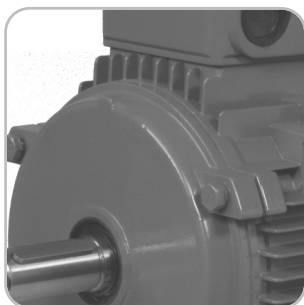


Series 10



IE1 & IE2 Efficiency Ranges



Introduction

2



Brook Crompton

Brook Crompton is a leading manufacturer of electric motors for the global industrial market.

Brook Crompton motors are used in almost every industrial activity including water treatment, building services, chemical/petrochemicals, general processing and manufacturing. They drive fans, pumps, compressors and conveyors.

Brook Crompton incorporates many well known names including Brook Motors, Crompton Parkinson, Electrodrives, Newman, Bull Electric and Hawker Siddeley Electric Motors.

There are extensive stocks of motors around the world, backed-up by a network of distributors, ensuring excellent local support wherever needed.

Quality assurance

Stringent quality procedures are observed from first design to finished product in accordance with the ISO9001 documented quality systems.

All factories have been assessed to meet these requirements.

Series 10

The Brook Crompton Series 10 range is a high quality standard range of electric motors with a specification suitable for most industrial applications. It covers outputs from 0.06kW up to 900kW in frame sizes 56 to 450.

Benefits include:

- Full output range to meet your requirements
- Efficiencies are within the IE1 & IE2 bands (where applicable).
- Robust construction for long life
- Mountings: foot, flange, face or combination
- Multi-mount - aluminium range
- Integrated feet cast iron 180 frame & above.
- Euro voltage: up to 3kW 230/400V; 4kW and above 400/690V
- Dual frequency (50 / 60Hz)
- IP55
- Metal fan cover
- Metric entries
- Thermistors fitted as standard
- Inverter duty

MEPS

The new standard

The EU MEPS scheme sets new **mandatory** minimum efficiency levels for most single speed 3ph induction motors up to 375kW rated up to 1000V, unlike the narrow definition of the CEMEP voluntary scheme which only covered a small number of standard motors. Aiming to reduce energy consumption throughout Europe and the rest of the world, it comes into effect in 3 stages. The effect of this is to maximise potential savings in electric motor driven systems.

New Efficiency levels in Europe (Time Line)

Current situation: Voluntary Agreement 2- and 4-pole, 1.1 to 90 kW Efficiencies: EFF3, EFF2, EFF1 (voluntary)

Mandatory from:

From 16 June 2011:

Minimum efficiency requirement at IE 2 for all motors covered 0.75 - 375kW

From 1 January 2015: Minimum efficiency requirement requirement at IE 3 level for ≥ 7.5 - 375kW motors alone, together with a requirement at IE 2 level for ≥ 7.5 - 375kW motors to be equipped with an appropriate VSD drive;

From 1 January 2017:

Minimum efficiency requirement at IE 4 level for ≥ 7.5 - 375kW motors alone, together with a requirement at IE3 level for ≥ 7.5 - 375kW to be equipped with an appropriate drive.

The Voluntary Agreement, since 1998, of CEMEP for motor manufactures is running out (classes EFF3 /EFF2/EFF1).

The new standard for motors will be a **mandatory** regulation in Europe.

The scope of EU MEPS covers 2, 4 & 6 pole single speed 3ph induction motors from 0.75 to 375kW, rated up to 1000V based on continuous duty operation.

Base of the regulation is a new international IEC 60034-30 standard. It defines the following efficiency classes :

IE1 - Standard Efficiency (comparable to EFF2)

IE2 - High Efficiency (comparable to EFF1 and USA EPACT 60 Hz)

IE3 - Premium Efficiency (comparable to USA "NEMA Premium" 60 Hz)

Standards and enviroment

3

Standards

Standards	
Series 10 motors are manufactured to the international standards listed below:	
Performance	IEC 60034-1
Dimensions	IEC 60072-1
Mounting	IEC 60034-7
Enclosure protection	IEC 60034-5
Vibration	IEC 60034-14 (grade A)
Noise	IEC60034-9

Specification

Specification		
	Standard product	Option
Frame material	56 - 160 aluminium	-
	180 - 450 cast iron	-
Fan cover	steel	-
Enclosure	IP55	-
Voltage	3 kW and below: 230 / 400	-
	4 kW and above: 400 / 690	-
Frequency	50 Hz	60 Hz
Lubrication	56 - 160 double-shielded bearings	-
	180 - 450 through greasing	-
Insulation	class F	-
Temperature rise	class B	-
Paint colour	water blue (RAL 5021)	-
Thermistor protection	56 - 450	-
Inverter Duty (with derate)	Variable Torque: 10:1	-
	Constant Torque: 2:1	-
Ambient temperature	- 30°C to + 40°C	-

Environment Enclosure

All motors have degrees of IP protection as defined in IEC EN 60034-5.

Motor cooling

Motors are cooled in accordance with IEC 60034-6. The normal arrangement is IC411 (Totally Enclosed Fan Ventilated) via a fan mounted at the non-drive end. Alternative methods of cooling available on request.

European directives

The following European directives apply:

Directives

Compliance with European directives applying to AC induction motors			
Directives	Low voltage (LV)	Machinery (MD)	Electromagnetic compatibility (EMC)
Reference numbers	73/23/EEC	2006/42/EC	89/336/EEC
	93/68/EEC	98/79/EC	92/31/EEC
	2006/95/EC	98/37/EC	93/68/EEC
		93/44/EEC	2004/108/EC
		89/392/EEC	
Motor CE marked	Yes	No	No
Standards	EN 60034	Not applicable	EN 60034-1
Documentation for customers' technical file	Declaration of conformity	Certificate of incorporation	Statement ⁽¹⁾
Safety instructions with every motor	Yes	Yes	Yes
Comment	Relevant electrical equipment operating between 50 to 1000 volts AC	Statement ⁽²⁾	Component

⁽¹⁾ Motors operating from a correctly applied, sinusoidal (AC) supply meet the requirements of the EMC directive and are within the limits specified in standard EN 60034-1

⁽²⁾ When installed in accordance with our customer safety and installation and maintenance instructions, they can be put into service only when the machinery into which they are being incorporated, has been declared to be in conformity with the machinery directive in accordance with Article 4(2) and Annex IIB of that Directive (98/37/EEC)

Performance data

IE1

4

3000 min⁻¹ (2 pole)

Rated power	Full load speed in revolutions per minute	Frame reference and size	Full load current at rated voltage	Efficiency	Power factor	Full load torque	Direct on line starting torque ratio	Direct on line pull up torque	Direct on line pull out torque	Direct on line starting current ratio	Rotor inertia Wk ²	Mean Sound pressure level (d Bm on no load)	Weight															
														P _N		I _N			η 1.0 P _N	Cos Ø 1.0 P _N	M _N Nm	$\frac{M_A}{M_N}$	$\frac{M_S}{M_N}$	$\frac{M_K}{M_N}$	$\frac{I_A}{I_N}$	J kgm ²	L _{pA} dB(A)	kg
														kW	hp	n min ⁻¹	Type	380 V A										
0.09	0.15	2750	B-DA56MA	0.32	0.30	0.29	62.0	0.70	0.31	2.1	-	2.2	5.2	0.00018	-	3.6												
0.12	0.20	2750	B-DA56MB	0.38	0.36	0.32	67.0	0.72	0.41	2.1	-	2.2	5.2	0.00023	-	3.9												
0.18	0.25	2720	B-DA63MA	0.53	0.50	0.48	65.0	0.80	0.61	2.2	-	2.3	5.5	0.00031	-	4.8												
0.25	0.33	2720	B-DA63MB	0.69	0.66	0.63	68.0	0.81	0.96	2.2	-	2.3	5.5	0.0006	-	5.1												
0.37	0.5	2740	B-DA71MA	0.99	0.94	0.91	70.0	0.81	1.26	2.2	-	2.3	6.1	0.00075	-	6.0												
0.55	0.75	2740	B-DA71MB	1.4	1.33	1.28	73.0	0.82	1.88	2.2	-	2.3	6.1	0.0009	-	6.5												
0.75	1.0	2840	B-DA80MA	1.9	1.8	1.74	72.1	0.83	2.52	2.3	-	2.4	6.1	0.0012	56	8.7												
1.1	1.5	2840	B-DA80MB	2.65	2.51	2.42	75.0	0.84	3.7	2.4	-	2.4	6.3	0.0014	56	9.5												
1.5	2.0	2840	B-DA90SA	3.51	3.33	3.21	77.2	0.84	5.0	2.3	-	2.3	6.5	0.0029	61	11.8												
2.2	3.0	2840	B-DA90LA	4.93	4.68	4.51	79.7	0.85	7.4	2.4	-	2.5	6.8	0.0055	62	13.5												
3.0	4.0	2860	B-DA100LA	6.41	6.09	5.87	81.5	0.87	10.0	2.4	-	2.4	6.9	0.0109	64	21.0												
4.0	5.5	2880	B-DA112MA	8.29	7.88	7.59	83.1	0.88	13.3	2.3	-	2.4	7.0	0.0126	65	28.0												
5.5	7.5	2900	B-DA132SA	11.2	10.6	10.3	84.7	0.88	18.1	2.2	-	2.3	7.2	0.0377	68	39.0												
7.5	10	2900	B-DA132SB	15.0	14.3	13.8	86.0	0.88	24.7	2.3	-	2.4	6.9	0.0499	68	44.5												
11.0	15	2930	B-DA160MA	21.4	20.3	19.6	87.6	0.89	35.9	2.2	-	2.3	6.8	0.055	73	69.5												
15.0	20	2930	B-DA160MB	28.8	27.4	26.4	88.7	0.89	48.9	2.3	-	2.3	7.0	0.075	73	78.0												
18.5	25	2930	B-DA160LA	34.9	33.2	32.0	89.3	0.90	60.3	2.4	-	2.5	7.0	0.124	73	88.5												
22.0	30	2940	B-DF180MA	41.2	39.2	37.7	89.9	0.90	71.5	2.3	-	2.3	6.9	0.075	75	165												
30.0	40	2950	B-DF200LA	55.8	53.0	51.1	90.7	0.90	97.1	2.2	-	2.3	7.1	0.124	78	218												
37.0	50	2950	B-DF200LB	68.4	65.0	62.6	91.2	0.90	119.8	2.3	-	2.4	7.1	0.139	78	230												
45.0	60	2960	BU-DF225M	82.7	78.5	75.7	91.7	0.90	145.2	2.3	-	2.5	6.8	0.233	78	280												
55.0	75	2965	BU-DF250M	101	95.7	92.2	92.1	0.90	177.2	2.1	-	2.2	6.8	0.312	79	365												
75.0	100	2970	BU-DF280S	137	130	125	92.7	0.90	241.2	2.3	-	2.3	7.1	0.579	80	495												
90.0	125	2970	BU-DF280MA	161	153	147	93.0	0.91	289.4	2.2	-	2.4	7.1	0.675	80	565												
110.0	150	2975	BU-DF315SA	197	187	180	93.3	0.91	353.1	2.2	-	2.3	7.1	1.18	82	890												
132.0	175	2975	BU-DF315MA	235	224	216	93.5	0.91	423.7	2.3	-	2.4	6.9	1.82	82	980												
160.0	215	2975	BU-DF315LA	281	267	258	93.8	0.92	513.6	2.2	-	2.3	7.0	2.08	85	1055												
200.0	270	2975	BU-DF315LB	351	333	321	94.0	0.92	642	2.2	-	2.3	7.0	2.38	86	1110												
250.0	335	2980	BU-DF355M	438	416	401	94.0	0.92	801.2	2.2	-	2.3	7.0	3.0	88	1900												
315.0	430	2980	BU-DF355L	552	524	505	94.0	0.92	1009	2.2	-	2.3	7.0	3.5	89	2300												
355.0	475	2975	BU-DF355LB	618	585	566	95.9	0.91	1281	1.23	-	2.53	5.80	12.52	-	2604												
400.0	535	2975	BU-DF355LC	696	660	637	95.9	0.91	1440	1.64	-	2.03	7.11	13.26	-	3035												
450.0	600	2975	BU-DF355LD	783	741	717	96.0	0.91	1681	1.47	-	2.72	6.42	14.21	-	3122												
500.0	670	2982	BU-DF400LA	853	814	781	96.3	0.92	1790	1.20	-	2.90	6.14	20.07	-	3340												
560.0	750	2982	BU-DF400LB	952	908	871	96.3	0.92	2016	0.98	-	2.57	5.46	20.07	-	3340												
630.0	840	2892	BU-DF400LC	1072	1019	981	96.3	0.93	2270	1.38	-	3.42	7.29	27.1	-	4020												
710.0	950	2988	BU-DF450LA	1195	1138	1092	96.6	0.94	2269	1.20	-	2.00	7.00	27.6	-	4200												
800.0	1080	2986	BU-DF450LB	1340	1276	1227	96.7	0.94	2666	1.20	-	2.00	7.00	28.1	-	4400												
900.0	1200	2985	BU-DF450LC	1507	1435	1380	96.7	0.94	2879	1.20	-	2.00	7.00	28.1	-	4650												
IE1 efficiency 0.75 to 375kW																												

Performance data

IE1

1500 min⁻¹ (4 pole)

Rated power		Full load speed in revolutions per minute		Frame reference and size		Full load current at rated voltage			Efficiency	Power factor	Full load torque	Direct on line starting torque ratio	Direct on line pull up torque	Direct on line pull out torque	Direct on line starting current ratio	Rotor inertia Wkg	Mean Sound pressure level @ 1m on no load	Weight
P _N		n min ⁻¹	Type	I _N			η 1.0 P _N	Cos Ø 1.0 P _N	M _N Nm	$\frac{M_A}{M_N}$	$\frac{M_S}{M_N}$	$\frac{M_K}{M_N}$	$\frac{I_A}{I_N}$	J kgm²	L _{pA} dB(A)	kg		
kW	hp			380 V A	400 V A	415 V A												
0.06	0.08	1325	B-DA56MA	0.28	0.27	0.26	56.0	0.58	0.43	2.0	-	2.1	4.0	0.0003	-	3.6		
0.09	0.12	1325	B-DA56MB	0.39	0.37	0.35	58.0	0.61	0.64	2.0	-	2.1	4.0	0.0004	-	3.9		
0.12	0.16	1310	B-DA63MA	0.44	0.42	0.41	57.0	0.72	0.84	2.1	-	2.2	4.4	0.0005	-	4.8		
0.18	0.25	1310	B-DA63MB	0.62	0.59	0.57	60.0	0.73	1.26	2.1	-	2.2	4.4	0.0006	-	5.1		
0.25	0.33	1330	B-DA71MA	0.79	0.75	0.72	65.0	0.74	1.73	2.1	-	2.2	5.2	0.0008	-	6.0		
0.37	0.5	1330	B-DA71MB	1.12	1.06	1.02	67.0	0.75	2.56	2.1	-	2.2	5.2	0.0013	-	6.3		
0.55	0.75	1390	B-DA80MA	1.57	1.49	1.43	71.1	0.75	3.75	2.3	-	2.3	5.2	0.0018	-	9.4		
0.75	1.0	1390	B-DA80MB	2.08	1.97	1.90	72.1	0.76	5.15	2.3	-	2.3	6.1	0.0021	47	10.8		
1.1	1.5	1390	B-DA90SA	2.89	2.74	2.64	75.0	0.77	7.56	2.3	-	2.4	6.3	0.0023	49	12.0		
1.5	2.0	1390	B-DA90LA	3.73	3.55	3.42	77.2	0.79	10.3	2.4	-	2.4	6.1	0.0027	49	13.8		
2.2	3.0	1390	B-DA100LA	5.17	4.91	4.74	79.7	0.81	15.1	2.3	-	2.4	6.5	0.0054	52	20.8		
3.0	4.0	1410	B-DA100LB	6.81	6.47	6.24	81.5	0.82	20.3	2.5	-	2.5	6.5	0.0067	52	23.5		
4.0	5.5	1410	B-DA112MA	8.91	8.46	8.16	83.1	0.82	27.1	2.4	-	2.4	7.0	0.0095	53	29.5		
5.5	7.5	1435	B-DA132SA	11.9	11.3	10.9	84.7	0.83	36.6	2.3	-	2.4	7.0	0.0214	59	41.0		
7.5	10	1440	B-DA132MA	15.7	15.0	14.4	86.0	0.84	49.7	2.3	-	2.3	7.0	0.0296	59	47.5		
11.0	15	1440	B-DA160MA	22.7	21.6	20.8	87.6	0.84	72.9	2.2	-	2.3	6.5	0.0747	62	72.5		
15.0	20	1460	B-DA160LA	30.2	28.7	27.8	88.7	0.85	98.1	2.2	-	2.2	7.2	0.0918	63	85.6		
18.5	25	1460	B-DF180MA	36.4	34.5	33.3	89.3	0.86	121	2.2	-	2.3	7.5	0.139	64	164		
22.0	30	1470	B-DF180LA	43.1	41.0	39.5	89.9	0.86	143	2.2	-	2.3	7.2	0.158	64	182		
30.0	40	1470	B-DF200L	58.4	55.5	53.4	90.7	0.86	195	2.3	-	2.4	7.1	0.262	66	245		
37.0	50	1470	B-DF255S	70.8	67.2	64.8	91.2	0.87	240	2.2	-	2.2	7.1	0.406	68	258		
45.0	60	1475	BU-DF225M	85.7	81.4	78.5	91.7	0.87	291	2.3	-	2.3	6.9	0.469	68	290		
55.0	75	1475	BU-DF250MA	104	98.9	95.3	92.1	0.87	356	2.1	-	2.2	6.8	0.66	70	388		
75.0	100	1480	BU-DF280S	141	134	129	92.7	0.87	484	2.2	-	2.2	7.5	1.12	72	510		
90.0	125	1480	BU-DF280MA	169	160	154	93.0	0.87	581	2.1	-	2.2	7.2	1.46	73	606		
110.0	150	1480	BU-DF315S	203	193	186	93.3	0.88	710	2.2	-	2.2	6.9	3.11	80	910		
132.0	175	1480	BU-DF315M	243	231	223	93.5	0.88	852	2.1	-	2.2	6.9	3.62	80	1000		
160.0	215	1480	BU-DF315LA	291	276	266	93.8	0.89	1032	2.1	-	2.2	6.7	4.13	84	1055		
200.0	270	1480	BU-DF315LB	363	345	332	94.0	0.89	1291	2.1	-	2.2	6.9	4.73	84	1128		
250.0	335	1490	BU-DF355M	449	426	411	94.0	0.90	1602	2.2	-	2.2	6.9	6.5	88	1700		
315.0	430	1490	BU-DF355L	565	537	517	94.0	0.90	2019	2.1	-	2.2	6.9	8.2	88	1900		
355.0	475	1485	BU-DF355LB	636	604	582	96.4	0.88	2283	1.93	-	2.6	6.50	9.5	-	2150		
400.0	535	1485	BU-DF355LC	716	680	655	96.4	0.88	2572	1.80	-	2.6	6.50	10.6	-	2300		
450.0	600	1485	BU-DF355LD	797	757	729	96.4	0.89	2894	1.80	-	2.6	6.50	11.5	-	2460		
500.0	670	1492	BU-DF400LA	869	831	795	96.4	0.90	3203	1.83	-	2.52	6.19	18.41	-	3132		
560.0	750	1492	BU-DF400LB	971	924	889	96.4	0.90	3587	2.02	-	2.67	6.64	19.62	-	3548		
630.0	840	1492	BU-DF400LC	1092	1043	1000	96.4	0.91	4035	1.75	-	2.34	5.81	21.33	-	3589		
710.0	950	1492	BU-DF450LA	1222	1164	1119	96.4	0.91	4530	1.30	-	2.57	6.17	41.00	-	4055		
800.0	1070	1492	BU-DF450LB	1373	1308	1257	96.6	0.93	5100	1.53	-	2.28	6.91	49.50	-	4724		
900.0	1200	1492	BU-DF450LC	1571	1496	1438	96.6	0.92	5740	1.75	-	2.34	5.81	49.50	-	4732		

IE1 efficiency 0.75 to 375kW

IE1 efficiency 0.75 to 375kW

Performance data

IE1

6

1000 min⁻¹ (6 pole)

Rated power	Full load speed in revolutions per minute	Frame reference and size		Full load current at rated voltage	Efficiency	Power factor	Full load torque	Direct on line starting torque ratio	Direct on line pull up torque	Direct on line pull out torque	Direct on line starting current ratio	Rotor inertia Wk²	Mean Sound pressure level @ 1m on no load	Weight															
															P _N		I _N			η 1.0 P _N	Cos Ø 1.0 P _N	M _N Nm	M _A M _N	M _S M _N	M _K M _N	I _A I _N	J kgm²	Lp _A dB(A)	kg
															kW	hp	n min ⁻¹	Type	380 V A										
0.09	0.15	840	B-DA63MA	0.52	0.49	0.47	44.0	0.60	1.02	1.8	-	1.9	3.5	0.00025	-	4.8													
0.12	0.20	850	B-DA63MB	0.63	0.60	0.58	48.0	0.60	1.35	1.8	-	1.9	3.5	0.0004	-	5.1													
0.18	0.25	850	B-DA71MA	0.74	0.70	0.68	56.0	0.66	2.02	1.9	-	2.0	4.0	0.0011	-	6.0													
0.25	0.33	850	B-DA71MB	0.95	0.90	0.87	59.0	0.68	2.80	1.9	-	2.0	4.0	0.0014	-	6.3													
0.37	0.5	885	B-DA80MA	1.30	1.23	1.19	62.0	0.70	3.99	1.9	-	2.0	4.7	0.0016	-	8.9													
0.55	0.75	885	B-DA80MB	1.78	1.69	1.63	65.0	0.72	5.94	1.9	-	2.1	4.7	0.0019	-	10.4													
0.75	1.0	910	B-DA90SA	2.26	2.15	2.07	70.0	0.7	7.8	2.1	-	2.1	5.5	0.0029	45	12.1													
1.1	1.5	910	B-DA90LA	3.14	2.98	2.87	72.9	0.73	11.5	2.0	-	2.1	5.5	0.0035	45	13.7													
1.5	2.0	920	B-DA100LA	4.04	3.83	3.70	75.2	0.75	15.6	2.0	-	2.0	6.0	0.0069	49	23.0													
2.2	3.0	935	B-DA112MA	5.65	5.36	5.17	77.7	0.76	22.5	2.2	-	2.2	6.0	0.014	53	28.2													
3.0	4.0	960	B-DA132SA	7.52	7.14	6.88	79.7	0.76	29.8	2.0	-	2.1	6.5	0.0286	57	40.3													
4.0	5.5	960	B-DA132MA	9.80	9.31	8.97	81.4	0.76	39.8	2.0	-	2.1	6.5	0.0357	57	43.0													
5.5	7.5	960	B-DA132MB	13.1	12.4	12.0	83.1	0.77	54.7	2.2	-	2.2	6.5	0.0449	57	47.2													
7.5	10	970	B-DA160MA	17.4	16.6	16.0	84.7	0.77	73.8	2.0	-	2.1	6.7	0.081	61	70.6													
11.0	15	970	B-DA160LA	22.2	21.1	20.3	86.4	0.78	108.3	2.2	-	2.3	6.7	0.116	61	85.0													
15.0	20	970	B-DF180LA	32.0	30.4	29.3	87.7	0.81	147.7	2.1	-	2.2	6.7	0.207	61	178													
18.5	25	980	B-DF200LA	39.1	37.2	35.8	88.6	0.81	180.3	2.2	-	2.2	6.7	0.315	64	200													
22.0	30	980	B-DF200LB	45.1	42.8	41.3	89.2	0.83	214.4	2.1	-	2.2	6.7	0.36	64	228													
30.0	40	980	BU-DF225M	60.1	57.1	55.0	90.2	0.84	292.3	2.1	-	2.1	7.0	0.547	64	265													
37.0	50	980	BU-DF250M	71.9	68.3	65.8	90.8	0.86	360.6	2.1	-	2.2	7.0	0.843	66	370													
45.0	60	980	BU-DF280S	86.8	82.5	79.5	91.4	0.86	438.5	2.0	-	2.1	7.0	1.39	68	490													
55.0	75	980	BU-DF280MA	106	100	96.7	91.9	0.86	536	2.1	-	2.2	7.0	1.65	68	540													
75.0	100	985	BU-DF315SA	143	136	131	92.6	0.86	727	2.1	-	2.2	7.0	4.11	73	900													
90.0	125	985	BU-DF315MA	171	162	156	92.9	0.86	873	2.0	-	2.1	6.7	4.78	73	980													
110.0	150	985	BU-DF315LA	208	197	190	93.3	0.86	1066	2.0	-	2.1	6.7	5.45	73	1045													
132.0	175	985	BU-DF315LB	246	234	226	93.5	0.87	1280	2.0	-	2.1	6.7	6.12	73	1100													
160.0	215	985	BU-DF355MA	295	280	270	93.8	0.88	1551	1.9	-	2.0	6.7	9.5	80	1550													
200.0	270	985	BU-DF355MB	367	349	336	94.0	0.88	1939	1.9	-	2.0	6.7	10.4	80	1600													
250.0	335	985	BU-DF355L	459	436	420	94.0	0.88	2424	1.9	-	2.0	6.7	12.4	80	1700													
315.0	420	990	BU-DA355LA	590	557	540	95.5	0.85	3039	2.10	-	2.40	6.50	13.5	-	2310													
355.0	480	990	BU-DF355LB	663	628	607	95.7	0.85	3425	2.10	-	2.40	6.50	14.3	-	2490													
400.0	544	990	BU-DF400LA	730	701	668	95.9	0.86	3843	2.08	-	2.48	6.38	21.86	-	3560													
450.0	612	994	BU-DF400LB	819	783	750	95.9	0.86	4323	2.07	-	2.43	6.31	22.31	-	3840													
500.0	680	994	BU-DF400LC	908	871	831	96.1	0.86	4804	1.86	-	2.19	5.72	23.52	-	3870													
560.0	760	994	BU-DF450MB	918	874	840	96.0	0.86	4785	1.64	-	2.32	5.99	54.10	-	4200													
630.0	850	994	BU-DF450LA	1152	1097	1055	96.1	0.86	6025	1.65	-	2.30	5.99	60.60	-	4620													
710.0	960	994	BU-DF450LB	1297	1235	1187	95.9	0.86	6790	1.71	-	2.33	6.13	67.90	-	5080													
800.0	1080	994	BU-DF450LC	1450	1381	1327	96.5	0.87	7680	1.52	-	2.06	5.47	67.90	-	5080													
IE1 efficiency 0.75 to 375kW																													

IE1 efficiency 0.75 to 375kW

Performance data

750 min⁻¹ (8 pole)

Rated power		Full load speed in revolutions per minute		Frame reference and size		Full load current at rated voltage			Efficiency	Power factor	Full load torque	Direct on line starting torque ratio	Direct on line pull up torque	Direct on line pull out torque	Direct on line starting current ratio	Rotor inertia Wkg	Mean Sound pressure level @ 1m on no load	Weight
P _N		n min ⁻¹	Type	I _N			η 1.0 P _N	Cos ϕ 1.0 P _N	M _N Nm	$\frac{M_A}{M_N}$	$\frac{M_S}{M_N}$	$\frac{M_K}{M_N}$	$\frac{I_A}{I_N}$	J kgm²	L _{pA} dB(A)	kg		
kW	hp			380 V A	400 V A	415 V A												
0.09	0.15	600	B-DA71MA	0.60	0.57	0.55	40.0	0.57	1.3	1.8	-	1.9	2.8	0.0008	48	6.0		
0.12	0.20	600	B-DA71MB	0.71	0.70	0.65	45.0	0.57	2.16	1.8	-	1.9	2.8	0.0010	48	6.3		
0.18	0.25	645	B-DA80MA	0.88	0.84	0.80	51.0	0.61	2.5	1.8	-	1.9	3.3	0.0025	48	8.9		
0.25	0.33	645	B-DA80MB	1.15	1.10	1.06	54.0	0.61	3.5	1.8	-	1.9	3.0	0.0030	48	10.4		
0.37	0.5	670	B-DA90S	1.49	1.41	1.4	62.0	0.61	5.1	1.8	-	1.9	4.0	0.0051	53	12.1		
0.55	0.75	670	B-DA90LA	2.17	2.07	1.99	63.0	0.61	7.6	1.8	-	2.0	4.0	0.0065	53	13.7		
0.75	1.0	680	B-DA100LA	2.40	2.28	2.2	71.0	0.67	10.2	1.8	-	2.0	4.0	0.0095	56	23.0		
1.1	1.5	680	B-DA100LB	3.32	3.15	3.04	73.0	0.69	15.0	1.8	-	2.0	5.0	0.0110	56	25.1		
1.5	2.0	690	B-DA112MA	4.40	4.18	4.0	75.0	0.69	20.5	1.8	-	2.0	5.0	0.0245	59	28.2		
2.2	3.0	705	B-DA132S	6.04	5.73	5.5	78.0	0.71	19.6	1.8	-	2.0	6.0	0.0314	61	40.3		
3.0	4.0	705	B-DA132M	7.9	7.51	7.2	79.0	0.73	40.4	1.8	-	2.0	6.0	0.0395	61	45.0		
4.0	5.5	720	B-DA160MA	10.3	9.76	9.4	81.0	0.73	53.1	1.9	-	2.0	6.0	0.0753	65	68.5		
5.5	7.5	720	B-DA160MB	13.6	12.9	12.5	83.0	0.74	72.6	2.0	-	2.0	6.0	0.0931	65	76.0		
7.5	10	720	B-DA160L	17.8	16.9	16.3	85.5	0.75	99.5	2.0	-	2.0	6.0	0.1260	65	86.2		
11.0	15	730	B-DF180L	25.1	23.9	23	87.5	0.76	143.9	2.0	-	2.0	6.0	0.203	70	160		
15.0	20	730	B-DF200L	34.1	32.4	31.2	88.0	0.76	196.2	2.0	-	2.0	6.6	0.399	73	228		
18.5	25	730	BU-DF225S	41.1	39	37.6	90.0	0.76	242.0	1.9	-	2.0	6.6	0.491	73	242		
22.0	30	730	BU-DF225M	47.4	45	43.4	90.5	0.78	287.8	1.9	-	2.0	6.6	0.547	73	265		
30.0	40	735	BU-DF250M	63.4	60.2	58.1	91.0	0.79	382.5	1.9	-	2.0	6.6	0.834	75	368		
37.0	50	735	BU-DF280S	77.8	73.9	71.2	91.5	0.79	484.0	1.9	-	2.0	6.6	1.93	76	472		
45.0	60	735	BU-DF280M	94.1	89.4	86.1	92.0	0.79	580.7	1.8	-	2.0	6.6	3.65	76	538		
55.0	75	735	BU-DF315SA	111	106	102	92.8	0.81	709.8	1.8	-	2.0	6.6	4.79	82	900		
75.0	100	735	BU-DF315MA	151	144	139	93.0	0.81	967.9	1.8	-	2.0	6.6	5.58	82	1000		
90.0	125	735	BU-DF315LA	178	169	163	93.8	0.82	1161.5	1.8	-	2.0	6.6	6.37	82	1055		
110.0	150	735	BU-DF315LB	217	206	199	94.0	0.82	1419.6	1.8	-	2.0	6.4	7.23	82	1118		
132.0	175	740	BU-DF355MA	261	248	239	93.7	0.82	1692.1	1.8	-	2.0	6.4	7.9	90	2000		
160.0	215	740	BU-DF355MB	315	299	288	94.2	0.82	2051.0	1.8	-	2.0	6.4	10.3	90	2150		
200.0	270	740	BU-DF355L	387	368	355	94.5	0.83	2563.4	1.8	-	2.0	6.4	12.3	90	2250		
250.0	340	740	BU-DF355LB	511	485	468	95.3	0.78	3226	1.80	-	2.0	6.5	14.53	-	2460		
315.0	420	740	BU-DF355LC	642	610	588	95.5	0.78	4065	1.80	-	2.0	6.5	15.39	-	2750		
355.0	480	745	BU-DF400LB	667	641	610	95.6	0.85	4557	1.72	-	2.25	5.84	29.76	-	3592		
400.0	540	745	BU-DF400LC	750	723	687	95.6	0.85	5128	1.96	-	2.44	6.39	31.34	-	3949		
450.0	600	745	BU-DF450LB	858	817	785	95.7	0.83	5740	1.62	-	2.18	5.43	75.20	-	4660		
500.0	675	745	BU-DF450LC	959	913	878	95.7	0.83	6675	1.74	-	2.23	5.65	79.30	-	4870		

Performance data

IE2

8

3000 min⁻¹ (2 pole)

Rated power		Full load speed in revolutions per minute		Frame reference and size	Full load current at rated voltage			Efficiency	Power factor	Full load torque	Direct on line starting torque ratio		Direct on line pull up torque		Direct on line pull out torque		Direct on line starting current ratio	Rotor inertia Wk2	Mean Sound pressure level @ 1m on no load	Weight
P _N		n			I _N						η		Cos Ø		M _A					
kW	hp	n min ⁻¹	Type		380 V A	400 V A	415 V A	1.0 P _N	1.0 P _N	M _N Nm	M _A M _N	M _S M _N	M _K M _N	I _A I _N	J kgm ²	L _{pA} dB(A)	kg			
0.75	1.0	2875	A-DA80MA		1.77	1.68	1.62	77.4	0.83	2.49	2.5	-	3.0	5.3	0.0012	56	12.0			
1.1	1.5	2875	A-DA80MB		2.50	2.37	2.29	79.6	0.84	3.65	3.2	-	3.8	7.0	0.0014	57	13.5			
1.5	2.0	2890	A-DA90SA		3.32	3.16	3.04	81.3	0.84	4.96	2.7	-	3.5	7.1	0.0029	61	17.5			
2.2	3.0	2890	A-DA90LA		4.72	4.48	4.32	83.2	0.85	7.27	2.4	-	3.0	6.9	0.0055	61	22.0			
3.0	4.0	2891	A-DA100LA		6.17	5.86	5.65	84.6	0.87	9.91	3.2	-	4.0	8.0	0.0109	63	29.0			
4.0	5.5	2914	A-DA112MA		8.04	7.64	7.36	85.8	0.88	13.1	2.5	-	3.0	7.5	0.0126	65	32.0			
5.5	7.5	2937	A-DA132SA		11.2	10.6	10.2	87.0	0.86	17.9	2.7	-	3.5	7.5	0.0377	68	47.5			
7.5	10	2940	A-DA132SB		14.6	13.9	13.4	88.1	0.88	24.4	2.4	-	3.3	7.5	0.0499	68	53.0			
11.0	15	2930	A-DA160MA		21.0	19.9	19.2	89.4	0.89	35.9	2.2	-	2.9	7.6	0.055	72	96.0			
15.0	20	2930	A-DA160MB		28.4	26.9	26.0	90.3	0.89	48.9	2.3	-	3.0	7.6	0.075	73	105			
18.5	25	2937	A-DA160LA		34.7	33.0	31.8	90.9	0.89	60.2	2.3	-	3.1	7.4	0.124	73	115			
22.0	30	2940	A-DF180MA		41.6	39.5	38.1	91.3	0.88	71.5	2.8	-	3.2	7.8	0.075	74	187			
30.0	40	2950	A-DF200LA		56.2	53.4	51.5	92.0	0.88	97.1	2.6	-	3.0	7.8	0.124	77	241			
37.0	50	2950	A-DF200LB		68.2	64.8	62.5	92.5	0.89	119.8	2.6	-	3.0	7.7	0.139	77	261			
45.0	60	2960	AU-DF225M		82.5	78.4	75.6	92.9	0.89	145.2	2.4	-	2.6	7.5	0.233	77	348			
55.0	75	2965	AU-DF250M		99.5	94.5	91.1	93.2	0.90	177.2	2.3	-	2.8	7.1	0.312	80	400			
75.0	100	2970	AU-DF280S		135	128	123	93.8	0.90	241.2	2.5	-	2.8	7.4	0.579	80	540			
90.0	125	2970	AU-DF280MA		160	152	146	94.1	0.91	289.4	2.8	-	2.8	7.6	0.675	80	588			
110.0	150	2975	AU-DF315SA		194	185	178	94.3	0.91	353.1	2.4	-	2.8	6.9	1.18	81	948			
132.0	175	2975	AU-DF315MA		233	221	213	94.6	0.91	423.7	2.6	-	2.9	7.1	1.82	81	1009			
160.0	215	2975	AU-DF315LA		278	265	255	94.8	0.92	513.6	2.5	-	2.9	7.1	2.08	85	1111			
200.0	270	2975	AU-DF315LB		348	330	318	95.0	0.92	642	2.5	-	2.8	6.9	2.38	85	1142			
250.0	335	2980	AU-DF355M		434	412	398	95.0	0.92	801.2	2.5	-	2.8	7.0	3.0	88	1938			
315.0	430	2980	AU-DF355L		547	520	501	95.0	0.92	1009	2.5	-	2.9	7.0	3.5	88	2346			
IE2 efficiency 0.75 to 375kW																				

IE2 efficiency 0.75 to 375kW

IE2 efficiency 0.75 to 375kW

Performance data

IE2

10

1000 min⁻¹ (6 pole)

Rated power		Full load speed in revolutions per minute		Frame reference and size	Full load current at rated voltage			Efficiency	Power factor	Full load torque	Direct on line starting torque ratio		Direct on line pull up torque		Direct on line pull out torque		Direct on line starting current ratio	Rotor inertia Wk2	Mean Sound pressure level @ 1m on no load	Weight
P _N		n			I _N						η		Cos Ø		M _A					
kW	hp	n min ⁻¹	Type		380 V A	400 V A	415 V A	1.0 P _N	1.0 P _N	M _N Nm	M _A M _N	M _S M _N	M _K M _N	I _A I _N	J kgm ²	L _{pA} dB(A)	kg			
0.75	1.0	934	A-DA90SA		2.08	1.98	1.90	75.9	0.72	7.67	2.2	-	2.4	4.5	0.0029	45	18.5			
1.1	1.5	945	A-DA90LA		2.97	2.82	2.72	78.1	0.72	11.1	2.4	-	2.6	4.5	0.0035	45	21.0			
1.5	2.0	945	A-DA100LA		3.80	3.61	3.48	79.8	0.75	15.2	1.8	-	2.2	4.2	0.0069	49	28.5			
2.2	3.0	960	A-DA112MA		5.37	5.10	4.92	81.8	0.76	21.9	2.3	-	2.8	4.5	0.014	53	33.5			
3.0	4.0	964	A-DA132SA		7.19	6.83	6.58	83.3	0.76	29.7	1.8	-	2.4	4.5	0.0286	53	44.0			
4.0	5.5	965	A-DA132MA		9.43	8.96	8.63	84.6	0.76	39.6	2.3	-	2.7	5.0	0.0357	55	53.0			
5.5	7.5	965	A-DA132MB		12.6	12.0	11.5	86.0	0.77	54.4	1.9	-	2.8	5.5	0.0449	55	63.5			
7.5	10	970	A-DA160MA		16.7	15.9	15.3	87.2	0.78	73.8	2.0	-	3.0	6.5	0.081	57	100			
11.0	15	970	A-DA160LA		24.1	22.9	22.1	88.7	0.78	108.3	2.4	-	3.3	7.5	0.116	57	113			
15.0	20	975	A-DF180LA		31.4	29.8	28.7	89.7	0.81	147	2.0	-	2.7	6.4	0.207	58	198			
18.5	25	980	A-DF200LA		38.3	36.4	35.1	90.4	0.81	180	2.3	-	3.0	7.0	0.315	58	236			
22.0	30	980	A-DF200LB		44.3	42.0	40.5	90.9	0.83	214	2.3	-	2.8	7.0	0.36	61	251			
30.0	40	980	AU-DF225M		59.2	56.2	54.2	91.7	0.84	292	2.2	-	2.7	6.5	0.547	62	317			
37.0	50	980	AU-DF250M		70.8	67.3	64.8	92.2	0.86	361	2.5	-	2.7	6.9	0.843	62	397			
45.0	60	980	AU-DF280S		85.8	81.5	78.5	92.7	0.86	439	2.2	-	2.4	7.0	1.39	63	513			
55.0	75	980	AU-DF280MA		104	99.2	95.6	93.1	0.86	536	2.4	-	2.5	7.1	1.65	64	562			
75.0	100	985	AU-DF315SA		141	134	129	93.7	0.86	727	2.8	-	3.0	7.3	4.11	68	933			
90.0	125	985	AU-DF315MA		169	160	155	94.0	0.86	873	2.7	-	2.9	7.1	4.78	68	1013			
110.0	150	985	AU-DF315LA		206	196	189	94.3	0.86	1066	2.9	-	2.9	7.4	5.45	73	1086			
132.0	175	985	AU-DF315LB		243	231	223	94.6	0.87	1280	3.0	-	3.1	7.6	6.12	73	1208			
160.0	215	990	AU-DF355MA		291	277	267	94.8	0.88	1543	3.1	-	3.1	7.6	9.5	78	1581			
200.0	270	990	AU-DF355MB		363	345	333	95.0	0.88	1929	3.0	-	3.0	7.8	10.4	78	1632			
250.0	335	990	AU-DF355L		454	432	416	95.0	0.88	2412	3.1	-	3.0	7.7	12.4	78	1734			
IE2 efficiency 0.75 to 375kW																				

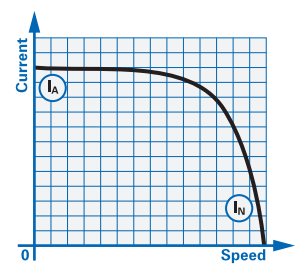
IE2 efficiency 0.75 to 375kW

Performance data notes

Performance data notes

DOL starting

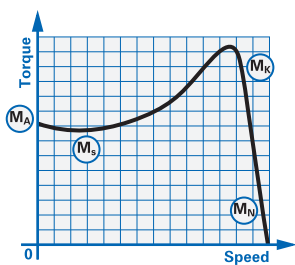
Typical speed/current curve



- (I_A) Starting current
- (I_N) Full load current
- (M_A) Starting torque or locked rotor torque
- (M_S) Pull up torque or run up torque
- (M_K) Pull out torque or breakdown torque
- (M_N) Full load torque

Torque/speed curves for specific motors can be supplied on request.

Typical speed/torque curve

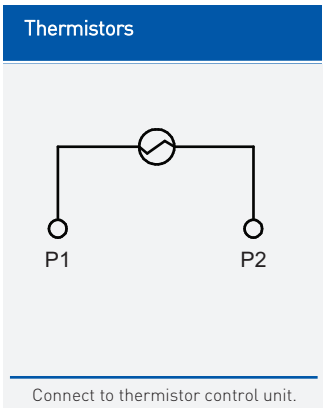
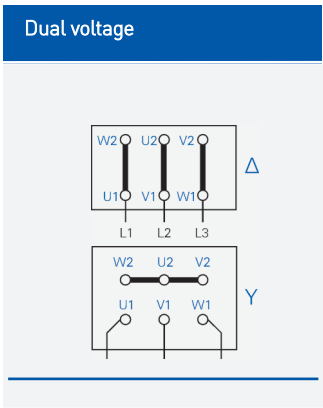
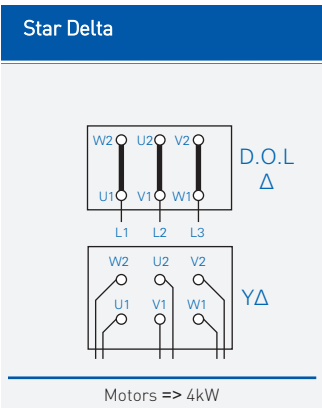


During the run up period in Star, there must be an adequate excess of motor torque over the load torque. The change to Delta must not occur until the motor is near the operating speed. Refer to Brook Crompton for running up against a load in excess of 70% full load during Star Delta starting.

Performance figures are subject to IEC tolerances. Performance figures are based on a 400 volt winding.

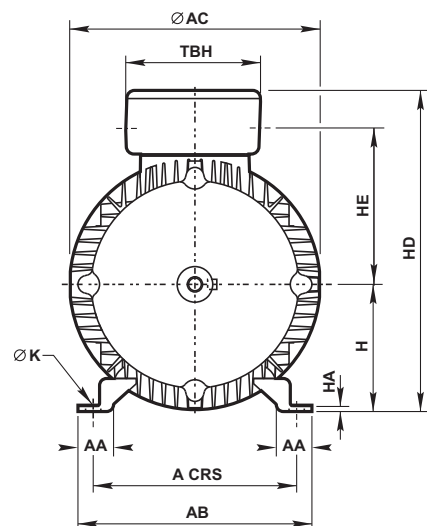
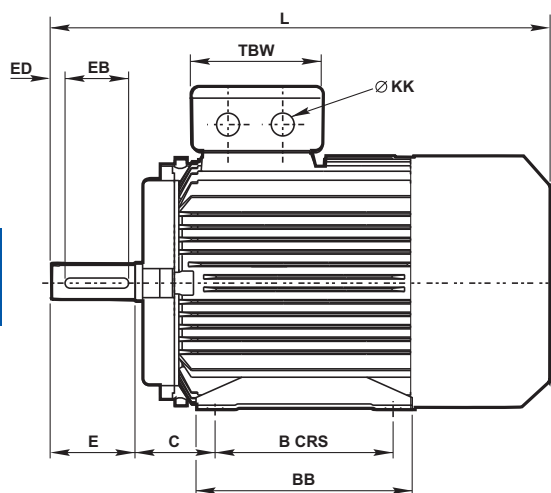
$$J \text{ (WK}^2 \text{ or WR}^2\text{)} = \frac{GD^2}{4}$$
$$J \text{ in lb ft}^2 = \frac{\text{kgm}^2}{0.042}$$

Connection Diagrams



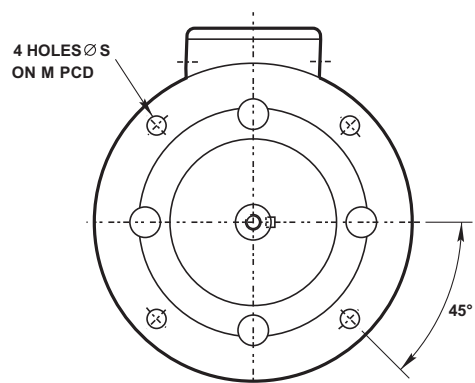
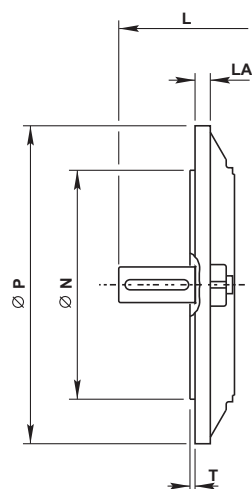
IM B3
IM 1001

Mounting options



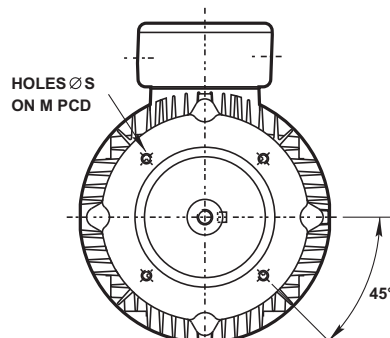
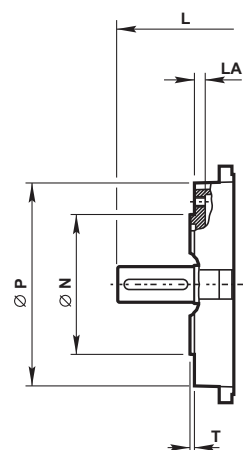
IM B5/IM B35
IM 3001/IM 2001

Mounting options



IM B14/IM B34
IM 3601/IM 2101

Mounting options



Dimensions

IE1

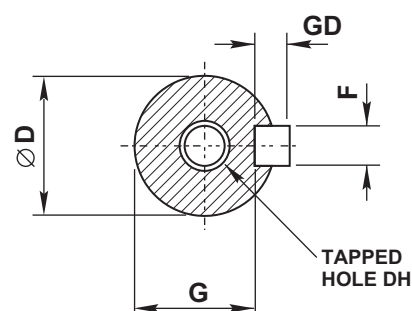
13

Foot, flange and face mounting - frame sizes 56 to 160 aluminium

General															
Type	Terminal box														
Aluminium	A	B	C	H	K	L	AA	AB	AC	BB	HA	HD	TBW	TBH	KK
B-DA56M	90	71	36	56	5.8 x 8.3	199	23	111	113	88	7	152	86	86	1 x M20
B-DA63M	100	80	40	63	7 x 9.5	217	24	123	120	100	7	165	101	101	1 x M20
B-DA71M	112	90	45	71	7 x 11	245	26	138	136	110	8	180	101	101	1 x M20
B-DA80M	125	100	50	80	10 x 14	287	35	157	155	125	9	204	101	101	1 x M25
B-DA90S	140	100	56	90	10 x 14	310	37	173	175	125	10	227	109	109	1 x M25
B-DA90L	140	125	56	90	10 x 14	335	37	173	175	150	10	227	109	109	1 x M25
B-DA100L	160	140	63	100	12 x 16	383	40	196	195	172	11	251	109	109	1 x M32
B-DA112M	190	140	70	112	12 x 16	401	41	227	219	180	12	281	118	118	2 x M32
B-DA132S	216	140	89	132	12 x 16	475	51	262	258	186	15	320	118	118	2 x M32
B-DA132M	216	178	89	132	12 x 16	513	51	262	258	224	15	320	118	118	2 x M32
B-DA160M	254	210	108	160	12 x 16	609	55	304	315	260	18	402	157	167	2 x M40
B-DA160L	254	254	108	160	15 x 18	653	55	304	315	304	18	402	157	167	2 x M40

Flange & Face													
Type	IM B5 mounting						IM B14 mounting						
Aluminium	M	N	P	S	T	LA	M	N	P	S	T	LA	
B-DA56M	100	80	120	7	3	8	65	50	80	M5	2.5	-	
B-DA63M	115	95	140	10	3	10	75	60	90	M5	2.5	-	
B-DA71M	130	110	160	10	3.5	10	85	70	105	M6	2.5	-	
B-DA80M	165	130	200	12	3.5	12	100	80	120	M6	3.0	-	
B-DA90S	165	130	200	12	3.5	11	115	95	140	M8	3.0	-	
B-DA90L	165	130	200	12	3.5	11	115	95	140	M6	3.0	-	
B-DA100L	215	180	250	14.5	4.0	13	130	110	160	M8	3.5	-	
B-DA112M	215	180	250	14.5	4.0	14	130	110	160	M8	3.5	-	
B-DA132S	265	230	300	14.5	4.0	14	165	130	200	M10	3.5	-	
B-DA132M	265	230	300	14.5	4.0	14	165	130	200	M10	3.5	-	
B-DA160M	300	250	350	18.5	5.0	15	215	180	250	M12	4	-	
B-DA160L	300	250	350	18.5	5.0	15	215	180	250	M12	4	-	

Shaft								
Type	D	E	F	G	GD	EB	ED	DH
Aluminium								
B-DA53	9	20	3	7.2	3	16	2	M4
B-DA63	11	23	4	8.5	4	16	3.5	M4
B-DA71	14	30	5	11	5	25	2.5	M5
B-DA80	19	40	6	15.5	6	30	5	M6
B-DA90	24	50	8	20	7	40	5	M8
B-DA100	28	60	8	24	7	50	5	M10
B-DA112M	28	60	8	24	7	50	5	M10
B-DA132	38	80	10	33	8	65	7.5	M12
B-DA160	42	110	12	37	8	90	10	M16



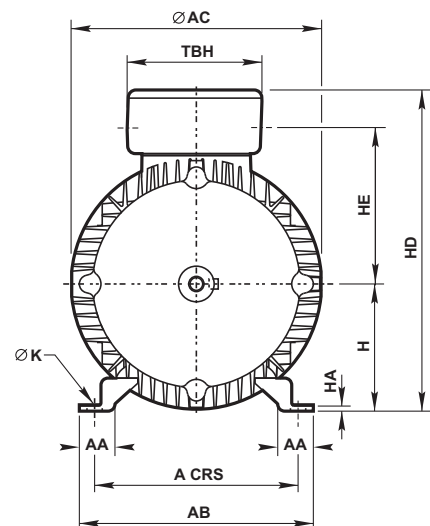
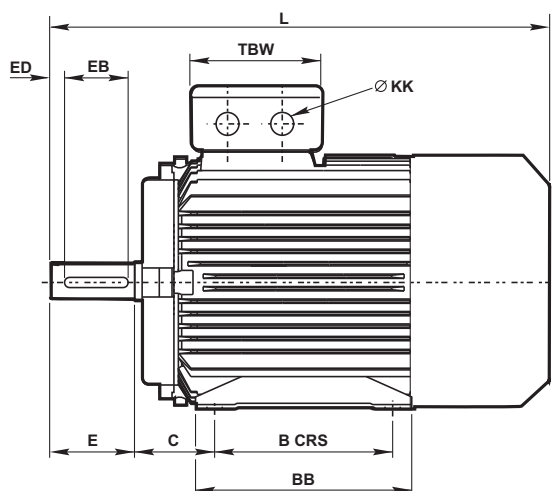
Dimensions

14

Foot and flange mounting - frame sizes 180 to 355 cast iron

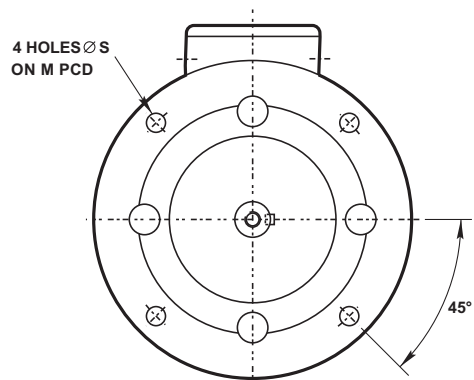
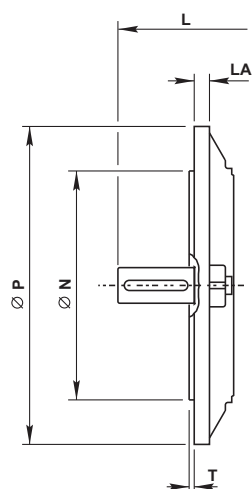
IM B3
IM 1001

Mounting options

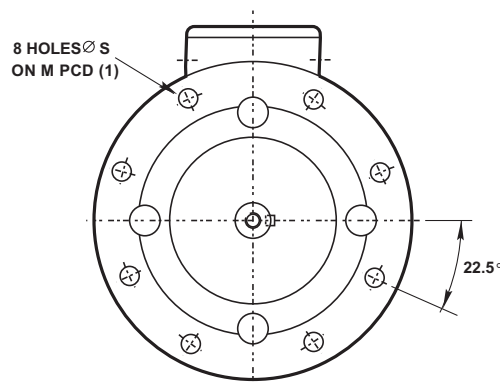


IM B5/IM B35
IM 3001/IM 2001

Mounting options



Up to 200 frame



8 holes at 22.5° for flanges to suit 225 frames and above to European specification

Dimensions

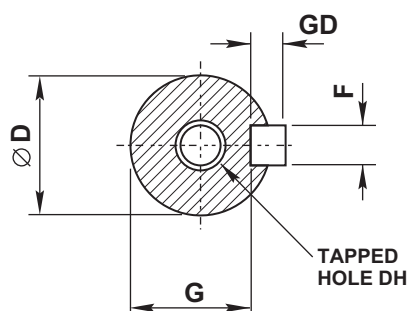
IE1

15

Foot and flange mounting - frame sizes 180 to 355 cast iron

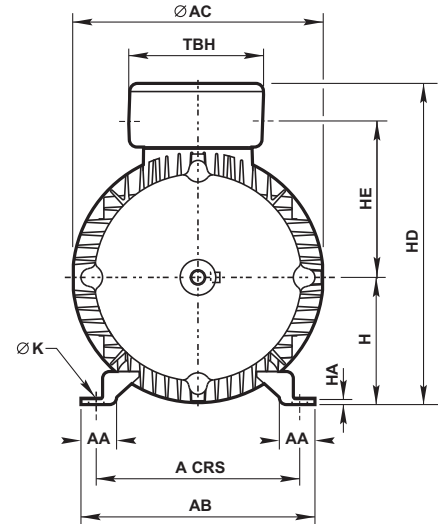
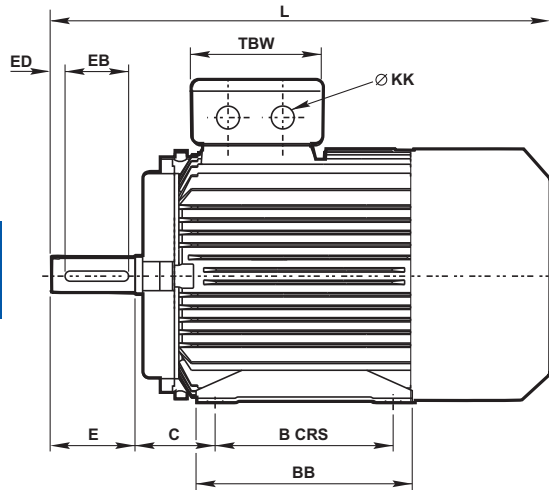
General																	
Type																	
Cast iron	A	B	C	H	K	4 Pole + L	2 Pole L	AA	AB	AC	BB	HA	HD	HE	Terminal box		
															TBW	TBH	KK
B-DF180M	279	241	121	180	14.5	688	688	70	349	355	311	22	447	-	152	162	2 x M40
B-DF180L	279	279	121	180	14.5	726	-	70	349	355	349	22	447	-	152	162	2 x M40
B-DF200L	318	305	133	200	16.5	771	771	70	388	397	369	25	499	-	190	210	2 x M50
BU-DF225S	356	286	149	225	18.5	824	-	75	431	446	368	28	547	-	190	210	2 x M50
BU-DF225M	356	311	149	225	18.5	849	819	75	431	446	393	28	547	-	190	210	2 x M50
BU-DF250M	406	349	168	250	24	910	910	80	484	485	445	30	608	-	218	248	2 x M63
BU-DF280S	457	368	190	280	24	982	982	85	542	547	485	35	667	-	218	248	2 x M63
BU-DF280M	457	419	190	280	24	1033	1033	85	542	547	536	35	667	-	218	248	2 x M63
BU-DF315S	508	406	216	315	28	1208	1178	120	628	620	570	45	842	-	280	320	2 x M63
BU-DF315M	508	457	216	315	28	1318	1288	120	628	620	680	45	842	-	280	320	2 x M63
BU-DF315L	508	508	216	315	28	1318	1288	120	628	620	680	45	842	-	280	320	2 x M63
BU-DF355M	610	560	254	355	28	1556	1486	116	726	698	750	52	997	-	330	380	2 x M63
BU-DF355L	610	630	254	355	28	1556	1486	116	726	698	750	52	997	-	330	380	2 x M63

Flange						
Type	IM B5, IM B35 mounting					
Cast iron	M	N	P	S	T	LA
B-DF180M/L	300	250	350	18.5	5	15
B-DF200L	350	300	400	18.5	5	17
BU-DF225S/M	400	350	450	18.5	5	20
BU-DF250	500	450	550	18.5	5	22
BU-DF280	500	450	550	18.5	5	22
BU-DF315S/M/L	600	550	660	24	6	22
BU-DF355M	740	680	800	24	6	25
BU-DF355L	740	680	800	24	6	25

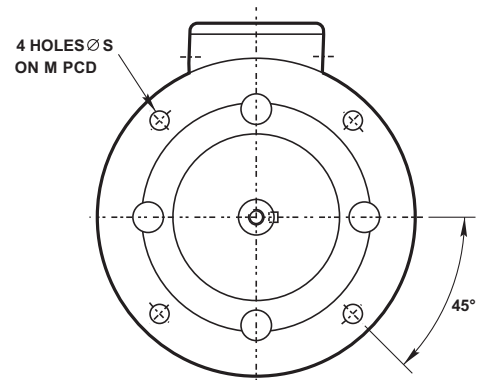
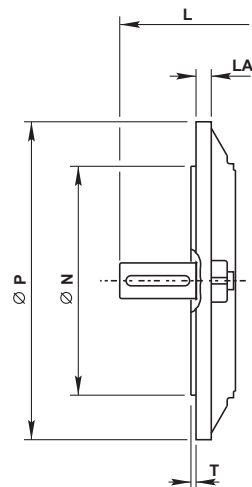


Shaft																	
Type	4 pole +								2 pole								
Cast iron	D	E	F	G	GD	EB	ED	DH	D	E	F	G	GD	EB	ED	DH	
B-DF180M/L	48	110	14	42.5	9	90	10	M16	48	110	14	42.5	9	90	15	M16	
BU-DF200L	55	110	16	49	10	100	5	M20	55	110	16	49	10	100	5	M20	
BU-DF225S	60	140	18	53	11	125	7.5	M20	-	-	-	-	-	-	-	-	
BU-DF225M	60	140	18	53	11	125	7.5	M20	55	110	16	49	11	100	5	M20	
BU-DF250M	65	140	18	58	11	125	7.5	M20	60	140	18	53	11	125	7.5	M20	
BU-DF280S/M	75	140	20	67.5	12	125	7.5	M20	65	140	18	58	11	125	7.5	M20	
BU-DF315S/M/L	80	170	22	71	14	160	5	M20	65	140	18	58	11	125	7.5	M20	
BU-DF355M	100	210	25	86	14	160	5	M24	75	140	20	67.5	12	130	5	M20	
BU-DF355L	100	210	25	86	14	160	5	M24	75	140	20	67.5	12	130	5	M20	

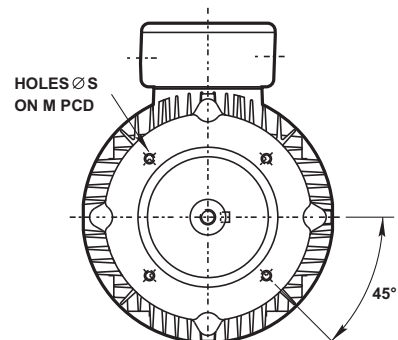
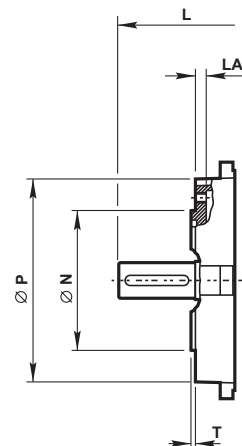
IM B3
IM 1001
Mounting options



IM B5/IM B35
IM 3001/IM 2001
Mounting options



IM B14/IM B34
IM 3601/IM 2101
Mounting options



Dimensions

IE2

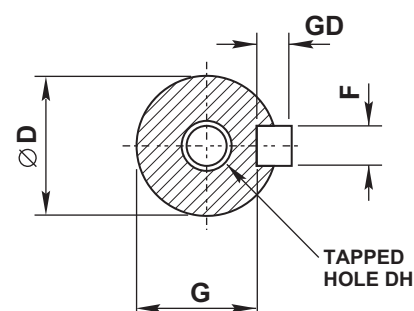
17

Foot, flange and face mounting - frame sizes 80 to 160 aluminium

General														Terminal box		
Type																
Aluminium	A	B	C	H	K	L	AA	AB	AC	BB	HA	HD	TBW	TBH	KK	
A-DA80M	125	100	50	80	10 x 14	290	35	157	158	125	8	209	101	101	1 x M25	
A-DA90S	140	100	56	90	10 x 14	325	37	173	175	125	10	230	109	109	1 x M25	
A-DA90L	140	125	56	90	10 x 14	350	37	173	175	150	10	230	109	109	1 x M25	
A-DA100L	160	140	63	100	12 x 16	398	40	196	198	172	11	256	109	109	1 x M32	
A-DA112M	190	140	70	112	12 x 16	447	41	227	219	180	12	278	118	118	2 x M32	
A-DA132S	216	140	89	132	12 x 16	475	51	262	258	186	15	320	118	118	2 x M32	
A-DA132M	216	178	89	132	12 x 16	513	51	262	258	224	15	320	118	118	2 x M32	
A-DA160M	254	210	108	160	12 x 16	609	55	304	315	260	18	402	167	167	2 x M40	
A-DA160L	254	254	108	160	15 x 18	653	55	304	315	304	18	402	167	167	2 x M40	

Flange & Face													
Type	IM B5 mounting						IM B14 mounting						
Aluminium	M	N	P	S	T	LA	M	N	P	S	T	LA	
A-DA80M	165	130	200	12	3.5	12	100	80	120	M6	3.0	-	
A-DA90S	165	130	200	12	3.5	11	115	95	140	M8	3.0	-	
A-DA90L	165	130	200	12	3.5	11	115	95	140	M6	3.0	-	
A-DA100L	215	180	250	14.5	4.0	13	130	110	160	M8	3.5	-	
A-DA112M	215	180	250	14.5	4.0	14	130	110	160	M8	3.5	-	
A-DA132S	265	230	300	14.5	4.0	14	165	130	200	M10	3.5	-	
A-DA132M	265	230	300	14.5	4.0	14	165	130	200	M10	3.5	-	
A-DA160M	300	250	350	18.5	5.0	15	215	180	250	M12	4	-	
A-DA160L	300	250	350	18.5	5.0	15	215	180	250	M12	4	-	

Shaft								
Type	D	E	F	G	GD	EB	ED	DH
Aluminium								
A-DA80	19	40	6	15.5	6	30	5	M6
A-DA90	24	50	8	20	7	40	5	M8
A-DA100	28	60	8	24	7	50	5	M10
A-DA112M	28	60	8	24	7	50	5	M10
A-DA132	38	80	10	33	8	65	7.5	M12
A-DA160	42	110	12	37	8	90	10	M16



Dimensions

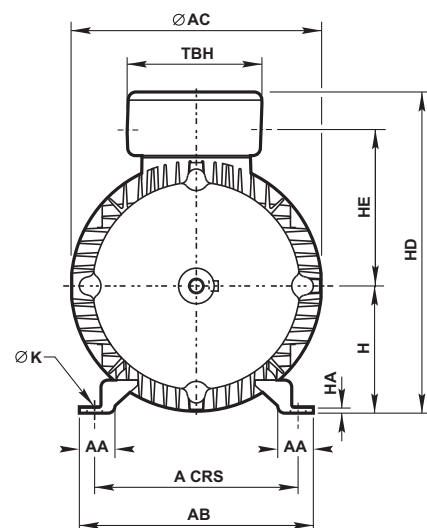
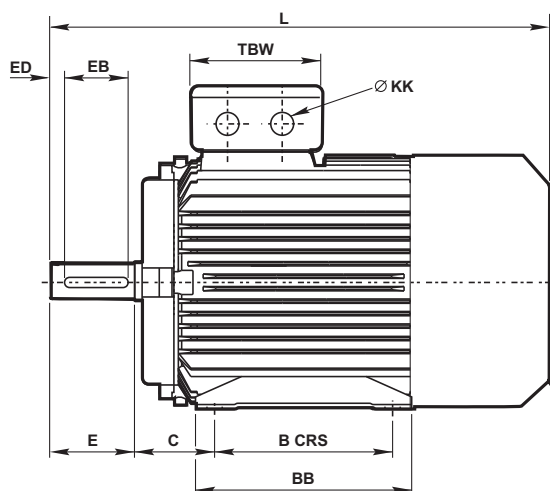
IE2

18

Foot and flange mounting - frame sizes 180 to 355 cast iron

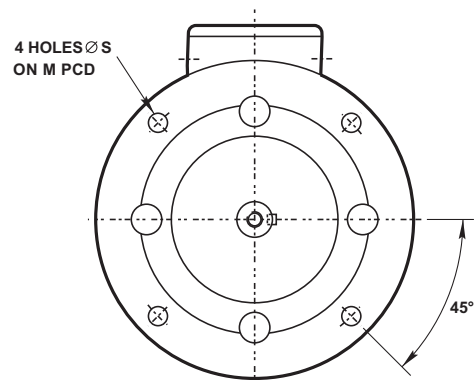
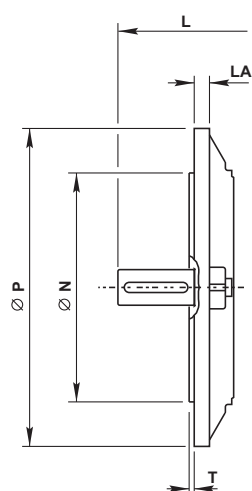
IM B3
IM 1001

Mounting options

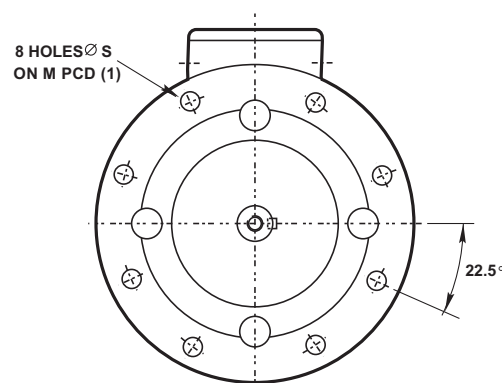


IM B5/IM B35
IM 3001/IM 2001

Mounting options



Up to 200 frame



8 holes at 22.5° for flanges to suit 225 frames and above to European specification

Dimensions

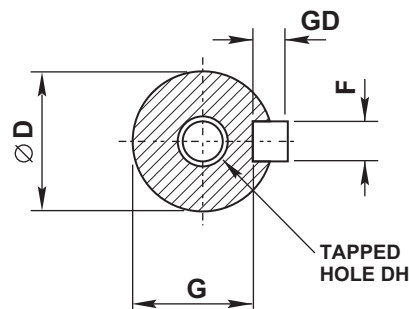
IE2

19

Foot and flange mounting - frame sizes 180 to 355 cast iron

General																	
Type																	
Cast iron	A	B	C	H	K	4 Pole +		2 Pole		AA	AB	AC	BB	HA	HD	HE	Terminal box TBW TBH KK
A-DF180M	279	241	121	180	14.5	688	688	70	349	355	311	22	447	-	152	162	2 x M40
A-DF180L	279	279	121	180	14.5	726	-	70	349	355	349	22	447	-	152	162	2 x M40
A-DF200L	318	305	133	200	16.5	779	771	70	388	397	369	25	499	-	190	210	2 x M50
AU-DF225S	356	286	149	225	18.5	824	-	75	431	446	368	28	547	-	190	210	2 x M50
AU-DF225M	356	311	149	225	18.5	849	819	75	431	446	393	28	547	-	190	210	2 x M50
AU-DF250M	406	349	168	250	24	910	910	80	484	485	445	30	608	-	218	248	2 x M63
AU-DF280S	457	368	190	280	24	982	982	85	542	547	485	35	667	-	218	248	2 x M63
AU-DF280M	457	419	190	280	24	1033	1033	85	542	547	536	35	667	-	218	248	2 x M63
AU-DF315S	508	406	216	315	28	1224	1194	120	628	620	570	45	842	-	280	320	2 x M63
AU-DF315M	508	457	216	315	28	1334	1304	120	628	620	680	45	842	-	280	320	2 x M63
AU-DF315L	508	508	216	315	28	1334	1304	120	628	620	680	45	842	-	280	320	2 x M63
AU-DF355M	610	560	254	355	28	1516	1486	116	726	698	750	52	997	-	330	380	2 x M63
AU-DF355L	610	630	254	355	28	1516	1486	116	726	698	750	52	997	-	330	380	2 x M63

Flange						
Type	IM B5, IM B35 mounting					
Cast iron	M	N	P	S	T	LA
A-DF180M/L	300	250	350	18.5	5	15
A-DF200L	350	300	400	18.5	5	17
AU-DF225S/M	400	350	450	18.5	5	20
AU-DF250	500	450	550	18.5	5	22
AU-DF280	500	450	550	18.5	5	22
AU-DF315S/M/L	600	550	660	24	6	22
AU-DF355M	740	680	800	24	6	25
AU-DF355L	740	680	800	24	6	25



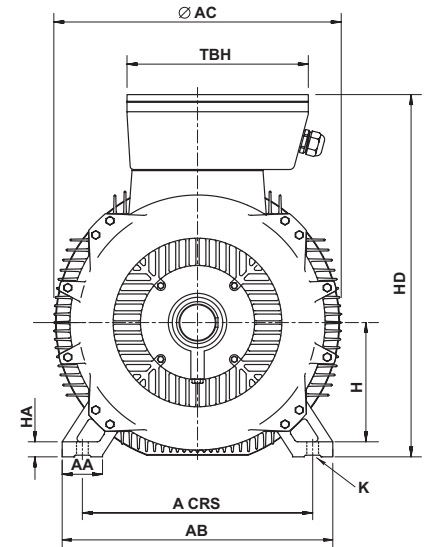
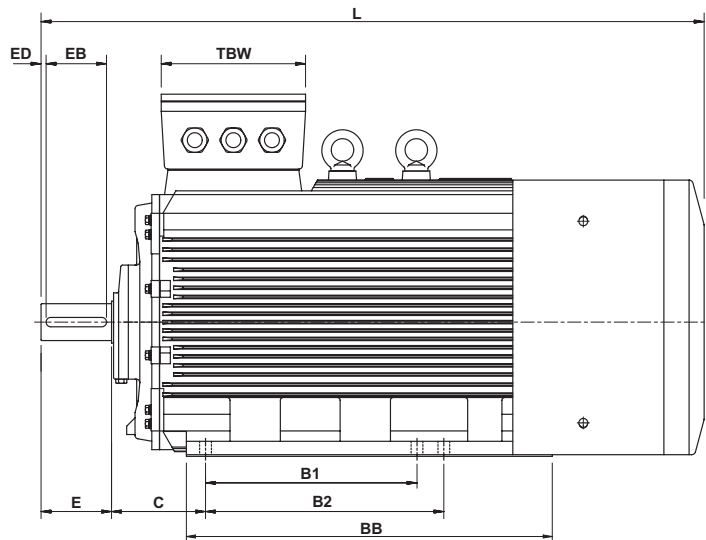
Shaft																	
Type	4 pole +								2 pole								
Cast iron	D	E	F	G	GD	EB	ED	DH	D	E	F	G	GD	EB	ED	DH	
A-DF180M/L	48	110	14	42.5	9	90	10	M16	48	110	14	42.5	9	90	15	M16	
AU-DF200L	55	110	16	49	10	100	5	M20	55	110	16	49	10	100	5	M20	
AU-DF225S	60	140	18	53	11	125	7.5	M20	-	-	-	-	-	-	-	-	
AU-DF225M	60	140	18	53	11	125	7.5	M20	55	110	16	49	11	100	5	M20	
AU-DF250M	65	140	18	58	11	125	7.5	M20	60	140	18	53	11	125	7.5	M20	
AU-DF280S/M	75	140	20	67.5	12	125	7.5	M20	65	140	18	58	11	125	7.5	M20	
AU-DF315S/M/L	80	170	22	71	14	160	5	M20	65	140	18	58	11	125	7.5	M20	
AU-DF355M	95	170	25	86	14	160	5	M24	75	140	20	67.5	12	130	5	M20	
AU-DF355L	95	170	25	86	14	160	5	M24	75	140	20	67.5	12	130	5	M20	

Dimensions

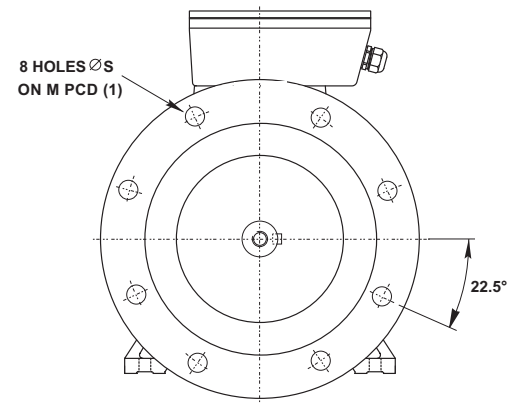
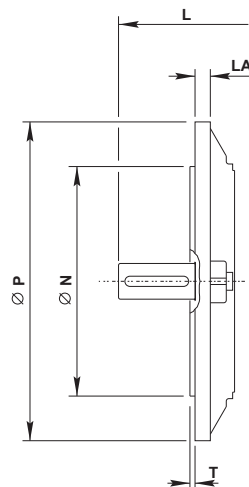
20

Foot and flange mounting - frame sizes 355LB to 450 cast iron

IM B3
IM 1001
Mounting options



IM B35
IM 2001
Mounting options

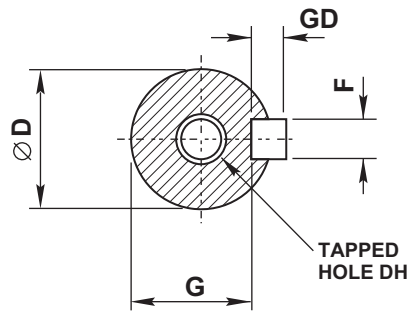


Dimension

Foot and flange mounting - frame sizes 355LB to 450 cast iron

General																			
Type																	Terminal box		
Cast iron	A	B1	B2	C	H	K	6, 8 Pole L	4 Pole L	2 Pole L	AA	AB	AC	BB	HA	HD	TBW	TBH	KK	
BU-DF355B +	630	800	-	224	355	35	1918	1898	1863	116	760	745	1140	52	1120	392	572	3 x M63	
BU-DF400M	686	630	710	280	400	36	1881	1881	1820	120	806	860	1090	52	1080	430	485	3 x M63	
BU-DF400L	686	630	710	280	400	36	1881	1881	1820	120	806	860	1090	55	1080	430	485	3 x M63	
BU-DF450M	800	900	1000	250	450	36	2200	2200	2050	150	950	950	1200	62	1400	460	530	3 x M63	
BU-DF450L	800	900	1000	250	450	36	2200	2200	2050	150	950	950	1200	62	1400	460	530	3 x M63	

Flange						
Type	IM B5, IM B35 mounting					
Cast iron	M	N	P	S	T	LA
BU-DF355	840	780	800	24	6	-
BU-DF400	940	880	1000	28	6	-
BU-DF450	1040	980	1100	32	8	-



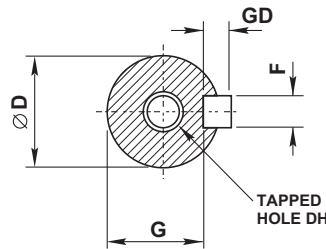
Shaft																	
Type	4 pole +								2 pole								
Cast iron	D	E	F	G	GD	EB	ED	DH	D	E	F	G	GD	EB	ED	DH	
BU-DF355	110	210	28	86	16	160	5	M24	80	170	22	67.5	14	130	5	M20	
BU-DF400	110	210	28	100	16	180	15	M24	85	170	22	76	14	140	15	M24	
BU-DF450	130	250	32	119	16	180	15	M24	90	170	25	86	14	140	15	M24	

Dimension pages notes & Mounting codes

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Page notes

Shaft		
Dim D	Tol	Limits
11 to 14	j6	+0.008 -0.003
19 to 28	j6	+0.009 -0.004
38 to 48	k6	+0.018 +0.002
55 to 80	m6	+0.030 +0.011
85 to 110	m6	+0.035 +0.013



All dimensions in millimetres

Cable entry can be arranged in any one of four positions at 90° intervals

Dimensions should not be used for installation purposes unless specially endorsed

B5 mounted motors have suffix '-D' in the frame reference, eg A-DA132MA-D and B3/B5 mounted motors have suffix '-H' in the frame reference, eg A-DA132MA-H

B14 mounted motors have suffix 'C' in the frame reference, eg A-DA132MA-C and B3/B14 mounted motors have suffix '-H' in the frame reference, eg A-DA132MA-H

Note

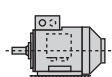
355LB frame and above, flange only available when B35 mounted (foot & flange).

Flange		
Dim N	IEC 60072	
	Tol	Limits
110	j6	+0.013 -0.009
130	j6	+0.014 -0.011
230 to 250	j6	+0.016 -0.013
300	j6	+0.016 -0.016
350	j6	+0.018 -0.018
450	j6	+0.020 -0.020
550	j6	+0.022 -0.022
680	js6	+0.025 -0.025

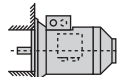
Face		
Dim N	IEC 60072	
	Tol	Limits
70 and 80	j6	+0.012 -0.007
95 and 110	j6	+0.013 -0.009
130	j6	+0.014 -0.011
230	j6	+0.016 -0.013

Mounting codes

Horizontal shaft:



**IM B3
IM 1001**
foot mounted



**IM B5
IM 3001**
flange at DE
no feet



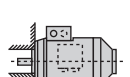
**IM B6
IM 1051**
foot wall mounted with
feet on left-hand side
when viewed from DE



**IM B7
IM 1061**
foot wall mounted with
feet on right-hand side
when viewed from DE

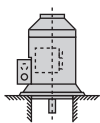


**IM B8
IM 1071**
ceiling mounted
with feet
above motor

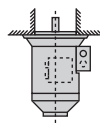


**IM B14
IM 3601**
face at DE
no feet

Vertical shaft:



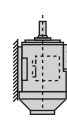
**IM V1
IM 3011**
flange at DE
shaft down
no feet



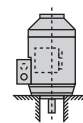
**IM V3
IM 3031**
flange at DE
shaft up
no feet



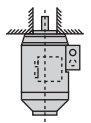
**IM V5
IM 1011**
vertical foot
wall mounted
shaft down



**IM V6
IM 1031**
vertical foot
wall mounted
shaft up



**IM V18
IM 3611**
face at DE
shaft down
no feet



**IM V19
IM 3631**
face at DE
shaft up
no feet

Technical information

Mechanical

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Bearing arrangements

Bearing references and oilseals for horizontally mounted motors only						
Type		Poles	Bearings ^[1]		Oilseals ^[2]	
Aluminium	Cast iron		Drive end	Non-drive end	Drive end	Non-drive end
B / A-DA56	—	All	6201ZZ	6201ZZ	12 x 25 x 7	12 x 25 x 7
B / A-DA63M	—	All	6201ZZ	6201ZZ	12 x 25 x 7	12 x 25 x 7
B / A-DA71M	—	All	6202ZZ	6202ZZ	15 x 30 x 7	15 x 30 x 7
B / A-DA80M	—	All	6204ZZ	6204ZZ	20 x 35 x 7	20 x 35 x 7
B / A-DA90S/L	—	All	6205ZZ	6205ZZ	25 x 40 x 7	25 x 40 x 7
B / A-DA100L	—	All	6206ZZ	6206ZZ	30 x 47 x 7	30 x 47 x 7
B / A-DA112M	—	All	6206ZZ	6206ZZ	30 x 47 x 7	30 x 47 x 7
B / A-DA132S/M	—	All	6208ZZ	6208ZZ	40 x 62 x 7	40 x 62 x 7
B / A-DA160M/L	—	All	6309ZZ	6309ZZ	45 x 62 x 12	45 x 62 x 12
—	B / A-DF180M/L	All	6311	6311	55 x 75 x 12	55 x 75 x 12
—	B / A-DF200L	All	6312	6312	60 x 80 x 12	60 x 80 x 12
—	B / AU-DF225S/M	All	6313	6313	65 x 90 x 12	60 x 90 x 12
—	B / AU-DF250S/M	All	6314	6314	70 x 90 x 12	70 x 90 x 12
—	B / AU-DF280S/M	2	6314	6314	70 x 90 x 12	70 x 90 x 12
—	B / AU-DF280S/M	4 up	6317	6317	85 x 110 x 12	85 x 110 x 12
—	B / AU-DF315S/M/L	2	6317	6317	85 x 110 x 12	85 x 110 x 12
—	B / AU-DF315S/M/L	4 up	NU319	6319	95 x 120 x 12	95 x 120 x 12
—	B / AU-DF355M/L	2	6319	6319	95 x 120 x 12	95 x 120 x 12
—	B / AU-DF355M/L	4 up	NU322	6322	110 x 140 x 14	110 x 140 x 14
—	BU-DF400	2	NU2194 & 6219	NU219E	84.5 x 97 x 10	84.5 x 97 x 10
—	BU-DF400	4 up	NU326E	6326	119 x 140 x 14	119 x 140 x 14
—	BU-DF450	2	tbc	tbc	110 x 124 x 12	110 x 124 x 12
—	BU-DF450	4 up	6328	6328	140 x 154 x 15	140 x 154 x 15

^[1] Frame sizes 56-160 have sealed for life bearings with C3 clearances. Frame sizes 180-355 have bearings with C3 clearance.

^[2] Sizes given are in mm and represent bore x outside diameter x width. The seal material used on all frame sizes and all polarity is nitrile rubber (NBR).

Every care has been taken to ensure the accuracy of the information contained in this publication, but, due to a policy of continuous development and improvement the right is reserved to supply products which may differ slightly from those illustrated and described in this publication

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