

Catalog

Low voltage General performance IE2 high efficiency motors

General performance IE2 high efficiency motors Sizes 71 to 355



ABB's General performance IE2 high efficiency motors are best suited for applications where simplicity and off-the-shelf availability are paramount. With ABB quality and support these motors have the features appreciated by volume customers and serial OEM's. Motors have IE2 efficiency.

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General performance motors in brief

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General performance cast iron motors

Technical data for totally enclosed squirrel cage three phase motors

IE2

IP 55 - IC 411 - Insulation class F, temperature rise class B
IE2 efficiency class according to IEC 60034-30; 2008

Output kW	Frame Size	Speed r/min	Efficiency			Power factor cos φ	Current		Torque			Moment of inertia J=1/4GD ² kgm ²	Weight kg
			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 _b /T _n		
3000 r/min 415V, 50Hz													
0.37	E2BA71A2	2660	72.2	72.2	72	0.80	0.92	3.9	1.3	2.2	2.3	0.00039	11
0.55	E2BA71B2	2680	74.8	74.8	74	0.85	1.2	4.3	2	2.4	2.5	0.00051	11
0.75	E2BA80B2	2895	77.4	77.4	73	0.74	1.8	6.5	2.5	2.4	4.2	0.001	16
1.1	E2BA80C2	2870	79.6	79.6	78	0.80	2.4	6.5	3.7	2.7	3.5	0.0012	18
1.5	E2BA90SLB2	2900	81.3	81.3	79.9	0.86	3	6.5	4.9	2.5	2.6	0.00254	24
2.2	E2BA90SLC2	2885	83.2	83.2	82.2	0.87	4.2	7.0	7.3	1.9	2.5	0.0028	25
3.7	E2BA100LC2	2905	85.5	85.5	85	0.86	7	7.0	12.2	2.9	3.2	0.00575	37
5.5	E2BA132SMB2	2865	87	87	85.8	0.86	10.2	7.0	18.3	2	2.7	0.01275	68
7.5	E2BA132SMC2	2890	88.1	88.1	86.3	0.84	14.1	7.0	24.80	2	3.6	0.01359	70
11	M2BAX160MLA2	2925	89.4	89.7	88.2	0.88	19.6	7.0	36	2.4	3.0	0.0415	105
15	M2BAX160MLB2	2930	90.3	90.7	90.0	0.90	25.9	7.0	49	2.4	3.0	0.0544	120
18.5	M2BAX160MLC2	2934	90.9	91.2	90.4	0.90	31.7	7.0	60	2.6	3.1	0.0581	131
22	M2BAX180MLA2	2936	91.3	91.7	91.0	0.91	37.3	7.0	72	3.0	3.5	0.0679	152
30	M2BAX200MLA2	2940	92.0	92.4	91.5	0.90	50.7	7.0	97	2.5	3.2	0.1077	198
37	M2BAX200MLB2	2950	92.5	92.8	91.7	0.89	62.9	7.0	120	3.0	3.8	0.1332	232
45	M2BAX225SMA2	2956	92.9	92.6	92.0	0.90	75.7	7.0	145	2.4	3.2	0.2443	295
55	M2BAX250SMA2	2960	93.2	93.8	92.8	0.90	91.7	7.0	177	2.6	3.0	0.3160	344
75	E2HX280SMB2	2970	93.8	93.8	92.8	0.92	121	7.0	241	2.3	2.7	1.025	690
90	E2HX280SMC2	2970	94.1	94.1	93.1	0.92	145	7.0	289	2.3	2.5	1.2	685
110	E2BA315SMA2	2980	94.3	94.3	93.3	0.90	180	7.0	353	2.4	2.7	1.41	935
125	E2BA315SMB2k	2980	94.5	94.5	93.5	0.90	204	7.0	401	2.4	2.7	1.61	975
132	E2BA315SMB2	2980	94.6	94.6	93.6	0.90	216	7.0	423	2.4	2.7	1.610	975
160	E2BA315MLA2	2980	94.8	94.8	93.8	0.90	261	7.0	513	2.3	3.0	1.950	1150
200	E2BA315MLC2	2980	95.0	95.0	94.0	0.90	325	7.0	641	2.6	3.0	2.55	1275
250	E2BA355SMA2	2980	95.0	95.0	94.0	0.90	407	7.0	801	1.6	3.0	4.250	1645
315	E2BA355MLA2	2980	95.0	95.0	94.0	0.91	507	7.0	1009	1.7	3.0	5.75	1895
355	E2BA355MLC2	2982	95.0	95.0	94.0	0.90	578	7.0	1137	1.7	3.2	6.525	2000

Efficiency values are given according to IEC 60034-2-1; 2007.
Please note that the values are not comparable without knowing the testing method.
ABB has calculated the efficiency values according to indirect method, stray load losses (additional losses) determined from measuring.

I_s / I_n = Starting current
T_i / T_n = Locked rotor torque
T_b / T_n = Breakdown torque

IE-class concerns motors from 0.37 kW to 355 kW

General performance cast iron motors

Technical data for totally enclosed squirrel cage three phase motors

IE2

IP 55 - IC 411 - Insulation class F, temperature rise class B
IE2 efficiency class according to IEC 60034-30; 2008

Output kW	Frame Size	Speed r/min	Efficiency			Power factor cos φ	Current		Torque			Moment of inertia J=1/4GD ² kgm ²	Weight kg
			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 _b /T _n		
1500 r/min 415V, 50Hz													
0.37	E2BA71B4	1380	70.1	70.1	68.7	0.83	0.9	4	2.6	1.6	2.1	0.00088	11
0.55	E2BA80A4	1415	75.1	75.1	71.4	0.73	1.4	5	3.7	2	2.8	0.00144	15
0.75	E2BA80D4	1430	79.6	79.6	76.2	0.73	1.8	6	5	2.7	3.2	0.00205	17
1.1	E2BA90SLC4	1435	81.4	81.4	80.9	0.80	2.4	6	7.3	2.7	3.4	0.0044	25
1.5	E2BA90SLD4	1430	82.8	82.8	81	0.83	3	6	10	2.5	3	0.00538	27
2.2	E2BA100LC4	1450	84.3	84.3	82.6	0.78	4.7	7.0	14.5	2.9	3.6	0.00948	36
3.7	E2BA112MB4	1440	86.3	86.3	85.9	0.81	7.4	7.0	24.5	2.5	2.9	0.0125	44
5.5	E2BA132SMB4	1460	87.7	87.7	86.8	0.80	10.9	7.0	36	1.8	2.4	0.03282	70
7.5	E2BA132SMC4	1450	88.7	88.7	86	0.81	14.5	7.0	49.4	1.6	2.4	0.03659	73
9.3	M2BAX160MLJ4	1460	89.3	89.8	88.0	0.84	17.4	7.0	61	2.3	2.9	0.0738	107
11	M2BAX160MLA4	1463	89.8	90.4	89.4	0.85	20.2	7.0	72	2.3	2.9	0.0840	115
15	M2BAX160MLB4	1463	90.6	91.2	90.2	0.84	27.6	7.0	98	2.5	3.1	0.1025	134
18.5	M2BAX180MLA4	1464	91.2	91.8	90.9	0.84	33.8	7.0	121	2.9	3.5	0.1217	155
22	M2BAX180MLB4	1465	91.6	92.1	91.2	0.83	40.5	7.0	143	2.5	3.2	0.1396	171
30	M2BAX200MLA4	1474	92.3	92.5	91.8	0.84	54.1	7.0	194	2.7	3.5	0.2572	229
37	M2BAX225SMA4	1478	92.7	93.1	92.2	0.85	65.7	6.5	239	2.3	2.7	0.3605	267
45	M2BAX225SMB4	1478	93.1	93.5	92.6	0.84	80.5	7.0	291	2.4	2.9	0.4314	304
55	M2BAX250SMA4	1478	93.5	93.7	92.9	0.85	96.8	7.0	355	2.7	3.0	0.5331	342
75	E2HX280SMB4	1478	94.0	94.0	93.0	0.87	128	7.0	485	2.4	2.7	1.11	670
90	E2HX280SMC4	1479	94.2	94.2	93.2	0.85	156	7.0	581	2.6	2.8	1.425	730
110	E2BA315SMA4	1486	94.5	94.5	93.5	0.88	184	7.0	707	2.3	2.8	2.387	930
125	E2BA315SMB4k	1486	94.6	94.6	93.6	0.86	214	7.0	803	2.0	2.7	2.65	960
132	E2BA315SMB4	1486	94.7	94.7	93.7	0.86	225	7.0	848	2.3	2.7	2.65	960
160	E2BA315MLA4	1485	94.9	94.9	93.9	0.87	270	7.0	1029	2.3	2.6	3.375	1110
200	E2BA315MLC4	1485	95.1	95.1	94.1	0.88	332	7.0	1286	2.4	2.8	4.25	1260
250	E2BA355SMA4	1486	95.1	95.1	94.1	0.87	420	7.0	1607	2.0	2.5	6.625	1620
315	E2BA355MLA4	1486	95.1	95.1	94.1	0.87	530	7.0	2024	2.5	3.0	8.25	1870
355	E2BA355MLB4	1486	95.1	95.1	94.1	0.87	597	7.0	2281	2.2	3.0	10	2110

Efficiency values are given according to IEC 60034-2-1; 2007.
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I_s / I_n = Starting current
T_i / T_n = Locked rotor torque
T_b / T_n = Breakdown torque

IE-class concerns motors from 0.37 kW to 355 kW

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Output kW	Frame Size	Speed r/min	Efficiency			Power factor cos φ	Current		Torque			Moment of inertia J=1/4GD ² kgm ²	Weight kg
			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 _b /T _n		
1000 r/min 415V, 50Hz													
0.37	E2BA80A6	915	69	69	64.4	0.69	1.1	6	3.9	1.8	2.2	0.00187	15
0.55	E2BA80B6	920	72.9	72.9	70.6	0.71	1.5	6	5.7	1.8	2.2	0.00239	17
0.75	E2BA90SLC6	960	75.9	75.9	69.7	0.60	2.3	6	7.5	2.3	3.1	0.00444	25
1.1	E2BA90SLE6	930	78.1	78.1	75.4	0.66	3	6	11.3	1.9	2.3	0.0054	28
1.5	E2BA100L6	950	79.8	79.8	76.8	0.69	3.8	6	15	2.2	2.7	0.00873	37
2.2	E2BA112MB6	950	81.8	81.8	79.3	0.69	5.4	7	22.1	1.7	2.3	0.0125	44
3.7	E2BA132SMB6	970	84.3	84.3	82.4	0.70	8.8	7	36.4	1.5	2.2	0.03336	69
5.5	E2BA132SMF6	965	86	86	85	0.71	12.5	7	54.4	2.5	2.8	0.0487	86
7.5	M2BAX160MLA6	967	87.2	88.0	86.8	0.79	15.3	6.5	74	1.9	2.6	0.0890	122
9.3	M2BAX160MLJ6	968	88.0	88.6	87.8	0.79	18.9	6.5	92	2.1	2.8	0.1190	141
11	M2BAX160MLB6	970	88.7	89.2	88.5	0.78	22.3	7.0	108	2.3	3.0	0.1293	147
15	M2BAX180MLA6	972	89.7	90.1	89.4	0.76	30.9	7.0	147	2.3	3.2	0.1522	173
18.5	M2BAX200MLA6	972	90.4	90.8	90.0	0.79	36.5	6.0	182	1.7	2.5	0.1980	190
22	M2BAX200MLB6	973	90.9	91.2	90.6	0.79	43.1	6.0	216	1.7	2.5	0.2384	212
30	M2BAX225SMA6	985	91.7	92.0	91.2	0.83	55.2	6.5	291	2.3	2.8	0.5687	284
37	M2BAX250SMA6	985	92.2	92.4	91.9	0.82	68.5	6.0	359	2.0	2.6	0.8042	337
45	E2HX280SMA6	988	92.7	92.7	90.7	0.84	80	7.0	435	2.2	2.4	1.8	590
55	E2HX280SMB6	988	93.1	93.1	91.1	0.84	98	7.0	532	2.2	2.4	2.025	600
75	E2BA315SMA6	989	93.7	93.7	91.7	0.85	131	7.0	724	2.4	2.7	3.887	932
90	E2BA315SMB6	990	94.0	94	92.0	0.85	157	7.0	868	2.4	2.8	4.8	1005
110	E2BA315SMC6	990	94.3	94.3	92.3	0.85	191	7.0	1061	2.5	3.0	5.45	1072
125	E2BA315MLC6k	990	94.4	94.4	92.4	0.86	214	7.0	1206	2.5	3.0	7.05	1305
132	E2BA315MLC6	988	94.6	94.6	92.6	0.86	226	7.0	1276	2.3	2.6	7.05	1305
160	E2BA355SMA6	989	94.8	94.8	92.8	0.85	276	7.0	1545	2.0	2.7	9.80	1675
200	E2BA355SMB6	990	95.0	95.0	93.0	0.84	349	7.0	1929	2.5	2.8	12.625	1800
250	E2BA355MLA6	988	95.0	95.0	93.0	0.85	431	7.0	2416	2.3	2.7	13.75	1940
315	E2BA355MLB6	990	95.0	95.0	93.0	0.84	549	7.0	3039	2.5	2.8	15.06	2040

Efficiency values are given according to IEC 60034-2-1; 2007.
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I_s / I_n = Starting current
T_i / T_n = Locked rotor torque
T_b / T_n = Breakdown torque

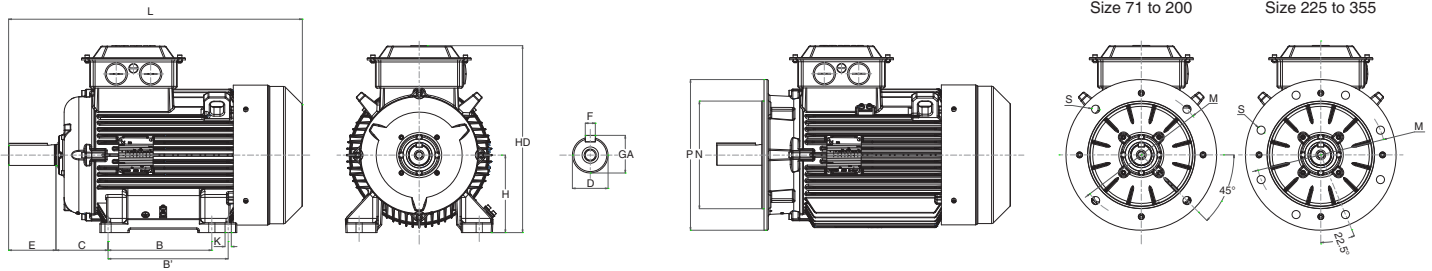
IE-class concerns motors from 0.37 kW to 355 kW

General performance IE2 high efficiency motors Sizes 71 - 355

Dimension drawings

Foot-mounted motor IM1001, B3

Flange-mounted motor IM3001, B5



IM 1001. IM B3

IM 3001. IM B5

IM 1001. IM B3

IM 3001. IM 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											
General performance cast iron motors																					
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	586	586 1), 1')	254	210	254	108	414	14.5	160	300	250	350	19
180	48	48	51.5	51.5	14	14	110	110	683	683 2)	279	241	279	121	434	14.5	180	300	250	350	19
200	55	55	59	59	16	16	110	110	728	728 3)	318	267	305	133	474	18.5	200	350	300	400	19
225	55	60	59	64	16	18	110	140	854	854 4)	356	286	311	149	540	18.5	225	400	350	450	19
250	60	65	64	69	18	18	140	140	882	882	406	311	349	168	585	24	250	500	450	550	19
280	65	75	69	79.5	18	20	140	140	1040	1040	457	368	419	190	728	24	280	500	450	550	19
315SM	65	80	69	85	18	22	140	170	1169	1199	508	406	457	216	872	28	315	600	550	660	24
315ML	65	90	69	95	18	25	140	170	1215	1245	508	457	508	216	872	28	315	600	550	660	24
355SM	75	100	79.5	106	20	28	140	210	1399	1469	610	500	560	254	965	28	355	740	680	800	24
355ML	75	100	79.5	106	20	28	140	210	1504	1574	610	560	630	254	965	28	355	740	680	800	24

Motor	D	GA	F	E	L Max	A	B	B'	C	HD	K	H	M	N	P	S
355MLB4	100	106	28	210	1680	610	560	630	254	965	28	355	740	680	800	24
355MLC2	75	79.5	20	140	1610	610	560	630	254	965	28	355	740	680	800	24

Above table gives the main dimensions in mm.

- 1) M2BAX160MLC2, B4, J6 L = 626
- 1') M2BAX160MLB6 L = 646
- 2) M2BAX180MLB4, A6 L = 703
- 3) M2BAX200MLB2, A4, B6 L = 768
- 4) M2BAX225SMB4, A6 L = 884

General performance IE2 cast iron motors in brief

Size		71	80	90	100	112	132
Stator	Material	Cast Iron Grade 150:ISO 185					
	Paint colour shade	Munsell blue 8B 4.5/3.25 / NCS 4822 B05G					
	Surface Treatment	Aliphatic polyurethane enamel paint $\geq 70\mu\text{m}$					
Feet		Fixed feet					
	Material	Cast Iron Grade 150:ISO 185					
Bearing end shields	Material	Cast Iron Grade 150:ISO 185					
	Paint colour shade	Munsell blue 8B 4.5/3.25 / NCS 4822 B05G					
	Surface Treatment	Aliphatic polyurethane enamel paint $\geq 70\mu\text{m}$					
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	Inner Bearing Cover	As stranded, locked at D-end					
Bearing seals	D-end	V-ring					
	N-end	Labyrinth seal					
Lubrication		Permanently lubricated shielded bearings. Grease temp. range -40 to +160°C					
Terminal Box Cover	Material	Sheet of steel, Cold rolled					
	Surface Treatment	Similar to stator					
	Screws	Steel					
Connections	Threaded opening	2 x M16	2 x M25		2 x M32		
	Max Cu area mm ²	4	6		10		
	Terminal Box	Cable lugs, 6 terminals					
	Screws	M4			M5		
Fan	Material	Polypropylene, Reinforced with 20% glass fibre					
Fan Cover	Material	Steel					
	Paint colour shade	Black RAL 9011					
	Surface Treatment	Polyster Powder coated $\geq 50\mu\text{m}$					
Stator winding	Material	Copper					
	Insulation class	Insulation class F, Temperature rise class B, unless otherwise stated					
	Winding protection	Optional					
Rotor winding	Material	Pressure die cast aluminum					
Balancing method		Half Key balancing as standard					
Key ways		Closed Key Way					
Enclosure		IP 55					
Cooling method		IC 411					
Drain holes		Drain holes with closable plastic plugs, open on delivery					
Lifting lugs		Bolted to the Stator					

General performance IE2 cast iron motors in brief

Size	M2BA	160	180	200	225	250
Stator	Material	Cast iron grade 200 : ISO 185				
	Paint colour shade	Munsell blue 8B 4.5/3.25 / NCS 4822 B05G				
	Surface Treatment	Aliphatic polyurethane enamel paint $\geq 70\mu\text{m}$				
Feet		Integrated with stator				
	Material	Cast iron grade 200 : ISO 185				
Bearing end shields	Material	Cast iron grade 200 : ISO 185				
	Paint colour shade	Munsell blue 8B 4.5/3.25 / NCS 4822 B05G				
	Surface Treatment	Aliphatic polyurethane enamel paint $\geq 70\mu\text{m}$				
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	Inner Bearing Cover	As standard, locked at D-end				
Bearing seals	D-end	V-ring				
	N-end	V-ring				
Lubrication		Permanently lubricated shielded bearings				
Terminal Box	Material	Sheet of Steel, Cold Rolled				
	Surface Treatment	Similar to stator				
	Screws	Steel 8.8				
Connections	Threaded opening	(2 x M40 + M16)*		(2 x M50 + M16)		
	Max Al-area mm ²	70		120		
	Terminal Box	6 terminals for connection with cable lugs (not included)				
	Screws	M6		M10		
Fan	Material	Polypropylene, Reinforced with 20% glass fibre				
Fan Cover	Material	Sheet of Steel, Cold Rolled				
	Paint colour shade	Munsell blue 8B 4.5/3.25 / NCS 4822 B05G				
	Surface Treatment	Similar to stator				
Stator winding	Material	Copper				
	Insulation	Insulation class F				
Rotor winding	Material	Diecast aluminum				
Balancing method		Half Key Balancing				
Key ways		Open Key Way				
Enclosure		IP 55				
Cooling method		IC 411				
Drain holes		Drain holes with closable plastic plugs, open on delivery				
Lifting lugs		Integrated with the stator				

General performance IE2 cast iron motors in brief

Size		280 2-6 Pole	315 2 Pole	315 4-6 Pole	355 2 Pole	355 4-6 Pole
Stator	Material	Cast iron grade 150, IS:210				
	Paint colour shade	Munsell blue 8B 4.5/3.25 / NCS 4822 B05G				
	Surface Treatment	Aliphatic polyurethane paint $\geq 80\mu\text{m}$				
Feet		Integrated with stator				
	Material	Cast iron grade 150, IS:210				
Bearing end shields	Material	Cast iron grade 150, IS:210				
	Paint colour shade	Munsell blue 8B 4.5/3.25 / NCS 4822 B05G				
	Surface Treatment	Aliphatic polyurethane paint $\geq 80\mu\text{m}$				
Bearings	D-end	6316/C3	6316/C3	6319/C3	6319/C3	6322/C3
	N-end	6315/C3	6316/C3	6316/C3	6319/C3	6319/C3
Axially-locked	Inner Bearing Cover	As stranded, locked at D-end				
Bearing seals	D-end	Oil Seal				
	N-end					
Lubrication		Regreasable Bearings, Regreasing nipple M10X1				
Terminal Box	Material	Cast iron grade 150, IS:210				
	Surface Treatment	Similar to stator				
	Screws	Steel				
Connections	Threaded opening	2 x 2" BSC	2 x 2-1/2" BSC			
	Max Al-area mm ²	185	240			
	Terminal Box	6 terminals for connection with cable lugs (not included)				
	Screws	M12	M16			
Fan	Material	Polypropylene, Reinforced with 20% glass fibre			Aluminium	
Fan Cover	Material	Sheet of steel, Cold Rolled				
	Paint colour shade	Munsell blue 8B 4.5/3.25 / NCS 4822 B05G				
	Surface Treatment	Similar to stator				
Stator winding	Material	Copper				
	Insulation	Insulation class F				
Rotor winding	Material	Diecast aluminum				
Balancing method		Half Key Balancing				
Key ways		Open Key Way				
Enclosure		IP 55				
Cooling method		IC 411				
Drain holes		Drain holes with closable plastic plugs, open on delivery				
Lifting lugs		Bolted to the Stator				



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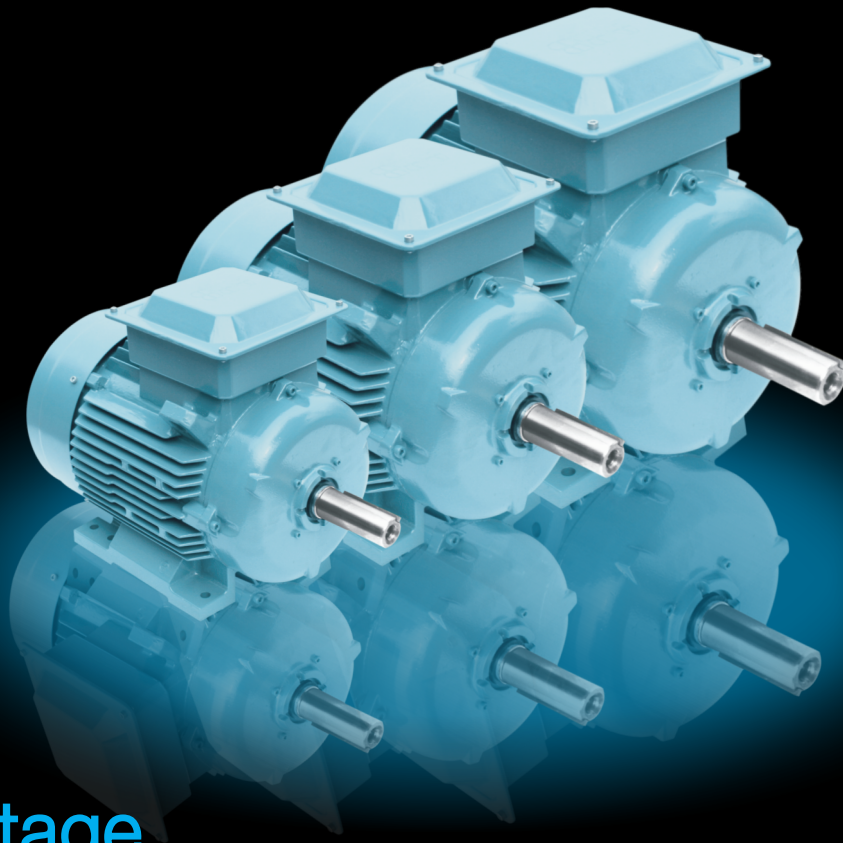
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Catalog

Low voltage
General performance
IE3 efficiency cast iron motors

General performance IE3 efficiency cast iron motors Sizes 71 to 355



ABB's General performance IE3 efficiency motors are best suited for industries where quality, robustness and reliability are paramount. With ABB quality and support these motors have features appreciated by industry customers. Motors have IE3 efficiency.

Technical data

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Dimension drawings

Page 07

General performance motors in brief

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General performance IE3 efficiency cast iron motors

Technical data for totally enclosed squirrel cage three phase induction motors

IE3

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

Output KW	Frame Size	Speed r/min	Efficiency			Power factor cos ϕ	Current		Torque			Moment of inertia $J=1/4GD^2$ kgm ²	Weight kg
			Full load 100%	3/4 load 75%	1/2 load 50%		I_n , A	I_s / I_n	T_n , Nm	T_s / T_n	T_b / T_n		
		3000 r/min	415V, 50Hz										
0.37	M2BAX71MC2	2790	75.5	75.4	72.7	0.81	0.84	4.6	1.3	2.2	2.5	0.00033	9
0.55	M2BAX71MB2	2785	78.1	78.4	76.4	0.80	1.22	4.6	1.9	2.3	2.6	0.00041	10
0.75	M2BAX80MC2	2875	80.7	80.0	76.7	0.80	1.62	6.2	2.5	3.0	3.6	0.00080	14
1.1	M2BAX80MD2	2865	82.7	83.4	81.9	0.84	2.2	6.7	3.7	3.0	3.6	0.00119	17
1.5	M2BAX90SB2	2885	84.2	84.6	83.0	0.86	2.9	6.1	5.0	2.9	3.3	0.00224	21
2.2	M2BAX90SLA2	2890	85.9	86.7	85.8	0.88	4.0	7.0	7.3	3.0	3.5	0.00304	25
3.7	M2BAX100LKB2	2900	87.8	88.1	86.8	0.88	6.7	7.5	12.1	3.5	3.9	0.00756	42
5.5	M2BAX132SMA2	2900	89.2	89.6	88.9	0.86	10.0	6.6	18.0	2.3	3.4	0.1630	69
7.5	M2BAX132SMB2	2905	90.1	90.5	89.7	0.86	13.5	6.3	24.6	2.5	3.5	0.01820	74
9.3	M2BAX160MLJ2	2940	90.7	90.8	89.7	0.89	16.2	7.7	30.1	2.8	3.8	0.053	115
11	M2BAX160MLA2	2942	91.2	91.5	90.8	0.90	18.7	7.7	35.7	2.8	3.6	0.057	118
15	M2BAX160MLB2	2944	91.9	92.1	91.3	0.88	26.0	7.7	48.6	3.0	4.0	0.063	126
18.5	M2BAX160MLC2	2995	92.4	92.9	92.5	0.90	31.2	7.7	59.8	3.0	3.9	0.076	144
22	M2BAX180MLA2	2955	92.7	93.2	92.7	0.90	37.1	7.7	71.0	3.0	3.7	0.110	181
30	M2BAX200MLA2	2957	93.3	93.6	93.2	0.89	51.0	7.0	96.8	2.9	3.3	0.182	230
37	M2BAX200MLB2	2958	93.7	94.1	93.6	0.90	61.8	7.0	119.3	2.9	3.4	0.222	257
45	M2BAX225SMA2	2966	94.0	94.1	93.3	0.87	77.3	7.0	144.7	2.9	3.4	0.296	287
55	M2BAX250SMA2	2968	94.3	94.3	93.5	0.89	92.5	6.7	176.9	2.8	3.1	0.426	344
75	E3HX280SMB2	2970	94.7	94.7	93.7	0.90	122	7.7	241	2.5	2.8	1.025	700
90	E3HX280SMC2	2970	95.0	95.0	94.0	0.90	146	7.7	289	2.0	2.6	1.214	740
110	E3BA315SMA2	2980	95.2	95.2	94.2	0.88	183	7.7	353	2.6	2.9	1.65	935
125	E3BA315SMB2K	2980	95.3	95.3	94.3	0.89	205	7.7	401	2.6	2.9	1.8	970
132	E3BA315SMB2	2980	95.4	95.4	94.4	0.89	216	7.7	423	2.5	2.7	1.8	970
160	E3BA315MLA2	2980	95.6	95.6	94.6	0.90	259	7.7	513	2.6	2.9	2.3	1150
200	E3BA315MLC2	2980	95.8	95.8	94.8	0.90	323	7.7	641	2.6	3	2.55	1310
250	E3BA355SMA2	2980	95.8	95.8	94.8	0.90	403	7.7	801	2.5	3	4.75	1905
315	E3BA355MLA2	2980	95.8	95.8	94.8	0.91	503	7.7	1009	2.0	2.9	5.75	1950
355	E3BA355MLC2	2982	95.8	95.8	94.8	0.90	573	7.7	1137	2.5	3	6.52	2260

Efficiency values are given according to IEC 60034-2-1; 2014.
 Please note that the values are not comparable without knowing the testing method.
 ABB has calculated the efficiency values according to indirect method, stray load losses (additional losses) determined from measuring.

I_s / I_n = Starting current
 T_s / T_n = Locked rotor torque
 T_b / T_n = Breakdown torque

IE-class concerns motors from 0.37 kW to 355 kW

General performance IE3 efficiency cast iron motors

Technical data for totally enclosed squirrel cage three phase induction motors

IE3

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

Output KW	Frame Size	Speed r/min	Efficiency			Power factor cos ϕ	Current		Torque			Moment of inertia $J=1/4GD^2$ kgm ²	Weight kg
			Full load 100%	3/4 load 75%	1/2 load 50%		I_n , A	I_s / I_n	T_n , Nm	T_s / T_n	T_b / T_n		
1500 r/min		415V, 50Hz											
0.37	M2BAX71MC4	1435	73.0	69.8	62.7	0.65	1.08	4.6	2.5	2.7	3.0	0.00082	10
0.55	M2BAX80MC4	1430	78.0	77.4	73.8	0.72	1.36	5.3	3.7	2.7	2.8	0.00195	15
0.75	M2BAX80MLA4	1445	82.5	81.1	77.1	0.70	1.81	4.5	5.0	3.5	3.9	0.00309	20
1.1	M2BAX90SB4	1435	84.1	83.7	81.0	0.73	2.5	5.5	7.4	3.3	3.7	0.00397	22
1.5	M2BAX90SLA4	1431	85.3	85.2	82.9	0.75	3.3	6.0	10.1	3.5	3.9	0.00486	25
2.2	M2BAX100LB4	1450	86.7	86.9	85.1	0.76	4.6	6.8	14.5	3.1	3.7	0.00919	34
3.7	M2BAX112MLA4	1455	88.4	88.5	87.0	0.77	7.6	7.0	24.4	3.5	3.9	0.01540	50
5.5	M2BAX132SMA4	1464	89.6	90.6	89.2	0.80	10.7	6.3	36.1	2.2	3.0	0.03510	72
7.5	M2BAX132MLA4	1467	90.4	90.9	90.3	0.80	14.4	6.1	49.2	2.2	3.5	0.04110	84
9.3	M2BAX160MLJ4	1475	91.0	90.9	89.5	0.79	18.2	7.5	60.0	3.0	4.0	0.105	130
11	M2BAX160MLA4	1475	91.4	91.5	90.5	0.80	21.2	7.5	71.0	2.9	3.8	0.110	134
15	M2BAX160MLB4	1475	92.1	92.2	91.3	0.80	28.8	7.5	96.9	3.0	3.9	0.135	159
18.5	M2BAX160MLA4	1479	92.6	93.0	92.5	0.82	34.0	7.5	119.2	2.8	3.3	0.219	192
22	M2BAX180MLB4	1479	93.0	93.5	93.0	0.82	40.7	7.5	141.8	3.0	3.5	0.243	205
30	M2BAX200MLA4	1482	93.6	93.8	93.2	0.83	53.4	7.5	192.9	3.0	3.3	0.385	259
37	M2BAX225SMA4	1482	93.9	94.2	93.8	0.83	68.1	6.8	238.3	2.9	3.2	0.427	274
45	M2BAX225SMB4	1482	94.2	94.6	94.3	0.83	81.6	6.8	290.0	2.7	3.1	0.525	307
55	M2BAX250SMA4	1482	94.6	94.7	94.1	0.84	98.5	7.0	354.2	3.0	3.4	0.694	358
75	E3HX280SMB4	1478	95.0	95.0	94.0	0.85	129	7.7	485	2.6	2.8	1.495	690
90	E3HX280SMC4	1479	95.2	95.2	94.2	0.85	155	7.7	581	2.6	2.8	1.725	750
110	E3BA315SMA4	1486	95.4	95.4	94.4	0.84	191	7.7	707	2.5	2.8	2.988	1030
125	E3BA315SMB4K	1486	95.5	95.5	94.5	0.84	217	7.7	803	2.5	2.8	3.887	1175
132	E3BA315SMB4	1486	95.6	95.6	94.6	0.85	226	7.7	848	2.5	2.8	3.887	1175
160	E3BA315MLA4	1485	95.8	95.8	94.8	0.84	277	7.7	1029	2.6	2.9	4.637	1350
200	E3BA315MLC4	1485	96.0	96.0	95.0	0.86	337	7.7	1286	2.6	2.8	5.03	1420
250	E3BA355SMA4	1486	96.0	96.0	95.0	0.87	416	7.7	1607	2.5	3.0	8.502	1915
315	E3BA355MLA4	1486	96.0	96.0	95.0	0.85	537	7.7	2024	2.5	3.0	10.115	2285
355	E3BA355MLB4	1486	96.0	96.0	95.0	0.86	598	7.7	2281	2.5	3.0	11.065	2430

Efficiency values are given according to IEC 60034-2-1; 2014.
Please note that the values are not comparable without knowing the testing method.
ABB has calculated the efficiency values according to indirect method, stray load losses (additional losses) determined from measuring.

I_s / I_n = Starting current
 T_s / T_n = Locked rotor torque
 T_b / T_n = Breakdown torque

General performance IE3 efficiency cast iron motors

Technical data for totally enclosed squirrel cage three phase induction motors

IE3

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

Output KW	Frame Size	Speed r/min	Efficiency			Power factor cos ϕ	Current		Torque			Moment of inertia $J=1/4GD^2$ kgm ²	Weight kg
			Full load 100%	3/4 load 75%	1/2 load 50%		I_n , A	I_s / I_n	T_n , Nm	T_s / T_n	T_b / T_n		
		1000 r/min	415V, 50Hz										
0.37	M2BAX80MC6	931	71.9	70.6	65.6	0.65	1.10	3.9	3.8	2.5	2.8	0.00220	15
0.55	M2BAX80MLA6	941	75.9	74.9	70.4	0.64	1.58	4.4	5.6	3.1	3.3	0.00349	19
0.75	M2BAX90SLA6	948	78.9	77.5	73.2	0.62	2.1	3.9	7.6	2.5	3.0	0.00487	25
1.1	M2BAX90LB6	951	81.0	79.7	75.4	0.62	3.0	3.1	11.2	3.3	3.6	0.00676	30
1.5	M2BAX100LKA6	954	82.5	82.6	80.2	0.67	3.8	4.1	15.2	2.2	2.4	0.00994	37
2.2	M2BAX112MLA6	957	84.3	84.4	82.5	0.67	5.4	4.6	22.2	2.1	2.7	0.01390	47
3.7	M2BAX132SMB6	967	86.5	87.0	86.0	0.69	8.6	4.7	37.0	1.6	2.7	0.03540	72
5.5	M2BAX132MLA6	970	88.0	88.3	87.3	0.69	12.6	4.7	54.7	1.6	2.8	0.05330	97
7.5	M2BAX160MLA6	972	89.1	90.2	90.0	0.75	15.7	6.5	73.3	2.1	3.1	0.089	119
9.3	M2BAX160MLJ6	977	89.8	90.3	89.7	0.75	20.3	6.0	90.7	2.0	3.1	0.128	153
11	M2BAX160MLB6	977	90.3	91.0	90.7	0.74	22.9	6.0	107.5	1.8	2.8	0.138	160
15	M2BAX160MLA6	979	91.2	91.6	91.0	0.77	30.3	5.0	146.2	1.5	2.6	0.212	190
18.5	M2BAX200MLA6	988	91.7	91.8	90.9	0.81	34.5	7.0	178.6	2.4	3.1	0.496	238
22	M2BAX200MLB6	989	92.2	92.2	91.1	0.81	41.6	7.5	212.2	2.6	3.6	0.585	263
30	M2BAX225SMA6	989	92.9	93.0	92.0	0.78	59.2	7.0	290.3	2.6	3.4	0.724	285
37	M2BAX250SMA6	990	93.3	93.7	93.4	0.82	68.0	6.0	356.6	2.3	2.5	1.300	379
45	E3HX280SMA6	988	93.7	93.7	91.7	0.84	80	7.7	435	2.3	2.6	2.3	655
55	E3HX280SMB6	988	94.1	94.1	92.1	0.84	97	7.7	532	2.5	2.6	2.45	680
75	E3BA315SMA6	989	94.6	94.6	92.6	0.84	131	7.7	724	2.5	2.6	4.725	925
90	E3BA315SMB6	990	94.9	94.9	92.9	0.84	157	7.7	868	2.5	2.8	5.425	1010
110	E3BA315SMC6	990	95.1	95.1	93.1	0.84	192	7.7	1061	2.6	2.8	7.425	1230
125	E3BA315MLC6K	990	95.2	95.2	93.2	0.84	217	7.7	1206	2.5	2.7	7.05	1305
132	E3BA315MLC6	988	95.4	95.4	93.4	0.84	229	7.7	1276	2.2	2.5	8.05	1305
160	E3BA355SMA6	989	95.6	95.6	93.6	0.84	277	7.7	1545	2.6	2.8	10.925	1670
200	E3BA355SMB6	990	95.8	95.8	93.8	0.85	342	7.7	1929	2.5	2.8	12.625	1820
250	E3BA355MLA6	988	95.8	95.8	93.8	0.84	432	7.7	2416	2.3	2.6	13.75	1975
315	E3BA355MLB6	990	95.8	95.8	93.8	0.84	545	7.7	3039	1.4	2.8	15.975	3000

Efficiency values are given according to IEC 60034-2-1; 2014.
Please note that the values are not comparable without knowing the testing method.
ABB has calculated the efficiency values according to indirect method, stray load losses (additional losses) determined from measuring.

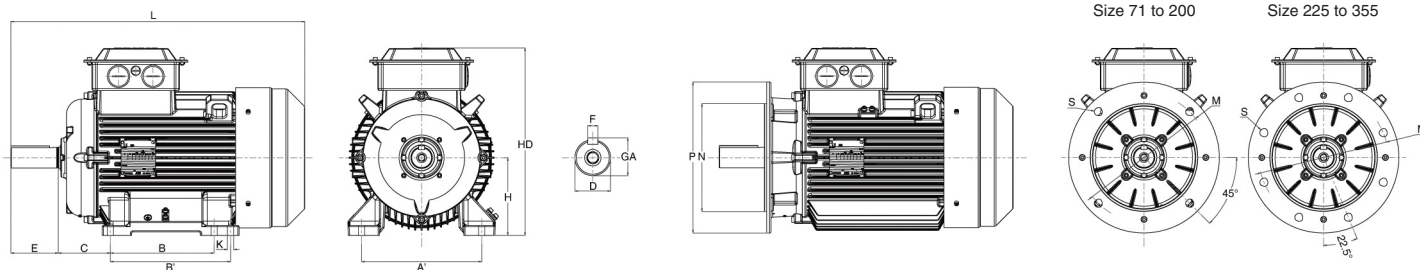
I_s / I_n = Starting current
 T_s / T_n = Locked rotor torque
 T_b / T_n = Breakdown torque

General performance IE3 efficiency cast iron motors

Dimension drawings

Foot-mounted motor IM1001, B3

Flange-mounted motor IM3001, 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	T
	2	4-6	2	4-6	2	4-6	2	4-6	2	4-6												
Process performance cast iron motors																						
71	14	14	16	16	5	5	30	30	257	257	112	90	-	45	175	7	71	130	110	160	10	3.5
80M	19	19	21.5	21.5	6	6	40	40	309	309	125	100	-	50	192	10	80	165	130	200	12	3.5
80ML	19	19	21.5	21.5	6	6	40	40	334	334	125	100	112	50	192	10	80	165	130	200	12	3.5
90S	24	24	27	27	8	8	50	50	335	335	140	100	-	56	217	10	90	165	130	200	12	3.5
90SL	24	24	27	27	8	8	50	50	351	351	140	100	125	56	217	10	90	165	130	200	12	3.5
90L	24	24	27	27	8	8	50	50	386	386	140	-	125	56	217	10	90	165	130	200	12	3.5
100L	28	28	31	31	8	8	60	60	376	376	160	140	-	63	240	12	100	215	180	250	14.5	4
100LK	28	28	31	31	8	8	60	60	410	410	160	140	160	63	240	12	100	215	180	250	14.5	4
112M	28	28	31	31	8	8	60	60	411	411	190	140	-	70	252	12	112	215	180	250	14.5	4
112ML	28	28	31	31	8	8	60	60	456	456	190	140	159	70	252	12	112	215	180	250	14.5	4
132SM	38	38	41	41	10	10	80	80	521	521	216	140	178	89	301	12	132	265	230	300	14.5	4
132ML	38	38	41	41	10	10	80	80	586	586	216	178	203	89	301	12	132	265	230	300	14.5	4
160ML	42	42	45	45	12	12	110	110	639 ¹	639 ¹	254	210	254	108	414	14.5	160	300	250	350	18.5	5
180ML	48	48	51.5	51.5	14	14	110	110	728	728	279	241	279	121	454	14.5	180	300	250	350	18.5	5
200ML	55	55	59	59	16	16	110	110	809	809	318	267	305	133	515	18.5	200	350	300	400	18.5	5
225SM	55	60	59	64	16	18	110	140	812	842	356	286	311	149	560	18.5	225	400	350	450	18.5	5
250SM	60	65	64	69	18	18	140	140	853	853	406	311	349	168	613	24	250	500	450	550	18.5	5
280SM	65	75	69	79.5	18	20	140	140	1040	1040	457	368	419	190	728	24	280	500	450	550	19	5
315SM	65	80	69	85	18	22	140	170	1169	1245	508	406	457	216	872	28	315	600	550	660	24	6
315ML	65	90	69	95	18	25	140	170	1215	1325	508	457	508	216	872	28	315	600	550	660	24	6
355SM	75	100	79.5	106	20	28	140	210	1504	1574	610	500	560	254	965	28	355	740	680	800	24	6
355ML	75	100	79.5	106	20	28	140	210	1610	1680	610	560	630	254	965	28	355	740	680	800	24	6

Above table gives the main dimensions in mm.

1) M2BAX 160ML C2, B4, B6: L = 696

General performance IE3 cast iron motors in brief

Size		71	80	90	100	112	132
Stator	Material	Cast Iron Grade 150:ISO 185					
	Paint colour shade	Munsell blue 8B 4.5/3.25 / NCS 4822 B05G					
	Corrosion class	C3 medium according to ISO / EN 12944-5					
Bearing end shields	Material	Cast iron grade 150 : ISO 185					
	Paint colour shade	Munsell blue 8B 4.5/3.25/NCS 4822 B05G					
	Corrosion class	C3 medium according to ISO / EN 12944-5					
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	Retaining ring	As standard , locked at D-end					
Bearing seals		Axial seal as standard, radial on request					
Lubrication		Permanently lubricated shielded bearings					
Measuring nipple		Not included					
Rating plate	Material	Aluminum					
Terminal Box	Frame material	Cast iron, integral to Stator frame					
	Cover material	Sheet of Steel, cold rolled					
	Cover screws material	Steel 8.8					
Connections	Cable entries	2xM16	2xM25		2xM32		
	Terminals	6 terminals for connection with cable lugs (not included)					
	Cable gland	Suitable opening in terminal box, cable glands as option					
Fan	Material	Polypropylene, Reinforced with 20% glass fibre					
Fan Cover	Material	Sheet of steel, cold rolled					
	Paint Colour shade	Munsell blue 8B 4.5/3.25/NCS 4822 B05G					
	Corrosion class	C3 medium according to ISO/EN 12944-5					
Stator winding	Material	Copper					
	Insulation	Insulation class F, Temperature rise class B unless otherwise stated.					
	Winding protection	3 PTC thermistors as option					
Rotor winding	Material	Pressure diecast aluminum					
Balancing method		Half Key Balancing as Standard					
Key ways		Open Key Way					
Enclosure		IP 55, Higher protection on request					
Cooling method		IC 411					

General performance IE3 cast iron motors in brief

Size		160	180	200	225	250
Stator	Material	Cast Iron Grade 200:ISO 185				
	Paint colour shade	Munsell blue 8B 4.5/3.25 / NCS 4822 B05G				
	Corrosion class	C3 medium according to ISO / EN 12944-5				
Bearing end shields	Material	Cast iron grade 200 : ISO 185				
	Paint colour shade	Munsell blue 8B 4.5/3.25/NCS 4822 B05G				
	Corrosion class	C3 medium according to ISO / EN 12944-5				
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	Inner Bearing Cover	As standard , locked at D-end				
Bearing seals		Axial seal standard, radial on request				
Lubrication		Permanently lubricated shielded bearings				
Measuring nipple		Not included				
Rating plate	Material	Aluminum				
Terminal Box	Frame material	Sheet of Steel, cold rolled				
	Cover material	Sheet of Steel, cold rolled				
	Cover screws material	Steel 8.8				
Connections	Cable entries	2xM40, 1xM16		2xM50, 1xM16		
	Terminals	6 terminals for connection with cable lugs (not included)				
	Cable gland	Suitable opening in terminal box, cable glands as option				
Fan	Material	Polypropylene, Reinforced with 20% glass fibre				
Fan Cover	Material	Sheet of steel, cold rolled				
	Paint Colour shade	Munsell blue 8B 4.5/3.25/NCS 4822 B05G				
	Corrosion class	C3 medium according to ISO/EN 12944-5				
Stator winding	Material	Copper				
	Insulation	Insulation class F, Temperature rise class B unless otherwise stated.				
	Winding protection	3 PTC thermistors as option				
Rotor winding	Material	Pressure diecast aluminum				
Balancing method		Half Key Balancing as Standard				
Key ways		Open Key Way				
Enclosure		IP 55, Higher protection on request				
Cooling method		IC 411				

General performance IE3 cast iron motors in brief

Size		280 2-6 Pole	315 2 Pole	315 4-6 Pole	355 2 Pole	355 4-6 Pole
Stator	Material	Cast Iron Grade 150, ISO: 210				
	Paint colour shade	Munsell blue 8B 4.5/3.25 / NCS 4822 B05G				
	Surface Treatment	C3 medium according to ISO / EN 12944-5				
Bearing end shields	Material	Cast iron grade 150, ISO: 210				
	Paint colour shade	Munsell blue 8B 4.5/3.25 / NCS 4822 B05G				
	Surface Treatment	C3 medium according to ISO / EN 12944-5				
Bearings	D-end	6316/C3	6316/C3	6319/C3	6319/C3	6322/C3
	N-end	6315/C3	6316/C3	6316/C3	6319/C3	6319/C3
Axially-locked	Inner Bearing Cover	As standard, locked at D-end				
Bearing seals		Radial as standard, on D-end only				
Lubrication		Regreasable bearing, Regreasing nipple M10x1				
Measuring nipple		-				
Rating plate	Material	Steel				
Terminal Box	Frame material	Cast iron grade 150, ISO: 210				
	Cover material	Cast iron grade 150, ISO: 210				
	Screws Steel					
Connections	Threaded	2 x 2" BSC	2 x 2-1/2" BSC			
	Terminals	6 terminals for connection with cable lugs (not included)				
	Cable gland	Cable flanges as standard, cable glands as option				
Fan	Material	PP*		Aluminium		
Fan Cover	Material	Sheet of steel, Cold Rolled				
	Paint Colour shade	Munsell blue 8B 4.5/3.25 / NCS 4822 B05G				
	Surface Treatment	C3 medium according to ISO / EN 12944-5				
Stator winding	Material	Copper				
	Insulation	Insulation class F, Temperature rise class B unless otherwise stated.				
	Winding protection	-				
Rotor winding	Material	Pressure diecast aluminum				
Balancing method		Half Key Balancing as Standard				
Key ways		Open Key Way				
Enclosure		IP 55				
Cooling method		IC 411				

*Polypropylene, Reinforced with 20% glass fibre.



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Flame Proof Motors For Hazardous Environment

JHX



ABB

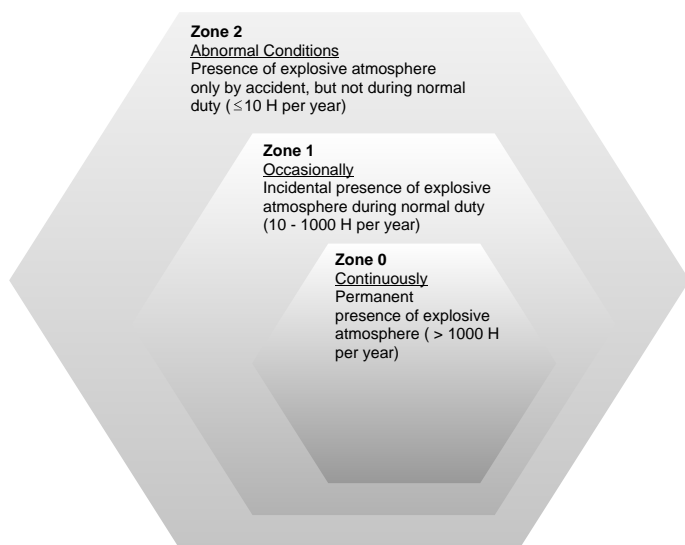
Introduction

The use of electrical motors in potentially explosive atmospheres is quite frequent these days. These motors have to be constructed in such a way that there is no risk of an explosion. An Explosion occurs when the following situations occur:

- presence of potentially explosive atmosphere
- existence of a source of ignition
- possibility of transmission of the explosion

Classification of Hazardous Environment:

According to IS: 5572, Hazardous areas are classified in the following ways depending on the degree of probability of the presence of hazardous atmosphere.



Zone	Criteria presence of gas
Zone 0	Continuously of very long period
Zone 1	Present in normal operations
Zone 2	Unlikely, but if present, only for a short time

In Zone 0, no electrical motors can be installed. Most common motor for Zone 1 is the flameproof design, but it can also be used in Zone 2.

Application Groups:

Depending on the intended use, explosion-proof electrical operating equipment is divided into two major groups:

Group I	Equipment for coal mines (only specially designed motors for mines can be used)
Group II	Electrical equipment for use other than mines (surface industry)
Group II	motors with flameproof enclosures are still further divided into gas groups:
II A	Propane
II B	Ethylene
II C	Hydrogen

Temperature Classes:

Combustible gas or vapour and explosion-protected electrical equipment are divided into temperature of the gas or to T6 with regard to the ignition temperature of the gas or vapour and the maximum surface temperature of the component.

Temperature class	Ignition temperature for the gas / vapour °C	Maximum permitted temperature of electrical equipment °C
T1	>450	450
T2	>300 <450	300
T3	>200 <300	200
T4	>135 <200	135
T5	>100 <135	100
T6	>85 <100	15

Flame proof motors, type "d"

ABB motors of flame proof design (type JHX) are TEFC, 3 phase squirrel cage induction motor (as per IS:2148 - 2004) for operation in hazardous location classified as Zone 1 and Zone 2 areas as per IS:5572

Note: Other frame sizes are available on request.

The motor enclosure has been designed in such a way that no internal explosion can be transmitted to the explosive atmosphere surrounding the machine. The enclosure must withstand, without damage, any pressure levels caused by an internal explosion, the shape, length and gap of part assembly joints at shaft opening, cable entries, etc., shall be designed to allow for throttling and cooling of hot gases escaping outside. The standard emphasise the impact of an explosive atmosphere (for instance, explosion pressure) over constructional requirements of such apparatus.

Range:0.25 15kW, 0.3320hp

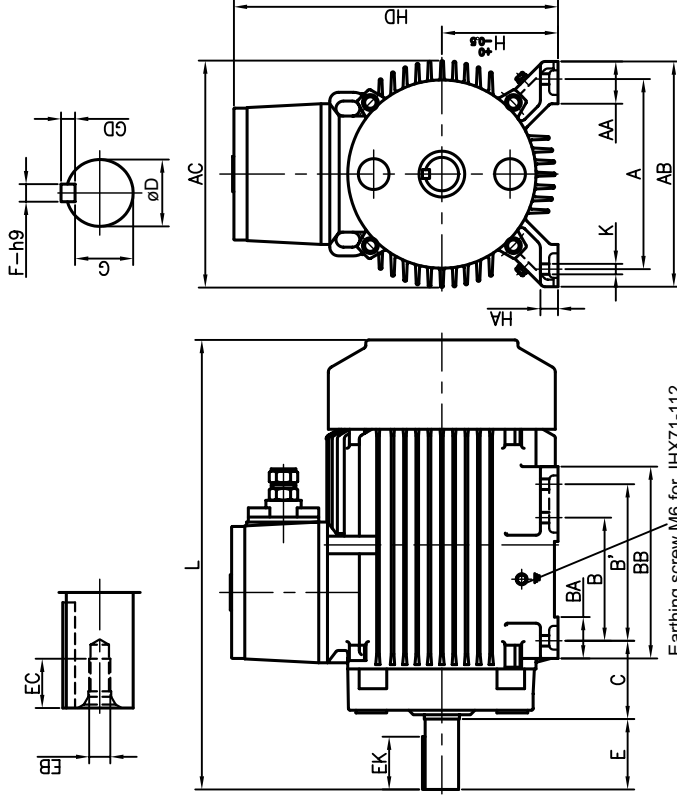
Frame:JHX71JHX160

Pole:28

Features:

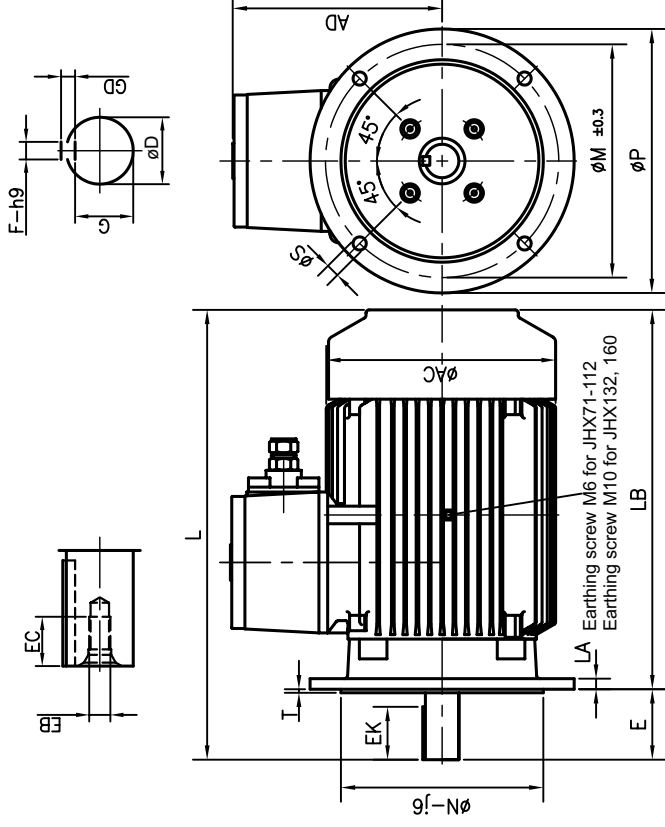
1. Motors suitable for high ambient temperature 50°C.
2. Keeps an explosion which takes place inside the enclosure from propagating through gaps to the ambient.
3. Withstands the explosion pressure created inside the enclosures.
4. Benefits when dealing with special operating modes such as heavy stars and special applications.
5. All surface temperatures are selected to comply with the temperature class.
6. Suitability for use in temperature classes T1 toT4.
7. Can be used both in Zone 1 and Zone 2.

**Dimension Drawing Foot Mounted Flame Proof Motors 71....160
Mounting Designation B3, B6, B7, B8, V5, V6**



Earthing screw M6 for JHX71-112
Earthing screw M10 for JHX132, 160

**Dimension Drawing Flange Mounted Flame Proof Motors 71....160
Mounting Designation B5, V1, V3**



Earthing screw M6 for JHX71-112
Earthing screw M10 for JHX132, 160

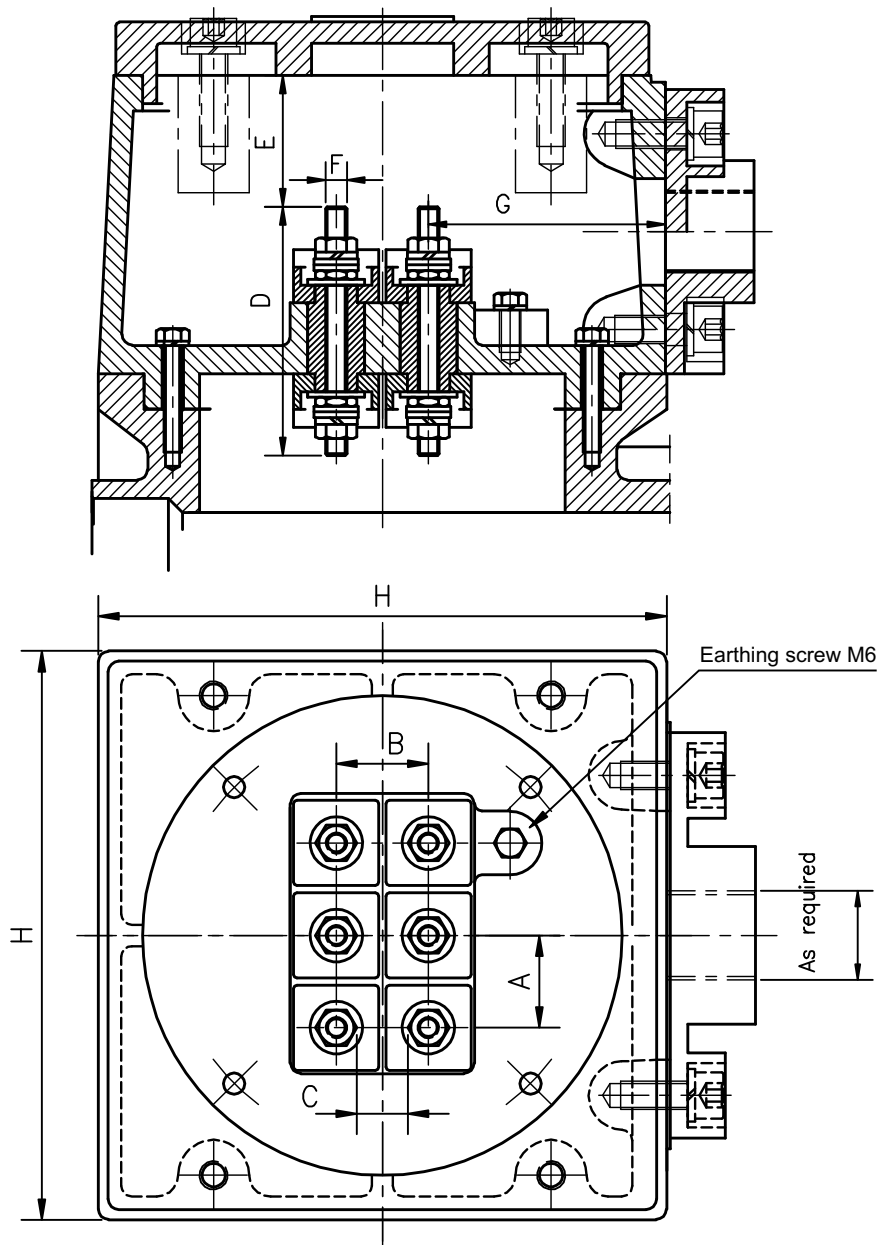
Type	A	AA	AB	AC	B	B'	BA	BB	C	D	Tol.	E	EB	EC	EK
	JHX 71	112	25	130	140.5	90	-	26	110	45	14	j6	30	M5	12
JHX 80	125	25	147	158	100	-	30	126	50	19	j6	40	M6	17	24
JHX 90SL	140	27	162	174	100	125	40	158	56	24	j6	50	M8	19	32
JHX 100L	160	42	200	203	140	-	47	180	63	28	j6	60	M10	22	42
JHX 112M	190	48	230	225	140	-	47	180	70	28	j6	60	M10	22	42
JHX 132SM	216	48	256	258	140	178	47	218	89	38	k6	80	M12	28	60
JHX 160ML	254	60	310	305	210	254	65	310	108	42	k6	110	M16	36	90

Type	F	G	GD	H	HA	HD	K	L	Bearings	
									D	N
JHX 71	5	11	5	71	9	218	7	268	6203ZZC3	6202ZZC3
JHX 80	6	15.5	6	80	10	234	10	314	6204ZZC3	6203ZZC3
JHX 90SL	8	20	7	90	13	252	10	363	6205ZZC3	6205ZZC3
JHX 100L	8	24	7	100	15	317	12	400	6306ZZC3	6206ZZC3
JHX 112M	8	24	7	112	18	337	12	420	6307ZZC3	6206ZZC3
JHX 132SM	10	33	8	132	20	374	12	511	6308ZZC3	6307ZZC3
JHX 160ML	12	37	8	160	22	457	15	702	6309ZZC3	6308ZZC3

Type	AC	AD	E	EB	EC	EK	F	G	GD
	JHX 71	140.5	147	30	M5	12	16	5	11
JHX 80	158	154	40	M6	17	24	6	15.5	6
JHX 90SL	174	162	50	M8	19	32	8	20	7
JHX 100L	203	217	60	M10	22	42	8	24	7
JHX 112M	225	225	60	M10	22	42	8	24	7
JHX 132SM	258	242	80	M12	28	60	10	33	8
JHX 160ML	305	297	110	M16	36	90	12	37	8

Type	L	LA	LB	M	N	P	S	T	Bearings	
									D	N
JHX 71	268	9	238	130	110	160	10	3.5	6203ZZC3	6202ZZC3
JHX 80	314	10	274	165	130	200	12	3.5	6204ZZC3	6203ZZC3
JHX 90SL	363	10	313	165	130	200	12	3.5	6205ZZC3	6205ZZC3
JHX 100L	400	11	340	215	180	250	15	4	6306ZZC3	6206ZZC3
JHX 112M	420	11	360	215	180	250	15	4	6307ZZC3	6206ZZC3
JHX 132SM	511	12	431	265	230	300	15	4	6308ZZC3	6307ZZC3
JHX 160ML	702	16	592	300	250	350	19	5	6309ZZC3	6308ZZC3

Terminal Box



Type	A	B	C	D	E	F	G	H
JHX 71 - 90	20	20	10.5	50	27	M5	42	115
JHX 100-132	26	26	13.5	75	32	M6	66.5	160
JHX 160	32	32	12	95	39	M8	94	210

* For JHX160, conduit entry is double

Certifications and Approvals for ABB Make Flame - Proof Motors

CMRI/ERTL Certificate No.	CCE Certificate No.	DGFASLI Certificate No.	BIS Certificate No.	Frame
CIMFR/TC/P/113 Dt. 12.05.2009	A/P/HQ/MH/104/1889 (P234925/1) Dt. 27.07.2009	66/7/2009 - Tech Dt. 02.07.2009	CML 1327946	JHX71
CIMFR/TC/P/60 Dt. 05.05.2009	A/P/HQ/MH/104/1856 (P233102/1) Dt. 15.06.2009	66/7/2009 - Tech Dt. 02.07.2009	CML 1327946	JHX80
CMRI/TC/P/H409 Dt. 28.08.2006	A/P/HQ/MH/104/1270 (P187868) Dt. 23.11.2006	66/07/2006 - Tech Dt. 15.11.2006	CML 1327946	JHX90
CIMFR/TC/SR/H969 Dt. 19.02.2008	A/P/HQ/MH/104/1564 (P214909) Dt. 04.07.2008	66/05/2005 - Tech Dt. 14.08.2008	CML 1327946	JHX100
ERTL(E)/TES/A356/0076/03-08 Dt. 02/04/2008	A/P/HQ/MH/104/1545 (P213402/1) Dt. 30.05.2008	66/05/2008 - Tech Dt. 09.06.2009	CML 9342275	JHX112
ERTL(E)/TES/A356/0077/03-08 Dt. 02/04/2008	A/P/HQ/MH/104/1545 (P213402/2) Dt. 30.05.2008	66/05/2008 - Tech Dt. 09.06.2009	CML 9342275	JHX132
ERTL(E)/TES/A356/0075/03-08 Dt. 02/04/2008	A/P/HQ/MH/104/1545 (P213402/3) Dt. 30.05.2008	66/05/2008 - Tech Dt. 09.06.2009	CML 9342275	JHX160



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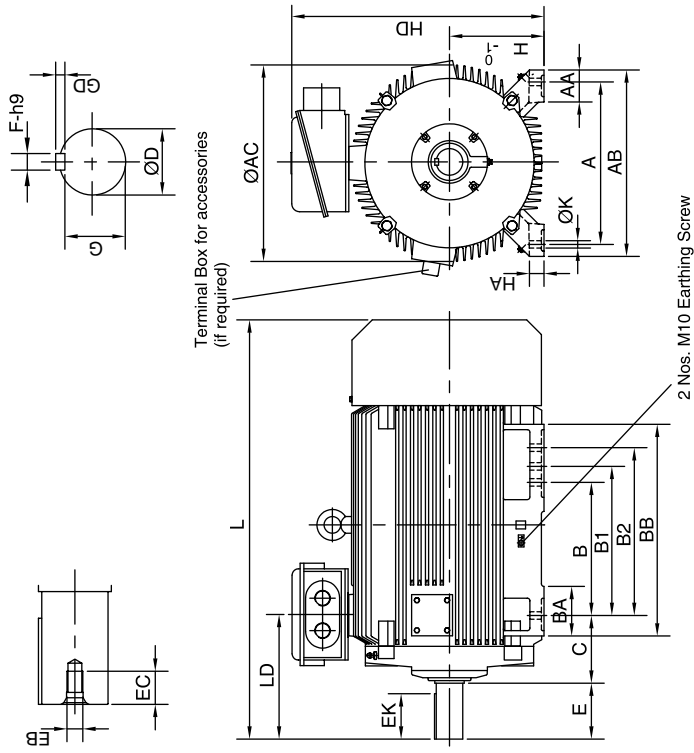
The most widely used motors from the world leaders

M2BA M 2000 range



ABB

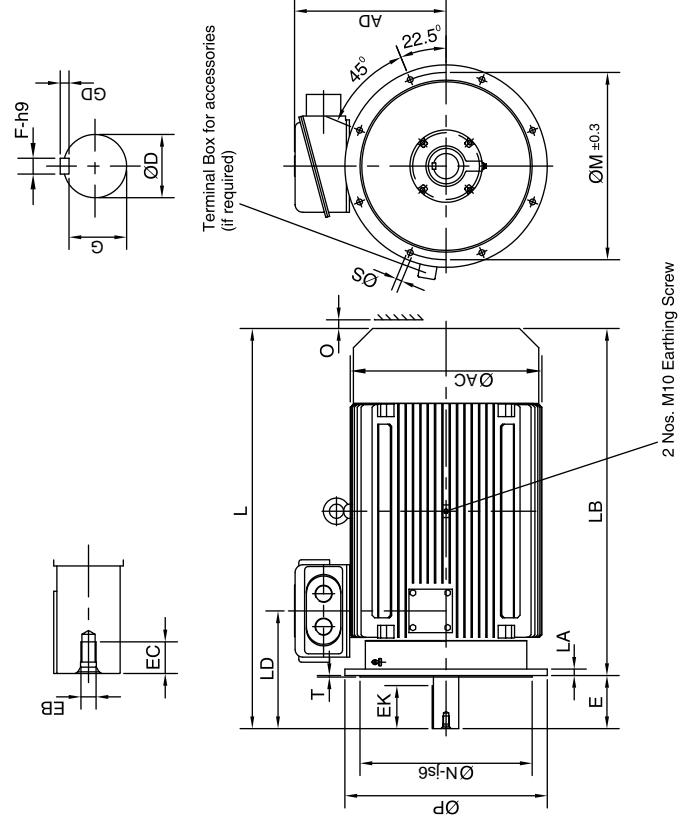
M2BA355 (Foot Mounted)



Type	A	AA	AB	AC	B	B1	B2	BA	BB	C	D Tol.		E	EB	
											75	m6			140
M2BA355MLC2			710		-			160				75	m6	140	M20
M2BA355SML	610	120	700	740	500	560	630	186	795	254					
4-8P											100	m6	210	M24	
M2BA355MLB4			710		-			160				100	m6	210	M24

Type	EC	EK	F	G	GD	H	HA	HD	K	L	LD	O	Bearings	
													D	N
M2BA355MLC2	40	115	20	67.5	12	355	33	985	28	1575	395		6319 C3	
2P													130	
M2BA355SML	48	170	28	90	16	33	33	965	1660		465		6319 C3	
4-8P														
M2BA355MLB4													6322 C3	

M2BA355 (Flange Mounted)



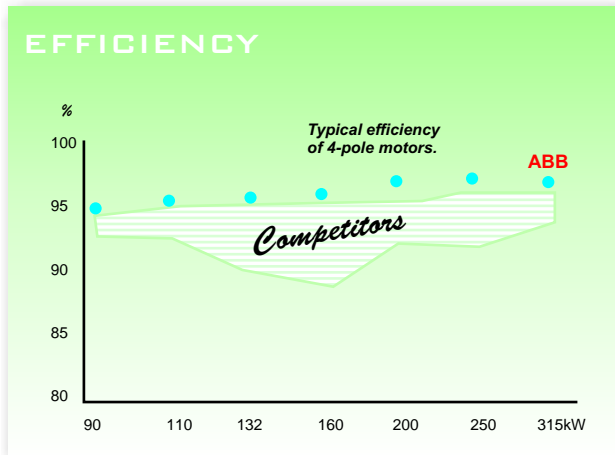
Type	AC	AD	D Tol.	E	EB	EC	EK	F	G	GD	L
M2BA355MLC2											
M2BAF355SML	740	610									
4-8P			100	m6	210	M24	48	170	28	90	16
M2BA355MLB4											1650

Type	LA	LB	LD	M	N	P	S	T	O	Bearings	
										D	N
M2BA355MLC2			395							6319 C3	
M2BAF355SML	25	1365	740	680	800	24	6	130		6319 C3	
4-8P			465								6322 C3
M2BA355MLB4											6319 C3

Note : All Dimensions are in mm

The 'M2000' Series

M2000 Motors have been engineered for the twin objective of high power to weight ratio and efficiency at a designed ambient of 50°C. The performance of 'M2BA' is well ahead of relevant IEC & IS standards resulting in lower energy consumption, reduced operational costs and ultimately faster returns on investment. 'M2BA' Motors have a wide range of applications including windmill.



Heavy duty design

The electrical and mechanical design of 'M2BA' Motors offer high performance values in all the mounting arrangements, protection class and in all applications. 'M2BA' Motors have withstood the test of time and are established for reliability in stringent operating conditions like thermal power plants world wide.

Installation Flexibility

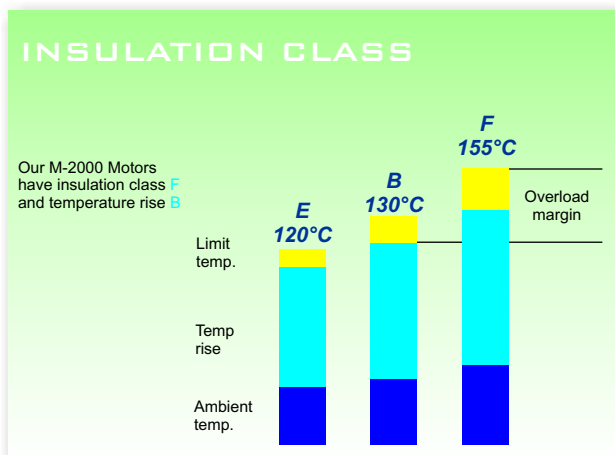
A dual mounting hole is provided for installation flexibility i.e. same housing length can be used for varied mounting applications.

IP55

'M2BA' Motors are protected against the ingress of water and dust. A high degree of protection IP 55 is a standard feature of 'M2BA' Motors. Higher degrees of protection (e.g. IP 56) can also be made available on request.

Insulation scheme

'M2BA' Motors employ a unique polyamide based Class F insulation scheme rated for 155°C with temperature rise limited to Class B. The advanced insulation the 'M2000' series gives high electrical and mechanical stability. This provides a generous thermal overload margin bringing greater reliability and improves life of the motor. This can be used for such conditions as increased load, high ambient temperature and variations in voltage and frequency.



User friendly design

'M2BA' Motors have a user friendly design and less number of components leading to faster and trouble-free dismantling and assembly.

Enclosure

'M2BA' Motors use rigid cast iron / fabricated housings and are provided with integrated deeper longitudinal ribs designed to give maximum cooling surface area. Integral feet ensure that the frame is rigid and vibration resistant. These frames are treated for high corrosion resistance. Effective and robust corrosion protection means that the motor can be used in all environments.

Winding

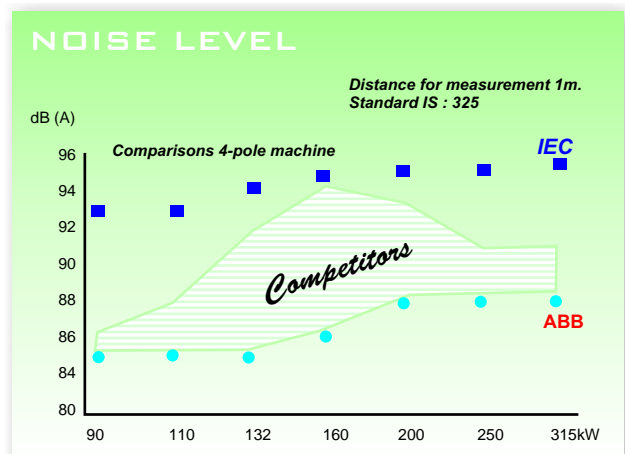
Stator winding uses high quality enamelled wires conforming to IS:13730. The windings are reinforced in the slots with slot wedges and on the overhang with fibre glass tape. To ensure long life, the stator is impregnated with a solventless resin. Gaps between individual conductors are effectively filled with this material resulting in good thermal conductivity and superior mechanical strength. All windings are tropicalised with epoxy gelcoat and made insensitive to moisture and micro-organisms.

Ventilation

Ventilation circuit of 'M2BA' has been optimally designed based on aerodynamic and acoustic considerations. Special design of fan blades and segmental groupings of fins in horizontal and vertical planes offer the most efficient air flow and minimum air borne noise while incurring least windage losses.

Low noise levels

'M2BA' Motors are the result of special efforts made to minimize electromagnetic, airborne and structural noise. These motors are designed for quieter operation even under abnormal load conditions.



Terminal box

The spacious terminal box makes the motor quick and easy to connect. The terminal box can be rotated so that cables can be connected from the right or the left. Further, positioning of the terminal box assembly on the side or the top can also be made available on request. Flexible orientation of the terminal box with liberal sizing for easy access are design inbuilt.

Bearings

'M2BA' Motors use appropriately selected ball bearings with high temperature grease to give increased life and reliability. For high radial loads and belt driven applications roller bearings are provided. 'M2BA' Motors are provided with regreasing facility.

Voltage ranges for extra versatility

The motors are matched to the standard voltages applicable in India i.e. 415V. However, motors for voltages ranging from 220V to 660V can also be provided on request.

Frequency converter drive

'M2BA' Motors are backed by the world class technology to incorporate inherent features in the design to take care of harmonics in frequency converter and yet offer the best performance. Special attention is given to mechanical features of 'M2BA' for reliable operation at extremes of speed range in variable speed applications.



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The most widely used motors from the world leaders

M2BA & HX+



TEFC, S1 Duty
 415 ± 10% V, 50Hz ± 5%.
 Combined Variation (absolute sum 10%)

Insulation Class F
 Ambient temp 50°C
 Temperature rise Class B (70°C)

2 Pole Ambient 50°C

Output kw	Motor Type	Product Code	Speed r/min	Efficiency, IEC 60034-2 1996		Power Factor cos 100%	Current		Torque			Moment of inertia J=1/4 Gd ² kgm ²	Weight foot mounted kg	Sound pressure level dB(A)
				FL	3/4FL		I _n (A)	I _s / I _n	T _n (Nm)	T _s / T _n	T _{max} / T _n			
0.37	M2BA71A2	3GBA 071 001-••B	2790	72.7	72.0	0.84	0.90	4.0	1.29	2.2	3.2	0.00039	11	58
0.55	M2BA71B2	3GBA 071 002-••B	2760	77.2	78.4	0.82	1.20	4.7	1.90	2.7	2.8	0.00051	11	58
0.75	M2BA80A2	3GBA 081 001-••B	2840	77.0	77.8	0.82	1.60	3.7	2.52	2.6	3.4	0.00080	14	60
1.1	M2BA80B2	3GBA 081 002-••B	2825	82.8	82.9	0.81	2.40	5.7	3.70	2.9	3.0	0.00101	16	60
1.5	M2BA90S2	3GBA 091 001-••B	2890	82.3	82.4	0.82	3.20	6.0	4.95	2.7	3.3	0.00199	22	63
2.2	M2BA90LB2	3GBA 091 003-••B	2875	85.6	86.5	0.89	4.10	6.5	7.30	2.7	3.0	0.00280	25	68
3.7	M2BA100LB2	3GBA 101 002-••B	2855	84.7	86.3	0.91	6.70	6.2	12.4	2.2	2.6	0.00528	36	68
5.5	M2BA132SA2	3GBA 131 001-••B	2890	86.8	87.4	0.80	11.0	6.5	18.2	2.6	3.6	0.01029	61	75
7.5	M2BA132SBB2	3GBA 131 004-••B	2880	90.0	90.4	0.87	13.5	6.5	24.8	2.2	3.3	0.01359	70	75
9.3	M2BA132SC2	3GBA 131 003-••B	2840	87.7	88.2	0.92	16.2	6.5	31.3	2.8	3.4	0.01951	80	75

4 Pole Ambient 50°C

Output kw	Motor Type	Product Code	Speed r/min	Efficiency, IEC 60034-2 1996		Power Factor cos 100%	Current		Torque			Moment of inertia J=1/4 Gd ² kgm ²	Weight foot mounted kg	Sound pressure level dB(A)
				FL	3/4FL		I _n (A)	I _s / I _n	T _n (Nm)	T _s / T _n	T _{max} / T _n			
0.25	M2BA71A4	3GBA 072 001-••B	1390	66.5	65.5	0.76	0.75	3.8	1.70	2.2	2.4	0.00074	10	45
0.37	M2BA71B4	3GBA 072 002-••B	1400	69.6	71.2	0.79	0.90	4.5	2.53	2.0	2.5	0.00088	11	45
0.55	M2BA80A4	3GBA 082 001-••B	1390	71.8	72.2	0.80	1.36	4.3	3.80	2.2	2.8	0.00144	15	50
0.75	M2BA80B4	3GBA 082 002-••B	1405	75.5	76.0	0.74	1.90	5.1	5.10	2.2	3.1	0.00198	16	50
1.1	M2BA90S4	3GBA 092 001-••B	1410	76.8	77.1	0.78	2.60	5.3	7.40	2.6	3.0	0.0033	22	50
1.5	M2BA90L4	3GBA 092 002-••B	1420	79.6	80.1	0.80	3.40	5.5	10.1	2.7	3.4	0.00444	25	50
2.2	M2BA100LA4	3GBA 102 001-••B	1430	82.8	83.3	0.83	4.60	5.6	14.7	2.2	2.7	0.00873	34	64
3.7	M2BA112M4	3GBA 112 001-••B	1425	85.0	86.2	0.83	7.50	5.9	24.8	2.6	3.0	0.0106	39	60
5.5	M2BA132S4	3GBA 132 001-••B	1455	88.3	88.4	0.78	11.1	5.5	36.1	2.1	2.5	0.02635	60	66
7.5	M2BA132M4	3GBA 132 002-••B	1450	88.4	88.9	0.80	14.8	6.0	49.4	2.1	2.7	0.03282	70	66

6 Pole Ambient 50°C

Output kw	Motor Type	Product Code	Speed r/min	Efficiency, IEC 60034-2 1996		Power Factor cos 100%	Current		Torque			Moment of inertia J=1/4 Gd ² kgm ²	Weight foot mounted kg	Sound pressure level dB(A)
				FL	3/4FL		I _n (A)	I _s / I _n	T _n (Nm)	T _s / T _n	T _{max} / T _n			
0.18	M2BA71A6	3GBA 073 001-••B	905	59.8	56.4	0.70	0.6	3.3	1.9	2.2	2.3	0.00089	10	42
0.25	M2BA71B6	3GBA 073 002-••B	885	63.5	61.5	0.71	0.8	3.4	2.7	2.2	2.6	0.0011	12	42
0.37	M2BA80A6	3GBA 083 001-••B	920	69.8	69.7	0.71	1.1	3.0	3.8	2.3	2.8	0.00187	15	47
0.55	M2BA80B6	3GBA 083 002-••B	925	72.4	74.0	0.70	1.5	3.8	5.7	2.1	2.7	0.00239	17	47
0.75	M2BA90L6	3GBA 093 002-••B	940	75.1	74.7	0.64	2.2	4.4	7.6	2.3	3.4	0.00444	25	44
1.1	M2BA90LB6	3GBA 093 003-••B	925	77.3	77.8	0.69	2.9	4.1	11.3	2.3	2.6	0.00491	25	44
1.5	M2BA100L6	3GBA 103 002-••B	955	81.5	81.3	0.68	3.8	4.4	15.0	2.2	2.7	0.00873	37	49
2.2	M2BA112M6	3GBA 113 001-••B	945	82.4	83.3	0.72	5.2	4.4	22.2	2.2	2.4	0.0114	40	54
3.7	M2BA132MA6	3GBA 133 002-••B	970	85.7	84.8	0.68	8.8	5.2	36.4	2.1	2.5	0.03336	69	57
5.5	M2BA132MC6	3GBA 133 004-••B	970	87.8	87.4	0.70	12.5	5.0	54.0	1.8	2.7	0.0487	86	57

8 Pole Ambient 50°C

Output kw	Motor Type	Product Code	Speed r/min	Efficiency, IEC 60034-2 1996		Power Factor cos 100%	Current		Torque			Moment of inertia J=1/4 Gd ² kgm ²	Weight foot mounted kg	Sound pressure level dB(A)
				FL	3/4FL		I _n (A)	I _s / I _n	T _n (Nm)	T _s / T _n	T _{max} / T _n			
0.09	M2BA71A8	3GBA 074 001-••B	700	43.8	35.5	0.53	0.55	2.3	1.25	2.1	2.5	0.00089	11	40
0.12	M2BA71B8	3GBA 074 002-••B	700	44.4	36.1	0.53	0.70	2.3	1.67	2.2	2.4	0.0011	12	40
0.18	M2BA80A8	3GBA 084 001-••B	705	57.8	52.4	0.57	0.77	3.0	2.45	2.4	2.6	0.00187	15	45
0.25	M2BA80B8	3GBA 084 002-••B	695	64.0	62.1	0.64	0.88	3.1	3.5	2.1	2.4	0.00239	17	45
0.37	M2BA90L8	3GBA 094 002-••B	705	64.8	62.4	0.56	1.40	2.9	5.0	1.6	2.3	0.00444	24	43
0.55	M2BA90LB8	3GBA 094 003-••B	690	67.0	64.4	0.59	2.0	2.6	7.6	1.5	2.0	0.00491	25	43
0.75	M2BA100LA8	3GBA 104 001-••B	710	71.3	68.5	0.60	2.5	3.9	10.0	2.4	2.7	0.0072	30	46
1.1	M2BA100LB8	3GBA 114 002-••B	705	73.5	73.1	0.63	3.25	3.6	15.1	2.1	2.7	0.00871	34	46
1.5	M2BA112MA8	3GBA 114 001-••B	685	74.6	76.0	0.71	3.9	3.5	20.9	1.9	2.2	0.0118	28	42
2.2	M2BA132S8	3GBA 134 001-••B	720	81.2	81.0	0.60	6.0	4.0	29.3	1.9	2.6	0.03336	70	56

I_n = Nominal or rated current

T_{max} = Maximum torque

I_s = Starting current

T_s = Starting torque

T_n = Nominal or rated torque in Nm

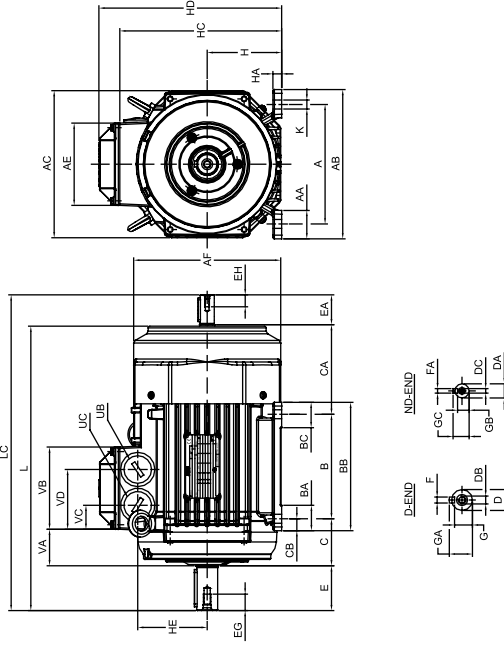
T_{cold} = Cold withstand time

T_{hot} = Hot withstand time

Note : All performance figures are subject to IS tolerances.

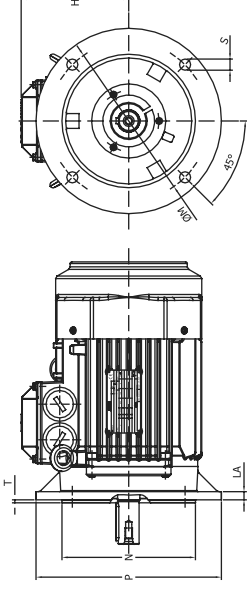
M2BA 71...132 (Foot Mounted)

Foot-mounted motor;
IM B3 (IM 1001), IM 1002

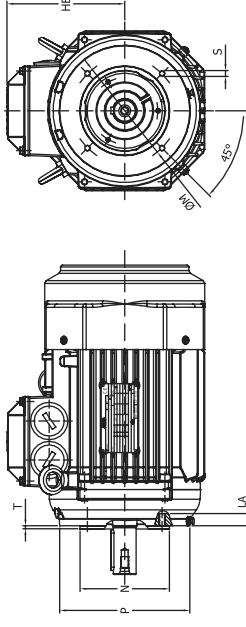


M2BA 71...132 (Flange Mounted)

Flange-mounted motor, large flange;
IM B5 (IM 3001), IM 3002

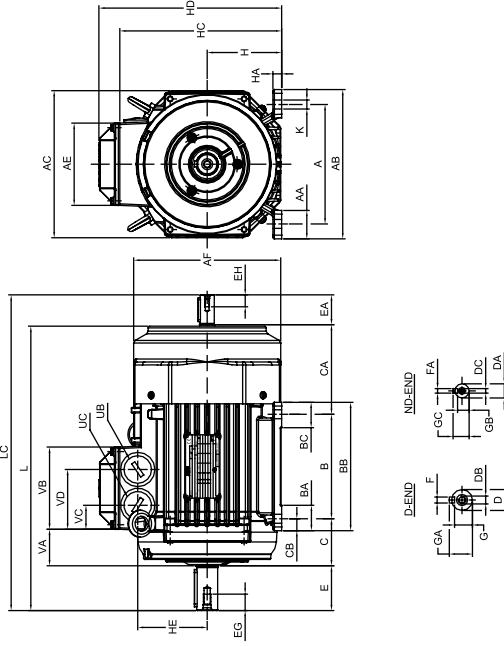


Flange-mounted motor, small flange;
IM B14 (IM 3601)



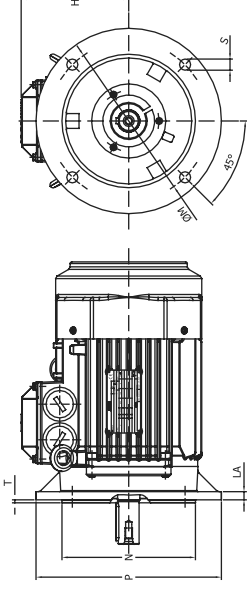
M2BA 71...132 (Foot Mounted)

Foot-mounted motor;
IM B3 (IM 1001), IM 1002

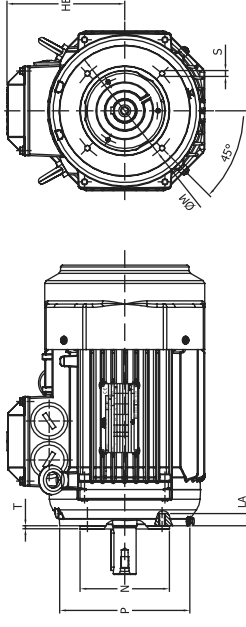


M2BA 71...132 (Flange Mounted)

Flange-mounted motor, large flange;
IM B5 (IM 3001), IM 3002



Flange-mounted motor, small flange;
IM B14 (IM 3601)



IM B3 (IM 1001), IM 1002

Motor Size	A	AA	AB	AC	AE	AF	B	BA	BB	BC	C	CA	CB	D-Tol.	DA	DB	DC	E	EA	EG	EH	VD
71	112	24	136	139	97	139	90	24	110	24	45	104	10	14-j6	11	M5	M4	30	23	12.5	10	
80	125	28	154	157	97	157	100	28	125	28	50	111	12.5	19-j6	14	M6	M5	40	30	16	12.5	
90S	140	30	170	177	110	177	100	30	150	55	56	156.5	12.5	24-j6	14	M8	M5	50	30	19	12.5	
90L	140	30	170	177	110	177	125	30	150	55	56	131.5	12.5	24-j6	14	M8	M5	50	30	19	12.5	
100	160	38	200	197	110	197	140	34	172	34	63	123	16	28-j6	19	M10	M6	60	40	22	16	
112	190	41	230	197	110	197	140	34	172	34	70	138	16	28-j6	19	M10	M6	60	40	22	16	
132S	216	47	262	261	160	261	140	40	212	76	89	228	16	38-k6	24	M12	M8	80	50	28	19	
132M	216	47	262	261	160	261	178	40	212	76	89	190	16	38-k6	24	M12	M8	80	50	28	19	

IM B5 (IM 3001), IM 3002

Motor Size	HB	LA	M	N	P	S	T
71	105	9	130	110	160	10	3.5
80	113	10	165	130	200	12	3.5
90	127	10	165	130	200	12	3.5
100	145	11	215	180	250	15	4.0
112	145	11	215	180	250	15	4.0
132	166	12.5	265	230	300	15	4.0

IM B14 (IM 3601), IM 3602

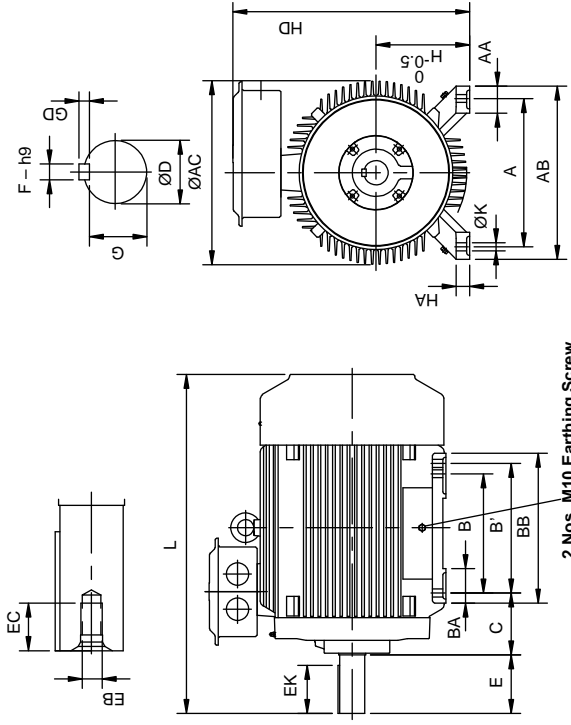
Motor Size	HB	LA	M	N	P	S	T
71	105	8	85	70	105	M6	2.5
80	113	8	100	80	120	M6	3.0
90	127	10	115	95	140	M8	3.0
100	145	10	130	110	160	M8	3.5
112	145	10	130	110	160	M8	3.5
132	166	12	165	130	200	M10	3.5

Tolerances:
A,B +0-0.8 H +0-0.5 D,DA ISO j6
N ISO j6 F,FA ISO h9 C,CA +0-0.8

All dimension are in mm.

HX+ 160...280 (Foot Mounted)

Mounting Designation B3, B6, B7, B8, V5, V6



Type	A	AA	AB	AC	B	B'	BA	BB	C	D -Tol.	E	EB	EC
HX+160ML	254	60	310	305	210	254	65	310	108	42-k6	110	M16	36
HX+180ML	279	58	324	348	241	279	58	324	121	48-k6			
HX+200ML	318	70	378	381	267	305	81	354	133	55-m6			
HX+225SM 2P 4-8P	356	65	416	442	286	311	83	360	149	60-m6	140	M20	42
HX+250M 2P 4-8P	406	80	473	495	349	-	93	406	168	65-m6			
HX+280SM 2P 4-8P	457	85	530	556	368	419	105	486	190	75-m6			

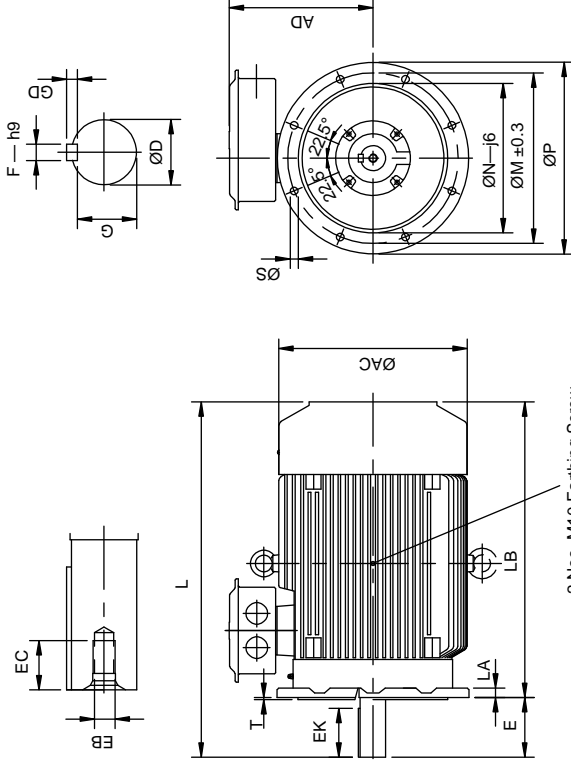
Type	EK	F	G	GD	H	HA	HD	K	L	Bearing		
										DS	NDS	N-Tol.
HX+160ML	90	12	37	8	160	22	407	15	671	6309ZZ C3	6308ZZ C3	360
HX+180ML		14	42.5	9	180	26	446	15	706	6310ZZ C3	6309ZZ C3	
HX+200ML		16	49	10	200	30	484	19	731	6312ZZ C3	6311ZZ C3	
HX+225SM 2P 4-8P	115	16	49	10	225	32	562	19	833	6313 C3	6312 C3	450
HX+250M 2P 4-8P		18	53	11	250	40	612	24	910	6315 C3	6313 C3	
HX+280SM 2P 4-8P		20	67.5	12	280	728	728	1040	1040	6316 C3	6315 C3	

* For HX+ 200MLC2; L= 770mm

* For 160-250 frame: sheet metal terminal box, 280 frame: cast iron terminal box

HXF+ 160...280 (Flange Mounted)

Mounting Designation B5, V1



Type	AC	AD	D -Tol.	E	EB	EC	EK	F	G	GD	L
HXF+160ML	305	247	42-k6	110	M16	36	90	12	37	8	671
HXF+180ML	348	266	48-k6					14	42.5	9	706
HXF+200ML	381	284	55-m6					16	49	10	731
HXF+225SM 2P 4-8P	442	337	60-m6	140	M20	42	115	18	53	11	910
HXF+250M 2P 4-8P	495	362	65-m6					20	58	12	1040
HXF+280SM 2P 4-8P	556	448	75-m6								

Type	LA	LB	M	N-Tol.	P	S	T	Bearing		
								DS	NDS	N-Tol.
HXF+160ML	16	561	300	250-j6	350			6309ZZ C3	6308ZZ C3	350
HXF+180ML	20	596	300	250-j6	350			6310ZZ C3	6309ZZ C3	
HXF+200ML	20	621	350	300-j6	400			6312ZZ C3	6311ZZ C3	
HXF+225SM 2P 4-8P	22	723	400	350-j6	450	19	5	6313 C3	6312 C3	450
HXF+250M 2P 4-8P	22	693	500	450-j6	550			6315 C3	6313 C3	
HXF+280SM 2P 4-8P	22	770	500	450-j6	550			6316 C3	6315 C3	

* For 160-200 frame flange mounted motors, 4 nos mounting holes are provided

* For 225-280 frame flange mounted motors, 8 nos mounting holes are provided



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14, Mathura Road, Faridabad - 121 003 Tel: +91 129 - 2275592/9627 Fax: +91 129 - 2275019	Omega Building, 17th Floor, Bengal Intelligent Park, Block EP & GP, Sector V, Salt Lake City, Kolkata 700 091 Tel: +91 33 66213000 - 11 Fax: +91 33 66213187	ABB House Dr. S B Path Ballard Estate, Mumbai 400 038 Tel: +91 22 66159888 Fax: +91 22 66314203	Khanija Bhawan, 5th Floor, West Wing, 49, Race Course Road Bangalore - 560 001 Tel: +91 80 22949250 Fax: +91 80 22946702/03
Chandigarh SCO13, 14, 15, 3rd Floor, Sec. 34 A, Chandigarh Tel: +91 172 4321800 Fax: +91 172 2601618	Raipur 4th & 5th Floor, Maruti Heights Aamanaka, G.E. Road, Raipur - 492 099 Tel: +91 771 4213200 Fax: +91 771 4213222	Bhopal FF - 9A, Mansarovar, Commercial Complex Hosangabad Road, Bhopal 462016 Tel: +91 755 4223572 Fax: +91 755 4253323	Chennai 'Janpriya Crest', I Floor 113/96 Pantheon Rd Egmore, Chennai 600008 Tel.: +91 44 28191551/28191661 Fax: +91 44 28193545
Jaipur Tel: +91 141 2744024 Fax: +91 141 2744027	Bhubaneshwar Tel: +91 674 6616300 -11 Fax: +91 674 6616307	Pune Tel: +91 20 66243838 Fax: +91 20 66016255	Coimbatore Tel: +91 422 2305934 Fax: +91 422 2300371
Lucknow Tel: +91 522 2209436 Fax: +91 522 2209478	Jamshedpur Tel: +91 657 6619204 Fax: +91 657 6619200	Vadodara Tel: +91 265 2642141-42 Fax: +91 265 2638911	Hyderabad Tel: +91 40 27906736,29 Fax: +91 40 27906648
Ludhiana Tel: +91 161 4656831 Fax: +91 161 4656830	Guwhati Tel: +91 361 2464260 Mob: +91 9435731532	Ahemadabad Tel: +91 79 66090111	Kochi Tel: +91 484 2330342 Fax: +91 484 2370343
Dehradun Tel: +91 135 2760654 Fax: +91 135 2760655		Nagpur Tel: +91 712 6461145,46, 48, 49 Fax: +91 712 2290283	Visakhapatnam Tel: +91 891 2795837 Fax: +91 891 2538188
		Indore Tel: +91 9981123166	