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Low voltage
Process Performance
IE3 premium efficiency cast iron motors

Power and productivity
for a better world™



Process Performance IE3 premium efficiency cast iron motors Sizes 160 to 355



ABB's process performance IE3 premium efficiency motors are best suited for process 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.

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Process performance premium 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
 le3 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_l/T_n	T_b/T_n		
3000 r/min		415V, 50Hz											
9.3	M3BP160MLJ2	2934	90.7	91.0	90.1	0.90	16	7.5	30.2	2.5	3.0	0.050	133
11	M3BP160MLA2	2936	91.2	91.3	90.5	0.90	18.8	7.0	35.7	2.5	3.0	0.054	142
15	M3BP160MLB2	2938	91.9	92.1	91.2	0.90	25.4	7.3	48.7	2.5	3.0	0.064	171
18.5	M3BP160MLC2	2938	92.4	92.4	91.3	0.91	30.8	7.7	60.0	2.7	3.0	0.074	184
22	M3BP180MLA2	2948	92.7	93.0	92.1	0.90	36.9	7.5	71.1	2.5	3.0	0.118	235
30	M3BP200MLA2	2950	93.3	93.3	92.5	0.90	50.3	7.0	97.0	2.5	3.0	0.198	299
37	M3BP200MLB2	2952	93.7	93.7	92.9	0.90	61.4	7.0	119.4	2.5	3.0	0.219	314
45	M3BP225SMA2	2962	94.0	94.0	93.4	0.90	74.4	7.0	145.0	2.5	3.0	0.336	410
55	M3BP250SMA2	2967	94.3	94.3	93.2	0.90	90.7	7.0	177	2.4	3.0	0.588	453
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; 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_l / T_n = Locked rotor torque
 T_b / T_n = Breakdown torque

IE-class concerns motors from 0.37 kW to 355 kW

Process performance premium 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; 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 _l /T _n	T _b /T _n		
1500 r/min		415V, 50Hz											
9.3	M3BP160MLJ4	1470	91.0	91.2	90.6	0.83	17.3	7.2	60.4	2.5	3.0	0.100	165
11	M3BP160MLA4	1470	91.4	91.7	91.0	0.83	20.3	7.0	71.4	2.6	2.9	0.110	174
15	M3BP160MLB4	1470	92.1	92.4	91.9	0.83	27.5	7.0	97.4	2.6	2.9	0.126	187
18.5	M3BP180MLA4	1476	92.6	92.8	92.1	0.83	34.0	7.3	120.0	2.5	3.0	0.220	235
22	M3BP180MLB4	1477	93.0	93.3	92.8	0.83	40.0	7.2	142.0	2.6	3.0	0.220	236
30	M3BP200MLA4	1478	93.6	93.6	93.0	0.84	53.2	6.5	194.0	2.5	2.7	0.374	319
37	M3BP225SMA4	1479	93.9	94.0	93.8	0.85	64.8	7.0	239.0	2.7	2.8	0.553	399
45	M3BP225SMB4	1479	94.2	94.2	93.6	0.85	78.6	7.0	290.0	2.5	3.0	0.553	399
55	M3BP250SMA4	1480	94.6	94.6	93.8	0.85	95.6	7.0	355.0	2.5	2.8	0.948	476
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; 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_l / T_n = Locked rotor torque
T_b / T_n = Breakdown torque

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Technical data for totally enclosed squirrel cage three phase induction motors

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IP 55 - IC 411 - Insulation class F, temperature rise class B
IE3 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_l/T_n	T_b/T_n		
1000 r/min		415V, 50Hz											
7.5	M3BP160MLA6	975	89.1	89.6	88.8	0.76	15.5	7.0	73.3	2.0	3.0	0.116	173
9.3	M3BP160MLJ6	975	89.8	90.0	89.4	0.76	19.2	7.1	91.0	2.2	3.0	0.120	178
11	M3BP160MLB6	975	90.3	90.3	90.0	0.76	22.5	7.3	107.2	2.3	3.0	0.134	186
15	M3BP180MLA6	975	91.2	91.2	90.6	0.78	29.6	6.5	147.0	1.7	2.5	0.218	234
18.5	M3BP200MLA6	986	91.7	91.7	91.0	0.80	35.3	6.5	178.5	2.4	3.0	0.456	292
22	M3BP200MLB6	987	92.2	92.2	91.6	0.81	41.2	6.5	213.0	2.3	2.9	0.539	318
30	M3BP225SMA6	987	92.9	93.3	92.5	0.81	55.8	6.5	289.7	2.2	3.0	0.827	393
37	M3BP250SMA6	988	93.3	93.5	92.7	0.83	66.8	7.0	357.0	2.3	2.8	1.512	468
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

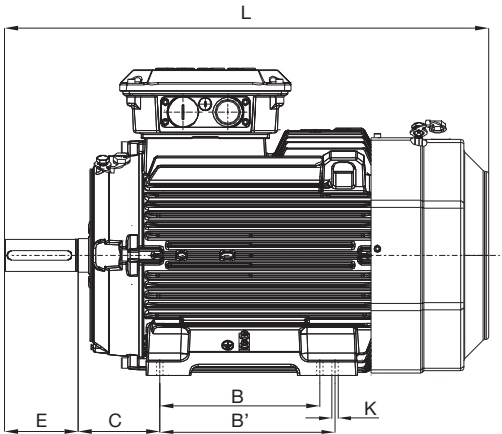
Efficiency values are given according to IEC 60034-2-1; 2007.
Please note that the values are not comparable without knowing the testing method.
ABB has calculated the efficiency values according to indirect method, stray load losses (additional losses) determined from measuring.

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

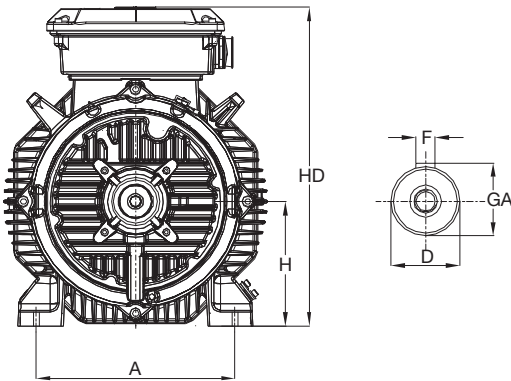
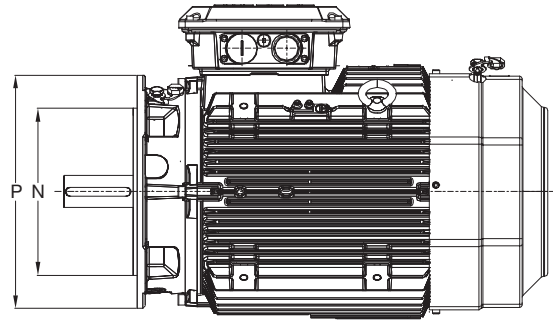
Process performance premium efficiency cast iron motors

Dimension drawings

Foot-mounted motor IM1001, B3

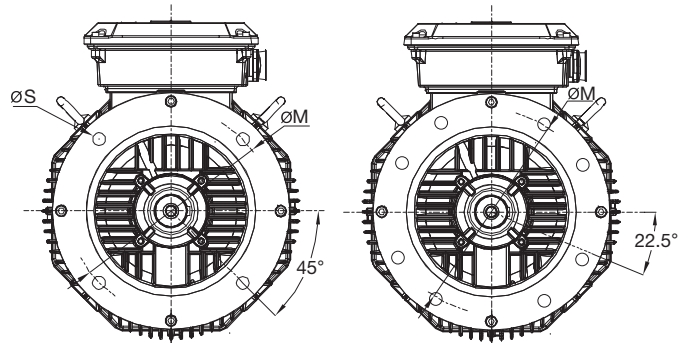


Flange-mounted motor IM3001, B5



Size 160 to 200

Size 225 to 355



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											
Process performance cast iron motors																					
160	42	42	45	45	12	12	110	110	680	680 ¹	254	210	254	108	421	14.5	160	300	250	350	19
180	48	48	51.5	51.5	14	14	110	110	726	726	279	241	279	121	461	14.5	180	300	250	350	19
200	55	55	59	59	16	16	110	110	821	821	318	267	305	133	528	18.5	200	350	300	400	19
225	55	60	59	64	16	18	110	140	849	879	356	286	311	149	573	18.5	225	400	350	450	19
250	60	65	64	69	18	18	140	140	884	884	406	311	349	168	626	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	1245	508	406	457	216	872	28	315	600	550	660	24
315ML	65	90	69	95	18	25	140	170	1215	1325	508	457	508	216	872	28	315	600	550	660	24
355SM	75	100	79.5	106	20	28	140	210	1504	1574	610	500	560	254	965	28	355	740	680	800	24
355ML	75	100	79.5	106	20	28	140	210	1610	1680	610	560	630	254	965	28	355	740	680	800	24

Above table gives the main dimensions in mm.

1)M3BP160MLJ2, A2L=583

Process performance cast iron motors in brief

Motor 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	Blue, Munsell 8B 4.5 / 3.25 / NCS 4822 B05G				
	Corrosion class	C3 medium according to ISO / EN / 12944-5				
Bearings	D-end	6309/C3	6310/C3	6312/C3	6313/C3	6315/C3
	N-end	6209/C3	6209/C3	6210/C3	6212/C3	6213/C3
Axially-locked	Inner Bearing Cover	As standard, locked at D-end				
Bearing seals		Axial seal standard, radial on request				
Lubrication		Regreasable bearing, regreasng nipple M6x1				
Measuring nipple		SPM as standard				
Rating plate	Material	Stainless steel, SS-EN 10088, 0.5mm				
Terminal Box	Frame material	Cast iron grade 200 : ISO 185				
	Cover material	Cast iron grade 200 : ISO 185				
	Cover screws material	Steel 8.8				
Connections	Cable entries	2xM40, 1xM16		2xM63, 1xM16		
	Terminals	6 terminals for connection with cable lugs (not included)				
	Cable gland	Cable flanges as standard, cable glands as option				
Fan	Material	Polypropylene, Reinforced with 20% glass fibre				
Fan Cover	Material	Hot dipped galvanized steel				
	Paint Colour shade	Blue, Munsell 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				
	Winding protection	3 PTC thermistors as standard, 150°C				
Rotor winding	Material	Pressure diecast aluminum				
Balancing method		Half Key Balancing as Standard				
Key ways		Closed Key Way				
Enclosure		IP 55, Higher protection on request				
Cooling method		IC 411				

Process performance 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				
	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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