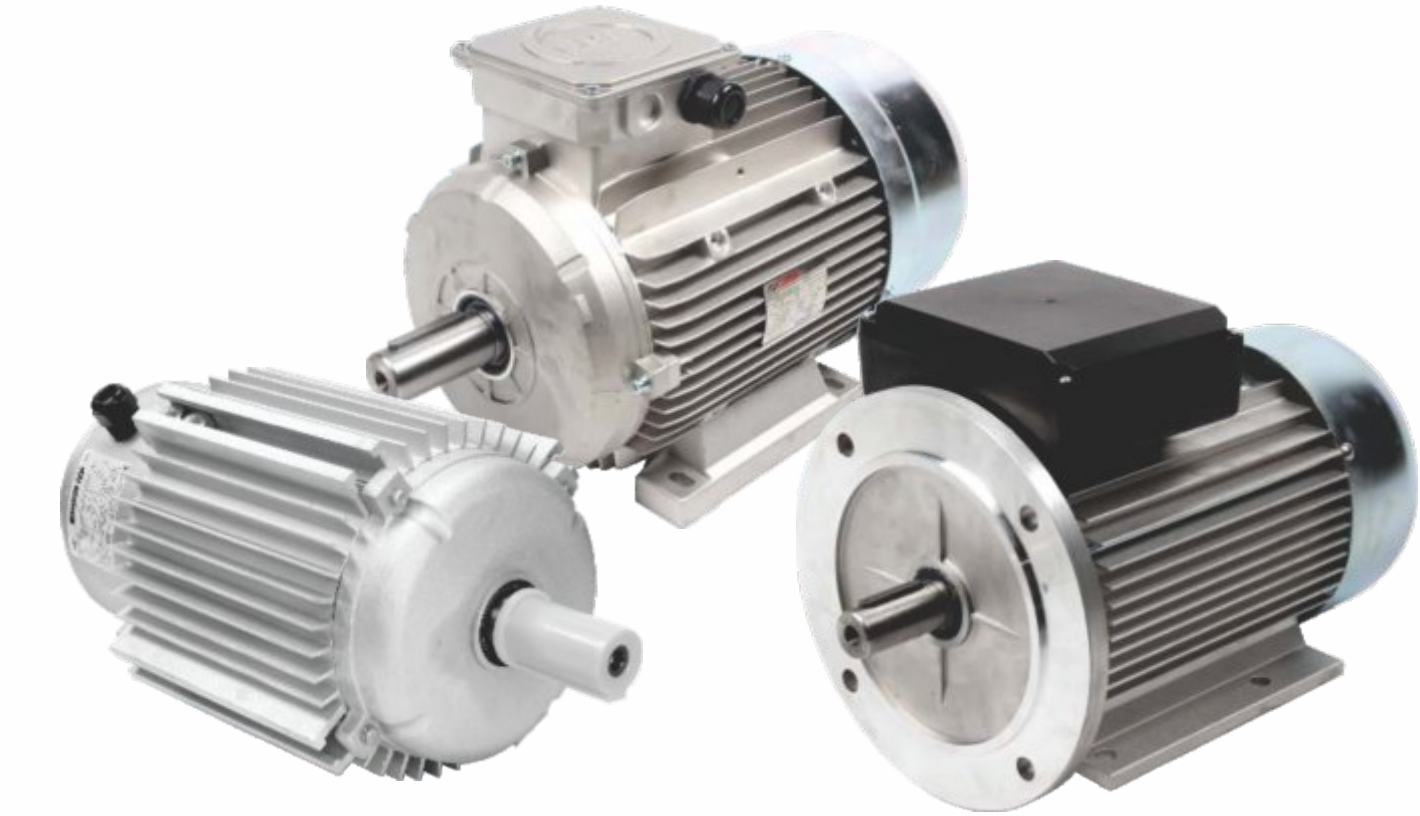

MOTOLINE

ALUMINIUM MOTORS (IE1)

Technical Guide

BEE 4
EMPOWERING SUPPLIER

ISO 9001	Certified
ISO 14001	Certified
ISO 45001	Certified

ABOUT US

Established in 1974 as a single bearing shop in Durban, South Africa; BMG's aggressive growth strategy has included acquisitions, supplemented by a steady organic growth discipline. BMG attracts best-of-breed talent resulting in technical expertise that differentiates BMG in the industry. Staff are truly part of the BMG family and its success.

BMG boasts an accredited in-house technical and commercial training academy which fosters a culture of staff development and career advancement; it's all about sustainability.

The net result, is a company that reliably supplies and supports 70 000 customers in 15 countries with the widest range of industrial engineered products and expert services in Africa via 105 branches.

BMG is positioned to deliver bespoke 360 degree solutions to its customers, and subsequently return on investment to its investors and shareholders. BMG plays a pivotal role in supporting the productivity and production targets of all Industrial, Manufacturing, Mining and Agricultural sectors of the economies in the countries it serves. With an enviable reputation as Africa's largest distributor, manufacturer and service provider of the highest quality engineering consumables and components; including

- Bearings & Seals
- Power Transmission Components
- Drives, Motors and Controllers
- Hydraulics, Pneumatics and Filtration
- Heavy and Light Duty Materials Handling
- Valves and Lubrication
- Fasteners, Gaskets and Tools

BMG is a level 4 BEE contributor with ISO 9001 Quality Assurance certification. Health and safety of its employees and customers is a paramount focus and the company adheres to ISO 45001. BMG is also committed to environmental care and sustainability and strictly follows the ISO 14001 charter.

As a key contributor to the Invicta Holdings stable, BMG has played a major part in Invicta's unique achievement of being rated in South Africa's Top 100 Companies for 21 consecutive years.

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SABS CERTIFICATION

SABS

Permit to Apply Certification Mark

Subject to the provisions of the Standards Act, 2008 (Act 8 of 2008), the relevant regulations made thereunder and the permit conditions contained in the under mentioned schedules, this permit authorizes

WONDER ELECTRIC COMPANY LIMITED (TRADING AS WONDER ELECTRIC COMPANY LIMITED/BEARING MAN LTD) FUJIAN, PR OF CHINA

to apply the certification mark

SABS APPROVED

in respect of the mark specification

SANS 1804-1:2012, SANS 1804-2:2012 & SANS 1804-4:2012
TO: INDUCTION MOTORS
PART 1: IEC REQUIREMENTS
PART 2: LOW-VOLTAGE THREE-PHASE STANDARD MOTORS
PART 4: SINGLE-PHASE INDUCTION MOTORS

This permit, including the schedules 1 to 3 which form an integral part thereof:
- is issued without alteration;
- is identified by the applicable permit number;
- is subject to any condition or limitation contained therein;
- is valid subject to ongoing compliance with permit conditions;
- bears the embossed SABS Commercial seal. In the absence of the seal, the permit and the schedules shall be invalid; and
- the permit may be authenticated by referring to the register of "Certified Clients" on the SABS Commercial website (www.sabs.co.za)
- Scheme Type 5 permit applies to products that have been tested.

Permit Number	**7191/10674**
Effective Date	**18 February 2019**
Expiry Date	**21 July 2021**
Date of Original Registration	**20 November 2002**
Chief Executive Officer	AJ Cabashe

sanas

SABS COMMERCIAL SOC Ltd.
1 Dr Lategan Rd, Groenkloof, Pretoria
Republic of South Africa

A4A 1001259

Three Phase Removable Feet, Standard Efficiency Aluminium Induction Motors

The RMS series Aluminium motors are three phase induction motors with removable feet. The position of the terminal box can be changed according to the user's requirements. The efficiency indicator meets IE1 standards.

Characteristics for all BMG Standard 3-Phase Aluminium Induction Motors:

- Widely applied in general machinery and industries such as pumps and water treatment, road machinery, petroleum, chemical, metallurgy, cement and paper milling
- It has an IP55 protection with a class F insulation, a class B temperature rise and a S1 duty
- Rated Voltage: 400V or 525V
- Rated Frequency: 50Hz
- Operation Conditions - Ambient Temperature: -20°C ~ 40°C, Altitude < 1000m
- Use Y-connections for motors up to 3 kW and Δ-connections for 4 kW and above
- The cooling method is IC411

Mounting Arrangements

Types	Basic Types of Construction	Derived Types of Construction				
RMS63-132	IM B3 IM 1001	IM V5 IM 1011	IM V6 IM 1031	IM B6 IM 1051	IM B7 IM 1061	IM 88 IM 1071
RMS63-132	IM B35 IM 2001	IM V15 IM 2011	IM V36 IM 2031	• IM 2051	• IM 2061	• IM 2071
RMS63-132	IM B34 IM 2101	• IM 2111	• IM 2131	• IM 2151	• IM 2161	• IM 2171
RMS63-132	IM B5 IM 3001	IM V1 IM 3011	IM V6 IM 3031			
RMS63-132	IM B14 IM 3601	IM V18 IM 3611	IM V19 IM 3631			

Basic types of construction may be used in all derived types. (*) not-defined mounting by IEC 60034-7

1) For the following types of construction, IM V6, IM B6, IM 88 an enquiry is necessary.

TECHNICAL INFORMATION

Output	IEC Frame	Rated Speed	Full Load Current I_n(A)	Efficiency η% of Full Load			Full Load Power Factor	Locked Rotor Current	Locked Rotor Torque	Break Down Torque	Rated Torque	Moment of Inertia	Nett Weight
kW		rpm	400V	100	75	50	$\cos\varphi$	Is/In	Ms/Mn	Mk/Mn	(N·m)	J(Kgm²)	kg
2-Pole/3000RPM													
0.18	63	2720	0.55	65.0*	64.5	59.6	0.73	5.5	2.2	2.2	0.63	-	3.9
0.25	63	2720	0.72	66.0*	65.6	61.4	0.76	5.5	2.2	2.2	0.88	-	4.4
0.33	63	2720	0.84	70.0*	70.3	67.1	0.81	6.1	2.2	2.2	1.30	-	4.7
0.37	71	2760	0.94	70.0*	70.9	68.9	0.81	6.1	2.2	2.2	1.28	0.0005	6.2
0.55	71	2820	1.33	73.0*	73.9	71.9	0.82	6.1	2.2	2.3	1.86	0.00063	6.3
0.75	71	2820	1.78	74.0	74.2	71.4	0.82	6.1	2.2	2.3	2.54	0.00076	6.5
0.75	80	2845	1.76	74.0	74.2	71.4	0.83	6.1	2.4	2.5	2.52	0.0008	8.3
1.1	80	2840	2.49	76.0	76.8	75.3	0.84	7.0	2.5	2.5	3.7	0.0010	9.0
1.5	80	2840	3.35	77.0	78.1	76.6	0.84	7.0	2.5	2.5	5.04	0.0012	10.0
1.5	90S	2840	3.30	78.0	78.7	76.7	0.84	7.0	2.7	2.8	5.04	0.0012	12.5
2.2	90L	2840	4.67	80.0	80.8	79.5	0.85	7.0	2.5	2.8	7.4	0.0014	14.0
3.0	90LB	2840	6.22	81.0	81.4	79.4	0.86	7.0	2.5	2.8	10.09	0.00145	16.0
3.0	100L	2870	6.07	82.0	82.1	80.3	0.87	7.5	2.2	2.5	9.98	0.0029	20.5
4.0	100LC	2880	7.81	84.0	84.8	84.1	0.88	7.5	2.3	2.5	13.26	0.0039	28.0
4.0	112M	2880	7.81	84.0	84.8	84.1	0.88	7.5	2.3	2.3	13.26	0.0050	26.0
5.5	112MC	2900	10.6	85.0	85.0	83.5	0.88	7.5	2.3	2.3	18.17	0.0069	33.0
5.5	132S1	2910	10.6	85.0	85.0	83.5	0.88	7.5	2.2	2.5	18.11	0.0104	40.0
7.5	132S2	2905	14.3	86.3	86.6	85.6	0.88	7.5	2.2	2.4	24.66	0.0121	44.0
11	132MC	2910	20.3	87.8	87.4	85.9	0.89	7.5	2.2	2.4	36.10	0.0178	65.0

Output	IEC Frame	Rated Speed	Full Load Current I_n(A)	Efficiency η% of Full Load			Full Load Power Factor	Locked Rotor Current	Locked Rotor Torque	Break Down Torque	Rated Torque	Moment of Inertia	Nett Weight
kW		rpm	400V	100	75	50	$\cos\varphi$	Is/In	Ms/Mn	Mk/Mn	(N·m)	J(Kgm²)	kg
4-Pole/1500RPM													
0.12	63	1340	0.42	57.0*	57.1	52.6	0.72	4.4	1.8	2.0	0.86	-	4.0
0.18	63	1340	0.61	58.0*	59.5	56.4	0.73	4.4	1.8	2.0	1.28	-	4.5
0.22	63	1340	0.75	58.0*	58.4	54.7	0.73	4.4	1.8	2.0	1.57	-	4.9
0.25	71	1345	0.75	65.0*	65.1	61.3	0.74	5.2	2.1	2.2	1.78	0.0011	6.1
0.37	71	1340	1.06	67.0*	68.2	65.7	0.75	5.2	2.1	2.2	2.64	0.0012	6.7
0.55	71	1390	1.49	71.0*	72.4	70.6	0.75	5.3	2.2	2.5	3.78	0.0016	8.2
0.55	80	1390	1.49	71.0*	72.4	70.6	0.75	5.3	2.2	2.5	3.78	0.0013	8.9
0.75	80	1380	1.96	72.6	73.3	71.2	0.76	5.3	2.3	2.5	5.19	0.0015	9.6
1.1	80	1390	2.76	75.7	77.3	76.1	0.76	6.0	2.3	2.5	7.56	0.0019	12.2
1.1	90S	1390	2.72	75.7	77.3	76.1	0.77	6.0	2.3	2.5	7.56	0.002	12.5
1.5	90L	1390	3.56	78.0	79.4	78.3	0.78	6.0	2.3	2.5	10.31	0.003	15.0
2.2	90LB	1415	4.84	80.0	80.8	79.5	0.82	7.0	2.3	2.5	14.85	0.0039	19.5
2.2	100LA	1415	4.90	80.0	80.8	79.5	0.81	7.0	2.3	2.5	14.85	0.0054	19.2
3.0	100LB	1415	6.44	82.0	82.6	81.1	0.82	7.0	2.3	2.5	20.25	0.0067	23.0
4.0	100LC	1430	8.29	83.9	84.6	83.5	0.83	7.0	2.3	2.5	26.71	0.0069	25.9
4.0	112M	1440	8.29	83.9	84.6	83.5	0.83	7.0	2.3	2.5	26.71	0.0091	29.0
5.5	112MC	1445	11.3	85.0	85.6	84.6	0.83	7.0	2.3	2.5	36.35	0.0117	37.5
5.5	132S	1445	11.3	85.0	85.6	84.6	0.83	7.0	2.3	2.5	36.35	0.0205	43.5
7.5	132M	1445	14.9	86.4	87.0	86.3	0.84	7.0	2.3	2.5	49.57	0.0296	53.5
11.0	132MC	1460	21.5	87.9	87.9	86.6	0.84	7.0	2.2	2.5	71.95	0.0326	75.6

Efficiencies according to the indirect method of IEC60034-2-1:2007 with stray load losses are determined by the measurement.

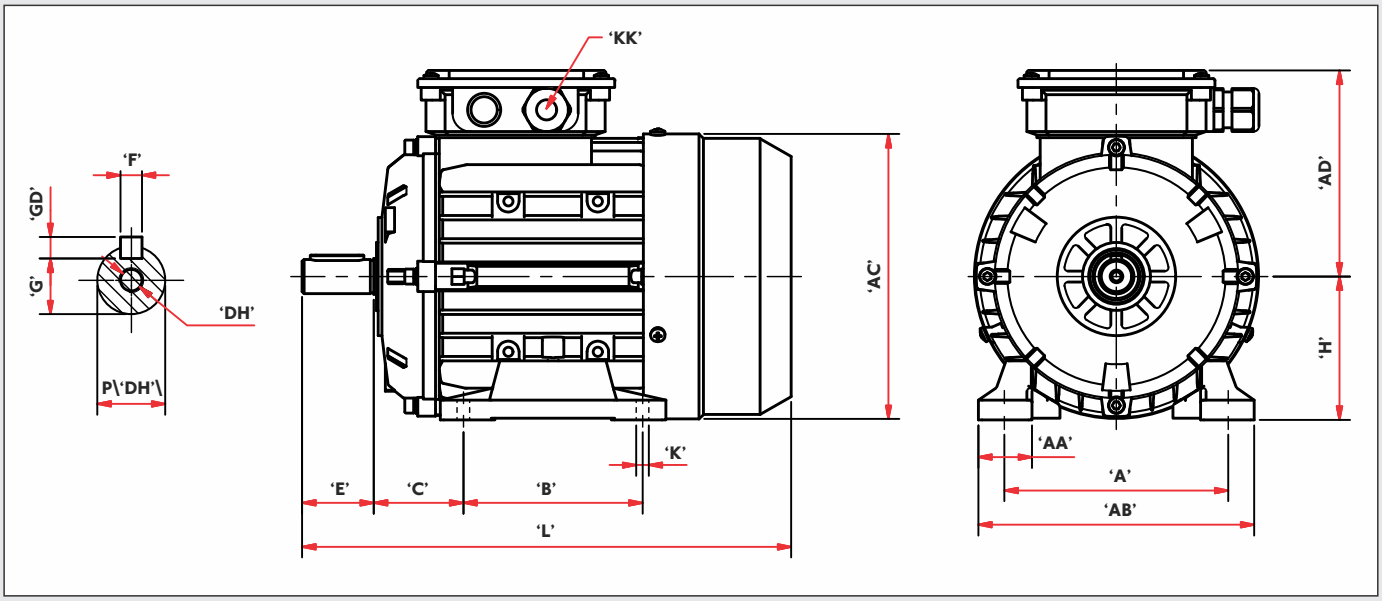
Output	IEC Frame	Rated Speed	Full Load Current I_n(A)	Efficiency η% of Full Load			Full Load Power Factor	Locked Rotor Current	Locked Rotor Torque	Break Down Torque	Rated Torque	Moment of Inertia	Nett Weight
kW		rpm	400V	100	75	50	cosφ	Is/In	Ms/Mn	Mk/Mn	(N·m)	J(Kgm²)	kg
6-Pole/1000RPM													
0.09	63	860	0.46	48.0*	43.9	34.0	0.59.	4.0	1.9	2	1.0	-	4.5
0.12	63	860	0.57	51.5*	48.0	40.2	0.59	4.0	1.9	2	1.33	-	5.6
0.18	71	860	0.70	56.0*	55.9	50.5	0.66	4.0	1.9	2	2.0	0.0011	6.4
0.25	71	860	0.90	59.0*	59.2	55.0	0.68	4.0	1.9	2	2.78	0.0012	6.5
0.37	80	885	1.23	62.0*	61.2	56.4	0.70	4.7	2.0	2.1	3.99	0.0016	8.5
0.55	80	885	1.70	65.0*	65.2	61.8	0.72	4.7	2.0	2.1	5.94	0.002	9.2
0.75	90S	915	2.15	70.0	70.8	68.3	0.72	5.5	2.0	2.2	7.83	0.003	12.0
1.1	90L	915	2.98	72.9	73.8	71.6	0.73	5.5	2.0	2.2	11.48	0.004	14.0
1.5	100L	920	3.82	75.5	76.8	75.1	0.75	5.5	2.0	2.2	15.57	0.0069	19.5
2.2	112M	935	5.33	78.4	79.3	77.8	0.76	6.5	2.0	2.2	22.47	0.0071	28.0
3	132S	960	7.12	80.0	80.3	78.6	0.76	6.5	2.0	2.8	29.84	0.0274	38.0
4	132M1	960	9.32	71.5	81.8	80.2	0.76	6.5	2.4	2.9	39.79	0.0343	45.0
5.5	132M2	960	12.4	83.3	84.0	83.1	0.77	6.5	2.4	2.8	54.71	0.0431	54.0

Efficiencies according to the indirect method of IEC60034-2-1:2007 with stray load losses are determined by the measurement.

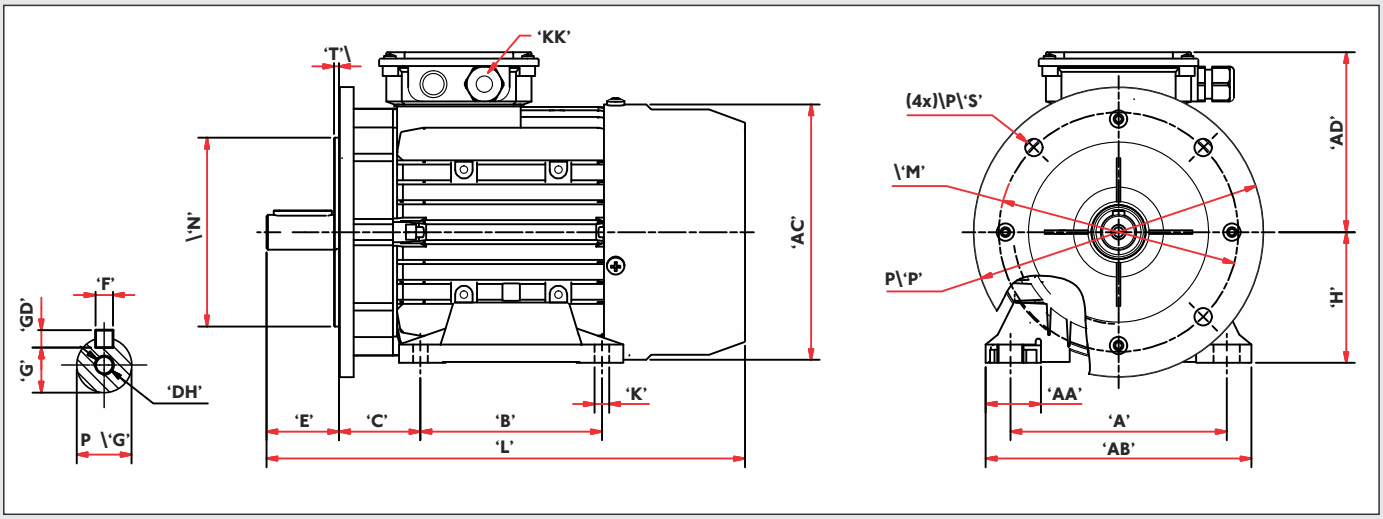
Output	IEC Frame	Rated Speed	Full Load Current I_n(A)	Efficiency η% of Full Load			Full Load Power Factor	Locked Rotor Current	Locked Rotor Torque	Break Down Torque	Rated Torque	Moment of Inertia	Nett Weight
kW		rpm	400V	100	75	50	cosφ	Is/In	Ms/Mn	Mk/Mn	(N·m)	J(Kgm²)	kg
8-Pole/750RPM													
0.09	71	635	0.68	39.0*	35.9	29.3	0.49	2.9	1.8	2.0	1.35	-	6.5
0.12	71	635	0.74	48.0*	45.8	39.5	0.49	2.9	1.8	2.0	1.80	-	7.5
0.18	80	645	0.84	51.0*	50.5	44.7	0.61	2.9	1.8	2.0	2.67	0.0018	8.3
0.25	80	645	1.10	54.0*	53.9	48.4	0.61	2.9	1.8	2.0	3.7	0.0021	9.0
0.37	90S	670	1.41	62.0*	61.8	57.1	0.61	3.2	1.9	2.3	5.27	0.0030	12.0
0.55	90L	670	2.07	63.0*	63.3	59.2	0.61	3.2	2.0	2.3	7.84	0.0040	15.0
0.75	100LA	680	2.42	66.7	66.5	62.2	0.67	4.7	1.8	2.2	10.46	0.0063	16.4
1.1	100LB	680	3.29	69.9	70.8	68.0	0.69	5.0	1.8	2.2	15.22	0.0097	21.8
1.5	112M	700	4.30	73.0	73.1	70.1	0.69	5.0	2.0	2.S	19.62	0.012	29.0
2.2	132S	710	5.88	76.1	76.3	73.9	0.71	6.0	1.8	2.5	29.59	0.029	39.0
3	132M	710	7.59	78.2	79.1	77.4	0.73	6.0	1.8	2.4	40.35	0.038	45.0

Efficiencies according to the indirect method of IEC60034-2-1:2007 with stray load losses are determined by the measurement.

ALUMINIUM THREE-PHASE IE1 B3

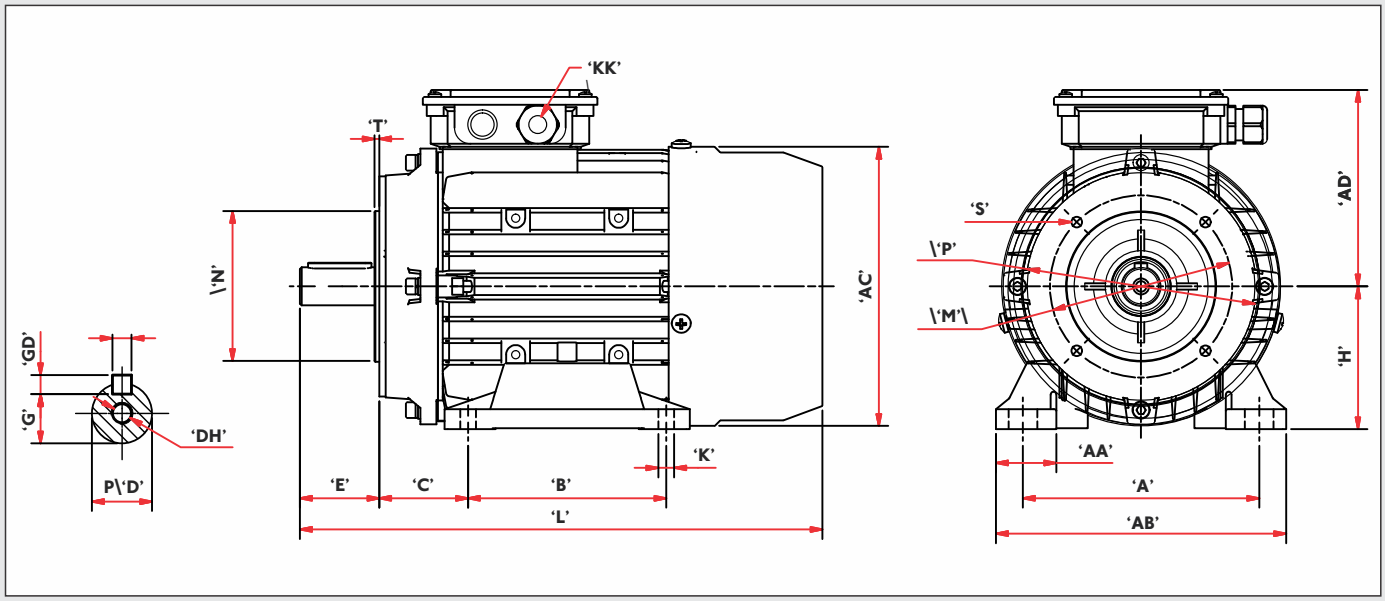


IEC Frame	Mounting Dimensions (mm)																	2-Pole		4-Pole		6-Pole	
	A	AA	AB	AC	AD	B	C	D	DH	E	F	G	GD	H	K (min)	KK	L	kW	Kg	kW	Kg	kW	Kg
63	100	25	122	122	99	80	40	11	M4x10	23	4	8.5	4	63	7	M16x1.5	215	0.18	3.9	0.12	4.0	0.09	4.5
																		0.25	4.4	0.18	4.5	0.12	5.6
																		0.33	4.7	0.22	4.9	-	-
71	112	26	136	138	109	90	45	14	M5x12	30	5	11	5	71	7	M20x1.5	245	0.37	6.2	0.25	6.1	0.18	6.4
																		0.55	6.3	0.37	6.7	0.25	6.5
																		0.75	6.5	0.55	8.2	-	-
80	125	30	154	157	112	100	50	19	M6x16	40	6	15.5	6	80	10	M20x1.5	275	0.75	8.3	0.55	8.9	0.37	8.5
																		1.1	9.0	0.75	9.6	0.55	9.2
																		1.5	10.0	1.1	12.2	-	-
90S	140	34.5	174	175	123	100	56	24	M8x19	50	8	20	7	90	10	M20x1.5	315	1.5	12.5	1.1	12.5	0.75	12.0
90L	140	38	174	175	123	125	56	24	M8x19	50	8	20	7	90	10	M20x1.5	330	2.2	14.0	1.5	15.0	1.1	14.0
																		3.0	16.0	2.2	19.5	/	/
100L	160	39	194	196	139	140	63	28	M10x22	60	8	24	7	100	12	M20x1.5	370	3.0	20.5	-	-	1.5	19.5
																		-	-	2.2	19.2	-	-
																		-	-	3.0	23.0	-	-
																		4.0	28.0	4.0	25.9	-	-
112M	190	45	224	220	156	140	70	28	M10x22	60	8	24	7	112	12	M25x1.5	395	4.0	26.0	4.0	29.0	2.2	28.0
																		5.5	33.0	5.5	37.5	/	/
132S	216	48	256	260	185	140	89	38	M12x28	80	10	33	8	132	12	M25x1.5	472	-	-	5.5	43.5	3.0	38.0
																		5.5	40.0	-	-	-	-
																		7.5	44.0	-	-	-	-
132M	216	48	256	260	185	178	89	38	M12x28	80	10	33	8	132	12	M25x1.5	510	/	/	7.5	53.5	-	-
																		11.0	65.0	11.0	75.6	-	-
																		-	-	-	-	4.0	45.0
																		-	-	-	-	5.5	54.0

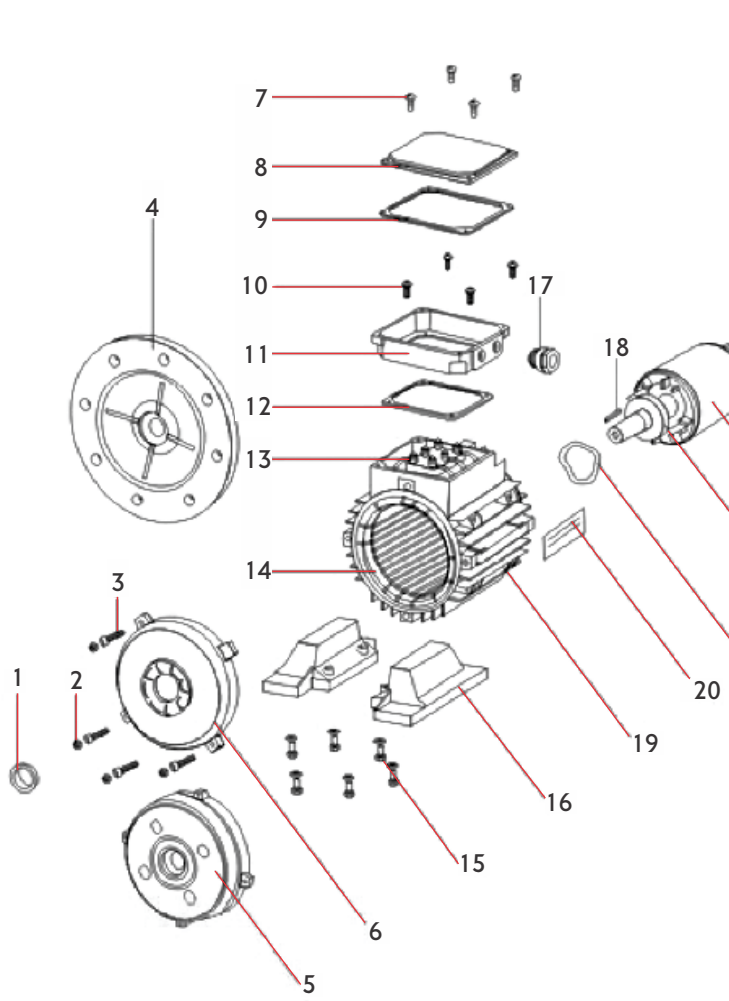


IEC Frame	Mounting Dimensions (mm)															2-Pole		4-Pole		6-Pole	
	AC	AD	D	DH	E	F	G	GD	KK	L	M	N	P (max)	S (min)	T	kW	Kg	kW	Kg	kW	Kg
63	112	99	11	M4x10	23	4	12.5	4	M16x1.5	215	115	95	140	10	3	0.18	3.9	0.12	4.0	0.09	4.5
																0.25	4.4	0.18	4.5	0.12	5.6
																0.33	4.7	0.22	4.9	-	-
71	138	109	14	M5x12	30	5	16	5	M20x1.5	245	130	110	160	10	3.5	0.37	6.2	0.25	6.1	0.18	6.4
																0.55	6.3	0.37	6.7	0.25	6.5
																0.75	6.5	0.55	8.2	-	-
80	157	112	19	M6x16	40	6	21.5	6	M20x1.5	275	160	130	200	12	3.5	0.75	8.3	0.55	8.9	0.37	8.5
																1.1	9.0	0.75	9.6	0.55	9.2
																1.5	10.0	1.1	12.2	-	-
90S	175	123	24	M8x19	50	8	27	7	M20x1.5	315	165	130	200	12	3.5	1.5	12.5	1.1	12.5	0.75	12.0
90L	175	123	24	M8x19	50	8	27	7	M20x1.5	330	165	130	200	12	3.5	2.2	14.0	1.5	15.0	1.1	14.0
																3.0	16.0	2.2	19.5	/	/
100L	196	139	28	M10x22	60	8	31	7	M20x1.5	370	215	180	250	15	4	3.0	20.5	-	-	1.5	19.5
																-	-	2.2	19.2	-	-
																-	-	3.0	23.0	-	-
																4.0	28.0	4.0	25.9	-	-
112M	220	156	28	M10x22	60	8	31	7	M25x1.5	395	215	180	250	15	4	4.0	26.0	4.0	29.0	2.2	28.0
																5.5	33.0	5.5	37.5	/	/
132S	260	185	38	M12x28	80	10	41	8	M25x1.5	472	265	230	300	15	4	-	-	5.5	43.5	3.0	38.0
																5.5	40.0	-	-	-	-
																7.5	44.0	-	-	-	-
132M	260	185	38	M12x28	80	10	41	8	M25x1.5	510	265	230	300	15	4	/	/	7.5	53.5	-	-
																11.0	65.0	11.0	75.6	-	-
																-	-	-	-	4.0	45.0
																-	-	-	-	5.5	54.0

ALUMINIUM THREE-PHASE IE1 B14



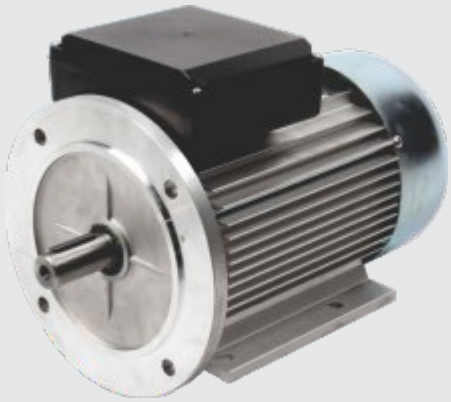
IEC Frame	Mounting Dimensions (mm)															2-Pole		4-Pole		6-Pole	
	AC	AD	D	DH	E	F	G	GD	KK	L	M	N	P (max)	S (min)	T	kW	Kg	kW	Kg	kW	Kg
63	112	99	11	M4x10	23	4	12.5	4	M16x1.5	215	75	60	90	M5	2.5	0.18	3.9	0.12	4.0	0.09	4.5
																0.25	4.4	0.18	4.5	0.12	5.6
																0.33	4.7	0.22	4.9	-	-
71	138	109	14	M5x12	30	5	16	5	M20x1.5	245	85	70	105	M6	2.5	0.37	6.2	0.25	6.1	0.18	6.4
																0.55	6.3	0.37	6.7	0.25	6.5
																0.75	6.5	0.55	8.2	-	-
80	157	112	19	M6x16	40	6	21.5	6	M20x1.5	275	100	80	120	M6	3	0.75	8.3	0.55	8.9	0.37	8.5
																1.1	9.0	0.75	9.6	0.55	9.2
																1.5	10.0	1.1	12.2	-	-
90S	175	123	24	M8x19	50	8	27	7	M20x1.5	315	115	95	140	M8	3	1.5	12.5	1.1	12.5	0.75	12.0
90L	175	123	24	M8x19	50	8	27	7	M20x1.5	330	115	95	140	M8	3	2.2	14.0	1.5	15.0	1.1	14.0
																3.0	16.0	2.2	19.5	/	/
100L	196	139	28	M10x22	60	8	31	7	M20x1.5	370	130	110	160	M8	3.5	3.0	20.5	-	-	1.5	19.5
																-	-	2.2	19.2	-	-
																-	-	3.0	23.0	-	-
																4.0	28.0	4.0	25.9	-	-
112M	220	156	28	M10x22	60	8	31	7	M25x1.5	395	130	110	160	M8	3.5	4.0	26.0	4.0	29.0	2.2	28.0
																5.5	33.0	5.5	37.5	/	/
132S	260	185	38	M12x28	80	10	41	8	M25x1.5	472	165	130	200	M10	3.5	-	-	5.5	43.5	3.0	38.0
																5.5	40.0	-	-	-	-
																7.5	44.0	-	-	-	-
132M	260	185	38	M12x28	80	10	41	8	M25x1.5	510	165	130	200	M10	3.5	/	/	7.5	53.5	-	-
																11.0	65.0	11.0	75.6	-	-
																-	-	-	-	4.0	45.0
																-	-	-	-	5.5	54.0



1. Oil Seal
2. Washer
3. Mounting Stud Screws
4. Flange B5
5. Flange B14
6. End Shield B3
7. Screw for Fixing Terminal Box (Cover) IP55
8. Terminal Box Cover
9. Terminal Seal IP55
10. Screws for Fixing Terminal Box (Base) IP55
11. Terminal Box Base
12. Terminal Seal IP55
13. Terminal Board Complete with Components
14. Wound stator
15. Screws for Fixing Removable Feet
16. Removable Feet
17. Cable Gland
18. Key
19. Frame
20. Name Plate
21. Spring Washer
22. Bearing (DE)
23. Rotor with Shaft
24. Bearing (NDE)
25. NDE Shield
26. Washer
27. Mounting Stud Screws
28. Oil Seal
29. Fan
30. Circlip
31. Fan Cover
32. Screws for Fixing Fan Cover

Frame Size	Driving End Bearings	Non-Driving End Bearings	Oil Seal
63	6201 2RS/C3	6201 2RS/C3	ϕ12 x ϕ22 x 7
71	6202 2RS/C3	6202 2RS/C3	ϕ15 x ϕ25 x 7
80	6204 2RS/C3	6204 2RS/C3	ϕ20 x ϕ30 x 7
90	6205 2RS/C3	6205 2RS/C3	ϕ25 x ϕ37 x 7
100	6206 2RS/C3	6206 2RS/C3	ϕ30 x ϕ42 x 7
112	6206 2RS/C3	6206 2RS/C3	ϕ30 x ϕ42 x 7
132	6208 2RS/C3	6208 2RS/C3	ϕ40 x ϕ58 x 8

ALUMINIUM SINGLE PHASE PERFORMANCE DATA TO SANS 1804 PARTS 1 & 2



Capacitor Start Series 2-Pole - 3000RPM: 50Hz

Frame Size	Power (kW)	Rated Speed (rpm)	Current Full Load 400V I_{FL}-400V	Current Starting / Current Full Load $\frac{I_{ST}}{I_{FL}}$	Efficiency %	Power Factor	Rated Torque (Nm)	Locked Rotor Torque / Torque Full Load $\frac{T_l}{T_N}$	Torque Breakdown / Torque Full Load $\frac{T_t}{T_N}$	Starting Capacitor 250V µF
71 1-2	0.18	2750	1.89	6.3	60	0.72	0.63	1.8	1.8	75
71 2-2	0.25	2770	2.4	6.25	64	0.74	0.86	1.8	1.8	75
80 1-2	0.37	2800	3.36	6.25	65	0.77	1.26	2.2	1.8	100
80 2-2	0.55	2810	4.65	6.24	68	0.79	1.87	2.2	1.8	150
90S-2	0.75	2820	5.94	6.1	70	0.82	2.54	2.2	1.8	200
90L-2	1.1	2820	8.37	7.2	72	0.83	3.73	2.2	1.8	300
100LA-2	1.5	2830	11.1	7.2	73	0.84	5.06	2.2	1.8	400
100LB-2	2.2	2830	15.7	7.65	75	0.85	7.42	2.2	1.8	2X300
112M-2	3.0	2840	21.1	7.1	76	0.85	10.09	2.4	1.8	2X300

Capacitor Start Series 4-Pole - 1400RPM: 50Hz

Frame Size	Power (kW)	Rated Speed (rpm)	Current Full Load 400V I_{FL}-400V	Current Starting / Current Full Load $\frac{I_{ST}}{I_{FL}}$	Efficiency %	Power Factor	Rated Torque (Nm)	Locked Rotor Torque / Torque Full Load $\frac{TI}{TN}$	Torque Breakdown / Torque Full Load $\frac{T_t}{T_N}$	Starting Capacitor 250V µF
71 1-4	0.12	1350	1.88	4.8	50	0.58	0.43	3.0	1.8	75
71 2-4	0.18	1370	2.49	4.8	53	0.62	0.65	2.8	1.8	75
80 1-4	0.25	1400	3.11	4.8	58	0.63	0.86	2.8	1.8	100
80 2-4	0.37	1410	4.24	5.0	62	0.64	1.28	2.5	1.8	100
90S-4	0.55	1420	5.49	5.2	66	0.69	1.57	2.5	1.8	150
90L-4	0.75	1420	6.87	5.5	68	0.73	1.78	2.5	1.8	200
100LA-4	1.1	1430	9.52	6.4	71	0.74	2.64	2.5	1.8	400
100LB-4	1.5	1430	12.5	6.4	73	0.75	3.78	2.5	1.8	400
112M-4	2.2	1440	17.8	6.8	74	0.76	3.78	2.2	1.8	2X300

Capacitor Run Series 2-Pole - 3000RPM: 50Hz

Frame Size	Power (kW)	Rated Speed (rpm)	Current Full Load 400V I_{FL}-400V	Current Starting / Current Full Load $\frac{I_{ST}}{I_{FL}}$	Efficiency %	Power Factor	Rated Torque (Nm)	Locked Rotor Torque / Torque Full Load $\frac{T_l}{T_N}$	Torque Breakdown / Torque Full Load $\frac{T_t}{T_N}$	Starting Capacitor 250V µF
56 1-2	0.09	2730	0.79	3.2	56	0.92	1.0	0.5	1.7	6
56 2-2	0.12	2730	0.99	3.5	60	0.92	1.33	0.5	1.7	6
63 1-2	0.18	2740	1.37	3.7	65	0.92	2.0	0.4	1.7	6
63 2-2	0.25	2740	1.87	3.7	66	0.92	2.78	0.4	1.7	8
71 1-2	0.37	2750	2.73	3.7	67	0.92	3.99	0.35	1.7	12
71 2-2	0.55	2760	3.88	3.9	70	0.92	5.94	0.35	1.7	16
80 1-2	0.75	2780	5.15	3.9	72	0.92	7.83	0.33	1.7	30
80 2-2	1.1	2790	7.02	4.3	75	0.95	11.48	0.33	1.7	35
90S-2	1.5	2800	9.44	4.8	76	0.95	15.57	0.30	1.7	40
90L-2	2.2	2800	13.7	4.8	77	0.95	22.47	0.30	1.7	40

Capacitor Run Series 4-Pole - 1400RPM: 50Hz

Frame Size	Power (kW)	Rated Speed (rpm)	Current Full Load 400V I_{FL}-400V	Current Starting / Current Full Load $\frac{I_{ST}}{I_{FL}}$	Efficiency %	Power Factor	Rated Torque (Nm)	Locked Rotor Torque / Torque Full Load $\frac{T_l}{T_N}$	Torque Breakdown / Torque Full Load $\frac{T_t}{T_N}$	Starting Capacitor 250V µF
56 1-4	0.06	1330	0.61	3.3	50	0.90	0.43	0.45	1.7	6
56 2-4	0.09	1340	0.87	2.9	52	0.90	0.64	0.45	1.7	6
63 1-4	0.12	1350	1.06	3.2	57	0.90	0.85	0.40	1.7	6
63 2-4	0.18	1360	1.54	3.3	59	0.90	1.26	0.40	1.7	8
71 1-4	0.25	1370	2.02	3.4	61	0.92	1.74	0.35	1.7	12
71 2-4	0.37	1370	2.95	3.4	62	0.92	2.58	0.35	1.7	16
80 1-4	0.55	1380	4.25	3.5	64	0.92	3.81	0.35	1.7	25
80 2-4	0.75	1380	5.45	3.7	68	0.92	5.19	0.32	1.7	30
90S-4	1.1	1390	7.41	4	71	0.95	7.56	0.32	1.7	40
90L-4	1.5	1400	9.83	4.6	73	0.95	10.23	0.30	1.7	40

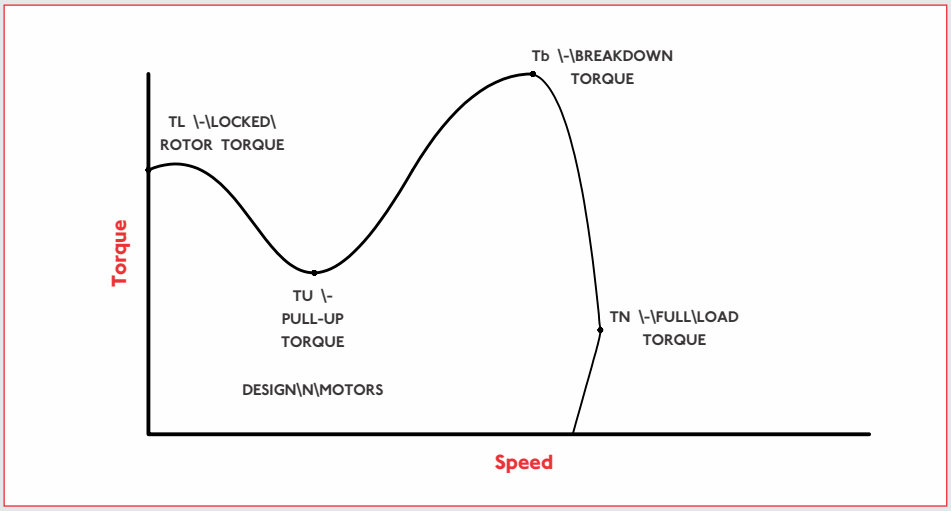
ALUMINIUM SINGLE PHASE PERFORMANCE DATA TO SANS 1804 PARTS 1 & 2

Dual Capacitor Series 2-Pole - 3000RPM: 50Hz

Frame Size	Power (kW)	Rated Speed (rpm)	Current Full Load 400V I_{FL}-400V	Current Starting / Current Full Load $\frac{I_{ST}}{I_{FL}}$	Efficiency %	Power Factor	Rated Torque (Nm)	Locked Rotor Torque / Torque Full Load $\frac{T_l}{T_N}$	Torque Breakdown / Torque Full Load $\frac{T_t}{T_N}$	Starting Capacitor 250V Starting 400V Running (µF)
80 1-2	0.75	2800	4.94	5.7	75	0.92	2.56	1.8	1.7	100/25
80 2-2	1.1	2800	6.75	5.6	78	0.95	3.75	1.8	1.7	150/25
90S-2	1.5	2800	9.2	6.0	78	0.95	5.12	1.7	1.7	300/40
90L-2	2.2	2800	12.8	6.2	82	0.95	7.50	1.7	1.7	300/40
100L1-2	3	2820	17.3	6.4	83	0.95	10.16	1.7	1.7	400/55
112M-2	3.7	2820	21.1	6.5	83	0.96	12.53	1.7	1.7	400/50

Dual Capacitor Series 4-Pole - 1400RPM: 50hz

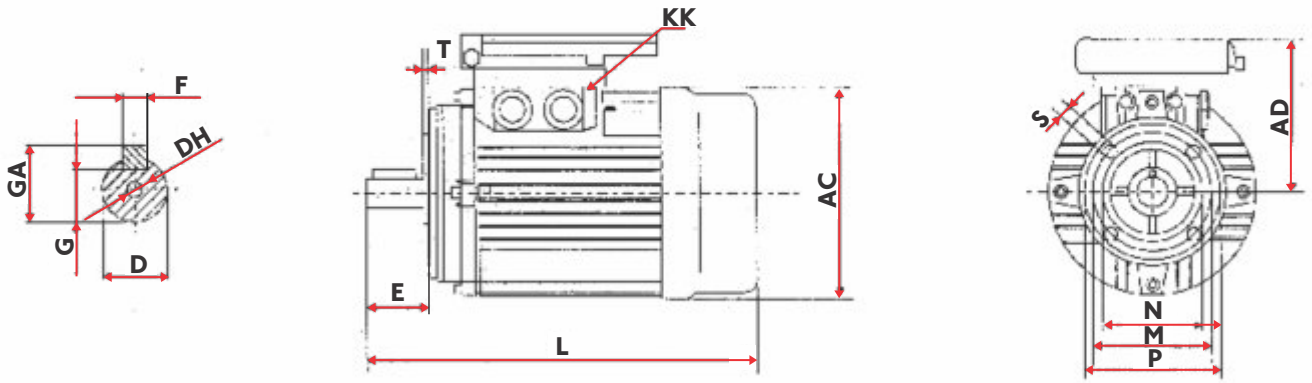
Frame Size	Power (kW)	Rated Speed (rpm)	Current Full load 400V I_{FL}-400V	Current Starting / Current Full Load $\frac{I_{ST}}{I_{FL}}$	Efficiency %	Power Factor	Rated Torque (Nm)	Locked Rotor Torque / Torque Full Load $\frac{T_l}{T_N}$	Torque Breakdown / Torque Full Load $\frac{T_t}{T_N}$	Starting Capacitor 250V Starting 400V Running (µF)
80 1-4	0.55	1400	3.88	5.4	70	0.92	3.75	1.8	1.7	100/25
80 2-4	0.75	1400	5.22	5.5	71	0.92	5.12	1.8	1.7	150/30
90S-4	1.1	1400	6.93	5.7	76	0.95	7.50	1.7	1.7	200/35
90L-4	1.5	1400	9.2	6.0	78	0.95	10.23	1.7	1.7	200/40
100LA1-4	2.2	1410	13.2	6.1	80	0.95	14.90	1.7	1.7	400/50
100LB-4	3	1420	17.3	6.4	83	0.95	20.18	1.7	1.7	400/50
112M-4	3.7	1430	21.1	6.5	83	0.96	24.71	1.7	1.7	400/50



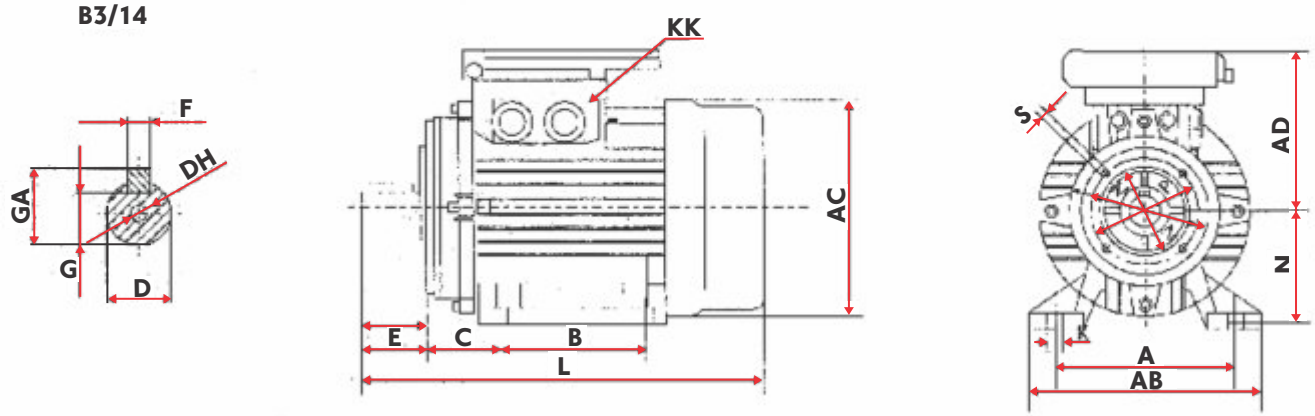
ALUMINIUM SINGLE PHASE 220V

Dimensions are according to IEC Specifications

B14



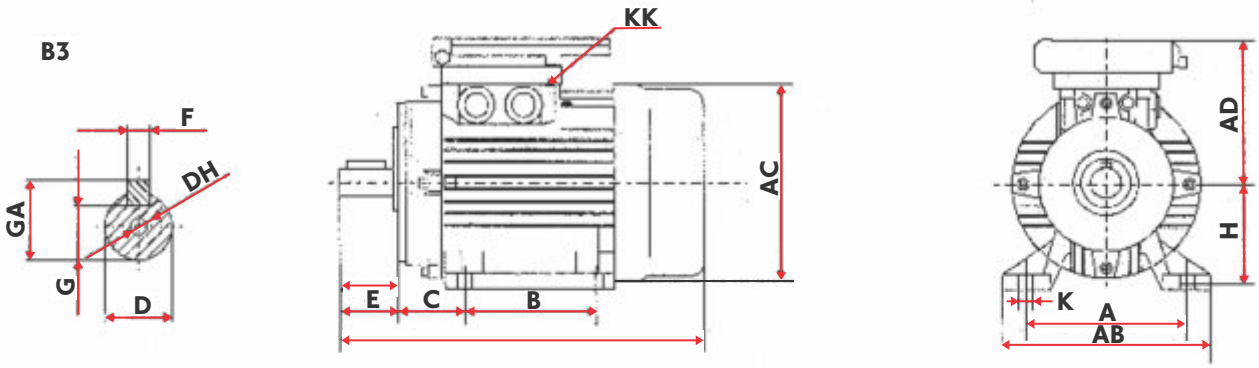
B3/14



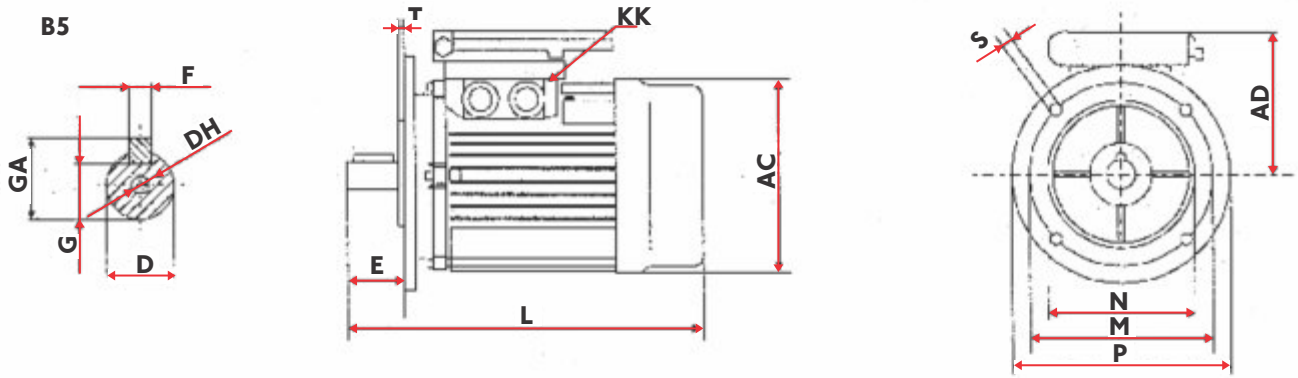
Frame Size	A	AB	AC	AD	B	C	D	DH	E	F	G	H	R	K	KK	L	M	N	P	S	T	Flange No.	GA
56	90	110	110	96	71	36	9	M4x12	20	3	7.2	56	0±1.0	7	2-M18x1.5	193	65	50	80	M5	3	FT65	10.2
63	100	122	122	99	80	40	11	M4x12	23	4	8.5	63	0±1.0	7	2-M18x1.5	218	75	60	90	M5	3	FT75	12.5
71	112	136	138	110	90	45	14	M5x12	30	5	11	71	0±1.0	7	2-M18x1.5	251	85	70	105	M6	3.5	FT85	16
80	125	154	157	152	100	50	19	M6x16	40	6	15.5	80	0±1.5	10	2-M20x1.5	286	100	80	120	M6	3.5	FT100	21.5
90S	140	174	175	158	100	56	24	M8x19	50	8	20	90	0±1.5	10	2-M20x1.5	335	115	95	140	M8	3.5	FT115	27
90L	140	174	175	158	125	56	24	M8x19	50	8	20	90	0±1.5	10	2-M20x1.5	350	115	95	140	M8	3.5	FT115	27
100L	160	194	196	177	140	63	28	M10x22	60	8	24	100	0±1.5	12	2-M20x1.5	377	130	110	160	M8	4	FT130	31
112M	190	224	220	184	140	70	28	M10x22	60	8	24	112	0±1.5	12	2-M20x1.5	395	130	110	160	M8	4	FT130	31

Dimensions are according to IEC Specifications

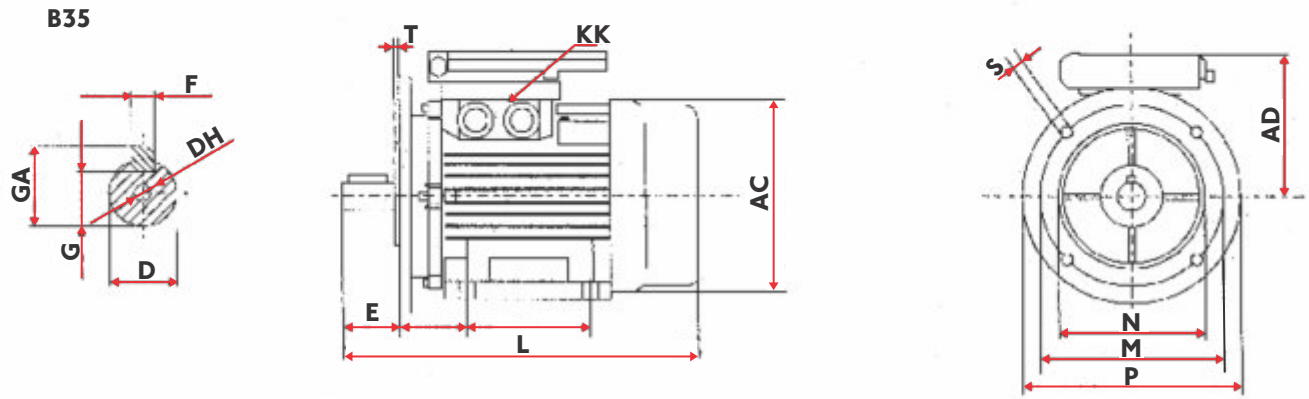
B3



B5

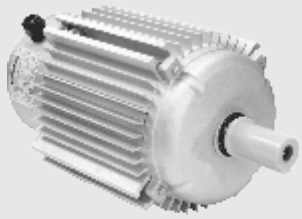


B35

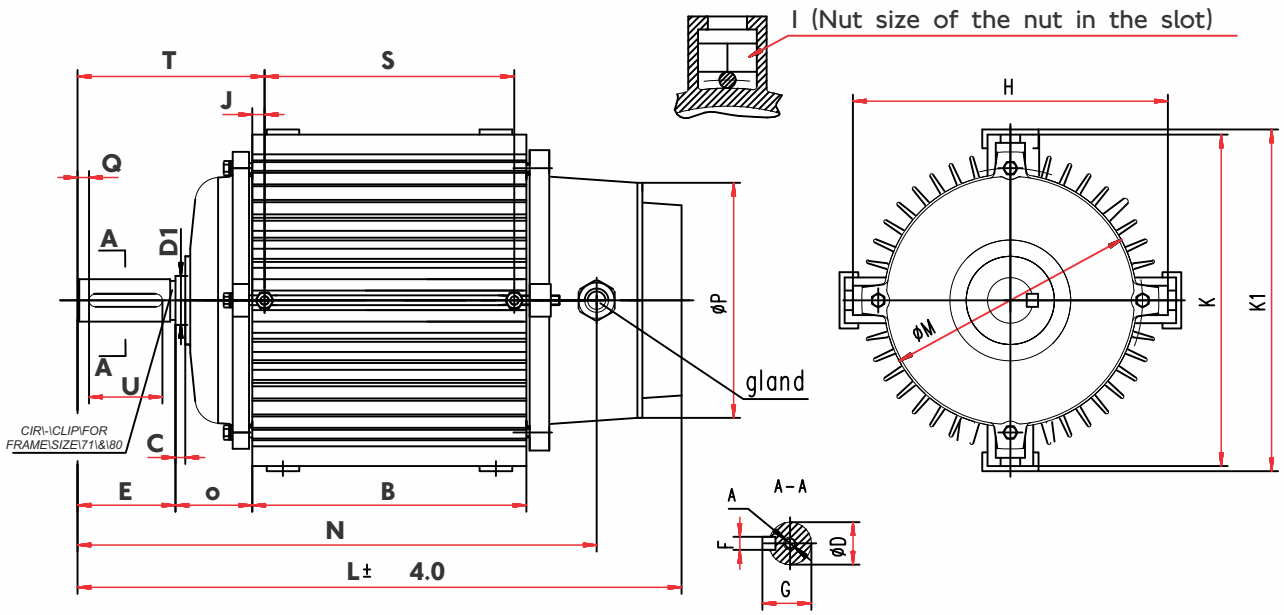


Frame Size	A	AB	AC	AD	B	C	D	DH	E	F	G	H	K	KK	L	M	N	P	S	T	Flange No.	GA
56	90	110	110	96	71	36	9	M4x12	20	3	7.2	56	7	2-M18x1.5	193	100	80	120	7	3	FF100	10.2
63	100	122	122	99	80	40	11	M4x12	23	4	8.5	63	7	2-M18x1.5	218	115	95	140	9	3	FF115	12.5
71	112	136	138	110	90	45	14	M5x12	30	5	11	71	7	2-M18x1.5	251	130	110	160	9	3.5	FF130	16
80	125	154	157	152	100	50	19	M6x16	40	6	15.5	80	10	2-M20x1.5	286	165	130	200	12	3.5	GG165	21.5
90S	140	174	175	158	100	56	24	M8x19	50	8	20	90	10	2-M20x1.5	335	165	130	200	12	3.5	FF165	27
90L	140	174	175	158	125	56	24	M8x19	50	8	20	90	10	2-M20x1.5	350	165	130	200	12	3.5	FF165	27
100L	160	194	196	177	140	63	28	M10x22	60	8	24	100	12	2-M20x1.5	377	215	180	250	15	4	GG215	31
112M	190	224	220	184	140	70	28	M10x22	60	8	24	112	12	2-M20x1.5	395	215	180	250	15	4	FF215	31

PAD MOUNTED MOTOR FMY/FMS



Dimensions are according to IEC Specifications



Type	Flange	B	C	ØD	ØD1	E	F	G	H	I	K	K1	L	ØM	N	O	ØP	J	Q	T	S Max	U	Gland Size
71	M5x10	110	1	Ø14 +0.008 +0.003	Ø14.5 0 -0.05	30±0.26	5	16	145	M10	153	159.3	254	117	226	33	110	11.5	5	74.5	87	20	M18x1.5
71	M5x10	127	1	Ø14 +0.008 +0.003	Ø14.5 0 -0.05	30±0.26	5	16	145	M10	153	159.3	271	117	243	33	110	11.5	5	74.5	104	20	M18x1.5
80	M6x12	122	1	Ø19 +0.009 +0.004	Ø19.5 0 -0.05	40±0.31	6	21.5	166	M12	175	181.3	286	129	242	37	120	12.5	3	89.5	97	32	M18x1.5
90	M6x12	150	4	Ø24 +0.009 +0.004	Ø29.5 0 -0.05	50±0.31	8	27	193	M12	203	209.3	341	155	288	45	144	12.5	5	107.5	125	40	M18x1.5
100M	M8x16	167	6	Ø28 +0.009 +0.004	Ø29.5 0 -0.05	60±0.37	8	31	193	M12	203	209.3	370	155	317	47	144	12.5	7.5	119.5	142	45	M18x1.5
100L	M8x16	190	6	Ø28 +0.009 +0.004	Ø29.5 0 -0.05	60±0.37	8	31	193	M12	203	209.3	393	155	340	47	144	12.5	7.5	119.5	165	45	M18x1.5
112	M8x16	179	4	Ø28 +0.009 +0.004	Ø29.5 0 -0.05	60±0.37	8	31	217	N12	227	233.3	393	185	345	56	144	12.5	7.5	128.5	154	45	M20x1.5

Pad Mounted Motor List - Three-phase

kW	Pole	Volt	Frame	Speed	Shaft Ø
0.37	2	230/400	71	3000	14
0.55	2	230/400	71	3000	14
0.75	2	230/400	80	3000	19
1.1	2	230/400	80	3000	19
1.5	2	230/400	90	3000	24
2.2	2	230/400	90	3000	24
3	2	230/400	100M	3000	28
4	2	400/690	112	3000	28

kW	Pole	Volt	Frame	Speed	Shaft Ø
0.25	4	230/400	71	1500	14
0.37	4	230/400	71	1500	14
0.55	4	230/400	80	1500	19
0.75	4	230/400	80	1500	19
1.1	4	230/400	90	1500	24
1.5	4	230/400	90	1500	24
2.2	4	230/400	100M	1500	28
3	4	230/400	100L	1500	28
4	4	400/690	112	1500	28

kW	Pole	Volt	Frame	Speed	Shaft Ø
0.18	6	230/400	71	1000	14
0.25	6	230/400	71	1000	14
0.37	6	230/400	80	1000	19
0.55	6	230/400	80	1000	19
0.75	6	230/400	90	1000	24
1.1	6	230/400	90	1000	24
1.5	6	230/400	100M	1000	28
2.2	6	400/690	112	1000	28

kW	Pole	Volt	C	Speed	Shaft Ø
0.25	8	230/400	80	750	19
0.37	8	230/400	90	750	24
0.55	8	230/400	90	750	24
0.75	8	230/400	100M	750	28
1.1	8	230/400	100L	750	28
1.5	8	400/690	112	750	28

Pad Mounted Motor List - Single-phase

kW	Pole	Volt	Frame	Speed	Cap µF	Shaft Ø
0.37	2	230	71	3000	12	14
0.55	2	230	71	3000	16	14
0.75	2	230	80	3000	25	19
1.1	2	230	80	3000	25	19
1.5	2	230	90	3000	40	24
2.2	2	230	90	3000	45	24

kW	Pole	Volt	Frame	Speed	Cap µF	Shaft Ø
0.18	4	230	71	1500	8	14
0.25	4	230	71	1500	12	14
0.37	4	230	80	1500	16	19
0.55	4	230	80	1500	20	19
0.75	4	230	90	1500	20	24
1.1	4	230	90	1500	25	24
1.5	4	230	90	1500	40	24
2.2	4	230	100L	1500	45	28

kW	Pole	Volt	Frame	Speed	Cap µF	Shaft Ø
0.18	6	230	71	1000	10	14
0.25	6	230	71	1000	12	14
0.37	6	230	80	1000	20	19
0.55	6	230	90	1000	25	24

Type	A	B	C	Df	E	F	G	H	I	K	L	Mf	N	O	P	J
71	M5x10	110	1	14	30	5	16	145	M10	153	254	117	226	33	110	11
80	M6x12	122	1	19	40	6	21.5	166	M12	175	286	129	242	37	120	13
90(100S)	M6x12	150	4	24	50	8	27	193	M12	203	341	155	288	45	144	13
100M	M8x16	167	6	26/28	60	8	29/31	193	M12	203	370	155	317	47	144	13
100L	M8x16	190	6	26/28	60	8	29/31	193	M12	203	393	155	340	47	144	13
112	M8x16	179	4	28	60	8	31	217	M12	227	393	185	343	56	144	13

NOTE: The 100 L comes in 3 kW - 4 P (3 Phase) & 2.2 kW - 4 P (1 Phase) Specifications

Electrical Formulae

1) $\text{Active kW} = \text{kVA} \times \text{PF}$ or $\dfrac{\text{line amps} \times \text{line volts} \times 1{,}732}{1000} \times \text{PF}$

2) $\text{Rated kW} = \text{kVA} \times \text{PF} \times \text{eff}$ or $\dfrac{\text{line amps} \times \text{line volts} \times 1{,}732 \times \text{PF} \times \text{eff}}{1000}$ or $\text{HP} \times 0{,}746$

3) $\text{Rated Hp} = \dfrac{\text{active kW} \times \text{eff}}{0.746}$ or $\dfrac{\text{line amps} \times \text{line volts} \times 1{,}732 \times \text{pf} \times \text{eff}}{746}$

4) $\text{Apparent kVA} = \dfrac{\text{rated kW}}{\text{eff} \times \text{PF}}$ or $\dfrac{\text{HP} \times 0{,}746}{\text{eff} \times \text{PF}}$ or $\dfrac{\text{line amps} \times \text{line volts} \times 1{,}732}{1000}$

5) $\text{Line amps} = \dfrac{\text{rated kW} \times 1000}{\text{line volts} \times 1{,}732 \times \text{PF} \times \text{eff}}$ or $\dfrac{\text{rated HP} \times 746}{\text{line volts} \times 1{,}732 \times \text{PF} \times \text{eff}}$

6) $\text{Rated Torque (Nm)} = \dfrac{9{,}55 \times \text{rated kW} \times 1000}{\text{rated speed of motor (r/min)}}$

7) $\text{Rated kW} = \dfrac{\text{rated torque (Nm)} \times \text{rated speed of motor (r/min)}}{9.55 \times 1000}$

8) $\text{Rated Slip \%} = \dfrac{\text{synchronous speed minus rated speed}}{\text{synchronous speed}} \times 100$

9) $\text{Starting Time (s)} = \dfrac{\text{total inertia kg m2 (WR2)} \times \text{working speed (r/min)}}{9{,}55 \times \text{mean acceleration torque (Nm)}}$

10) $\text{Synch. Speed (r/min)} = \dfrac{\text{frequency (Hz)} \times 60}{\text{number of pairs of poles}}$

PF : Power Factor
Eff : Efficiency
Rated kW : Mechanical Power Delivered by Motor Shaft
Active kW : Input Power

NOTES

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In the bid to procure cutting-edge components at competitive prices, BMG is able to capitalise on long-standing relationships with leading manufacturers dedicated to excellence in design and production.

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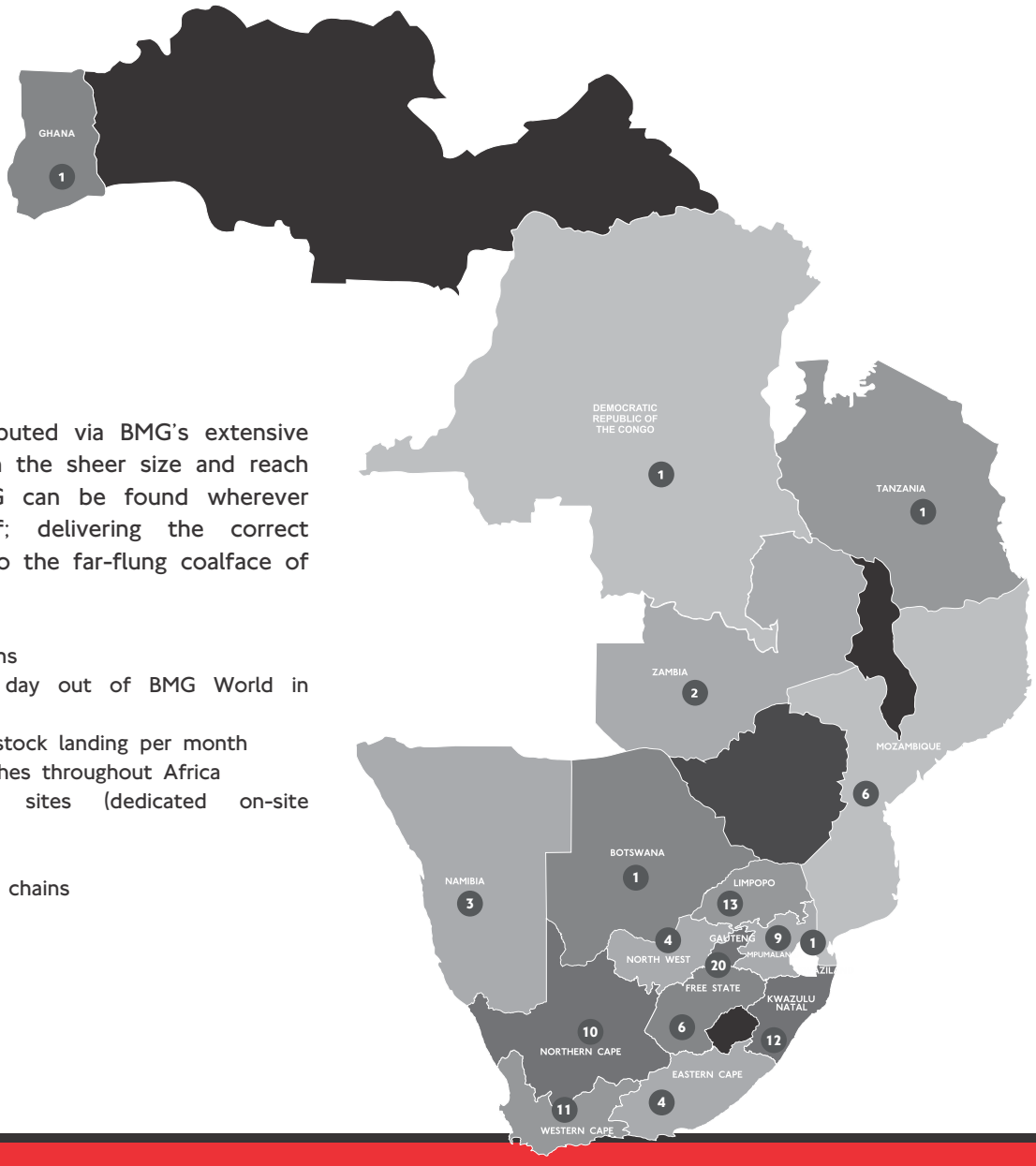

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