	91.2	91.5	90.7	0.84	66.1	6.0	240	2.3	2.7	0.348	262	72
45	M2BAX 225SMB 4	3GBA222042-••EIN	1477	91.7	92.3	91.8	0.85	80.0	6.0	291	2.3	2.6	0.406	293	74
55	M2BAX 250SMA 4	3GBA252042-••EIN	1477	92.1	92.6	92.2	0.86	96.0	6.0	356	2.4	2.8	0.514	357	78

Technical data

IE1 cast iron 415V, 50Hz motors, 1000 and 750 r/min

IP 55 - IC 411 - Insulation class F, temperature rise class B
IE1 efficiency class according to IEC 60034-30-1; 2014

Output kW	Motor type	Product code	Speed r/min	Efficiency IEC 60034-30-1; 2014			Power factor Cos ϕ	Current Torque					Moment of inertia J = 1/4 GD ² kgm ²	Weight kg	Sound pressure Level L _{PA} dB
				Full load 100%	3/4 load 75%	1/2 load 50%		I _N A	I _S /I _N	T _N Nm	T _I /T _N	T _V /T _N			
1000 r/min = 6 poles				415 V 50 Hz				CENELEC-design							
7.5	M2BAX 160MLA 6	3GBA163043-••EIN	964	84.7	86.1	85.9	0.78	15.6	6.1	74.1	2.1	2.9	0.0750	113	67
11	M2BAX 160MLB 6	3GBA163045-••EIN	972	86.4	87.6	87.1	0.78	22.9	6.5	109	2.1	3.1	0.119	138	67
15	M2BAX 180MLA 6	3GBA183041-••EIN	972	87.7	88.7	88.2	0.77	30.4	6.5	148	2.5	3.1	0.152	170	72
18.5	M2BAX 200MLA 6	3GBA203042-••EIN	975	88.6	89.2	88.4	0.76	37.4	5.5	182	1.7	2.6	0.173	178	72
30	M2BAX 225SMA 6	3GBA223041-••EIN	985	90.2	90.7	90.2	0.83	55.0	5.5	291	2.0	2.7	0.532	267	71
37	M2BAX 250SMA 6	3GBA253042-••EIN	985	90.8	91.1	90.5	0.83	69.3	5.5	359	2.1	2.7	0.718	317	72

Output kW	Motor type	Product code	Speed r/min	Efficiency IEC 60034-30-1; 2014			Power factor Cos ϕ	Current Torque					Moment of inertia J = 1/4 GD ² kgm ²	Weight kg	Sound pressure Level L _{PA} dB
				Full load 100%	3/4 load 75%	1/2 load 50%		I _N A	I _S /I _N	T _N Nm	T _I /T _N	T _V /T _N			
750 r/min = 8 poles				415 V 50 Hz				CENELEC-design							
3.7	M2BAX 160MLA 8	3GBA164044-••EIN	715	78.7	79.4	77.5	0.66	9.5	5.0	48.7	1.7	2.5	0.0590	100	72
5.5	M2BAX 160MLB 8	3GBA164045-••EIN	725	81.4	82.0	80.6	0.66	13.8	5.0	72.4	1.7	2.5	0.0940	127	68
7.5	M2BAX 160MLC 8	3GBA164046-••EIN	725	83.1	83.5	82.3	0.65	19.4	5.0	98.7	1.9	2.7	0.117	143	72
11	M2BAX 180MLB 8	3GBA184046-••EIN	725	85.0	85.9	85.1	0.64	28.4	5.0	145	1.8	2.4	0.157	174	74
15	M2BAX 200MLA 8	3GBA204041-••EIN	730	86.2	86.4	84.9	0.63	39.0	5.0	196	1.7	2.5	0.272	231	78
18.5	M2BAX 225SMA 8	3GBA224041-••EIN	735	86.9	87.5	86.5	0.74	40.0	5.0	241	2.1	2.3	0.495	254	69
22	M2BAX 225SMB 8	3GBA224042-••EIN	735	87.4	88.2	87.5	0.75	45.7	5.0	286	1.9	2.2	0.587	286	68
30	M2BAX 250SMA 8	3GBA254042-••EIN	735	88.3	89.2	88.8	0.74	62.8	5.0	390	1.9	2.2	0.862	348	73

Technical data

IE2 cast iron 415V, 50Hz motors, 3000 and 1500 r/min

IP 55 - IC 411 - Insulation class F, temperature rise class B
IE2 efficiency class according to IEC 60034-30-1; 2014

Output kW	Motor type	Product code	Speed r/min	Efficiency IEC 60034-30-1; 2014			Power factor Cosφ	Current Torque					Moment of inertia J = 1/4 GD ² kgm ²	Weight kg	Sound pressure Level L _{PA} dB
				Full load 100%	3/4 load 75%	1/2 load 50%		I _N A	I _s /I _N	T _N Nm	T _f /T _N	T _b /T _N			
3000 r/min = 2 poles				415 V 50 Hz				CENELEC-design							
0.37	M2BA 71MA 2	3GBA071211-••B	2785	75.1	75.6	73.0	0.75	0.9	4.7	1.3	2.4	2.5	0.000390	11	58
0.55	M2BA 71MB 2	3GBA071212-••B	2829	78.1	77.9	74.9	0.76	1.3	4.7	1.9	2.6	2.7	0.000510	11	56
0.75	¹⁾ M2BA 80MB 2	3GBA081212-••B	2905	79.7	78.2	73.9	0.69	1.8	7.7	2.8	1.3	1.3	0.0010	16	57
1.1	M2BA 80MC 2	3GBA081213-••B	2880	81.8	81.3	78.5	0.78	2.4	7.5	3.6	4.0	4.8	0.00120	18	60
1.5	M2BA 90SLB 2	3GBA091212-••B	2905	83.8	84.0	82.4	0.86	2.8	7.5	4.9	2.7	2.8	0.00254	24	69
2.2	M2BA 90SLC 2	3GBA091213-••B	2895	84.8	85.5	84.3	0.88	4.0	6.8	7.2	1.7	2.6	0.00280	25	64
3	M2BA 100LB 2	3GBA101212-••B	2930	85.0	84.4	81.8	0.86	5.6	9.1	9.8	3.4	3.8	0.00528	36	68
4	M2BA 112MB 2	3GBA111212-••B	2900	85.6	85.8	84.4	0.88	7.3	8.7	13.1	3.2	3.5	0.00575	37	70
5.5	M2BA 132SMB 2	3GBA131212-••B	2875	87.2	87.3	86.0	0.92	9.6	7.5	18.1	2.2	2.9	0.0128	68	70
7.5	M2BA 132SMC 2	3GBA131214-••B	2900	88.6	88.8	87.5	0.87	13.3	8.4	24.7	2.0	4.1	0.0136	70	70
11	M2BAX 160MLA 2	3GBA161410-••CIN	2925	89.4	89.4	87.8	0.88	19.6	7.0	36.0	2.4	3.0	0.0415	105	79
15	M2BAX 160MLB 2	3GBA161420-••CIN	2930	90.3	90.7	90.1	0.90	25.9	7.0	49.0	2.4	3.0	0.0544	120	77
18.5	M2BAX 160MLC 2	3GBA161430-••CIN	2934	90.9	91.5	90.9	0.90	31.7	7.0	60.0	2.6	3.1	0.0581	131	80
22	M2BAX 180MLA 2	3GBA181410-••CIN	2936	91.3	91.7	91.2	0.91	37.3	7.0	72.0	3.0	3.5	0.0679	152	78
30	M2BAX 200MLA 2	3GBA201410-••CIN	2940	92.0	92.4	91.8	0.90	50.7	7.0	97.0	2.5	3.2	0.108	198	80
37	M2BAX 200MLB 2	3GBA201420-••CIN	2950	92.5	92.6	91.7	0.89	62.9	7.0	120	3.0	3.8	0.133	232	84
45	M2BAX 225SMA 2	3GBA221210-••CIN	2956	92.9	92.9	92.0	0.90	75.7	7.0	145	2.4	3.2	0.244	295	84
55	M2BAX 250SMA 2	3GBA251210-••CIN	2960	93.2	93.7	93.2	0.90	91.7	7.0	177	2.6	3.0	0.316	344	79

Output kW	Motor type	Product code	Speed r/min	Efficiency IEC 60034-30-1; 2014			Power factor Cosφ	Current Torque					Moment of inertia J = 1/4 GD ² kgm ²	Weight kg	Sound pressure Level L _{PA} dB
				Full load 100%	3/4 load 75%	1/2 load 50%		I _N A	I _s /I _N	T _N Nm	T _f /T _N	T _b /T _N			
1500 r/min = 4 poles				415 V 50 Hz				CENELEC-design							
0.25	M2BA 71MA 4	3GBA072211-••B	1390	69.2	69.9	67.3	0.78	0.6	3.7	1.7	2.1	2.2	0.000740	10	45
0.37	M2BA 71MB 4	3GBA072212-••B	1410	73.2	73.4	70.6	0.80	0.9	4.8	2.5	1.7	2.3	0.000880	11	45
0.55	M2BA 80MA 4	3GBA082211-••B	1420	77.1	78.7	76.2	0.71	1.3	5.8	3.7	2.2	3.0	0.00144	15	45
0.75	M2BA 80MD 4	3GBA082214-••B	1440	81.1	80.3	76.5	0.71	1.8	5.6	4.9	3.0	3.4	0.00205	17	50
1.1	M2BA 90SLB 4	3GBA092212-••B	1440	83.9	84.4	82.6	0.78	2.3	6.4	7.2	2.9	3.7	0.00440	25	50
1.5	M2BA 90SLD 4	3GBA092215-••B	1435	84.6	85.5	84.2	0.81	3.0	6.6	9.9	2.9	3.7	0.00530	27	56
2.2	M2BA 100LO 4	3GBA102213-••B	1455	86.3	85.2	83.0	0.76	4.6	9.4	14.4	4.0	4.5	0.00948	36	56
3	M2BA 100LD 4	3GBA102214-••B	1455	86.2	86.0	83.7	0.78	6.2	7.9	19.6	3.0	3.5	0.0110	38	58
4	M2BA 112MB 4	3GBA112212-••B	1440	86.8	87.2	86.9	0.79	8.1	7.1	26.5	2.7	3.1	0.0125	44	59
5.5	M2BA 132SMB 4	3GBA132212-••B	1460	89.5	89.7	88.8	0.79	10.8	6.0	35.9	1.8	2.5	0.0328	70	67
7.5	M2BA 132SMC 4	3GBA132213-••B	1460	89.6	90.1	89.4	0.79	14.7	7.8	49.0	1.7	2.5	0.0366	73	64
11	M2BAX 160MLA 4	3GBA162410-••CIN	1463	89.8	90.6	90.3	0.85	20.2	7.0	72.0	2.3	2.9	0.084	115	75
15	M2BAX 160MLB 4	3GBA162420-••CIN	1463	90.6	91.3	91.0	0.84	27.6	7.0	98.0	2.5	3.1	0.103	134	72
18.5	M2BAX 180MLA 4	3GBA182410-••CIN	1464	91.2	91.9	91.7	0.84	33.8	7.0	121	2.9	3.5	0.122	155	67
22	M2BAX 180MLB 4	3GBA182420-••CIN	1465	91.6	92.2	92.0	0.83	40.5	7.0	143	2.5	3.2	0.140	171	73
30	M2BAX 200MLA 4	3GBA202410-••CIN	1474	92.3	92.8	92.4	0.84	54.1	7.0	194	2.7	3.5	0.257	229	73
37	M2BAX 225SMA 4	3GBA222210-••CIN	1478	92.7	93.1	92.8	0.85	65.7	6.5	239	2.3	2.7	0.361	267	75
45	M2BAX 225SMB 4	3GBA222220-••CIN	1478	93.1	93.5	93.1	0.84	80.5	7.0	291	2.4	2.9	0.431	304	79
55	M2BAX 250SMA 4	3GBA252210-••CIN	1478	93.5	93.8	93.3	0.85	96.8	7.0	355	2.7	3.0	0.533	342	75

Technical data

IE2 cast iron 415V, 50Hz motors, 1000 r/min

IP 55 - IC 411 - Insulation class F, temperature rise class B
IE2 efficiency class according to IEC 60034-30-1; 2014

Output kW	Motor type	Product code	Speed r/min	Efficiency IEC 60034-30-1; 2014			Power factor Cos ϕ	Current Torque					Moment of inertia J = 1/4 GD ² kgm ²	Weight kg	Sound pressure Level L _{PA} dB
				Full load 100%	3/4 load 75%	1/2 load 50%		I _N A	I _s /I _N	T _N Nm	T _f /T _N	T _b /T _N			
1000 r/min = 6 poles				415 V 50 Hz				CENELEC-design							
0.18	M2BA 71MA 6	3GBA073211-••B	910	64.2	64.2	59.3	0.68	0.6	3.2	1.9	2.1	2.2	0.000890	10	42
0.25	M2BA 71MB 6	3GBA073212-••B	920	67.1	66.2	61.6	0.66	0.8	3.8	2.6	2.8	2.9	0.00110	12	42
0.37	M2BA 80MA 6	3GBA083211-••B	930	71.1	70.9	66.8	0.65	1.1	4.3	3.8	2.5	2.6	0.00187	15	47
0.55	M2BA 80MB 6	3GBA083212-••B	925	74.3	75.1	71.4	0.67	1.5	3.9	5.6	2.0	2.4	0.00239	17	47
1.1	M2BA 90SLE 6	3GBA093214-••B	940	78.1	77.7	74.4	0.63	3.1	4.1	11.1	2.1	2.5	0.00540	28	44
1.5	M2BA 100L 6	3GBA103212-••B	955	82.1	82.2	80.2	0.68	3.7	4.2	14.9	1.6	2.2	0.00873	37	49
2.2	M2BA 112MB 6	3GBA113212-••B	955	82.4	82.6	80.2	0.67	5.5	4.6	21.9	1.8	2.4	0.0125	44	66
3	M2BA 132SMB 6	3GBA133211-••B	975	84.2	83.0	79.2	0.57	8.6	5.3	29.3	1.9	3.2	0.0334	69	57
4	M2BA 132SMC 6	3GBA133212-••B	965	86.0	86.3	84.7	0.67	9.6	4.8	39.5	1.6	2.3	0.0334	69	57
5.5	M2BA 132SMF 6	3GBA133214-••B	970	86.1	83.1	84.0	0.68	13.0	5.3	54.1	2.1	2.4	0.0487	86	57
7.5	M2BAX 160MLA 6	3GBA163410-••CIN	967	87.2	88.8	88.7	0.79	15.3	6.5	74.0	1.9	2.6	0.0890	122	70
11	M2BAX 160MLB 6	3GBA163420-••CIN	970	88.7	89.9	89.8	0.78	22.3	7.0	108	2.3	3.0	0.129	147	70
15	M2BAX 180MLA 6	3GBA183410-••CIN	972	89.7	90.4	90.0	0.76	30.4	7.0	147	2.3	3.2	0.152	173	70
18.5	M2BAX 200MLA 6	3GBA203410-••CIN	972	90.4	91.5	91.5	0.79	36.5	6.0	182	1.7	2.5	0.198	190	71
22	M2BAX 200MLB 6	3GBA203420-••CIN	973	90.9	91.9	91.9	0.79	43.1	6.0	216	1.7	2.5	0.238	212	72
30	M2BAX 225SMA 6	3GBA223210-••CIN	985	91.7	92.3	91.9	0.83	55.2	6.5	291	2.3	2.8	0.569	284	73
37	M2BAX 250SMA 6	3GBA253210-••CIN	985	92.2	92.7	92.3	0.82	68.5	6.0	359	2.0	2.6	0.804	337	68

Technical data

IE3 cast iron 415V, 50Hz motors, 3000 and 1500 r/min

IP 55 - IC 411 - Insulation class F, temperature rise class B
IE3 efficiency class according to IEC 60034-30-1; 2014

Output kW	Motor type	Product code	Speed r/min	Efficiency IEC 60034-30-1; 2014			Power factor Cosφ	Current Torque					Moment of inertia J = 1/4 GD ² kgm ²	Weight kg	Sound pressure Level L _{PA} dB
				Full load 100%	3/4 load 75%	1/2 load 50%		I _N A	I _s /I _N	T _N Nm	T _f /T _N	T _b /T _N			
3000 r/min = 2 poles				415 V 50 Hz				CENELEC-design							
11	M2BAX 160MLA 2	3GBA161410-••DIN	2942	91.2	91.5	90.7	0.90	18.7	7.7	35.7	2.8	3.6	0.0570	118	77
15	M2BAX 160MLB 2	3GBA161420-••DIN	2944	91.9	92.1	91.3	0.88	26.0	7.7	48.6	3.0	4.0	0.0630	126	73
18.5	M2BAX 160MLC 2	3GBA161430-••DIN	2945	92.4	92.9	92.5	0.90	31.2	7.7	59.8	3.0	3.9	0.0760	144	74
22	M2BAX 180MLA 2	3GBA181410-••DIN	2955	92.7	93.2	92.7	0.90	37.1	7.7	71.0	3.0	3.7	0.110	181	78
30	M2BAX 200MLA 2	3GBA201410-••DIN	2957	93.3	93.6	93.2	0.89	51.0	7.0	96.8	2.9	3.3	0.182	230	80
37	M2BAX 200MLB 2	3GBA201420-••DIN	2958	93.7	94.1	93.6	0.90	61.8	7.0	119	2.9	3.4	0.222	257	71
45	M2BAX 225SMA 2	3GBA221210-••DIN	2966	94.0	94.1	93.3	0.87	77.3	7.0	145	2.9	3.4	0.296	287	84
55	M2BAX 250SMA 2	3GBA251210-••DIN	2968	94.3	94.3	93.6	0.89	92.5	6.7	177	2.8	3.1	0.426	344	79

Output kW	Motor type	Product code	Speed r/min	Efficiency IEC 60034-30-1; 2014			Power factor Cosφ	Current Torque					Moment of inertia J = 1/4 GD ² kgm ²	Weight kg	Sound pressure Level L _{PA} dB
				Full load 100%	3/4 load 75%	1/2 load 50%		I _N A	I _s /I _N	T _N Nm	T _f /T _N	T _b /T _N			
1500 r/min = 4 poles				415 V 50 Hz				CENELEC-design							
11	M2BAX 160MLA 4	3GBA162410-••DIN	1475	91.4	91.5	90.5	0.80	21.2	7.5	71.0	2.9	3.8	0.110	134	72
15	M2BAX 160MLB 4	3GBA162420-••DIN	1475	92.1	92.2	91.3	0.80	28.8	7.5	96.9	3.0	3.9	0.135	159	68
18.5	M2BAX 180MLA 4	3GBA182410-••DIN	1479	92.6	93.0	92.5	0.82	34.0	7.5	119	2.8	3.3	0.219	192	67
22	M2BAX 180MLB 4	3GBA182420-••DIN	1479	93.0	93.5	93.0	0.82	40.7	7.5	142	3.0	3.5	0.243	205	72
30	M2BAX 200MLA 4	3GBA202410-••DIN	1482	93.6	93.8	93.2	0.83	53.4	7.5	193	3.0	3.3	0.385	259	73
37	M2BAX 225SMA 4	3GBA222210-••DIN	1482	93.9	94.2	93.8	0.83	68.1	7.5	238	2.9	3.2	0.427	274	69
45	M2BAX 225SMB 4	3GBA222220-••DIN	1482	94.2	94.6	94.3	0.83	81.6	6.8	290	2.7	3.1	0.525	307	73
55	M2BAX 250SMA 4	3GBA252210-••DIN	1482	94.6	94.7	94.1	0.84	98.5	7.0	354	3.0	3.4	0.694	358	74

Technical data

IE3 cast iron 415V, 50Hz motors, 1000 r/min

IP 55 - IC 411 - Insulation class F, temperature rise class B
IE3 efficiency class according to IEC 60034-30-1; 2014

Output kW	Motor type	Product code	Speed r/min	Efficiency IEC 60034-30-1; 2014			Power factor Cos ϕ	Current Torque					Moment of inertia J = 1/4 GD ² kgm ²	Weight kg	Sound pressure Level L _{PA} dB
				Full load 100%	3/4 load 75%	1/2 load 50%		I _N A	I _S /I _N	T _N Nm	T _I /T _N	T _S /T _N			
1000 r/min = 6 poles				415 V 50 Hz				CENELEC-design							
7.5	M2BAX 160MLA 6	3GBA163410-••DIN	972	89.1	90.2	90.0	0.75	15.7	6.5	73.3	2.1	3.1	0.089	119	70
11	M2BAX 160MLB 6	3GBA163420-••DIN	978	90.3	91.0	90.7	0.75	22.9	6.0	108	1.8	2.8	0.138	160	68
15	M2BAX 180MLA 6	3GBA183410-••DIN	979	91.2	91.6	91.0	0.77	30.3	5.0	146	1.5	2.6	0.212	190	72
18.5	M2BAX 200MLA 6	3GBA203410-••DIN	988	91.7	91.8	90.9	0.81	34.5	7.0	179	2.4	3.1	0.496	238	72
22	M2BAX 200MLB 6	3GBA203420-••DIN	989	92.2	92.2	91.1	0.81	41.6	7.5	212	2.6	3.6	0.585	263	71
30	M2BAX 225SMA 6	3GBA223210-••DIN	989	92.9	93.0	92.0	0.78	59.2	7.0	290	2.6	3.4	0.724	285	73
37	M2BAX 250SMA 6	3GBA253210-••DIN	990	93.3	93.7	93.4	0.82	68.0	6.0	357	2.3	2.5	1.30	379	75

Variant codes

General performance Cast iron motors

Variant codes specify additional options and features to the standard motor. The desired features are listed as three-digit variant codes in the motor order. Note also that there are variants that cannot be used together.

Code / Variant	M2BA						M2BAX				
	71	80	90	100	112	132	160	180	200	225	250
Bearings and lubrication											
036 Transport lock for bearings.	-	-	-	-	-	-	•	•	•	•	•
037 Roller bearing at D-end.	-	-	-	-	-	-	•	•	•	•	•
041 Bearings regreasable via grease nipples.	•	•	•	•	•	•	•	•	•	•	•
043 SPM nipples.	•	•	•	•	•	•	•	•	•	•	•
188 63-series bearings	-	-	-	-	-	-	•	•	•	•	•
Branch standard design											
178 Stainless steel / acid proof bolts.	•	•	•	•	•	•	•	•	•	•	•
209 Non-standard voltage or frequency, (special winding).	•	•	•	•	•	•	•	•	•	•	•
Cooling system											
068 Metal fan.	-	-	-	-	-	-	•	•	•	•	•
075 Cooling method IC418 (without fan).	-	-	-	-	-	-	•	•	•	•	•
183 Separate motor cooling (fan axial, N-end).	-	-	-	-	-	-	•	•	•	•	•
Documentation											
141 Binding dimension drawing.	•	•	•	•	•	•	•	•	•	•	•
Earthing bolt											
067 External earthing bolt.	○	○	○	○	○	○	○	○	○	○	○
Heating elements											
450 Heating element, 100-120V.	-	•	•	•	•	•	•	•	•	•	•
451 Heating element, 200-240V.	-	•	•	•	•	•	•	•	•	•	•
Insulation system											
014 Winding insulation class H.	•	•	•	•	•	•	•	•	•	•	•
Mounting arrangements											
008 IM 2101 foot/flange mounted, IEC flange, from IM 1001 (B34 from B3)	•	•	•	•	•	•	-	-	-	-	-
009 IM 2001 foot/flange mounted, IEC flange, from IM 1001 (B35 from B3)	•	•	•	•	•	•	•	•	•	•	•
047 IM 3601 flange mounted, IEC flange, from IM 3001 (B14 from B5).	•	•	•	•	•	•	-	-	-	-	-
066 Modified for specified mounting offering from IM B3 (1001), IM B5 (3001) and IM B35 (2001).	•	•	•	•	•	•	•	•	•	•	•
Painting											
114 Special paint colour, standard grade.	•	•	•	•	•	•	•	•	•	•	•
Protection											
005 Metal protective roof, vertical motor, shaft down.	•	•	•	•	•	•	•	•	•	•	•
072 Radial seal at D-end.	-	-	-	-	-	-	•	•	•	•	•
158 Degree of protection IP65.	•	•	•	•	•	•	•	•	•	•	•
403 Degree of protection IP56.	•	•	•	•	•	•	•	•	•	•	•
784 Gamma-seal at D-end.	•	•	•	•	•	•	•	•	•	•	•
Rating & instruction plates											
002 Restamping voltage, frequency and output, continuous duty.	•	•	•	•	•	•	•	•	•	•	•
095 Restamping output (maintained voltage, frequency), intermittent duty.	•	•	•	•	•	•	•	•	•	•	•
098 Stainless rating plate.	•	•	•	•	•	•	•	•	•	•	•
135 Mounting of additional identification plate, stainless.	•	•	•	•	•	•	•	•	•	•	•
159 Additional rating plate "made in ..."	•	•	•	•	•	•	•	•	•	•	•
161 Additional rating plate delivered loose.	-	-	-	-	-	-	•	•	•	•	•
163 Frequency converter rating plate. Rating data according to quotation.	•	•	•	•	•	•	•	•	•	•	•
Shaft & rotor											
069 Two shaft extensions according to catalog drawings.	•	•	•	•	•	•	•	•	•	•	•
070 One or two special shaft extensions, standard shaft material.	•	•	•	•	•	•	•	•	•	•	•
Stator winding temperature sensors											
121 Bimetal detectors, break type (NCC), (3 in series), 130°C, in stator winding.	-	-	-	-	-	-	•	•	•	•	•
122 Bimetal detectors, break type (NCC), (3 in series), 150°C, in stator winding.	-	-	-	-	-	-	•	•	•	•	•
435 PTC - thermistors (3 in series), 130°C, in stator winding.	•	•	•	•	•	•	•	•	•	•	•
436 PTC - thermistors (3 in series), 150°C, in stator winding.	○	○	○	○	○	○	•	•	•	•	•
439 PTC - thermistors (2x3 in series), 150°C, in stator winding.	-	-	-	-	-	-	•	•	•	•	•
441 PTC - thermistors (3 in series, 130°C & 3 in series, 150°C), in stator winding.	•	•	•	•	•	•	•	•	•	•	•

○ = Included as standard | • = Available as option | - = Not applicable

Code / Variant	M2BA						M2BAX					
	71	80	90	100	112	132	160	180	200	225	250	
445 Pt100 (1 per phase) in stator winding.	•	•	•	•	•	•	•	•	•	•	•	
Terminal box												
021 Terminal box LHS (seen from D-end).	•	•	•	•	•	•	•	•	•	•	•	
022 Cable entry LHS (seen from D-end).	•	•	•	•	•	•	•	•	•	•	•	
180 Terminal box RHS (seen from D-end).	•	•	•	•	•	•	•	•	•	•	•	
230 Standard metal cable glands.	•	•	•	•	•	•	•	•	•	•	•	
375 Standard plastic cable gland	•	•	•	•	•	•	•	•	•	•	•	
376 Two standard plastic cable glands	•	•	•	•	•	•	•	•	•	•	•	
418 Separate terminal box for auxiliaries, standard material.	-	-	-	-	-	-	•	•	•	•	•	
468 Cable entry from D-end.	•	•	•	•	•	•	-	-	-	-	-	
469 Cable entry from N-end.	•	•	•	•	•	•	-	-	-	-	-	
731 Two standard cable glands.	•	•	•	•	•	•	•	•	•	•	•	
400 4 x 90 degr turnable terminal box.	-	-	-	-	-	-	○	○	○	○	○	
Testing												
145 Type test report from a catalogue motor	-	-	-	-	-	-	•	•	•	•	•	
146 Type test with report for one motor from specific delivery batch.	•	•	•	•	•	•	•	•	•	•	•	
148 Routine test report.	•	•	•	•	•	•	•	•	•	•	•	

○ = Included as standard | • = Available as option | - = Not applicable

Mechanical design

Bearings

General performance motors are normally fitted with single-row deep-groove ball bearings, as shown in the table below.

If the bearing at the D-end is replaced with a roller bearing (NU- or NJ-), higher radial forces can be handled. Roller bearings are suitable for belt-drive applications and can be ordered with variant code 037.

Standard and alternative designs

Motor size	Poles	Standard design	
		Deep groove ball bearings	
		D-end	N-end
71	2 - 6	6203-2Z/C3	6202-2Z/C3
80	2 - 6	6204-2Z/C3	6203-2Z/C3
90	2 - 6	6205-2Z/C3	6204-2Z/C3
100	2 - 6	6206-2Z/C3	6205-2Z/C3
112	2 - 6	6206-2Z/C3	6205-2Z/C3
132	2 - 6	6208-2Z/C3	6208-2Z/C3
160	2 - 6	6209-2Z/C3	6209-2Z/C3
180	2 - 6	6210-2Z/C3	6209-2Z/C3
200	2 - 6	6212-2Z/C3	6209-2Z/C3
225	2 - 6	6213-2Z/C3	6210-2Z/C3
250	2 - 6	6215-2Z/C3	6212-2Z/C3

Axially-locked bearings

All motors are equipped as standard with an axially locked bearing at the D-end.

Terminal box

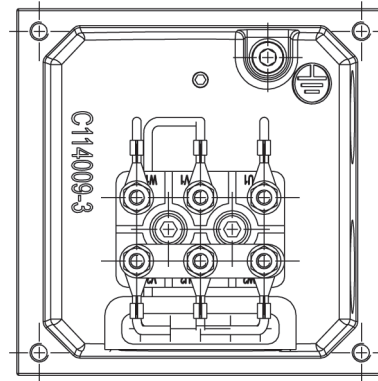
Standard terminal box, General performance cast iron motors, 71-250

Terminal boxes

The pictures below show standard terminal boxes.



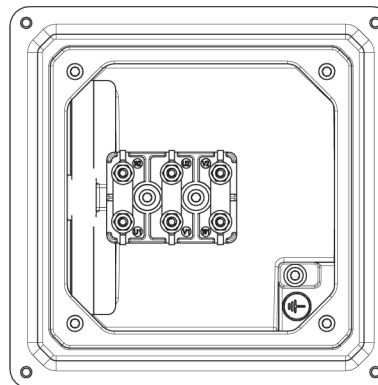
Terminal box for motor sizes 71 to 132



Terminal board for motor sizes 71 to 132



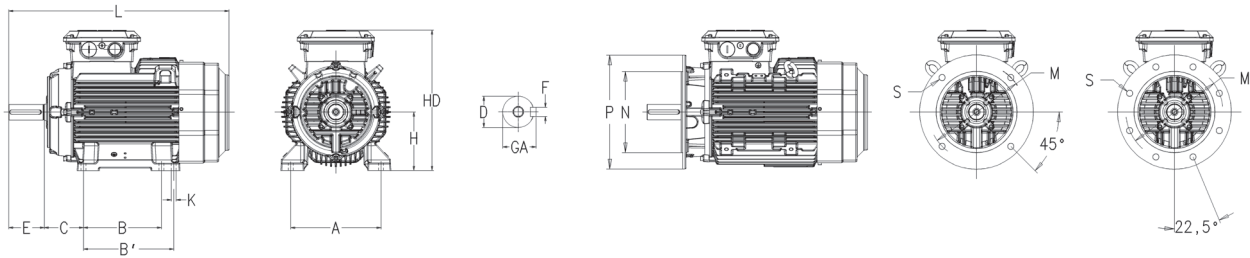
Terminal box for motor sizes 160 to 250



Terminal board for motor sizes 160 to 250

Dimension drawings

General performance cast iron motors, 71 - 132



Foot-mounted motor IM1001, B3 and Flange-mounted motor IM 3001, B5

Motor size	D poles		GA poles		F poles		E poles		L max poles		A	B	B'	C	HD	K	H	M	N	P	S
	2	4-6	2	4-6	2	4-6	2	4-6	2	4-6											
71	14	14	16	16	5	5	30	30	264	264	112	90	-	45	178	7	71	130	110	160	10
80	19	19	21.5	21.5	6	6	40	40	321	321	125	100	-	50	195	10	80	165	130	200	12
90	24	24	27	27	8	8	50	50	357	357	140	100	125	56	219	10	90	165	130	200	12
100	28	28	31	31	8	8	60	60	381	381	160	140	-	63	247	12	100	215	180	250	15
112	28	28	31	31	8	8	60	60	403	403	190	140	-	70	259	12	112	215	180	250	15
132	38	38	41	41	10	10	80	80	533	533	216	140	178	89	300	12	132	265	230	300	15
160	42	42	45	45	12	12	110	110	584	584 ¹⁾	254	210	254	108	413	14.5	160	300	250	350	19
180	48	48	51.5	51.5	14	14	110	110	681	681	279	241	279	121	433	14.5	180	300	250	350	19
200	55	55	59	59	16	16	110	110	726	726	318	267	305	133	473 ²⁾	18.5	200	350	300	400	19
225	55	60	59	64	16	18	110	140	821	851	356	286	311	149	539	18.5	225	400	350	450	19
250	60	65	64	69	18	18	140	140	879	879	406	311	349	168	584	24	250	500	450	550	19
280S	65	75	69	79.5	18	20	140	140	982	982	457	368	-	190	768	24	280	500	450	550	18
280SM	65	75	69	79.5	18	20	140	140	1052	1052	457	368	419	190	768	24	280	500	450	550	18
315SM	65	80	69	85	18	22	140	170	1216	1246	508	406	457	216	845	28	315	600	550	660	23
315ML	65	90	69	85	18	25	140	170	1330	1360	508	457	508	216	845	28	315	600	550	660	23
355SM	70	100	74.5	106	20	28	140	210	1399	1469	610	500	560	254	926	35	355	740	680	800	23

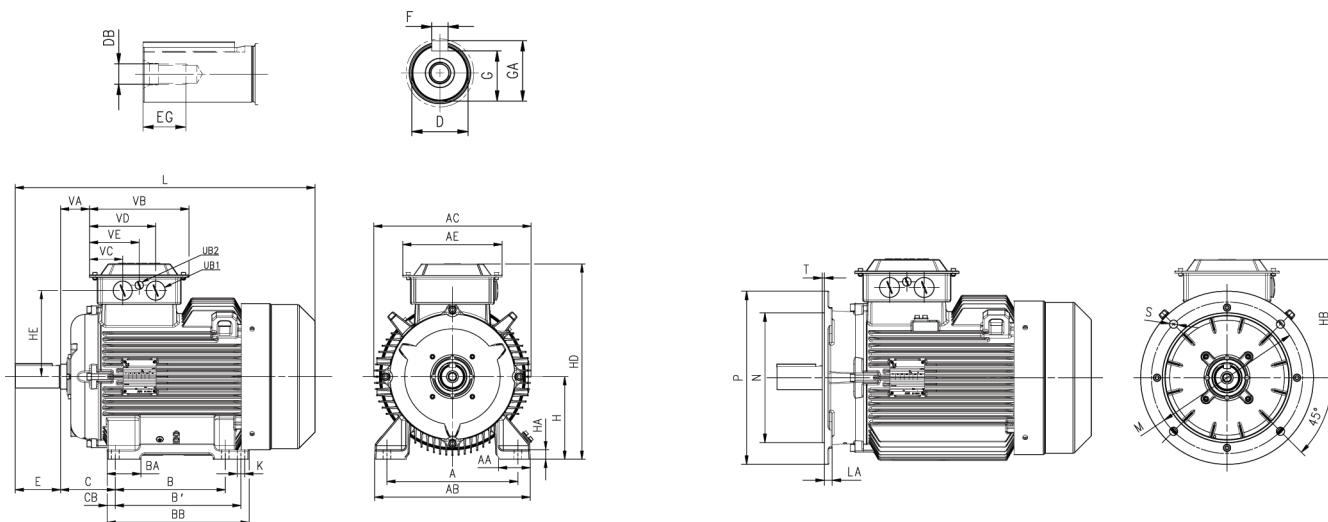
Motor size	M	N	P	S	Footnotes
71	85	70	105	M6	¹⁾ 160MLB 6-pole L = 681
80	100	80	120	M6	²⁾ 200, voltage code S HD = 478
90	115	95	140	M8	
100	130	110	160	M8	
112	130	110	160	M8	
132	165	130	200	M10	

Tolerances

A, B	±0,8
D	ISO j6 ≤ Ø 28 mm
	ISO k6 < Ø 38 mm
	ISO m6 ≥ Ø 55 mm
F	ISO h9
H	-0,5
N	ISO js6
C	±0,8

Dimension drawings

General performance cast iron motors, 160-250



Foot-mounted motor IM 1001, B3 and Flange-mounted motor IM 3001, B5

Motor size	AE	D	DB	E	EG	F	G	GA	H	HA	HE	L	UB	VA	VB	VC	VD	VE
160 ¹⁾	241	42	M16	110	36	12	37	45	160	23	188	586,5	M40X1,5	59	241	81	161	121
180 ²⁾	241	48	M16	110	36	14	42,5	51,5	180	23	188	683	M40X1,5	59	241	81	161	121
200 ³⁾	241	55	M20	110	42	16	49	59	200	23	208	728	M40X1,5	70	241	81	161	121
225 2p ⁴⁾	262	55	M20	110	42	16	49	59	225	23	228	824	M63X1,5	79	262	83	179	131
225 4-6 p ⁴⁾	262	60	M20	140	42	18	53	64	225	23	228	854	M63X1,5	79	262	83	179	131
250 2 p	262	60	M20	140	42	18	53	64	250	23	248	882	M63X1,5	72	262	83	179	131
250 4-6 p	262	65	M20	140	42	18	58	69	250	23	248	882	M63X1,5	72	262	83	179	131

Motor size	IM B3 (IM 1001)										IM B5 (IM 3001)								
	A	AA	AB	AC	B	B'	BA	BB	C	CB	HD	K	HB	LA	M	N	P	S	T
160	254	67	310	338	210	254	69	294	108	20	413	14,5	253	16	300	250	350	18,5	5
180	279	72	340	338	241	279	68	318	121	19	134	14,5	253	16	300	250	350	18,5	5
200	318	77	378	382	267	305	82	345	133	20	173	18,5	273	18	350	300	400	18,5	5
225 2p	356	91	435	414	286	311	69	351	149	20	539	18,5	314	20	400	350	450	18,5	5
225 4-6 p	356	91	435	414	286	311	69	351	149	20	539	18,5	314	20	400	350	450	18,5	5
250 2 p	406	98	480	462	311	349	72	392	168	22	585	24	334	22	500	450	550	18,5	5
250 4-6 p	406	98	480	462	311	349	72	392	168	22	585	24	334	22	500	450	550	18,5	5

Tolerances

Tolerance	Footnotes
A, B ±0,4	¹⁾ IE2: M2BAX160MLC2, B4, J6 & IE1: M2BAX160MLJ6, B6, B8 L=626
D ISO k6 < Ø 50 mm	¹⁾ IE2: M2BAX160MLB6 & IE1: M2BAX160MLC8 L=646
ISO m6 > Ø 50 mm	²⁾ IE2: M2BAX180MLB4, A6 & IE1: M2BAX180MLB4, A6, A8, B8 L=704
F ISO h9	³⁾ IE2: M2BAX200MLB2, A4, B6 & IE1: M2BAX200MLB2, A4, A8 L=768
H -0,5	IE1: M2BAX225SMA2 L=824
N ISO j6	⁴⁾ IE2: M2BAX225SMB4, A6 & IE1: M2BAX225SMB4, B8 L=884
C ±0,8	

Motors in brief

General performance cast iron motors, 71 - 132

Motor size	M2BA	71	80	90	100	112	132
Stator and end shields	Material	Cast iron EN-GJL-150/GG 15/GRS 150					
	Paint color shade	Munsell blue 8B 4.5/3.25					
	Surface treatment	Phosphating anticorrosive primer and top coat polyurethane, $\geq 70\mu\text{m}$					
Feet	Material	Integrated cast iron feet					
Bearings	D-end	6203-2Z/C3	6204-2Z/C3	6205-2Z/C3	6206-2Z/C3	6206-2Z/C3	6208-2Z/C3
	N-end	6202-2Z/C3	6203-2Z/C3	6204-2Z/C3	6205-2Z/C3	6205-2Z/C3	6208-2Z/C3
Axially locked bearings		Locked at D-end					
Bearing seals	D-end	V-ring					
	N-end	Labyrinth seal					
Lubrication		Permanently lubricated shielded bearings. Grease temperature range -40 to + 160 °C					
Terminal box	Material	Cast iron EN-GJL-150/GG 15/GRS 150					
	Surface treatment	Phosphating anticorrosive primer and top coat polyurethane, $\geq 70\mu\text{m}$					
	Screws	Steel 5G, coated with zinc and yellow chromated.					
Connections	Threaded openings	2 x M16	2 x M25	2 x M32			
	Max Cu-area mm ²	4	6	10			
	Terminal box	Cable lugs, 6 terminals					
Fan	Material	Polypropylene. Reinforced with 20% glass-fibre.					
Fan cover	Material	Steel					
	Paint color shade	Black RAL 9011					
	Surface treatment	Phosphating pretreatment and polyester powder top coat $\geq 70\mu\text{m}$					
Stator winding	Material	Copper					
	Insulation class	Insulation class F.					
	Winding protection	3 PTC thermistors as standard, 150 °C					
Rotor winding	Material	Die-cast aluminum					
Balancing method		Half-key balancing					
Key ways		Closed key way					
HEating elements	On request	8 W			25 W		
Enclosure		IP 55					
Cooling method		IC 411					
Drain holes		Drain holes with closable plastic plugs, open on delivery.					
Lifting lugs		Bolted to the stator					

Motors in brief

General performance cast iron motors, 160-250

Motor size	M2BAX	160	180	200	225	250
Stator and end shields	Material	Cast iron				
	Paint color shade	Munsell blue 8B 4.5/3.25				
	Corrosion class	C3 medium				
Feet	Material	Integrated cast iron				
Bearings	D-end	6209-2Z/C3	6210-2Z/C3	6212-2Z/C3	6213-2Z/C3	6215-2Z/C3
	N-end	6209-2Z/C3	6209-2Z/C3	6209-2Z/C3	6210-2Z/C3	6212-2Z/C3
Axially locked bearings	Retaining ring	Locked at D-end				
Bearing seals	D-end	V-ring				
Lubrication		Permanently lubricated shielded bearings				
Measuring nipples for condition monitoring of the bearings		Not Included				
Rating plate	Material	Aluminum				
Terminal box	Material	Steel				
	Corrosion class	C3 medium				
	Cover screws	Zinc-electroplated steel				
Connections	Threaded openings	2xM40, 1xM16			2xM50, 1xM16	
	Max Al-area mm	70			120	
	Terminals	6 terminals for connection with cable lugs (not included)				
	Cable glands	Gable gland as option				
Fan	Material	Glass-fiber reinforced polypropylene				
Fan cover	Material	Steel				
	Paint color shade	Munsell blue 8B 4.5/3.25				
	Corrosion class	C3 medium				
Stator winding	Material	Copper				
	Insulation	Insulation class F. Temperature rise class B unless otherwise stated.				
	Winding protection	Not included				
Rotor winding	Material	Pressure die-cast aluminum				
Balancing method		Half key balancing as standard				
Key ways		Open key way				
Drain holes		Drain holes with closable plastic plugs, open on delivery				
Enclosure		IP 55 Higher protection on request				
Cooling method		IC 411				
Lifting lugs		Integrated cast iron lifting lugs				

Total product offering

Motors, generators and mechanical power transmission products with a complete portfolio of services

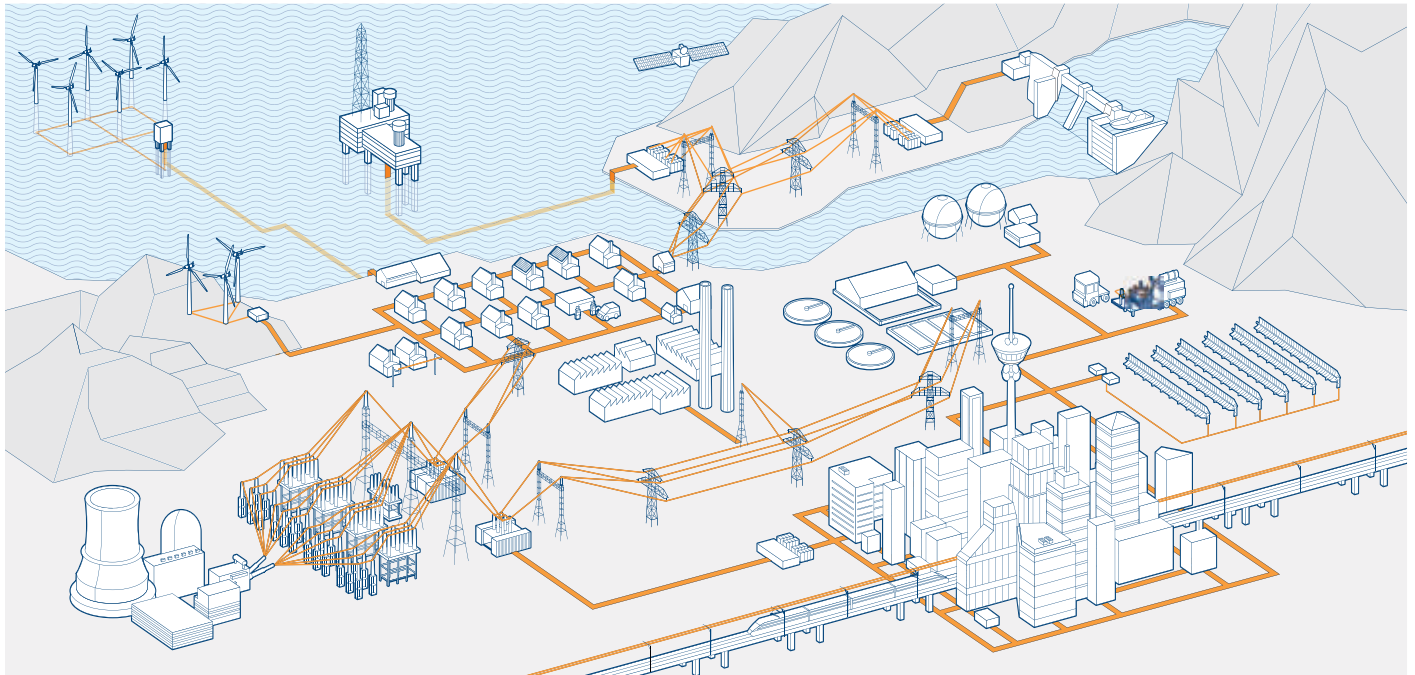


ABB is the leading manufacturer of low, medium and high voltage motors and generators, and mechanical power transmission products. ABB products are backed by a complete portfolio of services. Our in-depth knowledge of virtually every type of industrial process ensures we always specify the best solution for your needs.

Low and high voltage IEC induction motors

- Process performance motors
- General performance motors
- High voltage cast iron motors
- Induction modular motors
- Slip-ring modular motors

Low and medium voltage NEMA motors

- Steel frame open drip proof (ODP) motors
- Weather protected, water cooled, fan ventilated
- Cast iron frame (TEFC)
- Air to air cooled (TEAAC) motors

Motors and generators for explosive atmospheres

- IEC and NEMA motors and generators, for all protection types

Synchronous motors

Synchronous generators

- Synchronous generators for diesel and gas engines
- Synchronous generators for steam and gas turbines

Wind power generators

Generators for small hydro

Other motors and generators

- Brake motors
- DC motors and generators
- Gear motors
- Marine motors and generators
- Single phase motors
- Motors for high ambient temperatures
- Synchronous reluctance motors
- Permanent magnet motors and generators
- High speed motors
- Smoke extraction motors
- Wash down motors
- Water cooled motors
- Generator sets
- Roller table motors
- Low inertia motors
- Traction motors and generators

Life cycle services

Mechanical power transmission components, bearings, gearings

Life cycle services and support

From pre-purchase to migration and upgrades



ABB offers a complete portfolio of services to ensure trouble-free operation and long product lifetimes. These services cover the entire life cycle. Local support is provided through a global network of ABB service centers and certified partners.

Pre-purchase

ABB's front-end sales organization can help customers to quickly and efficiently select, configure and optimize the right motor or generator for their application.

Installation and commissioning

Professional installation and commissioning by ABB's certified engineers represent an investment in availability and reliability over the entire life cycle.

Engineering and consulting

ABB's experts provide energy efficiency and reliability appraisals, advanced condition and performance assessments and technical studies.

Condition monitoring and diagnosis

Unique services collect and analyze data to provide early warnings of problems before failures can occur. All critical areas of the equipment are covered.

Maintenance and field services

ABB offers life cycle management plans and preventive maintenance products. The recommended four-level maintenance program covers the entire product lifetime.

Spare parts

Spare parts and support are offered throughout the life cycle of ABB products. In addition to individual spares, tailored spare part packages are also available.

Repair and refurbishment

Support for all ABB motors and generators and other brands is provided by ABB's global service organization. Specialist teams can also deliver emergency support.

Migration and upgrades

Life cycle audits determine the optimum upgrades and migration paths. Upgrades range from individual components to direct replacement motors and generators.

Training

Product and service training courses take a practical approach. The training ranges from standard courses to specially tailored programs to suit customer requirements.

Specialized support

Specialized support is offered through ABB's global service organization. Local units provide major and minor repairs as well as overhauls and reconditioning.

Service contracts

Service contracts are tailored to the customer's needs. The contracts combine ABB's entire service portfolio and 120 years of experience to deploy the optimal service practices.

Contact us

www.abb.com/motors&generators

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