

# MEZ Electric Motors

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## Technical Data

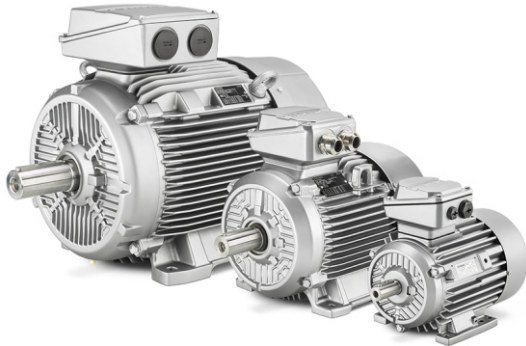
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November 2022

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[www.mez-motors.com](http://www.mez-motors.com)

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## MOTOR PAINT SPECIFICATION

### 1. General

The standard paint system is suitable for climate group "Worldwide" according to IEC 721-2-1 Issue 1982. This system is extensively resistant to aggressive chemicals. Heat resistance is 120°C continuously and 140°C short term.

### 2. Surface pretreatment

- 2.1 Gray cast-iron and steel parts are shot blasted (grain size 0.9 to 1.2 mm). Steel surfaces are cleaned to purity degree SA 3 (metallic bright). Gray cast-iron to SA 2 ½ (metallic clean) to SIS 055 900.
- 2.2 Sheet steel parts are degreased and phosphated.
- 2.3 Aluminium parts are degreased and passivised.

### 3. Paint system

- 3.1 Aluminium motors: Standard-paintwork "Worldwide" acc. to IEC 721-2-1 (issue 1982). Motors with aluminium housings are coated with a two component epoxy resin based top coat (dried film thickness: 30µm). Pre-treated and primed cast iron, sheet steel parts and other parts are coated with a two component epoxy resin based top coat (dried film thickness: 30µm). Total film thickness: 30/60µm.
- 3.2 Cast Iron Motors: Standard paint system „moderate“ acc. to IEC 721-2-1 (issue 1982). Pretreated and primed cast-iron, sheet steel parts and other parts: Acryl resin (red-brown) primer, dried film thickness: 20-30µm, Acryl resin-based top coat (RAL7030 as standard) -dried film thickness: 30µm. Total film thickness: 60µm.
- 3.3 Cast Iron Motors (special paint): Special paintwork "Worldwide", which is a special execution acc. to IEC 721-2-1 (issue 1982). Pretreated and primed cast iron parts, steel parts and other parts: Alkyd-resin (red-brown) primer -dried film thickness: 20-30µm. 2K-polyurethane-based top coat (RAL7030 as standard). Dried film thickness: 30µm. Passivised aluminium parts get a 2K-polyurethane-based top coat (RAL7030 as standard) -dried film thickness: 30µm. Total film thickness: 90µm.




# MOUNTING POSITIONS

1st digit	IM1... Foot mounted	IM2... Foot & Flange mounted				IM3... Flange mounted		
2nd digit	IM10	IM20	IM21	IM21	IM30	IM36	IM36	
3rd digit	IM1001	IM2001	IM2101	IM2101	IM3001	IM3601	IM3601	
4th digit	B3	B3/B5	B3/B14A	B3/B14B	B5	B14A	B14B	
0								
1	IM1011 V5	IM2011 V15	IM2111 V15	IM2111 V15	IM3011 V1	IM3611 V18	IM3611 V18	
3	IM1031 V6	IM2031 V36	IM2131 V36	IM2131 V36	IM3031 V3	IM3631 V19	IM3631 V19	
5	IM1051 B6	IM2051	IM2151	IM2151	<p>The specified mounting is to be mentioned when ordering an electric motor. The actual motor mounting may influence the protection class and bearing design. Flange mounted electric motors need further specification of the required pitch circle diameter of the fixing holes in the flange (FF or FT type of flange + Dimension M).                      FF (Flange Free holes) - B5 flanges,                      FT (Flange Tapped holes) - B14A &amp; B14B flanges                      The pitch circle diameter (M) is specified in the Standard</p> <p>Abbreviated mounting positions:                      IM B35    B3/B5                      IM B34A    B3/B14A                      IM B34B    B3/B14B</p>			
6	IM1061 B7	IM2061	IM2161	IM2161				
7	IM1071 B8	IM2071	IM2171	IM2171				




- 4th digit**
- Standard IEC shaft
  - 2nd shaft end
  - Conical shaft at DE
  - Special shaft end(s)

Vertical motors with shaft down are to be specified as

Motor without Canopy



Motor with Canopy

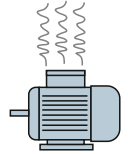




No motor should be exposed to direct sunlight!

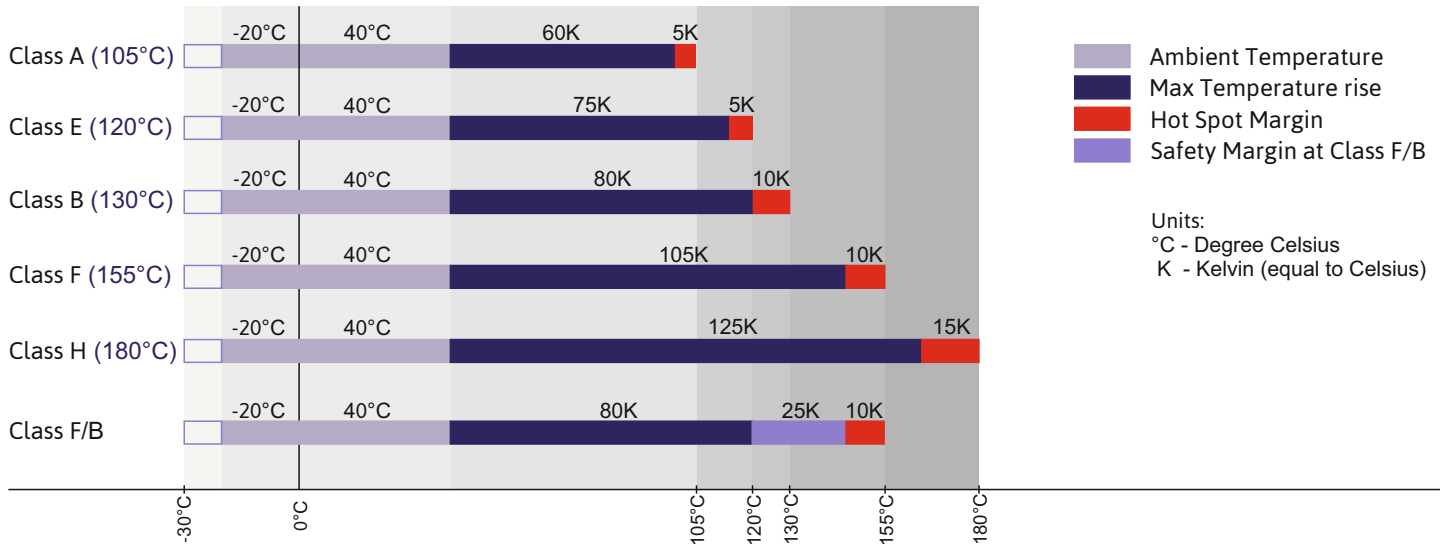
# INSULATION (TEMPERATURE) CLASSES

Various insulation materials are used in electric motors and each has its own function.

- Enamel wire insulation
- Slot and phase insulation materials (insulation between the winding and the stator lamination pack and phase insulation between the windings heads).
- Winding impregnation.
- Insulating sleeve used to cover wire/lead connections.
- Insulation of winding leads (between the winding and the terminal board).



These materials are specified in thermal classes referenced as Y-A-E-B-F-H-C. Every thermal class has its own temperature limit. Each material of a specific class needs to retain its mechanical and electrical properties within the temperature limit.



The maximum permissible temperature rise of the winding is determined based on the thermal class temperature limits. The temperature of the winding increases as a result of the copper and iron losses in the electric motor during operation. The winding temperature rise is determined through measuring the winding resistance, which increases with increasing temperature. To allow for any Hot Spots in winding lower temperature limits are specified for the insulation materials.

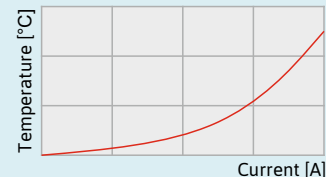
MEZ motors have been produced with insulation class F with winding temperature rise in accordance with the class B (max 80K). This means that the motors have a temperature reserve of 25K. This reserve can be utilised for short-term overload, a higher ambient temperature (above 40°C), for supply voltage/frequency fluctuation etc.

# THERMAL PROTECTION

The most commonly used Thermal Protection which protects electric motor winding against overloading:

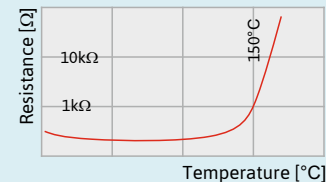
## Thermal Cutout (activated by passing current)

This protection is suitable for relatively small motors as these elements are limited by the current which can be passing through. The elements are equipped with bimetallic switch which is activated with the heat caused by passing current. There are automatic Thermal Cutouts which automatically reset when the motor cools down and there are Manual Reset ones for adding safety.



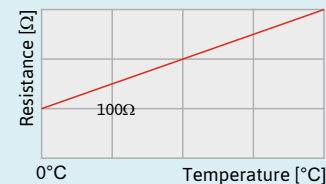
## PTC Thermistors (Positive Temperature Coefficient thermistors)

These are relatively inexpensive thermistors suitable for alarm and/or tripping. They do not have ability to measure the actual temperature and are suitable for signalling/tripping purposes only. They reach the required resistance (typically  $1k\Omega$ ) at the set temperature (typically  $145^{\circ}\text{C}$  or  $150^{\circ}\text{C}$ ) and come in sets of 3off (one for each phase) or 6off (3off set for lower temperature - for alarm and 3off set for higher temperature - for tripping).



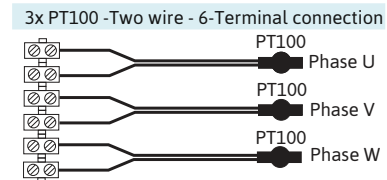
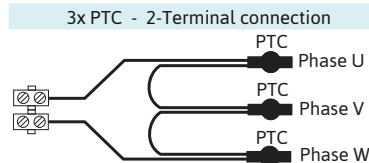
## PT100 are RTDs (Resistance Temperature Detectors or Resistance Thermometers).

They measure temperature by correlating the resistance of the RTD element with temperature. Platinum type PT100 have resistance  $100\Omega$  at  $0^{\circ}\text{C}$ . The linear characteristics is ideal for temperature monitoring. They again come in sets of 3off or 6off and single thermistors are often used for bearing temperature monitoring.

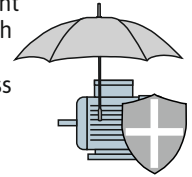


The use of Thermal Protection is recommended for VSD (variable Speed Drive) applications.

The use of Thermistors is mandatory for ATEX motors when they are used for VSD applications.



Depending on the operating conditions and the environment, the most suitable degree of protection must be chosen to prevent any damage due to water ingress, foreign objects or dust, and to prevent accidental contact with internal rotating parts or with live parts. The degrees of protection for electrical machines are designated by a code with two letters and two numerals and in some cases, an extra letter: IP (International Protection). Protection against contact with live or moving parts and the ingress of foreign bodies and water (not oil!). W, S and M are extra letters for denoting special degrees of protection. W for weather-protected machines; The extra letter W is inserted between the letters IP and the figures denoting the degree of protection, e.g. IPW23. For special applications (such as open-circuit air cooled machines on ships' decks having the air inlets and outlets covered when not in use) an extra letter can be inserted after the figures denoting the degree of protection to indicate whether the protection against harmful water ingress with the machine stationary (letter S) or moving (letter M) has been certified or tested.



	Protection against	
	Mechanical particles	Water
0	No protection	No protection
1	Protection against solid objects larger than 50 mm	Protection against vertically falling drops of rain
2	Protection against solid objects larger than 12 mm	Protection against drops of rain falling at 15° angle
3	Protection against solid objects larger than 2.5 mm	Protection against drops of rain falling at 60° angle
4	Protection against solid objects larger than 1 mm	Protection against water splashed from any direction
5	Protection against harmful deposits of dusts	Protection against water jet sprayed from any direction
6	Protection against penetration of dusts	Protection against heavy seas and powerful jets sprayed from any direction
7		Protection against immersion in water for specific time and pressure
8		Protection against continuous submersion in water

Motor	Degree of protection	Protection against mechanical particles		Protection against water
		accidental contact	solid foreign particles	
ODP motors (Open Drip Proof)	IP 23	Against contact with fingers	Against solid bodies larger than 12mm in diameter	Against spraying water at up to 60° from the vertical
TEFC motors Totally Enclosed Fan Cooled	IP 44	Against contact with tools or similar objects	Against solid bodies larger than 1mm in diameter	Against splashing water from all directions
	IP 54	Complete protection against accidental contact	Against harmful dust deposits	Against water jets from all directions
	IP 55			Against non heavy seas, strong jets
	IP 56			Against heavy seas, strong jets
	IP 65			Against water jets from all directions
	IP 67	Against the ingress of dust	Against submersion for specific time and pressure	
	IP 68		Against continuous submersion under conditions specified by the manufacturer	

# ErP DIRECTIVE 2009/125/EC & Commission Regulation (EU) 2019/1781

ErP Directive 2009/125/EC is setting requirements for ecodesign of Energy related Products (ErP).

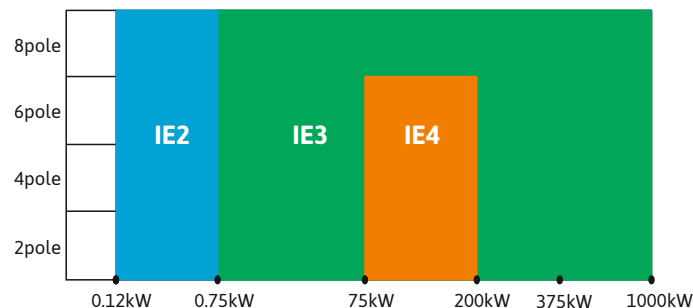
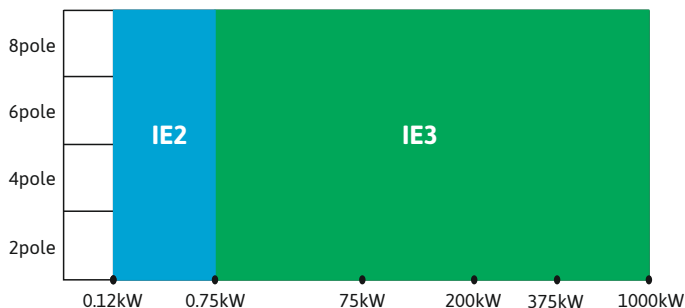
The Implementation Dates for Efficiency Classes related to Electric Motors are defined by EU Regulation 2019/1781.

According to the IEC 60034-30-1 : 2014 standard the Efficiency Class must be displayed on the rating plate and published in catalogues, websites etc.



From 01 July 2021 until 30 June 2023

From 01 July 2023



Execution	From 01/07/2021		From 01/07/2023	
	Included	Excluded	Included	Excluded
Three-phase standard motors (50Hz, 60Hz, 50Hz/60Hz)	✓		✓	
Three-phase TENV (IC410) motors		✓		✓
Three-phase TEAO (IC418) motors	✓		✓	
Three-phase ATEX motors	✓ <sup>(1)</sup>		✓	
Three-phase ATEX mining motors		✓		✓
Three-phase brake motors	✓		✓	
Three-phase water-cooled motors (water temp 0°C to +32°C)	✓		✓	
Three-phase submersible motors		✓		✓
Three-phase low temperature motors (< -30°C)		✓		✓
Three-phase high temperature motors (> +60°C)		✓		✓
Three-phase high altitude motors (> 4000m a.s.l.)		✓		✓
Three-phase short-term/intermittent duty motors		✓		✓
Inverter duty motors per IEC60034-25		✓		✓
Three-phase equipment intergrated motors		✓		✓
Multi speed motors (2-speed, 3-speed)		✓		✓
Three-phase slip-ring motors		✓		✓
Single phase motors for (50Hz, 60Hz, 50Hz/60Hz)		✓	✓ <sup>(2)</sup>	
Commutator motors		✓		✓

Non-compliant motors come without the CE marking / UKCA marking and cannot be installed and operated in the European Union/ United Kingdom, however can be supplied to the outside of the EU/UK.

Motors used in Means of Transportation (trains, ships, boats, barges) are exempt from the ErP Directive and come with CE/UKCA marking.

Efficiency at full load and partial loading (100% Load, 75% Load, 50% Load) must be published in catalogues and websites but only the efficiency at full load must be displayed on the motor's rating plate.

Nameplate:

- ▶ Sticker
- ▶ Aluminium
- ▶ Stainless steel

V	Hz	A	kW	cosφ	Nom.Eff	rpm	IE-CL
400 Δ	50	13.1	7.5	0.92	90.1	2950	IE3
690 Δ	50	7.6	7.5	0.92	90.1	2950	IE3
460 Δ	60	13.0	8.6	0.92	90.2	3550	IE3
460 Δ	60	11.5	7.5	0.91	90.2	3560	IE3

Sticker:

- ▶ QR Code
- with Ser.No.

UD2211/2345678-001-001  
 UK UK Importer: Van Houcke UK Ltd  
 CA Northampton NN3 6UR

<sup>(1)</sup> ATEX Ex eb (increased safety motors) are exempt until 30/06/2023 - Must comply with IE2 from 01/07/2023.

<sup>(2)</sup> All single-phase motors are exempt until 30/06/2023 - Must comply with IE2 from 01/07/2023.

Identical replacement motors may be supplied if the original motors were placed on the market before 01 July 2022. A statement that the motor may only be used as a replacement must be on the motor, packaging and documentation.



# MARKING OF ELECTRIC MOTORS FOR POTENTIALLY EXPLOSIVE ATMOSPHERES

Conditions and Subdivisions			Marking on operating equipment			
Flammable Materials	Temporary behaviour of explosive atmosphere	Classification of Hazardous Areas	Group (Directive 94/9/EC)	Equipment Category (Directive 94/9/EC)	Equipment Group (EN60079-0)	Equipment Protection (EN60079-0)
Gases & vapours	present continuously or for long periods or frequently	Zone 0	II	1G	II	Ga
	present occasionally in normal operation	Zone 1	II	2G (or 1G)	II	Gb (or Ga)
	not likely to be present in normal operation or will be short term only	Zone 2	II	3G (or 2G or 1G)	II	Gc (or Gb or Ga)
Dust	continuously present in clouds, or present for long periods or frequently	Zone 20	II	1D	III	Da
	occasionally develops into a cloud during normal operation	Zone 21	II	2D (or 1D)	III	Db (or Da)
	is not likely to develop into a cloud during normal operation or is short term only	Zone 22	II	3D (or 2D or 1D)	III	Dc (or Db or Da)
Methane Carbon dust	operation where there is a risk of explosion	--	I	M1	I	Ma
	disconnection where there is a risk of explosion	--	I	M2 (or M1)	I	Mb (or Ma)

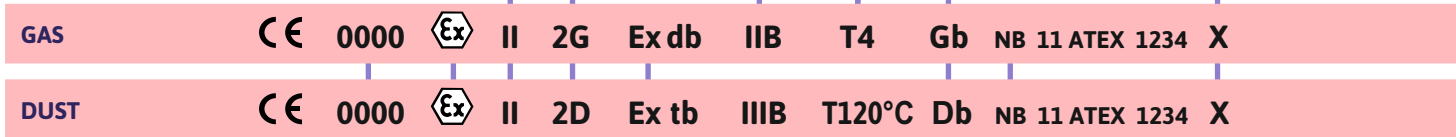
ATEX Electric Motors



Temp Class	Max Surface Temp
T1	450°C
T2	300°C
T3	200°C
T4	135°C
T5	100°C
T6	85°C

Use of the Equipment	
without	-no restrictions
X	-special conditions of use
U	-partial certification CE conformity after installation into operating equipment

Explosion Groups  
IIA; IIB; IIC



Notified Body (Testing Authority) Identification number

Specific marking of explosive protection

Dust Groups  
IIIA - combustible flyings  
IIIB - non-conductive dust  
IIIC - conductive dust

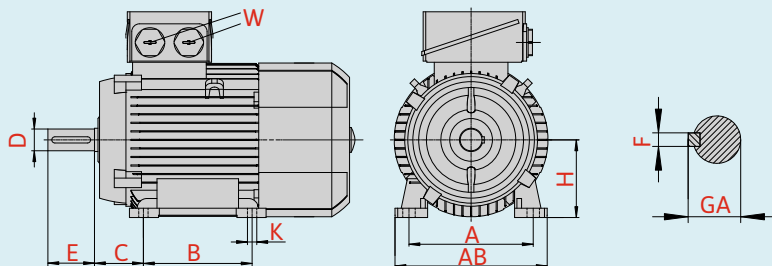
Notified Body

Ex db - Flame-proof to EN 60079-7  
Ex eb - Increased safety to EN 60079-7  
Ex ec - Non-sparking to EN 60079-7  
Ex db eb - Flame-proof motor with Increased safety Term. box  
Ex ta, Ex tb, Ex tc - Dust protection to EN 60079-31

Dust ignition temperature  
Permissible temperature of the layer  $T_{layer}$   
Permissible temperature of the cloud  $T_{cloud}$   
Max permissible temperature of the equipment  $T_{layer} \geq T_{max} \leq T_{cloud}$

# BASIC DIMENSIONS

B3



B3

- Foot mounted motor

B5 ("D" flange) - Flange mounted motor

B14A ("C" face) - Flange mounted motor

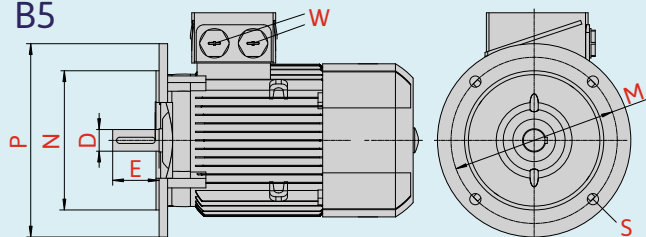
B14B - Flange mounted motor

B3/B5 - Foot & flange mounted motor

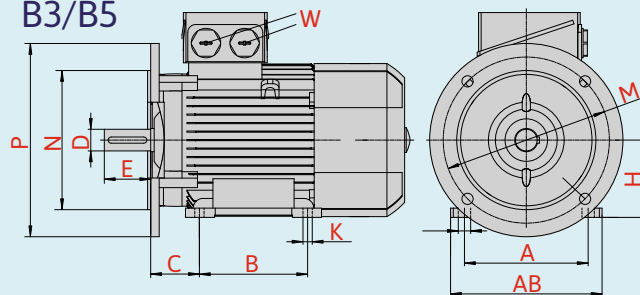
B3/B14A - Foot & flange mounted motor

B3/B14B - Foot & flange mounted motor

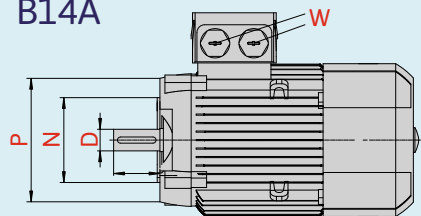
B5



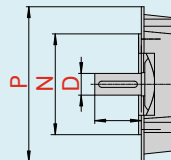
B3/B5



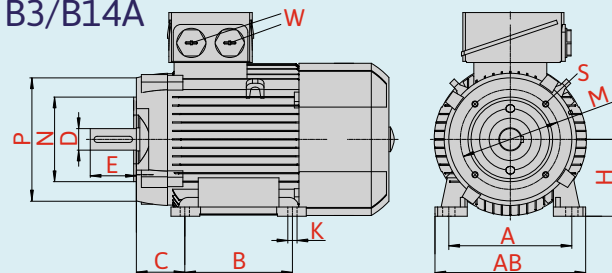
B14A



B14B

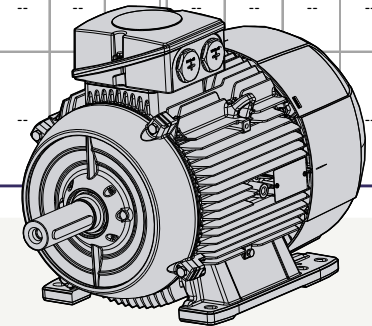


B3/B14A



BASIC DIMENSIONS												B5 FLANGE ("D" flange)				B14A FLANGE ("C" face)				B14B FLANGE						
Frame-(poles)		H	A	AB	B	C	K	W	SHAFT		KEY		PCD M	Spigot N	Dia P	Hole S	PCD M	Spigot N	Dia P	Hole S	PCD M	Spigot N	Dia P	Hole S		
									D	E	F	GA														
63 frame	63M	63	100	120	80	40	7 (M6)	M16+M25	11	23	4	12.5	115	95	140	10	75	60	90	M5	100	80	120	M6		
71 frame	71M	71	112	132	90	45	7 (M6)	M16+M25	14	30	5	16	130	110	160	10	85	70	105	M6	115	95	140	M8		
80 frame	80M	80	125	150	100	50	10 (M8)	M16+M25	19	40	6	21.5	165	130	200	12	100	80	120	M6	130	110	160	M8		
90 frame	90S 90L	90	140	165	100 125	56	10 (M8)	M16+M25	24	50	8	27	165	130	200	12	115	95	140	M8	130	110	160	M8		
100 frame	100L	100	160	192	140	63	12 (M10)	M32	28	60	8	31	215	180	250	14.5	130	110	160	M8	165	130	200	M10		
112 frame	112M	112	190	225	140	70	12 (M10)	M32	28	60	8	31	215	180	250	14.5	130	110	160	M8	165	130	200	M10		
132 frame	132S 132M	132	216	255	140 178	89	12 (M10)	M32	38	80	10	41	265	230	300	14.5	165	130	200	M10	215	180	250	M12		
160 frame	160M 160L	160	254	300	210 254	108	14.5 (M12)	M40	42	110	12	45	300	250	350	18.5	215	180	250	M12	--	--	--	--		
180 frame	180M 180L	180	279	339	241 279	121	14.5 (M12)	M40	48	110	14	51.5	300	250	350	18.5	--	--	--	--	--	--	--	--		
200 frame	200L	200	318	378	305	133	18.5 (M16)	M50	55	110	16	59	350	300	400	18.5	--	--	--	--	--	--	--	--		
225 frame	225S-4/6/8	225	356	436	286	149	18.5 (M16)	M50	60	140	18	64	400	350	450	18.5	--	--	--	--	--	--	--	--		
	225M-2				55				110	16	59															
	225M-4/6/8				60				140	18	64															
250 frame	250M-2	250	406	490	349	168	24 (M20)	M63	60	140	18	64	500	450	550	18.5	--	--	--	--	--	--	--	--		
	250M-4/6/8								65			140													18	69
280 frame	280S-2	280	457	540	368	190	24 (M20)	M63	65	140	18	69	500	450	550	18.5	--	--	--	--	--	--	--	--		
	280S-4/6/8								75			20													79.5	
	280M-2								65			140													18	69
	280M-4/6/8								75			20													79.5	
315 frame	315S-2	315	508	610	457	216	28 (M24)	M63	65	140	18	69	600	550	660	24	--	--	--	--	--	--	--	--		
	315S-4/6/8								80			170													22	85
	315M-2								65			140													18	69
	315M-4/6/8								80			170													22	85
	315L-2								65			140													18	69
	315L-4/6/8								80			170													22	85

PCD - Pitch Circle Diameter



Detailed drawings (2D and 3D) can be downloaded from our website [www.vanhoucke.co.uk](http://www.vanhoucke.co.uk).

Material	TYPE	Output	Output	Frame Size	Speed	Speed	Rated current				Power Factor	Efficiency at 50Hz			Rated torque	Ratio			Weight Aluminium kg	Weight Cast iron kg	
		50Hz kW	60Hz kW		50Hz rpm	60Hz rpm	380V A	400V A	415V A	460V A		cos φ	Class	100% Load %		75% Load %	50% Load %	Starting current			Starting torque
3000/3600rpm, 2-pole, 50/60Hz, IP55, Insulation F/B																					
	1T29001-0BA22-2_A4	0.18	0.21	63M	2850	3450	0.58	0.55	0.53	0.53	0.78	IE2	60.4	59.4	53.7	0.6	4.5	2.2	2.7	4	--
	1T29001-0BA32-2_A4	0.25	0.29	63M	2835	3435	0.72	0.69	0.66	0.66	0.81	IE2	64.8	63.5	57.3	0.8	4.1	1.9	2.5	5	--
	1T29001-0BA62-2_A4	0.37	0.43	63M	2800	3400	1.00	0.95	0.92	0.93	0.81	IE2	69.5	69.9	66.4	1.3	4.4	2.4	2.5	6	--
	1T29_01-0CA22-2_A4	0.37	0.43	71M	2770	3370	1.00	0.95	0.92	0.93	0.81	IE2	69.5	70.5	67.9	1.3	4.1	2.5	2.5	6	11.5
	1T29_01-0CA32-2_A4	0.55	0.63	71M	2780	3380	1.41	1.34	1.29	1.34	0.80	IE2	74.1	75.2	72.9	1.9	4.6	2.6	2.6	7	13
	1T29_03-0DA22-2_A4	0.75	0.86	80M	2850	3450	1.66	1.56	1.52	1.63	0.86	IE3	80.7	82.2	81.9	2.5	6.2	2.6	3.0	11	18
	1T29_03-0DA32-2_A4	1.1	1.27	80M	2885	3480	2.38	2.25	2.18	2.25	0.85	IE3	82.7	83.9	83.1	3.7	7.1	3.0	3.3	12	21
	1T29_03-0DA62-2_A4	1.5	1.75	80M	2865	3455	3.23	3.05	2.95	3.00	0.84	IE3	84.2	84.8	84.4	5	8.0	3.7	3.2	13	22
	1T29_03-0EA22-2_A4	1.5	1.75	90S	2910	3510	3.2	3.0	2.9	3.0	0.86	IE3	84.2	84.6	83.2	5	8.1	2.7	4.2	15	26
	1T29_03-0EA42-2_A4	2.2	2.55	90L	2910	3510	4.4	4.2	4.1	4.2	0.88	IE3	85.9	86.8	86.1	7	8.3	2.6	4.0	19	32
	1T29_03-0EA63-4_A4	3	3.45	90L	2920	3515	6.2	5.9	5.7	5.8	0.84	IE3	87.1	87.2	85.9	10	10.2	4.4	4.6	20	31
	1T29_03-1AA43-4_A4	3	3.45	100L	2910	3505	6.0	5.6	5.5	5.5	0.87	IE3	87.1	87.7	87.0	10	9.4	4.4	4.5	26	36
	1T29_03-1AA63-2_A4	4	4.55	100L	2910	3510	8.3	7.9	7.6	7.7	0.83	IE3	88.1	88.9	87.8	13	8.9	4.6	3.5	26	34
	1T29_03-1BA23-4_A4	4	4.55	112M	2945	3545	7.8	7.4	7.1	7.2	0.89	IE3	88.1	88.8	87.9	13	9.1	2.6	3.6	34	45
	1T29_03-1BA63-4_A4	5.5	6.3	112M	2950	3550	11	10.4	10	10	0.86	IE3	89.2	89.5	88.8	18	8.8	2.7	3.9	36	49
	1T29_03-1CA03-4_A4	5.5	6.3	132S	2945	3540	10.4	9.9	9.5	10	0.88	IE3	89.2	89.5	88.6	18	8.9	2.5	3.8	43	58
	1T29_03-1CA13-4_A4	7.5	8.6	132S	2950	3550	13.8	13	12.6	13	0.92	IE3	90.1	91.0	91.0	25	8.3	1.9	3.9	57	73
	1T29_03-1CA63-4_A4	11	12.6	132M	2955	3555	21.3	20	19.5	20	0.86	IE3	91.2	91.7	91.8	36	9.4	2.5	4.1	57	73
	1T29_03-1CA73-4_A4	15	17.3	132M	2960	3565	28.5	28	26.1	28	0.84	IE3	91.9	92.0	91.1	49	9.1	2.9	4.4	64	82
	1T29_03-1DA23-4_A4	11	12.6	160M	2955	3555	21	19.6	19.3	20	0.89	IE3	91.2	91.0	89.5	36	7.9	2.4	3.8	75	100
	1T29_03-1DA33-4_A4	15	17.3	160M	2960	3560	29	27	26	27	0.87	IE3	91.9	91.8	90.5	49	8.8	2.8	4.3	84	110
	1T29_03-1DA43-4_A4	18.5	21.3	160L	2955	3555	34	32	31	32	0.90	IE3	92.4	92.8	92.4	60	9.0	2.8	4.2	94	127
	1T29_03-1DA63-4_A4	22	25.3	160L	2945	3545	40	38	36	38	0.91	IE3	92.7	92.8	92.2	71	9.9	3.5	4.4	105	142
	1T29_03-1EA23-4_A4	22	24.5	180M	2950	3550	41	39	37	38	0.89	IE3	92.7	93.2	92.9	71	7.5	2.3	3.5	122	160
	1T29_03-1EA63-4_A4	30	33.5	180L	2950	3550	56	53	51	51	0.88	IE3	93.3	93.5	93.1	97	8.6	2.6	3.9	140	173
	1T29_03-2AA43-4_A4	30	33.5	200L	2955	3555	56	53	51	52	0.87	IE3	93.3	93.5	92.9	97	7.0	2.5	3.3	173	225
	1T29_03-2AA53-4_A4	37	41.5	200L	2955	3555	68	65	63	63	0.88	IE3	93.7	94.2	94.0	120	7.1	2.5	3.2	194	250
	1T29_03-2AA63-4_A4	45	51	200L	2950	3555	84	79	77	78	0.87	IE3	94.0	94.5	93.9	146	7.1	2.5	3.2	194	245
	1T29503-2BA23-4_A4	45	51	225M	2960	3560	82	78	75	77	0.89	IE3	94.0	94.5	94.4	145	6.9	2.4	3.1	--	315
	1T29503-2BA63-4_A4	55	62	225M	2965	3565	101	96	92	94	0.88	IE3	94.3	94.6	94.4	177	8.0	2.8	3.7	--	370
	1T29503-2CA23-4_A4	55	62	250M	2975	3575	100	95	91	92	0.89	IE3	94.3	94.5	93.9	177	6.7	2.3	3.1	--	385
	1T29503-2CA63-4_A4	75	84	250M	2970	3570	134	127	123	124	0.90	IE3	94.7	94.9	94.5	241	6.8	2.2	2.9	--	455
	1T29503-2DA03-4_A4	75	84	280S	2975	3575	135	129	124	126	0.89	IE3	94.7	94.8	94.1	241	6.8	2.4	3.0	--	510
	1T29503-2DA23-4_A4	90	101	280M	2975	3575	160	152	147	149	0.90	IE3	95.0	95.1	94.6	289	7.2	2.4	3.1	--	590
	1T29503-2DA63-4_A4	110	123	280M	2975	3575	193	183	177	179	0.91	IE3	95.2	95.4	95.1	353	7.7	2.5	3.2	--	660
	1T29503-3AA03-4_A4	110	123	315S	2982	3582	193	183	177	179	0.91	IE3	95.2	95.4	94.9	352	7.1	2.4	3.1	--	750
	1T29503-3AA23-4_A4	132	148	315M	2982	3582	231	220	212	214	0.91	IE3	95.4	95.5	95.2	423	7.2	2.5	3.1	--	880
	1T29503-3AA43-4_A4	160	180	315L	2982	3582	277	263	253	258	0.92	IE3	95.6	95.7	95.2	513	7.8	2.8	3.3	--	980
	1T29503-3AA53-4_A4	200	224	315L	2982	3582	345	328	316	319	0.92	IE3	95.8	95.9	95.5	641	7.2	2.5	3.0	--	1150
	1T25503-3AA63-4_A4	250	280	315L	2986	3586	451	429	413	417	0.88	IE3	95.8	95.7	95.0	800	9.3	3.0	4.2	--	1340
	1T25503-3AA73-4_A4	315	355	315L	2986	3586	575	546	526	529	0.87	IE3	95.8	95.6	94.8	1008	9.9	3.5	4.2	--	1520
	1T25603-3BA33-4_A4	355	400	355L	2988	3588	633	602	580	583	0.89	IE3	95.8	95.6	94.8	1135	8.9	2.6	4.0	--	2100
	1T25603-3BA43-4_A4	400	450	355L	2986	3586	690	656	632	642	0.92	IE3	95.8	95.7	95.2	1280	8.5	2.6	3.4	--	2240
	1T25603-3BA53-4_A4	500	560	355L	2988	3588	892	847	817	825	0.89	IE3	95.8	95.7	95.1	1599	8.9	3.0	3.8	--	2340

Material	TYPE	Output	Output	Frame Size	Speed	Speed	Rated current				Power Factor	Efficiency at 50Hz			Rated torque	Ratio			Weight Aluminium kg	Weight Cast iron kg	
		50Hz kW	60Hz kW		50Hz rpm	60Hz rpm	380V A	400V A	415V A	460V A		cosφ	Class	100% Load %		75% Load %	50% Load %	Starting current			Starting torque
1500/1800rpm, 4-pole, 50/60Hz, IP55, Insulation F/B																					
	1T29001-0BB32-2_A4	0.18	0.21	63M	1385	1685	0.65	0.62	0.60	0.60	0.65	IE2	64.7	62.4	55.7	1.2	3.3	2.6	2.6	5	--
	1T29_01-0CB22-2_A4	0.25	0.29	71M	1395	1695	0.80	0.76	0.74	0.75	0.69	IE2	68.5	68.4	64.2	1.7	3.7	2.4	2.5	6	12
	1T29_01-0CB32-2_A4	0.37	0.43	71M	1380	1680	1.08	1.02	0.98	1.04	0.72	IE2	72.7	73.2	69.9	2.6	4.0	2.5	2.5	7	13
	1T29_01-0DB22-2_A4	0.55	0.63	80M	1440	1735	1.45	1.39	1.33	1.42	0.74	IE2	77.1	76.8	73.7	3.7	5.3	2.2	3.1	10	17
	1T29_03-0DB32-2_A4	0.75	0.86	80M	1450	1750	1.82	1.75	1.67	1.72	0.75	IE3	82.5	82.3	80.1	5	7.1	2.7	3.9	14	23
	1T29_03-0DB62-2_A4	1.1	1.27	80M	1445	1740	2.55	2.40	2.34	2.35	0.78	IE3	84.1	84.6	83.6	7	7.0	3.5	3.0	15	24
	1T29_03-0EB02-2_A4	1.1	1.27	90S	1440	1740	2.5	2.4	2.3	2.4	0.78	IE3	84.1	84.7	83.4	7	6.9	2.9	3.6	16	25
	1T29_03-0EB42-2_A4	1.5	1.75	90L	1445	1740	3.3	3.2	3.1	3.2	0.80	IE3	85.3	85.7	84.4	10	7.3	2.9	3.5	19	31
	1T29_03-0EB62-2_A4	2.2	--	90L	1445	--	5.3	5.0	4.8	--	0.73	IE3	86.7	86.9	85.3	15	7.9	4.2	3.8	25	36
	1T29_03-1AB42-2_A4	2.2	2.55	100L	1455	1750	4.7	4.4	4.3	4.3	0.82	IE3	86.7	87.2	86.3	14	8.3	3.0	3.8	30	40
	1T29_03-1AB53-4_A4	3	3.45	100L	1450	1750	6.3	5.9	5.7	5.8	0.80	IE3	87.7	88.1	87.1	20	8.0	3.1	3.8	30	40
	1T29_03-1AB63-4_A4	4	4.55	100L	1455	1755	8.5	8.0	7.8	7.9	0.81	IE3	88.6	89.4	88.8	27	8.1	3.0	3.9	42	53
	1T29_03-1BB23-4_A4	4	4.55	112M	1460	1760	8.4	7.9	7.7	7.7	0.82	IE3	88.6	89.2	88.6	26	7.1	2.4	3.7	34	46
	1T29_03-1BB63-4_A4	5.5	6.3	112M	1460	1755	12	11	11	6	0.80	IE3	89.6	89.9	89.4	36	8.0	3.2	4.1	49	60
	1T29_03-1CB03-4_A4	5.5	6.3	132S	1470	1770	11	11	10	11	0.82	IE3	89.6	90.0	89.4	36	8.5	2.9	3.7	64	74
	1T29_03-1CB23-4_A4	7.5	8.6	132M	1465	1765	15	14	14	14	0.80	IE3	90.4	90.7	90.4	49	8.5	3.0	3.8	64	80
	1T29_03-1CB63-4_A4	11	12.6	132M	1470	1770	23	22	21	21	0.79	IE3	91.4	91.8	91.1	71	8.3	2.8	3.8	81	97
	1T29_03-1DB23-4_A4	11	12.6	160M	1470	1765	22	21	20	20	0.82	IE3	91.4	91.9	91.9	71	8.0	2.5	3.5	83	109
	1T29_03-1DB43-4_A4	15	17.3	160L	1475	1775	30	29	28	28	0.82	IE3	92.1	92.3	91.5	97	8.5	2.5	3.8	100	127
	1T29_03-1DB63-4_A4	18.5	21.3	160L	1480	1775	38	38	34	37	0.76	IE3	92.6	92.7	91.8	119	8.1	2.7	3.8	110	126
	1T29_03-1EB23-4_A4	18.5	21.3	180M	1470	1770	37	35	34	35	0.82	IE3	92.6	93.1	92.9	120	7.2	2.5	3.3	134	165
	1T29_03-1EB43-4_A4	22	25.3	180L	1470	1770	43	41	40	41	0.83	IE3	93.0	93.6	93.6	143	6.8	2.3	3.3	142	170
	1T29_03-1EB63-4_A4	30	34.5	180L	1470	1770	62	59	57	57	0.79	IE3	93.6	94.0	93.8	195	8.2	3.0	3.8	154	193
	1T29_03-2AB53-4_A4	30	34.5	200L	1470	1770	58	55	53	55	0.84	IE3	93.6	94.0	93.7	195	7.3	2.6	3.1	189	240
	1T29_03-2AB63-4_A4	37	42.5	200L	1475	1775	74	70	68	68	0.81	IE3	93.9	94.0	93.6	240	8.1	3.1	3.5	205	260
	1T29503-2BB03-4_A4	37	42.5	225S	1478	1778	70	66	64	66	0.86	IE3	93.9	94.5	94.4	239	6.4	2.5	2.7	--	285
	1T29503-2BB23-4_A4	45	52	225M	1478	1778	84	80	77	81	0.86	IE3	94.2	94.9	95.0	291	6.6	2.6	2.6	--	340
	1T29503-2BB63-4_A4	55	63	225M	1478	1778	103	98	94	98	0.86	IE3	94.6	95.3	95.5	356	6.5	2.8	2.7	--	405
	1T29503-2CB23-4_A4	55	63	250M	1482	1782	102	97	93	97	0.87	IE3	94.6	95.1	95.0	355	6.8	2.5	2.9	--	420
	1T29503-2CB63-4_A4	75	86	250M	1486	1785	141	134	129	132	0.85	IE3	95.0	95.2	94.8	482	7.9	3.0	3.4	--	510
	1T29503-2DB03-4_A4	75	86	280S	1485	1785	140	133	128	131	0.86	IE3	95.0	95.3	95.0	483	6.9	2.5	3.0	--	570
	1T29503-2DB23-4_A4	90	104	280M	1485	1785	165	157	151	158	0.87	IE3	95.2	95.5	95.3	579	7.2	2.6	3.0	--	670
	1T29503-2DB63-4_A4	110	127	280M	1486	1785	206	196	189	195	0.85	IE3	95.4	95.5	95.0	707	8.3	3.0	3.4	--	710
	1T29503-3AB03-4_A4	110	127	315S	1488	1788	202	192	185	191	0.87	IE3	95.4	95.8	95.5	706	6.8	2.6	2.9	--	760
	1T29503-3AB23-4_A4	132	152	315M	1490	1788	241	229	221	226	0.87	IE3	95.6	95.9	95.9	846	7.3	2.8	3.0	--	960
	1T29503-3AB43-4_A4	160	184	315L	1490	1788	292	277	267	273	0.87	IE3	95.8	96.1	96.1	1026	7.3	2.9	3.1	--	990
	1T29503-3AB53-4_A4	200	230	315L	1488	1788	360	342	330	344	0.88	IE3	96.0	96.3	96.1	1284	7.4	3.2	3.0	--	1190
	1T25503-3AB63-4_A4	250	290	315L	1490	1788	466	443	427	440	0.85	IE3	96.0	96.1	95.7	1603	7.9	2.8	3.2	--	1290
	1T25503-3AB73-4_A4	315	360	315L	1490	1790	601	571	551	560	0.83	IE3	96.0	96.0	95.6	2020	8.5	3.2	3.5	--	1560
	1T25603-3BB33-4_A4	355	410	355L	1492	1792	654	621	599	623	0.86	IE3	96.0	96.0	95.4	2273	7.9	2.9	2.8	--	2020
	1T25603-3BB43-4_A4	400	460	355L	1492	1792	755	717	691	707	0.84	IE3	96.0	96.0	95.5	2561	8.4	3.4	3.0	--	2110
	1T25603-3BB53-4_A4	500	580	355L	1491	1790	921	875	844	871	0.86	IE3	96.0	96.1	95.9	3204	8.1	3.1	3.3	--	2290

The motors in these tables follow the ErP Directive (are IE2 from 0.12kW to 0.55kW and IE3 from 0.75kW).

IE3 motors with power output lower than 0.75kW are available. Please contact us for more details!

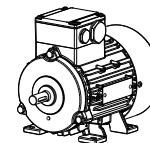
Material	TYPE	Output	Output	Frame Size	Speed	Speed	Rated current				Power Factor	Efficiency at 50Hz			Rated torque	Ratio			Weight Aluminium kg	Weight Cast iron kg	
		50Hz kW	60Hz kW		50Hz rpm	60Hz rpm	380V A	400V A	415V A	460V A		cosφ	Class	100% Load %		75% Load %	50% Load %	Starting current			Starting torque
1000/1200rpm, 6-pole, 50/60Hz, IP55, Insulation F/B																					
	1T29_01-0CC22-2_A4	0.18	0.21	71M	875	1075	0.71	0.68	0.65	0.72	0.68	IE2	56.6	56.9	52.7	1.96	2.5	2.2	2.3	6	11.5
	1T29_01-0CC32-2_A4	0.25	0.29	71M	870	1070	0.88	0.84	0.81	0.87	0.70	IE2	61.6	62.7	59.2	2.75	2.6	2.3	2.3	7	12.5
	1T29_01-0DC22-2_A4	0.37	0.43	80M	925	1125	1.14	1.14	1.05	1.22	0.69	IE2	67.6	67.9	64.4	3.80	4.0	2.1	2.4	9	16.5
	1T29_01-0DC32-2_A4	0.55	0.63	80M	935	1135	1.71	1.65	1.57	1.76	0.66	IE2	73.1	73.8	70.8	5.60	4.4	2.5	2.9	12	18.5
	1T29_03-0EC02-2_A4	0.75	0.86	90S	945	1140	2.0	2.0	1.8	1.9	0.70	IE3	78.9	80.0	78.8	7.6	4.6	2.2	2.6	16	27
	1T29_03-0EC42-2_A4	1.1	1.27	90L	950	1150	3.1	3.0	2.8	3.2	0.66	IE3	81.0	81.4	79.3	11.1	5.0	2.8	3.0	19	32
	1T29_03-1AC42-2_A4	1.5	1.75	100L	970	1170	3.6	3.5	3.3	3.5	0.73	IE3	82.5	83.1	81.5	15.0	5.2	1.9	2.8	30	34
	1T29_03-1BC22-2_A4	2.2	2.55	112M	970	1170	5.0	4.7	4.5	4.8	0.75	IE3	84.3	85.0	83.9	22.0	5.6	2.2	2.8	29	47
	1T29_03-1BC63-2_A4	3	3.45	112M	965	1165	7.2	6.8	6.6	6.6	0.74	IE3	85.6	86.8	86.6	29.5	5.8	2.7	2.3	45	55
	1T29_03-1CC03-4_A4	3	3.45	132S	975	1175	6.8	6.9	6.3	6.5	0.73	IE3	85.6	85.8	84.3	29.5	6.6	2.3	3.2	43	68
	1T29_03-1CC23-4_A4	4	4.55	132M	975	1175	8.9	9.1	8.1	8.6	0.73	IE3	86.8	87.3	86.2	39.0	6.2	2.2	3.0	52	68
	1T29_03-1CC33-4_A4	5.5	6.3	132M	975	1175	12	13	11	12	0.72	IE3	88.0	88.1	86.9	54.0	6.8	2.7	3.4	52	81
	1T29_03-1DC23-4_A4	7.5	8.6	160M	985	1185	17	15	15	15	0.81	IE3	89.1	89.7	89.0	73.0	7.9	2.3	3.2	93	120
	1T29_03-1DC43-4_A4	11	12.6	160L	980	1180	24	22	22	22	0.80	IE3	90.3	90.7	89.8	107.0	6.8	2.9	2.8	115	149
	1T29_03-1EC43-4_A4	15	18	180L	975	1170	31	30	29	31	0.80	IE3	91.2	92.0	91.9	147.0	5.9	2.3	2.8	130	180
	1T29_03-1EC63-4_A4	18.5	22	180L	975	1175	40	38	37	38	0.77	IE3	91.7	92.3	91.9	181.0	6.9	2.6	3.3	150	215
	1T29_03-2AC43-4_A4	18.5	22	200L	978	1175	39	37	36	38	0.79	IE3	91.7	92.5	92.4	181.0	5.6	2.5	2.6	166	215
	1T29_03-2AC53-4_A4	22	26.5	200L	978	1175	46	44	42	44	0.79	IE3	92.2	92.8	92.3	215.0	5.6	2.5	2.6	179	230
	1T29_03-2AC63-4_A4	30	36	200L	978	1175	62	59	57	61	0.79	IE3	92.9	93.6	93.7	295.0	6.5	2.8	2.8	220	264
	1T29503-2BC23-4_A4	30	36	225M	982	1180	59	56	54	58	0.83	IE3	92.9	93.6	93.5	292.0	6.6	2.6	3.0	--	325
	1T29503-2BC63-4_A4	37	44.5	225M	982	1180	74	71	68	73	0.81	IE3	93.3	93.9	93.7	360.0	7.1	3.0	3.2	--	395
	1T29503-2CC23-4_A4	37	44.5	250M	985	1182	71	67	65	70	0.85	IE3	93.3	94.0	94.0	359.0	7.0	2.7	2.9	--	405
	1T29503-2CC63-4_A4	45	54	250M	986	1182	87	83	80	86	0.84	IE3	93.7	94.3	94.2	436.0	7.0	2.8	2.9	--	480
	1T29503-2DC03-4_A4	45	54	280S	988	1186	86	82	79	84	0.85	IE3	93.7	94.3	94.2	435.0	6.8	3.0	2.8	--	510
	1T29503-2DC23-4_A4	55	66	280M	988	1186	105	99	96	102	0.85	IE3	94.1	94.5	94.4	532.0	7.2	3.3	3.0	--	560
	1T29503-2DC63-4_A4	75	90	280M	988	1188	145	138	133	140	0.83	IE3	94.6	95.0	94.8	725.0	8.6	3.7	3.3	--	630
	1T29503-3AC03-4_A4	75	90	315S	990	1190	144	136	131	142	0.84	IE3	94.6	94.9	94.4	724.0	7.5	2.6	3.1	--	750
	1T29503-3AC23-4_A4	90	108	315M	991	1190	170	161	155	170	0.85	IE3	94.9	95.2	94.9	868.0	6.7	2.5	2.8	--	890
	1T29503-3AC43-4_A4	110	132	315L	991	1190	209	199	192	205	0.84	IE3	95.1	95.5	95.3	1060.0	7.2	2.8	3.0	--	990
	1T29503-3AC53-4_A4	132	158	315L	992	1191	257	244	235	252	0.82	IE3	95.4	95.7	95.4	1271.0	8.0	3.3	3.3	--	1130
	1T29503-3AC63-4_A4	160	192	315L	992	1191	310	295	284	302	0.82	IE3	95.6	95.8	95.5	1541.0	8.5	3.5	3.6	--	1260
	1T25503-3AC73-4_A4	200	240	315L	992	1192	387	368	355	379	0.82	IE3	95.8	95.9	95.6	1926.0	7.5	3.0	3.2	--	1410
	1T25503-3AC83-4_A4	250	300	315L	992	1191	490	466	449	474	0.81	IE3	95.8	95.9	95.6	2408.0	8.2	3.2	3.3	--	1700
	1T25603-3BC23-4_A4	315	380	355L	993	1192	610	579	559	593	0.82	IE3	95.8	95.8	95.3	3031.0	7.8	2.9	3.2	--	2040
	1T25603-3BC33-4_A4	355	425	355L	993	1192	679	645	622	664	0.83	IE3	95.8	95.9	95.5	3416.0	8.4	2.9	3.3	--	2250
	1T25603-3BC43-4_A4	400	480	355L	994	1193	756	718	692	732	0.84	IE3	95.8	96.0	95.8	3845.0	8.1	2.8	3.0	--	2240

Aluminium motors

Motors marked in red are 'Higher Output Motors' (power output available in one frame size smaller than the IEC frame size).

Choice of Aluminium / Cast iron motors

Cast iron motors



Material	TYPE	Output	Output	Frame Size	Speed	Speed	Rated current				Power Factor	Efficiency at 50Hz			Rated torque	Ratio			Weight Aluminium kg	Weight Cast iron kg	
		50Hz kW	60Hz kW		50Hz rpm	60Hz rpm	380V A	400V A	415V A	460V A		Class	100% Load %	75% Load %		50% Load %	Starting current	Starting torque			B/down torque
750/900rpm, 8-pole, 50/60Hz, IP55, Insulation F/B																					
	1T29_01-0DD22-2_A4	0.18	0.21	80M	690	840	1.0	0.9	0.9	1.0	0.60	IE2	45.9	43.6	37.8	2.5	2.2	1.7	2.1	8.5	16.5
	1T29_01-0DD32-2_A4	0.25	0.29	80M	705	855	1.4	1.3	1.3	1.3	0.55	IE2	50.6	48.1	41.9	3.4	2.5	2.0	2.5	10.4	18.5
	1T29_01-0ED02-2_A4	0.37	0.43	90S	675	830	1.4	1.3	1.3	1.33	0.71	IE2	56.1	55.6	49.6	5.2	2.6	1.4	1.7	11.5	20
	1T29_01-0ED42-2_A4	0.55	0.63	90L	665	820	1.8	1.7	1.7	1.77	0.74	IE2	61.7	63.4	59.8	7.9	2.7	1.5	1.7	14.5	21.5
	1T29_03-1AD42-2_A4	0.75	0.86	100L	710	860	2.3	2.2	2.1	2.1	0.67	IE3	75.0	75.7	73.1	10	3.7	1.5	2.1	20	31
	1T29_03-1AD52-2_A4	1.1	1.27	100L	710	860	3.2	3.1	2.9	3.0	0.67	IE3	77.7	76.4	75.1	15	4.1	1.8	2.3	26	37
	1T29_03-1BD22-2_A4	1.5	1.75	112M	720	870	4.5	4.3	4.2	4.2	0.63	IE3	79.7	85.6	77.3	20	5.1	2.6	3.1	34	46
	1T29_03-1CD02-2_A4	2.2	2.55	132S	725	875	6.5	6.2	5.9	5.9	0.71	IE3	81.9	82.5	80.9	29	5.0	1.9	2.5	56	66
	1T29_03-1CD23-4_A4	3	3.45	132M	725	875	9.0	8.5	8.2	8.0	0.72	IE3	83.5	83.8	82.2	40	5.2	2.0	2.5	65	78
	1T29_03-1DD23-4_A4	4	4.55	160M	730	880	11	10	10	10	0.74	IE3	84.8	86.0	85.5	52	4.7	1.6	2.1	72	98
	1T29_03-1DD33-4_A4	5.5	6.3	160M	730	880	15	14	14	14	0.73	IE3	86.2	87.0	86.3	72	5.5	2.0	2.4	86	110
	1T29_03-1DD43-4_A4	7.5	8.6	160L	730	880	20	19	18	18	0.73	IE3	87.3	87.9	86.9	98	5.8	2.3	2.7	110	135
	1T29_03-1ED43-4_A4	11	13.2	180L	725	870	26	24	23	25	0.74	IE3	88.6	89.6	89.0	145	5.1	2.1	2.4	161	190
	1T29_03-2AD53-4_A4	15	18	200L	730	875	35	34	32	34	0.73	IE3	89.6	90.1	89.4	196	6.8	3.0	3.7	212	255
	1T29_03-2AD63-2_A4	18.5	22	200L	725	875	44	42	40	41	0.71	IE3	90.1	90.5	89.5	245	6.7	3.7	3.1	205	256
	1T29503-2BD03-4_A4	18.5	22	225S	732	882	42	40	38	40	0.75	IE3	90.1	90.6	90.0	241	5.9	2.5	3.0	--	270
	1T29503-2BD23-4_A4	22	26.5	225M	732	882	48	46	44	46	0.77	IE3	90.6	91.4	91.2	287	5.9	2.6	2.9	--	280
	1T29503-2BD63-4_A4	30	36	225M	732	880	67	63	61	64	0.75	IE3	91.3	92.0	91.8	392	6.1	2.7	3.1	--	325
	1T29503-2CD23-4_A4	30	36	250M	735	882	63	60	58	61	0.79	IE3	91.3	91.8	91.5	390	6.1	2.6	3.0	--	370
	1T29503-2CD63-4_A4	37	44.5	250M	730	880	76	72	69	74	0.81	IE3	91.8	92.9	93.2	484	5.7	2.3	2.6	--	405
	1T29503-2DD03-4_A4	37	44.5	280S	736	885	79	75	72	76	0.78	IE3	91.8	92.5	92.4	480	5.4	2.3	2.4	--	460
	1T29503-2DD23-4_A4	45	54	280M	738	886	93	88	85	90	0.80	IE3	92.2	92.8	92.6	583	5.9	2.5	2.5	--	550
	1T29503-2DD63-4_A4	55	66	280M	736	885	113	107	104	110	0.80	IE3	92.5	93.3	92.6	714	5.9	2.5	2.5	--	550
	1T29503-3AD03-4_A4	55	66	315S	740	888	112	106	102	108	0.81	IE3	92.5	92.9	92.6	710	6.0	2.3	2.7	--	650
	1T29503-3AD23-4_A4	75	90	315M	738	888	151	144	139	147	0.81	IE3	93.1	93.5	93.3	971	5.9	2.3	2.7	--	720
	1T29503-3AD43-4_A4	90	108	315L	740	890	177	168	162	174	0.83	IE3	93.4	94.2	94.3	1162	5.8	2.2	2.5	--	860
	1T29503-3AD53-4_A4	110	132	315L	740	888	218	207	199	211	0.82	IE3	93.7	94.2	94.1	1420	6.7	2.7	2.9	--	980
	1T29503-3AD63-4_A4	132	158	315L	740	888	264	251	241	253	0.81	IE3	94.0	94.4	94.1	1704	7.2	2.9	3.3	--	1070
	1T25503-3AD73-4_A4	160	192	315L	741	890	327	310	299	321	0.79	IE3	94.3	94.7	94.7	2063	6.3	2.5	2.5	--	1420
	1T25503-3AD83-4_A4	200	240	315L	742	891	412	392	378	402	0.78	IE3	94.6	94.8	94.6	2575	6.7	2.9	2.8	--	1660
	1T25603-3BD13-4_A4	250	300	355L	744	893	502	477	460	490	0.80	IE3	94.6	95.0	95.0	3210	7.1	2.4	2.7	--	2280
	1T25603-3BD23-4_A4	315	380	355L	744	893	633	601	580	621	0.80	IE3	94.6	94.9	94.6	4045	7.3	2.5	3.0	--	2310

1T29\_03-1AD42-2\_A4

Aluminium motor: insert '0'  
Cast iron motor: insert 'S'

- insert 'A' for B3-foot mounted motor
- insert 'F' for B5-flange mounted motor
- insert 'J' for B3/B5- foot & flange mounted motor
- insert 'K' for B14-flange mounted motor
- insert 'N' for B3/B14- foot & flange mounted motor

Material	TYPE	Output		Frame Size	Speed		Rated current				Power Factor	Efficiency at 50Hz			Rated torque	Ratio			Weight Aluminium kg	Weight Cast iron kg	
		50Hz kW	60Hz kW		50Hz rpm	60Hz rpm	380V A	400V A	415V A	460V A		Class	100% Load %	75% Load %		50% Load %	Starting current	Starting torque			B/down torque
3000/3600rpm, 2-pole, 50/60Hz, IP55, Insulation F/B																					
	1T29_04-1AA43-4_A4	3	3.45	100L	2920	3515	5.9	5.7	5.4	5.6	0.86	IE4	89.1	89.8	89.4	10	9.0	3.7	4.9	27	37
	1T29_04-1BA23-4_A4	4	4.55	112M	2950	3545	7.6	7.2	7.0	7.1	0.89	IE4	90.0	90.4	89.7	13	8.8	2.6	4.1	34	43
	1T29_04-1CA03-4_A4	5.5	6.3	132S	2960	3560	11.0	10.4	10.1	10.2	0.84	IE4	90.9	90.9	89.8	18	8.6	2.1	4.6	44	50
	1T29_04-1CA13-4_A4	7.5	8.6	132S	2955	3555	13.7	13.0	12.5	13.0	0.91	IE4	91.7	92.4	92.2	24	8.6	2.2	4.3	56	75
	1T29_04-1DA23-4_A4	11	12.6	160M	2955	3555	20	19	18	19	0.90	IE4	92.6	92.8	92.0	36	8.6	2.8	4.2	84	111
	1T29_04-1DA33-4_A4	15	17.3	160M	2955	3555	27	26	25	26	0.90	IE4	93.3	93.5	92.9	49	9.0	3.1	4.5	98	130
	1T29_04-1DA43-4_A4	18.5	21.3	160L	2955	3555	33	32	30	32	0.91	IE4	93.7	94.1	93.8	60	8.9	3.1	4.3	120	131
	1T29_04-1EA23-4_A4	22	24.5	180M	2950	3555	40	38	37	37	0.89	IE4	94.0	94.4	94.1	71	8.9	2.8	4.3	139	175
	1T29_04-2AA43-4_A4	30	33.5	200L	2955	3560	59	54	54	52	0.85	IE4	94.5	94.8	94.4	97	7.9	2.8	4.0	173	222
	1T29_04-2AA53-4_A4	37	41.5	200L	2955	3555	70	64	64	63	0.88	IE4	94.8	95.1	94.9	120	7.8	2.9	4.0	214	263
	1T29504-2BA23-4_A4	45	51	225M	2970	3570	85	81	78	78	0.85	IE4	95.0	95.0	94.4	145	8.8	3.1	4.1	--	330
	1T29504-2CA23-4_A4	55	62	250M	2978	3578	100	95	91	94	0.88	IE4	95.3	95.2	94.5	176	7.5	2.5	3.2	--	430
	1T29504-2DA03-4_A4	75	84	280S	2980	3580	134	127	123	123	0.89	IE4	95.6	95.6	95.0	240	8.4	2.7	3.5	--	610
	1T29504-2DA23-4_A4	90	101	280M	2978	3578	161	153	147	148	0.89	IE4	95.8	95.9	95.4	289	8.4	2.7	3.5	--	610
	1T25504-3AA03-4_A4	110	123	315S	2988	3588	194	184	177	178	0.90	IE4	96.0	95.9	95.1	352	9.1	2.5	3.7	--	916
	1T25504-3AA23-4_A4	132	148	315M	2988	3588	232	220	212	216	0.90	IE4	96.2	96.2	95.6	422	9.8	2.6	3.9	--	1010
	1T25504-3AA43-4_A4	160	179	315L	2986	3586	281	267	257	260	0.90	IE4	96.3	96.3	95.8	512	9.6	2.5	3.9	--	1050
	1T25504-3AA53-4_A4	200	225	315L	2986	3586	346	329	317	323	0.91	IE4	96.5	96.6	96.2	640	9.7	2.7	3.7	--	1240
	1T25504-3AA63-4_A4	250	280	315L	2986	3586	448	425	410	416	0.88	IE4	96.5	96.4	95.7	800	9.3	3.0	4.2	--	1340
	1T25504-3AA73-4_A4	315	355	315L	2986	3586	571	542	523	527	0.87	IE4	96.5	96.3	95.5	1008	9.9	3.5	4.2	--	1520
	1T25604-3BA33-4_A4	355	400	355L	2988	3588	629	597	576	581	0.89	IE4	96.5	96.3	95.5	1135	8.9	2.6	4.0	--	2100
	1T25604-3BA43-4_A4	400	450	355L	2986	3586	685	651	628	639	0.92	IE4	96.5	96.4	95.9	1280	8.5	2.6	3.4	--	2240
	1T25604-3BA53-4_A4	500	560	355L	2988	3588	886	841	811	822	0.89	IE4	96.5	96.4	95.8	1599	8.9	3.0	3.8	--	2340

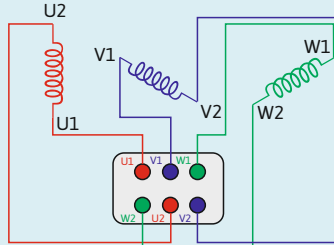
Standard three-phase motors (IE1, IE2, IE3 & IE4) specification:

Output [kW]	0.12	0.18	0.25	0.37	0.55	0.75	1.1	1.5	2.2	3	4	5.5	7.5	11	15	18.5	22	30	37	45	55	75	90	110	132	160	200	250	315		
Voltage	230/400V 50Hz, 460V 60Hz										400/690V 50Hz, 460V 60Hz																				
Conditions	Ambient Temperature -20°C to +40°C. Altitude up to 1000 metres above sea level. S1 Duty Cycle (continuous duty)																														

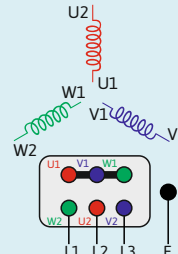
Variety of other voltages and ambient temperature executions available. Price on application.

Comprehensive Short Term Duty calculator is available on our website ([www.vanhoucke.co.uk](http://www.vanhoucke.co.uk)). Please click on **CALCULATION** button.

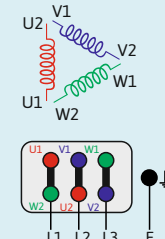
Winding configuration:  
(valid for 3-phase motors)



Star:



Delta:

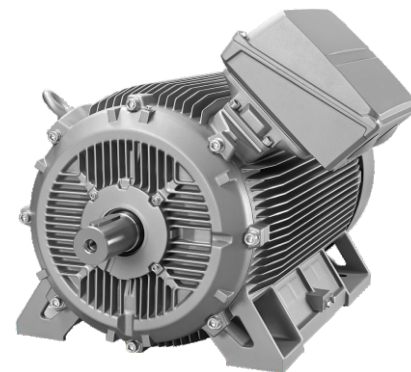
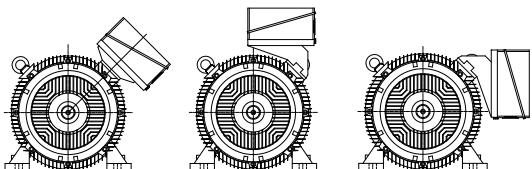




Material	TYPE	Output	Output	Frame Size	Speed	Speed	Rated current				Power Factor	Efficiency at 50Hz			Rated torque	Ratio			Weight	Weight	
		50Hz kW	60Hz kW		50Hz rpm	60Hz rpm	380V A	400V A	415V A	460V A		Class	100% Load %	75% Load %		50% Load %	Starting current	Starting torque	B/down torque	Aluminium kg	Cast iron kg
1500/1800rpm, 4-pole, 50/60Hz, IP55, Insulation F/B																					
	1TZ9_04-1AB42-2_A4	2.2	2.55	100L	1465	1765	4.7	4.5	4.3	4.4	0.79	IE4	89.5	89.6	88.3	14	8.5	3.3	4.7	30	40
	1TZ9_04-1AB53-4_A4	3	3.45	100L	1460	1760	6.2	5.9	5.7	5.8	0.81	IE4	90.4	91.0	90.5	20	8.8	3.5	4.2	38	52
	1TZ9_04-1BB23-4_A4	4	4.55	112M	1465	1765	8.3	7.8	7.6	7.6	0.81	IE4	91.1	91.6	91.0	26	8.3	3.1	4.3	46	60
	1TZ9_04-1CB03-4_A4	5.5	6.3	132S	1470	1770	10.9	10.4	10.0	10.3	0.83	IE4	91.9	92.5	92.3	36	8.3	2.6	3.5	59	82
	1TZ9_04-1CB23-4_A4	7.5	8.6	132M	1470	1770	15.2	14.4	14.0	14.2	0.81	IE4	92.6	93.1	92.7	49	7.7	3.0	4.0	62	86
	1TZ9_04-1DB23-4_A4	11	12.6	160M	1480	1780	22	21	20	21	0.82	IE4	93.3	93.4	92.5	71	8.1	2.9	4.1	98	127
	1TZ9_04-1DB43-4_A4	15	17.3	160L	1480	1780	30	29	28	29	0.80	IE4	93.9	94.0	93.3	97	7.8	3.7	4.3	109	137
	1TZ9_04-1EB23-4_A4	18.5	21.3	180M	1470	1770	37	35	34	35	0.81	IE4	94.2	94.7	94.5	120	7.9	2.7	3.6	153	187
	1TZ9_04-1EB43-4_A4	22	25.3	180L	1475	1775	44	42	40	41	0.81	IE4	94.5	95.0	94.8	142	7.7	2.9	3.8	158	192
	1TZ9_04-2AB53-4_A4	30	34.5	200L	1475	1775	59	56	54	55	0.81	IE4	94.9	95.2	94.9	194	7.3	3.2	3.6	205	258
	1TZ9504-2BB03-4_A4	37	42.5	225S	1485	1782	70	67	64	66	0.84	IE4	95.2	95.5	95.2	238	8.4	3.2	3.2	--	345
	1TZ9504-2BB23-4_A4	45	52	225M	1485	1785	85	81	78	81	0.84	IE4	95.4	95.7	95.4	290	8.0	3.4	3.3	--	415
	1TZ9504-2CB23-4_A4	55	63	250M	1486	1786	102	97	93	96	0.86	IE4	95.7	95.8	95.4	354	8.2	3.0	3.3	--	490
	1TZ9504-2DB03-4_A4	75	86	280S	1490	1788	140	133	128	132	0.85	IE4	96.0	96.1	95.6	481	9.2	3.4	3.8	--	670
	1TZ9504-2DB23-4_A4	90	104	280M	1488	1790	166	157	152	158	0.86	IE4	96.1	96.3	96.1	578	9.0	3.2	3.4	--	730
	1TZ5504-3AB03-4_A4	110	127	315S	1491	1790	202	192	185	193	0.86	IE4	96.3	96.4	96.0	705	8.6	3.3	3.3	--	922
	1TZ5504-3AB23-4_A4	132	152	315M	1490	1790	245	233	224	233	0.85	IE4	96.4	96.6	96.3	846	8.2	3.3	3.2	--	942
	1TZ5504-3AB43-4_A4	160	184	315L	1490	1790	296	282	271	279	0.85	IE4	96.6	96.8	96.6	1026	7.9	3.3	3.1	--	1200
	1TZ5504-3AB53-4_A4	200	230	315L	1490	1788	370	352	339	347	0.85	IE4	96.7	96.9	96.8	1282	7.8	3.4	3.1	--	1290
	1TZ5504-3AB63-4_A4	250	290	315L	1490	1790	457	434	419	440	0.86	IE4	96.7	96.8	96.5	1603	7.9	2.8	3.2	--	1500
	1TZ5504-3AB73-4_A4	315	360	315L	1490	1790	597	567	547	560	0.83	IE4	96.7	96.7	96.3	2020	8.5	3.2	3.5	--	1560
	1TZ5604-3BB33-4_A4	355	410	355L	1492	1792	673	639	616	630	0.83	IE4	96.7	96.7	96.2	2273	7.9	2.8	2.8	--	2050
	1TZ5604-3BB43-4_A4	400	460	355L	1492	1792	767	729	703	733	0.82	IE4	96.7	96.7	96.2	2561	7.9	3.2	2.9	--	2080
	1TZ5604-3BB53-4_A4	500	580	355L	1491	1790	915	869	837	865	0.86	IE4	96.7	96.8	96.6	3204	8.1	3.1	3.3	--	2290

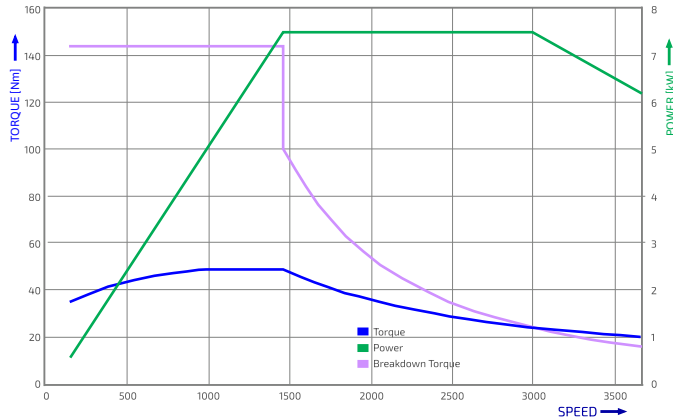
1TZ5 315 & 355  
IE3 & IE4

Available with Terminal Box mounted diagonally or on top or on side when the adapter trunk is used.



Material	TYPE	Output		Frame Size	Speed		Rated current				Power Factor	Efficiency at 50Hz				Rated torque	Ratio			Weight Aluminium kg	Weight Cast iron kg
		50Hz kW	60Hz kW		50Hz rpm	60Hz rpm	380V A	400V A	415V A	460V A		Class	100% Load %	75% Load %	50% Load %		Starting current	Starting torque	B/down torque		
<b>1000/1200rpm, 6-pole, 50/60Hz, IP55, Insulation F/B</b>																					
	1TZ5504-3AC03-4_A4	75	90	315S	992	1192	142	135	130	139	0.84	IE4	95.4	95.6	95.2	722	8.2	2.7	3.5	--	830
	1TZ5504-3AC23-4_A4	90	99	315M	992	1192	168	160	154	153	0.85	IE4	95.6	95.9	95.7	867	8.2	2.8	3.5	--	900
	1TZ5504-3AC43-4_A4	110	132	315L	992	1191	203	193	186	198	0.86	IE4	95.8	96.1	96.0	1059	8.3	2.8	3.5	--	1020
	1TZ5504-3AC53-4_A4	132	158	315L	992	1191	240	228	220	235	0.87	IE4	96.0	96.3	96.3	1271	8.4	2.8	3.5	--	1130
	1TZ5504-3AC63-4_A4	160	192	315L	993	1192	309	293	283	299	0.82	IE4	96.2	96.4	96.1	1539	8.0	2.9	3.1	--	1260
	1TZ5504-3AC73-4_A4	200	240	315L	992	1191	385	366	353	377	0.82	IE4	96.3	96.4	96.1	1926	7.5	3.0	3.2	--	1410
	1TZ5504-3AC83-4_A4	250	300	315L	992	1191	487	462	445	471	0.81	IE4	96.5	96.6	96.3	2408	8.2	3.2	3.3	--	1700
<b>750/900rpm, 8-pole, 50/60Hz, IP55, Insulation F/B</b>																					
	1TZ5604-3BC03-4_A4	315	380	355L	993	1192	591	561	541	575	0.84	IE4	96.6	96.8	96.5	3031	7.8	2.8	3.2	--	2110
	1TZ5604-3BC33-4_A4	355	425	355L	993	1192	674	640	617	659	0.83	IE4	96.6	96.7	96.3	3416	8.4	2.9	3.3	--	2250
	1TZ5604-3BC43-4_A4	400	480	355L	993	1193	750	712	687	727	0.84	IE4	96.6	96.7	96.5	3849	8.1	2.8	3.0	--	2240
<b>750/900rpm, 8-pole, 50/60Hz, IP55, Insulation F/B</b>																					
	1TZ5504-3AD03-4_A4	55	66	315S	743	892	112	106	102	108	0.80	IE4	93.7	93.9	93.4	707	6.1	2.3	2.5	--	762
	1TZ5504-3AD23-4_A4	75	90	315M	742	891	150	142	137	145	0.81	IE4	94.2	94.5	94.1	966	6.3	2.4	2.6	--	834
	1TZ5504-3AD43-4_A4	90	108	315L	742	891	177	168	162	172	0.82	IE4	94.4	94.7	94.4	1159	6.1	2.5	2.5	--	943
	1TZ5504-3AD53-4_A4	110	123	315L	742	892	215	205	197	196	0.82	IE4	94.7	95.1	94.9	1416	6.3	2.4	2.6	--	1030
	1TZ5504-3AD63-4_A4	132	148	315L	741	891	258	245	236	235	0.82	IE4	94.9	95.3	95.1	1702	6.1	2.4	2.5	--	1110
	1TZ5504-3AD73-4_A4	160	192	315L	741	890	324	308	297	320	0.79	IE4	95.1	95.5	95.5	2063	6.3	2.5	2.5	--	1420
	1TZ5504-3AD83-4_A4	200	240	315L	742	891	409	388	374	398	0.78	IE4	95.4	95.6	95.4	2575	6.7	2.9	2.8	--	1660
	1TZ5604-3BD13-4_A4	250	300	355L	744	893	498	473	456	486	0.80	IE4	95.4	95.8	95.8	3210	7.1	2.4	2.7	--	2280
	1TZ5604-3BD23-4_A4	315	380	355L	744	893	628	596	575	615	0.80	IE4	95.4	95.7	95.4	4045	7.3	2.5	3.0	--	2310

Torque/Speed Model of **TEFC Self-ventilated (IC411)** Squirrel Cage Induction Motor controlled with Frequency Inverter.  
 Reduced Torque up to 80% of the Base Frequency and Constant Power (field weakening) after the Base Frequency (nominal speed) point.



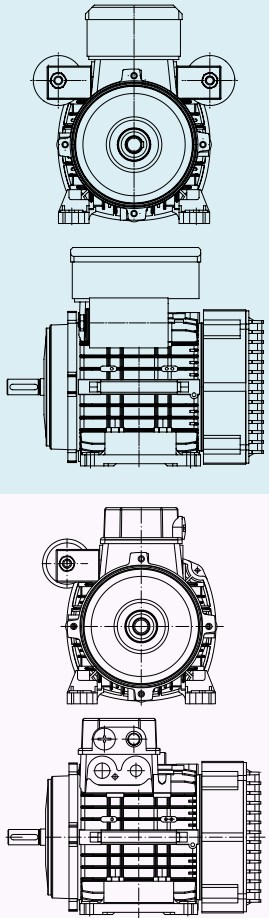
Where the 'Breakdown Torque' curve (violet) intersects the 'Torque' curve (blue) the range of "Constant Power" ends and after that the Breakdown Torque, which is decreased by 30% (to reserve for the Acceleration Torque), is the limiting Torque Value the motor can achieve.

### Interactive Torque/speed models:

We have an online Torque/Speed model for inverter controlled **force ventilated** motors ([https://www.vanhoucke.co.uk/speed\\_control/IC416.html](https://www.vanhoucke.co.uk/speed_control/IC416.html)).

We have an online Torque/Speed model for inverter controlled **self-ventilated** motors ([https://www.vanhoucke.co.uk/speed\\_control/IC411.html](https://www.vanhoucke.co.uk/speed_control/IC411.html)).

# SINGLE-PHASE MOTORS (Capacitor Start-Capacitor Run & Permanent Capacitor Motors)



Material	TYPE	Output 50Hz kW	Frame Size	Speed 50Hz rpm	Current 230V A	Power Factor cosφ	Efficiency			Ratio			Run Capacitor µF/V	Start Capacitor µF/V	Weight kg	
							Class	at 100% Load	at 75% Load	at 50% Load	Starting current	Starting torque				B/down torque
2 pole - 3000 rpm, IP54, Insulation class F/B		Capacitor Start - Capacitor Run Motors - with Electronic Disconnection Switch														
	1EMPCC 63M02K	0.18	63	2860	1.36	0.93	IE1	62.0	56.83	47.9	5.00	1.87	1.64	6/450	14/320	4.80
	1EMPCC 63M02	0.25		2840	1.65	0.97	IE1	68.0	63.85	53.6	4.70	1.79	1.62	8/450	18/320	5.20
	1EMPCC 71M02K	0.37	71	2835	2.75	0.90	IE1	65.0	58.81	47.5	4.00	1.71	1.64	16/450	35/320	5.90
	1EMPCC 71M02	0.55		2800	3.81	0.91	IE1	69.0	62.66	57.3	4.10	1.68	1.60	20/450	45/320	6.50
	1EMPCC 80M02K	0.75	80	2800	4.76	0.92	IE1	74.4	69.20	58.8	4.50	1.68	1.58	25/450	50/320	9.00
	1EMPCC 80M02	1.1		2800	6.57	0.97	IE1	75.0	70.30	60.2	4.80	1.67	1.62	40/450	70/320	9.60
	1EMPCC 90S02	1.5	90S	2805	8.99	0.94	IE1	77.2	72.25	65.5	5.00	1.96	1.60	40/450	125/320	12.60
	1EMPCC 90L02	2.2	90L	2800	12.37	0.97	IE1	79.7	76.10	66.9	5.20	1.81	1.65	80/450	180/320	17.80
	1EMPCC 100L02	3	100L	2885	16.85	0.95	IE1	81.5	77.70	67.8	6.30	1.83	1.68	80/450	140/320	21.40
4 pole - 1500 rpm, IP54, Insulation class F/B		Capacitor Start - Capacitor Run Motors - with Electronic Disconnection Switch														
	1EMPCC 63M04K	0.12	63	1410	1.01	0.89	IE1	58.0	50.97	40.5	3.70	1.94	1.57	5/450	10/320	4.80
	1EMPCC 63M04	0.18		1390	1.47	0.92	IE1	58.0	50.44	40.2	3.80	1.77	1.65	10/450	12/320	5.20
	1EMPCC 71M04K	0.25	71	1400	1.72	0.97	IE1	65.2	58.40	49.8	3.80	1.60	1.55	10/450	25/320	5.90
	1EMPCC 71M04	0.37		1390	2.59	0.94	IE1	66.1	60.86	50.4	3.60	1.80	1.60	14/450	25/320	7.10
	1EMPCC 80M04K	0.55	80	1410	3.74	0.91	IE1	70.2	64.30	56.8	4.00	1.69	1.70	14/450	40/320	9.10
	1EMPCC 80M04	0.75		1390	4.81	0.94	IE1	72.1	68.46	60.1	4.20	1.89	1.64	30/450	90/320	9.90
	1EMPCC 90S04	1.1	90S	1415	6.57	0.97	IE1	75.1	71.45	62.3	4.10	1.62	1.68	35/450	80/320	12.90
	1EMPCC 90L04	1.5	90L	1405	8.71	0.97	IE1	77.2	73.20	64.0	4.30	1.82	1.72	55/450	160/320	18.40
	1EMPCC 100L04	2.2	100L	1400	12.77	0.94	IE1	79.7	75.50	66.8	5.40	2.09	1.80	65/450	180/320	22.00
	1EMPCC 100L04V	3	100S	1405	16.6	0.96	IE1	81.5	77.40	70.1	5.10	1.70	1.60	100/450	200/320	30.00
2 pole - 3000 rpm, IP54, Insulation class F/B		Permanent Capacitor Motors														
	1EMPC 63M02K	0.18	63	2860	1.36	0.93	IE1	62.0	56.83	47.9	3.70	0.50	1.64	6/450	n/a	4.60
	1EMPC 63M02	0.25		2840	1.65	0.97	IE1	68.0	63.85	53.6	4.00	0.46	1.62	10/450	n/a	5.00
	1EMPC 71M02K	0.37	71	2835	2.75	0.90	IE1	65.0	58.81	47.5	4.10	0.47	1.64	16/450	n/a	5.60
	1EMPC 71M02	0.55		2800	3.85	0.90	IE1	69.0	62.66	57.3	3.90	0.41	1.60	20/450	n/a	6.20
	1EMPC 80M02K	0.75	80	2800	4.76	0.92	IE1	74.4	69.20	58.8	4.00	0.48	1.58	25/450	n/a	8.50
	1EMPC 80M02	1.1		2800	6.57	0.97	IE1	75.0	70.30	60.2	4.00	0.50	1.62	40/450	n/a	9.10
	1EMPC 90S02	1.5	90S	2805	8.99	0.94	IE1	77.2	72.25	65.5	4.20	0.48	1.60	40/450	n/a	11.80
	1EMPC 90L02	2.2	90L	2800	12.37	0.97	IE1	79.7	76.10	66.9	4.40	0.51	1.65	80/450	n/a	16.90
	1EMPC 100L02	3	100L	2885	16.85	0.95	IE1	81.5	77.70	67.8	6.20	0.41	1.68	80/450	n/a	20.40
4 pole - 1500 rpm, IP54, Insulation class F/B		Permanent Capacitor Motors														
	1EMPC 63M04K	0.12	63	1410	1.01	0.89	IE1	58.0	50.97	40.5	2.90	0.38	1.57	5/450	n/a	4.60
	1EMPC 63M04	0.18		1390	1.5	0.90	IE1	58.0	50.44	40.2	2.70	0.54	1.65	8/450	n/a	5.00
	1EMPC 71M04K	0.25	71	1400	1.72	0.97	IE1	65.2	58.40	49.8	2.80	0.53	1.55	10/450	n/a	5.60
	1EMPC 71M04	0.37		1390	2.59	0.94	IE1	66.1	60.86	50.4	2.80	0.52	1.60	14/450	n/a	6.80
	1EMPC 80M04K	0.55	80	1410	3.74	0.91	IE1	70.2	64.30	56.8	3.70	0.38	1.70	14/450	n/a	8.60
	1EMPC 80M04	0.75		1390	4.81	0.94	IE1	72.1	68.46	60.1	3.30	0.39	1.64	20/450	n/a	9.40
	1EMPC 90S04	1.1	90S	1415	6.57	0.97	IE1	75.1	71.45	62.3	3.50	0.36	1.68	35/450	n/a	12.10
	1EMPC 90L04	1.5	90L	1405	8.71	0.97	IE1	77.2	73.20	64.0	4.10	0.34	1.72	55/450	n/a	17.50
	1EMPC 100L04	2.2	100L	1400	12.77	0.94	IE1	79.7	75.50	66.8	5.10	0.41	1.80	65/450	n/a	21.00
	1EMPC 100L04V	3	100S	1405	16.6	0.96	IE1	81.5	77.40	70.1	5.10	0.40	1.60	100/450	n/a	29.00



Power Output kW	Frame	Eff Class	Material	Motor Type Zone2	Motor Type Zone21	Motor Type Zone22	Motor Type Zone2+22
				[Ex] II 3G Ex ec IIC T3 Gc	[Ex] II 2D Ex tb IIIC T120°C Db	[Ex] II 3D Ex tc IIIB T120°C Dc	[Ex] II 3GD Ex ec IIC T3 Gc & Ex tc IIIB T120°C Dc
3000/3600rpm, 2-pole, 50/60Hz, IP55, Insulation F/B, Standard voltage: up to 2.2kW: 230/400V 50Hz 460V/60Hz; from 3kW 400/690V 50Hz 460V/60Hz							
0.37	71M	IE3	Cast iron	1TE1533-0CA22-2_A4	1TE1513-0CA22-2_A4	1TE1523-0CA22-2_A4	1TE1533-0CA22-2_A4 B30
0.55	71M	IE3	Cast iron	1TE1533-0CA32-2_A4	1TE1513-0CA32-2_A4	1TE1523-0CA32-2_A4	1TE1533-0CA32-2_A4 B30
0.75	80M	IE3	Cast iron	1TE1533-0DA22-2_A4	1TE1513-0DA22-2_A4	1TE1523-0DA22-2_A4	1TE1533-0DA22-2_A4 B30
1.1	80M	IE3	Cast iron	1TE1533-0DA32-2_A4	1TE1513-0DA32-2_A4	1TE1523-0DA32-2_A4	1TE1533-0DA32-2_A4 B30
1.5	90S	IE3	Cast iron	1TE1533-0EA02-2_A4	1TE1513-0EA02-2_A4	1TE1523-0EA02-2_A4	1TE1533-0EA02-2_A4 B30
2.2	90L	IE3	Cast iron	1TE1533-0EA42-2_A4	1TE1513-0EA42-2_A4	1TE1523-0EA42-2_A4	1TE1533-0EA42-2_A4 B30
3	100L	IE3	Cast iron	1TE1533-1AA43-4_A4	1TE1513-1AA43-4_A4	1TE1523-1AA43-4_A4	1TE1533-1AA43-4_A4 B30
4	112M	IE3	Cast iron	1TE1533-1BA23-4_A4	1TE1513-1BA23-4_A4	1TE1523-1BA23-4_A4	1TE1533-1BA23-4_A4 B30
5.5	132S	IE3	Cast iron	1TE1533-1CA03-4_A4	1TE1513-1CA03-4_A4	1TE1523-1CA03-4_A4	1TE1533-1CA03-4_A4 B30
7.5	132S	IE3	Cast iron	1TE1533-1CA13-4_A4	1TE1513-1CA13-4_A4	1TE1523-1CA13-4_A4	1TE1533-1CA13-4_A4 B30
11	160M	IE3	Cast iron	1TE1533-1DA23-4_A4	1TE1513-1DA23-4_A4	1TE1523-1DA23-4_A4	1TE1533-1DA23-4_A4 B30
15	160M	IE3	Cast iron	1TE1533-1DA33-4_A4	1TE1513-1DA33-4_A4	1TE1523-1DA33-4_A4	1TE1533-1DA33-4_A4 B30
18.5	160L	IE3	Cast iron	1TE1533-1DA43-4_A4	1TE1513-1DA43-4_A4	1TE1523-1DA43-4_A4	1TE1533-1DA43-4_A4 B30
22	180M	IE3	Cast iron	1TE1533-1EA23-4_A4	1TE1513-1EA23-4_A4	1TE1523-1EA23-4_A4	1TE1533-1EA23-4_A4 B30
30	200L	IE3	Cast iron	1TE1533-2AA43-4_A4	1TE1513-2AA43-4_A4	1TE1523-2AA43-4_A4	1TE1533-2AA43-4_A4 B30
37	200L	IE3	Cast iron	1TE1533-2AA53-4_A4	1TE1513-2AA53-4_A4	1TE1523-2AA53-4_A4	1TE1533-2AA53-4_A4 B30
45	225M	IE3	Cast iron	1TE1533-2BA23-4_A4	1TE1513-2BA23-4_A4	1TE1523-2BA23-4_A4	1TE1533-2BA23-4_A4 B30
55	250M	IE3	Cast iron	1TE1533-2CA23-4_A4	1TE1513-2CA23-4_A4	1TE1523-2CA23-4_A4	1TE1533-2CA23-4_A4 B30
75	280S	IE3	Cast iron	1TE1533-2DA03-4_A4	1TE1513-2DA03-4_A4	1TE1523-2DA03-4_A4	1TE1533-2DA03-4_A4 B30
90	280M	IE3	Cast iron	1TE1533-2DA23-4_A4	1TE1513-2DA23-4_A4	1TE1523-2DA23-4_A4	1TE1533-2DA23-4_A4 B30
110	315S	IE3	Cast iron	1TE1533-3AA03-4_A4	1TE1513-3AA03-4_A4	1TE1523-3AA03-4_A4	1TE1533-3AA03-4_A4 B30
132	315M	IE3	Cast iron	1TE1533-3AA23-4_A4	1TE1513-3AA23-4_A4	1TE1523-3AA23-4_A4	1TE1533-3AA23-4_A4 B30
160	315L	IE3	Cast iron	1TE1533-3AA43-4_A4	1TE1513-3AA43-4_A4	1TE1523-3AA43-4_A4	1TE1533-3AA43-4_A4 B30
200	315L	IE3	Cast iron	1TE1533-3AA53-4_A4	1TE1513-3AA53-4_A4	1TE1523-3AA53-4_A4	1TE1533-3AA53-4_A4 B30

EC Type Examination Certificates

Type Examination Certificates

ATEX	Frame sizes	Certificate No.
Zone21	71 - 90	FTZU 18 ATEX 0133
Zone21	100 - 200	FTZU 18 ATEX 0134
Zone21	225 - 315	FTZU 18 ATEX 0135

ATEX	Frame sizes	ATEX Certificate No.
Zone2+22	71 - 90	FTZU 18 ATEX 0136
Zone2+22	100 - 200	FTZU 18 ATEX 0137
Zone2+22	225 - 315	FTZU 18 ATEX 0138



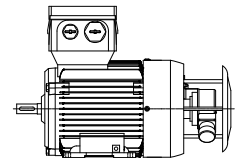
For Zone1 II 2G Ex db IIC T4 Gb or II 2G Ex db eb IIC T4 Gb  
 ATEX Motors -please refer to our website.  
 HEW motor range (Made in Germany) is available.

Power Output kW	Frame	Eff Class	Material	Motor Type Zone2	Motor Type Zone21	Motor Type Zone22	Motor Type Zone2+22
				[Ex] II 3G Ex ec IIC T3 Gc	[Ex] II 2D Ex tb IIIC T120°C Db	[Ex] II 3D Ex tc IIIB T120°C Dc	[Ex] II 3GD Ex ec IIC T3 Gc & Ex tc IIIB T120°C Dc
1500/1800rpm, 4-pole, 50/60Hz, IP55, Insulation F/B, Standard voltage: up to 2.2kW: 230/400V 50Hz 460VY 60Hz; from 3kW 400/690V 50Hz 460VD 60Hz							
0.25	71M	IE3	Cast iron	1TE1533-0CB22-2_A4	1TE1513-0CB22-2_A4	1TE1523-0CB22-2_A4	1TE1533-0CB22-2_A4 B30
0.37	71M	IE3	Cast iron	1TE1533-0CB32-2_A4	1TE1513-0CB32-2_A4	1TE1523-0CB32-2_A4	1TE1533-0CB32-2_A4 B30
0.55	80M	IE3	Cast iron	1TE1533-0DB22-2_A4	1TE1513-0DB22-2_A4	1TE1523-0DB22-2_A4	1TE1533-0DB22-2_A4 B30
0.75	80M	IE3	Cast iron	1TE1533-0DB32-2_A4	1TE1513-0DB32-2_A4	1TE1523-0DB32-2_A4	1TE1533-0DB32-2_A4 B30
1.1	90S	IE3	Cast iron	1TE1533-0EB02-2_A4	1TE1513-0EB02-2_A4	1TE1523-0EB02-2_A4	1TE1533-0EB02-2_A4 B30
1.5	90L	IE3	Cast iron	1TE1533-0EB42-2_A4	1TE1513-0EB42-2_A4	1TE1523-0EB42-2_A4	1TE1533-0EB42-2_A4 B30
2.2	100L	IE3	Cast iron	1TE1533-1AB42-2_A4	1TE1513-1AB42-2_A4	1TE1523-1AB42-2_A4	1TE1533-1AB42-2_A4 B30
3	100L	IE3	Cast iron	1TE1533-1AB53-4_A4	1TE1513-1AB53-4_A4	1TE1523-1AB53-4_A4	1TE1533-1AB53-4_A4 B30
4	112M	IE3	Cast iron	1TE1533-1BB23-4_A4	1TE1513-1BB23-4_A4	1TE1523-1BB23-4_A4	1TE1533-1BB23-4_A4 B30
5.5	132S	IE3	Cast iron	1TE1533-1CB03-4_A4	1TE1513-1CB03-4_A4	1TE1523-1CB03-4_A4	1TE1533-1CB03-4_A4 B30
7.5	132M	IE3	Cast iron	1TE1533-1CB23-4_A4	1TE1513-1CB23-4_A4	1TE1523-1CB23-4_A4	1TE1533-1CB23-4_A4 B30
11	160M	IE3	Cast iron	1TE1533-1DB23-4_A4	1TE1513-1DB23-4_A4	1TE1523-1DB23-4_A4	1TE1533-1DB23-4_A4 B30
15	160L	IE3	Cast iron	1TE1533-1DB43-4_A4	1TE1513-1DB43-4_A4	1TE1523-1DB43-4_A4	1TE1533-1DB43-4_A4 B30
18.5	180M	IE3	Cast iron	1TE1533-1EB23-4_A4	1TE1513-1EB23-4_A4	1TE1523-1EB23-4_A4	1TE1533-1EB23-4_A4 B30
22	180L	IE3	Cast iron	1TE1533-1EB43-4_A4	1TE1513-1EB43-4_A4	1TE1523-1EB43-4_A4	1TE1533-1EB43-4_A4 B30
30	200L	IE3	Cast iron	1TE1533-2AB53-4_A4	1TE1513-2AB53-4_A4	1TE1523-2AB53-4_A4	1TE1533-2AB53-4_A4 B30
37	225S	IE3	Cast iron	1TE1533-2BB03-4_A4	1TE1513-2BB03-4_A4	1TE1523-2BB03-4_A4	1TE1533-2BB03-4_A4 B30
45	225M	IE3	Cast iron	1TE1533-2BB23-4_A4	1TE1513-2BB23-4_A4	1TE1523-2BB23-4_A4	1TE1533-2BB23-4_A4 B30
55	250M	IE3	Cast iron	1TE1533-2CB23-4_A4	1TE1513-2CB23-4_A4	1TE1523-2CB23-4_A4	1TE1533-2CB23-4_A4 B30
75	280S	IE3	Cast iron	1TE1533-2DB03-4_A4	1TE1513-2DB03-4_A4	1TE1523-2DB03-4_A4	1TE1533-2DB03-4_A4 B30
90	280M	IE3	Cast iron	1TE1533-2DB23-4_A4	1TE1513-2DB23-4_A4	1TE1523-2DB23-4_A4	1TE1533-2DB23-4_A4 B30
110	315S	IE3	Cast iron	1TE1533-3AB03-4_A4	1TE1513-3AB03-4_A4	1TE1523-3AB03-4_A4	1TE1533-3AB03-4_A4 B30
132	315M	IE3	Cast iron	1TE1533-3AB23-4_A4	1TE1513-3AB23-4_A4	1TE1523-3AB23-4_A4	1TE1533-3AB23-4_A4 B30
160	315L	IE3	Cast iron	1TE1533-3AB43-4_A4	1TE1513-3AB43-4_A4	1TE1523-3AB43-4_A4	1TE1533-3AB43-4_A4 B30
200	315L	IE3	Cast iron	1TE1533-3AB53-4_A4	1TE1513-3AB53-4_A4	1TE1523-3AB53-4_A4	1TE1533-3AB53-4_A4 B30

HEW

- ATEX certified Zone1 motors
- Certified for up to 60°C without deration
- Available as Exde [II 2G Ex db eb IIC T4 Gb] (Motor in pressure tight enclosure, T Box is Increased Safety)
- Available as Exd [II 2G Ex db IIC T4 Gb] (both motor and Terminal Box are in pressure tight enclosure)

- Output range is 0.09kW to 200kW, 2p, 4p, 6p & 8pole
- 71 to 315 frame.
- ATEX Brakes available
- ATEX Forced ventilation motors available
- ATEX Encoders available
- Execution for Temperature class T5 or T6 available





Power Output kW	Frame	Eff Class	Material	Motor Type Zone2	Motor Type Zone21	Motor Type Zone22	Motor Type Zone2+22
				[Ex] II 3G Ex ec IIC T3 Gc	[Ex] II 2D Ex tb IIIC T120°C Db	[Ex] II 3D Ex tc IIIB T120°C Dc	[Ex] II 3GD Ex ec IIC T3 Gc & Ex tc IIIB T120°C Dc
1000/1200rpm, 6-pole, 50/60Hz, IP55, Insulation F/B, Standard voltage: up to 2.2kW: 230/400V 50Hz 460VY 60Hz; from 3kW 400/690V 50Hz 460VD 60Hz							
0.18	71M	IE3	Cast iron	1TE1533-0CC22-2_A4	1TE1513-0CC22-2_A4	1TE1523-0CC22-2_A4	1TE1533-0CC22-2_A4 B30
0.25	71M	IE3	Cast iron	1TE1533-0CC32-2_A4	1TE1513-0CC32-2_A4	1TE1523-0CC32-2_A4	1TE1533-0CC32-2_A4 B30
0.37	80M	IE3	Cast iron	1TE1533-0DC22-2_A4	1TE1513-0DC22-2_A4	1TE1523-0DC22-2_A4	1TE1533-0DC22-2_A4 B30
0.55	80M	IE3	Cast iron	1TE1533-0DC32-2_A4	1TE1513-0DC32-2_A4	1TE1523-0DC32-2_A4	1TE1533-0DC32-2_A4 B30
0.75	90S	IE3	Cast iron	1TE1533-0EC02-2_A4	1TE1513-0EC02-2_A4	1TE1523-0EC02-2_A4	1TE1533-0EC02-2_A4 B30
1.1	90L	IE3	Cast iron	1TE1533-0EC42-2_A4	1TE1513-0EC42-2_A4	1TE1523-0EC42-2_A4	1TE1533-0EC42-2_A4 B30
1.5	100L	IE3	Cast iron	1TE1533-1AC42-2_A4	1TE1513-1AC42-2_A4	1TE1523-1AC42-2_A4	1TE1533-1AC42-2_A4 B30
2.2	112M	IE3	Cast iron	1TE1533-1BC22-2_A4	1TE1513-1BC22-2_A4	1TE1523-1BC22-2_A4	1TE1533-1BC22-2_A4 B30
3	132S	IE3	Cast iron	1TE1533-1CC03-4_A4	1TE1513-1CC03-4_A4	1TE1523-1CC03-4_A4	1TE1533-1CC03-4_A4 B30
4	132M	IE3	Cast iron	1TE1533-1CC23-4_A4	1TE1513-1CC23-4_A4	1TE1523-1CC23-4_A4	1TE1533-1CC23-4_A4 B30
5.5	132M	IE3	Cast iron	1TE1533-1CC33-4_A4	1TE1513-1CC33-4_A4	1TE1523-1CC33-4_A4	1TE1533-1CC33-4_A4 B30
7.5	160M	IE3	Cast iron	1TE1533-1DC23-4_A4	1TE1513-1DC23-4_A4	1TE1523-1DC23-4_A4	1TE1533-1DC23-4_A4 B30
11	160L	IE3	Cast iron	1TE1533-1DC43-4_A4	1TE1513-1DC43-4_A4	1TE1523-1DC43-4_A4	1TE1533-1DC43-4_A4 B30
15	180L	IE3	Cast iron	1TE1533-1EC43-4_A4	1TE1513-1EC43-4_A4	1TE1523-1EC43-4_A4	1TE1533-1EC43-4_A4 B30
18.5	200L	IE3	Cast iron	1TE1533-2AC43-4_A4	1TE1513-2AC43-4_A4	1TE1523-2AC43-4_A4	1TE1533-2AC43-4_A4 B30
22	200L	IE3	Cast iron	1TE1533-2AC53-4_A4	1TE1513-2AC53-4_A4	1TE1523-2AC53-4_A4	1TE1533-2AC53-4_A4 B30
30	225M	IE3	Cast iron	1TE1533-2BC23-4_A4	1TE1513-2BC23-4_A4	1TE1523-2BC23-4_A4	1TE1533-2BC23-4_A4 B30
37	250M	IE3	Cast iron	1TE1533-2CC23-4_A4	1TE1513-2CC23-4_A4	1TE1523-2CC23-4_A4	1TE1533-2CC23-4_A4 B30
45	280S	IE3	Cast iron	1TE1533-2DC03-4_A4	1TE1513-2DC03-4_A4	1TE1523-2DC03-4_A4	1TE1533-2DC03-4_A4 B30
55	280M	IE3	Cast iron	1TE1533-2DC23-4_A4	1TE1513-2DC23-4_A4	1TE1523-2DC23-4_A4	1TE1533-2DC23-4_A4 B30
75	315S	IE3	Cast iron	1TE1533-3AC03-4_A4	1TE1513-3AC03-4_A4	1TE1523-3AC03-4_A4	1TE1533-3AC03-4_A4 B30
90	315M	IE3	Cast iron	1TE1533-3AC23-4_A4	1TE1513-3AC23-4_A4	1TE1523-3AC23-4_A4	1TE1533-3AC23-4_A4 B30
110	315L	IE3	Cast iron	1TE1533-3AC43-4_A4	1TE1513-3AC43-4_A4	1TE1523-3AC43-4_A4	1TE1533-3AC43-4_A4 B30
132	315L	IE3	Cast iron	1TE1533-3AC53-4_A4	1TE1513-3AC53-4_A4	1TE1523-3AC53-4_A4	1TE1533-3AC53-4_A4 B30
160	315L	IE3	Cast iron	1TE1533-3AC63-4_A4	1TE1513-3AC63-4_A4	1TE1523-3AC63-4_A4	1TE1533-3AC63-4_A4 B30

EC Type Examination Certificates

Type Examination Certificates

ATEX	Frame sizes	Certificate No.
Zone21	71 - 90	FTZU 18 ATEX 0133
Zone21	100 - 200	FTZU 18 ATEX 0134
Zone21	225 - 315	FTZU 18 ATEX 0135

ATEX	Frame sizes	ATEX Certificate No.
Zone2+22	71 - 90	FTZU 18 ATEX 0136
Zone2+22	100 - 200	FTZU 18 ATEX 0137
Zone2+22	225 - 315	FTZU 18 ATEX 0138

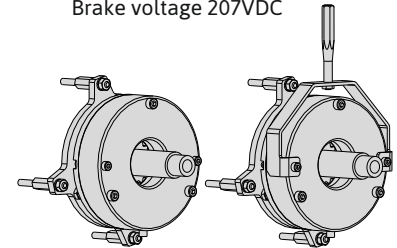


8 pole motors available.  
Ask for details !!

# BRAKES & FORCE VENTILATION UNITS

Frame Size	Brake Type	Brake Torque Nm	Current A	Input W	Moment of Inertia kgm <sup>2</sup>	Weight kg	Protection	Hand Release
63	Brake EBM 0.5 for 1TZ90/7AA motor	5	0.11	22	2.8x10 <sup>-5</sup>	1.28	IP55	on request
71	Brake EBM 0.5 for 1TZ90/7AA motor	5	0.11	22	2.8x10 <sup>-5</sup>	1.28	IP55	on request
80	Brake EBM 1 for 1TZ90 motor	10	0.15	31	8.6x10 <sup>-5</sup>	2.35	IP55	on request
90	Brake EBM 2 for 1TZ90 motor	20	0.15	31	36.1x10 <sup>-5</sup>	4.2	IP55	on request
100	Brake EBM 4 for 1TZ90/5 motor	40	0.24	49	81.7x10 <sup>-5</sup>	6.7	IP55	on request
112	Brake EBM 6.3 for 1TZ90/5 motor	63	0.30	61	105x10 <sup>-5</sup>	9.8	IP55	on request
132	Brake EBM 10 for 1TZ90/5 motor	100	0.31	63	274x10 <sup>-5</sup>	14.3	IP55	on request
160	Brake EBM 25 for 1TZ90/5 motor	250	0.41	84	1060x10 <sup>-5</sup>	29.5	IP55	on request

Brake voltage 207VDC



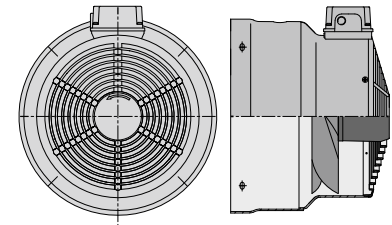
Other voltages available

The above brakes are stock kits which can be fitted on standard Stock Motors.  
 Factory fitted brakes are available for all motor sizes up to 315 frame. AC brakes also available. Price on request.

All brakes come with full wave rectifier (230VAC/195VDC) as standard or with half wave rectifier (400VAC/195VDC) upon request!

Frame Size	Motor Speed	Type	CONNECTION					
			1phase (Steinmetz)		3phase (star)		3phase (delta)	
			Max Current A	Max Input W	Max Current A	Max Input W	Max Current A	Max Input W
63	2-8pole	Force Ventilation Unit FV63	0.12	32	0.07	28	0.12	28
71	2-8pole	Force Ventilation Unit FV71	0.12	33	0.06	31	0.11	31
80	2-8pole	Force Ventilation Unit FV80	0.14	37	0.06	34	0.11	34
90	2-8pole	Force Ventilation Unit FV90	0.29	65	0.22	91	0.38	91
100	2-8pole	Force Ventilation Unit FV100	0.3	75	0.22	91	0.37	91
112	2-8pole	Force Ventilation Unit FV112	0.37	94	0.2	103	0.35	103
132	2-8pole	Force Ventilation Unit FV132	0.57	149	0.33	148	0.58	148
160	2-8pole	Force Ventilation Unit FV160	0.97	253	0.56	360	0.93	360
180	2-8pole	Force Ventilation Unit FV180	0.97	253	0.56	360	0.93	360
200	2-8pole	Force Ventilation Unit FV200	0.97	253	0.56	360	0.93	360
225	2-8pole	Force Ventilation Unit FV225	n/a	n/a	0.83	505	1.95	540
250	2-8pole	Force Ventilation Unit FV250	n/a	n/a	0.83	505	1.95	540
280	2-8pole	Force Ventilation Unit FV280	n/a	n/a	0.83	505	1.95	540
315	2pole	Force Ventilation Unit FV315	n/a	n/a	0.83	505	1.95	540
315	4-8pole	Force Ventilation Unit FV315	n/a	n/a	0.83	505	1.95	540

Fan Ventilation Units have a motorised fan fitted in fan cover with a separate terminal box. The fan is designed to deliver the same (or more) cooling air that is normally delivered by the motor's own fan at the rated speed.



Single-phase connection: 230-277V 50Hz and 230-277 60Hz

Three-phase connection: 200-303V Delta/346-525V Star 50Hz and 220-332VDelta/380-575V Star 60Hz

# ENCODERS, ACCESSORIES, SPECIAL EXECUTIONS



- IP66 / IP67 Protection
- Aluminium or Stainless Steel Casing available
- Short-Circuit & Overload Protection
- High Noise Immunity
- Robust Construction

Price on application!

Both HTL and TTL encoders are available at short lead times.  
From European manufactures (Baumer Hübner, IED, Leine & Linde)

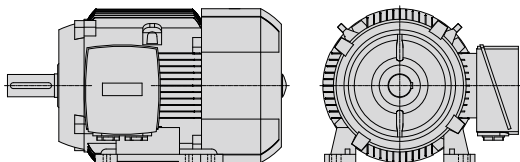
## Motor Executions available upon request:

- High Temperature motors in **Insulation Class H**.
- Low Temperature motors up to **-80°C**
- Motors wound for **Non-standard Voltages**.
- Motors with **Special Paint System** or **RAL Shades**.
- **Roller Bearings** at DE for increased shaft forces.
- **Insulated Bearings/Shafts** at NDE for inverter application.
- Motors for **Marine and Offshore** Environment.

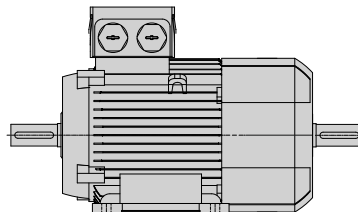


FRAME SIZE	63	71	80	90	100	112	132	160	180	200	225	250	280	315
Loose Flanges (B5, B14A, B14B)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>PROTECTION</b>														
3x PTC Thermistors (TEFC)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
6x PTC Thermistors (TEFC)			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>MECHANICAL FEATURES</b>														
Extended & modified shaft at DE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
DE oil seal for flanges	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Anticondensation heater 110V or 220V	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Protection IP65	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Protection IP56 non-heavy sea	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Routine test certificate	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

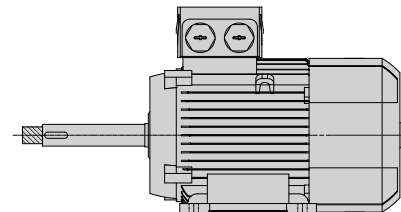
Motors with **Terminal Box on side**  
With cast-on feet and with bolt-on feet.



**Double Shafted motors**



**Special Shafted Motors**





## Standard (Constant Torque) Two-speed motors:

Go to: [www.vanhoucke.co.uk/DataSheet](http://www.vanhoucke.co.uk/DataSheet) & Drawings/2-speed motors

Dahlander D/YY

Frame	63M	63M	71M	71M	80M	80M	90S	90L	100L	100L	112M	132S	132M	160M	160L	180L	200L	225S	225M	250M	280S	280M	315L
4pole kW	0.1	0.15	0.21	0.3	0.48	0.7	1.1	1.5	1.9	2.5	3.7	4.7	6.5	9.3	13	18	26	32	38	46	63	73	145
2pole kW	0.15	0.2	0.28	0.43	0.6	0.85	1.4	1.9	2.4	3.1	4.4	5.9	8	11.5	16	21.5	31	38	45	55	75	87	172

Separate windings

Frame	80M	90S	90L	100L	100L	112M	132S	132M	160M	160L	180L	180L	200L	225S	225M	250M	280S	280M	315S	315M	315L
6pole kW	0.26	0.38	0.55	0.9	1.1	1.5	2	2.8	4.3	6.3	9.5	11	16	21	25	32	45	54	62	75	90
4pole kW	0.4	0.65	0.9	1.3	1.7	2.3	3.1	4.3	6.6	9.5	14	16.5	24	31	37	47	66	80	92	110	132

Dahlander D/YY

Frame	71M	80M	90S	90L	100L	100L	112M	132S	132M	160M	160L	180L	200L	225S	225M	250M	280S	280M	315S	315M	315L
8pole kW	0.09	0.18	0.35	0.5	0.55	0.9	1.1	1.6	2.2	3.5	5.6	11	17	22	25	32	38	46	56	78	92
4pole kW	0.18	0.37	0.5	0.7	1.1	1.5	1.9	3.2	4.4	7	11	18	27	32	37	47	56	67	82	115	135

## Fan Duty (Quadratic Load) Two-speed motors:

Go to: [www.vanhoucke.co.uk/DataSheet](http://www.vanhoucke.co.uk/DataSheet) & Drawings/2-speed motors

Dahlander D/YY

Frame	71M	80M	80M	90S	90L	100L	100L	112M	132S	132M	160M	160L	180L	200L	225S	225M	250M	280S	280M	315S	315M	315L
4pole kW	0.16	0.15	0.25	0.33	0.5	0.65	0.8	1.1	1.45	2	2.9	4.3	5.8	8.4	10.5	13	15	18	22	26	32	40
2pole kW	0.65	0.7	0.95	1.4	2	2.4	3.1	4.4	5.9	8	11.5	16	21.5	31	38	45	55	67	80	90	110	161

Separate windings

Frame	80M	80M	90S	90L	100L	100L	112M	132S	132M	160M	160L	180M	180L	200L	225S	225M	250M	280S	280M	315S	315M	315L
6pole kW	0.12	0.18	0.29	0.38	0.6	0.8	0.9	1.2	1.7	2.5	3.7	5.5	6.5	9.5	12	14.5	18	25	30	33	45	55
4pole kW	0.4	0.55	0.8	1.1	1.7	2.1	3	3.9	5.4	7.2	12	16	19	26	34	40	52	70	82	92	120	170

Dahlander D/YY

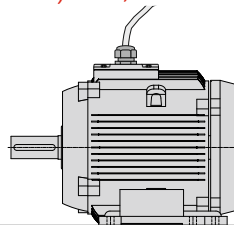
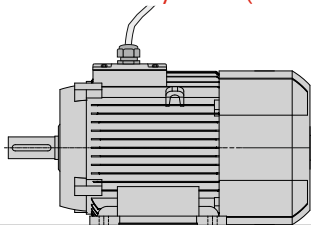
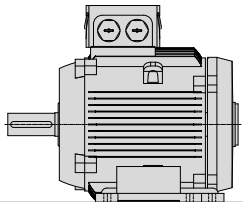
Frame	71M	80M	80M	90S	90L	100L	100L	112M	132S	132M	160M	160L	180M	180L	200L	225S	225M	250M	280S	280M	315S	315M	315L
8pole kW	0.06	0.1	0.15	0.22	0.33	0.5	0.65	0.9	1.1	1.4	2.2	3.3	4.5	5	7.5	9.5	11.5	14.5	19	23	26	30	35
4pole kW	0.3	0.5	0.7	1	1.5	2	2.5	3.6	4.7	6.4	9.5	14	16	18.5	28	35	42	52	70	83	95	115	140

All two-speed motors are suitable for 400V 50Hz, IP55, Temperature class F/ Temperature rise B.

The two-speed motors are suitable for DOL connection only as standard. Motors for Star/Delta starting are available upon request at certain sizes.

TENV or TEAO Motors

Motors with Fly Leads (no Terminal Box) TEFC, TENV or TEAO



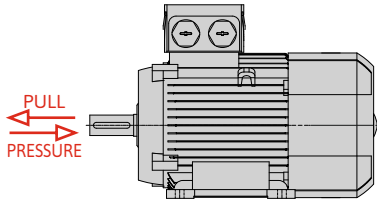
### Motor Cooling Explanation:

- »TEFC - (IC411) Totally Enclosed Fan Cooled
- »TEAO- (IC418) Totally Enclosed Air Over
- »TENV- (IC410) Totally Enclosed Naturally Ventilated
- »TEFV - (IC416) Totally Enclosed Force Ventilated

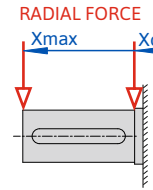
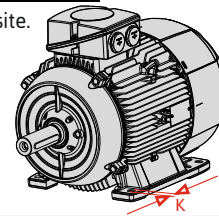
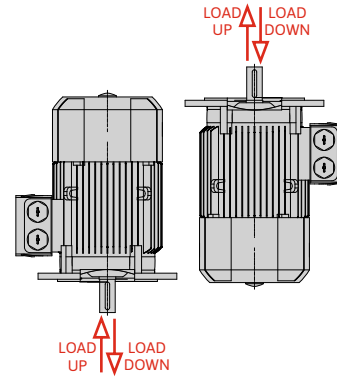
# PERMISSIBLE SHAFT FORCES (AXIAL & RADIAL) & FEET TIGHTENING TORQUE

Shaft vertical - Load in [N] for standard Ball Bearings																
Frame	3000rpm				1500rpm				1000rpm				750rpm			
	Shaft down		Shaft up		Shaft down		Shaft up		Shaft down		Shaft up		Shaft down		Shaft up	
	Load		Load		Load		Load		Load		Load		Load		Load	
	down	up	down	up	down	up	down	up	down	up	down	up	down	up	down	up
80	110	425	360	160	100	540	480	165	100	650	590	165	100	760	700	165
90	110	440	360	180	100	680	580	190	100	920	820	190	100	1150	1050	190
100	140	700	550	280	130	990	820	285	130	1280	1110	285	130	1560	1390	285
112	140	710	550	300	130	1000	820	310	130	1290	1110	310	130	1570	1390	310
132	200	1200	950	470	180	1680	1200	470	180	1900	1600	470	190	2200	1900	440
160	1500	1400	950	1900	1900	1800	1300	2200	2200	2200	1600	2700	2700	2700	1950	2900
180	2490	2060	1330	3220	3160	2950	2010	4100	3740	3570	2580	4730	4090	4140	2940	5290
200	2810	3060	2000	3870	3820	4210	3010	5020	4570	5010	3760	5820	5010	5800	4200	6610
225	3100	3400	2050	4400	4100	4850	3000	5850	4650	5850	3600	6900	5500	6600	4400	7650
250	3850	4100	2250	5650	4800	5750	3200	7400	5750	6750	4200	8350	6900	7700	5300	9200
280	3180	4280	1580	5850	4770	6930	3150	8500	6230	7990	4600	9570	7370	9030	5700	10500
315	2240	4710	100	6850	3720	7580	1650	9650	4550	9100	2500	11100	5900	10150	3900	11800

The Bearing sizes can be found on DataSheets, which can be downloaded from our website.

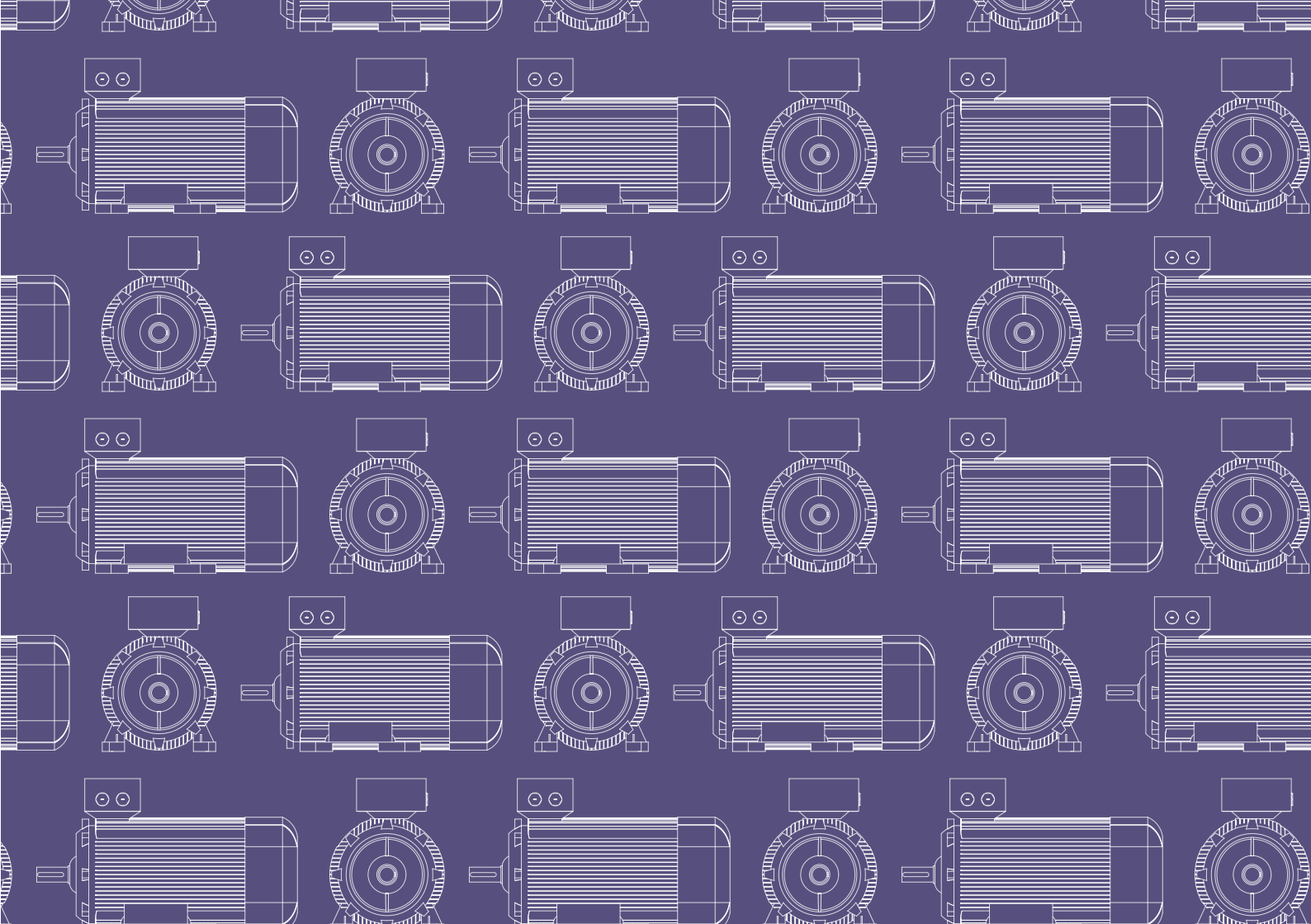


Shaft horizontal - Load in [N] for standard Ball Bearings								
Frame	3000rpm		1500rpm		1000rpm		750rpm	
	Pressure	Pull	Pressure	Pull	Pressure	Pull	Pressure	Pull
100	1430	870	1780	1220	2090	1530	2370	1810
112	1410	850	1790	1230	2090	1530	2370	1810
132	2280	960	2820	1500	3250	1930	3680	2360
160	2320	1600	2980	2260	3480	2760	4010	3290
180	2850	1700	3630	2480	4230	3080	4230	3080
200	3340	2530	4430	3620	5150	4340	5150	4340
225	3800	2750	4900	3850	5700	4650	6500	5450
250	4750	3150	6050	4450	7100	5500	8000	6400
280	4450	2850	6600	5000	7850	6300	8800	7200
315	4700	2600	7050	5000	8250	6200	9100	7100



Frame Size	Hole in Foot: K [mm]	Bolt Size	Tightening Torque	
			Bolt Grade < 8.8	Bolt Grade ≥ 8.8
63	7	M6	4.5Nm	8Nm
71	7	M6	4.5Nm	8Nm
80	10	M8	10Nm	20Nm
90	10	M8	10Nm	20Nm
100	12	M10	20Nm	40Nm
112	12	M10	20Nm	40Nm
132	12	M10	20Nm	40Nm
160	14.5	M12	34Nm	70Nm
180	14.5	M12	34Nm	70Nm
200	18.5	M16	83Nm	170Nm
225	18.5	M16	83Nm	170Nm
250	24	M20	160Nm	340Nm
280	24	M20	160Nm	340Nm
315	28	M24	280Nm	600Nm

Frame Size	Poles	Radial Force [N]	
		Xo	Xmax
100	2	1585	1270
	4	1960	1575
	6	2270	1815
	8	2520	2015
112	2	1545	1240
	4	1960	1555
	6	2270	1800
	8	2510	1990
132	2	2285	1795
	4	2860	2250
	6	3320	2580
	8	3700	2870
160	2	2800	2170
	4	3450	2750
	6	4000	3160
	8	4510	3500
180	2	3250	2610
	4	4110	3270
	6	4720	3740
	8	4800	3800
200	2	4320	3550
	4	5480	4500
	6	6220	5110
	8	6300	5200
225	2	5000	4150
	4	6250	4900
	6	7200	5750
	8	7800	6200
250	2	6000	4800
	4	7600	6200
	6	8750	7350
	8	9500	8000
280	2	5200	4200
	4	8500	7000
	6	9800	8150
	8	10800	9000
315S/M	2	5300	4500
	4	9150	7400
	6	10750	8750
	8	11600	9600
315L	2	4900	4300
	4	8900	7700
	6	10100	9150
	8	11100	10200



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The technical data published in this brochure are subject to change or alteration without prior notice.

