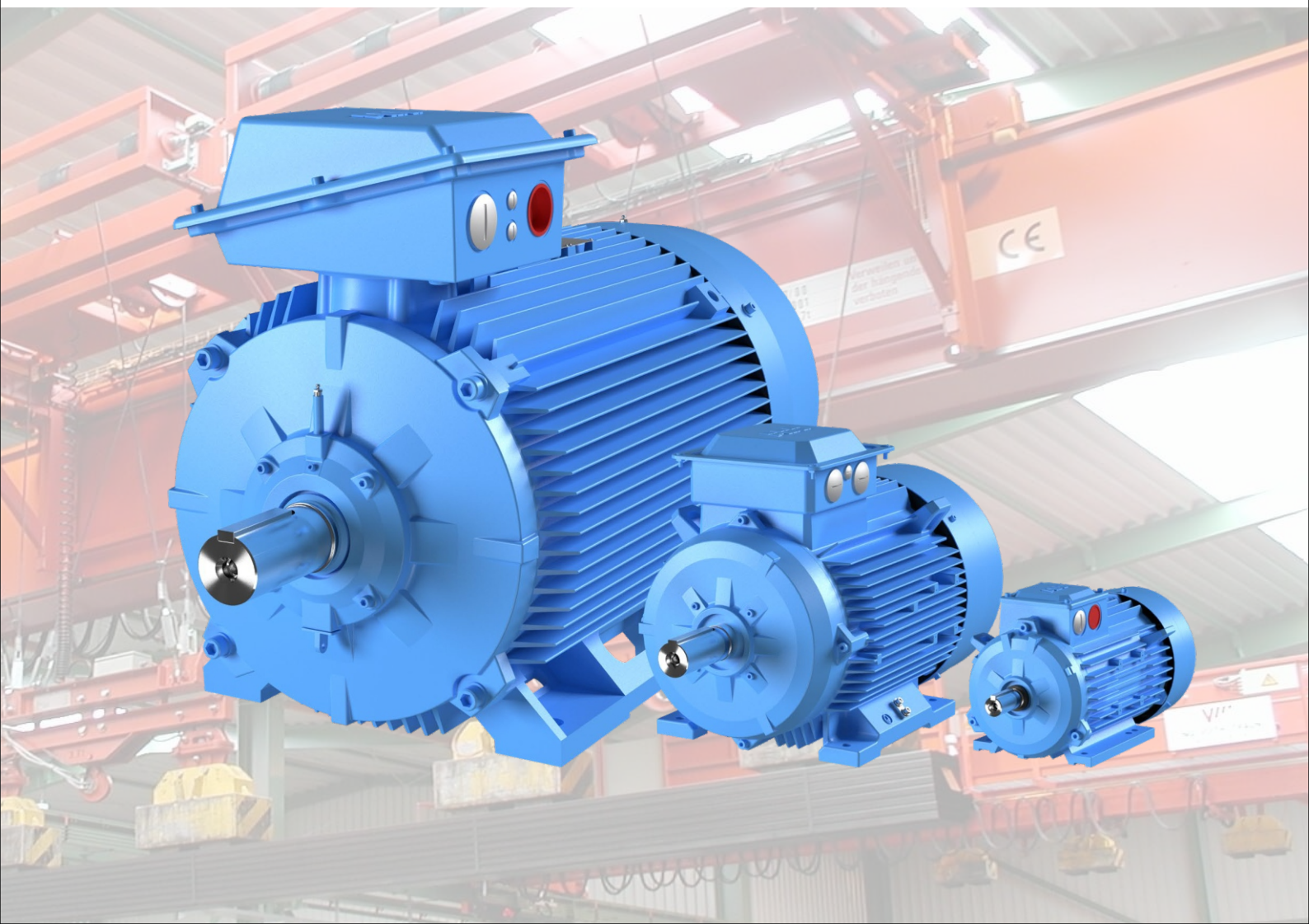
CATALOG | NOVEMBER 2024

Low voltage

Crane Duty motors



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“With expertise, and compliance across the wide range of products, we help value-minded industrial customers improve their energy efficiency and productivity in their cranes.”

Crane Duty Motors - 71 to 450

ABB Low Voltage Crane Duty Motors

ABB Crane duty motors, offer the optimal solution for your crane duty applications. ABB Crane duty motors are robust and reliable that meets the requirements of heavy industries. Built with most reliable insulation system to suit maximum starts/stops per hour, these motors are ISI marked with IE2, IE3 & IE4 level of efficiencies

Application

A crane is a type of machine, generally equipped with a hoist rope, wire ropes or chains, and sheaves, that can be used both to lift and lower materials and to move them horizontally. It is mainly used for lifting heavy objects and transporting them to other places.

Cranes are commonly employed in transportation for the loading and unloading of freight, in construction for the movement of materials, and in manufacturing for the assembling of heavy equipment

Typical Applications for Crane duty Motors include Industrial EOT cranes (Long travel, Hoist), Harbor cranes, Construction Cranes, Elevators and so on.

The motors powering cranes are designed and selected such that they are suitable for frequent reversing, frequent acceleration and braking. ABB Crane duty motors perform reliably in actual service conditions by ensuring that the temperature does not exceed the permissible limits specified in IS 325.

Sample Nameplate complying to BIS

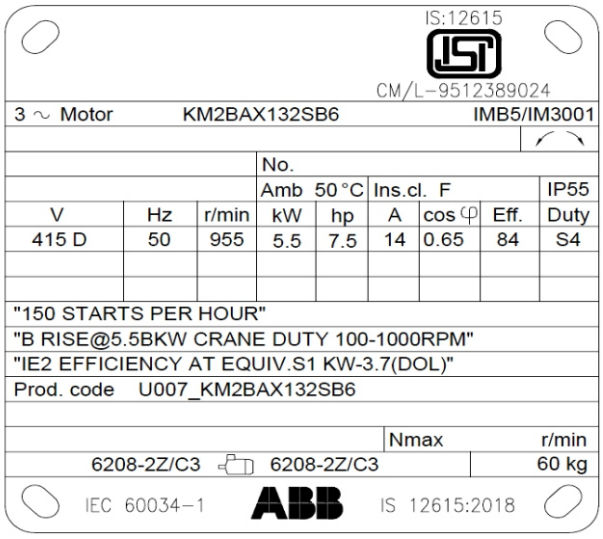


ABB Crane duty motors have BIS marking on the nameplate and are energy efficient complying to IS 12615 2018 and IEC 60034-30-1 for the efficiency levels

The motors features suitable insulation system to withstand the frequent starts and stops that vary from 60 starts/ hour to 300 starts/hour with duty factors ranging from 25% to 100%.

Standards & Regulations

Low Voltage motors in India are governed under the IS standards. IS 12615 2018 defines the efficiency classes and performance specifications of Low voltage motors. Motors rated with duty cycle S2 and above are also covered in addition to S1 duty motors. As per these standards motors rated with duty cycle S2 and above shall be marked with the equivalent S1 duty output and its corresponding IE class. Declaration of S1 duty output value may be as per mutual agreement between motor manufacturer and customer.

ABB Crane duty motors are energy efficient with the efficiencies tested in NABL accredited test labs and following the accurate methods of measurement in line with IEC 60034-30-1. With wide range of options available to customize the solution, these motors deliver the best while ensuring the reliability & durability of the motor.

Technical information

Main features:

Power: 0.12kW to 1000kW, 4-8 Pole

Efficiency levels: IE2/IE3/IE4*

Frame: 71 to 450

CDF: 25%, 40%, 60% & 100%

Number of starts/ hour: 60, 150, 300

*only for VSD duty on case to case

Key features

Reliable design

- Motors with BIS marking on nameplate. S1 equivalent rating mentioned on the rating plate as per IS 12615 2018
- Winding design suitable to withstand frequent starts and stops.
- Better torque values to comply Crane duty requirements.
- VFD Crane duty motors confirming to IVIC class of C (Phase/phase) in compliance with IEC 60034-18-41.
- NABL accredited test labs to test the material quality & motor performance ensuring utmost compliance.
- MOTLAB software used for testing the motors where stray load losses are directly measured. This ensures the accuracy in tested values.

Customizable for any application

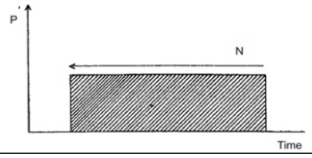
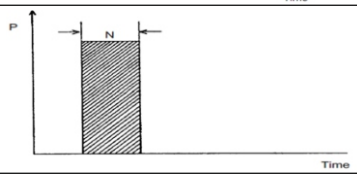
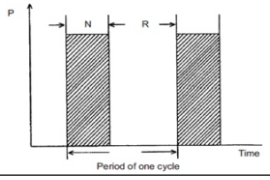
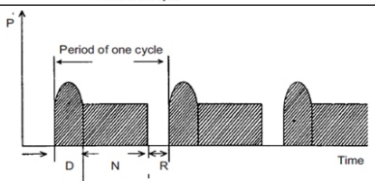
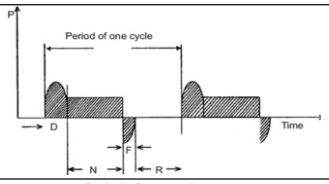
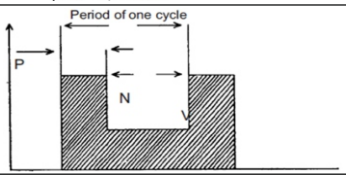
ABB Crane duty motors can be customized with many features to suit the application requirements.

- Inbuilt brake system to have mechanical braking
- Class H Insulation system
- Double shaft extension
- Forced cooling arrangement
- Accessories like space heaters, temperature sensors

Great flexibility

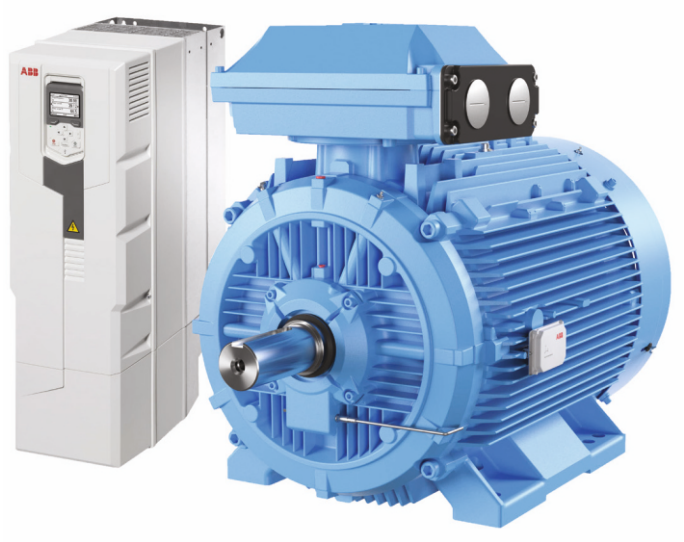
- Provide great flexibility for specific solutions and can be individually designed to the exact demands of the application.
- Wide range of options and accessories available.

Duty Cycles as per IEC 60034-1

Duty Cycles	Descriptions		
S1	Continuous running duty	The motor operates at a constant load maintained for sufficient time to allow the machine to reach thermal equilibrium.	
S2	Short time duty	The motor operates at constant load for given time less than that required to reach thermal equilibrium. The rest periods between the cycles are long enough for the motors to reach ambient temperature.	
S3	Intermittent periodic duty	A sequence of identical duty cycles, each including a time of operation at constant load and a time de-energised and at rest. In this duty, the cycle is such that the starting current does not significantly affect the temperature rise.	
S4	Intermittent periodic duty with starting	A sequence of identical duty cycles, each cycle including a significant starting time, a time of operation at constant load and a time de-energised and at rest.	
S5	Intermittent periodic duty with electrical braking	A sequence of identical duty cycles, each cycle consisting of a starting time, a time of operation at constant load, a time of electrical braking and a time of de-energised and at rest.	
S6	Continuous operation-periodic duty	A sequence of identical duty cycles, each cycle consisting of a time of operation at constant load and a time of operation at no load. There is no time de-energised and at rest.	
S7	Continuous operation-periodic duty with electrical braking	A sequence of identical duty cycles, each cycle consisting of a starting time, a time of operation at constant load and a time of electrical braking. There is no time de-energised and at rest.	
S8	Continuous operation-periodic duty with related load speed changes	A sequence of identical duty cycles, each cycle consisting of a time of operation at constant load corresponding to a predetermined speed of rotation, followed by one or more times of operation at other constant loads corresponding to different speeds of rotation (carried out, for example, by means of a change in the number of poles in the case of induction motors). There is no time de-energized and at rest.	
S9	Duty with non-periodic load and speed variations	A duty in which generally load and speed vary non-periodically within the permissible operating range. This duty includes frequently applied overloads that may greatly exceed the reference load.	
S10	Duty with discrete Constant loads and speeds	A duty consisting of a specific number of discrete values of load (or equivalent loading) and if applicable, speed, each load/speed combination being maintained for sufficient time to allow the machine to reach thermal equilibrium, see Figure 10. The minimum load within a duty cycle may have the value zero (no-load or de-energized and at rest).	

Abbreviations: P = Output power, D = Starting, N = Operation under rated condition, F = Electrical braking, V = Operation of no load, R = At rest and de-energised

VFD Operated Crane Duty Motors



Crane duty motors often operate with VSDs and Modern low voltage variable speed drives has output voltage waveform which is not a sine wave, but a series of rectangular wave pulses (PWM technology) that produces a reasonable approximation of sine wave current. These VSDs during operation generates short rise time pulses. The VSDs challenge motor manufacturers to design insulation systems capable of withstanding repeated voltage impulses. To ensure that motors operate reliably, the effects of non-sinusoidal output voltages from the VSDs must be taken into consideration when selecting the correct insulation system for the motor.

IEC60034-18-41

The standard IEC 60034-18-41, "Rotating Electrical Machines: Electrical insulation systems without partial discharge (Type I) used in rotating electrical machines powered by voltage converters - Qualification and quality control tests" defines stress categories (IVIC classes) i.e IVIC A, B, C & D.

Standards recommend that the manufacturer can assign an impulse voltage insulation class (IVIC) for the insulation system.

The IEC 60034-1, IEC 60034-25, further states that in case of a converter capable or converter duty electrical machine with rated power >1kW with Type 1 insulation (random/ wire wound) and an IVIC assigned, the insulation system should be suitable for **IVIC C for phase to phase & IVIC B for phase to ground**, or as otherwise agreed to between the user and the manufacturer.

ABB Motor Insulation system qualified according to standard IEC 60034-18-41 Impulse Voltage Insulation **Class C (IVIC C)**

Operating Speed

When a motor is used with frequency converter, its actual operating speed may deviate considerably from its nominal speed (i.e the speed stamped on the rating plate). These motors can operate successfully with TEFC cooling in the the speed range of 10-100%.

Bearing currents

Bearing voltages and currents must be avoided in all variable speed applications to ensure the reliability and safety of the application.

For this purpose insulated bearings, common mode filters and suitable cabling and grounding methods must be used. It is recommended that the motors rated 100kW and above or the motors with frame 315 frame and above should have insulated bearings at NDE side.

PDIV Test

ABB has PDIV test (Partial discharge Inception Voltage) set up where the insulation system is tested suitable for IVIC Class C levels.

Crane Duty Motors Chart - DOL Operated Motors

Pole - 4

LV Motors
32, NIT Industrial Area
Faridabad
Series Name - KM2BAX
Enclosure-TEFC
Protection/Cooling - IP55/IC411
Insulation Class - F
Temperature Rise Class - B

Date-01.03.2022
Voltage : 415V+/-10%
Frequency : 50Hz+/-5%
Combined Variation : 10%
Ambient : 50°C, Altitude:1000m
Duty-S4 & S5 (equivalent)
IE2 Efficiency Motor at S1 Duty

Frame Size	Equlvalent S1 kw	150 Starts / hr.				300 Starts / hr.				Motor GD² Kg m²)	Net Weight (Kg)
		25 or 40 % CDF		60 % CDF		25 or 40 % CDF		60 % CDF			
		kW	Amps. (Approx)	kW	Amps. (Approx)	kW	Amps. (Approx)	kW	Amps. (Approx)		
KM2BAX71MB4	0.37	0.37	1.1	0.37	1.1	0.37	1.1	0.37	1.1	0.0030	10
KM2BAX71MC4	0.40	0.55	1.63	0.55	1.63	0.55	1.63	0.55	1.63	0.0033	11
KM2BAX80MA4	0.55	0.75	1.9	0.75	1.9	0.75	1.9	0.75	1.9	0.0062	15
KM2BAX80MB4	0.75	1.1	2.7	1.1	2.7	1.1	2.7	1.1	2.7	0.0098	17
KM2BAX90SA4	1.1	01.5	3.7	1.5	3.7	1.5	3.7	1.5	3.7	0.0148	21
KM2BAX90LA4	1.50	2.2	5.1	2.2	5.1	2.2	5.1	2.2	5.1	0.0184	23
KM2BAX100LB4	2.20	3.7	8.7	3.7	8.7	3.7	8.7	3.7	8.7	0.0386	34
KM2BAX112MLA4	3.70	5.5	12.8	5.5	12.8	5.5	12.8	5.5	12.8	0.0617	50
KM2BAX132MA4	5.50	7.5	15.8	7.5	15.8	7.5	15.8	7.5	15.8	0.096	68
KM2BAX132SME4	7.50	9.3	19.3	9.3	19.3	9.3	19.3	9.3	19.3	0.164	84
KM2BAX160MLA4	11.0	12.5	25.0	12.5	25.0	12	24.0	12	24.0	0.336	115
KM2BAX160MLB4	15.0	16.5	31.0	16.5	31.0	16	30.2	16	30.2	0.410	134
KM2BAX160MLC4	16.0	18.5	35.2	18.5	35.2	NA	NA	NA	NA	0.540	150
KM2BAX180MLA4	18.5	22.0	41.5	22.0	41.5	22.0	41.5	NA	NA	0.484	155
KM2BAX200MLA4	30.0	30	55.5	30	55.5	30	55.5	NA	NA	1.028	229

Note: -
1) Rating 225 frame onwards can be offered against enquiry.
2) Separate declaration are required for different service factors for different cranes & ambient temperature.
3) Efficiency declared for equivalent S1kW are as per IS 12615 2018
4) Ambient declaration chart -

Permissible Output	100%	95%	90%
Amb. Temp °C	50.0	55.0	60.0

Doc no : 3GZH500730-6/Rev-A

Crane Duty Motors Chart - DOL Operated Motors

Pole - 6

LV Motors
32, NIT Industrial Area
Faridabad
Series Name - KM2BAX
Enclosure-TEFC
Protection/Cooling - IP55/IC411
Insulation Class - F
Temperature Rise Class - B

Date-01.03.2022
Voltage : 415V+/-10%
Frequency : 50Hz+/-5%
Combined Variation : 10%
Ambient : 50°C, Altitude:1000m
Duty-S4 & S5 (equivalent)
IE2 Efficiency Motor at S1 Duty

Frame Size	Equlvalent S1 kw	150 Starts / hr.				300 Starts / hr.				Motor GD² Kg m²)	Net Weight (Kg)
		25 or 40 % CDF		60 % CDF		25 or 40 % CDF		60 % CDF			
		kW	Amps. (Approx)	kW	Amps. (Approx)	kW	Amps. (Approx)	kW	Amps. (Approx)		
KM2BAX71MA6	0.12	0.18	0.60	0.18	0.60	0.18	0.60	0.18	0.60	0.00356	9
KM2BAX71MB6	0.18	0.25	0.80	0.25	0.80	0.25	0.80	0.25	0.80	0.00440	10
KM2BAX71MC6	0.25	0.37	1.40	0.37	1.40	0.37	1.40	0.37	1.40	0.00480	12
KM2BAX80MC6	0.37	0.55	1.62	0.55	1.62	0.55	1.62	0.55	1.62	0.00956	16
KM2BAX80MB6	0.55	0.75	2.30	0.75	2.30	0.75	2.30	0.75	2.30	0.01096	15
KM2BAX90LA6	0.75	1.1	3.10	1.1	3.10	1.1	3.10	1.1	3.10	0.02028	24
KM2BAX90LB6	1.10	1.5	4.6	01.5	4.60	1.5	4.60	1.5	4.60	0.02704	30
KM2BAX100LA6	1.50	2.2	6.30	2.2	6.30	2.2	6.30	2.2	6.30	0.03180	31
KM2BAX112MLA6	2.20	3.7	10.50	3.7	10.50	3.7	10.50	3.7	10.50	0.05552	47
KM2BAX132SB6	3.70	5.5	14.00	5.5	14.00	5.5	14.00	5.5	14.00	0.11320	60
KM2BAX132MLA6	5.50	7.5	18.00	7.5	18.00	7.5	18.00	7.5	18.00	0.21300	97
KM2BAX160MLA6	7.50	9.3	20.00	9.3	20.00	9.3	20.00	9.3	20.00	0.35600	122
KM2BAX160MLJ6	9.30	11.5	24.50	11.5	24.50	11.5	24.50	10.7	22.80	0.47600	141
KM2BAX160MLB6	11.00	13.5	29.40	12	25.00	12	25.00	10	21.80	0.51700	147
KM2BAX180MLA6	15.00	18.5	39.00	18.5	39.00	18.5	39.00	18.5	39.00	0.60880	173
KM2BAX200MLB6	22.00	23.5	49.50	22	46.50	22	46.50	NA	NA	0.95360	212

Note: -
1) Rating 225 frame onwards can be offered against enquiry.
2) Separate declaration are required for different service factors for different cranes & ambient temperature.
3) Efficiency declared for equivalent S1kW are as per IS 12615 2018
4) Ambient declaration chart -

Permissible Output	100%	95%	90%
Amb. Temp °C	50.0	55.0	60.0

Doc no : 3GZH500730-6/Rev-A

Crane Duty Motors Chart - DOL Operated Motors

Pole - 8

LV Motors
32, NIT Industrial Area
Faridabad
Series Name - KM2BAX
Enclosure-TEFC
Protection/Cooling - IP55/IC411
Insulation Class - F
Temperature Rise Class - B

Date-01.03.2022
Voltage : 415V+/-10%
Frequency : 50Hz+/-5%
Combined Variation : 10%
Ambient : 50°C, Altitude:1000m
Duty-S4 & S5 (equivalent)
IE2 Efficiency Motor at S1 Duty

Frame Size	Equlvalent S1 kw	150 Starts / hr.				300 Starts / hr.				Motor GD² Kg m²)	Net Weight (Kg)
		25 or 40 % CDF		60 % CDF		25 or 40 % CDF		60 % CDF			
		kW	Amps. (Approx)	kW	Amps. (Approx)	kW	Amps. (Approx)	kW	Amps. (Approx)		
KM2BAX71MA8	0.09	0.09	0.55	0.09	0.55	0.09	0.55	0.09	0.55	0.0032	10
KM2BAX71MB8	0.12	0.12	0.70	0.12	0.70	0.12	0.70	0.12	0.70	0.0044	11
KM2BAX80MA8	0.18	0.18	0.77	0.18	0.77	0.18	0.77	0.18	0.77	0.0075	15
KM2BAX80MB8	0.25	0.25	0.88	0.25	0.88	0.25	0.88	0.25	0.88	0.0096	16
KM2BAX90SA8	0.37	0.37	1.50	0.37	1.50	0.37	1.50	0.37	1.50	0.0176	22
KM2BAX90SB8	0.37	0.55	2.00	0.55	2.00	0.55	2.00	0.55	2.00	0.0176	23
KM2BAX90LA8	0.55	0.75	2.85	0.75	2.85	0.75	2.85	0.75	2.85	0.0196	24
KM2BAX100LB8	0.75	1.10	3.25	1.10	3.25	1.10	3.25	1.10	3.25	0.0348	32
KM2BAX100LKA8	1.1	1.50	4.80	1.50	4.80	1.50	4.80	1.50	4.80	0.0384	35
KM2BAX112MLA8	1.5	2.20	6.50	2.20	6.50	2.20	6.50	2.20	6.50	0.0584	45
KM2BAX132SMA8	2.2	3.70	10.10	3.70	10.10	3.70	10.10	3.70	10.10	0.1448	77
KM2BAX160MLA8	3.7	6.00	14.80	6.00	14.80	6.00	14.80	6.00	14.80	0.2360	100
KM2BAX160MLB8	5.5	7.50	18.30	7.50	18.30	7.50	18.30	7.50	18.30	0.3760	127
KM2BAX160MLC8	7.5	9.30	23.00	9.30	23.00	9.30	23.00	9.30	23.00	0.4680	143
KM2BAX180MLA8	9.3	12.00	29.50	10.00	26.30	10.00	26.30	10.00	26.30	0.5880	166
KM2BAX200MLA8	15.0	15.00	43.00	14.00	41.70	14.00	41.70	13.00	40.50	1.0880	231

Note: -
1) Rating 225 frame onwards can be offered against enquiry.
2) Separate declaration are required for different service factors for different cranes & ambient temperature.
3) Efficiency declared for equivalent S1kW are as per IS 12615 2018
4) Ambient declaration chart -

Permissible Output	100%	95%	90%
Amb. Temp °C	50.0	55.0	60.0

Doc no : 3GZH500730-6/Rev-A

Crane Duty Motors Chart

For VVVF Drive

Pole - 4

LV Motors
ABB India Ltd.
Series Name - M2BAX
Enclosure-TEFC
Protection/Cooling - IP55/IC411
Insulation Class - F
Temperature Rise Class - B

Doc no : 3GZH500730-5/Rev-B
Date-04.09.2023
Voltage : 415V+/-10%
Frequency : 50Hz+/-5%
Combined Variation : 10%
Ambient : 50°C
Duty-S3 & S4 (equivalent)

Frame Size	Equlva-lent S1 kw	S1 Current	S1-IE2 Efficie-ncy	Power Factor	Full Load RPM	POT	150 / 300 Starts / hr.																		Motor GD² Kg m²)	Net Weight (Kg)
							25 % CDF						40 % CDF						60 % CDF							
							kW	Eff	Pf	Amps	RPM	POT	kW	Eff	Pf	Amps	RPM	POT	kW	Eff	Pf	Amps	RPM	POT		
KM2BAX71MB4	0.37	0.96	72.7	0.74	1395	2.5	0.40	72.5	0.77	1.00	1384	2.3	0.4	72.5	0.77	1.00	1384	2.3	0.4	72.5	0.77	1.00	1384	2.3	0.0030	10
KM2BAX71MC4	0.40	1.09	72.9	0.70	1437	3.0	0.55	72.0	0.75	1.42	1395	2.2	0.55	72.0	0.75	1.42	1395	2.2	0.55	72.0	0.75	1.42	1395	2.2	0.0032	11
KM2BAX80MA4	0.55	1.32	77.1	0.75	1415	2.7	0.75	74.8	0.84	1.66	1370	2.0	0.75	74.8	0.84	1.66	1370	2.0	0.75	74.8	0.84	1.66	1370	2.0	0.0062	15
KM2BAX80MB4	0.75	1.85	79.6	0.71	1425	3.6	1.1	78.7	0.80	2.43	1387	2.5	1.1	78.7	0.80	2.43	1387	2.5	1.1	78.7	0.80	2.43	1387	2.5	0.0099	17
KM2BAX90SA4	1.1	2.5	81.4	0.74	1430	3.5	1.5	79.9	0.82	3.2	1395	2.6	1.5	79.9	0.82	3.2	1395	2.6	1.5	79.9	0.82	3.2	1395	2.6	0.0149	21
KM2BAX90LA4	1.5	3.5	82.8	0.73	1435	3.6	2.2	80.0	0.82	4.7	1388	2.5	2.2	80.0	0.82	4.7	1388	2.5	2.2	80	0.82	4.7	1388	2.5	0.0185	23
KM2BAX100LA4	2.2	4.5	84.3	0.80	1440	3.3	3.7	79.7	0.87	7.4	1380	2.0	3.7	79.7	0.87	7.4	1380	2.0	3.7	79.7	0.87	7.4	1380	2.0	0.0304	31
KM2BAX112MLA4	3.7	7.6	86.3	0.79	1453	3.9	5.5	84.5	0.86	10.5	1422	2.6	5.5	84.5	0.86	10.5	1422	2.6	5.5	84.5	0.86	10.5	1422	2.6	0.0617	50
KM2BAX132SA4	5.5	11.0	87.7	0.79	1450	3.0	7.5	86.2	0.83	14.6	1429	2.2	7.5	86.2	0.83	14.6	1429	2.2	7.5	86.2	0.83	14.6	1429	2.2	0.1028	57
KM2BAX132MA4	7.5	15.3	88.7	0.77	1455	3.0	9.3	87.7	0.81	18.2	1441	2.4	9.3	87.7	0.81	18	1441	2.4	9.3	87.7	0.81	18.2	1441	2.4	0.1280	68
KM2BAX160MLJ4	9.3	17.9	89.3	0.81	1455	3.0	12.0	88.2	0.84	22.5	1444	2.3	11.0	88.7	0.83	20.8	1448	2.5	10.0	89.1	0.82	19.0	1452	2.8	0.2952	107
KM2BAX160MLA4	11.0	21.0	89.8	0.81	1455	2.9	15	88.1	0.82	28.9	1471	2.1	15	88.1	0.82	28.9	1471	2.1	12.0	89.5	0.81	23.0	1452	2.7	0.3360	115
KM2BAX160MLB4	15.0	28.4	90.6	0.81	1460	3.0	19.5	89.4	0.84	36.1	1447	2.3	18.5	90.0	0.83	34.5	1450	2.4	16.0	90.3	0.82	30.1	1457	2.8	0.4100	134
KM2BAX180MLA4	18.5	34.8	91.2	0.81	1457	3.5	24.0	90.2	0.83	44.6	1444	2.7	22.0	90.6	0.82	41.2	1449	2.9	20	90.9	0.82	37.3	1453	3.2	0.4868	155
KM2BAX180MLB4	22.0	42.0	91.6	0.80	1460	3.2	28.5	91.2	0.82	53.0	1449	2.5	24.0	91.4	0.82	44.5	1457	2.9	23.5	91.5	0.81	44.1	1458	3.0	0.5584	171
KM2BAX200MLA4	30.0	55.8	92.3	0.81	1474	3.1	39.0	91.3	0.83	71.6	1466	2.4	33.0	92	0.82	60.9	1471	2.8	32	92.1	0.82	58.9	1472	2.9	1.0288	229
KM2BAX225SMA4	37.0	66.1	92.7	0.84	1475	2.7	48.0	92.1	0.85	85.3	1468	2.1	41.0	92.5	0.84	73.4	1473	2.4	39.5	92.6	0.84	70.6	1474	2.5	1.4420	267
KM2BAX225SMB4	45.0	81.0	93.1	0.83	1478	2.9	58	92.7	0.85	102	1472	2.3	50.0	93	0.84	89.0	1475	2.6	48	93	0.84	85.5	1476	2.7	1.7256	304
KM2BAX250SMA4	55.0	98.6	93.5	0.83	1475	3.0	71	93.0	0.85	125	1468	2.3	61.0	93.3	0.84	108	1472	2.7	59	93.4	0.84	104.62	1473	2.8	2.1324	342
KM2BAX280SA4	65	117	94	0.82	1488	3.7	100	94	0.85	174	1477	2.50	90	94	0.84	159	1480	2.67	80	94	0.84	141	1482	2.8	5.00	554
KM2BAX280SMB4	76	134	94.2	0.84	1483	3.7	115	94.1	0.86	198	1477	2.60	108	94.2	0.86	185	1480	2.60	96	94.2	0.86	165	1481	2.7	6.00	616

to be continue .....

Crane Duty Motors Chart

For VVVF Drive

Pole - 4

LV Motors
ABB India Ltd.
Series Name - M2BAX
Enclosure-TEFC
Protection/Cooling - IP55/IC411
Insulation Class - F
Temperature Rise Class - B

Doc no : 3GZH500730-5/Rev-B
Date-04.09.2023
Voltage : 415V+/-10%
Frequency : 50Hz+/-5%
Combined Variation : 10%
Ambient : 50°C
Duty-S3 & S4 (equivalent)

Frame Size	Equlva-lent S1 kw	S1 Current	S1-IE2 Efficie-ncy	Power Factor	Full Load RPM	POT	150 / 300 Starts / hr.																		Motor GD² Kg m²)	Net Weight (Kg)
							25 % CDF						40 % CDF						60 % CDF							
							kW	Eff	Pf	Amps	RPM	POT	kW	Eff	Pf	Amps	RPM	POT	kW	Eff	Pf	Amps	RPM	POT		
KM2BAX315SMA4	94	165	94.5	0.84	1487	3.6	145	94.2	0.85	252	1482	2.50	132	94	0.84	233	1487	2.80	121	94	0.84	213	1488	3	9.20	849
KM2BAX315SMB4	112	196	94.7	0.84	1488	3.6	172	94.7	0.87	290	1483	2.50	158	94.2	0.86	271	1483	2.50	140	94.2	0.86	240	1484	2.5	10.40	905
KM2BAX315SMC4	136	240	94.9	0.83	1489	3.8	208	94.8	0.87	351	1484	2.60	192	94.8	0.85	331	1485	2.70	175	94.8	0.86	299	1485	2.8	11.60	958
KM2BAX315MLA4	153	261	95	0.86	1487	3.6	235	95	0.89	387	1481	2.50	216	95	0.88	359	1483	2.50	198	95.1	0.88	329	1484	2.7	14.00	1108
KM2BAX315MLA4	170	303	95.1	0.82	1488	3.9	260	95.1	0.88	432	1483	2.70	240	95.1	0.87	404	1484	2.60	220	95.2	0.85	378	1485	2.8	14.00	1108
KM2BAX355SA4	191	345	95.1	0.81	1490	3.3	292	95.1	0.84	509	1485	2.20	270	95.2	0.85	464	1484	2.00	247	95	0.85	426	1485	2.1	21.60	1473
KM2BAX355SMA4	212	378	95.1	0.82	1491	3.2	270	95.1	0.84	470	1484	2.50	300	95.1	0.84	522	1485	2.10	275	95.2	0.84	478	1486	2.2	21.60	1473
KM2BAX355SMB4	270	482	95.1	0.82	1492	4.21	350	95.5	0.86	593	1488	3.10	325	95.5	0.84	564	1490	3.20	300	95.5	0.84	520.27	1491	3.3	27.60	1730
KM2BAX355SMC4	300	510	95.1	0.86	1487	3.4	375	95.5	0.86	635	1485	2.70	365	95.5	0.86	618	1488	2.60	335	95.5	0.86	567.46	1489	2.8	28.80	1730

Note: -
1) VFD duty motor due to controlled starting, the starting current does not significantly affect the temperature rise. Hence S4 duty as be defined as equal to S3 duty
2) Separate declaration are required for different service factors for different cranes & ambient temperature.
3) Speed range 10-100%, Insulated bearing for 100kW & above or 315 frame
4) Efficiency declared for equivalent S1kW are as per IS 12615:2018
5) Switching frequency 2kHz to 4kHz
6) Efficiency & temperature rise at equivalent S1kW are at sinusoidal supply
7) Ambient declaration chart -

Permissible Output	100%	95%	90%
Amb. Temp °C	50.0	55.0	60.0

Revised Doc no-PC/CD-002/Rev-D

Crane Duty Motors Chart

For VVVF Drive

Pole - 6

LV Motors
ABB India Ltd.
Series Name -
Enclosure-TEFC
Protection/Cooling - IP55/IC411
Insulation Class - F
Temperature Rise Class - B

Doc no : 3GZH500730-5/Rev-B
Date-04.09.2023
Voltage : 415V+/-10%
Frequency : 50Hz+/-5%
Combined Variation : 10%
Ambient : 50°C
Duty-S3 & S4 (equivalent)

Frame Size	Equlva-lent S1 kw	S1 Current	S1-IE2 Efficie-ncy	Power Factor	Full Load RPM	POT	150 / 300 Starts / hr.																		Motor GD² Kg m²)	Net Weight (Kg)
							25 % CDF						40 % CDF						60 % CDF							
							kW	Eff	Pf	Amps	RPM	POT	kW	Eff	Pf	Amps	RPM	POT	kW	Eff	Pf	Amps	RPM	POT		
KM2BAX80MA6	0.37	1.2	69.0	0.63	925	3.0	0.55	66.8	0.69	1.7	874	2.0	0.55	66.8	0.69	1.7	874	2.0	0.55	66.8	0.69	1.7	874	2.0	0.0017	13.0
KM2BAX80MB6	0.55	1.5	72.9	0.69	918	2.7	0.75	70.6	0.77	1.9	878	2.0	0.75	70.6	0.77	1.9	878	2.0	0.75	70.6	0.77	1.9	878	2.0	0.0027	15.0
KM2BAX90SA6	0.75	2.2	75.9	0.62	945	3.2	1.1	74.4	0.74	2.8	911	2.2	1.1	74.4	0.74	2.8	911	2.2	1.1	74.4	0.74	2.8	911	2.2	0.0044	21.0
KM2BAX90LA6	1.10	3.1	78.1	0.63	935	2.9	1.5	76.0	0.73	3.8	901	2.1	1.5	76.0	0.73	3.8	901	2.1	1.5	76.0	0.73	3.8	901	2.1	0.0051	24.0
KM2BAX100LA6	1.50	4.2	79.8	0.63	950	2.9	2.2	78.1	0.75	5.2	917	2.0	2.2	78.1	0.75	5.2	917	2.0	2.2	78.1	0.75	5.2	917	2.0	0.0080	31.0
KM2BAX112MLA6	2.20	5.4	81.8	0.70	952	3.4	3.7	80.5	0.80	8.0	932	2.0	3.7	80.5	0.80	8.0	932	2.0	3.7	80.5	0.80	8.0	932	2.0	0.0139	47.0
KM2BAX132SB6	3.70	8.4	84.3	0.73	955	2.2	4.0	83.6	0.80	8.3	951	2.0	4.0	83.6	0.80	8.3	951	2.0	4.0	83.6	0.80	8.3	951	2.0	0.0283	60.0
KM2BAX132MB6	5.50	12.2	86.0	0.73	965	3.0	7.5	84.3	0.80	15.5	947	2.2	7.5	84.3	0.80	15.5	947	2.2	6.0	85.7	0.76	13	961	2.8	0.0397	77.0
KM2BAX160MLA6	7.50	15.1	87.2	0.79	957	2.8	9.3	86.0	0.82	18.3	949	2.3	9.3	86.0	0.80	18.8	949	2.3	8.0	86.9	0.80	16.0	955	2.6	0.0890	122.0
KM2BAX160MLJ6	9.30	19.1	88.0	0.77	965	2.8	11.5	86.9	0.80	23.0	957	2.3	11.0	87.2	0.80	21.9	959	2.4	10.0	87.7	0.78	20.3	963	2.6	0.1190	141.0
KM2BAX160MLB6	11.0	22.7	88.7	0.76	970	3.0	13.8	87.9	0.80	27.3	963	2.4	13.0	88.2	0.80	25.6	965	2.5	11.6	88.6	0.78	23.4	968	2.8	0.1293	147.0
KM2BAX180MLA6	15.0	30.5	89.7	0.76	970	3.0	18.8	88.9	0.80	36.6	964	2.4	18.5	89.0	0.80	36.0	965	2.4	16.0	89.5	0.78	31.8	969	2.8	0.1522	173.0
KM2BAX200MLA6	18.50	36.5	90.4	0.78	965	2.5	23.0	89.3	0.80	44.8	958	2.0	22.0	89.6	0.80	42.7	960	2.1	19.5	90.2	0.79	38.1	964	2.4	0.1980	190.0
KM2BAX200MLB6	22.0	43.2	90.9	0.78	970	2.5	27.5	89.8	0.80	53.3	962	2.0	24.0	90.5	0.80	46.1	967	2.3	23.0	90.7	0.80	44.1	968	2.4	0.2384	212.0
KM2BAX225SMA6	30.0	55.8	91.7	0.82	984	2.8	37.5	91.1	0.83	69.4	980	2.2	33.0	91.5	0.83	60.8	982	2.5	32.0	91.6	0.82	59.6	983	2.6	0.5687	284.0
KM2BAX250SMA6	37.0	68.9	92.2	0.81	981	2.8	46.0	91.6	0.83	84.2	977	2.3	40.0	92.0	0.82	74.0	980	2.6	39.0	92.1	0.82	72.0	980	2.7	0.8042	337.0
KM2BAX280SA6	38.0	72.0	92.7	0.79	991	3.2	58.0	92.7	0.82	106.0	986	2.2	54.0	92.7	0.82	99.0	987	2.3	50.0	92.7	0.82	91.0	988	2.5	7.60	535.0
KM2BAX280SB6	47.0	87.0	93.1	0.81	990	3.2	71.0	93.0	0.83	128.0	985	2.2	66.0	93.0	0.83	119.0	986	2.3	61.0	93.1	0.83	110.0	987	2.5	8.80	582.0
KM2BAX315SMA6	64.0	125.0	93.7	0.76	993	3.5	98.0	93.1	0.81	181.0	989	2.5	90.0	93.2	0.81	166.0	990	2.6	82.0	93.3	0.80	153.0	991	2.8	12.80	789.0
KM2BAX315SMB6	77.0	142.0	94.0	0.80	993	3.6	115.0	94.0	0.83	205.0	989	2.5	108.0	94.0	0.83	193.0	990	2.6	93.0	94.0	0.81	170.0	991	2.9	16.40	879.0
KM2BAX315SMC6	94.0	176.0	94.3	0.79	992	3.0	143.0	94.1	0.82	258.0	988	2.5	132.0	94.1	0.82	238.0	989	2.7	121.0	94.1	0.81	221.0	990	2.8	19.60	957.0

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Crane Duty Motors Chart

For VVVF Drive

Pole - 6

LV Motors
ABB India Ltd.
Series Name -
Enclosure-TEFC
Protection/Cooling - IP55/IC411
Insulation Class - F
Temperature Rise Class - B

Doc no : 3GZH500730-5/Rev-B
Date-04.09.2023
Voltage : 415V+/-10%
Frequency : 50Hz+/-5%
Combined Variation : 10%
Ambient : 50°C
Duty-S3 & S4 (equivalent)

Frame Size	Equlva-lent S1 kw	S1 Current	S1-IE2 Efficie-ncy	Power Factor	Full Load RPM	POT	150 / 300 Starts / hr.																		Motor GD² Kg m²)	Net Weight (Kg)
							25 % CDF						40 % CDF						60 % CDF							
							kW	Eff	Pf	Amps	RPM	POT	kW	Eff	Pf	Amps	RPM	POT	kW	Eff	Pf	Amps	RPM	POT		
KM2BAX315MLA6	113.0	210.0	94.6	0.79	993	3.7	172.0	94.6	0.82	308.0	993	2.5	158.4	94.6	0.82	284.0	991	2.70	145.2	94.6	0.81	264.0	991	2.9	23.20	1091
KM2BAX355SMA6	136.0	246.0	94.8	0.81	993	3.4	205.0	94.8	0.83	362.0	990	2.3	192.0	94.8	0.82	344.0	992	2.40	176.0	94.8	0.82	315.0	992	2.6	29.20	1370
KM2BAX355SMB6	170.0	304.0	95.0	0.82	992	3.1	250.0	95.0	0.83	441.0	989	2.2	240.0	95.0	0.83	423.0	989	2.30	212	95.0	0.83	374.0	990	2.6	38.80	1518
KM2BAX355SMC6	212.0	379.0	95.0	0.82	993	3.5	300.0	95.0	0.84	523.0	989	2.50	285.0	95.0	0.84	497.0	990	2.60	262.0	95.0	0.83	462.0	991	2.8	45.20	1518
KE2BA355MLB6	268.0	479.0	95.0	0.82	993	3.5	390.0	95.0	0.85	672.0	990	2.50	360.0	95.0	0.84	628	991	2.70	305.0	95.0	0.83	538.0	992	2.9	51.60	2250

Note: -
1) VFD duty motor due to controlled starting, the starting current does not significantly affect the temperature rise. Hence S4 duty as be defined as equal to S3 duty
2) Separate declaration are required for different service factors for different cranes & ambient temperature.
3) Speed range 10-100%, Insulated bearing for 100kW & above or 315 frame
4) Efficiency declared for equivalent S1kW are as per IS 12615:2018
5) Switching frequency 2kHz to 4kHz
6) Efficiency & temperature rise at equivalent S1kW are at sinusoidal supply
7) Ambient declaration chart -

Permissible Output	100%	95%	90%
Amb. Temp °C	50.0	55.0	60.0

Crane Duty Motors Chart

For VVVF Drive

Pole - 8

LV Motors
ABB India Ltd.
Series Name -
Enclosure-TEFC
Protection/Cooling - IP55/IC411
Insulation Class - F
Temperature Rise Class - B

Doc no : PC/CD-002/Rev-D
Date-04.09.2023
Voltage : 415V+/-10%
Frequency : 50Hz+/-5%
Combined Variation : 10%
Ambient : 50°C
Duty-S3 & S4 (equivalent)

Frame Size	Equlva-lent S1 kw	S1 Current	S1-IE2 Efficie-ncy	Power Factor	Full Load RPM	POT	150 / 300 Starts / hr.																		Motor GD² Kg m²)	Net Weight (Kg)
							25 % CDF						40 % CDF						60 % CDF							
							kW	Eff	Pf	Amps	RPM	POT	kW	Eff	Pf	Amps	RPM	POT	kW	Eff	Pf	Amps	RPM	POT		
KM2BAX90SA8	0.37	1.5	56.1	0.61	690	2.7	0.50	57.1	0.72	1.7	667	2.0	0.46	57.3	0.69	1.62	675	2.2	0.43	57.1	0.67	1.56	680	2.3	0.018	22
KM2BAX90LA8	0.55	2.0	61.7	0.62	680	2.4	0.75	60.4	0.72	2.4	647	1.8	0.70	61.2	0.71	2.24	656	1.9	0.63	61.7	0.67	2.12	668	2.1	0.020	24
KM2BAX100LA8	0.75	2.6	66.2	0.61	710	2.7	1.1	66.2	0.74	3.1	683	1.8	1.1	66.2	0.74	3.1	683	1.8	0.9	66.8	0.67	2.80	701	2.3	0.029	30
KM2BAX100LB8	1.1	3.4	70.8	0.64	695	2.4	1.5	69.4	0.75	4.0	672	1.8	1.5	69.4	0.75	4.0	672	1.8	1.3	70.5	0.70	3.7	684	2.0	0.035	32
KM2BAX112MLA8	1.5	4.0	74.1	0.7	680	2.3	1.9	72.1	0.77	4.8	663	1.8	1.6	73.9	0.73	4.1	676	2.2	1.6	73.9	0.73	4.1	676	2.2	0.047	40
KM2BAX132SA8	2.2	6.1	77.6	0.65	710	2.3	2.8	76.6	0.72	7.1	700	1.8	2.5	73.6	0.69	6.8	705	2.0	2.3	77.5	0.66	6.3	708	2.2	0.13	69
KM2BAX160MLA8	3.7	9.7	81.4	0.65	715	2.5	5.2	79.7	0.73	12.4	704	1.8	5.0	80.1	0.71	12.2	706	1.9	4.0	81.3	0.67	10.2	713	2.3	0.24	100
KM2BAX160MLB8	5.5	13.6	83.8	0.67	720	2.6	8.0	81.1	0.73	18.8	705	1.8	7.5	81.9	0.73	17.5	709	1.9	6.0	83.5	0.69	14.5	718	2.4	0.38	127
KM2BAX160MLC8	7.5	18.3	85.3	0.67	720	2.5	9.4	84.3	0.72	21.5	713	2.0	8.5	84.9	0.70	19.9	716	2.2	8.0	85.1	0.69	19.0	718	2.3	0.47	143
KM2BAX180MLA8	9.3	22.4	86.3	0.67	720	2.5	11.6	85.4	0.72	26.2	712	2.0	10.6	85.9	0.70	24.5	716	2.2	10.3	86.0	0.69	24.1	717	2.3	0.59	166
KM2BAX180MLB8	11	26.3	86.9	0.67	720	2.4	12.5	86.3	0.70	28.8	715	2.1	11.8	86.6	0.70	27.1	717	2.2	11.5	86.7	0.68	27.1	718	2.3	0.81	200
KM2BAX200MLA8	15	34.9	88.0	0.68	725	2.3	17.0	87.8	0.71	37.9	722	2.0	16.0	87.9	0.70	36.2	723	2.2	15.5	88.0	0.70	35.0	724	2.2	1.09	235
KM2BAX225SMA8	18.5	39.8	88.6	0.73	735	2.3	21.5	88.1	0.76	44.7	732	2.0	20.5	88.3	0.75	43.1	733	2.1	19.5	88.5	0.74	41.4	734	2.2	1.98	254
KM2BAX225SMB8	22	45.8	89.1	0.75	735	2.3	24.5	88.7	0.77	49.9	733	2.1	24.0	88.8	0.76	49.5	734	2.1	23.0	88.9	0.76	47.4	734	2.2	2.35	286
KM2BAX250SMA8	30	62.8	89.8	0.74	735	2.2	34.0	89.5	0.75	70.5	733	1.9	32.0	89.7	0.75	66.2	734	2.1	31.0	89.7	0.74	65.0	735	2.1	3.45	348
KM2BAX 280SA8	31	81	90.3	0.60	745	3.5	48	90.3	0.72	103	743	2.30	44	90.3	0.70	98	742	2.50	41	90.3	0.68	92	743	2.70	7.40	558
KM2BAX 280SB8	38	84	90.7	0.70	744	2.9	58	90.7	0.79	113	740	2.10	54	90.7	0.78	106	741	2.10	50	90.7	0.77	99	742	2.20	8.80	598
KM2BAX 315SMA8	47	97	91	0.74	744	3.1	72	91.0	0.79	138	740	2.10	66	91.0	0.78	129	741	2.20	61	91.0	0.77	120	742	2.40	12.80	792
KM2BAX 315SMB8	64	127	91.6	0.76	743	3.0	98	91.6	0.83	178	739	2.10	90	91.6	0.82	167	740	2.20	83	91.6	0.81	155	741	2.40	16.40	880
KM2BAX 315SMC8	77	145	91.9	0.80	743	3.4	117	91.9	0.87	204	739	2.30	108	91.9	0.86	190	740	2.50	99	91.9	0.85	176	741	2.70	19.60	959
KM2BAX 315MLA8	94	178	92.3	0.79	742	3	143	92.3	0.84	257	738	2.10	132	92.3	0.83	240	739	2.20	121	92.3	0.82	222	740	2.30	23.20	1091

to be continue .....

Crane Duty Motors Chart

For VVVF Drive

Pole - 8

LV Motors
ABB India Ltd.
Series Name -
Enclosure-TEFC
Protection/Cooling - IP55/IC411
Insulation Class - F
Temperature Rise Class - B

Doc no : PC/CD-002/Rev-D
Date-04.09.2023
Voltage : 415V+/-10%
Frequency : 50Hz+/-5%
Combined Variation : 10%
Ambient : 50°C
Duty-S3 & S4 (equivalent)

Frame Size	Equlva-lent S1 kw	S1 Current	S1-IE2 Efficie-ncy	Power Factor	Full Load RPM	POT	150 / 300 Starts / hr.																		Motor GD² Kg m²)	Net Weight (Kg)
							25 % CDF						40 % CDF						60 % CDF							
							kW	Eff	Pf	Amps	RPM	POT	kW	Eff	Pf	Amps	RPM	POT	kW	Eff	Pf	Amps	RPM	POT		
KM2BAX 355SMA8	112	228	92.6	0.74	746	3.1	172	92.6	0.8	322	743	2.10	158	92.6	0.79	301	744	2.25	145	92.6	0.78	280	744	2.50	31.60	1413
KM2BAX 355SMB8	136	271	93	0.75	745	3.8	208	93	0.8	389	743	2.50	192	93	0.8	359	743	2.70	176	93	0.79	333	744	2.90	38.80	1574
KM2BAX 355SMC8	170	333	93.5	0.76	745	3.4	260	93.5	0.82	472	742	2.20	240	93.5	0.81	441	742	2.40	220	93.5	0.8	409	743	2.60	45.20	1600

Note: -
1) VFD duty motor due to controlled starting, the starting current does not significantly affect the temperature rise. Hence S4 duty as be defined as equal to S3 duty
2) Separate declaration are required for different service factors for different cranes & ambient temperature.
3) Speed range 10-100%, Insulated bearing for 100kW & above or 315 frame
4) Efficiency declared for equivalent S1kW are as per IS 12615:2018
5) Switching frequency 2kHz to 4kHz
6) Efficiency & temperature rise at equivalent S1kW are at sinusoidal supply
7) Ambient declaration chart -

Permissible Output	100%	95%	90%
Amb. Temp °C	50.0	55.0	60.0

Revised Doc no-PC/CD-002/Rev-D

Crane Duty Motors Chart

For VVVF Drive

Pole - 4

LV Motors
ABB India Ltd.
Series Name - M2BAX
Enclosure-TEFC
Protection/Cooling - IP55/IC411
Insulation Class - F
Temperature Rise Class - B

Doc no : 3GZH500730-5/Rev-B
Date-04.09.2023
Voltage : 415V+/-10%
Frequency : 50Hz+/-5%
Combined Variation : 10%
Ambient : 50°C
Duty-S3 & S4 (equivalent)

Frame Size	Equlva-lent S1 kw	S1 Current	S1-IE3 Efficie-ncy	Power Factor	Full Load RPM	POT	150 / 300 Starts / hr.																		Motor GD² Kg m²)	Net Weight (Kg)
							25 % CDF						40 % CDF						60 % CDF							
							kW	Eff	Pf	Amps	RPM	POT	kW	Eff	Pf	Amps	RPM	POT	kW	Eff	Pf	Amps	RPM	POT		
KM2BAX71MLA4	0.37	1.02	77.3	0.65	1415	2.8	0.55	74.3	0.76	1.4	1359	1.9	0.55	74.3	0.76	1.4	1359	1.9	0.55	74.3	0.76	1.4	1359	1.9	0.0032	12
KM2BAX80MC4	0.55	1.35	80.8	0.70	1435	2.8	0.75	79.3	0.77	1.7	1403	2.1	0.75	79.3	0.77	1.7	1403	2.1	0.75	79.3	0.77	1.7	1403	2.1	0.0078	17
KM2BAX80MLA4	0.75	1.81	82.5	0.70	1445	3.9	1.1	81.0	0.80	2.4	1417	2.7	1.1	81	0.80	2.4	1417	2.7	1.1	81.0	0.80	2.4	1417	2.7	0.0124	20
KM2BAX90SB4	1.1	2.6	84.1	0.70	1435	3.7	1.5	82.3	0.78	3.3	1402	2.7	1.5	82.3	0.78	3.3	1402	2.7	1.5	82.3	0.78	3.3	1402	2.7	0.0159	22
KM2BAX90SLA4	1.5	3.3	85.3	0.75	1431	3.9	2.2	82.5	0.83	4.5	1387	2.7	2.2	82.5	0.83	4.5	1387	2.7	2.2	82.5	0.83	4.5	1387	2.7	0.0194	25
KM2BAX100LB4	2.2	4.8	86.7	0.74	1445	3.7	3.7	84.0	0.84	7.3	1401	2.2	3.7	84.0	0.84	7.3	1401	2.2	3.7	84.0	0.84	7.3	1401	2.2	0.0076	34
KM2BAX112MLA4	3.7	7.7	88.4	0.76	1450	4.2	5.5	86.6	0.83	10.6	1419	2.8	5.5	86.6	0.83	10.6	1419	2.8	5.5	86.6	0.83	10.6	1419	2.8	0.0617	50
KM2BAX132SMA4	5.5	11.1	89.6	0.77	1460	3.3	7.5	88.5	0.82	14.4	1443	2.4	7.5	88.5	0.82	14.4	1443	2.4	7.5	88.5	0.82	14.4	1443	2.4	0.140	72
KM2BAX132MLA4	7.5	15.4	90.4	0.75	1462	3.6	9.3	89.8	0.80	18.0	1452	2.9	9.3	89.8	0.80	18.0	1452	2.9	9.3	89.8	0.80	18.0	1452	2.9	0.164	84
KM2BAX160MLJ4	9.3	18.5	91.0	0.77	1470	3.5	12.0	90.7	0.80	23.0	1462	2.7	11.0	90.7	0.80	21.1	1465	3.0	10.0	91.0	0.80	19.1	1468	3.3	0.420	130
KM2BAX160MLA4	11.0	21.2	91.4	0.79	1470	3.2	15	90.8	0.82	28.0	1460	2.3	15	90.8	0.82	28.0	1460	2.3	12.0	91.3	0.80	22.9	1467	2.9	0.440	134
KM2BAX160MLB4	15.0	28.3	92.1	0.80	1470	3.5	19.5	91.8	0.83	35.6	1463	2.7	18.5	91.9	0.82	34.2	1464	2.8	16.0	92.1	0.81	29.8	1468	3.3	0.540	159
KM2BAX180MLA4	18.5	34.7	92.6	0.80	1476	3.3	24.0	92.1	0.81	44.8	1468	2.5	22.0	92.3	0.81	40.9	1471	2.8	20	92.5	0.80	37.6	1473	3.1	0.876	192
KM2BAX180MLB4	22.0	41.7	93	0.79	1475	3.4	28.5	92.6	0.81	52.9	1469	2.6	24.0	92.8	0.80	45.0	1473	3.1	23.5	92.9	0.80	44.0	1474	3.2	0.972	205
KM2BAX200MLA4	30.0	55.1	93.6	0.81	1480	3.2	39.0	93.3	0.84	69.2	1475	2.5	33.0	93.6	0.82	59.8	1478	2.9	32	93.6	0.83	57.3	1479	3.0	1.54	259
KM2BAX225SMA4	37.0	68.5	93.9	0.80	1480	3.2	48.0	93.6	0.83	86.0	1474	2.5	41.0	93.8	0.81	75.1	1478	2.9	39.5	93.5	0.81	72.3	1478	3.0	1.71	274
KM2BAX225SMB4	45.0	82.1	84.2	0.81	1480	3.1	58	93.9	0.84	102.3	1474	2.4	50.0	94.1	0.82	90.1	1478	2.8	48	94.1	0.82	86.5	1482	2.9	2.10	307
KM2BAX250SMA4	55.0	97.5	94.6	0.83	1482	3.1	71	94.2	0.85	123.4	1477	2.4	61.0	94.5	0.84	106.9	1480	2.8	59	94.6	0.84	103.3	1480	2.9	2.78	358
KM2BAX280SMB4	65	116	95	0.82	1487	3.7	100	94.8	0.85	173	1479	2.50	90	95	0.84	157	1481	2.70	80	95	0.84	139	1483	3	5.52	597
KM2BAX280SMC4	76	134	95.1	0.83	1486	3.8	115	94.9	0.86	196	1480	2.60	108	94.9	0.85	186	1480	2.80	96	95	0.85	165	1483	3	6.92	659
KM2BAX315SMB4	94	164	95.2	0.84	1489	3.6	145	94.5	0.84	254	1482	2.70	132	94.5	0.84	231	1487	2.90	121	94.5	0.84	212	1488	3.1	9.72	881

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Crane Duty Motors Chart

For VVVF Drive

Pole - 4

LV Motors
ABB India Ltd.
Series Name - M2BAX
Enclosure-TEFC
Protection/Cooling - IP55/IC411
Insulation Class - F
Temperature Rise Class - B

Doc no : 3GZH500730-5/Rev-B
Date-04.09.2023
Voltage : 415V+/-10%
Frequency : 50Hz+/-5%
Combined Variation : 10%
Ambient : 50°C
Duty-S3 & S4 (equivalent)

Frame Size	Equlva-lent S1 kw	S1 Current	S1-IE3 Efficie-ncy	Power Factor	Full Load RPM	POT	150 / 300 Starts / hr.																		Motor GD² Kg m²)	Net Weight (Kg)
							25 % CDF						40 % CDF						60 % CDF							
							kW	Eff	Pf	Amps	RPM	POT	kW	Eff	Pf	Amps	RPM	POT	kW	Eff	Pf	Amps	RPM	POT		
KM2BAX315SMC4	112	196	95.6	0.83	1490	3.8	172	95.6	0.86	291	1484	2.60	158	95.6	0.86	267	1485	2.70	140	95.6	0.86	237	1487	2.9	11.7	955
KM2BAX315SMD4	136	241	95.8	0.82	1489	3.6	208	95.3	0.87	349	1485	2.60	192	95.4	0.86	326	1486	2.80	175	95.5	0.85	300	1487	3	12.80	1000
KM2BAX315MB4	153	265	95.5	0.84	1488	3.5	225	95.3	0.86	382	1483	2.40	216	95.3	0.86	367	1484	2.50	198	95.4	0.86	336	1485	2.7	15.60	1153
KM2BAX315MLB4	170	291	95.5	0.85	1487	3.6	245	95.2	0.88	407	1482	2.50	230	95.3	0.88	382	1483	2.70	220	95.3	0.88	365	1484	2.8	15.60	1153
KM2BAX355SA4	191	342	96	0.81	1490	3.3	250	95.5	0.84	434	1485	2.20	230	95.5	0.85	394	1487	2.30	215	95.5	0.84	373	1487	2.5	23.60	1534
KM2BAX355SMA4	212	375	96	0.82	1491	3.2	270	96	0.83	471	1490	2.70	255	96	0.83	445	1491	2.80	235	96	0.83	410	1491	3	23.60	1534
KM2BAX355SMB4	270	477	96	0.82	1492	4.21	350	96	0.86	590	1488	3.10	325	96	0.84	561	1490	3.20	300	96	0.84	518	1491	3.3	27.60	1685
KM2BAX355SMC4	300	506	96	0.86	1487	3.4	375	96	0.86	632	1485	2.70	365	96	0.86	615	1488	2.60	335	96	0.86	565	1489	2.8	28.80	1730

Note: -

1) VFD duty motor due to controlled starting, the starting current does not significantly affect the temperature rise. Hence S4 duty as be defined as equal to S3 duty
2) Separate declaration are required for different service factors for different cranes & ambient temperature.
3) Speed range 10-100%, Insulated bearing for 100kW & above or 315 frame
4) Efficiency declared for equivalent S1kW are as per IS 12615:2018
5) Switching frequency 2kHz to 4kHz
6) Efficiency & temperature rise at equivalent S1kW are at sinusoidal supply
7) Ambient declaration chart -

Permissible Output	100%	95%	90%
Amb. Temp °C	50.0	55.0	60.0

Revised Doc no-3GZH500730-5/Rev-B

Crane Duty Motors Chart

For VVVF Drive

Pole - 6

LV Motors
ABB India Ltd.
Series Name -
Enclosure-TEFC
Protection/Cooling - IP55/IC411
Insulation Class - F
Temperature Rise Class - B

Doc no : 3GZH500730-5/Rev-B
Date-04.09.2023
Voltage : 415V+/-10%
Frequency : 50Hz+/-5%
Combined Variation : 10%
Ambient : 50°C
Duty-S3 & S4 (equivalent)

Frame Size	Equlva-lent S1 kw	S1 Current	S1-IE3 Efficie-ncy	Power Factor	Full Load RPM	POT	150 / 300 Starts / hr.																		Motor GD² Kg m²)	Net Weight (Kg)
							25 % CDF						40 % CDF						60 % CDF							
							kW	Eff	Pf	Amps	RPM	POT	kW	Eff	Pf	Amps	RPM	POT	kW	Eff	Pf	Amps	RPM	POT		
KM2BAX80MC6	0.37	1.08	73.5	0.65	931	2.9	0.55	70.0	0.79	1.4	877	2.0	0.55	70.0	0.79	1.4	877	2.0	0.55	70.0	0.79	1.4	877	2.0	0.00220	15.0
KM2BAX80MLA6	0.55	1.68	77.2	0.59	935	3.3	0.75	76.0	0.70	2.0	904	2.4	0.75	76.0	0.70	2.0	904	2.4	0.75	76.0	0.70	2.0	904	2.4	0.00349	19.0
KM2BAX90SLA6	0.75	2.10	78.9	0.63	940	3.0	1.1	77.4	0.75	2.64	908	2.0	1.1	77.4	0.75	2.64	908	2.0	1.1	77.4	0.75	2.64	908	2.0	0.00487	25.0
KM2BAX90LB6	1.10	3.10	81.0	0.61	945	3.6	1.5	80.3	0.72	3.6	921	2.6	1.5	80.3	0.72	3.6	921	2.6	1.5	80.3	0.72	3.6	921	2.6	0.00676	30.0
KM2BAX100LKA6	1.50	3.8	82.5	0.67	954	2.9	2.2	79.4	0.77	5.0	921	2.0	2.2	79.4	0.77	5.0	921	2.0	2.2	79.4	0.77	5.0	921	2.0	0.00994	37.0
KM2BAX112MLA6	2.20	5.3	84.3	0.69	952	3.4	3.7	82.0	0.80	8.0	932	2.0	3.7	82.0	0.80	8.0	932	2.0	3.7	82.0	0.80	8.0	932	2.0	0.01388	47.0
KM2BAX132SMB6	3.70	8.5	86.5	0.70	960	2.5	4.7	83.6	0.80	9.8	943	2.0	4.0	86.1	0.74	8.7	956	2.3	4.0	86.1	0.74	8.7	956	2.3	0.03540	72.0
KM2BAX132MLA6	5.50	12.4	88.0	0.70	965	2.8	7.5	86.7	0.78	15.4	947	2.1	7.5	86.7	0.78	15.4	947	2.1	6.5	87.6	0.75	13.8	956	2.4	0.05334	97.0
KM2BAX160MLA6	7.50	15.2	89.1	0.77	965	3.0	9.3	88.4	0.80	18.3	957	2.4	9.3	88.4	0.80	18.3	957	2.4	8.0	88.9	0.78	16.1	968	2.8	0.0890	119.0
KM2BAX160MLJ6	9.30	18.7	89.8	0.77	970	3.0	11.5	88.9	0.80	22.5	963	2.4	11.0	89.0	0.80	21.5	965	2.5	10.0	89.6	0.78	19.9	968	2.8	0.1280	153.0
KM2BAX160MLB6	11.00	22.0	90.3	0.77	970	3.0	13.8	89.6	0.80	26.8	964	2.4	13.0	89.8	0.80	25.2	966	2.5	11.6	90.0	0.78	23.0	968	2.8	0.1380	160.0
KM2BAX180MLA6	15.00	29.7	91.2	0.77	972	2.8	18.8	90.6	0.80	36.1	966	2.2	18.5	90.6	0.80	35.5	967	2.3	16.0	91.0	0.78	31.4	971	2.6	0.2120	190.0
KM2BAX200MLA6	18.50	35.1	91.7	0.80	980	3.1	23.0	91.5	0.83	42.1	978	2.5	22.0	91.5	0.81	41.3	978	2.6	19.5	91.7	0.81	36.5	980	2.9	0.4960	238.0
KM2BAX200MLB6	22.00	42.0	92.2	0.79	986	3.1	27.5	92.1	0.82	50.7	983	2.5	24.0	92.2	0.80	45.3	985	2.8	23.0	92.2	0.80	43.4	986	3.0	0.5850	263.0
KM2BAX225SMA6	30.00	57.6	92.9	0.78	982	3.0	37.5	92.6	0.80	70.4	978	2.4	33.0	92.7	0.81	61.1	980	2.7	33.0	92.7	0.81	61.1	980	2.7	0.7240	285.0
KM2BAX250SMA6	37.00	69.0	93.3	0.80	985	2.5	46.0	93.0	0.82	83.9	982	2.0	40.0	93.2	0.81	73.7	978	2.3	39.0	93.3	0.81	71.8	984	2.4	1.3000	379.0
KM2BAX 280SMB6	38	71	93.7	0.8	991	3.7	58	93.5	0.84	103	989	2.40	54	93.5	0.84	96	989	2.50	50	93.5	0.83	89	990	2.70	7.60	535
KM2BAX 280SMC6	47	86	94.1	0.81	993	3.7	71	94.1	0.85	123	990	2.50	66	94.1	0.84	116	991	2.60	61	94.1	0.84	107	991	2.90	8.80	582
KM2BAX 315SMB6	64	115	94.6	0.82	994	3.1	98	94.3	0.84	172	990	2.00	90	94.3	0.84	158	991	2.20	83	94.4	0.84	146	992	2.40	12.80	789
KM2BAX 315SMC6	77	139	94.9	0.81	995	3.6	115	94.9	0.84	201	992	2.50	108	94.9	0.83	191	993	2.60	93	94.9	0.82	166	994	3.00	16.40	879
KM2BAX 315SMD6	94	170	95.1	0.81	994	3.2	143	95	0.84	249	991	2.10	132	95	0.83	233	992	2.30	121	95.1	0.83	213	993	2.50	19.60	957

to be continue .....

Crane Duty Motors Chart

For VVVF Drive

Pole - 6

LV Motors
ABB India Ltd.
Series Name - M2BAX
Enclosure-TEFC
Protection/Cooling - IP55/IC411
Insulation Class - F
Temperature Rise Class - B

Doc no : PC/CD-002/Rev-D
Date-04.09.2023
Voltage : 415V+/-10%
Frequency : 50Hz+/-5%
Combined Variation : 10%
Ambient : 50°C
Duty-S3 & S4 (equivalent)

Frame Size	Equlva-lent S1 kw	S1 Current	S1-IE3 Efficie-ncy	Power Factor	Full Load RPM	POT	150 / 300 Starts / hr.																		Motor GD² Kg m²)	Net Weight (Kg)
							25 % CDF						40 % CDF						60 % CDF							
							kW	Eff	Pf	Amps	RPM	POT	kW	Eff	Pf	Amps	RPM	POT	kW	Eff	Pf	Amps	RPM	POT		
KM2BAX 315MLB6	113	201	95.2	0.82	997	3.6	172	95	0.86	293	994	2.40	158	95	0.86	269	995	2.50	145	95	0.85	250	995	2.80	23.20	1091
KM2BAX 355SMA6	136	248	95.3	0.8	994	3.8	205	95	0.82	366	991	2.50	192	95	0.83	339	992	2.70	176	95.1	0.83	310	992	2.90	29.20	1370
KM2BAX 355SMB6	170	313	95.8	0.79	993	3.8	250	95.4	0.82	445	990	2.60	240	95.4	0.82	427	991	2.70	212	95.5	0.81	381	992	3.00	38.80	1518
KM2BAX 355SMC6	212	390	95.8	0.79	988	3.1	300	95.4	0.84	521	989	2.50	285	95.4	0.84	495	990	2.60	262	95.5	0.84	454	991	2.80	45.20	1518
KE3BA 355MLB6	268	475	95.8	0.82	990	3.6	390	95.4	0.85	669	990	2.50	360	95.4	0.84	625	991	2.70	305	95.4	0.83	536	992	3.00	51.60	2250

Note: -
1) VFD duty motor due to controlled starting, the starting current does not significantly affect the temperature rise. Hence S4 duty as be defined as equal to S3 duty
2) Separate declaration are required for different service factors for different cranes & ambient temperature.
3) Speed range 10-100%, Insulated bearing for 100kW & above or 315 frame
4) Efficiency declared for equivalent S1kW are as per IS 12615:2018
5) Switching frequency 2kHz to 4kHz
6) Efficiency & temperature rise at equivalent S1kW are at sinusoidal supply
7) Ambient declaration chart -

Permissible Output	100%	95%	90%
Amb. Temp °C	50.0	55.0	60.0

Revised Doc no-PC/CD-002/Rev-D

Crane Duty Motors Chart

For VVVF Drive

Pole - 8

LV Motors
ABB India Ltd.
Series Name -
Enclosure-TEFC
Protection/Cooling - IP55/IC411
Insulation Class - F
Temperature Rise Class - B

Doc no : 3GZH500730-5/Rev-B
Date-04.09.2023
Voltage : 415V+/-10%
Frequency : 50Hz+/-5%
Combined Variation : 10%
Ambient : 50°C
Duty-S3 & S4 (equivalent)

Frame Size	Equlva-lent S1 kw	S1 Current	S1-IE3 Efficie-ncy	Power Factor	Full Load RPM	POT	150 / 300 Starts / hr.																		Motor GD² Kg m²)	Net Weight (Kg)
							25 % CDF						40 % CDF						60 % CDF							
							kW	Eff	Pf	Amps	RPM	POT	kW	Eff	Pf	Amps	RPM	POT	kW	Eff	Pf	Amps	RPM	POT		
KM2BAX90SA8	0.37	1.35	69.3	0.55	697	2.7	0.50	68.7	0.66	1.53	671	2.0	0.46	69.3	0.63	1.47	680	2.2	0.43	69.3	0.6	1.44	686	2.3	0.018	23
KM2BAX90LA8	0.55	1.78	73	0.59	672	2.4	0.75	69.5	0.69	2.2	634	1.8	0.70	70.9	0.67	2.1	646	1.9	0.63	72.2	0.64	1.90	658	2.1	0.030	30
KM2BAX100LKA8	0.75	2.2	75	0.64	695	2.6	1.1	72.2	0.76	2.8	667	1.8	1.1	72.2	0.76	2.8	667	1.8	0.9	74.3	0.70	2.4	684	2.2	0.038	35
KM2BAX100LKB8	1.1	3.1	77.7	0.63	695	2.4	1.5	75.5	0.73	3.8	672	1.8	1.5	75.5	0.73	3.8	672	1.8	1.3	76.9	0.69	3.4	684	2.0	0.045	38
KM2BAX112MLA8	1.5	4.0	79.7	0.66	680	2.3	1.9	79.5	0.73	4.6	663	1.8	1.6	79.3	0.68	4.1	676	2.2	1.6	79.3	0.68	4.1	676	2.2	0.048	47
KM2BAX132SMA8	2.2	5.8	81.9	0.64	715	2.4	2.8	81.0	0.71	6.8	705	1.9	2.5	81.6	0.67	6.4	710	2.1	2.3	81.8	0.65	6.0	713	2.3	0.14	81
KM2BAX160MLA8	3.7	9.5	84.5	0.64	715	2.5	4.6	83.9	0.71	10.7	708	2.0	4.0	84.3	0.70	9.4	712	2.3	4.0	84.3	0.70	9.4	712	2.3	0.28	107
KM2BAX160MLB8	5.5	13.7	86.2	0.65	725	2.6	8.0	83.3	0.71	18.8	710	1.8	7.5	84.1	0.71	17.5	714	1.9	6.0	85.8	0.67	14.5	723	2.4	0.38	127
KM2BAX160MLC8	7.5	18.7	87.3	0.64	725	2.5	9.4	86.1	0.70	21.7	717	2.0	8.5	86.7	0.70	19.5	721	2.2	8.0	87.0	0.67	19.1	723	2.3	0.49	150
KM2BAX180MLA8	9.3	22.6	88.1	0.65	730	2.9	11.6	87.6	0.70	26.3	725	2.3	10.6	87.9	0.70	24.0	728	2.5	10.3	87.9	0.67	24.3	729	2.6	0.86	208
KM2BAX180MLB8	11	25.4	88.6	0.68	730	2.4	13.5	87.8	0.71	30.1	725	2.0	12.0	88.3	0.70	27.0	728	2.2	11.5	88.5	0.69	26.2	729	2.3	0.91	216
KM2BAX200MLA8	15	32.8	89.6	0.71	736	2.5	18.0	89.0	0.74	38.0	733	2.1	16.0	89.4	0.72	34.6	735	2.3	15.5	89.5	0.72	33.5	736	2.4	1.98	238
KM2BAX225SMA8	18.5	39.7	90.1	0.72	738	2.3	23.0	89.4	0.74	48.4	735	1.9	20.5	89.9	0.73	43.5	736	2.1	19.5	90.0	0.73	41.3	737	2.2	2.63	271
KM2BAX225SMB8	22	46.9	90.6	0.72	738	2.3	25.0	90.3	0.74	52.0	736	2.0	24.0	90.4	0.74	49.9	737	2.1	23.0	90.5	0.73	48.4	738	2.2	2.90	290
KM2BAX250SMA8	30	66.3	91.3	0.69	740	2.5	34.0	91.1	0.71	73.1	739	2.2	32.0	91.2	0.71	65.8	740	2.3	31.0	91.2	0.70	67.6	740	2.4	5.20	379
KM2BAX280SA8	31	79	91.8	0.6	745	3.5	48	91.8	0.72	101	743	2.30	44	91.8	0.7	96	742	2.50	41	91.8	0.78	91	743	2.70	7.40	558
KM2BAX280SB8	38	82	92.2	0.7	744	2.9	58	92.2	0.79	111	740	2.10	54	92.2	0.78	104	741	2.10	50	92.2	0.77	97	742	2.20	8.80	598
KM2BAX315SMA8	47	95	92.5	0.74	744	3.1	72	92.5	0.79	136	740	2.10	66	92.5	0.78	127	741	2.20	61	92.5	0.77	118	742	2.40	12.80	792
KM2BAX315SMB8	64	125	93.1	0.76	743	3	98	93.1	0.83	176	739	2.10	90	93.1	0.82	164	740	2.20	83	93.1	0.81	152	741	2.40	16.40	880
KM2BAX315SMC8	77	142	93.4	0.8	743	3.4	117	93.4	0.87	200	739	2.30	108	93.4	0.86	187	740	2.50	99	93.4	0.85	173	741	2.70	19.60	959
KM2BAX315MLA8	94	176	93.7	0.79	742	3	143	93.7	0.84	253	738	2.10	132	93.7	0.83	236	739	2.20	121	93.7	0.82	219	740	2.30	23.20	1091

to be continue .....

Crane Duty Motors Chart

For VVVF Drive

Pole - 8

LV Motors
ABB India Ltd.
Series Name - M2BAX
Enclosure-TEFC
Protection/Cooling - IP55/IC411
Insulation Class - F
Temperature Rise Class - B

Doc no : PC/CD-002/Rev-D
Date-04.09.2023
Voltage : 415V+/-10%
Frequency : 50Hz+/-5%
Combined Variation : 10%
Ambient : 50°C
Duty-S3 & S4 (equivalent)

Frame Size	Equlva-lent S1 kw	S1 Current	S1-IE3 Efficie-ncy	Power Factor	Full Load RPM	POT	150 / 300 Starts / hr.																		Motor GD² Kg m²)	Net Weight (Kg)
							25 % CDF						40 % CDF						60 % CDF							
							kW	Eff	Pf	Amps	RPM	POT	kW	Eff	Pf	Amps	RPM	POT	kW	Eff	Pf	Amps	RPM	POT		
KM2BAX 355SMA8	112	224	94	0.74	746	3.1	172	94	0.8	317	743	2.10	158	94	0.79	297	744	2.25	145	94	0.78	276	744	2.50	31.60	1413
KM2BAX 355SMB8	136	268	94.3	0.75	745	3.8	208	94.3	0.8	384	743	2.50	192	94.3	0.8	354	743	2.70	176	94.3	0.79	329	744	2.90	38.80	1574
KM2BAX355SMC8	170	329	94.6	0.76	745	3.4	260	94.6	0.82	466	742	2.20	240	94.6	0.81	436	742	2.40	220	94.6	0.8	404	743	2.60	45.20	1600

Note: -
1) VFD duty motor due to controlled starting, the starting current does not significantly affect the temperature rise. Hence S4 duty defined as equal to S3 duty
2) Separate declaration are required for different service factors for different cranes & ambient temperature.
3) Speed range 10-100%, Insulated bearing for 100kW & above or 315 frame
4) Efficiency declared for equivalent S1kW are as per IS 12615:2018
5) Switching frequency 2kHz to 4kHz
6) Efficiency & temperature rise at equivalent S1kW are at sinusoidal supply
7) Ambient declaration chart -

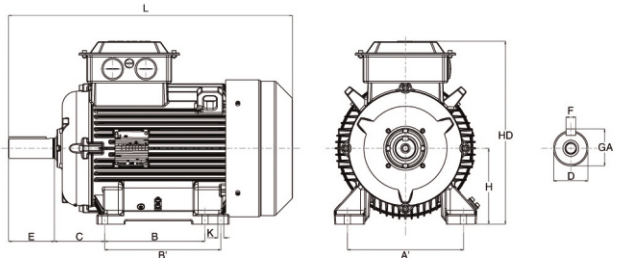
Permissible Output	100%	95%	90%
Amb. Temp °C	50.0	55.0	60.0

Revised Doc no-PC/CD-002/Rev-D

Dimension drawings

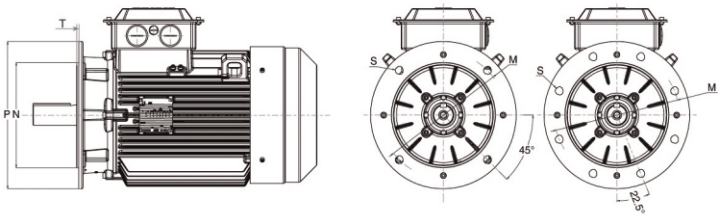
General performance IE2 high efficiency cast iron motors Sizes 71 - 355

Foot-mounted motor IM1001, B3



Flange-mounted motor IM 3001, B5

Size 71 to 200 Size 225 to 355



Motor Size	D Poles 2	4-8	GA Poles 2	4-8	F Poles 2	4-8	E Poles 2	4-8	L max Poles 2	4-8	A	B	B'	C	HD	K	H	M	N	P	S	T
General performance cast iron motors																						
71M	14	14	16.0	16.0	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
90SL	24	24	27.0	27.0	8	8	50	50	351	351 [5)]	140	100	125	56	217	10	90	165	130	200	12	3.5
100L	28	28	31.0	31.0	8	8	60	60	376	376	160	140	-	63	240	12	100	215	180	250	15	4.0
112M	28	28	31.0	31.0	8	8	60	60	411	411	190	140	-	70	252	12	112	215	180	250	15	4.0
132SM	38	38	41.0	41.0	10	10	80	80	521	521 [6)]	216	140	178	89	301	12	132	265	230	300	15	4.0
160	42	42	45.0	45.0	12	12	110	110	586	586 [1), 1')]	254	210	254	108	414	14.5	160	300	250	350	19	5.0
180	48	48	51.5	51.5	14	14	110	110	684	684 [2)]	279	241	279	121	434	14.5	180	300	250	350	19	5.0
200	55	55	59.0	59.0	16	16	110	110	728	728 [3)]	318	267	305	133	474	18.5	200	350	300	400	19	5.0
225	55	60	59.0	64.0	16	18	110	140	854	854 [4)]	356	286	311	149	540	18.5	225	400	350	450	19	5.0
250	60	65	64.0	69.0	18	18	140	140	882	882	406	311	349	168	585	24	250	500	450	550	19	5.0
280S	65	75	69.0	79.5	18	20	140	140	982	982	457	368	-	190	775	24	280	500	450	550	19	5.0
280SM	65	75	69.0	79.5	18	20	140	140	1052	1052	457	368	419	190	775	24	280	500	450	550	19	5.0

Motor	D		GA		F		E		L Max		A	B	B'	C	HD	K	H	M	N	P	S	T
	2	4_8	2	4_8	2	4_8	2	4_8	2	4_8												
M2BAX 315SM	65	80	69.0	85.0	18	22	140	170	1216	1246	508	406	457	216	872	28	315	600	550	660	24	6.0
M2BAX 315ML	65	90	69.0	95.0	18	25	140	170	1326	1356	508	457	508	216	872	28	315	600	550	660	24	6.0
M2BAX 355SM	70	100	74.5	106.0	20	28	140	210	1399	1469	610	500	560	254	960	35	355	740	680	800	24	6.0
E3BA 355MLB6	-	100	-	106.0	-	28	-	210	-	1680	610	560	630	254	995	28	355	740	680	800	24	6.0

Above table gives the main dimensions in mm.

1) M2BAX160MLC2, B4, J6	L = 626
1') M2BAX160MLB6	L = 646
2) M2BAX180MLB4, A6	L = 704
3) M2BAX200MLB2, A4, B6	L = 768
4) M2BAX225SMB4, A6	L = 884
5) M2BAX90SA2,SA4,SA6	L = 335
6) M2BAX132SA2,B2,SA4,SB6	L = 479
7) M2BAX180MLB8	refer GAD
8) M2BAX200MLA8	refer GAD

Motors in brief

General performance IE2 high efficiency 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	C3 medium according to ISO / EN 12944-5					
Feet	Integrated with stator						
	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	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					
Rating plate	Material	Aluminium					
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			
	Cable Sizes	2Rx3Cx4mm2	2Rx3Cx6mm2	2Rx3Cx10mm2			
	Terminal Stud Size	M4	M4	M5			
	Terminals	Upto 2HP - STAR / 3 Leads > 2 HP - DELTA / 6 Leads, (Cable lugs not included)					
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	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, Higher protection on request					
Cooling method		IC 411					
Drain holes		Drain holes with closable plastic plugs, open on delivery					
Lifting lugs		Integrated with the stator					

Motors in brief

General performance IE2 high efficiency cast iron motors

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				
	Surface Treatment	C3 medium according to ISO / EN 12944-5				
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_70µm				
Bearings	D-end	6209-2Z/C3	6310-2Z/C3	6312-2Z/C3	6313-2Z/C3	6315-2Z/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	Cable Entries	2xM40, 1xM16			2xM50, 1xM16	
	Cable Sizes	2Rx3Cx70mm2			2Rx3Cx120mm2	
	Terminal Stud Size	M6			M10	
	Terminal Box	6 terminals for connection, Cable lugs not included				
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 as standarad				
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				

Motors in brief

General performance IE2 high efficiency cast iron motors

Size		280 2-8 Pole	315 2 Pole	315 4-8 Pole	355 2 Pole	355 4-8 Pole
Stator	Material	Cast iron grade 150, IS:210 [1]				
	Paint colour shade	Munsell blue 8B 4.5/3.25 / NCS 4822 B05G				
	Surface Treatment	C3 medium according to ISO / EN 12944-5				
Feet		Integrated with stator				
	Material	Cast iron grade 150, IS:210 [1]				
Bearing end shields	Material	Cast iron grade 150, IS:210 [1]				
	Paint colour shade	Munsell blue 8B 4.5/3.25 / NCS 4822 B05G				
	Surface Treatment	Aliphatic polyurethane paint ≥80µm				
Bearings	D-end	6316/C3	6316/C3	6319/C3	6319/C3 [2]	6322/C3
	N-end	6316/C3	6316/C3	6316/C3	6319/C3 [2]	6319/C3 [2]
Axially-locked	Inner Bearing Cover	As standard, 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 [1]				
	Surface	Similar to stator				
	Screws	Steel				
Connections	Cable Entries	2 x 2" BSC [3]		2 x 2-1/2" BSC* [3]		
	Cable Sizes	280 : 2Rx3Cx185Sqmm Cu/Al Cable 315 : 2Rx3Cx240Sqmm Cu/Al Cable 355 : 2Rx3Cx240Sqmm Cu/Al Cable*				
	Terminal Stud Size	M12		M16 [4]		
	Terminal Box	6 terminals for connection, (Cable lugs not included)				
Fan	Material	Polypropylene, Reinforced with 20% glass fibre				Aluminium [5]
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 as standarad				
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				

*Cable Size for 355MLD2, 355MLB6H & 355MLB4H will be 2Rx3Cx300 Sqmm Cu/Al , Threaded opening 2x3" BSC

For M2BAX series, following is applicable:

1) Cast Iron Grade 200, IS:210
2) Bearing Size: 6316/C3
3) Cable Entries for
   280 to 315 frame - 2xM63, 2xM20
   355 frame - 2xM75, 2xM20
4) Terminal Stud Size: M12
5) For all Frames,fan material is Polypropylene,Reinforced with 20% glass fibre.

***Bearings Seals in M2BAX 280 to 355 frame is V-ring at DE and NDE side.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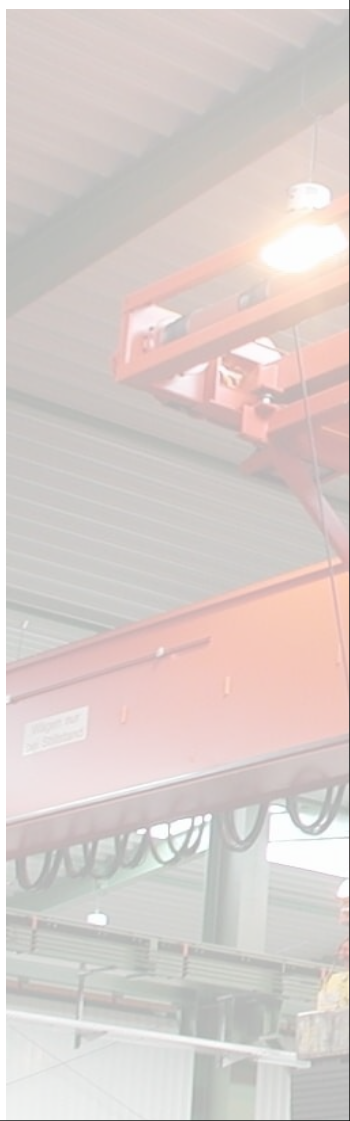

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