

# Product note

## Process performance IE3 cast iron motors, frame sizes 280 to 355, generation L

### IE3 premium efficiency motors, generation L

ABB's premium efficiency range of the familiar M3BP Process performance motor portfolio has been optimized from a market and efficiency regulation point of view.

This product note presents generation L cast iron motors optimized especially for the European market and for 400 V, 50 Hz networks.

The series covers frame sizes 280 to 355 and is designated with generation code L. Motors optimized for the US and Canada are designated with generation code K.

Motor sizes 280 to 355 are rated from 75 to 355 kilowatts and are available as 2-, 4- and 6-pole versions. More information on motor performance and features is available through our sales channels.



### Technical data

IP 55 – IC 411 – Insulation class F, temperature rise class B, IE3 efficiency class according to IEC 60034-30;2008

Output kW	Motor type	Product code	Speed $n_N$ r/min	Efficiency IEC 60034-2-1: 2007			Power factor $\cos \varphi$	Current		Torque			Inertia J kgm <sup>2</sup>	Weight kg	Sound pressure level, LPA dB	
				Full load 100%	3/4 load 75%	1/2 load 50%		$I_N$ A	$I_G/I_N$	$T_N$ Nm	$T_L/T_N$	$T_B/T_N$				
<b>3000 r/min = 2 poles</b>																
<b>400 V 50 Hz</b>																
75	M3BP 280 SMB 2	3GBP 281220 -**L	2978	94.7	94.5	93.6	0.88	130	7.0	240	2.3	3.0	0.90	665	74	
90	M3BP 280 SMB 2	3GBP 281230 -**L	2975	95.0	95.0	94.3	0.88	155	6.4	288	2.1	2.8	0.99	690	74	
110	M3BP 315 SMB 2	3GBP 311220 -**L	2982	95.2	95.0	94.0	0.87	192	7.0	352	1.8	2.7	1.30	910	78	
132	M3BP 315 SMC 2	3GBP 311230 -**L	2982	95.4	95.3	94.4	0.88	227	6.8	422	2.0	2.8	1.50	965	78	
160	M3BP 315 SMD 2	3GBP 311240 -**L	2983	95.6	95.5	94.9	0.88	275	7.4	512	2.2	2.8	1.70	1025	78	
200	M3BP 315 MLA 2	3GBP 311410 -**L	2983	95.8	95.8	95.4	0.88	342	7.7	640	2.5	3.1	2.10	1190	81	
250	M3BP 315 LKB 2	3GBP 311820 -**L	2983	95.8	95.9	95.5	0.90	419	7.7	800	2.5	3.3	2.90	1440	81	
250	M3BP 355 SMA 2	3GBP 351210 -**L	2984	96.0	95.8	94.9	0.89	422	7.7	800	2.1	3.3	3.00	1600	83	
315	M3BP 355 SMB 2	3GBP 351220 -**L	2980	96.1	96.0	95.4	0.89	532	7.0	1009	2.1	3.0	3.40	1680	83	
355	M3BP 355 SMC 2	3GBP 351230 -**L	2985	96.2	96.1	95.5	0.88	605	7.2	1135	2.2	3.0	3.60	1750	83	
<b>1500 r/min = 4 poles</b>																
<b>400 V 50 Hz</b>																
75	M3BP 280 SMB 4	3GBP 282220 -**L	1484	95.0	95.1	94.6	0.85	134	6.5	482	2.3	2.8	1.38	645	75	
90	M3BP 280 SMC 4	3GBP 282230 -**L	1485	95.2	95.4	94.9	0.86	159	7.1	578	2.5	2.9	1.73	700	75	
110	M3BP 315 SMB 4	3GBP 312220 -**L	1489	95.4	95.4	94.8	0.85	195	7.0	705	2.1	3.0	2.43	930	71	
132	M3BP 315 SMC 4	3GBP 312230 -**L	1488	95.6	95.7	95.3	0.86	231	6.7	847	2.2	2.9	2.90	1000	71	
160	M3BP 315 SMD 4	3GBP 312240 -**L	1488	95.8	95.9	95.5	0.85	284	6.9	1026	2.2	3.0	3.20	1000	71	
200	M3BP 315 MLB 4	3GBP 312420 -**L	1487	96.0	96.3	96.1	0.86	350	6.8	1284	2.4	3.0	3.90	1220	74	
250	M3BP 315 LKA 4	3GBP 312810 -**L	1488	96.0	96.2	96.0	0.85	442	6.9	1604	2.5	3.2	4.40	1410	78	
250	M3BP 355 SMA 4	3GBP 352210 -**L	1491	96.2	96.2	95.8	0.86	436	6.4	1601	2.1	2.9	5.90	1610	78	
315	M3BP 355 SMB 4	3GBP 352220 -**L	1491	96.2	96.3	95.8	0.86	550	7.2	2017	2.3	3.3	6.90	1780	78	
355	M3BP 355 SMC 4	3GBP 352230 -**L	1490	96.0	96.1	95.8	0.86	621	6.3	2273	2.3	2.8	7.20	1820	78	

Output kW	Motor type	Product code	Speed n <sub>N</sub> r/min	Efficiency IEC 60034-2-1: 2007			Power factor cos φ	Current		Torque			Inertia J kgm <sup>2</sup>	Weight kg	Sound pressure level, LPA dB	
				Full load 100%	3/4 load 75%	1/2 load 50%		I <sub>N</sub> A	I <sub>S</sub> /I <sub>N</sub>	T <sub>N</sub> Nm	T <sub>L</sub> /T <sub>N</sub>	T <sub>B</sub> /T <sub>N</sub>				
				400 V 50 Hz												
45	M3BP	280 SMB 6	3GBP 283220 -**L	991	93.7	94.0	93.5	0.84	83	7.4	433	2.7	3.0	1.87	645	72
55	M3BP	280 SMC 6	3GBP 283230 -**L	992	94.1	94.4	93.9	0.85	99	7.5	528	2.8	3.0	2.57	725	71
75	M3BP	315 SMB 6	3GBP 313220 -**L	994	94.6	94.8	94.3	0.84	136	6.8	720	1.8	2.6	4.10	930	75
90	M3BP	315 SMC 6	3GBP 313230 -**L	994	94.9	95.1	94.5	0.84	163	7.2	864	2.0	3.0	4.60	1000	76
110	M3BP	315 SMD 6	3GBP 313240 -**L	994	95.1	95.3	94.8	0.83	201	7.3	1056	2.2	3.1	4.90	1000	75
132	M3BP	315 MLB 6	3GBP 313420 -**L	995	95.4	95.5	94.8	0.82	244	7.3	1266	2.3	3.2	6.30	1200	72
160	M3BP	315 LKA 6	3GBP 313810 -**L	994	95.6	95.8	95.4	0.81	298	7.5	1535	2.2	3.1	7.30	1410	76
160	M3BP	355 SMA 6	3GBP 353210 -**L	993	95.7	96.0	95.7	0.82	294	6.7	1538	2.5	2.6	7.90	1520	75
200	M3BP	355 SMB 6	3GBP 353220 -**L	993	95.8	96.1	95.9	0.82	367	6.7	1923	2.6	2.5	9.70	1680	75
250	M3BP	355 SMC 6	3GBP 353230 -**L	993	95.9	96.1	95.8	0.81	465	7.7	2404	3.0	3.1	11.3	1820	75
315	M3BP	355 MLB 6	3GBP 353420 -**L	993	96.0	96.3	96.0	0.83	571	6.8	3029	2.6	3.2	13.5	2180	76
355	M3BP	355 LKA 6	3GBP 353810 -**L	993	96.0	96.2	95.9	0.81	659	7.5	3413	2.9	3.2	15.5	2500	76

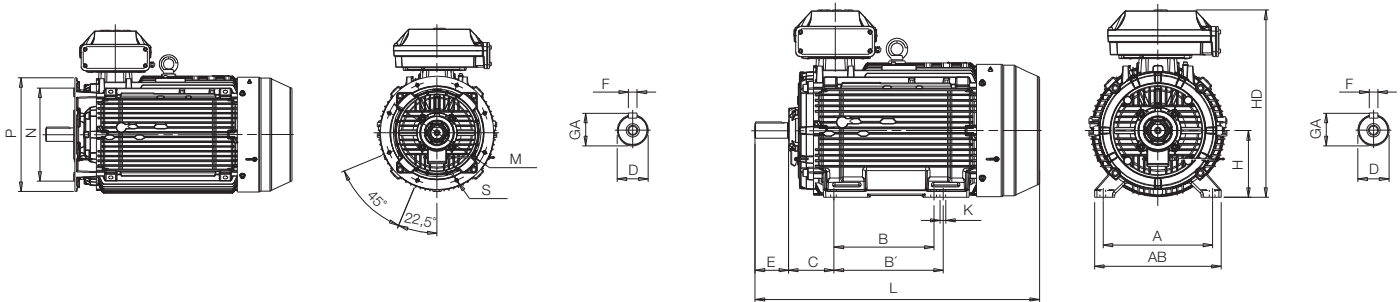
I<sub>S</sub>/I<sub>N</sub> = Starting current

T<sub>L</sub>/T<sub>N</sub> = Locked-rotor torque

T<sub>B</sub>/T<sub>N</sub> = Breakdown torque

### Dimensions

Process performance cast iron motors IE3 frame sizes 280 to 355.



Motor size	IM 1001, IM B3 and IM 3001, IM B5										IM 1001, IM B3					IM 3001, IM B5					
	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											
280	65	75	69	79.5	18	20	140	140	1088	1088	457	368	419	190	762	24	280	500	450	550	18
280 ML	65	75	69	79.5	18	20	140	140	1189	1189	457	419	457	190	785	24	280	500	450	550	18
315 SM	65	80	69	85	18	22	140	170	1174	1204	508	406	457	216	852	30	315	600	550	660	23
315 ML	65	90	69	95	18	25	140	170	1285	1315	508	457	508	216	852	30	315	600	550	660	23
355 SM	70	100	62.5	90	20	28	140	210	1409	1479	610	500	560	254	958	35	355	740	680	800	23
355 ML	70	100	62.5	90	20	28	140	210	1514	1584	610	560	630	254	958	35	355	740	680	800	23
355 LK	70	100	62.5	90	20	28	140	210	1764	1834	610	710	900	254	958	35	355	740	680	800	23

For more information please contact:

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