

# W21

Aluminium Multimounting  
Three-phase Electric Motors  
Asian Market



Motors | Automation | Energy | Transmission & Distribution | Coatings

## W21 Aluminium Multimounting - Three-Phase Induction Motors

Looking for the optimum solution to satisfy a diversity of requirements and applications, WEG offers its W21 Aluminium Multimounting three phase motor platform. Recognised for their high quality, reliability and flexibility, these motors are utilised throughout the world in a variety of industrial applications.

### Standard Features

- Rated output: 0,12 to 37 kW
- Number of poles: 2, 4, 6 and 8
- Frame sizes IEC 63 to 200M/L
- Efficiency levels IE2, IE3 or IE4
- Ambient Temperature Range: -20°C to +40°C
- Frequency: 50 Hz
- Voltage at 50 Hz: 220-240/380-415 V (up to 100 L)  
380-415/660 V (from 112M and up);
- Insulation class F (DT 80 K)
- Design N
- Degree of protection: IP55
- Cooling method: IC411 according to DIN EN 60034-6
- Mounting: B3T
- Frame material: Die cast aluminium
- Endshields material: FC-200 cast iron
- Terminal box material: Aluminium
- Terminal block for motor connection
- Grounding: Simple grounding inside the terminal box
- Fan Material: Polypropylene
- Fan Cover Material: Steel plate
- Drain: Plastic drain plug
- V'ring seal on both endshields
- Shaft material: SAE 1040/45
- ZZ Ball bearings
- Eyebolts for frames 112M to 200L
- Painting Plan: WEG internal painting plans 207A semi-matt (frames 63 up to 132) and 203A semi-gloss (frames 160 up to 200), both meeting the 'C2' performance criteria defined in the DIN EN ISO 12944-2 standard
- Thermal Protection: Thermistors PTC (155 °C) in windings for frames 160 up to 200
- WISE® Insulation System - Suitable for frequency inverter operation\*

\*For further information about frequency inverter operation, please contact WEG.

### Optional Features

- Number of poles: 10, 12 or multispeed motors
- Non standard voltages
- Insulation Class H
- Thermal protections: Thermostats, Thermistors (PTC) or Thermoresistances (Pt-100) in windings
- Space Heaters
- Higher degrees of protection, up to IP66
- Forced ventilation, encoders or brakes
- Other mounting configurations, including foot/flange, flange, pad
- Accessories terminal box
- Cable glands
- Canopy for vertical shaft down applications
- Fan material: Conductive plastic, aluminium
- Shaft material: Stainless steel
- Double shaft end
- Painting plans for aggressive environments e.g. C5M / C5I acc. ISO 12944
- Internal anticorrosive epoxy painting

## Features and Benefits

### Reliability

WEG W21 Aluminium Motors are the result of high technological design, premium quality components and a wide application experience. Recognized for its quality, reliability and efficiency, the W21 Aluminium motor range incorporates the benefits of the W22 General Purpose cast iron line but with a lightweight construction and the with the flexibility offered by its multi-mounting mechanical design.

### Flexible Construction

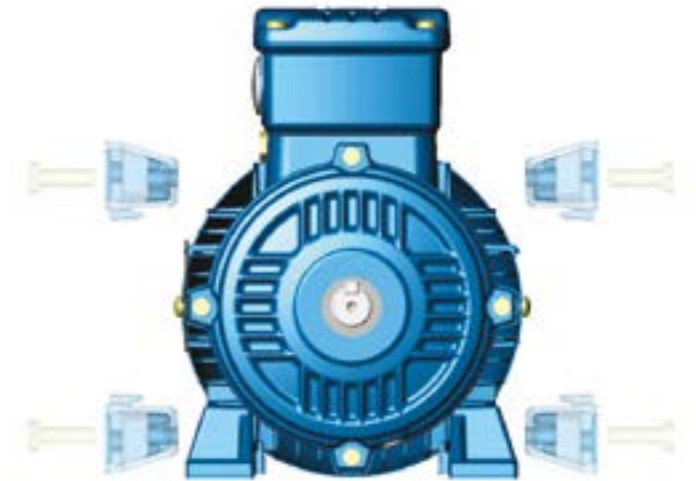
The W21 Aluminium motor line was developed in response to Market requirements regarding mounting flexibility. Consequently, and as its name suggests, the design incorporates a multimount feature which permits the motor to be mounted with the terminal box oriented on the top or on either side. Additionally, the motor terminal box can be rotated in 90° increments, permitting connection of the incoming power cables in any position. This unique system enables the mounting configuration to be easily changed with no machining or modification to the motor feet required.

Furthermore, the innovative design of the W21 Aluminium Multimounting line offers the additional advantage on standardization and stock flexibility, considering that a single motor may be utilised for all mounting possibilities whilst also offering full interchangeability with existing cast iron frame motors.

### Definite Purpose Designs

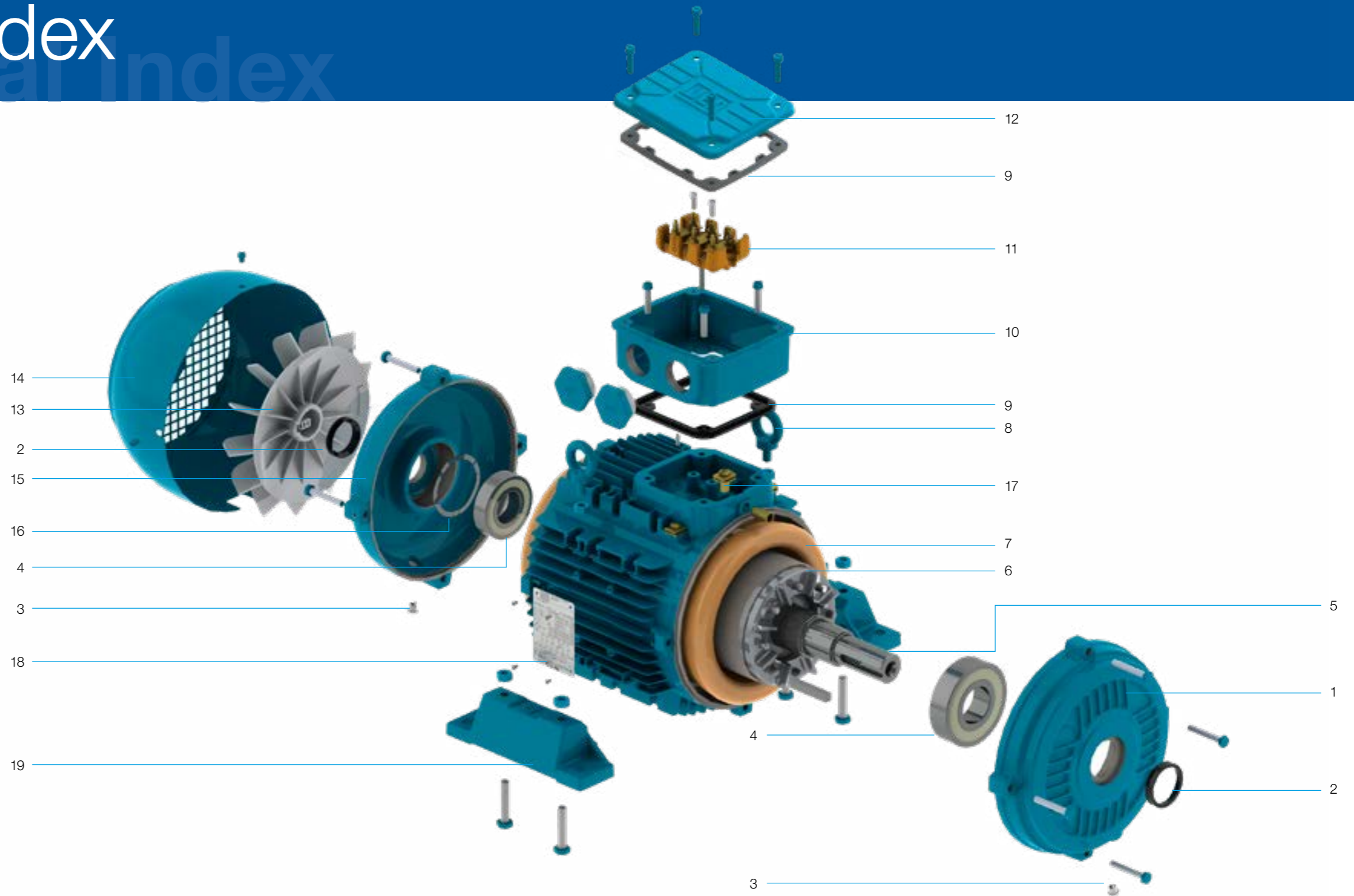
Complimenting what is already a comprehensive range of industrial motors, the W21 aluminium multi-mounting line features, besides the standard version, several definite purpose derived designs, such as Brake Motors, Single Phase Motors, Marine Motors and TEAO (IC 418) Motors for Fan & Exhaust applications.

These definite purpose designs are perfectly adapted to suit all application needs, and incorporate the same reliability, easy maintenance, reduced energy consumption and flexibility offered by the standard W21 Aluminium Multi-mounting line.





# Visual Index



- 1 - Drive endshield
- 2 - Bearing seal (v'ring)
- 3 - Drain plug
- 4 - Bearings
- 5 - Shaft

- 6 - Squirrel cage rotor
- 7 - Wound stator
- 8 - Eye bolts
- 9 - Rubber gasket
- 10 - Terminal box

- 11 - Terminal block
- 12 - Terminal box cover
- 13 - Cooling Fan
- 14 - Fan cover
- 15 - Non-drive endshield

- 16 - Spring washer
- 17 - Grounding terminal
- 18 - Nameplate
- 19 - Removable feet

### Construction Features

Frame	63	71	80	90S/L	100L	112M	132S	132M	S132S	160M/L	180M/L	200M/L	
<b>Mechanical features</b>													
Nameplate markings	CE												
Mounting	B3T												
Frame Material	Aluminum												
Degree of Protection (IP rating)	IP55												
Grounding	Single Grounding												
Cooling Method (IC)	Totally enclosed fan cooled (IC411)												
Fan Material	Plastic												
Fan Cover Material	Steel plate												
Endshields Material	Aluminum						Cast Iron						
Drain	Plastic drain plug												
Bearings	Shielded/Clearance (DE)	ZZ						ZZ-C3					
	Shielded/Clearance (NDE)	ZZ						ZZ-C3					
	Locating bearing configuration	None, fitted with spring washer in the NDE											
	Drive End	6201	6203	6204	6205	6206	6307	6308	6308	6308	6309	6311	6312
Non drive end	6202		6203	6204	6205	6206	6207	6207	6207	6209	6211	6212	
Bearing Seal	V-ring												
Joint Seal	None												
Lubrication	Grease type	Mobil Polyrex EM											
	Grease fitting	Without grease fitting											
Terminal block	BMC - 6-pins												
Terminal box material	Die cast aluminium												
Cable entries	Main	2 x M20 x 1.5			2 x M25 x 1.5			2 x M32 x 1.5			2 x M40 x 1.5		2 x M50 x 1.5
	Plug	Plastic plug for transport and storage											
Shaft	Material	SAE 1040/45											
	DE Threaded hole	2P	M4	M5	M6	M8	M10	M12	M16	M20			
Balancing	Vibration level	Grade A											
	2P	Without balance						With 1/2 key					
Painting	4 - 12P	Without balance						With 1/2 key					
	Nameplate material	Stainless steel AISI 304											
Painting	Type	207 A						203 A					
	Performance Criteria	Corrosive category C2 according to DIN EN ISO 12944-2											
	Colour	RAL 5009											
Packaging	Cardboard box						Crate						
<b>Electrical features</b>													
Design	N												
Voltage / Frequency	220-240/380-415//440-460 V (50 // 60Hz)						380-415/660//440-460 V (50 // 60Hz)						
	380V with 3 terminals (IE4)						380V with 6 terminals (IE4)						
Winding	Impregnation	Immersion in polyester resin											
	Insulation class	F (DT 80K)											
Service factor	1.00												
Thermal protection	Without thermal protection						Thermistor PTC, 1 per phase, for tripping at 155 °C						

### Optional Features

Frame	63	71	80	90S/L	100L	112M	132S	132M	S132S	160M/L	180M/L	200M/L
<b>Mechanical optionals</b>												
<b>Cable glands</b>												
Plastic cable gland	0	0	0	0	0	0	0	0	0	0	0	0
<b>Flange</b>												
Flange FF	0	0	0	0	0	0	0	0	0	0	0	0
Flange C-DIN	0	0	0	0	0	0	0	0	0	NA	NA	NA
<b>Cooling fan</b>												
Conductive plastic	0	0	0	0	0	0	0	0	0	0	0	0
Aluminium	0	0	0	0	0	0	0	0	0	0	0	0
<b>Bearings</b>												
2RS ball bearings at both ends	0	0	0	0	0	0	0	0	0	NA	NA	NA
bearing cap	NA	0	0	0	0	0	0	0	0	P	P	P
C3	NA	NA	NA	E	E	E	E	E	E	0	0	0
<b>Shaft sealing</b>												
Nitrilic rubber lip seal	0	0	0	0	0	0	0	0	0	0	0	0
Nitrilic rubber oil seal	0	0	0	0	0	0	0	0	0	0	0	0
<b>Other sealing</b>												
Joints sealing with Loctite 5923 (permatex)	0	0	0	0	0	0	0	0	0	0	0	0
<b>Degree of protection</b>												
IP56	0	0	0	0	0	0	0	0	0	0	0	0
<b>Shaft</b>												
Second shaft end	0	0	0	0	0	0	0	0	0	0	0	0
<b>Grease / Lubrication</b>												
Grease - Aeroshell 22	0	0	0	0	0	0	0	0	0	0	0	0
Polyrea Ester Oil (WT/ENS)	0	0	0	0	0	0	0	0	0	0	0	0
<b>Double grounding (1 in terminal box + 1 frame)</b>												
Double grounding (1 in terminal box + 1 frame)	0	0	0	0	0	0	0	0	0	0	0	0
<b>Nameplates</b>												
Direction of Rotation plate	0	0	0	0	0	0	0	0	0	0	0	0
Drip cover (recommended for vertical shaft down applications)	0	0	0	0	0	0	0	0	0	E	E	E
<b>Painting Plan</b>												
203A	0	0	0	0	0	0	0	0	0	P	P	P
205E	0	0	0	0	0	0	0	0	0	0	0	0
205P	0	0	0	0	0	0	0	0	0	0	0	0
<b>Internal Tropicalized Painting</b>												
Complete (200h)	0	0	0	0	0	0	0	0	0	0	0	0
According to IEEE 841 (96h)	0	0	0	0	0	0	0	0	0	0	0	0
Only rotor	0	0	0	0	0	0	0	0	0	0	0	0
<b>Key</b>												
C Key	0	0	0	0	0	0	0	0	0	0	0	0
Without key	0	0	0	0	0	0	0	0	0	0	0	0
Without keyway	0	0	0	0	0	0	0	0	0	0	0	0
<b>Electrical optionals</b>												
<b>Direction of rotation</b>												
Clockwise	0	0	0	0	0	0	0	0	0	0	0	0
Counterclockwise	0	0	0	0	0	0	0	0	0	0	0	0
<b>Thermal Protection</b>												
Bimetal thermal protector - 155°C Tripping	0	0	0	0	0	0	0	0	0	0	0	0
PTC Thermistor - 155°C - Tripping	0	0	0	0	0	0	0	0	0	P	P	P
<b>Space heaters</b>												
220-240 V	0	0	0	0	0	0	0	0	0	0	0	0
110-127 / 220-240 V	NA	NA	NA	NA	NA	NA	0	0	0	0	0	0
<b>Service factor</b>												
Service factor 1.15	0	0	0	0	0	0	0	0	0	0	0	0
<b>Insulation class</b>												
F (DT=105K)	0	0	0	0	0	0	0	0	0	0	0	0

Note: P= Standard; O=Optional; E=Special; NA=Not available

IE4 - Super Premium Efficiency - 50 Hz <sup>1) 2)</sup>

Output		Frame	Full Load Torque (kgfm)	Locked Rotor Current I <sub>L</sub> /I <sub>n</sub>	Locked Rotor Torque T <sub>L</sub> /T <sub>n</sub>	Break-down Torque T <sub>b</sub> /T <sub>n</sub>	Inertia J (kgm <sup>2</sup> )	Allowable locked rotor time (s)		Weight (kg)	Sound dB(A)	Rated speed (rpm)	380 V						Full load current I <sub>n</sub> (A)
								% of full load											
								Efficiency					Power Factor						
kW	HP	Hot	Cold	50	75	100	50	75	100										
<b>II Poles</b>																			
0.18	0.25	63	0.064	4.2	2.8	2.6	0.0002	47	103	6.6	52	2745	70.0	73.0	70.8	0.59	0.72	0.81	0.477
0.25	0.33	63	0.087	4.9	3.8	3.5	0.0002	34	75	6.8	52	2790	69.2	73.8	74.3	0.49	0.63	0.73	0.700
0.37	0.5	71	0.126	6.8	4.2	4.1	0.0004	35	77	9.5	56	2855	73.4	77.4	78.1	0.59	0.72	0.80	0.900
0.55	0.75	71	0.189	6.2	3.9	3.7	0.0005	29	64	11.5	56	2830	78.7	80.9	81.5	0.63	0.76	0.83	1.24
0.75	1	80	0.256	7.4	4.2	3.8	0.0009	39	86	11.8	59	2855	82.0	83.7	83.5	0.62	0.74	0.81	1.68
1.1	1.5	L80	0.375	7.5	4.7	4.2	0.0011	30	66	19.0	59	2860	83.2	84.7	85.2	0.60	0.72	0.80	2.45
1.5	2	90S/L	0.503	9.1	4.4	4.5	0.0026	20	44	21.5	62	2905	81.6	84.4	86.5	0.63	0.74	0.81	3.25
2.2	3	L90S/L	0.740	9.2	4.8	4.7	0.0033	16	35	31.5	62	2895	83.9	86.0	88.0	0.63	0.75	0.82	4.63
3	4	L100L	0.997	11.0	4.6	5.3	0.0075	18	40	35.3	67	2930	87.1	89.0	89.1	0.65	0.77	0.84	6.09
4	5.5	112M	1.34	9.0	3.4	4.3	0.0094	26	57	42.6	62	2910	89.0	90.1	90.0	0.67	0.78	0.84	8.04
5.5	7.5	S132S	1.82	9.0	2.9	3.9	0.0216	28	62	56.2	63	2950	88.3	90.0	90.9	0.70	0.80	0.85	10.8
7.5	10	132S	2.48	9.9	3.3	4	0.0306	22	48	66.0	63	2950	89.9	91.2	91.7	0.74	0.83	0.87	14.3
11	15	160M/L	3.63	8.1	3.2	4.2	0.0501	24	53	110	70	2950	90.2	91.4	92.6	0.64	0.76	0.82	22.0
15	20	160M/L	4.95	8.8	3.5	4.3	0.0641	18	40	118	70	2950	91.2	92.1	93.3	0.65	0.77	0.83	29.4
18.5	25	L160M/L	6.11	8.2	3.3	4	0.0722	17	37	125	70	2950	92.5	92.9	93.7	0.70	0.80	0.85	35.3
22	30	180M/L	7.24	9.3	3.7	3.6	0.1237	21	46	170	70	2960	93.2	93.8	94.0	0.70	0.80	0.84	42.3
30	40	200M/L	9.84	8.5	3.5	3.5	0.2115	30	66	212	74	2970	92.9	93.9	94.5	0.67	0.78	0.83	58.1
37	50	200M/L	12.2	8.1	3.3	3.3	0.2368	25	55	242	74	2965	93.6	94.3	94.8	0.71	0.80	0.84	70.6
<b>High-Output Design</b>																			
5.5	7.5	132S	1.82	9.0	2.9	3.9	0.0216	28	62	56.2	63	2950	88.3	90.0	90.9	0.70	0.80	0.85	10.8
<b>IV Poles</b>																			
0.12	0.16	63	0.084	3.8	2.5	2.5	0.0006	94	207	6.9	44	1400	58.1	63.8	69.8	0.49	0.61	0.70	0.373
0.18	0.25	63	0.125	4.3	2.9	2.8	0.0007	71	156	7.3	44	1405	63.2	68.2	74.7	0.46	0.59	0.69	0.531
0.25	0.33	71	0.173	4.9	3.2	3.1	0.0009	131	288	10.9	43	1405	70.3	74.4	77.9	0.47	0.59	0.67	0.728
0.37	0.5	80	0.249	7.5	3.7	3.8	0.0031	37	81	14.2	44	1445	74.0	77.8	81.1	0.57	0.70	0.78	0.889
0.55	0.75	L80	0.369	7.4	3.1	3.4	0.0037	30	66	18.5	44	1450	81.6	83.6	83.9	0.57	0.70	0.78	1.28
0.75	1	90S/L	0.502	7.0	2.6	3.1	0.0055	33	73	19.4	49	1455	83.2	85.1	85.7	0.58	0.71	0.78	1.70
1.1	1.5	L90S/L	0.734	8.4	3.4	4	0.0077	24	53	24.6	49	1460	84.1	86.3	87.2	0.53	0.67	0.75	2.56
1.5	2	100L	1.00	9.1	4.5	4.2	0.0097	33	73	25.8	53	1455	85.8	87.6	88.2	0.53	0.66	0.74	3.49
2.2	3	L100L	1.47	9.5	5.1	4.7	0.0120	25	55	37.0	53	1455	86.0	87.9	89.5	0.51	0.64	0.73	5.12
3	4	L112M	2.00	8.0	3	3.7	0.0206	36	79	45.5	56	1460	88.0	89.4	90.4	0.52	0.66	0.74	6.81
4	5.5	132S	2.64	9.7	2.8	4	0.0563	28	62	73.6	56	1475	87.9	89.7	91.1	0.62	0.74	0.81	8.24
5.5	7.5	132S	3.64	10.0	3	4.2	0.0638	18	40	76.8	56	1470	89.3	90.7	91.9	0.61	0.74	0.81	11.2
7.5	10	160M/L	4.95	8.5	3.7	4.1	0.1120	26	57	116	67	1475	90.4	91.6	92.6	0.57	0.71	0.78	15.8
11	15	180M/L	7.26	8.6	3.5	3.7	0.1827	38	84	132	64	1475	91.9	93.0	93.3	0.62	0.74	0.80	22.4
15	20	180M/L	9.91	8.5	3.6	3.7	0.2088	29	64	142	64	1475	92.3	93.2	93.9	0.62	0.74	0.81	30.0
18.5	25	L180M/L	12.2	8.4	3.5	3.6	0.2437	26	57	170	64	1475	93.0	93.7	94.2	0.64	0.76	0.82	36.4
22	30	200M/L	14.4	9.0	3.7	3.8	0.3743	28	62	233	69	1485	94.0	94.8	94.5	0.61	0.73	0.79	44.8
30	40	L200M/L	19.7	8.6	3.6	3.7	0.3979	20	44	250	69	1480	94.0	94.6	94.9	0.57	0.70	0.77	62.4

Notes:  
 (1) Efficiency values are given according to IEC 60034-2-1. They are calculated according to indirect method, with stray load losses determined by measurement.  
 (2) With effect from 1st January 2017, IE2 motors placed onto the European Market and rated at 0.75 kW or above, must be used with a variable speed drive unless their design falls outside of the scope of the European Regulation or their final installation will be outside of the EU / EEA.  
 (3) Motor with class F (105K) temperature rise.

IE4 - Super Premium Efficiency - 50 Hz <sup>1) 2)</sup>

Output		Frame	Full Load Torque (kgfm)	Locked Rotor Current I <sub>L</sub> /I <sub>n</sub>	Locked Rotor Torque T <sub>L</sub> /T <sub>n</sub>	Break-down Torque T <sub>b</sub> /T <sub>n</sub>	Inertia J (kgm <sup>2</sup> )	Allowable locked rotor time (s)		Weight (kg)	Sound dB(A)	Rated speed (rpm)	380 V						Full load current I <sub>n</sub> (A)
								% of full load											
								Efficiency					Power Factor						
kW	HP	Hot	Cold	50	75	100	50	75	100										
<b>VI Poles</b>																			
0.12	0.16	71	0.128	2.8	2.0	2.0	0.0007	216	475	9.5	43	910	54.8	60.6	64.9	0.38	0.48	0.56	0.502
0.18	0.25	71	0.193	3.1	2.3	2.2	0.0009	181	398	12.5	43	910	60.8	65.7	70.1	0.36	0.46	0.54	0.722
0.25	0.33	80	0.258	4.4	2.7	2.8	0.0027	58	128	13.2	43	945	65.9	70.1	74.1	0.46	0.58	0.68	0.754
0.37	0.5	L80	0.381	4.7	2.9	3	0.0037	46	101	15.8	43	945	71.9	74.8	78.0	0.44	0.57	0.67	1.08
0.55	0.75	90S/L	0.560	5.4	2.7	3.2	0.0066	44	97	20.7	45	957	77.2	80.6	80.9	0.45	0.58	0.65	1.59
0.75	1	L90S/L	0.769	5.3	2.6	2.9	0.0077	43	95	23.8	45	950	81.0	83.1	82.7	0.48	0.62	0.68	2.03
1.1	1.5	100L	1.12	5.3	2.5	2.7	0.0143	6	13	25.3	44	960	80.6	83.0	84.5	0.47	0.60	0.68	2.91
1.5	2	L100L	1.52	5.7	2.7	2.8	0.0176	50	110	31.5	44	960	82.0	84.0	85.9	0.47	0.60	0.69	3.85
2.2	3	L112M	2.23	6.2	2.7	2.9	0.0293	39	86	48.0	48	960	84.7	86.0	87.4	0.51	0.63	0.71	5.39
3	4	132S	3.00	6.5	2.3	2.7	0.0568	68	150	60.8	52	973	85.6	87.0	88.6	0.52	0.64	0.72	7.15
4	5.5	L132S	4.00	7.1	2.6	2.9	0.0757	55	121	70.5	52	975	86.8	88.0	89.5	0.52	0.64	0.71	9.56
5.5	7.5	160M/L	5.46	7.5	3.5	3.9	0.1544	23	51	119	56	982	87.2	89.6	90.5	0.50	0.64	0.73	12.6
7.5	10	160M/L	7.44	7.7	3.7	4	0.1895	19	42	125	56	982	87.6	90.0	91.3	0.50	0.63	0.72	17.3
11	15	180M/L	10.9	9.5	3.3	3.8	0.3381	18	40	172	56	980	91.2	92.0	92.3	0.65	0.77	0.83	21.8
15	20	200M/L	14.8	6.8	2.6	3	0.4212	39	86	215	58	985	91.7	92.5	92.9	0.60	0.72	0.78	31.5
18.5	25	200M/L	18.3	6.9	2.8	3.2	0.4896	32	70	230	58	985	92.7	93.3	93.4	0.55	0.68	0.76	39.6
22	30	L200M/L	21.8	6.8	2.7	3.1	0.5246	25	55	248	58	985	92.6	93.2	93.7	0.56	0.69	0.76	46.9
<b>VIII Poles</b>																			
0.12	0.16	80	0.168	2.6	1.9	1.9	0.0030	144	317	14.9	42	695	50.9	56.8	62.3	0.44	0.55	0.64	0.457
0.18	0.25	L80	0.256	2.8	1.8	1.7	0.0037	124	273	16.8	42	685	56.7	61.1	67.2	0.46	0.58	0.67	0.607
0.25	0.33	L90S/L	0.343	3.5	1.8	2.4	0.0071	154	339	22.5	43	710	64.0	69.9	70.8	0.38	0.48	0.56	0.958
0.37	0.5	100L	0.499	3.9	1.9	2.4	0.0077	88	194	25.5	50	722	65.3	71.5	74.3	0.36	0.47	0.54	1.40
0.55	0.75	100L	0.758	3.4	1.4	1.7	0.0088	104	229	26.8	50	707	73.7	76.6	77.0	0.44	0.57	0.63	1.72
0.75	1	100L	1.03	3.7	1.6	1.8	0.0116	76	167	30.0	50	708	76.0	78.5	78.4	0.44	0.57	0.63	2.31
1.1	1.5	L100L	1.50	4.1	2	2.1	0.0165	70	154	34.8	50	713	77.3	80.2	80.8	0.41	0.53	0.60	3.45
1.5	2	L112M	2.05	5.0	2.9	3	0.0275	57	125	44.8	46	713	79.0	81.5	82.6	0.44	0.56	0.65	4.24
2.2	3	132S	2.98	6.5	2.4	3.1	0.0838	53	117	70.5	48	720	82.8	84.2	84.5	0.48	0.61	0.6	

IE3 - Premium Efficiency - 50 Hz 1) 2)

Table with columns for Output (kW, HP), Frame, Full Load Torque, Locked Rotor Current, Locked Rotor Torque, Break-down Torque, Inertia J, Allowable locked rotor time, Weight, Sound dB(A), Rated speed, Efficiency (50, 75, 100), Power Factor (50, 75, 100), Full load current. Includes sections for II Poles, High-Output Design, and IV Poles.

Notes: (1) Efficiency values are given according to IEC 60034-2-1. They are calculated according to indirect method, with stray load losses determined by measurement. (2) With effect from 1st January 2017, IE2 motors placed onto the European Market and rated at 0.75 kW or above, must be used with a variable speed drive unless their design falls outside of the scope of the European Regulation or their final installation will be outside of the EU / EEA. (3) Motor with class F (105K) temperature rise.

IE3 - Premium Efficiency - 50 Hz 1) 2)

Table with columns for Output (kW, HP), Rated speed, Efficiency (50, 75, 100), Power Factor (50, 75, 100), Full load current. Includes sections for 380 V and 415 V, II Poles, High-Output Design, and IV Poles.

Notes: (1) Efficiency values are given according to IEC 60034-2-1. They are calculated according to indirect method, with stray load losses determined by measurement. (2) With effect from 1st January 2017, IE2 motors placed onto the European Market and rated at 0.75 kW or above, must be used with a variable speed drive unless their design falls outside of the scope of the European Regulation or their final installation will be outside of the EU / EEA. (3) Motor with class F (105K) temperature rise.



IE3 - Premium Efficiency - 50 Hz <sup>1) 2)</sup>

Output		Frame	Full Load Torque (kgfm)	Locked Rotor Current II/In	Locked Rotor Torque TI/Tn	Break-down Torque Tb/Tn	Inertia J (kgm <sup>2</sup> )	Allowable locked rotor time (s)		Weight (kg)	Sound dB(A)	400 V						Full load current In (A)	
								Hot	Cold			Rated speed (rpm)	% of full load			Efficiency	Power Factor		
													50	75	100				
VI Poles																			
0.12	0.16	63	0.130	3.1	2.1	2.3	0.0007	30	66	7.8	43.0	925	50.0	55.0	57.7	0.40	0.50	0.59	0.509
0.18	0.25	71	0.190	3.2	2.0	2.1	0.0009	30	66	10.5	43.0	900	56.0	62.0	63.9	0.38	0.48	0.57	0.713
0.25	0.33	80	0.250	4.3	1.7	2.4	0.0029	25	55	12.0	43.0	955	63.6	68.5	68.8	0.47	0.60	0.71	0.739
0.37	0.5	80	0.390	4.5	1.9	2.1	0.0025	25	55	13.9	43.0	925	66.0	69.5	73.5	0.51	0.65	0.75	0.969
0.55	0.75	L80	0.570	5.1	2.9	3.1	0.0034	20	44	18.0	43.0	945	70.5	75.2	77.2	0.45	0.58	0.69	1.49
0.75	1	90S/L	0.780	5.2	2.5	2.8	0.0066	31	68	21.4	45.0	940	76.5	79.0	79.0	0.49	0.62	0.71	1.93
1.1	1.5	100L	1.12	6.0	2.1	3.2	0.0110	18	40	25.3	44.0	960	77.0	80.0	81.0	0.50	0.62	0.70	2.80
1.5	2	L100L	1.54	5.5	2.3	2.8	0.0143	31	68	29.4	44.0	950	81.5	82.5	82.5	0.49	0.62	0.71	3.70
2.2	3	L112M	2.23	6.4	2.4	2.9	0.0257	26	57	39.5	49.0	960	83.0	84.5	84.5	0.53	0.64	0.72	5.22
3	4	132S	3.01	6.0	1.9	2.5	0.0566	28	62	62.4	53.0	970	85.0	85.8	85.8	0.52	0.65	0.73	6.91
4	5.5	132M	4.06	6.5	2.2	2.5	0.0566	30	66	66.0	53.0	960	86.0	86.8	86.8	0.53	0.66	0.74	8.99
5.5	7.5	L132M	5.52	7.3	2.1	2.5	0.0755	26	57	73.2	53.0	970	86.0	87.0	88.0	0.50	0.64	0.72	12.5
7.5	10	160M/L	7.49	6.6	2.5	2.9	0.1614	19	42	117	54.0	975	86.0	88.5	89.1	0.61	0.74	0.80	15.2
11	15	160M/L	11.0	7.0	3.2	3.2	0.1689	13	29	123	54.0	977	87.5	89.4	90.3	0.54	0.68	0.76	23.1
15	20	180M/L	14.9	8.4	3.1	3.7	0.3310	8	18	174	56.0	980	90.0	91.2	91.2	0.61	0.74	0.81	29.3
18.5	25	200M/L	18.5	6.3	2.3	2.5	0.3861	17	37	206	58.0	975	90.5	91.8	92.0	0.67	0.78	0.82	35.4
22	30	200M/L	22.0	6.2	2.3	2.6	0.4388	15	33	219	58.0	975	90.4	92.0	92.2	0.65	0.75	0.82	42.0
High-Output Design																			
1.1	1.5	112M	1.10	7.5	2.2	3.7	0.0220	20	44	32.2	49.0	970	79.0	82.0	82.5	0.43	0.55	0.64	3.01
1.5	2	112M	1.52	6.0	2.1	2.8	0.0202	28	62	35.8	49.0	960	84.5	85.5	85.5	0.51	0.63	0.71	3.57
2.2	3	132S	2.20	6.5	2.2	2.6	0.0491	30	66	55.7	53.0	975	84.0	84.3	84.3	0.49	0.61	0.69	5.46
2.2	3	S132S	2.20	6.5	2.2	2.6	0.0491	30	66	55.7	53.0	975	84.0	84.3	84.3	0.49	0.61	0.69	5.46
3	4	132M	3.01	6.0	1.9	2.5	0.0566	28	62	62.4	53.0	970	85.0	85.8	85.8	0.52	0.65	0.73	6.91
5.5	7.5	160M/L	5.47	6.7	2.2	2.9	0.1264	15	33	112	54.0	980	87.0	88.0	88.0	0.58	0.70	0.77	11.7
VIII Poles																			
0.12	0.16	71	0.180	2.4	1.6	1.8	0.0009	30	66	11.5	41.0	650	44.0	50.0	50.7	0.35	0.43	0.50	0.683
0.18	0.25	80	0.260	3.3	2.0	2.2	0.0029	30	66	15.0	42.0	680	51.0	57.0	58.7	0.45	0.55	0.65	0.681
0.25	0.33	80	0.350	3.5	2.0	2.2	0.0034	30	66	15.5	42.0	695	53.0	60.0	64.1	0.42	0.52	0.63	0.894
0.37	0.5	90S/L	0.520	3.7	2.1	2.4	0.0055	30	66	19.0	44.0	690	61.0	66.0	69.3	0.41	0.53	0.62	1.24
0.55	0.75	90S/L	0.780	3.6	1.8	2.1	0.0066	29	64	23.0	44.0	685	63.0	72.5	73.0	0.44	0.57	0.67	1.62
0.75	1	100L	1.03	4.6	1.9	2.3	0.0127	30	66	28.8	50.0	710	72.5	75.5	75.5	0.41	0.53	0.62	2.31
1.1	1.5	100L	1.51	4.6	1.9	2.0	0.0143	30	66	30.8	50.0	710	73.0	76.0	77.7	0.41	0.53	0.62	3.30
1.5	2	112M	2.07	5.0	2.5	2.8	0.0238	28	62	37.4	46.0	705	79.0	80.5	80.5	0.45	0.59	0.68	3.96
2.2	3	S132S	3.02	6.2	2.3	2.5	0.0690	27	59	58.9	48.0	710	82.0	82.6	82.6	0.51	0.65	0.72	5.34
3	4	132M	4.12	6.4	2.4	2.6	0.0838	21	46	66.2	48.0	710	82.5	83.5	83.5	0.51	0.64	0.72	7.20
4	5.5	160M/L	5.34	5.6	2.1	3.1	0.1221	15	33	97.3	53.0	730	81.0	83.0	84.8	0.48	0.61	0.70	9.73
5.5	7.5	160M/L	7.34	5.7	2.4	3.2	0.1652	20	44	112	53.0	730	84.0	86.0	86.2	0.49	0.62	0.71	13.0
7.5	10	160M/L	10.1	5.3	2.2	2.8	0.1652	19	42	121	53.0	725	86.0	87.0	87.3	0.54	0.66	0.73	17.0
11	15	180M/L	14.7	6.5	2.3	2.7	0.3034	13	29	158	51.0	730	88.6	88.6	88.6	0.55	0.68	0.76	23.6
15	20	200M/L	19.9	5.0	2.0	2.2	0.5023	28	62	228	56.0	735	89.5	90.5	90.9	0.53	0.65	0.71	33.5
High-Output Design																			
2.2	3	132S	3.02	6.2	2.3	2.5	0.0690	27	59	58.9	48.0	710	82.0	82.6	82.6	0.51	0.65	0.72	5.34

Notes:  
 (1) Efficiency values are given according to IEC 60034-2-1. They are calculated according to indirect method, with stray load losses determined by measurement.  
 (2) With effect from 1st January 2017, IE2 motors placed onto the European Market and rated at 0.75 kW or above, must be used with a variable speed drive unless their design falls outside of the scope of the European Regulation or their final installation will be outside of the EU / EEA.  
 (3) Motor with class F (105K) temperature rise.

IE3 - Premium Efficiency - 50 Hz <sup>1) 2)</sup>

Output		Frame	Full Load Torque (kgfm)	Locked Rotor Current II/In	Locked Rotor Torque TI/Tn	Break-down Torque Tb/Tn	Inertia J (kgm <sup>2</sup> )	Allowable locked rotor time (s)		Weight (kg)	Sound dB(A)	380 V						415 V						Full load current In (A)			
								Hot	Cold			Rated speed (rpm)	% of full load			Efficiency	Power Factor	Rated speed (rpm)	% of full load			Efficiency	Power Factor				
													50	75	100				50	75	100						
VI Poles																											
0.12	0.16	910	48.7	54.7	57.7	0.40	0.53	0.63	0.502	930	50.0	55.0	57.7	0.39	0.47	0.56	0.517										
0.18	0.25	885	57.7	62.8	63.9	0.43	0.55	0.64	0.669	910	54.5	61.2	63.9	0.38	0.48	0.57	0.688										
0.25	0.33	950	65.9	68.0	68.6	0.51	0.64	0.74	0.748	960	61.7	68.2	68.8	0.45	0.57	0.68	0.743										
0.37	0.5	915	67.6	69.9	73.5	0.55	0.69	0.79	0.968	930	64.3	68.8	73.5	0.48	0.62	0.72	0.973										
0.55	0.75	940	73.4	76.7	77.2	0.49	0.63	0.73	1.48	950	67.9	75.0	77.2	0.42	0.55	0.65	1.52										
0.75	1	930	77.5	79.2	78.9	0.53	0.66	0.74	1.95	945	75.3	78.6	79.1	0.46	0.59	0.69	1.91										
1.1	1.5	955	77.0	80.0	81.0	0.53	0.66	0.74	2.79	965	76.0	80.0	81.0	0.46	0.59	0.68	2.78										
1.5	2	945	82.3	82.6	82.5	0.53	0.66	0.74	3.73	955	80.6	82.3	82.8	0.46	0.59	0.68	3.71										
2.2	3	955	83.6	84.4	84.3	0.57	0.68	0.75	5.29	965	82.3	84.3	84.7	0.50	0.62	0.70	5.16										
3	4	965	85.0	85.8	85.8	0.56	0.69	0.76	6.99	975	85.0	85.8	85.8	0.49	0.62	0.71	6.85										
4	5.5	955	86.6	86.9	86.8	0.57	0.70	0.76	9.21	965	85.4	86.6	86.9	0.50	0.63	0.71	9.02										
5.5	7.5	965	85.5	87.0	88.0	0.55	0.68	0.75	12.7	970	86.0	87.0	88.0	0.47	0.61	0.69	12.6										
7.5	10	970	86.5	88.5	89.1	0.65	0.76	0.82	15.6	975	85.5	88.5	89.1	0.58	0.71	0.79	14.8										
11	15	974	88.3	89.6	90.3	0.59	0.71	0.79	23.4	979	86.7	89.0	90.3	0.51	0.64	0.73	23.2										
15	20	975	90.7	91.0	91.2	0.65	0.76	0.83	30.1	980	89.0	91.0	91.2	0.57	0.71	0.79	29.0										
18.5	25	970	90.5	91.8	92.0	0.72	0.81	0.84	36.4	980	90.0	91.8	92.0	0.64	0.75	0.80	35.0										
22	30	970	91.0	92.0	92.2	0.70	0.78	0.84	43.2	980	89.5	91.5	92.2	0.60	0.72	0.80	41.5										
High-Output Design																											
1.1	1.5	970	80.0	82.5	82.5	0.47	0.59	0.68	2.98	975	78.0	81.0	82.5	0.40	0.52	0.61	3.04										
1.5	2	955	85.1	85.4	84.9	0.54	0.66	0.74	3.63	960	84.0	85.4	85.8	0.48	0.60	0.69	3.52										
2.2	3	970	80.0	84.3	84.3	0.53	0.65	0.72	5.51	975	86.4	84.3	84.3	0.50	0.62	0.70	5.19										
2.2	3	970	80.0	84.3	84.3	0.53	0.65	0.72	5.51	975	86.4	84.3	84.3	0.50	0.62	0.70	5.19										
3	4	965	85.0	85.8	85.8	0.56	0.69	0.76	6.99	975	85.0	85.8	85.8	0.49	0.62	0.71	6.85										
5.5	7.5	975	87.0	88.0	88.0	0.61	0.73	0.79	12.0	980	87.0	88.0	88.0	0.55	0.67	0.75	11.6										
VIII Poles																											
0.12	0.16	640	46.6	51.7	50.7	0.38	0.46	0.54	0.666	660	41.8	48.2	50.7	0.34	0.41	0.48	0.686										
0.18	0.25	670	52.8	58.0	58.7	0.48	0.59	0.69	0.675	685	49.3	56.0	58.7	0.43	0.53	0.62	0.688										
0.25	0.33	685	54.0	60.0	64.1	0.44	0.57	0.67	0.884	705																	

IE2 - High Efficiency - 50 Hz 1) 2)

IE2 - High Efficiency - 50 Hz 1) 2)

Technical specification table for IE2 High Efficiency 50 Hz motors, 400V. Columns include Output (kW/HP), Frame, Full Load Torque, Locked Rotor Current/Torque, Break-down Torque, Inertia J, Allowable locked rotor time, Weight, Sound dB(A), Rated speed, Efficiency, Power Factor, and Full load current.

Technical specification table for IE2 High Efficiency 50 Hz motors, 380V and 415V. Columns include Output (kW/HP), Frame, Full Load Torque, Locked Rotor Current/Torque, Break-down Torque, Inertia J, Allowable locked rotor time, Weight, Sound dB(A), Rated speed, Efficiency, Power Factor, and Full load current.



### IE2 - High Efficiency - 50 Hz <sup>1) 2)</sup>

Output		Frame	Full Load Torque (kgfm)	Locked Rotor Current I <sub>L</sub> /I <sub>n</sub>	Locked Rotor Torque T <sub>L</sub> /T <sub>n</sub>	Break-down Torque T <sub>b</sub> /T <sub>n</sub>	Inertia J (kgm <sup>2</sup> )	Allowable locked rotor time (s)		Weight (kg)	Sound dB(A)	400 V								
								Rated speed (rpm)	% of full load						Full load current I <sub>n</sub> (A)					
									Efficiency			Power Factor								
									Hot			Cold		50		75	100	50	75	100
VI Poles																				
0.12	0.16	63	0.130	3.0	1.9	2.0	0.0006	52	114	7.4	43.0	905	42.0	50.0	52.0	0.43	0.53	0.63	0.529	
0.18	0.25	71	0.190	3.2	2.0	2.0	0.0008	96	211	10.5	43.0	915	52.0	58.0	59.0	0.40	0.51	0.58	0.759	
0.25	0.33	71	0.270	3.2	1.9	2.1	0.0008	70	154	12.5	43.0	890	53.0	60.0	61.6	0.37	0.48	0.58	1.01	
0.37	0.5	80	0.390	4.1	2.0	2.4	0.0022	24	53	14.0	43.0	925	65.0	67.0	67.6	0.47	0.62	0.72	1.10	
0.55	0.75	80	0.580	4.5	2.3	2.5	0.0030	21	46	13.6	43.0	930	65.0	71.0	73.1	0.50	0.62	0.72	1.51	
0.75	1	90S/L	0.790	4.5	2.0	2.1	0.0055	23	51	18.2	45.0	925	74.5	76.0	76.0	0.51	0.64	0.73	1.95	
1.1	1.5	90S/L	1.16	4.7	2.3	2.2	0.0066	17	37	20.7	45.0	925	76.0	78.1	78.1	0.50	0.63	0.73	2.78	
1.5	2	100L	1.54	6.0	2.0	2.4	0.0110	15	33	25.9	44.0	950	76.0	79.8	79.8	0.52	0.65	0.73	3.72	
2.2	3	112M	2.24	6.0	2.0	2.4	0.0257	10	22	38.8	49.0	955	80.0	81.8	81.8	0.52	0.65	0.73	5.32	
3	4	S132S	3.04	5.7	2.0	2.4	0.0359	31	68	53.0	53.0	960	82.5	83.6	83.6	0.50	0.63	0.71	7.30	
4	5.5	132M	4.04	6.0	2.1	2.5	0.0453	21	46	55.4	53.0	965	84.0	84.8	84.8	0.51	0.64	0.72	9.46	
5.5	7.5	132M	5.55	6.4	2.5	2.8	0.0604	19	42	75.0	53.0	965	85.5	86.1	86.1	0.51	0.64	0.72	12.8	
7.5	10	160M/L	7.45	6.6	2.2	2.9	0.1055	10	22	89.1	56.0	980	86.6	87.2	87.2	0.58	0.71	0.78	15.9	
9.2	12.5	160M/L	9.14	6.8	2.3	3.0	0.1266	10	22	109	57.0	980	86.5	87.5	88.1	0.55	0.69	0.77	19.6	
11	15	160M/L	11.1	6.5	2.4	2.8	0.1689	10	22	114	57.0	970	88.0	88.7	88.7	0.63	0.75	0.81	22.1	
15	20	180M/L	14.9	8.4	2.5	3.7	0.2705	6	13	146	56.0	980	87.0	89.0	89.7	0.61	0.73	0.81	29.8	
18.5	25	200M/L	18.4	7.5	2.7	2.7	0.3335	8	18	178	58.0	980	89.0	90.4	90.4	0.62	0.74	0.80	36.9	
22	30	200M/L	21.9	8.0	3.0	3.1	0.3868	8	18	199	58.0	980	88.5	90.0	90.9	0.59	0.71	0.78	44.8	
High-Output Design																				
3	4	132M	3.04	5.7	2.0	2.4	0.0359	31	68	53.0	53.0	960	82.5	83.6	83.6	0.50	0.63	0.71	7.30	
3	4	132S	3.04	5.7	2.0	2.4	0.0359	31	68	53.0	53.0	960	82.5	83.6	83.6	0.50	0.63	0.71	7.30	
5.5	7.5	160M/L	5.47	6.3	2.0	2.8	0.1191	14	31	106	56.0	980	85.0	85.5	86.0	0.59	0.72	0.79	11.7	
VIII Poles																				
0.12	0.16	71	0.180	2.2	1.6	1.9	0.0008	60	132	10.0	41.0	660	40.0	48.0	50.0	0.33	0.41	0.50	0.693	
0.18	0.25	80	0.250	3.1	1.9	2.0	0.0024	27	59	13.0	42.0	690	34.8	43.9	45.9	0.44	0.55	0.65	0.871	
0.25	0.33	80	0.360	3.3	1.9	2.2	0.0029	32	70	14.3	42.0	675	47.0	52.5	55.0	0.43	0.55	0.66	0.994	
0.37	0.5	90S/L	0.520	3.5	1.8	2.0	0.0044	23	51	16.0	44.0	690	46.1	53.2	56.1	0.41	0.52	0.62	1.54	
0.55	0.75	90S/L	0.780	3.5	1.9	2.0	0.0060	31	68	18.9	44.0	685	61.0	64.0	64.0	0.44	0.56	0.66	1.88	
0.75	1	100L	1.01	5.0	2.0	2.5	0.0110	18	40	30.5	50.0	720	60.0	68.0	70.0	0.40	0.49	0.58	2.67	
1.1	1.5	100L	1.50	5.0	2.0	2.4	0.0127	14	31	32.0	50.0	715	62.0	69.0	70.8	0.40	0.51	0.59	3.80	
1.5	2	112M	2.09	4.7	2.4	2.3	0.0202	12	26	39.0	46.0	700	77.0	79.0	79.0	0.44	0.57	0.67	4.09	
2.2	3	S132S	3.06	5.5	2.2	2.4	0.0592	12	26	66.0	48.0	700	81.0	81.5	81.0	0.52	0.65	0.72	5.44	
3	4	132M	4.12	6.2	2.4	2.9	0.0740	19	42	68.0	48.0	710	82.0	82.5	82.0	0.54	0.65	0.72	7.33	
4	5.5	160M/L	5.34	5.5	2.1	3.0	0.0985	13	29	85.8	51.0	730	80.0	81.9	81.9	0.48	0.61	0.70	10.1	
5.5	7.5	160M/L	7.34	5.5	2.1	3.0	0.1266	9	20	102	51.0	730	79.0	81.5	83.8	0.47	0.60	0.69	13.7	
7.5	10	160M/L	10.0	5.6	2.4	3.1	0.1555	15	33	109	53.0	730	84.0	85.3	85.3	0.50	0.63	0.71	17.9	
9.2	12.5	180M/L	12.2	7.0	2.1	2.9	0.2308	8	18	133	51.0	735	85.0	86.0	86.3	0.55	0.68	0.76	20.2	
11	15	180M/L	14.6	7.4	2.3	3.1	0.3259	8	18	178	51.0	735	85.0	86.0	86.9	0.55	0.68	0.76	24.0	
15	20	200M/L	19.9	6.0	2.3	2.3	0.4228	12	26	208	53.0	735	86.5	87.5	88.0	0.53	0.66	0.73	33.7	
High-Output Design																				
2.2	3	132S	3.06	5.5	2.2	2.4	0.0592	12	26	66.0	48.0	700	81.0	81.5	81.0	0.52	0.65	0.72	5.44	

### IE2 - High Efficiency - 50 Hz <sup>1) 2)</sup>

Output		Frame	Full Load Torque (kgfm)	Locked Rotor Current I <sub>L</sub> /I <sub>n</sub>	Locked Rotor Torque T <sub>L</sub> /T <sub>n</sub>	Break-down Torque T <sub>b</sub> /T <sub>n</sub>	Inertia J (kgm <sup>2</sup> )	Allowable locked rotor time (s)		Weight (kg)	Sound dB(A)	380 V									415 V								
								Rated speed (rpm)	% of full load						Full load current I <sub>n</sub> (A)	Rated speed (rpm)	% of full load						Full load current I <sub>n</sub> (A)						
									Efficiency			Power Factor					Efficiency			Power Factor									
									50			75	100	50			75	100	50	75	100	50		75	100	50	75	100	
VI Poles																													
0.12	0.16	895	45.4	52.1	52.9	0.46	0.57	0.67	0.514	910	39.1	47.5	50.7	0.41	0.50	0.59	0.558												
0.18	0.25	905	54.2	59.0	58.7	0.37	0.50	0.57	0.817	920	50.1	56.8	58.6	0.38	0.48	0.57	0.750												
0.25	0.33	875	56.3	61.6	61.6	0.41	0.52	0.62	0.995	900	50.1	60.0	61.6	0.35	0.45	0.54	1.05												
0.37	0.5	920	65.0	67.0	67.6	0.52	0.66	0.76	1.09	935	62.0	67.0	67.6	0.45	0.58	0.67	1.14												
0.55	0.75	920	67.5	71.8	73.1	0.55	0.66	0.76	1.50	935	62.5	69.6	73.1	0.47	0.61	0.72	1.45												
0.75	1	915	75.8	75.9	75.9	0.55	0.68	0.76	1.98	930	73.2	75.6	76.4	0.48	0.61	0.71	1.92												
1.1	1.5	915	77.9	78.5	78.5	0.55	0.67	0.77	2.76	930	74.3	77.3	78.1	0.46	0.59	0.70	2.80												
1.5	2	945	76.0	79.8	79.8	0.57	0.69	0.76	3.76	955	75.0	79.8	79.8	0.48	0.62	0.70	3.74												
2.2	3	945	81.0	81.8	81.8	0.57	0.69	0.76	5.38	955	79.0	81.8	81.8	0.50	0.62	0.71	5.27												
3	4	955	83.4	83.8	83.3	0.54	0.67	0.74	7.39	960	81.4	83.1	83.6	0.46	0.59	0.68	7.34												
4	5.5	965	84.9	85.0	84.6	0.55	0.68	0.74	9.71	970	83.0	84.4	84.9	0.47	0.61	0.69	9.50												
5.5	7.5	960	86.4	86.3	86.0	0.56	0.68	0.75	13.0	970	84.6	85.7	86.2	0.47	0.61	0.69	12.9												
7.5	10	975	86.8	87.2	87.2	0.62	0.75	0.81	16.1	980	86.0	87.2	87.2	0.55	0.69	0.76	15.7												
9.2	12.5	975	87.2	87.7	88.1	0.60	0.73	0.80	19.8	980	85.5	87.1	88.1	0.52	0.66	0.75	19.4												
11	15	965	88.0	88.7	88.7	0.67	0.78	0.83	22.7	975	86.8	88.1	88.7	0.59	0.72	0.79	21.8												
15	20	980	87.0	89.0	89.7	0.66	0.78	0.84	30.2	985	87.0	89.0	89.7	0.57	0.70	0.79	29.4												
18.5	25	975	89.0	90.4	90.4	0.66	0.77	0.83	37.5	980	88.0	90.4	90.4	0.58	0.71	0.78	36.5												
22	30	980	88.5	90.0	90.9	0.64	0.76	0.81	45.4	980	88.5	89.5	90.9	0.55	0.68	0.75	44.9												
High-Output Design																													
3	4	955	83.4	83.8	83.3	0.54	0.67	0.74	7.39	960	81.4	83.1	83.6	0.46	0.59	0.68	7.34												
3	4	955	83.4	83.8	83.3	0.54	0.67	0.74	7.39	960	81.4	83.1	83.6	0.46	0.59	0.68	7.34												
5.5	7.5	975	85.0	85.5	86.0	0.63	0.76	0.81	12.0	980	85.0	85.5	86.0	0.57	0.70	0.77	11.6												
VIII Poles																													
0.12	0.16	650	42.9	50.1	50.6	0.35	0.44	0.53	0.680	670	37.1	45.7	48.8	0.31	0.38	0.47	0.728												
0.18	0.25	680	37.2	45.7	45.9	0.47	0.59	0.69	0.864	695	33.0	42.2	45.9	0.42	0.53	0.59	0.925												
0.25	0.33	665	49.0	53.0	55.0	0.47	0.59	0.70	0.987	680	45.0	52.0	55.0	0.42	0.53	0.63	1.00												
0.37	0.5	680	49.0	54.9	56.1	0.44	0.56	0.67	1.50	695	43.7	51.5	56.1	0.39	0.49	0.55	1.67												
0.55	0.75	675	63.3	65.1	63.5	0.47	0.61	0.70	1.88	690	58.5	62.8	63.9	0.41	0.53	0.63	1.90												
0.75	1	715	65.0	70.0	72.0	0.43	0.54	0.62	2.55	720	56.0	64.0	68.0	0.38	0.4														

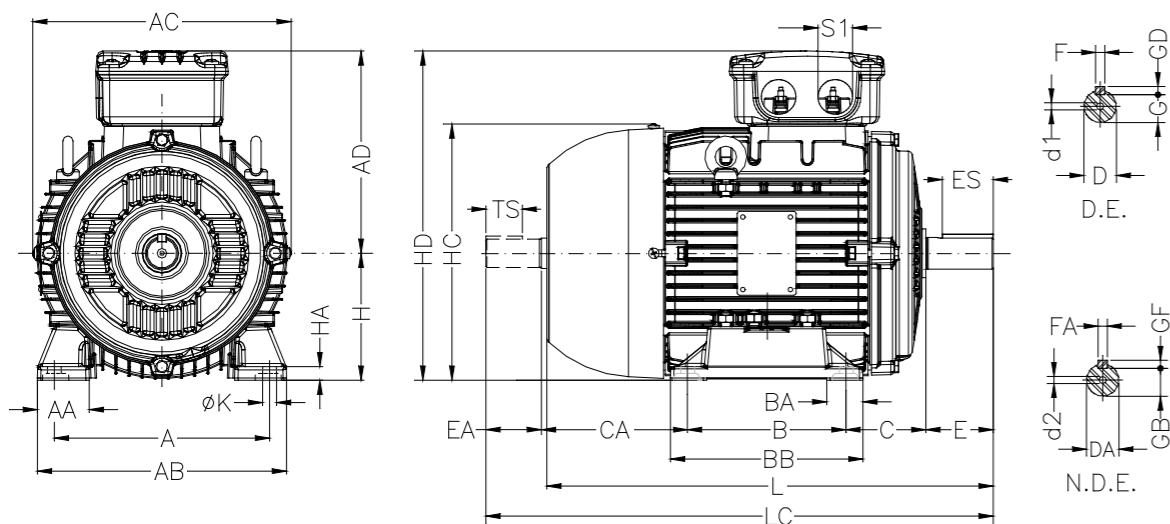






# Mechanical Data

## Foot Mounted Motors



Frame	A	AA	AB	AC	AD	B	BA	BB	C	CA	Shaft Dimensions														H	HA	HC	HD	K	L	LC	S1	d1	d2	Bearings	
											D	E	ES	F	G	GD	DA	EA	TS	FA	GB	GF	D.E.	N.D.E.												
63	100	19	116	125	119	80	23	95	40	78	11j6	23	14	4	8.5	4	9j6	20	12	3	7.2	3	63	6	124	182	216	241	EM4	EM3	6201-ZZ					
71	112	28	134	141	127	90	24.5	108	45	88	14j6	30	18	5	11	5	11j6	23	14	4	8.5	4	71	6	139	198	248	276	2xM20x1.5	DM5	EM4	6203-ZZ	6202-ZZ			
80	125	32	155	159	136	100	28	124	50	93	19j6	40	28	6	15.5	6	14j6	30	18		11		80	8	157	216	276	313	DM6	DM4	6204-ZZ	6203-ZZ				
90S/L	140	35	170	179	155	110	24	146	56	129	24j6	50	36		20		16j6	40	28	5	13	5	90	9	177	245	330	375	2xM25x1.5	DM8	DM6	6205-ZZ	6204-ZZ			
100L	160	40	196	200	165	120	30		63	118	28j6	60	45		24	7	22j6	50	36		20		100	10	198	265	376	431	DM10	DM8	6206-ZZ	6205-ZZ				
112M	190	46	220	223	184	140	40	170	70	128	32j6	70	50				24j6	60	45		20		112	12	235	296	393	448			6307-ZZ	6206-ZZ				
S132S	216	44	248	270	212	140	40	170	89	150	38k6	80	63	10	33	8	28j6	60	45	8	24	7	132	12	274	344	452	519	2xM32x1.5	DM12	DM10	6308-ZZ	6207-ZZ			
132S	216	44	248	270	212	140	40	170	89	150	38k6	80	63	10	33	8	28j6	60	45	8	24	7	132	12	274	344	490	557	DM12	DM10	6308-ZZ	6207-ZZ				
132M	216	44	248	270	212	178	32	210	89	150	38k6	80	63	10	33	8	28j6	60	45		24	7	132	12	274	344	490	557	DM12	DM10	6308-ZZ	6207-ZZ				
160M/L	254	62	308	347	255	210	40	254	108	174	42k6			12	37	8	42k6	110	80	12	37	8	160	18	313	414	634	756	2xM40x1.5	DM16	DM16	6309-C3	6209-Z-C3			
180M/L	279	68	350	306	274	241	49	322	121	238	48k6	110	80	14	42.5	9	48k6	110	80	14	42.5	9	180	20	354	454	694	820	2xM40x1.5	DM16	DM16	6311-C3	6211-Z-C3			
200M/L	318	73	385	386	300	267	60	370	133	260	55m6			16	49	10	48k6	110	80	14	42.5	9	200	25	393	500	758	880	2xM50x1.5	DM20	DM20	6312-C3	6212-Z-C3			

\*The following motors have longer lamination core length, and consequently, a larger frame.

### Standard frames:

Motor	Frame	L	LC
IE2 - 2.2kW 2P	L90S/L	360	405
IE2 - 1.5kW 2P	L90S/L	360	405
IE2 - 3kW 4P	L100L	420	475
IE2 - 4kW 4P	L112M	425	480
IE3 - 3kW 4P	L100L	420	475

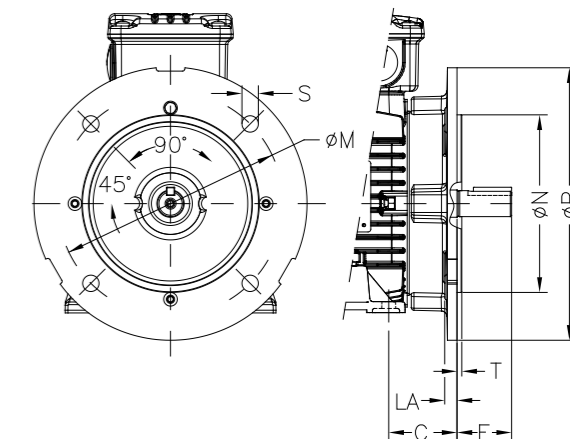
### Optional frames:

Motor	Frame	L	LC
IE2 - 1.1kW 4P	80	325	362
IE2 - 3kW 2P	90S/L	360	406
IE2 - 2.2kW 4P	90S/L	360	406
IE2 - 7.5kW 2P	112M	423	478
IE2 - 5.5kW 4P	112M	423	478

## Flange mounted motors

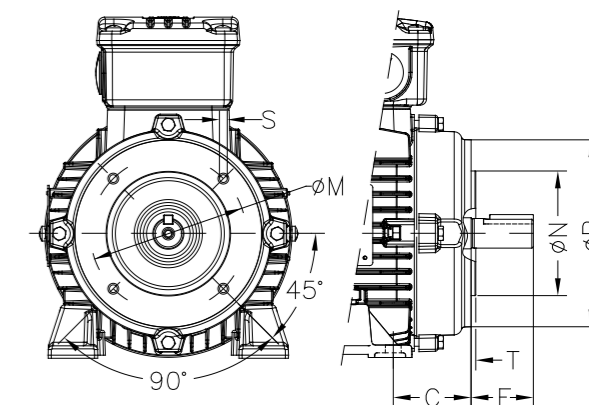
### "FF" Flange

Frame	"FF" Flange Dimensions									N° of Holes		
	Flange	C	LA	M	N	P	T	S	a			
63	FF-115	40		115	95	140	3			10	45°	4
71	FF-130	45	9	130	110	160						
80	FF-165	50	10	165	130	200	3.5			12	45°	4
90S/L		56										
100L	FF-215	63	11	215	180	250				15	45°	4
112M		70										
S132S	FF-265	89	12	265	230	300				19	45°	4
132S/M	FF-265	89	12	265	230	300						
160M/L	FF-300	108	18	300	250	350				19	45°	4
180M/L		121										
200M/L	FF-350	133		350	300	400				19	45°	4



### "C-DIN" Flange

Frame	"C" DIN Flange Dimensions								N° of Holes	
	Flange	C	M	N	P	S	T	a		
63	C-90	40	75	60	90	M5			2.5	4
71	C-105	45	85	70	105	M6				
80	C-120	50	100	80	120	M6			3	4
90S/L	C-140	56	115	95	140	M8				
100L	C-160	63	130	110	160	M8			3.5	4
112M		70								
S132S	C-200	89	165	130	200	M10			3.5	4
132S/M	C-200	89	165	130	200	M10				



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Cod: 50124117 | Rev: 00 | Date (m/y): 9/2022.

The values shown are subject to change without prior notice.  
The information contained is reference values.