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## **LOW VOLTAGE**

Process performance high  
output cast iron motors



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

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# Process performance cast iron motors

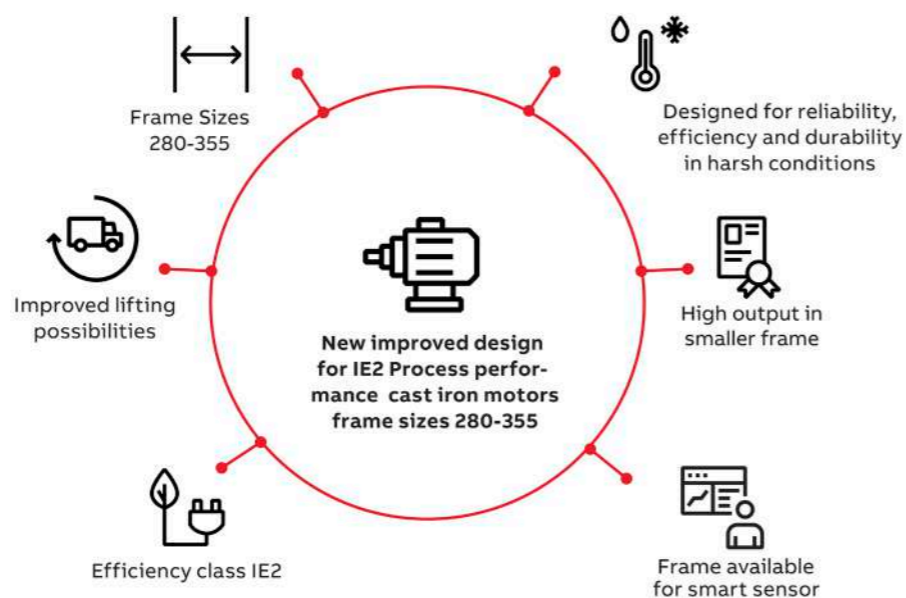
High output induction motors are high quality products designed for durability in the most demanding environments and tough applications. They are ideally suited to process industries and heavy duty applications – sectors like mining, cement and paper - where motors have to meet high requirements for reliability, availability and efficiency in harsh conditions.

### New improved design

M3BP High output process performance motors in frame sizes 280,315 & 355. The new motors have improved electrical design to meet the requirements.

The new motors are compact and have improved lifting possibilities. The motor frames are also available for smart sensor.

Process performance cast iron motors, M3BP	Value
Frame sizes	280,315 & 355
Pole numbers	2,4,6
Product type	M3BP
Availability	Production



# Technical data

IP55 - IC 411 - Insulation class F, Ambient 45°C (Temp rise class B, 75°C), S1 Duty, IE2 efficiency class according to IS 12615:2018, IEC 60034-30-1, 2014, 415V ± 10%, 50 ± 5% Hz, Combined Variation 10% (absolute)

### 2 Pole, 3000 rev/min.

Out put (kW)	Motor Type	Product Code	Speed (r/min)	Efficiency			Power factor			Current		Torque			Moment of inertia J = 1/4 GD2 (kgm2)	Weight	Sound pressure level LPA (dB)
				FL 100%	FL 75%	FL 50%	100%	75%	50%	In (A)	Is/In (%)	Tn	Ts/Tn	Tmax/Tn			
110	M3BP 280SMC 2	3GBP2 81230-ADG	2980	95.0	95.0	94.0	0.88	<b>0.86</b>	0.82	183	7.0	<b>352</b>	2.5	3.2	1.1	725	90
132	M3BP 280MLA 2	3GBP2 81410-ADG	2978	95.2	95.2	94.2	0.88	<b>0.86</b>	0.82	219	7.0	<b>423</b>	2.7	3.2	1.4	840	90
160	M3BP 280MLB 2	3GBP2 81420-ADG	2978	95.4	95.4	94.4	0.89	<b>0.86</b>	0.83	262	7.0	<b>513</b>	3.0	3.2	1.5	890	90
250	M3BP 315LKA 2	3GBP3 11810-ADG	2982	95.5	95.5	94.5	0.88	<b>0.86</b>	0.82	414	7.0	<b>801</b>	3.0	3.2	2.7	1440	90
315	M3BP 315LKC 2	3GBP3 11830-ADG	2983	95.5	95.5	94.5	0.88	<b>0.86</b>	0.81	521	7.0	<b>1008</b>	3.4	3.4	3.3	1630	90
400	M3BP 355MLA 2	3GBP3 51410-ADG	2984	95.5	95.5	94.5	0.85	<b>0.83</b>	0.77	685	7.0	<b>1280</b>	2.4	3.0	4.1	2000	90
450	M3BP 355MLB 2	3GBP3 51420-ADG	2985	95.5	95.5	94.5	0.88	<b>0.85</b>	0.80	745	7.0	<b>1440</b>	2.3	3.5	4.3	2080	90
500	M3BP 355LKA 2	3GBP3 51810-ADG	2983	95.5	95.5	94.5	0.89	<b>0.86</b>	0.80	818	7.0	<b>1601</b>	2.2	4.0	4.8	2320	90
560	M3BP 355LKB 2	3GBP3 51820-ADG	2984	95.5	95.5	94.5	0.88	<b>0.85</b>	0.80	927	7.0	<b>1792</b>	2.3	4.2	5.2	2460	90

### 4 Pole, 1500 rev/min.

110	M3BP 280SMC 4	3GBP282230-ADG	1486	95.1	95.1	94.1	0.85	<b>0.81</b>	0.72	189	7.0	<b>707</b>	3.2	3.2	1.9	725	85
132	M3BP 280MLA 4	3GBP282410-ADG	1485	95.3	95.3	94.3	0.85	<b>0.81</b>	0.73	227	7.0	<b>848</b>	2.9	3.0	2.3	840	85
160	M3BP 280MLB 4	3GBP282420-ADG	1485	95.5	95.5	94.5	0.84	<b>0.79</b>	0.70	278	7.0	<b>1029</b>	3.1	3.1	2.5	890	85
250	M3BP 315LKA 4	3GBP312810-ADG	1488	95.5	95.5	94.5	0.84	<b>0.80</b>	0.72	434	7.0	<b>1604</b>	2.7	3.1	4.4	1410	85
280	M3BP 315LKB 4	3GBP312820-ADG	1488	95.5	95.5	94.5	0.86	<b>0.83</b>	0.75	474	7.0	<b>1797</b>	2.8	3.3	5.0	1520	85
315	M3BP 315LKC 4	3GBP312830-ADG	1489	95.5	95.5	94.5	0.85	<b>0.82</b>	0.72	540	7.0	<b>2020</b>	2.8	3.4	5.5	1600	85
400	M3BP 355MLA 4	3GBP352410-ADG	1490	95.5	95.5	94.5	0.83	<b>0.80</b>	0.70	702	7.0	<b>2563</b>	2.4	2.7	8.4	2140	85
450	M3BP 355MLB 4	3GBP352420-ADG	1491	95.5	95.5	94.5	0.83	<b>0.80</b>	0.69	790	7.0	<b>2882</b>	2.4	3.0	8.4	2140	85
500	M3BP 355LKA 4	3GBP352810-ADG	1491	95.5	95.5	94.5	0.84	<b>0.80</b>	0.70	867	7.0	<b>3202</b>	2.1	3.2	10.0	2500	85

### 6 Pole, 1000 rev/min.

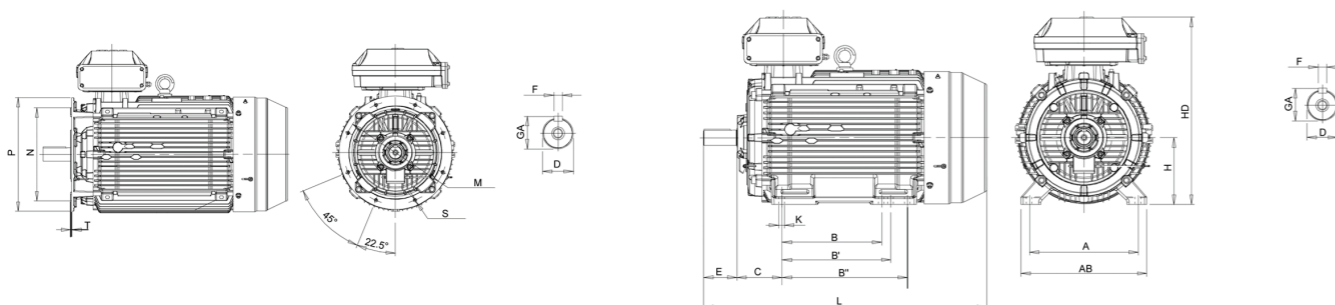
75	M3BP 280SMC 6	3GBP283230-ADG	991	94.3	94.3	93.3	0.83	<b>0.80</b>	0.72	133	7.0	<b>723</b>	3.0	2.9	2.8	725	85
90	M3BP 280MLA 6	3GBP283410-ADG	990	94.1	94.1	93.1	0.79	<b>0.74</b>	0.64	168	7.0	<b>868</b>	2.6	2.7	3.1	840	85
110	M3BP 280MLB 6	3GBP283420-ADG	991	94.4	94.4	93.4	0.80	<b>0.75</b>	0.65	203	7.0	<b>1060</b>	2.9	2.8	4.1	890	85
160	M3BP 315LKA 6	3GBP313810-ADG	992	95.3	95.3	94.3	0.82	<b>0.77</b>	0.67	285	7.0	<b>1540</b>	2.8	3.0	7.3	1410	85
180	M3BP 315LKB 6	3GBP313820-ADG	992	95.4	95.4	94.4	0.82	<b>0.78</b>	0.68	320	7.0	<b>1733</b>	2.9	3.1	8.3	1520	85
200	M3BP 315LKC 6	3GBP313830-ADG	990	95.5	95.5	94.5	0.84	<b>0.81</b>	0.73	347	7.0	<b>1929</b>	2.7	2.8	9.2	1600	85
355	M3BP 355LKA 6	3GBP353810-ADG	993	95.5	95.5	94.5	0.79	<b>0.73</b>	0.62	655	7.0	<b>3414</b>	2.8	3.0	15.5	2500	85
400	M3BP 355LKB 6	3GBP353820-ADG	993	95.5	95.5	94.5	0.81	<b>0.75</b>	0.62	719	7.0	<b>3846</b>	2.6	2.8	16.5	2600	85

\* 2 pole - Unidirection Fan from 200kW to 560kW - Direction of rotation must be stated when ordering, see variant codes 044 and 045.  
 In = Nominal or rated current      Is = Starting current      Note: 1. All performance figures are subject to IEC/IS tolerances.  
 Tn = Nominal or rated torque in Nm      Ts = Starting Torque      2. For Higher Ambient requirement contact sales team  
 Tmax = Maximum torque

# Dimensions drawings

## Process performance IE2 efficiency cast iron motors

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



Motor size	D		GA		F		F		L MAX		A	B	B1	C	HD	K	H	M	N	P	S
	2	4-8	2	4-8	2	4-8	2	4-8	2	4-8											
280SM_	65	75	69	79.5	18	20	140	140	1053	1054	457	368	419	190	785	24	280	500	450	550	19
280ML_	65	75	69	79.5	18	20	140	140	1189	1189	457	368	419	190	785	24	280	500	450	550	19
315 SA	65	80	69	85	18	22	140	170	1088	1118	508	406	--	216	845	28	315	600	550	660	24
315 SM_	65	80	69	85	18	22	140	170	1190	1220	508	406	457	216	845	28	315	600	550	660	24
315 ML_	65	90	69	95	18	25	140	170	1285	1315	508	457	508	216	852	30	315	600	550	660	24
315 LK_	65	90	69	95	18	25	140	170	1491	1521	508	457	508	216	880	30	315	600	550	660	24
355 SM_	70	100	74.5	106	20	28	140	210	1409	1479	610	500	560	254	958	35	355	740	680	800	24
355 ML_	70	100	74.5	106	20	28	140	210	1514	1584	610	560	630	254	958	35	355	740	680	800	24
355 LK_	70	100	74.5	106	20	28	140	210	1764	1834	610	710	900	254	958	35	355	740	680	800	24

## Motors in brief

Process performance cast iron motors  
M3BP 280-355 High output

Output	280	315	355		
Stator and end shields	Material	Cast iron			
	Paint colour shade	Munshell blue 8B 4.5/3.25			
	Corrosion class	C3 (medium)			
Feet	Material	Integrated cast iron feet			
Bearings	D-End	2-pole	6316/C3	6316/C3	6316M/C3
		4-6 pole	6316/C3	6319/C3	6322/C3
	N-End	2-pole	6316/C3	6316/C3	6316M/C3
		4-6 pole	6316/C3	6316/C3	6316/C3
Axially-locked bearings	Locked at D-end				
Bearing seals	D-End	V-ring or labrinth seal			
	N-End	V-ring or labrinth seal			
Lubrication	Regreasable bearings, regreasing nipples M10 x 1				
Measuring nipple for condition monitoring of the bearings	Included				
Rating plate	Material	Stainless steel			
Terminal box	Frame and cover	Cast iron	Cover steel		
	Corrosion class	C3 (medium)	Steel		
	Cover screws	Zinc-electroplated steel			
Connections	Cable entries	Refer cable details below			
	Terminals	6 terminals of connection (Cable lugs not included)			
	Cable gland	Suitable opening in terminal box, cable glands as option			
Fan	Material	Glass-fiber reinforced polypropylene			
Fan cover	Material	Sheet			
	Paint colour shade	Munshell 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	3 PTC thermistors, 155°C			
Rotor winding	Material	Pressure diecast aluminium			
Balancing method	Half key balancing				
Key ways	Open key-way				
Drain holes	Drain holes with closable plastic plugs, open on delivery				
Enclosure	IP 55				
Cooling method	IC 411				

### Cable Details

Rating kW	Maximum Cable Size	Conduit Size	Terminal; Box Type
110	2Rx3Cx240sqmm	2xM63x1.5	370*
132-160	2Rx3Cx240sqmm	2xM63x1.5	370*
250-280	2Rx3Cx240sqmm	2xM63x1.5	750*
315-560	4Rx3Cx240sqmm	4xM63x1.5	750*

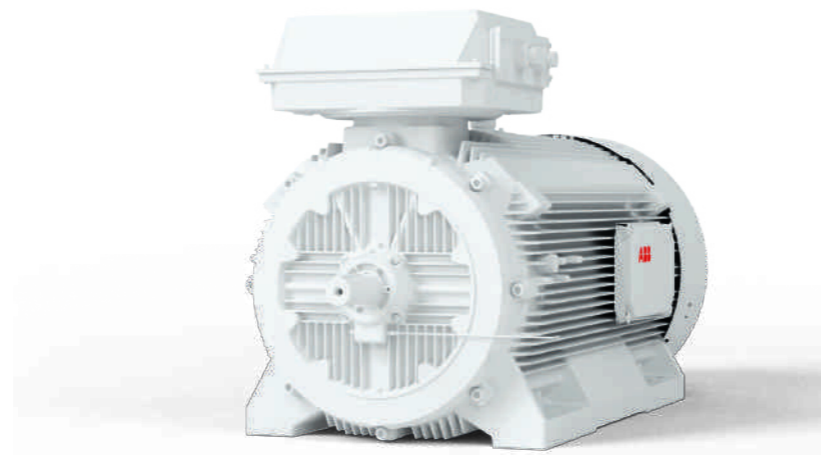
\* With adaptor for Cable Entry

CONDITION MONITORING FOR LOW VOLTAGE MOTORS

# Motors that let you know when it's time for service

Monitoring and maintenance of low voltage motors installed across a plant is time consuming and expensive

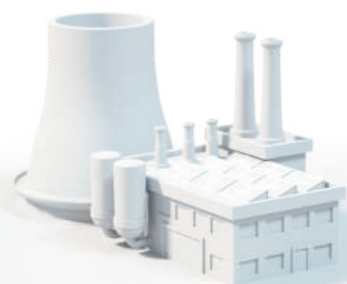
Failures or oversized motors add unnecessary costs



Many parts of the plant operate in "yesterday's world"

Nothing being sent, nothing being received. No value added from smart services.

Industrie 2.0



Industrie 4.0

Tomorrow's factory is smart, because it communicates



It gathers and shares data

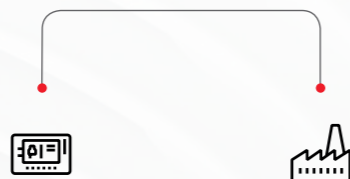
Now millions of motors will become smart

Making intelligent services real for electric motors!



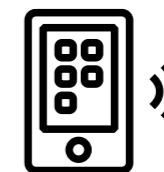
ABB Ability™ Smart Sensor

The gateway to tomorrow's smart factory



# Your advantages Simply attached directly to the motor

The ABB Ability™ Smart Sensor sends key operating data to the cloud



Motors let you know when it's time for service

ABB Ability™ Smart Sensor collects condition and performance data frequently



User-friendly information

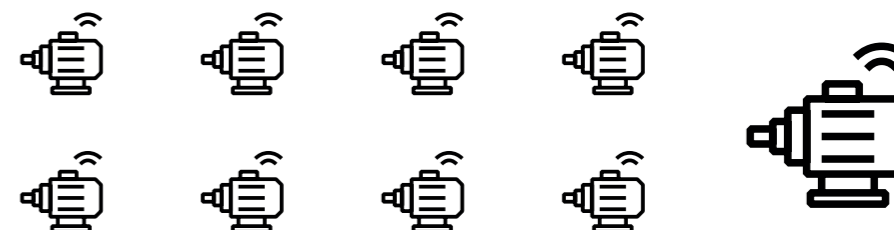


with reports, performance charts and graphs



Measured and analysed data provides recommendations on how to optimize operations

For millions of motors predictive maintenance becomes reality





## Notes

Lined area for notes, consisting of multiple horizontal lines.





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