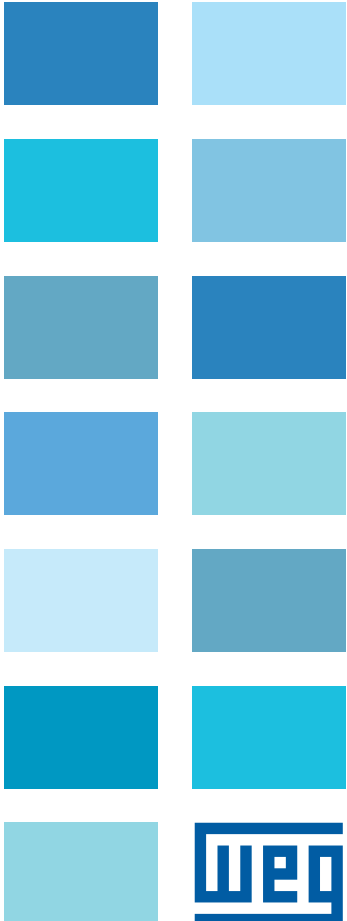
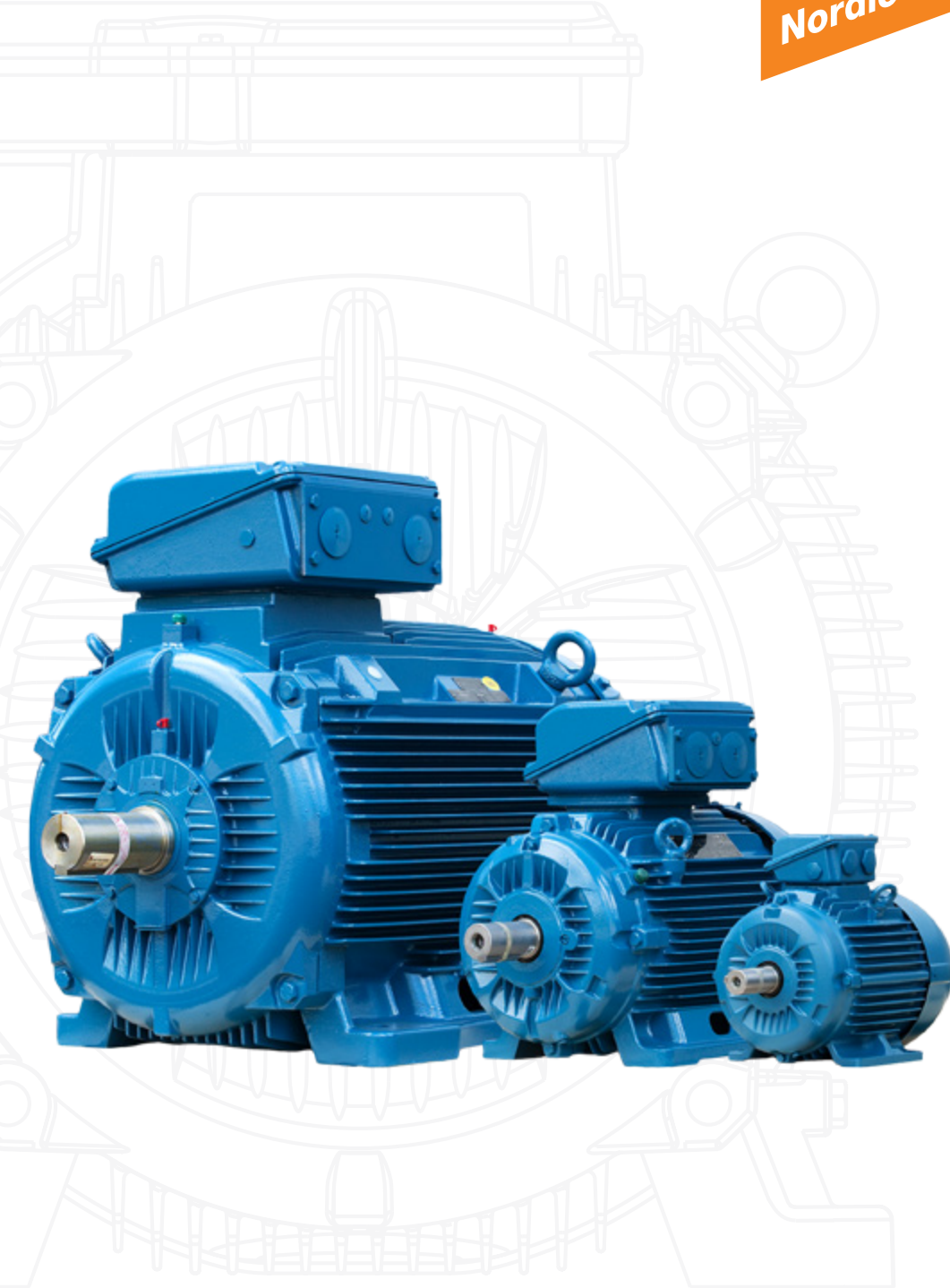


# W22 Processmotor

Three-Phase Electric Motor

Technical Catalogue  
Nordic Industrial Market





### W22 Line – High Efficiency Motors

The increasing demand for electrical energy to sustain global development requires consistent heavy investments in power supply generation. However, in addition to complex medium and long term planning, these investments rely on natural resources, which are becoming depleted due to constant pressures upon the environment. The best strategy, therefore, to maintain energy supply in the short term is to avoid wastage and increase energy efficiency. Electric motors play a major role in this strategy; since around 40% of global energy demand is estimated to be related to electric motor applications. Consequently, any initiatives to increase energy efficiency, by using high efficiency electric motors and frequency inverters, are to be welcomed, as they can make a real contribution to reductions in global energy demand.

At the same time as efficiency initiatives make an impact in traditional market sectors, the application of new technologies in emerging sectors is resulting in profound changes in the way that electric motors are applied and controlled. By integrating these changes

together with the demands for increased energy efficiency, WEG has taken up the challenge and produced a new design of high efficiency motor; one that exceeds the performance of WEG's existing W21 motor line, which is recognised worldwide for its quality, reliability and efficiency.

Using the latest generation of computerised tools, such as structural analysis software (finite element analysis) and computer fluid dynamics, as well as electrical design optimisation software, an innovative – next generation - product has been developed: the W22 processmotor.

Several key objectives have been achieved in the design of the W22 processmotor:

- Reduction of noise and vibration levels
- Increased energy efficiency and reduced thermal footprint
- Easy maintenance
- Compatibility with present & future generations of frequency inverters
- Flexible and modular design

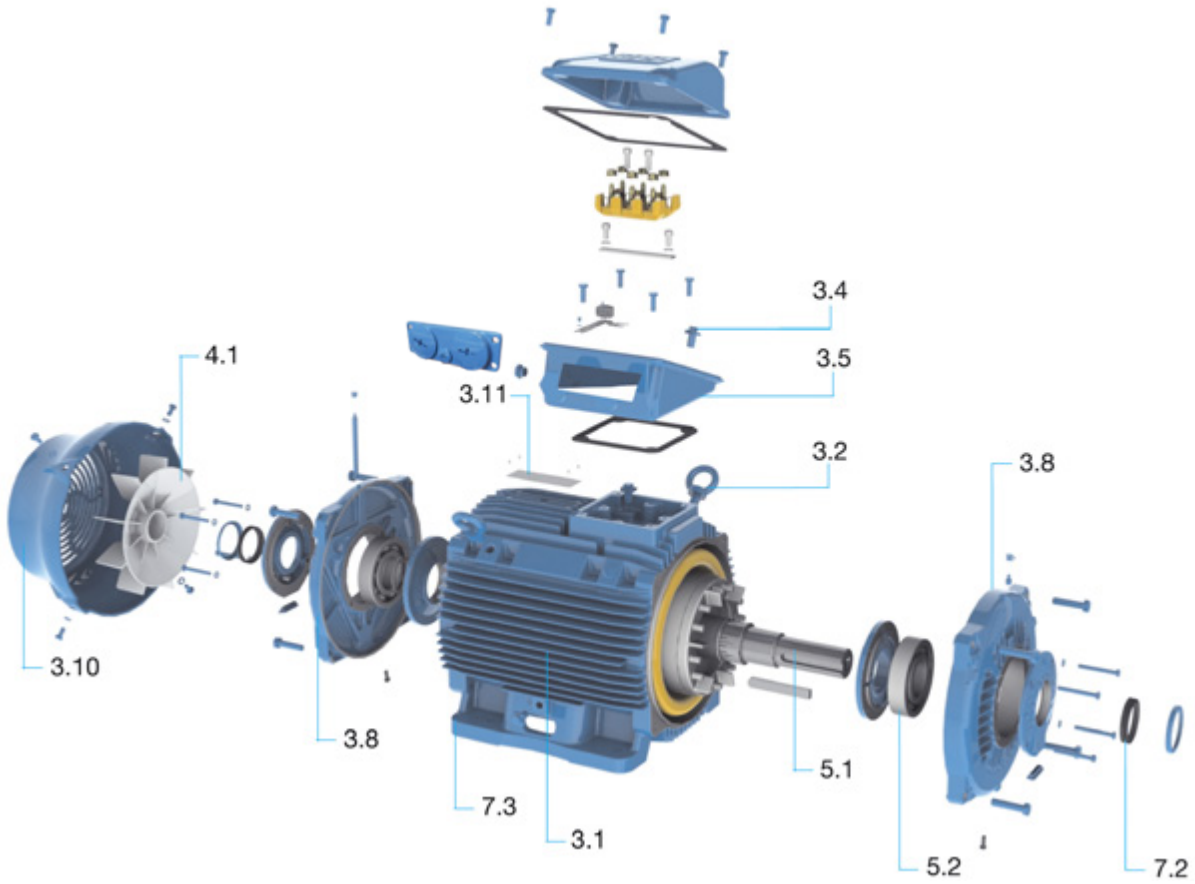
Output	IE1 - Standard Efficiency				IE2 - High Efficiency				IE3 - Premium Efficiency				IE4 - Super Premium Efficiency			
	Poles				Poles				Poles				Poles			
kW	2	4	6	8	2	4	6	8	2	4	6	8	2	4	6	8
0.12	45.0	50.0	38.3	31.0	53.6	59.1	50.6	39.8	60.8	64.8	57.7	50.7	66.5	69.8	64.9	62.3
0.18	52.8	57.0	45.5	38.0	60.4	64.7	56.6	45.9	65.9	69.9	63.9	58.7	70.8	74.7	70.1	67.2
0.20	54.6	58.5	47.6	39.7	61.9	65.9	58.8	47.4	67.2	71.1	65.4	60.6	71.9	75.5	71.4	68.4
0.25	58.2	61.5	52.1	43.4	64.8	68.5	61.6	50.6	69.7	73.5	68.6	64.1	74.3	77.9	74.1	70.8
0.37	63.9	66.0	59.7	49.7	69.5	72.7	67.6	56.1	73.8	77.3	73.5	69.3	78.1	81.1	78.0	74.3
0.40	64.9	66.8	61.1	50.9	70.4	73.5	68.8	57.2	74.6	78.0	74.4	70.1	78.9	81.7	78.7	74.9
0.55	69.0	70.0	65.8	56.1	74.1	77.1	73.1	61.7	77.8	80.8	77.2	73.0	81.5	83.9	80.9	77.0
0.75	72.1	72.1	70.0	61.2	77.4	79.6	75.9	66.2	80.7	82.5	78.9	75.0	83.5	85.7	82.7	78.4
1.1	75.0	75.0	72.9	66.5	79.6	81.4	78.1	70.8	82.7	84.1	81.0	77.7	85.2	87.2	84.5	80.8
1.5	77.2	77.2	75.2	70.2	81.3	82.8	79.8	74.1	84.2	85.3	82.5	79.7	86.5	88.2	85.9	82.6
2.2	79.7	79.7	77.7	74.2	83.2	84.3	81.8	77.6	85.9	86.7	84.3	81.9	88.0	89.5	87.4	84.5
3	81.5	81.5	79.7	77.0	84.6	85.5	83.3	80.0	87.1	87.7	85.6	83.5	89.1	90.4	88.6	85.9
4	83.1	83.1	81.4	79.2	85.8	86.6	84.6	81.9	88.1	88.6	86.8	84.8	90.0	91.1	89.5	87.1
5.5	84.7	84.7	83.1	81.4	87.0	87.7	86.0	83.8	89.2	89.6	88.0	86.2	90.9	91.9	90.5	88.3
7.5	86.0	86.0	84.7	83.1	88.1	88.7	87.2	85.3	90.1	90.4	89.1	87.3	91.7	92.6	91.3	89.3
11	87.6	87.6	86.4	85.0	89.4	89.8	88.7	86.9	91.2	91.4	90.3	88.6	92.6	93.3	92.3	90.4
15	88.7	88.7	87.7	86.2	90.3	90.6	89.7	88.0	91.9	92.1	91.2	89.6	93.3	93.9	92.9	91.2
18.5	89.3	89.3	88.6	86.9	90.9	91.2	90.4	88.6	92.4	92.6	91.7	90.1	93.7	94.2	93.4	91.7
22	89.9	89.9	89.2	87.4	91.3	91.6	90.9	89.1	92.7	93.0	92.2	90.6	94.0	94.5	93.7	92.1
30	90.7	90.7	90.2	88.3	92.0	92.3	91.7	89.8	93.3	93.6	92.9	91.3	94.5	94.9	94.2	92.7
37	91.2	91.2	90.8	88.8	92.5	92.7	92.2	90.3	93.7	93.9	93.3	91.8	94.8	95.2	94.5	93.1
45	91.7	91.7	91.4	89.2	92.9	93.1	92.7	90.7	94.0	94.2	93.7	92.2	95.0	95.4	94.8	93.4
55	92.1	92.1	91.9	89.7	93.2	93.5	93.1	91.0	94.3	94.6	94.1	92.5	95.3	95.7	95.1	93.7
75	92.7	92.7	92.6	90.7	93.8	94.0	93.7	91.6	94.7	95.0	94.6	93.1	95.6	96.0	95.4	94.2
90	93.0	93.0	92.9	91.1	94.1	94.2	94.0	91.9	95.0	95.2	94.9	93.4	95.8	96.1	95.6	94.4
110	93.3	93.3	93.3	91.5	94.3	94.5	94.3	92.3	95.2	95.4	95.1	93.7	96.0	96.3	95.8	94.7
132	93.5	93.5	93.5	91.9	94.6	94.7	94.6	92.6	95.4	95.6	95.4	94.0	96.2	96.4	96.0	94.9
160	93.8	93.8	93.8	92.5	94.8	94.9	94.8	93.0	95.6	95.8	95.6	94.3	96.3	96.6	96.2	95.1
200	94.0	94.0	94.0	92.5	95.0	95.1	95.0	93.5	95.8	96.0	95.8	94.6	96.5	96.7	96.3	95.4
250	94.0	94.0	94.0	92.5	95.0	95.1	95.0	93.5	95.8	96.0	95.8	94.6	96.5	96.7	96.5	95.4
315 up to 1000	94.0	94.0	94.0	92.5	95.0	95.1	95.0	93.5	95.8	96.0	95.8	94.6	96.5	96.7	96.6	95.4

Table 1 - Minimum efficiency levels (according to IEC 60034-30-1 : 2014).

WEG can support the movement towards these high efficiency levels by offering a comprehensive range of products meeting IE3 and IE4 criteria detailed above. Additionally our variable speed drives are perfectly matched to our motors, affording you the most reliable package of motor / drive products in industry.

To learn more about WEG, our products and the new Global Directives, go to [www.weg.net](http://www.weg.net) or [www.weg.net/green](http://www.weg.net/green)

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# EU Declaration of Conformity

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The manufacturer declares under sole responsibility that:

WEG electric motors and components used for following motor lines:

**W01, W11, W20, W21, W22, W40, W50, HGF, Roller Table, W22 Magnet and W22 Quattro**

when installed, maintained and used in applications for which they were designed, and in compliance with the relevant installation standards and manufacturer's instructions, comply with the provisions of the following relevant European Union harmonisation legislation, wherever applicable:

**Low Voltage Directive 2014/35/EU\***  
**Regulation (EC) No 640/2009\*, Regulation (EU) No 4/2014\* and Directive 2009/125/EC\***  
**Machinery Directive 2006/42/EC\*\***

**EMC Directive 2014/30/EU** (electric motors are considered inherently benign in terms of electromagnetic compatibility)

The fulfilment of the safety objectives of the relevant European Union harmonisation legislation has been demonstrated by compliance with the following standards, wherever applicable:

**EN 60034-1:2010 + AC:2010/ EN 60034-2-1:2007/ EN 60034-5:2001 + A1:2007/ EN 60034-6:1993/  
EN 60034-7:1993 + A1:2001/ EN 60034-8:2007 + A1:2014/ EN 60034-9:2005 + A1:2007/ EN 60034-11:2004/  
EN 60034-12:2002 + A1:2007/ EN 60034-14:2004 + A1:2007/ EN 60034-30:2009/  
EN 60204-1:2006 + A1:2009 + AC:2010 and EN 60204-11:2000 + AC:2010**

CE marking in: **1996**

\* Electric motors designed for use with a voltage rating higher than 1000V are not considered under the scope.

\*\* Low voltage electric motors are not considered under the scope and electric motors designed for use with a voltage rating higher than 1000V are considered partly completed machinery and are supplied with a

**Declaration of Incorporation:**

*The products above cannot be put into service until the machinery into which they have been incorporated has been declared in conformity with the Machinery Directive.*

*A Technical Documentation for the products above is compiled in accordance with part B of annex VII of Machinery Directive 2006/42/EC.*

*We undertake to transmit, in response to a reasoned request by the national authorities, relevant information on the partly completed machinery identified above through WEG authorised representative established in the European Union. The method of transmission shall be electronic or physical method and shall be without prejudice to the intellectual property rights of the manufacturer.*

Signed for and on behalf of the manufacturer:  
**Milton Oscar Castella**  
Engineering Director

Jaraguá do Sul, January 16<sup>th</sup>, 2017

DEC0117 1/1

## 1. Versions available

W22 processmotors are fully tested and have their efficiency figures declared in accordance with IEC 60034-2-1:2007 Standard with stray load losses directly determined by summation of losses.

All motors, even Super Premium Efficiency IE4 and premium Efficiency IE3, have the output versus frame ratio per EN 50347 Standard, allowing direct replacement of existing lower motors with Super Premium/Premium Efficiency machines.

Another characteristic of the electrical design of the W22 line is that it was conceived so that its efficiency remains practically constant in the 75% to 100% load range. Therefore, even when the motor does not run at full load its efficiency is not considerably affected (see figure 2), resulting in high levels of energy efficiency.

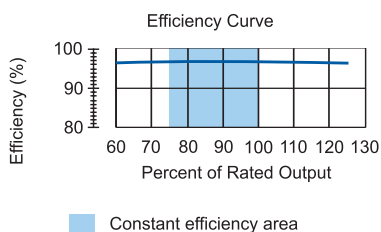


Figure 2 – Typical efficiency curve of W22 line

## 2. Standards

W22 processmotors meet the requirements and regulations of the latest version of the following Standards:

- IEC 60034-1 Rotating electrical machines – Part 1: Rating and performance.
- IEC 60034-2-1 Rotating electrical machines – Part 2-1: Standard methods for determining losses and efficiency from tests (excluding machines for traction vehicles).
- IEC 60034-5 Rotating electrical machines – Part 5: Degrees of protection provided by the integral design of rotating electrical machines (IP code) - classification.
- IEC 60034-6 Rotating electrical machines – Part 6: Methods of cooling (IC code).
- IEC 60034-7 Rotating electrical machines – Part 7: Classification of types of enclosures and mounting arrangements (IM code).
- IEC 60034-8 Rotating electrical machines – Part 8: Terminal markings and direction of rotation.
- IEC 60034-9 Rotating electrical machines – Part 9: Noise limits.
- IEC 60034-11-1 Rotating electrical machines – Part 11-1: Thermal protection.
- IEC 60034-12 Rotating electrical machines – Part 12: Starting performance of single-speed three-phase cage induction motors.

- IEC 60034-14 Rotating electrical machines – Part 14: Mechanical vibration of certain machines – Limits of vibration.
- IEC 60034-30 Rotating electrical machines – Part 30: Efficiency classes for single-speed three-phase cage induction motors.
- IEC 60072-1 Dimensions and output series for rotating electrical machines – Part 1: Frame numbers 56 to 400 and flange numbers 55 to 1080.
- EN 50347 General purpose three-phase induction motors having standard dimensions and outputs - frame numbers 56 to 315 and flange numbers 65 to 740.

## 3. Construction details

The information included in this document refers to standard construction features and the most common variations for W22 processmotors in low voltage for general applications in frame sizes from IEC 63 to 355K/J.

W22 processmotors for special and/or customised applications are available on request. For more information, please contact your WEG office or distributor.

### 3.1 Frame

The W22 frame (figure 3) is manufactured in FC-200 cast iron to provide high levels of mechanical strength to cater for the most critical applications. The cooling fins are designed to minimize the accumulation of liquids and dust over the motor.



Figure 3 – W22 Frame

The motor feet are completely solid for better mechanical strength (figure 4), allowing easier alignment and installation.

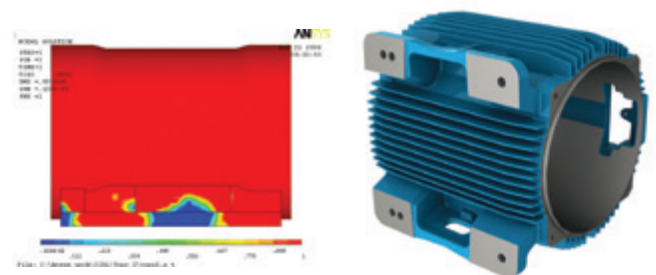


Figure 4 – Solid feet

### 3.2 Eyebolts

Eyebolts are provided as standard from frame size 100L. The position of the eyebolts are shown in the table 3:

Number of eyebolts	Description
1	Frames 100L to 200L Motors with feet and with side mounted terminal box
2	Frames 100L to 200L Motors with feet and with top mounted terminal box
2	Frames 100L to 200L - Motors without feet and with C or FF flange
2	Frames 225S/M to 355K/J - Motors with feet and side or top mounted terminal box. These motors have four threaded holes in the upper part of the frame for fastening of the eyebolts (figure 5)
2	Frames 225S/M to 355K/J - Motors without feet and with C or FF flange. These motors have four threaded holes in the upper part of the frame for fastening of the eyebolts and two more threaded holes in the bottom part

Table 3: Eyebolts

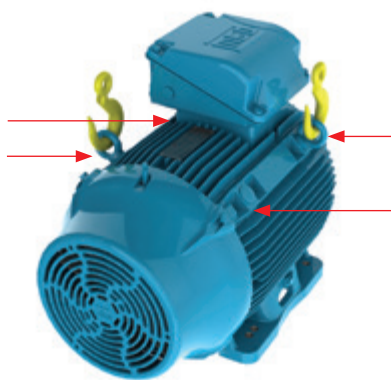


Figure 5: Motor with four threaded holes for fastening of the eyebolts

### 3.3 Points for Vibration Monitoring

To allow easy maintenance, specifically vibration testing, the 160 to 355 frames are designed with flat areas on both ends for better placement of the accelerometer (figure 6). These areas are available both in vertical and horizontal planes. Provision for SPM Vibration Sensor are standard on frame size  $\geq 160$ .



Front side

Figure 6 - Flat surfaces for vibration monitoring on the top, front and side.

### 3.4 Earth Terminals

All frames from 63 to 355K/J are provided with an earth terminal located inside the terminal box (see figure 7).

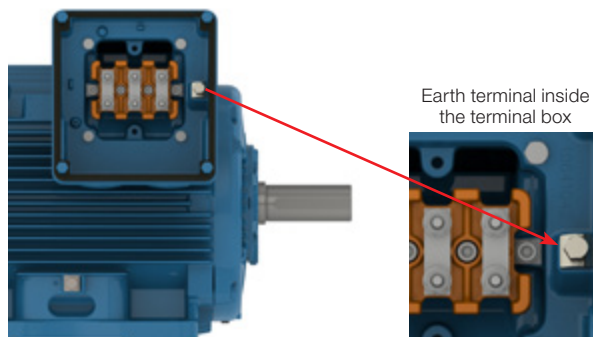


Figure 7 - Earth terminal inside the terminal box

Motors in frames 225S/M to 355K/J are fitted with an additional earth terminal on the frame. It is located on the same side of the main cable entry of the terminal box (see Figure 8) and is responsible to equalize electrical potential and provide greater safety for operators. Capable of withstanding cables from 25 mm<sup>2</sup> to 185 mm<sup>2</sup>.

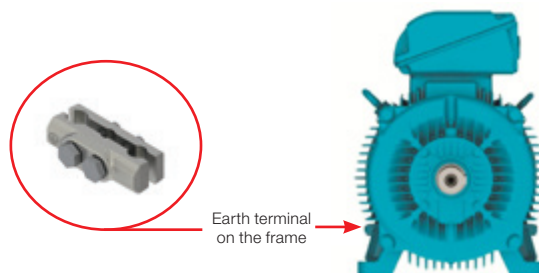


Figure 8 - Earth terminal position on the frame

Optionally, the motors can be supplied with an additional earth terminal on the frame.

### 3.5 Terminal Box

The terminal box of W22 processmotors is made with FC-200 (EN GJL 200) cast iron, which is the same material used to produce the frame and endshields. It is diagonally split for easier handling of leads and connections. For frame sizes 225S/M to 355K/J the terminal box is positioned towards the drive end of the motor and on top as standard. This arrangement allows improvement of the airflow over the cooling fins, thus reducing motor operating temperatures. Terminal box position on either the left or right hand side of the motor is possible through the use of an adaptor (see figure 9).

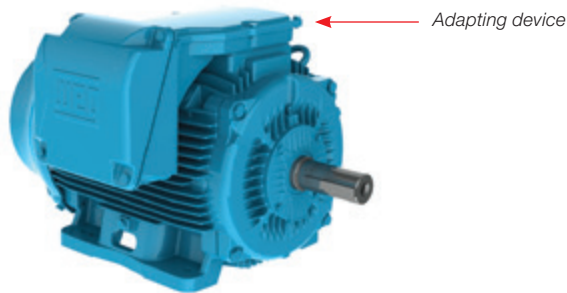


Figure 10 – Terminal box mounted on the left side viewing from shaft end

Standard is topmounted terminalbox. Changing to sidemounting the cable length must be adjusted.

The flexibility of terminal box positions on the W22 processmotor offered by the adaptor can be seen in figure 11.

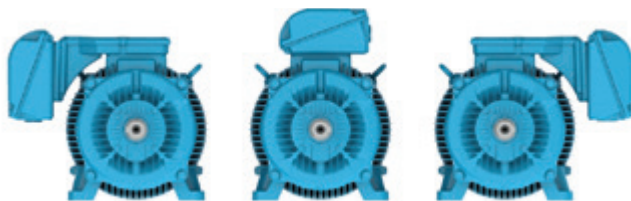


Figure 11 – Terminal box mounted on both sides and on top (versatility)

Conversely, factory supplied motors with the terminal box position on top can be modified to side mounting by fitting the adaptor and extending the motor leads.

For the frame size range 63 to 200 the terminal box position is centralized on the motor frame and can be supplied in two configurations – top (standard) or left / right side (optional). A motor with a side mounted terminal box (B3R or B3L) can have the terminal box position located on the opposite side through modification.

Please Note: For all terminal box position modifications please contact WEG or your local WEG service centre. For all frames, the terminal box can be rotated in 90°. Motors in IEC frame sizes from 160 are supplied with removable cast iron cable gland plates, type FL according to Swedish standard SEN280901 shown in figure 12.

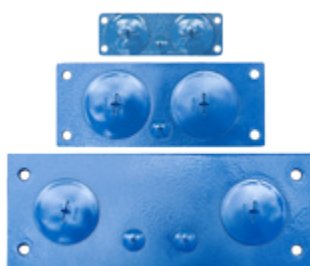


Figure 12  
Removable cable gland,  
type FL 13, 21 and 33.

Motors are supplied with plastic threaded plugs in the cable entries to maintain the degree of protection during transport and storage.

In order to guarantee the degree of protection, cable entries must comply with at least the same degree of protection indicated on the motor nameplate. Lack of compliance with such detail can invalidate the motor warranty. If required, please contact the WEG Service Area for further advice.

### 3.6 Power supply connection leads

Motor power supply leads are marked in accordance with IEC 60034-8 and are connected to a terminal block made from a polyester based resin BMC (Bulk Moulding Compound), duly reinforced with fibre glass (see figure 13). Motors 355K/J are provided with the terminal block as shown in the figure 14.



Figure 13 – Six-pin terminal block



Figure 14 – 355K/J terminal block

Motors 315L and 355M/L are provided with the terminal block as shown in the figure 14.1 and 14.2



Figure 14.1 – 315L and 355M/L ≥ 400A

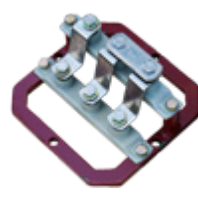


Figure 14.2 – 315L and 355M/L < 400A

### 3.7 Accessory connection leads

Accessory terminals are assembled on connectors whenever the motor is supplied with a terminal block. They may be assembled inside the main power terminal box or in a separate accessory.

Whether the accessory terminals are assembled inside the main power or a separate terminal box, an M20 x 1.5 threaded hole is provided for fitting of cable glands for the incoming connection leads.

In the Mechanical Data section of this catalogue it is possible to check the quantity of connectors that may be assembled inside the main power and accessory terminal boxes.

For frames 132 to 355, there is also the option of providing a dedicated terminal box for the connection of space heaters as shown in figure 15.



Figure 15 – Two accessory terminal boxes attached to power terminal box



### 3.8 Endshields

The drive end endshield (figure 16) is designed with fins for better thermal heat dissipation, and to ensure low bearing operating temperatures, resulting in extended lubrication intervals.

For the frames 225S/M to 355K/J, where ventilation is critical for thermal performance of the motor, the endshield fastening screws are placed in such a way so as not to block airflow to any fin, thus contributing to better thermal exchange.



Figure 16 - Drive and non-drive endshields

### 3.9 Drains

The endshields have holes for drainage of water that may condense inside of the frame. These holes are supplied with rubber drain plugs, in accordance with figure 17. These plugs leave the factory in the closed position and must be opened periodically to allow the exit of condensed water.

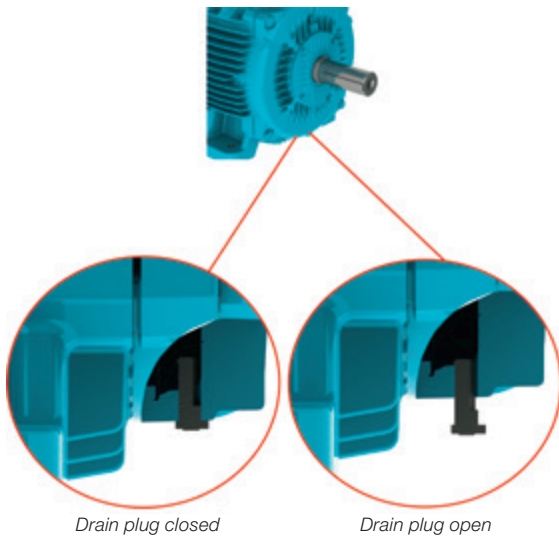


Figure 17: Detail of the drain plug position on drive endshield.

### 3.10 Fan Cover

The fan cover is made of steel for frames 63 to 132 and FC-200 cast iron for frames 160 to 355. The cast iron fan covers have an aerodynamic design, which results in a significant reduction in noise level and optimized airflow between frame fins for heat exchange improvement. Figure 18 shows the aerodynamic design of the cast iron fan cover.



Figure 18 - Fan cover

### 3.11 Nameplate

The nameplate supplies information determining motor construction and performance characteristics. The line name is given on the first line of the nameplate together with nominal efficiency levels as required by IEC 60034-30-1.

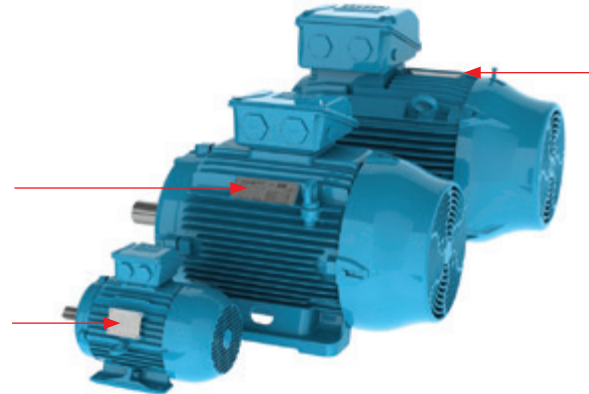


Figure 19 - Nameplate position of W22 processmotors

W22 Premium												11459166			
3 ~ 132M-04		IP55	INS	CL	F	Δ/T	80	K	S1	16 → SF 1.00	AMB 40°C	←15	04AGO14 0000000000		
V	10 → Hz	kW	RPM	13 → A	14 → PF	IE code	100%	75%	50%	←27					
380 Δ / 660 Y	50	7.5	1460	14.4	8.29	0.86	5	91.2	91.5	91.4					
400 Δ / 690 Y			1465	13.9	8.06	0.84	IE3	91.5	91.5	91.0					
415 Δ / -			1470	13.5	-	0.83									
460 Δ / -	60	11	1770	12.2	-	0.83		91.7	91.0	90.2					
NEMA Eff 91.7%		10HP	460 V	60Hz	1770 RPM	6308-ZZ ←19		6207-ZZ ←20		MOBIL POLYREX EM ←21		ALT 1000 m.a.s.l. ←17		79 kg ←18	
12.4A PF 0.83 Des A		Code	L	SF 1.15	CC029A	MOD.TE1BFOX0\$		CE EAC		IEC 60034-1					
W2 U2 V2		W2 U2 V2		W2 U2 V2		W2 U2 V2		W2 U2 V2		W2 U2 V2		W2 U2 V2		W2 U2 V2	
U1 V1 W1		U1 V1 W1		U1 V1 W1		U1 V1 W1		U1 V1 W1		U1 V1 W1		U1 V1 W1		U1 V1 W1	
Δ L1 L2 L3		Y L1 L2 L3		Y L1 L2 L3		Y L1 L2 L3		Y L1 L2 L3		Y L1 L2 L3		Y L1 L2 L3		Y L1 L2 L3	

Figure 20 - Nameplate layout for frames 63 to 132

W22 Process Premium												1156254			
3 ~ 315L-04		IP55	INS	CL	F	Δ/T	80	K	S1	16 → SF 1.00	AMB 40°C	←15	04AGO14 0000000000		
V	10 → Hz	kW	RPM	13 → A	14 → PF	IE code	100%	75%	50%	←27					
380 Δ / 660 Y	50	250	1490	451	260	0.87	5	96.8	96.6	96.4					
400 Δ / 690 Y			1490	433	251	0.86	IE3	96.9	96.6	96.2					
415 Δ / -			1490	422	-	0.85									
460 Δ / -	60	11	1790	384	-	0.85		96.2	96.2	95.4					
NEMA Eff 96.2%		340HP	460 V	60Hz	1790 RPM	6319-C3(45g) ←19		6316-C3(34g) ←20		MOBIL POLYREX EM ←21		ALT 1000 m.a.s.l. ←17		1546kg ←18	
11000 h ←23		Code	L	SF 1.15	CC029A	MOD.TE1BFOX0\$		CE EAC		IEC 60034-1					
W2 U2 V2		W2 U2 V2		W2 U2 V2		W2 U2 V2		W2 U2 V2		W2 U2 V2		W2 U2 V2		W2 U2 V2	
U1 V1 W1		U1 V1 W1		U1 V1 W1		U1 V1 W1		U1 V1 W1		U1 V1 W1		U1 V1 W1		U1 V1 W1	
Δ L1 L2 L3		Y L1 L2 L3		Y L1 L2 L3		Y L1 L2 L3		Y L1 L2 L3		Y L1 L2 L3		Y L1 L2 L3		Y L1 L2 L3	

Figure 21 - Nameplate layout for frames 160 to 355



- 1 - Part. no. (SAP Code)
- 2 - Number of phases
- 3 - Rated operating voltage
- 4 - Service duty
- 5 - Efficiency Code - IE
- 6 - Frame size
- 7 - Degree of protection
- 8 - Insulation class
- 9 - Temperature rise
- 10 - Frequency
- 11 - Motor rated power
- 12 - Full load speed (rpm)
- 13 - Rated operating current
- 14 - Power factor
- 15 - Ambient temperature
- 16 - Service factor
- 17 - Altitude
- 18 - Motor weight
- 19 - Drive end bearing type and amount of grease (where applicable)
- 20 - Non-drive end bearing type and amount of grease (where applicable)
- 21 - Type of grease for bearings
- 22 - Connection diagram
- 23 - Relubrication intervals in hours
- 24 - Certification labels
- 25 - Manufacturing date
- 26 - Serial number
- 27 - Partial load efficiencies

## 4. Cooling System and Noise Level / Vibration Level / Impact Resistance

### 4.1 Cooling System and Noise Level

The W22 processmotors are totally enclosed fan cooled (IC411), as per IEC 60034-6 (figure 22). Non-ventilated versions (TENV), air over (TEAO) and with forced ventilation TEFV (IC416) are available on request. More information about IC416 option can be found in section 12 - Variable speed drive application.



Figure 22 - Cooling system

The cooling system (fan, non drive endshield and fan cover) is designed to minimize the noise level and improve thermal efficiency (figure 23).

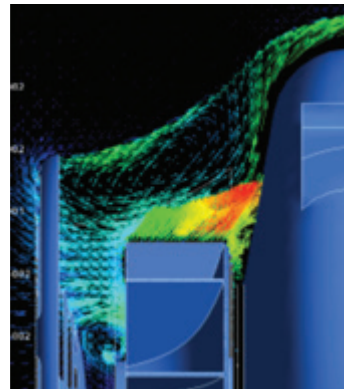


Figure 23 - Cooling system operation

W22 processmotors comply with IEC 60034-9 Standard and the corresponding sound pressure levels. Tables 4 and 5 show sound pressure levels in dB(A) which are obtained upon tests at 50 Hz and 60 Hz.

Frame	IEC 50 Hz			
	Sound pressure level - dB(A) at 1 meter			
	2 poles	4 poles	6 poles	8 poles
63	52	44	43	-
71	56	43	43	41
80	59	44	43	42
90	64/ 62(*)	49	45	43
100	67	53	44	50
112	64	56	48	46
132	68/ 67(*)	60/ 56(*)	52	48
160	67	61	56	51
180	67	61	56	51
200	72/ 69(*)	65/ 63(*)	60	53
225	75/ 74(*)	66/ 63(*)	61	56
250	75/ 74(*)	66/ 64(*)	61	56
280	77	69	65	59
315S/M	77	71	67	61
315 L	78	74/ 73(*)	68	61
355M/L	80	76/ 74(*)	73	70
355K/J	83	76	73	70

(\*) Applicable to IE3 and IE4 Motors.

Table 4 - Sound pressure levels for 50 Hz motors

Frame	IEC 60 Hz			
	Sound pressure level - dB(A) at 1 meter			
	2 poles	4 poles	6 poles	8 poles
63	56	48	47	-
71	60	47	47	45
80	62	48	47	46
90	68	51	49	47
100	71	54	48	54
112	69	58	52	50
132	72	61	55	52
160	72	64	59	54
180	72	64	59	54
200	76/ 74(*)	68/ 66(*)	62	56
225	80/ 79(*)	70/ 67(*)	64	60
250	80/ 79(*)	70/ 68(*)	64	60
280	81	73	69	63
315S/M	81	75	70	64
315L	82	79/ 77(*)	71	64
355M/L	84	81/ 78(*)	77	75
355K/J	89	81	77	75

(\*) Applicable to IE3 and IE4 Motors.

Table 5 - Sound pressure levels for 60 Hz motors

The noise level figures shown in tables 4 and 5 are taken at 1 metre at no load. Under load the IEC 60034-9 Standard foresees an increase of the sound pressure levels as shown in table 6.

Frame (mm)	2 poles	4 poles	6 poles	8 poles
90 ≤ H ≤ 160	2	5	7	8
180 ≤ H ≤ 200	2	4	6	7
225 ≤ H ≤ 280	2	3	6	7
H = 315	2	3	5	6
355 ≤ H	2	2	4	5

Table 6 – Maximum expected increase of sound pressure level for loaded motors.

Note: These figures refer to operating frequencies of 50 Hz and 60 Hz.  
The global noise level can be reduced up to 2 dB (A) with the installation of a drip cover.

#### 4.2 Vibration level

Vibration of an electrical machine is closely related to its assembly on the application and, thus, it is generally desirable to perform vibration measurements under installation and operational conditions. Nevertheless, to allow evaluation of the vibration generated by the electrical machine itself in a way to allow reproducibility of the tests and the obtaining of comparative measurements, it is necessary to perform such measurements with the machine uncoupled, under controlled test conditions. The test conditions and vibration limits described here are those found in IEC 60034-14.

The severity of vibration is the maximum value of vibration found among all the recommended measurement points and directions. The table below indicates the recommended admissible values of vibration severity under IEC standard 60034-14 for the frames IEC 56 to 400, for degrees of vibration A and B.

W22 processmotors are dynamically balanced with half key and the standard version meets the vibration levels of Grade A (without special vibration requirements) described in IEC 60034-14 Standard. As an option, motors can be supplied in conformance with vibration of Grade B. The RMS speed and vibration levels in mm/s of Grades A and B are shown in table 7.

Vibration	Frame	56 ≤ H ≤ 132	132 < H ≤ 280	H > 280
	Assembly	Vibration speed RMS (mm/s)	Vibration speed RMS (mm/s)	Vibration speed RMS (mm/s)
Grade A	Free suspension	1.6	2.2	2.8
Grade B	Free suspension	0.7	1.1	1.8

Table 7 – Speed and vibration levels

#### 4.3 Impact resistance

The W22 processmotor complies with impact level IK08 – mechanical impact of 5J as per EN 62262 – Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts (IK code) ensuring superior mechanical strength for the most demanding applications.

## 5. Shaft / Bearings

### 5.1 Shaft

The shaft of W22 processmotors is made of AISI 1040/45 steel, in frames IEC 63 to 315S/M, and in AISI 4140 steel for frames 315L, 355M/L and 355K/J. When supplied with roller bearings (optional for frames 160 and above), the shaft material must be AISI 4140.

As they are fitted with AISI 4140 steel shafts in frames 315L, 355M/L and 355K/J, W22 processmotors can employ roller bearings, making them suitable for heavy duty applications such as pulley and belt applications. Information about maximum allowable radial and axial loads on shaft ends is given in tables 9, 10 and 11.

Important: Under such circumstances, the non drive end bearing cap needs to be replaced as the non drive end bearing must be locked.

Shafts are supplied with an open profile key way, with a threaded centre hole and have dimensions shown in section 17 – Mechanical data.

W22 processmotors can be supplied with a second shaft end as per dimensions shown in section 17 – Mechanical data. Information about maximum allowable radial and axial loads on the second shaft end is available on request.

As an option, W22 processmotors can be supplied with stainless steel shafts (AISI 316 and AISI 420) for highly corrosive environments.

Note: 2 pole motors will have as an option only the shaft end in stainless steel AISI 316.

### 5.2 Bearings

W22 processmotors are supplied with deep groove ball bearings as standard (figure 24). Optionally, frame size 160 and above can be supplied with NU series roller bearings, where high radial loads may occur.

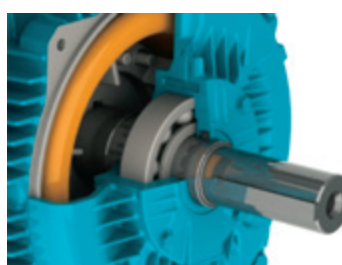


Figure 24 – Bearing view

The nominal bearing life L10h is 20,000 or 40,000 hours in conformance with maximum radial and axial loads as described in tables 9, 10 and 11. When direct coupled to the load (without axial or radial thrusts), the L10h bearing life is 50,000 hours. Suggested bearing manufacturers are SKF, FAG and NSK. The manufacturer is indicated on the motor nameplate for frame 160 and above.

In standard configuration, with ball bearings, the drive end bearing is locked axially from frame 160. To compensate for any axial movement the motors are fitted with pre-load washers for frames 63 to 200 and with pre-load springs for frames 225 to 355. When provided with roller bearings, the rear bearing is locked and the axial movement is

compensated by the axial play of the front roller bearing. Minimum and maximum admissible radial loads for roller bearings are shown in table 10 on page 16. Bearings lifetime depends on the type and size of the bearing, the radial and axial mechanical loads it is submitted to, operating conditions (environment, temperature), rotational speed and grease life. Therefore, bearing lifetime is closely related to its correct use, maintenance and lubrication. Respecting the quantity of grease and lubrication intervals allows bearings to reach the lifetime given. W22 processmotors in IEC frames 160M and above are provided as standard with grease fittings in each endshield to permit the relubrication of the bearings. The quantity of grease and lubrication intervals are stamped in the motor nameplate. The lubrication interval is shown in tables 12 and 13 - page 17. It must be emphasized that excessive lubrication, i.e. a quantity of grease greater than that recommended on the motor nameplate, can result in the increase of bearing temperatures leading to reduced operating hours.

**Note:**

- L10 lifetime means that at least 90% of the bearings submitted to the maximum indicated loads will reach the number of hours indicated. The maximum admissible radial and axial loads for the standard configuration are shown in table 9, 10 and 11. The values of the maximum radial load consider axial load as nil. The values of the maximum axial load consider radial load as nil. For bearing lifetime in combined axial and radial loads condition contact WEG.
- The radial force value  $F_r$  usually results from information recommended on catalogues of pulley/belts manufacturers. When this information is not available, the force  $F_r$ , under operation, can be calculated based on the output power, on coupling design characteristics with pulleys and belts and on the type of application. So we have:

$$\text{Where: } F_r = \frac{19,1 \cdot 10^6 \cdot P_n}{n_n \cdot dp} \cdot ka \text{ (N)}$$

$F_r$  is the radial force caused by pulley and belt coupling [N];  
 $P_n$  is the motor rated power [kW];  
 $n_n$  is the motor rated speed per minute [rpm];  
 $dp$  is the pitch diameter of the driven pulley [mm];  
 $ka$  is a factor that depends on belt tension and type of application (table 8).

Groups and Basic Types of Application		ka Factor of the application	
		V Belts	Plane Belts
1	(Fans and Blowers. Centrifugal Pumps. Winding machines. Compressors. Machine tools) with outputs up to 30 HP (22 kW)	2.0	3.1
2	(Fans and Blowers, Centrifugal Pumps, Winding machines, Compressors, Machine tools) with outputs higher than 30 HP (22 kW), Mixers, Plungers, Printer Machines.	2.4	3.3
3	Presses, vibrating screens, Piston and screw compressor, pulverisers, helicoidal conveyors, woodworking machines, Textile machines, Kneading machines, Ceramic machines, Pulp and paper industrial grinders.	2.7	3.4
4	Overhead cranes, Hammer mills, Metal laminators, Conveyors, Gyrotory Crushers, Jaw Crusher, Cone Crushers, Cage Mills, Ball Mills, Rubber Mixers, Mining machines, Shredders.	3.0	3.7

Table 8 – ka factor

**Important:**

**1 - Special applications**

Motor operation under adverse operating conditions, such as higher ambient temperatures and altitudes or abnormal axial / radial loads, may require specific lubrication measures and alternative relubrication intervals to those indicated in the tables provided within this technical catalogue.

**2 - Roller bearings**

Roller bearings require a minimum radial load so as to ensure correct operation. They are not recommended for direct coupling arrangements, or for use on 2 pole motors.

**3 - Frequency inverter driven motors**

Bearing life may be reduced when a motor is driven by a frequency drive at speeds above nominal. Speed itself is one of the factors taken into consideration when determining motor bearing life.

**4 - Motors with modified mounting configurations**

For motors supplied with horizontal mounting but working vertically, lubrication intervals must be reduced by half.

**5 - Figures for radial thrusts**

The figures given in the tables below for radial thrusts take into consideration the point upon which the load is applied, either at the centre of the shaft (L/2) or at the end of the shaft (L), figure 25.

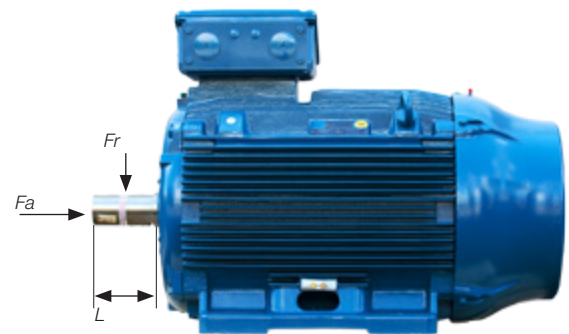


Figure 25 – Radial and axial thrust on motor shaft

**5.2.1 Permissible loads**

**Radial thrust - Ball bearings**

Frame	Maximum permissible radial thrust - 50 Hz – $F_r$ in (kN) 20,000 hours							
	2 poles		4 poles		6 poles		8 poles	
	L	L/2	L	L/2	L	L/2	L	L/2
63	0.4	0.3	0.4	0.3	0.4	0.3	0.4	0.3
71	0.5	0.5	0.6	0.5	0.6	0.5	0.7	0.6
80	0.6	0.6	0.7	0.7	0.8	0.7	1.0	0.8
90	0.7	0.6	0.8	0.7	0.9	0.8	1.0	0.9
100	0.9	1.0	1.0	1.1	1.2	1.3	1.3	1.4
112	1.2	1.3	1.4	1.5	1.6	1.8	1.7	1.9
132	1.8	2.0	2.2	2.4	2.4	2.7	2.6	2.9
160	2.3	2.6	2.6	2.9	2.7	3.3	2.7	3.7
180	3.1	3.5	3.6	4.0	4.2	4.7	4.2	5.2
200	3.7	4.0	4.2	4.7	4.9	5.4	5.7	6.2
225	5.1	5.5	5.2	6.3	5.3	7.0	5.7	8.1
250	4.9	5.3	5.2	5.7	6.5	7.1	6.0	8.2
280	5.0	5.4	6.7	7.2	7.8	8.4	8.7	9.4
315S/M	4.3	4.7	7.0	7.7	8.1	8.8	9.0	9.8
315L	4.6	5.0	4.0	7.3	6.2	8.2	9.1	9.8
355M/L	4.8	5.1	8.5	9.3	9.6	10.4	11.6	12.6
355K/J	4.5	4.7	5.1	7.4	7.4	8.0	6.9	10.6

Table 9.1 – Maximum permissible radial thrusts for ball bearings

### Radial thrust - Ball bearings

Maximum permissible radial thrust - 50 Hz - Fr in (kN) 40,000 hours								
Frame	2 poles		4 poles		6 poles		8 poles	
	L	L/2	L	L/2	L	L/2	L	L/2
63	0.2	0.2	0.3	0.3	0.4	0.3	0.4	0.3
71	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.5
80	0.5	0.5	0.6	0.5	0.6	0.6	0.7	0.7
90	0.5	0.5	0.6	0.5	0.7	0.6	0.8	0.7
100	0.7	0.7	0.7	0.8	0.9	1.0	1.0	1.1
112	0.9	1.0	1.0	1.1	1.2	1.4	1.3	1.4
132	1.4	1.6	1.6	1.8	1.8	2.0	2.0	2.2
160	1.8	2.0	1.9	2.1	2.2	2.4	2.5	2.7
180	2.4	2.7	2.7	3.0	3.2	3.5	3.6	3.9
200	2.8	3.0	3.2	3.5	3.7	4.0	4.3	4.7
225	3.9	4.3	4.3	4.7	4.7	5.2	5.6	6.2
250	3.7	4.1	3.8	4.2	4.9	5.4	5.7	6.3
280	3.8	4.1	4.9	5.4	5.8	6.3	6.5	7.0
315S/M	3.1	3.4	4.9	5.4	5.7	6.2	6.3	6.9
315L	3.4	3.6	4.0	4.9	5.1	5.5	6.4	6.9
355M/L	3.3	3.6	5.8	6.3	6.5	7.1	8.2	8.9
355K/J	3.0	3.2	4.1	4.4	4.2	4.5	5.3	6.8

Table 9.2 – Maximum permissible radial thrusts for ball bearings (Horizontal Mounting)

### Radial thrust - Roller bearings

Maximum permissible radial thrust - 50 Hz - Fr in (kN) 20,000 or 40,000 hours						
Frame	4 poles		6 poles		8 poles	
	L/2	L	L/2	L	L/2	L
160	6	3.7	5.9	3.6	6	3.7
180	10.4	5.7	10.4	5.7	10.5	5.7
200	13.4	8.4	13.4	8.4	13.5	8.4
225S/M	15	6.9	15.1	7	15.3	7.3
250S/M	14.1	8.2	14.4	8.7	14.1	8.2
280S/M	20.9	12.1	21.2	13.1	21.3	13
315S/M	23.4	10.9	25.4	11.9	26.8	12.5
315L	8.5	4.0	13.3	6.2	22.6	10.4
355M/L	31.7	15	28.9	13.7	30.1	14.3
355K/J	10.7	5.1	16.4	7.8	14.6	6.9

Table 10 – Maximum permissible radial thrusts for roller bearings (Horizontal Mounting)  
 Note: the figures given for roller bearings take into consideration shaft supplied with steel AISI 4140

### Axial thrust - Ball bearings

Maximum permissible axial thrust - 50 Hz - Fa in (kN) - 20,000 hours							
Frame	Poles	Horizontal		Vertical with shaft upwards		Vertical with shaft downwards	
		Pushing	Pulling	Pushing	Pulling	Pushing	Pulling
63	2	0.2	0.2	0.2	0.2	0.2	0.2
	4	0.3	0.3	0.3	0.3	0.3	0.3
	6	0.3	0.4	0.3	0.4	0.4	0.3
	8	0.3	0.4	0.3	0.4	0.4	0.3
71	2	0.2	0.3	0.2	0.3	0.2	0.3
	4	0.3	0.4	0.3	0.4	0.3	0.4
	6	0.4	0.5	0.4	0.5	0.4	0.5
	8	0.5	0.6	0.4	0.6	0.5	0.6
80	2	0.3	0.4	0.3	0.4	0.3	0.4
	4	0.4	0.6	0.3	0.6	0.4	0.5
	6	0.5	0.7	0.4	0.7	0.5	0.7
	8	0.6	0.8	0.5	0.9	0.6	0.8
90	2	0.4	0.4	0.3	0.5	0.4	0.4
	4	0.5	0.6	0.5	0.7	0.5	0.6
	6	0.6	0.7	0.6	0.8	0.6	0.7
	8	0.8	0.9	0.7	0.9	0.8	0.8
100	2	0.4	0.6	0.3	0.7	0.4	0.6
	4	0.5	0.8	0.4	0.9	0.5	0.8
	6	0.7	1.0	0.6	1.1	0.7	1.0
	8	0.8	1.2	0.7	1.3	0.8	1.1
112	2	0.5	0.8	0.5	0.9	0.6	0.7
	4	0.7	1.1	0.7	1.2	0.8	1.0
	6	1.0	1.4	0.9	1.5	1.0	1.3
	8	1.1	1.5	1.0	1.7	1.1	1.4
132	2	0.7	1.3	0.6	1.5	0.8	1.2
	4	1.0	1.8	0.8	2.1	1.0	1.7
	6	1.2	2.2	1.1	2.5	1.3	2.1
	8	1.4	2.5	1.2	2.8	1.4	2.3
160	2	2.4	1.7	0.2	2.1	2.8	1.5
	4	3.0	2.3	2.7	2.7	3.4	2.0
	6	3.4	2.7	3.1	3.3	4.0	2.4
	8	3.9	3.2	3.6	3.7	4.4	2.9
180	2	3.2	2.3	2.9	2.8	3.7	2.0
	4	3.9	3.0	3.6	3.7	4.6	2.7
	6	4.7	3.8	4.2	4.5	5.3	3.3
	8	5.2	4.4	4.8	5.1	6.0	3.9
200	2	3.6	2.6	3.1	3.3	4.3	2.1
	4	4.5	3.5	4.0	4.3	5.3	3.0
	6	5.2	4.2	4.7	5.1	6.1	3.7
	8	6.0	5.0	5.5	5.9	6.9	4.5
225	2	4.6	3.8	3.8	4.9	5.7	3.1
	4	5.8	5.0	5.0	6.3	7.1	4.2
	6	6.7	5.9	5.7	7.6	8.4	4.9
	8	7.8	7.0	6.9	8.5	9.3	6.1
250	2	4.5	3.7	3.7	4.9	5.6	3.0
	4	5.4	4.7	4.2	6.6	7.4	3.4
	6	6.8	6.0	5.4	8.0	8.8	4.6
	8	7.8	7.1	6.6	8.9	9.7	5.9
280	2	4.4	3.7	3.2	5.4	6.2	2.4
	4	6.3	5.5	4.6	8.0	8.8	3.9
	6	7.6	6.8	5.8	9.4	10.2	5.0
	8	8.5	7.8	6.6	10.6	11.4	5.8
315S/M	2	4.1	3.3	2.4	5.9	6.7	1.6
	4	6.8	6.0	4.3	10.0	10.7	3.5
	6	8.0	7.2	5.2	11.9	12.7	4.5
	8	9.1	8.3	6.2	13.2	14.0	5.5
315L	2	3.0	2.2	1.1	5.0	5.7	0.4
	4	4.5	3.7	1.4	8.2	8.9	0.6
	6	5.2	4.4	1.9	9.5	10.3	1.2
	8	6.3	5.5	3.4	10.0	10.8	2.6
355M/L	2	4.4	3.7	1.1	8.8	9.5	0.3
	4	7.7	7.0	3.2	13.9	14.7	2.5
	6	9.1	8.4	4.7	15.3	16.0	3.9
	8	10.9	10.2	6.4	17.2	17.9	5.7
355K/J	2	4.1	3.3	On request			
	4	6.8	6.0				
	6	7.8	7.0				
	8	9.8	9.0				

Table 11.1 – Maximum permissible axial thrusts for ball bearings

**Axial thrust - Ball bearings**

Maximum permissible axial thrust - 50 Hz - Fa in (kN) - 40,000 hours							
Frame	Poles	Horizontal		Vertical with shaft upwards		Vertical with shaft downwards	
		Pushing	Pulling	Pushing	Pulling	Pushing	Pulling
63	2	0.1	0.1	0.1	0.1	0.1	0.1
	4	0.2	0.2	0.2	0.2	0.2	0.2
	6	0.2	0.2	0.2	0.2	0.2	0.2
	8	0.2	0.2	0.2	0.2	0.2	0.2
71	2	0.1	0.2	0.1	0.2	0.1	0.2
	4	0.2	0.3	0.2	0.3	0.2	0.2
	6	0.2	0.3	0.2	0.3	0.2	0.3
80	2	0.2	0.3	0.1	0.3	0.2	0.3
	4	0.2	0.4	0.2	0.4	0.2	0.3
	6	0.3	0.5	0.3	0.5	0.3	0.4
90	2	0.2	0.3	0.2	0.3	0.2	0.2
	4	0.3	0.4	0.3	0.4	0.3	0.3
	6	0.4	0.5	0.4	0.5	0.4	0.4
100	2	0.2	0.4	0.2	0.4	0.2	0.3
	4	0.3	0.5	0.2	0.6	0.3	0.5
	6	0.4	0.7	0.3	0.8	0.4	0.6
112	2	0.3	0.5	0.3	0.6	0.3	0.4
	4	0.4	0.7	0.4	0.8	0.5	0.6
	6	0.6	0.9	0.5	1.1	0.6	0.8
132	2	0.4	0.9	0.3	1.1	0.5	0.8
	4	0.6	1.2	0.5	1.4	0.6	1.1
	6	0.8	1.5	0.6	1.8	0.8	1.3
160	2	1.8	1.1	1.6	1.5	2.2	0.9
	4	2.2	1.5	1.9	1.9	2.6	1.2
	6	2.5	1.8	2.2	2.3	3.1	1.5
	8	2.9	2.2	2.5	2.7	3.4	1.8
180	2	2.4	1.5	2.1	2.0	2.9	1.2
	4	2.9	2.0	2.5	2.6	3.5	1.6
	6	3.4	2.5	3.0	3.2	4.1	2.1
	8	3.9	3.0	3.5	3.7	4.6	2.6
200	2	2.7	1.7	2.2	2.4	3.4	1.2
	4	3.3	2.3	2.8	3.1	4.1	1.8
	6	3.8	2.8	3.3	3.8	4.8	2.3
	8	4.4	3.4	3.9	4.3	5.3	2.9
225	2	3.4	2.6	2.7	3.7	4.5	1.9
	4	4.2	3.5	3.4	4.7	5.5	2.6
	6	4.8	4.0	3.8	5.7	6.5	3.0
250	2	3.4	2.5	2.5	3.7	4.5	1.8
	4	3.9	3.1	2.6	5.0	5.9	1.8
	6	4.9	4.1	3.6	6.2	7.0	2.8
	8	5.8	4.9	4.5	6.8	7.6	3.8
280	2	3.3	2.5	2.0	4.3	5.1	1.2
	4	4.6	3.8	2.9	6.2	7.0	2.1
	6	5.4	4.7	3.6	7.3	8.0	2.8
315	2	2.9	2.2	1.2	4.8	5.5	0.4
	4	4.7	4.0	2.2	7.9	8.6	1.4
	6	5.6	4.8	2.8	9.4	10.2	2.0
315L	2	3.0	2.2	1.1	5.0	5.7	0.4
	4	4.5	3.7	1.4	8.2	8.9	0.6
	6	5.2	4.4	1.9	9.5	10.3	1.2
	8	6.3	5.5	3.4	10.0	10.8	2.6
355M/L	2	3.1	2.4	0.6	6.7	7.5	0.2
	4	5.5	4.7	1.9	1.1	11.6	1.2
	6	6.3	5.6	2.8	11.8	12.7	2.0
	8	7.6	6.8	3.8	13.2	13.7	2.9
355K/J	2	2.9	2.2	On request			
	4	4.6	3.9				
	6	5.2	4.5				
	8	6.5	5.8				

Table 11.2 – Maximum permissible axial thrusts for ball bearings (Horizontal Mounting)

**Lubrication intervals (40°C – rated speed)**

Lubrication intervals (hours)				
Frame	Poles	Bearing	50 Hz	60 Hz
160	2	6309	22,000	20,000
	4		25,000	25,000
	6			
	8			
180	2	6311	17,000	14,000
	4		25,000	25,000
	6			
200	2	6312	15,000	12,000
	4		25,000	25,000
	6			
225	2	6314	5,000	4,000
	4		14,000	12,000
	6		20,000	17,000
	8		24,000	20,000
250	2	6314	5,000	4,000
	4		14,000	12,000
	6		20,000	17,000
	8		24,000	20,000
280	2	6314	5,000	4,000
	4		13,000	10,000
	6		18,000	16,000
	8		20,000	20,000
315	2	6314	5,000	4,000
	4		11,000	8,000
	6		16,000	13,000
	8		20,000	17,000
355	2	6314	5,000	4,000
	4	6316	4,000	On request
		6	6322	9,000
	13,000			11,000
8	19,000	14,000		

Table 12 – Lubrication intervals for ball bearings

Note: the amount of grease is indicated on the nameplate

Lubrication intervals (hours)				
Frame	Poles	Bearing	50 Hz	60 Hz
160	4	NU309	25,000	25,000
	6			
	8			
180	4	NU311	25,000	25,000
	6			
	8			
200	4	NU312	25,000	21,000
	6			25,000
	8			
225	4	NU314	11,000	9,000
	6		16,000	13,000
	8		20,000	19,000
250	4	NU314	11,000	9,000
	6		16,000	13,000
	8		20,000	19,000
280	4	NU316	9,000	7,000
	6		14,000	12,000
	8		19,000	17,000
315	4	NU319	7,000	5,000
	6		12,000	9,000
	8		17,000	15,000
355	4	NU322	5,000	4,000
	6		9,000	7,000
	8		14,000	13,000

Table 13 – Lubrication intervals for roller bearings

Note: the amount of grease is indicated on the nameplate



### 5.2.2 Bearing monitoring

On request, W22 processmotors can be equipped with bearing temperature detectors which monitor bearing operating conditions. The most commonly used accessory is the

PT-100 temperature detector for continuous monitoring of bearing operating temperature.

This type of monitoring is extremely important considering that it directly affects the grease and bearing lives particularly on motors equipped with regreasing facilities.

SPM vibration sensor is standard on frame 160 and above.

## 6. Mounting forms

Motors are supplied, as standard, in the B3T configuration, with the terminal box on top.



Figure 26 – B3T mounting

The mounting configuration for the W22 processmotor lines comply with IEC 60034-7 standard. Standard mounting forms and their variations are shown in table 14. After the designation, a characteristic letter is used to define the terminal box position. So, the mounting code IM B3 can be seen in WEG documents as detailed below (without IM code).

- B3L – terminal box on left hand side of the motor frame
- B3T – terminal box on top of the motor frame
- B3R – terminal box on right hand side of the motor frame

Note: The terminal box position is defined viewing the motor from shaft end and shall be coded with a final letter in accordance with the following rules:

Machines with feet shall be viewed from the D-end with the feet at 6 o'clock;

Machines with flange only and with drains shall be viewed from the D-end and with the drains at 6 o'clock;

Other configuration shall not have a coding.

Basic mountings	Other type of mounting				
	IM V5	IM V6	IM B6	IM B7	IM B8
IM B3	IM 1011	IM 1031	IM 1051	IM 1061	IM 1071
IM B35	IM V15	IM V36	- *)	- *)	- *)
IM 2001	IM 2011	IM 2031	IM 2051	IM 2061	IM 2071
IM B34	IM V17	IM V37	- *)	- *)	- *)
IM 2101	IM 2111	IM 2131	IM 2151	IM 2161	IM 2171
IM B5	IM V1	IM V3			
IM 3001	IM 3011	IM 3031			
IM B14	IM V18	IM V19			
IM 3601	IM 3611	IM 3631			

Table 14 – Mountings configurations

\* Non-defined mountings by IEC 60034-7

### Important:

- The mountings IM B34 and IM B14 with C-DIN flange, in accordance with DIN standard EN 50347, are limited to frame size 132; C flange in accordance with NEMA MG 1 Part 4 standard is available for frames 63 to 355M/L.
- For motors mounted vertically shaft down fitting of a drip cover is recommended to prevent ingress of small objects into the fan cover. The increase in total length of the motor with drip cover is shown in the section 19.
- For vertically shaft up mounted motors installed in environments containing liquids, the use of a rubber slinger is recommended to prevent the ingress of liquid into the motor through the shaft.

## 7. Degree of protection / Sealing system / Painting

### 7.1 Degree of protection

As per IEC 60034-5, the degree of protection of a rotating electrical machine consists of the letters IP (ingress protection), followed by two characteristic numerals, with the following meaning:

- First characteristic numeral: referred to protection of people against or approach to live parts and against contacts with moving parts (other than smooth rotating shafts and the like) inside the enclosure and protection of the machine against ingress of solid and foreign objects.
- Second characteristic numeral: protection of machines against harmful effects due to ingress of water.



W22 processmotors are supplied with degrees of protection in conformance with IEC 60034-5. As standard, they are IP55, which means:

- a) First characteristic numeral 5: machine protected against dust. The enclosure is protected against contact with moving parts. Ingress of dust is not totally prevented, but dust does not enter in sufficient quantity to interfere with satisfactory operation of the machine.
- b) Second characteristic numeral 5: Machine protected against water jets. Water projected by a nozzle against the machine from any direction shall have no harmful effect.

### 7.2 Sealing system

The sealing system applied to the shaft of W22 processmotors in frame 63 to 200 is V'ring. For frames 225S/M to 355K/J the sealing system is the exclusive WSeal®, which consists of a double lipped V'Ring with a metallic cap (see figure 27). This configuration operates like a labyrinth preventing ingress of water and dust into the motor, and not recommended for use in flange mounted motors.



Figure 27 – WSeal®

Alternatively, motors can be supplied with other sealing systems, for example, Oilseal, tachonite labyrinth and the WEG exclusive W3 Seal®, among others (see Section 15 – Optional features).

When fitted with flange, the recommended seal is lip seal (no contact with liquid) and Oilseal (with contact with liquid)

### 7.3 Painting



Figure 28 – WEG internal painting plan

Frame 63 to 132 are supplied as standard with WEG internal painting plan 207A. More information, see page 26.

Frame 160 to 355 are supplied as standard with WEG internal painting plan 202P. More information, see page 26.

Alternative painting plans are available on request, which are suitable to guarantee additional protection in aggressive environments (see section 15 – Optional features).

### Tropicalized painting

The integrity of the insulation system is the primary consideration when determining the lifetime of an electric motor. High humidity can result in premature deterioration of the insulation system, therefore for any ambient temperature with relative humidity above 95%, it is recommended to coat all internal components of the motor with an epoxy painting, also known as tropicalization.

## 8. Voltage / Frequency

IEC 60034-1 the combination of voltage and frequency variations are classified as Zone A or Zone B, as per figure 29.

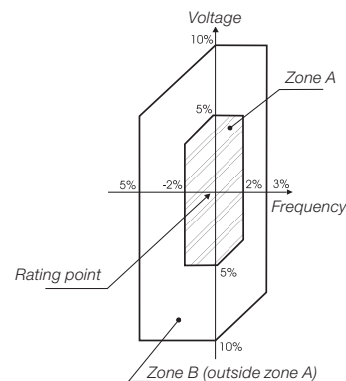


Figure 29 – Rated voltage and frequency limits for electric motors

IEC 60034-1 states that the motor must be suitable to perform its main function (supply torque) continuously at Zone A. However, this motor may not fully meet its performance characteristics due to power supply voltage and frequency variation, which can result in temperature rise above the rated value.

The motor must also be suitable to perform its main function (supply torque) at Zone B. However, the performance characteristic changes will be greater than those operating at Zone A. The temperature rise will also be higher than that of rated voltage and frequency and that operating at Zone A. Prolonged operation near Zone B boundary is not recommended.

## 9. Overload Capacity

As per IEC 60034-1, motors having rated output not exceeding 315 kW and rated voltages not exceeding 1 kV shall be capable of withstanding a current equal to 1,5 times the rated current for not less than 2 min.

## 10. Ambient and Altitude

Unless otherwise specified, the rated power outputs shown in the electrical data tables within this catalogue refer to continuous duty operation S1, as per IEC 60034-1 and under the following conditions:

- With ambient temperature range -20 °C to +40 °C
- With altitudes up to 1000 metres above sea level

For operating temperatures and altitudes differing from those above, the factors indicated in table 15 must be applied to the nominal motor power rating in order to determine the derated available output (Pmax).

$$P_{max} = P_{nom} \times \text{correction factor}$$

T (°C)	Altitude (m)								
	1000	1500	2000	2500	3000	3500	4000	4500	5000
10							0.97	0.92	0.88
15						0.98	0.94	0.90	0.86
20				1.00	0.95	0.91	0.87	0.83	
25				1.00	0.95	0.93	0.89	0.85	0.81
30			1.00	0.96	0.92	0.90	0.86	0.82	0.78
35		1.00	0.95	0.93	0.90	0.88	0.84	0.80	0.75
40	1.00	0.97	0.94	0.90	0.86	0.82	0.80	0.76	0.71
45	0.95	0.92	0.90	0.88	0.85	0.81	0.78	0.74	0.69
50	0.92	0.90	0.87	0.85	0.82	0.80	0.77	0.72	0.67
55	0.88	0.85	0.83	0.81	0.78	0.76	0.73	0.70	0.65
60	0.83	0.82	0.80	0.77	0.75	0.73	0.70	0.67	0.62
65	0.79	0.76	0.74	0.72	0.70	0.68	0.66	0.62	0.58
70	0.74	0.71	0.69	0.67	0.66	0.64	0.62	0.58	0.53
75	0.70	0.68	0.66	0.64	0.62	0.60	0.58	0.53	0.49
80	0.65	0.64	0.62	0.60	0.58	0.56	0.55	0.48	0.44

Table 15 - Correction factors for altitude and ambient temperature

## 11. Insulation & Temperature Rise

W22 processmotors are supplied with class F insulation and Class B (80 K) temperature rise at normal operating conditions (unless otherwise specified).

The difference between the temperature of the class F insulation (105 K) and the temperature rise of the design (80 K) means that, in practice, W22 processmotors are suitable to supply output ratings above the rated values up to a limit where the temperature rise reaches the temperature rise value of the insulation class.

The ratio between temperature rise and service factor is given by the equation below:

$$\Delta T_{FINAL} \cong (S.F.)^2 \times \Delta T_{INITIAL}$$

From the above calculation, we can see that the service factor is approximately 1.15. This reserve of temperature also allows W22 processmotors with class B temperature rise (80 K) to operate continuously at:

- Up to 15% above its rated output power, considering 40 °C ambient temperature and 1000 m.a.s.l. or;
- Up to 55 °C ambient temperature, keeping the rated output power or;
- Up to 3000 m.a.s.l., keeping the rated output power

**Important:** Please note that under these conditions combined ambient and temperature rise may reach class F limits.

Table 16 shows the safety margins per thermal class.

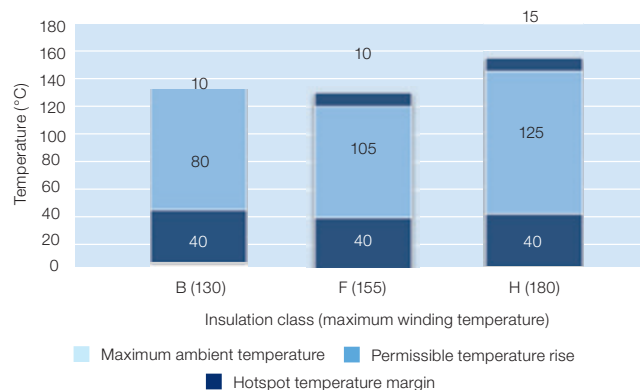


Table 16 - Safety margins per thermal class.

Bearing lubrication intervals will change under operating conditions other than 40 °C maximum ambient temperature and 1000 metres above sea level. Contact WEG for more information.

All W22 processmotors are wound with the WISE® insulation system which consists of enamelled wire impregnated with solvent free resin which protects motors with temperatures up to 200 °C. The WISE® system also permits motor operation with variable speed drives (see section 13).

### 11.1 Space Heaters

The use of space heaters is recommended in two situations:

- Motors installed in environments with relative air humidity up to 95%, in which the motor may remain idle for periods greater than 24 hours;
- Motors installed in environments with relative air humidity greater than 95%, regardless of the operating schedule. It should be highlighted that in this situation it is strongly recommended that an epoxy paint known as tropicalized painting is applied in the internal components of the motor. More information can be obtained in section 7.3.

The supply voltage for space heaters must be defined by the Customer. For all frame sizes, W22 processmotors can be provided with space heaters suitable for 110-127 V, 220-240 V and 380-480 V. As an option, dual voltage heaters of 110-127 / 220-240 V can be supplied for motor frame sizes 112 to 355K/J, through reconnection of the heater cables inside the terminal box.

The power rating and number of space heaters fitted depends on the size of the motor as indicated in table 17 below:

Frame	Quantities	Total power rated (W)
63 to 80	1	7.5
90 and 100	1	11
112	2	22
132 and 160	2	30
180 and 200	2	38
225 and 250	2	56
280 and 315	2	140
355	2	174

Table 17 - Power and quantity of space heaters

## 12. Motor Protections

Protections available for the W22 processmotor line can be classified as follows:

- Based on operating temperature
- Based on operating current

In section 15 - Construction features it is possible to identify the type of protection for each W22 line.

### 12.1 Protection Based on Operating Temperature

Continuous duty motors must be protected from overload either by a device integrated into the motor or via an independent protection system, usually a thermal relay with rated or setting current, equal to or below the value obtained when multiplying the power supply rated current ( $I_n$ ), as per table 18.

Service factor	Relay setting current
1.0 up to 1.15	$I_n \times S.F.$
$\geq 1.15$	$(I_n \times S.F.) - 5\%$

Table 18 - Relay setting current referred to service factor

#### 12.1.1 Pt-100



Figure 29 - Pt-100

These are temperature detectors with operating principle based on the properties that some materials vary the electric resistance with the variation in temperature (usually platinum, nickel or copper). They are also fitted with calibrated resistances that vary linearly with temperature, allowing continuous reading of motor operating temperature through a monitoring display, with high precision rate and response sensitivity.

The same detector can serve as alarm (with operation above the regular operating temperature) and trip (usually set up for the maximum temperature of the insulation class).

#### 12.1.2 Thermistor (PTC)



Figure 30 - Thermistor (PTC)

These are thermal protectors consisting of semiconductor detectors with sudden variation of the resistance when reaching a certain temperature.

PTC is considered a thermistor with the resistance increasing drastically to a well defined temperature figure. This sudden resistance variation blocks the PTC current, causing the output relay to operate, and the main circuit to switch-off.

The thermistors are of small dimensions, do not wear and have quicker response if compared to other protectors, although they do not allow continuous monitoring of motor operating temperature.

Together with their electronic circuits, these thermistors provide full protection against overheating caused by overload, under or overvoltage or frequent reversing operations.

Where thermistor protection is required to provide both alarm and trip operation, it is necessary for each phase of the

motor winding to be equipped with two sets of appropriately rated thermistors.

WEG Automation offers a range of electronic relays 'RPW' intended specifically to read the PTC signal and operate its output relay. For further information please visit the website [www.weg.net](http://www.weg.net).

#### 12.1.3 Bimetallic Thermal Protectors

These are silver-contact thermal sensors, normally closed, that operate at certain temperature rise. When their operating temperature decreases, they return to their original position instantaneously, allowing the silver contact to close again.

The bimetallic thermal protectors are series-connected with the contactor coil, and can be used either as alarm or trip.

There are also other types of thermal protectors such as Pt-1000, KTY and thermocouples. Contact your local WEG office closest to you for more information.

### 12.2 Protection Based on Operating Current

Overloads are processes that usually make the temperature increase gradually. To solve this problem, the thermal protectors described in item 12.1 are quite suitable. However, the only way to protect motors against short-circuit currents is the application of fuses. This type of protection depends directly on the motor current and is highly effective in cases of locked rotor.

WEG Automation supplies a range of fuses in versions D and NH. Visit the website [www.weg.net](http://www.weg.net) for further information.

## 13. Variable Speed Drive Application

### 13.1 Considerations Regarding Voltage Spikes and the Insulation System

The stator windings of W22 processmotors are wound with class F insulation (class H optional) and are suitable for either DOL starting or via a variable speed drive. They incorporate the WEG exclusive insulation system - WISE® (WEG Insulation System Evolution) - which ensures superior electrical insulation characteristics.

The stator winding is suitable for variable speed drive application, taking into account the limits shown in table 19.

Rated voltage					
230/400 V or 400/690 V or 500 V at 50Hz					
Motor frame size	Motor rated voltage	Voltage spikes at motor terminals (phase-phase)	dV/dt (*) at motor terminals (phase-phase)	Rise time (*)	Time between pulses
63 - 100	230/400 V	$\leq 1\ 600\ V$	$\leq 5\ 200\ V/\mu s$	$\geq 0,1\ \mu s$	$\geq 6\ \mu s$
113 - 132	400/690 V	$\leq 1\ 600\ V$	$\leq 5\ 200\ V/\mu s$		
160 - 355	400/690 V	$\leq 2\ 000\ V$	$\leq 6\ 500\ V/\mu s$		
63 - 355	500 V	$\leq 2\ 000\ V$	$\leq 6\ 500\ V/\mu s$		
63-132 option +26.10	230, 400, 690 V	$\leq 2\ 000\ V$	$\leq 6\ 500\ V/\mu s$		
63-355 option +26.11	230 - 690 V	$\leq 2\ 400\ V$	$\geq 7\ 800\ V/\mu s$		

(\*) dV/dt and Rise time definition according to Nema Std. MG1 - Part 30.

Table 19 - Supportability of random wound motors' insulation system

#### Notes:

- 1 - In order to protect the motor insulation system, the maximum recommended switching frequency is 5 kHz.
- 2 - If one or more of the above conditions is not attended, a

filter (load reactor or dV/dt filter) must be installed in the output of the VSD.

- 3 - General purpose motors with rated voltage greater than 575 V, which at the time of purchase did not have any indication of operation with VSD, are able to withstand the electrical limits set in the table above for rated voltage up to 575 V. If such conditions are not fully satisfied, output filters must be used.
- 4 - General purpose motors of the dual voltage type, for example 400/690 V or 380/660 V, which at the time of purchase did not have any indication of operation with VSD, are able to be driven by a VSD in the higher voltage only if the limits set in the table above for rated voltage up to 460 V are fully attended in the application. Otherwise, a load reactor or a dV/dt filter must be installed in the VSD output.

### 13.2 Influence of the VSD on the Motor Temperature

Motors operating with frequency inverters may present a higher temperature rise than when operating under sinusoidal supply. This occurs due to the combined effects of the loss increase resulting from the PWM harmonics and the reduction in ventilation experienced by self-ventilated motors when operating at low frequencies. There are basically the following solutions to avoid excessive overheating of the motor in VSD applications:

- Torque derating (oversizing of the self-ventilated motor frame size);
- Forced ventilation (use of an independent cooling system);
- Optimal Flux Solution (exclusive to applications where both motor and drive are WEG).

#### 13.2.1 Torque Derating Criteria

In order to keep the temperature rise of WEG motors within acceptable levels, when supplied by VSD, the speed range-related loadability limits established in figures 31 (for operation under constant flux condition) or 32 (for operation under optimal flux condition) must be observed.

#### Notes:

- 1 - The derating curves below relate the motor thermal capability only and do not concern the insulation class. Speed regulation will depend on VSD mode of operation and proper adjustment.
- 2 - Torque derating is usually required when the motor drives constant torque loads (e.g. screw compressors, conveyors, extruders, etc.). For squared torque loads, such as pumps and fans, no torque derating is normally required.
- 3 - W22 processmotors in frame sizes 90S and above can be blower cooled (independently ventilated) under request. In such case, the motor will be suitable for VSD operation without torque derating regardless the load type.
- 4 - For operation above base (nameplate) speed, mechanical issues must be also observed. Please refer to the maximum limits for safe operation set in Table 20.

#### 13.2.2 Constant Flux Condition

Applicable when the motor is supplied by any commercial drive operating with any control scheme other than the Optimal Flux available in WEG drives.

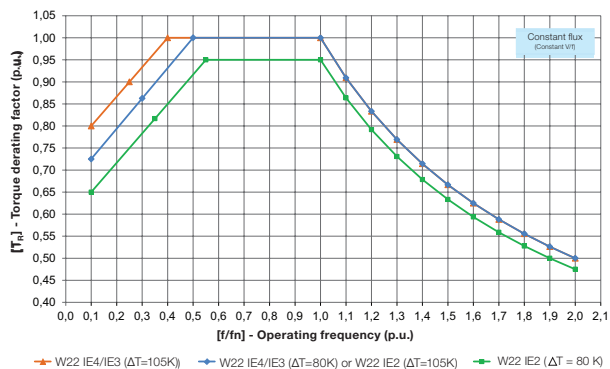


Figure 31 - Derating curves for constant flux condition

OBS: IE3 motors of the frame sizes 315L and 355M/L must follow the criteria established for IE2 motors (blue and green curves).

#### 13.2.3 Optimal Flux Condition

The study of the composition of the overall motor losses and its relation to operation parameters such as the frequency, the magnetic flux, the current, and the speed variation led to the determination of an optimal flux value for each operating frequency. The implementation of this solution within the CFW700, CFW701 and CFW11 control algorithms allow that the motor optimal flux condition be automatically applied by the drive throughout the speed range, resulting in a continuous minimization of losses. As a consequence of this loss minimization, the use of the optimal flux control provides higher efficiency and lower temperature rise. Therefore, the torque derating factors for this operation condition are milder than for constant V/f, as shown in figure 32.

The optimal flux solution was developed for low frequency applications with constant torque loads and it should neither be used with variable torque loads nor when the operating range includes points above the base (rated) frequency. The Optimal Flux Solution may be only applied under the following conditions:

- The motor attends at least IE2 efficiency class;
- The motor is fed by a WEG drive (CFW11, CFW700 or CFW701);
- Sensorless vector control type is used.

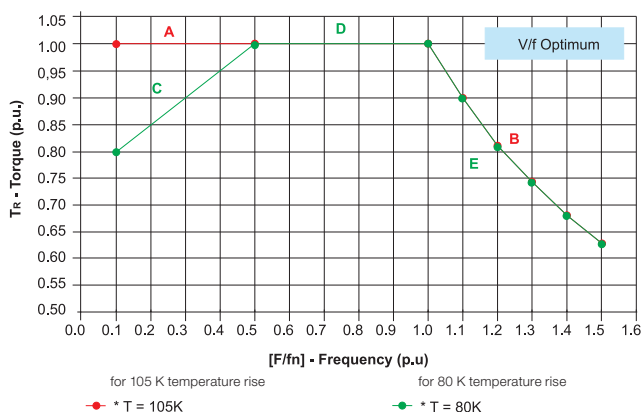


Figure 32 - Derating curves for Optimal Flux condition



kW	TEFC Motors		
	2 poles	4 poles	6 poles
0.18	7200	3600	2400
0.25	7200	3600	2400
0.37	7200	3600	2400
0.55	7200	3600	2400
0.75	7200	3600	2400
1.1	7200	3600	2400
1.5	7200	3600	2400
2.2	7200	3600	2400
4	7200	3600	2400
5.5	5400	3600	2400
7.5	5400	3600	2400
11	5400	3600	2400
15	5400	3600	2400
18.5	5400	2700	2400
22	5400	2700	2400
30	4500	2700	2400
37	4500	2700	2400
45	3600	2700	2400
55	3600	2700	2400
75	3600	2700	1800
90	3600	2700	1800
110	3600	2700	1800
150	3600	2250	1800
185	3600	2250	1800
220	3600	2250	1800
260	3600	1800	1800
300	3600	1800	-
330	3600	1800	-
370	3600	1800	-

Table 20 - Maximum safe operating speeds (rpm) for W22 processmotors driven by VSD

**Notes:**

- 1 - The values in Table 20 are related to mechanical limitations. For operation above nameplate speed, the electrical limitations (motor torque capability) must be also observed.
- 2 - The limits established in Table 20 are in accordance with the NEMA Std. MG 1 - Part 30.
- 3 - The permissible overspeed value is 10% above the limits given in Table 20 (not to exceed 2 minutes in duration) except where the maximum safe operating speed is the same as the synchronous speed at 60 Hz - in such case, please contact WEG.
- 4 - Operation above nameplate speed may require specially refined motor balancing. In such case, vibration and noise limits per NEMA MG1 Parts 7 and 9, respectively, are not applicable.
- 5 - Bearing life will be affected by the length of time the motor is operated at various speeds.
- 6 - For speeds and ratings not covered by the table above, please contact WEG.

**13.3 Considerations Regarding Bearing Currents**

Motors up to frame size 280S/M generally do not require special features with respect to the bearings for variable speed drive application. From frame size 315S/M upwards additional measures should be taken in order to avoid detrimental bearing currents. This can be accomplished by utilisation of an insulated bearing or insulated hub endshield and a shaft grounding brush mounted on the opposite side. W22 processmotors will normally be supplied duly protected per such recommendations when operation with VSD is specified at the time of purchase. Otherwise, WEG can modify motors that were not originally supplied with such protection under request.

**13.4 Forced Ventilation**

For those cases where an independent cooling system is required, the W22 processmotors can be supplied with a forced ventilation kit, as shown in figure 33.

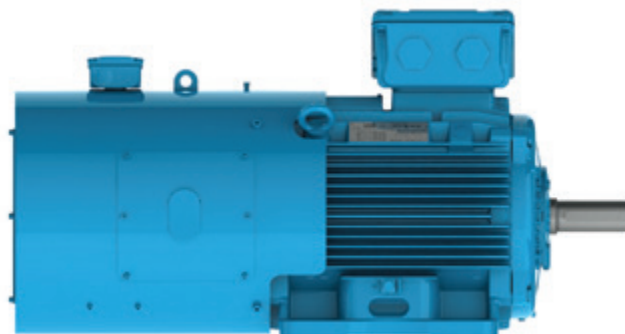


Figure 33 - Forced ventilation kit for W22 processmotors

When the forced ventilation kit is assembled on the motor in the factory, the overall motor length will be increased, see section 20. External Motor Dimensions with Forced Ventilation. As a local stock modification option, an alternative forced ventilation kit can be fitted. Please contact your local WEG office for details of these dimensions.

**13.5 Encoders**

W22 processmotors may be supplied with encoders for speed control in closed loop. Encoders can be fitted to motors with either forced ventilation or with shaft mounted cooling fan (TEFC). When encoders are fitted to TEFC machines, motors may not have a second shaft end or be fitted with drip cover. The following models of encoder are available for supply:

- Dynapar - B58N - 1024ppr (hollow shaft)
- Hengstler - RI58 - 1024ppr (hollow shaft)
- Leine & Linde - XH861 - 1024ppr (hollow shaft)
- Hubner Berlin - HOG 10 - 1024ppr (hollow shaft)
- Hübner Giessen - FGH 40 - 1024ppr (shaft)

Other models can be supplied on request. Note: The encoders described above are of the 1024 pulses per revolution type. As an option, models of 2048 pulses per revolution are available.

For more information on VSD motor applications, visit our website ([www.weg.net](http://www.weg.net)) and download the Technical Guide - Induction motors fed by PWM frequency inverters (code 028).

**14. Tolerances for Electrical Data**

The following tolerances are allowed in accordance with IEC 60034-1:

Efficiency ( $\eta$ )	-0.15 (1- $\eta$ ) for $P_{nom} \leq 150$ kW / -0.1 (1- $\eta$ ) for $P_{nom} > 150$ kW Where $\eta$ is a decimal number
Power factor	$\frac{1 - \cos \Phi}{6}$ Minimum 0.02 and Maximum 0.07
Slip	$\pm 20\%$ for $P_{nom} \geq 1$ kW and $\pm 30\%$ for $P_{nom} < 1$ kW
Starting current	20% (without lower limit)
Starting torque	- 15% + 25%
Breakdown torque	- 10 %
Moment of inertia	$\pm 10$ %

Table 21 - Tolerances for electrical data

## 14. Standard Construction features

Frame	63	71	80	90	100	112	132	160	180		
<b>Mechanical features</b>											
Mounting form		B3T (options are available as per section 6)									
Frame	Material Cast iron FC-200										
Degree of protection		IP55									
Grounding		Simple grounding (one inside the terminal box and one on the frame)									
Cooling method		Totally enclosed fan cooled - IC411									
Fan	Material	2-4p	Polypropylene								
		6-8p									
Fan cover	Material Steel						Cast iron FC-200				
Endshields	Material Cast iron FC-200 (EN G.JL 200)										
Endshield NDE											
Drain hole		Automatic plastic						Fitted with rubber drain plug			
Bearings	Clearance D.E		ZZ						C3		
	Clearance N.D.E		ZZ						C3		
	Locking		Without bearing cap and with preload washer at non-drive end						DE locating bearing with bearing cap and with preload washer at non-drive end		
	Drive end side	2p	6201-ZZ	6202-ZZ	6204-ZZ	6205-ZZ	6206-ZZ	6207-ZZ	6308-ZZ	6309-C3	6311-C3
		4 - 8p			6203-ZZ	6204-ZZ	6205-ZZ	6206-ZZ	6207-ZZ	6209-Z-C3	6211-Z-C3
Non drive end side	2p										
	4 - 8p										
Bearing seal		V'ring									
Lubrication	Type of grease		Mobil Polyrex EM								
	Grease fitting		Without grease fitting						With grease fitting		
Terminal block		With terminal block									
Terminal box	Material Cast iron FC-200										
Leads inlet	Main	Size	2 x M20 x 1,5		2 x M25 x 1,5		2 x M32 x 1,5		2 x M40 x 1,5 Removable Gland Plate FL13		
	Plug		Threaded plug for transport and storage; cable gland as optional								
	Accessory	Size	1 x M20 x 1.5 lateral thread when fitted with accessories								
Shaft	Material		AISI 1040/45								
	D.E. Threaded hole	2p	M4	M5	M6	M8	M10	M10	M12	M16	
		4 - 8p									
Vibration		Grade A									
Vibrationsensor								SPM			
Balance		With half key									
Nameplate	Material Stainless steel AISI 304 and plastic Protection										
Painting	Type		207A						202P		
	Colour		Premium Efficiency motors, IE3: RAL 5009 Blue				Super Premium Efficiency motors, IE4: RAL 6002 Green				
<b>Electrical features</b>											
Design		N									
Voltage		220-240/380-415//440-460 V or 500V				380-415/660-690//440-460 V or 500V					
Winding	Impregnation		Dip and bake								
	Insulation class		Class F (DT 80K) Variable speed drive application see page 19								
Service factor		1.00									
Rotor		Aluminium die cast									
Thermal protector								Thermistor PTC, 1 per phase, 140°C			



Frame		200		225S/M	250S/M	280S/M	315S/M	315L	355M/L	355K/J		
<b>Mechanical features</b>												
Mounting		B3T										
Frame	Material	Cast iron FC-200										
Degree of protection		IP55										
Grounding		Simple grounding (one inside the terminal box and one on the frame)			Double + additional (one inside the terminal box and three on the frame)							
Cooling method		Totally enclosed fan cooled - IC411										
Fan	Material	2p	Polypropylene			Aluminium						
		4-8p	Polypropylene			Aluminium						
Fan cover	Material	Cast iron FC-200 (EN GJL 200)										
Endshields	Material	Cast iron FC-200 (EN GJL 200)										
Endshield NDE										Insulated		
Drain hole		Fitted with rubber drain plug										
Bearings	Clearance D.E		C3									
	Clearance N.D.E		C3				C3					
	Locking		DE locating bearing with bearing cap and with preload washer at non-drive end			Locked on drive end with internal and external bearing cap and with preload springs on non drive end side						
	Drive end side	2p	6312-C3			6314-C3	6314-C3	6314-C3	6314-C3	6316-C3	6316-C3	6316
		4 - 8p						6316-C3	6319-C3	6322-C3	6322-C3	6322
	Non drive end side	2p	6212-Z-C3			6314-C3	6314-C3	6314-C3	6314-C3	6314-C3	6314-C3	6314
4 - 8p		6316-C3						6316-C3	6319-C3	6319-C3	6319-C3	6319
Bearing seal		V'ring			WSeal®							
Lubrication	Type of grease		Mobil Polyrex EM									
	Grease fitting		With grease fitting									
Terminal block		With terminal block								HGF terminal block		
Terminal box	Material	Cast iron FC-200										
Leads inlet	Main	Size	2 x M63 x 1.5 removable gland plate FL21				2 x M63 x 1.5 removable gland plate FL33					
	Plug		Threaded plug for transportation and storage; cable gland as optional									
	Accessory	Size	1 x M20 x 1.5 lateral thread when fitted with accessories									
Shaft	Material		AISI 1040/45				AISI 4140					
	D.E. Threaded hole	2p	M20			M20	M20	M20	M20	M20	M20	
		4 - 8p								M24	M24	
Vibration		Grade A										
Vibrationsensor		SPM										
Balance		With half key										
Nameplate	Material	Stainless steel AISI 304 and plastic Protection										
Painting	Type	202P										
	Colour	Premium Efficiency motors, IE3: RAL 5009 Blue				Super Premium Efficiency motors , IE4: RAL 6002 Green						
<b>Electrical features</b>												
Design		N										
Voltage		380-415/660-690V//440-460V or 500V										
Winding	Impregnation	Dip and bake			Continuous flow impregnation							
	Insulation class	Class F (DT 80K)Variable speed drive application see page 19										
Service factor		1.00										
Rotor		Aluminium die cast										
Thermal protector		Thermistor PTC, 1 per phase, 140°C				Thermistor PTC, 1 per phase, 140°C 2 PT100 per phase						

## 15. Optional features

Frame	Options	63	71	80	90	100	112	132
<b>Mechanical optionals</b>								
<b>Terminal box</b>								
Additional terminal box	+01.01	0	0	0	0	0	0	0
Removable gland plate type FL	+01.03	0	0	0	0	0	0	0
<b>Flange</b>								
Flange FF B5 enlarge	+04.02	0	0	0	0	0	0	0
Flange FF B5 reduced	+04.03	NA	0	0	0	0	0	0
Flange C-DIN B14 enlarge	+04.05	0	0	0	0	0	0	0
Flange C-DIN B14 reduced	+04.06	NA	0	0	0	0	0	0
<b>Fan</b>								
Polypropylene (2 and 4 poles)	+05.01	S	S	S	S	S	S	S
Polypropylene (4 and 8 poles)	+05.02	S	S	S	S	S	S	S
Aluminium (2 and 4 poles)	+05.04	0	0	0	0	0	0	0
Aluminium (4 and 8 poles)	+05.05	0	0	0	0	0	0	0
Cast iron	+05.06	0	0	0	0	0	0	0
<b>Bearing</b>								
Ball bearing (D.E)	+06.02	NA	NA	NA	NA	NA	NA	NA
Angular contact ball bearing(N.D.E.)	+06.03	0	0	0	0	0	0	0
ZZ bearing on both ends	+06.04	S	S	S	S	S	S	S
2RS bearing on both ends	+06.05	0	0	0	0	0	0	0
Clearance C4	+06.06	NA	NA	NA	0	0	0	0
<b>Bearing cap</b>								
With bearing cap	+07.01	NA	0	0	0	0	0	0
<b>Shaft sealing</b>								
Nitrilic rubber lip seal	+09.01	0	0	0	0	0	0	0
Nitrilic rubber oil seal	+09.02	0	0	0	0	0	0	0
Nitrilic rubber oil seal double lip	+09.03	0	0	0	0	0	0	0
Viton seal	+09.04	0	0	0	0	0	0	0
Viton oil seal	+09.05	0	0	0	0	0	0	0
Viton oil seal with stainless steel spring	+09.06	0	0	0	0	0	0	0
Taconite Labyrinth	+09.07	NA	NA	NA	0	0	0	0
W3 Seal®	+09.08	NA	NA	NA	0	0	0	0

Notes: 1) Other optional features, on request.

2) Some combinations of optional features are not allowed – then contact WEG.

S (Standard)  
NA (Not available)  
O (Optional)

160	180	200	225S/M	250S/M	280S/M	315S/M	315L	355M/L	355K/J
<b>Mechanical options</b>									
<b>Terminal box</b>									
0	0	0	0	0	0	0	0	0	0
S	S	S	S	S	S	S	S	S	S
<b>Flange</b>									
0	0	0	NA	NA	0	NA	NA	NA	NA
0	0	0	0	0	NA	0	0	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>Fan</b>									
S	S	S	0	0	0	0	0	0	NA
S	S	S	0	0	0	0	NA	NA	NA
0	0	0	S	S	S	S	S	S	S
0	0	0	S	S	S	S	S	S	S
0	0	0	0	0	0	0	0	0	0
<b>Bearing</b>									
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	NA	NA	NA	NA	NA	NA
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
<b>Bearing cap</b>									
S	S	S	S	S	S	S	S	S	S
<b>Shaft sealing</b>									
0	0	0	0	0	0	NA	NA	NA	NA
0	0	0	0	0	0	NA	NA	NA	NA
0	0	0	0	0	0	NA	NA	NA	NA
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0

Frame	Options	63	71	80	90	100	112	132
<b>Other sealing</b>								
Joints sealing with Loctite 5923 (Permatex)	+09.09	0	0	0	0	0	0	0
Bolt with Loctite 5923 (Permatex)	+09.10	0	0	0	0	0	0	0
<b>Shaft</b>								
AISI 4140	+10.02	0	0	0	0	0	0	0
AISI 304 (stainless steel)	+10.03	0	0	0	0	0	0	0
AISI 316 (stainless steel)	+10.04	0	0	0	0	0	0	0
AISI 420 (stainless steel)	+10.05	0	0	0	0	0	0	0
Locking shaft device (standard for roller bearing motors)	+10.06	NA	NA	NA	NA	NA	NA	0
Second shaft end	+10.07	0	0	0	0	0	0	0
<b>Degree of protection</b>								
IP56	+11.01	0	0	0	0	0	0	0
IP65	+11.02	0	0	0	0	0	0	0
IP66	+11.03	0	0	0	0	0	0	0
<b>Painting plan</b>								
<b>202P</b> Primer: One coat with 20 to 55 µm of alkyd oxide red Intermediate: One coat with 20 to 30 µm of isocyanate epoxy paint Finishing: One coat with 70 to 100 µm of polyurethane paint N2677 C3 according to ISO 12944	+12.01	0	0	0	0	0	0	0
<b>211E</b> Primer: One coat with 100 to 140 µm of epoxy paint N2630. Finishing: One coat with 100 to 140 µm of epoxy paint N2628 C5 according to ISO 12944	+12.02	0	0	0	0	0	0	0
<b>211P</b> Primer: One coat with 100 to 140µm of epoxy paint N2630 Finishing: One coat with 70 to 100 µm of PU paint N2677 C5 according to ISO 12944	+12.03	0	0	0	0	0	0	0
<b>212E</b> Primer: One coat with 75 to 105 µm of epoxy paint N1277 Intermediate: One coat with 100 to 140 µm of epoxy paint N2630 Finishing: One coat with 100 to 140 µm of epoxy paint N2628 C5 according to ISO 12944	+12.04	0	0	0	0	0	0	0

Notes: 1) Other optional features, on request.

2) Some combinations of optional features are not allowed – then contact WEG.

S (Standard)

NA (Not available)

O (Optional)

160	180	200	225S/M	250S/M	280S/M	315S/M	315L	355M/L	355K/J
Other sealing									
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
Shaft									
0	0	0	0	0	0	0	S	S	S
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
Degree of protection									
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
Painting plan									
S	S	S	S	S	S	S	S	S	S
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0

Frame	Options	63	71	80	90	100	112	132
<b>212P</b> Primer: One coat with 75 to 105 µm of epoxy paint N1277 Intermediate: One coat with 100 to 140 µm of epoxy paint N2630 Finishing: One coat with 70 to 100 µm of PU paint N2677 C5 according to ISO 12944	+12.05	0	0	0	0	0	0	0
<b>213E</b> Primer: One coat with 75 to 90 µm of Silicate Ethyl paint N1661 Intermediate: One coat with 35 to 50 µm of epoxy paint N1202 Finishing: One coat with 240 to 340 µm of epoxy paint N2628 C5 according to ISO 12944	+12.06	0	0	0	0	0	0	0
Inside of terminal box painted (Munsell 2.5 YR 6/14)	+12.08	0	0	0	0	0	0	0
Inside epoxy painting (Tropicallized)	+12.09	0	0	0	0	0	0	0
<b>Lubrication</b>								
Aeroshell 7	+13.02	0	0	0	0	0	0	0
Isoflex NBU-15	+13.03	0	0	0	0	0	0	0
<b>Grease nipple</b>								
Stainless steel grease nipple	+14.02	NA	NA	NA	NA	NA	NA	NA
<b>Balance</b>								
Balance with full key	+15.01	0	0	0	0	0	0	0
<b>Vibration</b>								
Grade B	+16.01	0	0	0	0	0	0	0
Vibration detector SPM	+16.02	NA	NA	NA	0	0	0	0
<b>Drain</b>								
Threaded drain plug	+17.01	0	0	0	0	0	0	0
Stainless steel threaded drain plug	+17.02	0	0	0	0	0	0	0
"T" format threaded drain plug	+17.03	0	0	0	0	0	0	0
<b>Other mechanical optionals</b>								
Drip cover (recommended for vertical shaft down applications)	+18.01	0	0	0	0	0	0	0
Rubber slinger (recommended for vertical shaft up applications)	+18.02	NA	NA	NA	0	0	0	0
Stainless steel hardware	+18.03	0	0	0	0	0	0	0
Grease outlet through the fan cover	+18.04	NA	NA	NA	NA	NA	NA	NA

Notes: 1) Other optional features, on request.  
 2) Some combinations of optional features are not allowed – then contact WEG.  
 (\*) 4 poles and upwards

S (Standard)  
 NA (Not available)  
 O (Optional)



160	180	200	225S/M	250S/M	280S/M	315S/M	315L	355M/L	355K/J
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
<b>Lubrication</b>									
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
<b>Grease nipple</b>									
0	0	0	0	0	0	0	0	0	0
<b>Balance</b>									
0	0	0	0	0	0	0	0	0	0
<b>Vibration</b>									
0	0	0	0	0	0	0	0	0	0
S	S	S	S	S	S	S	S	S	S
<b>Drain</b>									
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
<b>Other mechanical optionals</b>									
0	0	0	0	0	0	0	0	0	NA
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
NA	NA	NA	0	0	0	0	0	0	0

Frame	Options	63	71	80	90	100	112	132
<b>Electrical optionals</b>								
<b>Winding thermal protection</b>								
Bimetallic alarm thermal protector	+19.01	0	0	0	0	0	0	0
Bimetallic tripping thermal protector	+19.02	0	0	0	0	0	0	0
PT100 two wires, one per phase	+19.03	0	0	0	0	0	0	0
PT100 two wires, two per phase	+19.04	NA	NA	NA	NA	NA	NA	NA
PT100 three wires, one per phase	+19.05	0	0	0	0	0	0	0
PT100 three wires, two per phase	+19.06	NA	NA	NA	NA	NA	NA	NA
140°C thermistor	+19.07	0	0	0	0	0	0	0
155°C thermistor	+19.08	0	0	0	0	0	0	0
<b>Bearing thermal protection</b>								
Bimetallic thermal protector	+20.01	NA	NA	NA	NA	NA	NA	NA
Thermistor	+20.02	NA	NA	NA	NA	NA	NA	NA
PT-100 two wires	+20.03	NA	NA	NA	NA	NA	NA	NA
PT-100 three wires	+20.04	NA	NA	NA	NA	NA	NA	NA
PT-100 three wires (calibrated)	+20.05	NA	NA	NA	NA	NA	NA	NA
<b>Space heaters</b>								
110-127 V	+21.01	0	0	0	0	0	0	0
220-240 V	+21.02	0	0	0	0	0	0	0
110-127 / 220-240 V	+21.03	NA	NA	NA	NA	NA	0	0
380-480 V	+21.04	0	0	0	0	0	0	0
<b>Service factor</b>								
Service factor 1.15	+24.02	0	0	0	0	0	0	0
<b>Insulation class</b>								
H	+25.02	0	0	0	0	0	0	0
<b>Variable Speed Options</b>								
Forced ventilation kit with encoder provision (inform auxiliary motor voltage)	+26.01	NA	NA	NA	0	0	0	0
Forced ventilation kit without encoder provision (informe auxiliary motor voltage)	+26.02	NA	NA	NA	0	0	0	0
Encoder	+26.03	NA	NA	NA	0	0	0	0
Drive end side grounding brush	+26.04	NA	NA	NA	NA	NA	NA	NA
Non drive end side grounding brush	+26.05	NA	NA	NA	NA	NA	NA	NA
Insulated drive end ball bearing	+26.06	NA	NA	NA	NA	NA	NA	NA
Insulated non drive end ball bearing	+26.07	NA	NA	NA	NA	NA	NA	NA
Insulated DE bearing hub	+26.08	NA	NA	NA	NA	NA	NA	NA
Insulated NDE bearing hub	+26.09	NA	NA	NA	NA	NA	NA	NA
Increased winding insulation ≤ 2 000 V	+26.10	0*	0*	0*	0*	0*	0*	0*
Increased winding insulation ≤ 2 400 V	+26.11	0	0	0	0	0	0	0
Prepared for pulse tacho L&L 8611007455 Ø12	+26.12	NA	NA	NA	NA	NA	NA	NA
Prepared for pulse tacho L&L 861900220 Ø16	+26.13	NA	NA	NA	NA	NA	NA	NA
Pulse tacho, L&L 1024 pulse	+26.14	NA	NA	NA	NA	NA	0	0
Pulse tacho, L&L 2048 pulse	+26.15	NA	NA	NA	NA	NA	0	0
<b>Nameplates</b>								
Second main nameplate (loose)	+27.01	0	0	0	0	0	0	0
Additional tagplate	+27.02	0	0	0	0	0	0	0
Additional options plate	+27.05	0	0	0	0	0	0	0

Notes: 1) Other optional features, on request.

2) Some combinations of optional features are not allowed – then contact WEG.

\*) Standard for 500V

S (Standard)

NA (Not available)

O (Optional)

160	180	200	225S/M	250S/M	280S/M	315S/M	315L	355M/L	355K/J
<b>Electrical options</b>									
<b>Winding thermal protection</b>									
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
NA	NA	NA	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
NA	NA	NA	0	0	0	S	S	S	S
S	S	S	S	S	S	S	S	S	S
0	0	0	0	0	0	0	0	0	0
<b>Bearing thermal protection</b>									
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
<b>Space heaters</b>									
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
<b>Service factor</b>									
0	0	0	0	0	0	0	0	0	0
<b>Insulation class</b>									
0	0	0	0	0	0	0	0	0	0
<b>Variable Speed Options</b>									
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
NA	NA	NA	NA	NA	NA	0	0	0	0
NA	NA	NA	0	0	0	0	0	0	0
NA	NA	NA	0	0	0	0	0	0	0
NA	NA	NA	0	0	0	0	0	0	0
NA	NA	NA	0	0	0	0	0	0	0
NA	NA	NA	0	0	0	S	S	S	S
S	S	S	S	S	S	S	S	S	S
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
<b>Nameplates</b>									
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0

## W22 – Premium Efficiency – IE3 <sup>(1)</sup>

II pole – 3000 rpm – 50 Hz

Output kW	Frame	Full Load Torque (Nm)	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							
							Hot	Cold			Rated speed (rpm)	% of full load			Full load current I <sub>n</sub> (A)			
												Efficiency				Power Factor		
			50	75	100	50	75	100										
0,12	63	0,407	5,4	3,1	3,3	0,0001	30	66	6,2	52	2820	58,0	60,8	60,8	0,54	0,67	0,76	0,375
0,18	63	0,611	5,2	3	3,2	0,0002	22	48	6,7	52	2815	61,0	65,9	65,9	0,55	0,68	0,77	0,512
0,25	63	0,852	5,5	3,2	3,2	0,0002	17	37	7,2	52	2805	63,0	68,0	69,7	0,54	0,68	0,77	0,672
0,37	71	1,25	6,0	2,5	2,5	0,0004	12	26	7,5	56	2820	73,0	73,8	73,8	0,66	0,79	0,85	0,851
0,55	71	1,90	5,9	3	3	0,0005	18	40	8,5	56	2770	75,0	76,0	77,8	0,68	0,81	0,86	1,19
0,75	80	2,54	7,5	3,5	3,5	0,0008	25	55	13,5	59	2825	80,0	82,0	81,0	0,63	0,76	0,82	1,63
1,1	80	3,71	7,4	3,6	3,6	0,0009	23	51	15,0	59	2830	81,0	83,5	83,0	0,63	0,76	0,82	2,33
1,5	90S	4,99	7,6	3,3	3,3	0,0020	15	33	18,5	62	2875	83,0	85,0	84,5	0,64	0,76	0,83	3,09
2,2	90L	7,32	7,5	3,4	3,5	0,0026	12	26	23,5	62	2870	86,0	86,5	86,3	0,65	0,77	0,83	4,43
3	100L	9,85	8,5	3,4	3,4	0,0064	15	33	35,0	67	2910	85,5	87,3	87,3	0,69	0,81	0,86	5,77
4	112M	13,2	7,7	2,9	3,5	0,0081	22	48	41,0	64	2900	88,0	88,4	88,4	0,69	0,80	0,86	7,59
5,5	132S	17,9	7,9	2,4	3,5	0,0180	16	35	62,0	67	2930	86,9	88,7	89,4	0,66	0,78	0,84	10,6
7,5	132S	24,5	8,8	2,7	3,6	0,0234	10	22	65,0	67	2930	88,5	89,8	90,3	0,68	0,80	0,85	14,1
9,2	132M	30,0	8,5	2,9	3,3	0,0303	16	35	78,0	67	2930	90,4	91,1	90,7	0,75	0,84	0,88	16,6
11	160M	35,7	8,0	2,6	3,4	0,0482	12	26	105	67	2945	90,3	91,4	91,4	0,71	0,82	0,87	20,0
15	160M	48,7	8,3	2,8	3,5	0,0551	8	18	112	67	2945	90,9	91,8	92,1	0,67	0,79	0,85	27,7
18,5	160L	60,0	8,6	3,1	3,7	0,0663	6	13	125	67	2945	91,5	92,3	92,6	0,69	0,80	0,85	33,9
22	180M	71,3	8,3	2,7	3,6	0,0968	6	13	165	67	2950	92,3	93,0	92,9	0,69	0,80	0,86	39,7
30	200L	96,8	7,7	3	3	0,1703	16	35	225	69	2960	92,2	93,2	93,5	0,69	0,80	0,85	54,5
37	200L	119	7,7	3,1	3	0,1881	13	29	250	69	2960	92,6	93,4	93,8	0,69	0,79	0,84	67,8
45	225S/M	145	7,7	2,4	3,1	0,2861	13	29	380	74	2960	94,2	94,5	94,2	0,78	0,86	0,89	77,5
55	250S/M	178	7,8	2,7	3,3	0,3736	19	42	430	74	2960	93,6	94,4	94,4	0,77	0,85	0,88	95,6
75	280S/M	241	7,5	2	3,1	0,9386	36	79	630	77	2975	93,7	94,8	94,9	0,78	0,85	0,88	130
90	280S/M	289	7,6	2,2	3,1	1,12	27	59	710	77	2975	94,3	95,2	95,2	0,81	0,87	0,90	152
110	315S/M	353	7,5	1,9	3	1,66	38	84	900	77	2975	94,3	95,3	95,4	0,78	0,85	0,88	189
132	315S/M	423	7,6	2,1	3,1	1,96	34	75	950	77	2980	94,5	95,4	95,6	0,78	0,86	0,89	224
150	315S/M	481	7,5	2,3	3,1	2,18	20	44	990	77	2980	95,0	95,6	95,6	0,80	0,86	0,89	254
160	315S/M	513	7,4	2	2,9	2,24	28	62	1035	77	2980	95,1	95,8	95,8	0,79	0,86	0,89	271
185	315S/M	593	7,6	2,3	3,1	2,46	22	48	1090	77	2980	95,4	95,8	95,8	0,79	0,86	0,89	313
200	315L	642	7,6	2,3	2,9	2,68	23	51	1150	78	2975	95,7	96,2	96,0	0,82	0,88	0,90	334
220	315L	705	8,5	2,7	3,3	3,13	23	51	1220	78	2980	95,9	96,0	96,0	0,81	0,88	0,90	368
250	315L	802	7,8	2,7	2,9	3,57	21	46	1350	78	2980	96,3	96,0	96,0	0,85	0,90	0,91	413
260	315L	834	7,8	2,7	2,9	3,57	21	46	1370	78	2980	96,3	96,7	96,0	0,85	0,90	0,91	430
280	315L	896	7,5	2,5	2,7	4,17	22	48	1390	78	2985	95,4	95,8	96,0	0,84	0,89	0,91	463
315	355M/L	1010	7,7	2,1	2,5	6,01	23	51	1800	80	2980	95,5	96,0	96,0	0,87	0,90	0,91	520
330	355M/L	1058	7,7	2,1	2,3	6,01	28	62	1840	80	2980	95,2	96,0	96,0	0,90	0,91	0,91	545
355	355M/L	1136	7,9	2,2	2,8	6,01	14	31	1840	80	2985	95,3	95,6	95,8	0,87	0,90	0,91	588
370	355K/J (4)	1184	7,9	2,5	2,8	6,76	40	88	2046	83	2985	95,8	96,1	96,4	0,85	0,89	0,90	616
400	355K/J (4)	1280	7,6	2,4	2,8	6,76	31	68	2043	83	2985	95,8	96,2	96,4	0,85	0,89	0,91	658
450	355K/J (4)	1440	7,5	2,5	2,7	7,40	31	68	2160	83	2985	95,8	96,2	96,6	0,85	0,90	0,91	739

Note:

(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.

(4) Fitted with air deflector in the drive end side.

Output kW	500 V								690 V								WEG Scandinavia Motor code See page 59
	Rated speed (rpm)	% of full load						Full load current In (A)	Rated speed (rpm)	% of full load						Full load current In (A)	
		Efficiency			Power Factor					Efficiency			Power Factor				
		50	75	100	50	75	100			50	75	100	50	75	100		
0,12	2820	58,0	60,8	60,8	0,54	0,67	0,76	0,300	2820	58,0	60,8	60,8	0,54	0,67	0,76	0,217	W22S02P63-0,12IE3 .....
0,18	2815	61,0	65,9	65,9	0,55	0,68	0,77	0,410	2815	61,0	65,9	65,9	0,55	0,68	0,77	0,297	W22S02P63-0,18IE3 .....
0,25	2805	63,0	68,0	69,7	0,54	0,68	0,77	0,538	2805	63,0	68,0	69,7	0,54	0,68	0,77	0,390	W22S02P63-0,25IE3 .....
0,37	2820	73,0	73,8	73,8	0,66	0,79	0,85	0,681	2820	73,0	73,8	73,8	0,66	0,79	0,85	0,493	W22S02P71-0,37IE3 .....
0,55	2770	75,0	76,0	77,8	0,68	0,81	0,86	0,952	2770	75,0	76,0	77,8	0,68	0,81	0,86	0,690	W22S02P71-0,55IE3 .....
0,75	2825	80,0	82,0	81,0	0,63	0,76	0,82	1,30	2825	80,0	82,0	81,0	0,63	0,76	0,82	0,945	W22S02P80-0,75IE3 .....
1,1	2830	81,0	83,5	83,0	0,63	0,76	0,82	1,86	2830	81,0	83,5	83,0	0,63	0,76	0,82	1,35	W22S02P80-1,1IE3 .....
1,5	2875	83,0	85,0	84,5	0,64	0,76	0,83	2,47	2875	83,0	85,0	84,5	0,64	0,76	0,83	1,79	W22S02P90S-1,5IE3 .....
2,2	2870	86,0	86,5	86,3	0,65	0,77	0,83	3,54	2870	86,0	86,5	86,3	0,65	0,77	0,83	2,57	W22S02P90L-2,2IE3 .....
3	2910	85,5	87,3	87,3	0,69	0,81	0,86	4,62	2910	85,5	87,3	87,3	0,69	0,81	0,86	3,34	W22S02P100L-3IE3 .....
4	2900	88,0	88,4	88,4	0,69	0,80	0,86	6,07	2900	88,0	88,4	88,4	0,69	0,80	0,86	4,40	W22S02P112M-4IE3 .....
5,5	2930	86,9	88,7	89,4	0,66	0,78	0,84	8,48	2930	86,9	88,7	89,4	0,66	0,78	0,84	6,14	W22S02P132S-5,5IE3 .....
7,5	2930	88,5	89,8	90,3	0,68	0,80	0,85	11,3	2930	88,5	89,8	90,3	0,68	0,80	0,85	8,17	W22S02P132S-7,5IE3 .....
9,2	2930	90,4	91,1	90,7	0,75	0,84	0,88	13,3	2930	90,4	91,1	90,7	0,75	0,84	0,88	9,62	W22S02P132M-9,2IE3 .....
11	2945	90,3	91,4	91,4	0,71	0,82	0,87	16,0	2945	90,3	91,4	91,4	0,71	0,82	0,87	11,6	W22P02P160M-11IE3 .....
15	2945	90,9	91,8	92,1	0,67	0,79	0,85	22,2	2945	90,9	91,8	92,1	0,67	0,79	0,85	16,1	W22P02P160M-15IE3 .....
18,5	2945	91,5	92,3	92,6	0,69	0,80	0,85	27,1	2945	91,5	92,3	92,6	0,69	0,80	0,85	19,7	W22P02P160L-18,5IE3 .....
22	2950	92,3	93,0	92,9	0,69	0,80	0,86	31,8	2950	92,3	93,0	92,9	0,69	0,80	0,86	23,0	W22P02P180M-22IE3 .....
30	2960	92,2	93,2	93,5	0,69	0,80	0,85	43,6	2960	92,2	93,2	93,5	0,69	0,80	0,85	31,6	W22P02P200L-30IE3 .....
37	2960	92,6	93,4	93,8	0,69	0,79	0,84	54,2	2960	92,6	93,4	93,8	0,69	0,79	0,84	39,3	W22P02P200L-37IE3 .....
45	2960	94,2	94,5	94,2	0,78	0,86	0,89	62,0	2960	94,2	94,5	94,2	0,78	0,86	0,89	44,9	W22P02P225S/M-45IE3 .....
55	2960	93,6	94,4	94,4	0,77	0,85	0,88	76,5	2960	93,6	94,4	94,4	0,77	0,85	0,88	55,4	W22P02P250S/M-55IE3 .....
75	2975	93,7	94,8	94,9	0,78	0,85	0,88	104	2975	93,7	94,8	94,9	0,78	0,85	0,88	75,4	W22P02P280S/M-75IE3 .....
90	2975	94,3	95,2	95,2	0,81	0,87	0,90	122	2975	94,3	95,2	95,2	0,81	0,87	0,90	88,1	W22P02P280S/M-90IE3 .....
110	2975	94,3	95,3	95,4	0,78	0,85	0,88	151	2975	94,3	95,3	95,4	0,78	0,85	0,88	110	W22P02P315S/M-110IE3 .....
132	2980	94,5	95,4	95,6	0,78	0,86	0,89	179	2980	94,5	95,4	95,6	0,78	0,86	0,89	130	W22P02P315S/M-132IE3 .....
150	2980	95,0	95,6	95,6	0,80	0,86	0,89	203	2980	95,0	95,6	95,6	0,80	0,86	0,89	147	W22P02P315S/M-150IE3 .....
160	2980	95,1	95,8	95,8	0,79	0,86	0,89	217	2980	95,1	95,8	95,8	0,79	0,86	0,89	157	W22P02P315S/M-160IE3 .....
185	2980	95,4	95,8	95,8	0,79	0,86	0,89	250	2980	95,4	95,8	95,8	0,79	0,86	0,89	181	W22P02P315S/M-185IE3 .....
200	2975	95,7	96,2	96,0	0,82	0,88	0,90	267	2975	95,7	96,2	96,0	0,82	0,88	0,90	194	W22P02P315L-20IE3 .....
220	2980	95,9	96,0	96,0	0,81	0,88	0,90	294	2980	95,9	96,0	96,0	0,81	0,88	0,90	213	W22P02P315L-220IE3 .....
250	2980	96,3	96,0	96,0	0,85	0,90	0,91	330	2980	96,3	96,0	96,0	0,85	0,90	0,91	239	W22P02P315L-250IE3 .....
260	2980	96,3	96,7	96,0	0,85	0,90	0,91	344	2980	96,3	96,7	96,0	0,85	0,90	0,91	249	W22P02P315L-260IE3 .....
280	2985	95,4	95,8	96,0	0,84	0,89	0,91	370	2985	95,4	95,8	96,0	0,84	0,89	0,91	268	W22P02P315L-280IE3 .....
315	2980	95,5	96,0	96,0	0,87	0,90	0,91	416	2980	95,5	96,0	96,0	0,87	0,90	0,91	301	W22P02P355M/L-315IE3 .....
330	2980	95,2	96,0	96,0	0,90	0,91	0,91	436	2980	95,2	96,0	96,0	0,90	0,91	0,91	316	W22P02P355M/L-330IE3 .....
355	2985	95,3	95,6	95,8	0,87	0,90	0,91	470	2985	95,3	95,6	95,8	0,87	0,90	0,91	341	W22P02P355M/L-355IE3 .....
370	2985	95,8	96,1	96,4	0,85	0,89	0,90	493	2985	95,8	96,1	96,4	0,85	0,89	0,90	357	W22P02P355K/J-370IE3 .....
400	2985	95,8	96,2	96,4	0,85	0,89	0,91	526	2985	95,8	96,2	96,4	0,85	0,89	0,91	381	W22P02P355K/J-400IE3 .....
450	2985	95,8	96,2	96,6	0,85	0,90	0,91	591	2985	95,8	96,2	96,6	0,85	0,90	0,91	428	W22P02P355K/J-450IE3 .....

## W22 – Premium Efficiency – IE3<sup>(1)</sup>

II pole – 3000 rpm – 50 Hz

### Optional frames and output

Output kW	Frame	Full Load Torque (Nm)	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							
							Hot	Cold			Rated speed (rpm)	% of full load			Full load current I <sub>n</sub> (A)			
												Efficiency			Power Factor			
			50	75	100	50	75	100										
0,75	90S	2,47	8,2	3,3	3,4	0,0015	24	53	17,0	62	2900	79,0	82,5	81,5	0,63	0,75	0,82	1,62
1,1	90S	3,65	7,8	3,3	3,3	0,0018	19	42	17,5	62	2880	82,0	84,2	83,5	0,63	0,75	0,82	2,32
2,2	L90L	7,32	7,5	3,4	3,5	0,0026	12	26	23,5	62	2870	86,0	86,5	86,3	0,65	0,77	0,83	4,43
3	L100L	9,85	8,5	3,4	3,4	0,0064	15	33	35,0	67	2910	85,5	87,3	87,3	0,69	0,81	0,86	5,77
4	132S	13,0	7,5	2,3	3,1	0,0180	24	53	61,0	67	2930	86,9	88,7	88,6	0,73	0,82	0,87	7,49
5,5	132M	17,9	7,9	2,4	3,5	0,0180	16	35	62,0	67	2930	86,9	88,7	89,4	0,66	0,78	0,84	10,6
7,5	132M	24,5	8,8	2,7	3,6	0,0234	10	22	65,0	67	2930	88,5	89,8	90,3	0,68	0,80	0,85	14,1
11	132M	35,9	8,2	2,7	3	0,0303	11	24	80,0	67	2925	90,6	91,1	91,2	0,75	0,85	0,89	19,6
11	160L	35,7	8,0	2,6	3,4	0,0482	12	26	105	67	2945	90,3	91,4	91,4	0,71	0,82	0,87	20,0
15	160L	48,7	8,3	2,8	3,5	0,0551	8	18	112	67	2945	90,9	91,8	92,1	0,67	0,79	0,85	27,7
18,5	180M	60,0	7,6	2,3	3,1	0,0973	11	24	160	67	2945	91,5	92,0	92,6	0,77	0,85	0,88	32,8
22	180L	71,3	8,3	2,7	3,6	0,0968	6	13	165	67	2950	92,3	93,0	92,9	0,69	0,80	0,86	39,7
75	250S/M	242	7,6	3	2,8	0,5132	11	24	500	74	2965	95,0	95,3	94,9	0,83	0,87	0,89	128
110	280S/M	353	7,5	2,1	3	1,33	20	44	760	77	2975	95,0	95,5	95,4	0,80	0,87	0,89	187
200	355M/L	640	7,9	2,1	2,9	3,56	30	66	1300	80	2985	95,0	95,6	96,0	0,80	0,87	0,90	334
220	355M/L	704	7,3	1,9	2,6	4,18	35	77	1400	80	2985	95,0	95,6	96,0	0,85	0,89	0,91	363
250	355M/L	800	7,7	2,4	2,7	4,93	30	66	1500	80	2985	95,0	95,6	96,0	0,85	0,89	0,91	413
260	355M/L	832	7,7	2,4	2,7	4,93	30	66	1520	80	2985	95,0	95,6	96,0	0,85	0,89	0,91	430
280	355M/L	896	8,4	2	2,7	5,17	25	55	1590	80	2985	95,4	95,8	96,0	0,87	0,91	0,92	458



### Optional frames and output

Output kW	500 V								690 V								WEG Scandinavia Motor code See page 59
	Rated speed (rpm)	% of full load						Full load current In (A)	Rated speed (rpm)	% of full load						Full load current In (A)	
		Efficiency			Power Factor					Efficiency			Power Factor				
		50	75	100	50	75	100			50	75	100	50	75	100		
0,75	2900	79,0	82,5	81,5	0,63	0,75	0,82	1,30	2900	79,0	82,5	81,5	0,63	0,75	0,82	0,939	W22S02P90S-0,75IE3 .....
1,1	2880	82,0	84,2	83,5	0,63	0,75	0,82	1,86	2880	82,0	84,2	83,5	0,63	0,75	0,82	1,34	W22S02P90S-1,1IE3 .....
2,2	2870	86,0	86,5	86,3	0,65	0,77	0,83	3,54	2870	86,0	86,5	86,3	0,65	0,77	0,83	2,57	W22S02P100L-20,2IE3 .....
3	2910	85,5	87,3	87,3	0,69	0,81	0,86	4,62	2910	85,5	87,3	87,3	0,69	0,81	0,86	3,34	W22S02PL100L-3IE3 .....
4	2930	86,9	88,7	88,6	0,73	0,82	0,87	5,99	2930	86,9	88,7	88,6	0,73	0,82	0,87	4,34	W22S02P132S-4IE3 .....
5,5	2930	86,9	88,7	89,4	0,66	0,78	0,84	8,48	2930	86,9	88,7	89,4	0,66	0,78	0,84	6,14	W22S02P132M-50,5IE3 .....
7,5	2930	88,5	89,8	90,3	0,68	0,80	0,85	11,3	2930	88,5	89,8	90,3	0,68	0,80	0,85	8,17	W22S02P132M-70,5IE3 .....
11	2925	90,6	91,1	91,2	0,75	0,85	0,89	15,7	2925	90,6	91,1	91,2	0,75	0,85	0,89	11,4	W22S02P132M-11IE3 .....
11	2945	90,3	91,4	91,4	0,71	0,82	0,87	16,0	2945	90,3	91,4	91,4	0,71	0,82	0,87	11,6	W22P02P160L-11IE3 .....
15	2945	90,9	91,8	92,1	0,67	0,79	0,85	22,2	2945	90,9	91,8	92,1	0,67	0,79	0,85	16,1	W22P02P160L-15IE3 .....
18,5	2945	91,5	92,0	92,6	0,77	0,85	0,88	26,2	2945	91,5	92,0	92,6	0,77	0,85	0,88	19,0	W22P02P180M-185IE3 .....
22	2950	92,3	93,0	92,9	0,69	0,80	0,86	31,8	2950	92,3	93,0	92,9	0,69	0,80	0,86	23,0	W22P02P180L-22IE3 .....
75	2965	95,0	95,3	94,9	0,83	0,87	0,89	102	2965	95,0	95,3	94,9	0,83	0,87	0,89	74,2	W22P02P250S/M-75IE3 .....
110	2975	95,0	95,5	95,4	0,80	0,87	0,89	150	2975	95,0	95,5	95,4	0,80	0,87	0,89	108	W22P02P280S/M-110IE3 .....
200	2985	95,0	95,6	96,0	0,80	0,87	0,90	267	2985	95,0	95,6	96,0	0,80	0,87	0,90	194	W22P02P355M/L-200IE3 .....
220	2985	95,0	95,6	96,0	0,85	0,89	0,91	290	2985	95,0	95,6	96,0	0,85	0,89	0,91	210	W22P02P355M/L-220IE3 .....
250	2985	95,0	95,6	96,0	0,85	0,89	0,91	330	2985	95,0	95,6	96,0	0,85	0,89	0,91	239	W22P02P355M/L-250IE3 .....
260	2985	95,0	95,6	96,0	0,85	0,89	0,91	344	2985	95,0	95,6	96,0	0,85	0,89	0,91	249	W22P02P355M/L-260IE3 .....
280	2985	95,4	95,8	96,0	0,87	0,91	0,92	366	2985	95,4	95,8	96,0	0,87	0,91	0,92	265	W22P02P355M/L-280IE3 .....

# W22 – Premium Efficiency – IE3 <sup>(1)</sup>

## IV pole – 1500 rpm – 50 Hz

Output kW	Frame	Full Load Torque (Nm)	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							
							Hot	Cold			Rated speed (rpm)	% of full load			Full load current I <sub>n</sub> (A)			
												Efficiency	Power Factor					
											50	75	100	50	75	100		
0,12	63	0,837	4,4	2,1	2,3	0,0004	30	66	5,2	44	1370	57,0	63,0	64,8	0,52	0,62	0,73	0,366
0,18	63	1,26	4,7	2,1	2,4	0,0006	30	66	7,2	44	1370	65,0	67,0	69,9	0,53	0,63	0,72	0,516
0,25	71	1,72	4,8	2,3	2,3	0,0009	30	66	8,0	43	1390	69,0	72,0	73,5	0,52	0,65	0,72	0,682
0,37	71	2,55	4,8	2,8	2,9	0,0008	30	66	9,5	43	1385	73,0	75,0	77,3	0,50	0,62	0,70	0,987
0,55	80	3,70	6,6	2,9	3,2	0,0027	20	44	12,5	44	1420	77,0	79,0	80,8	0,61	0,74	0,80	1,23
0,75	80	5,05	6,7	3	3,3	0,0032	18	40	14,5	44	1420	80,0	82,0	82,5	0,59	0,72	0,81	1,62
1,1	90S	7,22	7,6	2,5	3,3	0,0055	15	33	19,5	49	1455	83,0	84,5	84,5	0,59	0,72	0,80	2,35
1,5	90L	9,88	7,4	2,6	3,4	0,0066	13	29	23,0	49	1450	84,0	86,0	85,5	0,58	0,72	0,80	3,17
2,2	100L	14,6	7,4	3,2	3,5	0,0090	18	40	31,5	53	1435	86,5	87,0	87,0	0,60	0,73	0,80	4,56
3	L100L	19,9	7,8	3,5	3,7	0,0120	15	33	37,5	53	1440	87,0	88,0	88,0	0,60	0,73	0,80	6,15
4	112M	26,4	7,0	2,3	3,1	0,0180	15	33	44,0	56	1450	88,7	89,1	88,8	0,62	0,74	0,81	8,03
5,5	132S	36,0	8,3	2,1	3,3	0,0491	12	26	66,0	56	1460	89,0	89,6	89,7	0,69	0,80	0,85	10,4
7,5	132M	49,1	8,3	2,4	3,5	0,0563	7	15	74,0	56	1460	90,5	90,8	90,6	0,69	0,80	0,86	13,9
9,2	132M/L	60,0	8,6	2,8	3,5	0,0698	10	22	82,0	56	1465	90,3	91,0	91,0	0,64	0,76	0,82	17,4
11	160M	71,5	7,5	2,8	3,2	0,1191	11	24	113	61	1470	91,1	91,8	91,6	0,65	0,77	0,83	20,9
15	160L	97,8	7,2	2,8	3,1	0,1534	8	18	135	61	1465	92,2	92,5	92,3	0,67	0,78	0,84	27,9
18,5	180M	120	7,4	3	3,2	0,1740	13	29	168	61	1470	92,2	92,8	92,8	0,64	0,76	0,82	35,1
22	180L	143	7,3	3,4	3,4	0,2097	11	24	185	61	1470	92,3	93,0	93,2	0,66	0,77	0,83	41,0
30	200L	194	7,5	2,8	3,1	0,3202	12	26	228	63	1480	92,9	93,6	93,7	0,63	0,75	0,81	57,1
37	225S/M	239	7,7	2,8	3,3	0,5177	13	29	365	63	1480	93,4	94,0	94,1	0,70	0,80	0,85	66,8
45	225S/M	292	7,5	2,8	3,1	0,6733	14	31	400	63	1475	93,7	94,1	94,4	0,71	0,81	0,85	80,9
55	250S/M	355	7,5	2,8	3	1,05	14	31	440	64	1480	94,3	94,7	94,7	0,69	0,80	0,85	98,6
75	280S/M	483	7,5	2,2	2,9	2,09	30	66	630	69	1485	94,5	95,1	95,2	0,72	0,82	0,85	134
90	280S/M	579	7,0	2,2	2,7	2,17	30	66	700	69	1485	94,9	95,4	95,4	0,75	0,83	0,86	158
110	315S/M	705	7,4	2,2	2,6	2,89	33	73	950	71	1490	94,7	95,5	95,6	0,74	0,82	0,86	193
132	315S/M	846	7,5	2,3	2,7	3,79	30	66	1010	71	1490	95,1	95,7	95,8	0,74	0,82	0,86	231
150	315S/M	962	7,8	2,7	2,7	3,77	27	59	1030	71	1490	95,4	95,8	95,9	0,71	0,81	0,85	266
160	315S/M	1026	7,7	2,6	2,7	3,99	28	62	1080	71	1490	95,2	95,9	96,0	0,74	0,82	0,86	280
185	315S/M	1186	7,8	2,7	2,9	4,42	25	55	1150	71	1490	95,5	96,1	96,0	0,71	0,80	0,85	327
200	315L	1287	7,1	2,4	2,4	4,75	21	46	1200	73	1485	96,0	96,3	96,0	0,78	0,85	0,87	346
220	315L	1411	7,9	2,8	2,8	5,30	12	26	1340	73	1490	95,8	96,1	96,2	0,72	0,81	0,85	388
250	315L	1603	7,9	2,9	2,7	5,75	19	42	1430	73	1490	96,0	96,2	96,2	0,73	0,82	0,86	436
260	315L	1667	7,9	2,6	2,6	6,41	19	42	1430	73	1490	95,8	96,0	96,2	0,77	0,84	0,87	448
280	355M/L	1796	7,3	2,4	2,6	9,66	20	44	1600	74	1490	95,9	96,0	96,2	0,74	0,83	0,86	488
315	355M/L	2020	7,9	2,5	2,6	9,47	17	37	1750	74	1490	96,1	96,3	96,3	0,72	0,81	0,85	555
355	355M/L	2277	7,2	2,4	2,5	11,6	15	33	1878	74	1490	96,5	96,8	96,5	0,74	0,83	0,86	617
400	355K/J (4)	2565	7,6	2,6	2,9	13,2	20	44	2089	76	1490	95,7	96,1	96,2	0,68	0,79	0,84	714
450	355K/J (4)	2886	7,4	2,5	2,8	13,2	20	44	2089	76	1490	95,8	96,1	96,2	0,69	0,80	0,84	804
500	355K/J (3,4)	3206	7,3	2,4	2,7	14,6	17	37	2246	76	1490	95,9	96,3	96,3	0,72	0,81	0,85	882

Note:  
 (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.  
 (3) Motor with class F (105K) temperature rise.  
 (4) Fitted with air deflector in the drive end side.

Output kW	500 V								690 V								WEG Scandinavia Motor code See page 59
	Rated speed (rpm)	% of full load						Full load current In (A)	Rated speed (rpm)	% of full load						Full load current In (A)	
		Efficiency			Power Factor					Efficiency			Power Factor				
		50	75	100	50	75	100			50	75	100	50	75	100		
0,12	1370	57,0	63,0	64,8	0,52	0,62	0,73	0,293	1370	57,0	63,0	64,8	0,52	0,62	0,73	0,212	W22S04P63-0,12IE3 .....
0,18	1370	65,0	67,0	69,9	0,53	0,63	0,72	0,413	1370	65,0	67,0	69,9	0,53	0,63	0,72	0,299	W22S04P63-0,18IE3 .....
0,25	1390	69,0	72,0	73,5	0,52	0,65	0,72	0,546	1390	69,0	72,0	73,5	0,52	0,65	0,72	0,395	W22S04P71-0,25IE3 .....
0,37	1385	73,0	75,0	77,3	0,50	0,62	0,70	0,790	1385	73,0	75,0	77,3	0,50	0,62	0,70	0,572	W22S04P71-0,37IE3 .....
0,55	1420	77,0	79,0	80,8	0,61	0,74	0,80	0,984	1420	77,0	79,0	80,8	0,61	0,74	0,80	0,713	W22S04P80-0,55IE3 .....
0,75	1420	80,0	82,0	82,5	0,59	0,72	0,81	1,30	1420	80,0	82,0	82,5	0,59	0,72	0,81	0,939	W22S04P80-0,75IE3 .....
1,1	1455	83,0	84,5	84,5	0,59	0,72	0,80	1,88	1455	83,0	84,5	84,5	0,59	0,72	0,80	1,36	W22S04P90S1,1IE3 .....
1,5	1450	84,0	86,0	85,5	0,58	0,72	0,80	2,54	1450	84,0	86,0	85,5	0,58	0,72	0,80	1,84	W22S04P90L1,5IE3 .....
2,2	1435	86,5	87,0	87,0	0,60	0,73	0,80	3,65	1435	86,5	87,0	87,0	0,60	0,73	0,80	2,64	W22S04P10-0L-2,2IE3 .....
3	1440	87,0	88,0	88,0	0,60	0,73	0,80	4,92	1440	87,0	88,0	88,0	0,60	0,73	0,80	3,57	W22S04PL100L3IE3 .....
4	1450	88,7	89,1	88,8	0,62	0,74	0,81	6,42	1450	88,7	89,1	88,8	0,62	0,74	0,81	4,66	W22S04P112M-4IE3 .....
5,5	1460	89,0	89,6	89,7	0,69	0,80	0,85	8,32	1460	89,0	89,6	89,7	0,69	0,80	0,85	6,03	W22S04P132S-5,5IE3 .....
7,5	1460	90,5	90,8	90,6	0,69	0,80	0,86	11,1	1460	90,5	90,8	90,6	0,69	0,80	0,86	8,06	W22S04P132M-7,5IE3 .....
9,2	1465	90,3	91,0	91,0	0,64	0,76	0,82	13,9	1465	90,3	91,0	91,0	0,64	0,76	0,82	10,1	W22P04P160M-9,2IE3 .....
11	1470	91,1	91,8	91,6	0,65	0,77	0,83	16,7	1470	91,1	91,8	91,6	0,65	0,77	0,83	12,1	W22P04P160M-11IE3 .....
15	1465	92,2	92,5	92,3	0,67	0,78	0,84	22,3	1465	92,2	92,5	92,3	0,67	0,78	0,84	16,2	W22P04P160L-15IE3 .....
18,5	1470	92,2	92,8	92,8	0,64	0,76	0,82	28,1	1470	92,2	92,8	92,8	0,64	0,76	0,82	20,3	W22P04P180M-18,5IE3 .....
22	1470	92,3	93,0	93,2	0,66	0,77	0,83	32,8	1470	92,3	93,0	93,2	0,66	0,77	0,83	23,8	W22P04P180L-22IE3 .....
30	1480	92,9	93,6	93,7	0,63	0,75	0,81	45,7	1480	92,9	93,6	93,7	0,63	0,75	0,81	33,1	W22P04P200L-30IE3 .....
37	1480	93,4	94,0	94,1	0,70	0,80	0,85	53,4	1480	93,4	94,0	94,1	0,70	0,80	0,85	38,7	W22P04P225S/M-37IE3 .....
45	1475	93,7	94,1	94,4	0,71	0,81	0,85	64,7	1475	93,7	94,1	94,4	0,71	0,81	0,85	46,9	W22P04P225S/M-45IE3 .....
55	1480	94,3	94,7	94,7	0,69	0,80	0,85	78,9	1480	94,3	94,7	94,7	0,69	0,80	0,85	57,2	W22P04P250S/M-55IE3 .....
75	1485	94,5	95,1	95,2	0,72	0,82	0,85	107	1485	94,5	95,1	95,2	0,72	0,82	0,85	77,7	W22P04P280S/M-75IE3 .....
90	1485	94,9	95,4	95,4	0,75	0,83	0,86	126	1485	94,9	95,4	95,4	0,75	0,83	0,86	91,6	W22P04P280S/M-90IE3 .....
110	1490	94,7	95,5	95,6	0,74	0,82	0,86	154	1490	94,7	95,5	95,6	0,74	0,82	0,86	112	W22P04P315S/M-110IE3 .....
132	1490	95,1	95,7	95,8	0,74	0,82	0,86	185	1490	95,1	95,7	95,8	0,74	0,82	0,86	134	W22P04P315S/M-132IE3 .....
150	1490	95,4	95,8	95,9	0,71	0,81	0,85	213	1490	95,4	95,8	95,9	0,71	0,81	0,85	154	W22P04P315S/M-150IE3 .....
160	1490	95,2	95,9	96,0	0,74	0,82	0,86	224	1490	95,2	95,9	96,0	0,74	0,82	0,86	162	W22P04P315S/M-160IE3 .....
185	1490	95,5	96,1	96,0	0,71	0,80	0,85	262	1490	95,5	96,1	96,0	0,71	0,80	0,85	190	W22P04P315S/M-185IE3 .....
200	1485	96,0	96,3	96,0	0,78	0,85	0,87	277	1485	96,0	96,3	96,0	0,78	0,85	0,87	201	W22P04P315L-200IE3 .....
220	1490	95,8	96,1	96,2	0,72	0,81	0,85	310	1490	95,8	96,1	96,2	0,72	0,81	0,85	225	W22P04P315L-220IE3 .....
250	1490	96,0	96,2	96,2	0,73	0,82	0,86	349	1490	96,0	96,2	96,2	0,73	0,82	0,86	253	W22P04P315L-250IE3 .....
260	1490	95,8	96,0	96,2	0,77	0,84	0,87	359	1490	95,8	96,0	96,2	0,77	0,84	0,87	260	W22P04P315L-260IE3 .....
280	1490	95,9	96,0	96,2	0,74	0,83	0,86	390	1490	95,9	96,0	96,2	0,74	0,83	0,86	283	W22P04P355M/L-280IE3 .....
315	1490	96,1	96,3	96,3	0,72	0,81	0,85	444	1490	96,1	96,3	96,3	0,72	0,81	0,85	322	W22P04P355M/L-315IE3 .....
355	1490	96,5	96,8	96,5	0,74	0,83	0,86	494	1490	96,5	96,8	96,5	0,74	0,83	0,86	358	W22P04P355M/L-355IE3 .....
400	1490	95,7	96,1	96,2	0,68	0,79	0,84	571	1490	95,7	96,1	96,2	0,68	0,79	0,84	414	W22P04P355K/J-400IE3 .....
450	1490	95,8	96,1	96,2	0,69	0,80	0,84	643	1490	95,8	96,1	96,2	0,69	0,80	0,84	466	W22P04P355K/J-450IE3 .....
500	1490	95,9	96,3	96,3	0,72	0,81	0,85	706	1490	95,9	96,3	96,3	0,72	0,81	0,85	511	W22P04P355K/J-500IE3 .....

## W22 – Premium Efficiency – IE3 <sup>(1)</sup>

IV pole – 1500 rpm – 50 Hz

### Optional frames and output

Output kW	Frame	Full Load Torque (Nm)	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							
							Hot	Cold			Rated speed (rpm)	% of full load			Full load current I <sub>n</sub> (A)			
												Efficiency				Power Factor		
			50	75	100	50	75	100										
0,75	90S	4,93	7,8	2,4	3,3	0,0049	21	46	18,5	49	1455	82,5	84,0	84,5	0,60	0,73	0,80	1,60
1,1	90L	7,22	7,6	2,5	3,3	0,0055	15	33	19,5	49	1455	83,0	84,5	84,5	0,59	0,72	0,80	2,35
1,5	100L	9,95	7,7	3,1	3,4	0,0082	25	55	30,0	53	1440	85,5	86,0	86,0	0,61	0,73	0,80	3,15
2,2	112M	14,5	6,8	2	3	0,0143	31	68	41,0	56	1450	87,5	88,2	88,2	0,62	0,74	0,81	4,44
3	112M	19,7	7,1	2,3	3	0,0169	25	55	43,0	56	1455	87,0	88,0	88,0	0,62	0,74	0,81	6,07
5,5	132M	36,0	8,3	2,1	3,3	0,0491	12	26	66,0	56	1460	89,0	89,6	89,7	0,69	0,80	0,85	10,4
9,2	160M	59,6	7,2	2,5	3	0,1118	16	35	109	61	1475	90,0	91,4	91,3	0,66	0,77	0,83	17,5
11	160L	71,5	7,5	2,8	3,2	0,1191	11	24	113	61	1470	91,1	91,8	91,6	0,65	0,77	0,83	20,9
15	180M	97,5	7,0	2,5	3	0,0000	23	51	155	61	1470	91,9	92,5	92,3	0,66	0,77	0,83	28,3
18,5	180L	120	7,4	3	3,2	0,1740	13	29	168	61	1470	92,2	92,8	92,8	0,64	0,76	0,82	35,1
37	200L	239	7,0	2,6	3	0,3994	14	31	284	63	1480	93,3	94,0	94,5	0,64	0,76	0,82	68,9
75	250S/M	484	7,8	2,8	3,3	1,22	8	18	530	64	1480	95,0	95,5	95,2	0,73	0,83	0,87	131
110	280S/M	708	7,7	2,5	2,9	3,25	19	42	800	69	1485	95,3	95,6	95,6	0,73	0,82	0,86	193
200	315S/M	1287	7,1	2,4	2,4	5,30	21	46	1332	71	1485	95,8	96,0	96,0	0,78	0,85	0,87	346
200	355M/L	1283	7,6	2,3	2,5	7,01	22	48	1495	74	1490	95,9	96,5	96,2	0,72	0,81	0,85	353
220	355M/L	1411	7,4	2,2	2,5	7,34	20	44	1510	74	1490	96,0	96,6	96,2	0,72	0,80	0,85	388
250	355M/L	1603	7,3	2,3	2,5	7,70	26	57	1550	74	1490	95,9	96,6	96,2	0,74	0,82	0,86	436
260	355M/L	1667	7,3	2	2,4	8,59	26	57	1550	74	1490	95,8	96,0	96,2	0,77	0,84	0,87	448

Optional frames and output

Output kW	500 V								690 V								WEG Scandinavia Motor code See page 59
	Rated speed (rpm)	% of full load						Full load current In (A)	Rated speed (rpm)	% of full load						Full load current In (A)	
		Efficiency			Power Factor					Efficiency			Power Factor				
		50	75	100	50	75	100			50	75	100	50	75	100		
0,75	1455	82,5	84,0	84,5	0,60	0,73	0,80	1,28	1455	82,5	84,0	84,5	0,60	0,73	0,80	0,928	W22S04P90S-0,75IE3 .....
1,1	1455	83,0	84,5	84,5	0,59	0,72	0,80	1,88	1455	83,0	84,5	84,5	0,59	0,72	0,80	1,36	W22S04P90L-1,1IE3 .....
1,5	1440	85,5	86,0	86,0	0,61	0,73	0,80	2,52	1440	85,5	86,0	86,0	0,61	0,73	0,80	1,83	W22S04P100-1,5IE3 .....
2,2	1450	87,5	88,2	88,2	0,62	0,74	0,81	3,55	1450	87,5	88,2	88,2	0,62	0,74	0,81	2,57	W22S04P112M-2,2IE3 .....
3	1455	87,0	88,0	88,0	0,62	0,74	0,81	4,86	1455	87,0	88,0	88,0	0,62	0,74	0,81	3,52	W22S04P112M-3IE3 .....
5,5	1460	89,0	89,6	89,7	0,69	0,80	0,85	8,32	1460	89,0	89,6	89,7	0,69	0,80	0,85	6,03	W22S04P132M-5,5IE3 .....
9,2	1475	90,0	91,4	91,3	0,66	0,77	0,83	14,0	1475	90,0	91,4	91,3	0,66	0,77	0,83	10,1	W22S04P132M/L-9,2IE3 .....
11	1470	91,1	91,8	91,6	0,65	0,77	0,83	16,7	1470	91,1	91,8	91,6	0,65	0,77	0,83	12,1	W22P04P160L-11IE3 .....
15	1470	91,9	92,5	92,3	0,66	0,77	0,83	22,6	1470	91,9	92,5	92,3	0,66	0,77	0,83	16,4	W22P04P180M-15IE3 .....
18,5	1470	92,2	92,8	92,8	0,64	0,76	0,82	28,1	1470	92,2	92,8	92,8	0,64	0,76	0,82	20,3	W22P04P180L-18,5IE3 .....
37	1480	93,3	94,0	94,5	0,64	0,76	0,82	55,1	1480	93,3	94,0	94,5	0,64	0,76	0,82	39,9	W22P04P200L-37IE3 .....
75	1480	95,0	95,5	95,2	0,73	0,83	0,87	105	1480	95,0	95,5	95,2	0,73	0,83	0,87	75,9	W22P04P250S/M-75IE3 .....
110	1485	95,3	95,6	95,6	0,73	0,82	0,86	154	1485	95,3	95,6	95,6	0,73	0,82	0,86	112	W22P04P280S/M-110IE3 .....
200	1485	95,8	96,0	96,0	0,78	0,85	0,87	277	1485	95,8	96,0	96,0	0,78	0,85	0,87	201	W22P04P315S/M-200IE3 .....
200	1490	95,9	96,5	96,2	0,72	0,81	0,85	282	1490	95,9	96,5	96,2	0,72	0,81	0,85	205	W22P04P355M/L-200IE3 .....
220	1490	96,0	96,6	96,2	0,72	0,80	0,85	310	1490	96,0	96,6	96,2	0,72	0,80	0,85	225	W22P04P355M/L-220IE3 .....
250	1490	95,9	96,6	96,2	0,74	0,82	0,86	349	1490	95,9	96,6	96,2	0,74	0,82	0,86	253	W22P04P355M/L-250IE3 .....
260	1490	95,8	96,0	96,2	0,77	0,84	0,87	359	1490	95,8	96,0	96,2	0,77	0,84	0,87	260	W22P04P355M/L-260IE3 .....

# W22 – Premium Efficiency – IE3 (1)

VI pole – 1000 rpm – 50 Hz

Output kW	Frame	Full Load Torque (Nm)	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							Full load current I <sub>n</sub> (A)
							Rated speed (rpm)	% of full load			Power Factor							
								50			75	100	50	75	100			
0,12	63	1,27	3,1	1,8	2,1	0,0007	30	66	7,7	43	905	50,0	55,0	57,7	0,44	0,53	0,62	0,484
0,18	71	1,91	3,2	2	2,1	0,0009	30	66	11,5	43	900	56,0	62,0	63,9	0,38	0,48	0,57	0,713
0,25	80	2,50	4,3	1,7	2,4	0,0000	25	55	12,0	43	955	63,6	68,5	68,8	0,47	0,60	0,71	0,739
0,37	80	3,82	4,5	1,9	2,1	0,0025	25	55	12,5	43	925	66,0	69,5	73,5	0,51	0,65	0,75	0,969
0,55	L80	5,56	5,1	2,9	3,1	0,0037	20	44	15,5	43	945	70,5	75,2	77,2	0,45	0,58	0,69	1,49
0,75	L90S	7,62	5,2	2,5	2,8	0,0060	31	68	22,0	45	940	76,5	79,0	79,0	0,49	0,62	0,71	1,93
1,1	L90L	11,1	5,5	2,5	2,8	0,0077	20	44	26,0	45	945	79,3	81,4	81,0	0,50	0,64	0,73	2,69
1,5	100L	15,1	5,5	2,3	2,8	0,0143	31	68	32,0	44	950	81,5	82,5	82,5	0,49	0,62	0,71	3,70
2,2	112M	22,1	6,0	2,5	2,6	0,0257	26	57	46,0	52	950	83,0	84,5	84,5	0,53	0,64	0,72	5,22
3	132S	29,7	5,8	1,8	2,6	0,0416	40	88	65,0	53	965	85,0	85,6	85,8	0,53	0,66	0,73	6,91
4	132M	39,6	6,1	1,9	2,7	0,0492	25	55	70,0	53	965	86,0	86,8	86,8	0,53	0,66	0,73	9,11
5,5	132M/L	54,5	7,0	2,5	2,8	0,0755	26	57	78,0	53	965	86,5	88,0	88,0	0,50	0,64	0,70	12,9
7,5	160M	73,5	6,3	2,2	2,7	0,1404	16	35	118	56	975	88,5	89,3	89,3	0,64	0,76	0,82	14,8
9,2	160L	90,6	6,5	2	2,6	0,1756	18	40	135	56	970	89,5	90,0	90,0	0,68	0,78	0,83	17,8
11	160L	108	7,1	2,8	3,2	0,1931	12	26	140	56	975	89,0	90,1	90,5	0,60	0,73	0,80	21,9
15	180L	147	7,7	2,6	3,2	0,2970	8	18	185	56	975	91,5	91,5	91,4	0,71	0,82	0,86	27,5
18,5	200L	180	6,3	2,4	2,8	0,3510	16	35	215	60	980	91,0	91,7	91,9	0,63	0,75	0,81	35,9
22	200L	214	6,4	2,4	2,8	0,4212	15	33	225	60	980	91,4	92,0	92,4	0,64	0,76	0,81	42,4
30	225S/M	291	7,5	2,4	2,8	0,8194	15	33	380	63	985	93,0	93,4	93,1	0,69	0,80	0,84	55,4
37	250S/M	359	7,2	2,4	2,7	1,24	20	44	430	64	985	93,3	93,5	93,5	0,72	0,81	0,85	67,2
45	280S/M	437	6,4	2,1	2,7	2,35	28	62	640	65	985	93,9	93,9	93,9	0,67	0,77	0,82	84,4
55	280S/M	534	6,8	2,3	2,8	2,69	24	53	665	65	985	94,0	94,2	94,3	0,66	0,77	0,82	103
75	315S/M	724	6,3	2	2,5	4,35	37	81	920	67	990	94,6	94,9	94,9	0,67	0,77	0,82	139
90	315S/M	869	6,4	2,2	2,5	5,42	35	77	990	67	990	95,1	95,5	95,1	0,68	0,78	0,83	165
110	315S/M	1062	6,2	2,1	2,4	6,15	31	68	1040	67	990	95,4	95,6	95,3	0,70	0,80	0,83	201
132	315S/M	1274	7,2	2,6	2,7	7,23	25	55	1100	67	990	95,4	95,8	95,6	0,67	0,77	0,82	243
150	315L	1448	6,5	2,1	2,3	7,96	25	55	1200	68	990	95,4	95,7	95,7	0,69	0,80	0,85	266
160	315L	1544	7,5	2,7	2,8	6,87	22	48	1230	68	990	95,6	95,6	95,8	0,67	0,77	0,82	294
200	355M/L	1930	6,1	2,2	2,3	10,4	39	86	1620	73	990	95,5	96,0	95,9	0,66	0,76	0,80	376
220	355M/L	2113	6,5	2	2,2	12,0	36	79	1710	73	995	95,5	96,1	96,0	0,63	0,74	0,79	419
250	355M/L	2413	6,4	2,2	2,3	13,9	38	84	1830	73	990	95,7	95,9	95,9	0,64	0,75	0,79	476
280	355M/L	2689	5,5	1,9	2,2	15,0	38	84	1970	73	995	95,1	95,1	96,0	0,64	0,75	0,80	526
300	355M/L	2895	5,8	1,7	1,8	15,0	25	55	2493	73	990	95,8	96,0	96,0	0,65	0,76	0,82	550
315	355M/L	3040	6,1	2,1	2,1	15,0	25	55	2493	73	990	95,2	95,8	95,8	0,66	0,76	0,80	593
355	355K/J	3426	6,2	2	2,3	17,1	29	64	2200	73	990	95,3	95,7	95,8	0,63	0,74	0,79	677
370	355K/J (3,4)	3571	6,0	2,2	2,3	18,0	25	55	2300	73	990	95,4	95,8	95,9	0,63	0,74	0,79	705
400	355K/J (3,4)	3861	6,1	2	2,3	18,9	29	64	2346	73	990	95,4	95,8	95,9	0,63	0,74	0,79	762

Note:  
 (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.  
 (3) Motor with class F (105K) temperature rise.  
 (4) Fitted with air deflector in the drive end side.



Output kW	500 V								690 V								WEG Scandinavia Motor code See page 59
	Rated speed (rpm)	% of full load						Full load current In (A)	Rated speed (rpm)	% of full load						Full load current In (A)	
		Efficiency			Power Factor					Efficiency			Power Factor				
		50	75	100	50	75	100			50	75	100	50	75	100		
0,12	905	50,0	55,0	57,7	0,44	0,53	0,62	0,387	905	50,0	55,0	57,7	0,44	0,53	0,62	0,281	W22S06P63-0,12IE3 .....
0,18	900	56,0	62,0	63,9	0,38	0,48	0,57	0,570	900	56,0	62,0	63,9	0,38	0,48	0,57	0,413	W22S06P71-0,18IE3 .....
0,25	955	63,6	68,5	68,8	0,47	0,60	0,71	0,591	955	63,6	68,5	68,8	0,47	0,60	0,71	0,428	W22S06P71-0,25IE3 .....
0,37	925	66,0	69,5	73,5	0,51	0,65	0,75	0,775	925	66,0	69,5	73,5	0,51	0,65	0,75	0,562	W22S06P80-0,37IE3 .....
0,55	945	70,5	75,2	77,2	0,45	0,58	0,69	1,19	945	70,5	75,2	77,2	0,45	0,58	0,69	0,864	W22S06P80-0,55IE3 .....
0,75	940	76,5	79,0	79,0	0,49	0,62	0,71	1,54	940	76,5	79,0	79,0	0,49	0,62	0,71	1,12	W22S06PL90S-0,75IE3 .....
1,1	945	79,3	81,4	81,0	0,50	0,64	0,73	2,15	945	79,3	81,4	81,0	0,50	0,64	0,73	1,56	W22S06P100L-1,1IE3 .....
1,5	950	81,5	82,5	82,5	0,49	0,62	0,71	2,96	950	81,5	82,5	82,5	0,49	0,62	0,71	2,14	W22S06P100L-1,5IE3 .....
2,2	950	83,0	84,5	84,5	0,53	0,64	0,72	4,18	950	83,0	84,5	84,5	0,53	0,64	0,72	3,03	W22S06P112M-2,2IE3 .....
3	965	85,0	85,6	85,8	0,53	0,66	0,73	5,53	965	85,0	85,6	85,8	0,53	0,66	0,73	4,01	W22S06P132S-3IE3 .....
4	965	86,0	86,8	86,8	0,53	0,66	0,73	7,29	965	86,0	86,8	86,8	0,53	0,66	0,73	5,28	W22S06P132M-4IE3 .....
5,5	965	86,5	88,0	88,0	0,50	0,64	0,70	10,3	965	86,5	88,0	88,0	0,50	0,64	0,70	7,48	W22S06P132M/L-5,5IE3 .....
7,5	975	88,5	89,3	89,3	0,64	0,76	0,82	11,8	975	88,5	89,3	89,3	0,64	0,76	0,82	8,58	W22P06P160M-7,5IE3 .....
9,2	970	89,5	90,0	90,0	0,68	0,78	0,83	14,2	970	89,5	90,0	90,0	0,68	0,78	0,83	10,3	W22P06P160L-9,2IE3 .....
11	975	89,0	90,1	90,5	0,60	0,73	0,80	17,5	975	89,0	90,1	90,5	0,60	0,73	0,80	12,7	W22P06P160L-11IE3 .....
15	975	91,5	91,5	91,4	0,71	0,82	0,86	22,0	975	91,5	91,5	91,4	0,71	0,82	0,86	15,9	W22P06P180L-15IE3 .....
18,5	980	91,0	91,7	91,9	0,63	0,75	0,81	28,7	980	91,0	91,7	91,9	0,63	0,75	0,81	20,8	W22P06P200L-18,5IE3 .....
22	980	91,4	92,0	92,4	0,64	0,76	0,81	33,9	980	91,4	92,0	92,4	0,64	0,76	0,81	24,6	W22P06P200L-22IE3 .....
30	985	93,0	93,4	93,1	0,69	0,80	0,84	44,3	985	93,0	93,4	93,1	0,69	0,80	0,84	32,1	W22P06P225S/M-30IE3 .....
37	985	93,3	93,5	93,5	0,72	0,81	0,85	53,8	985	93,3	93,5	93,5	0,72	0,81	0,85	39,0	W22P06P250S/M-37IE3 .....
45	985	93,9	93,9	93,9	0,67	0,77	0,82	67,5	985	93,9	93,9	93,9	0,67	0,77	0,82	48,9	W22P06P280S/M-45IE3 .....
55	985	94,0	94,2	94,3	0,66	0,77	0,82	82,4	985	94,0	94,2	94,3	0,66	0,77	0,82	59,7	W22P06P280S/M-55IE3 .....
75	990	94,6	94,9	94,9	0,67	0,77	0,82	111	990	94,6	94,9	94,9	0,67	0,77	0,82	80,6	W22P06P315S/M-75IE3 .....
90	990	95,1	95,5	95,1	0,68	0,78	0,83	132	990	95,1	95,5	95,1	0,68	0,78	0,83	95,7	W22P06P315S/M-90IE3 .....
110	990	95,4	95,6	95,3	0,70	0,80	0,83	161	990	95,4	95,6	95,3	0,70	0,80	0,83	117	W22P06P315S/M-110IE3 .....
132	990	95,4	95,8	95,6	0,67	0,77	0,82	194	990	95,4	95,8	95,6	0,67	0,77	0,82	141	W22P06P315S/M-132IE3 .....
150	990	95,4	95,7	95,7	0,69	0,80	0,85	213	990	95,4	95,7	95,7	0,69	0,80	0,85	154	W22P06P315L150IE3 .....
160	990	95,6	95,6	95,8	0,67	0,77	0,82	235	990	95,6	95,6	95,8	0,67	0,77	0,82	170	W22P06P315L160IE3 .....
200	990	95,5	96,0	95,9	0,66	0,76	0,80	301	990	95,5	96,0	95,9	0,66	0,76	0,80	218	W22P06P355M/L-200IE3 .....
220	995	95,5	96,1	96,0	0,63	0,74	0,79	335	995	95,5	96,1	96,0	0,63	0,74	0,79	243	W22P06P355M/L-220IE3 .....
250	990	95,7	95,9	95,9	0,64	0,75	0,79	381	990	95,7	95,9	95,9	0,64	0,75	0,79	276	W22P06P355M/L-250IE3 .....
280	995	95,1	95,1	96,0	0,64	0,75	0,80	421	995	95,1	95,1	96,0	0,64	0,75	0,80	305	W22P06P355M/L-280IE3 .....
300	990	95,8	96,0	96,0	0,65	0,76	0,82	440	990	95,8	96,0	96,0	0,65	0,76	0,82	319	W22P06P355M/L-300IE3 .....
315	990	95,2	95,8	95,8	0,66	0,76	0,80	474	990	95,2	95,8	95,8	0,66	0,76	0,80	344	W22P06P355M/L-315IE3 .....
355	990	95,3	95,7	95,8	0,63	0,74	0,79	542	990	95,3	95,7	95,8	0,63	0,74	0,79	392	W22P06P355K/J-355IE3 .....
370	990	95,4	95,8	95,9	0,63	0,74	0,79	564	990	95,4	95,8	95,9	0,63	0,74	0,79	409	W22P06P355K/J-370IE3 .....
400	990	95,4	95,8	95,9	0,63	0,74	0,79	610	990	95,4	95,8	95,9	0,63	0,74	0,79	442	W22P06P355K/J-400IE3 .....

## W22 – Premium Efficiency – IE3 <sup>(1)</sup>

VI pole – 1000 rpm – 50 Hz

### Optional frames and output

Output kW	Frame	Full Load Torque (Nm)	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							
											50	75	100	50	75	100		
0,55	90S	5,47	5,5	2,3	2,8	0,0055	35	77	19,0	45	960	77,0	77,2	77,5	0,48	0,62	0,71	1,44
1,1	100L (3)	11,1	4,9	2	2,4	0,0110	32	70	28,5	44	945	80,5	81,0	81,0	0,51	0,65	0,73	2,69
1,1	112M	10,9	6,2	2,3	2,8	0,0220	28	62	39,0	52	960	80,0	81,0	82,0	0,52	0,64	0,70	2,77
1,5	112M	14,9	6,0	2,1	2,8	0,0202	28	62	42,0	52	960	84,5	85,5	85,5	0,51	0,63	0,71	3,57
2,2	132S	21,7	5,7	1,8	2,7	0,0492	30	66	63,0	53	970	86,0	87,5	87,5	0,52	0,64	0,72	5,04
45	250S/M	437	7,7	2,8	2,8	1,43	18	40	490	64	985	92,4	93,9	93,9	0,76	0,84	0,87	79,5
75	280S/M	724	7,9	2,7	3,2	4,48	17	37	725	65	990	94,1	94,7	94,7	0,63	0,75	0,81	141
150	315S/M	1448	6,5	2,3	2,5	7,96	20	44	1180	67	990	95,4	95,8	95,7	0,67	0,78	0,83	273
160	355M/L	1544	6,5	1,9	2,1	8,80	33	73	1500	73	990	94,9	95,6	95,8	0,63	0,74	0,79	305

Note:

(3) Motor with class F (105K) temperature rise.

### Optional frames and output

Output kW	500 V								690 V								WEG Scandinavia Motor code See page 59
	Rated speed (rpm)	% of full load						Full load current In (A)	Rated speed (rpm)	% of full load						Full load current In (A)	
		Efficiency			Power Factor					Efficiency			Power Factor				
		50	75	100	50	75	100			50	75	100	50	75	100		
0,55	960	77,0	77,2	77,5	0,48	0,62	0,71	1,15	960	77,0	77,2	77,5	0,48	0,62	0,71	0,835	W22S06PL90S-0,55IE3 .....
1,1	945	80,5	81,0	81,0	0,51	0,65	0,73	2,15	945	80,5	81,0	81,0	0,51	0,65	0,73	1,56	W22S06P100L-1,1IE3 .....
1,1	960	80,0	81,0	82,0	0,52	0,64	0,70	2,22	960	80,0	81,0	82,0	0,52	0,64	0,70	1,61	W22S06P112M-1,1IE3 .....
1,5	960	84,5	85,5	85,5	0,51	0,63	0,71	2,86	960	84,5	85,5	85,5	0,51	0,63	0,71	2,07	W22S06P112M-1,5IE3 .....
2,2	970	86,0	87,5	87,5	0,52	0,64	0,72	4,03	970	86,0	87,5	87,5	0,52	0,64	0,72	2,92	W22S06P132S-2,2IE3 .....
45	985	92,4	93,9	93,9	0,76	0,84	0,87	63,6	985	92,4	93,9	93,9	0,76	0,84	0,87	46,1	W22P06P250S/M-45IE3 .....
75	990	94,1	94,7	94,7	0,63	0,75	0,81	113	990	94,1	94,7	94,7	0,63	0,75	0,81	81,7	W22P06P280S/M-75IE3 .....
150	990	95,4	95,8	95,7	0,67	0,78	0,83	218	990	95,4	95,8	95,7	0,67	0,78	0,83	158	W22P06P315S/M-150IE3 .....
160	990	94,9	95,6	95,8	0,63	0,74	0,79	244	990	94,9	95,6	95,8	0,63	0,74	0,79	177	W22P06P355M/L-160IE3 .....

## W22 – Premium Efficiency – IE3 (1)

VIII pole – 750 rpm – 50 Hz

Output kW	Frame	Full Load Torque (Nm)	Locked Rotor Current II/ In	Locked Rotor Torque TI/ Tn	Break- down Torque Tb/ Tn	Inertia J (kgm2)	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			Power Factor			
												50	75	100	50	75		100
0,12	71	1,76	2,4	1,8	2,0	0,0009	30	66	11,5	41	650	44,0	50,0	52,5	0,35	0,43	0,50	0,660
0,18	80	2,53	3,3	2	2,2	0,0029	30	66	13,5	42	680	51,0	57,0	58,7	0,45	0,55	0,65	0,681
0,25	80	3,44	3,5	1,9	2,1	0,0034	30	66	14,5	42	695	54,0	60,0	64,1	0,44	0,57	0,67	0,840
0,37	90S	5,12	3,7	2	2,3	0,0055	30	66	19,0	43	690	61,0	66,0	69,3	0,41	0,53	0,62	1,24
0,55	90L	7,62	3,8	1,9	2,2	0,0066	29	64	23,0	43	690	65,0	70,0	73,0	0,44	0,57	0,67	1,62
0,75	100L	10,1	4,6	1,9	2,3	0,0127	30	66	30,5	50	710	72,5	75,5	75,5	0,41	0,53	0,62	2,31
1,1	100L	14,8	4,6	2,1	2,4	0,0143	30	66	33,0	50	710	73,0	76,0	77,7	0,41	0,53	0,62	3,30
1,5	112M	20,3	5,0	2,5	2,8	0,0238	28	62	43,0	46	705	79,0	79,5	79,9	0,45	0,59	0,68	3,98
2,2	132S	29,6	6,2	2,3	2,5	0,0690	27	59	69,0	48	710	81,5	82,0	82,1	0,51	0,65	0,72	5,37
3	132M	40,4	6,4	2,4	2,6	0,0838	21	46	75,0	48	710	82,5	83,5	83,5	0,51	0,64	0,72	7,20
4	160M	52,7	5,0	2,1	2,3	0,1229	34	75	114	51	725	85,0	86,0	86,0	0,52	0,65	0,72	9,32
5,5	160M	72,5	5,0	2,1	2,3	0,1492	28	62	123	51	725	86,0	87,3	87,3	0,52	0,65	0,73	12,5
7,5	160L	98,2	5,3	2,2	2,5	0,2199	22	48	145	51	730	87,0	88,3	88,5	0,52	0,65	0,73	16,8
9,2	180M	121	6,0	2	2,6	0,2575	15	33	173	51	725	89,0	89,3	89,6	0,63	0,75	0,82	18,1
11	180L	145	6,5	2,3	2,7	0,2846	12	26	185	51	725	89,5	90,0	90,0	0,55	0,68	0,76	23,2
15	200L	196	4,8	1,9	2,1	0,4571	34	75	220	56	730	89,0	89,6	89,8	0,56	0,68	0,74	32,6
18,5	225S/M	240	6,5	1,7	2,5	0,8219	28	62	377	56	735	89,8	90,3	90,3	0,63	0,75	0,81	36,5
22	225S/M	286	6,5	1,8	2,5	0,9574	22	48	402	56	735	90,3	90,8	90,8	0,63	0,75	0,81	43,2
30	250S/M	390	7,4	1,9	2,8	1,43	18	40	490	56	735	91,0	91,5	91,5	0,66	0,77	0,83	57,0
37	280S/M	478	6,0	1,8	2,3	2,82	32	70	673	59	740	91,5	92,0	92,0	0,63	0,73	0,79	73,5
45	280S/M	581	6,0	1,8	2,2	3,49	30	66	670	59	740	92,2	92,4	92,4	0,63	0,73	0,79	89,0
55	315S/M	710	6,0	1,7	2,2	5,11	40	88	936	62	740	92,2	92,7	92,7	0,65	0,75	0,80	107
75	315S/M	968	6,0	1,8	2,2	6,56	40	88	900	62	740	92,8	93,3	93,3	0,65	0,75	0,80	145
90	315S/M	1162	6,0	1,9	2,2	7,84	40	88	990	62	740	93,1	93,6	93,6	0,65	0,75	0,80	173
110	315L	1420	6,0	1,9	2,2	9,46	35	77	1367	68	740	93,4	93,9	93,9	0,64	0,74	0,79	214
132	355M/L	1693	6,2	1,3	2,3	14,1	48	106	1587	70	745	93,7	94,2	94,2	0,64	0,74	0,79	256
160	355M/L	2052	6,4	1,3	2,3	17,4	56	123	1747	70	745	94,0	94,5	94,5	0,64	0,75	0,80	305
185	355M/L	2373	6,3	1,3	2,3	18,5	56	123	1819	70	745	95,5	95,9	96,0	0,64	0,75	0,80	348
200	355M/L	2565	6,2	1,3	2,3	18,9	56	123	1891	70	745	94,3	94,8	94,8	0,65	0,76	0,80	381
220	355M/L	2822	7,2	1,6	2,3	19,8	30	66	2493	70	745	94,8	95,6	95,6	0,67	0,78	0,82	405
250	355K/J (4)	3206	6,2	1,5	2,4	21,7	47	103	2092	70	745	95,1	95,7	95,8	0,62	0,73	0,79	477
260	355K/J (4)	3335	6,2	1,5	2,4	21,7	47	103	2092	70	745	95,1	95,7	95,8	0,62	0,73	0,79	496
280	355K/J (4)	3591	7,5	2	2,8	25,0	44	97	2279	70	745	95,1	95,7	95,8	0,61	0,73	0,79	534

### Optional frames and output

Output kW	Frame	Full Load Torque (Nm)	Locked Rotor Current II/ In	Locked Rotor Torque TI/ Tn	Break- down Torque Tb/ Tn	Inertia J (kgm2)	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			Power Factor			
												50	75	100	50	75		100
37	250S/M	481	8,5	2,8	3,3	1,61	12	26	550	56	735	91,5	92,0	92,0	0,60	0,72	0,79	73,5
55	280S/M	710	7,0	2	2,5	3,38	26	57	812	59	740	92,2	92,7	92,7	0,60	0,71	0,77	111
110	315S/M	1420	6,0	1,9	2,2	9,46	35	77	1367	62	740	93,4	93,9	93,9	0,64	0,74	0,79	214
132	315L	1704	6,0	2	2,3	11,3	34	75	1508	68	740	93,7	94,2	94,2	0,64	0,74	0,79	256

Note:

(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.  
 (4) Fitted with air deflector in the drive end side.

Output kW	500 V								690 V								WEG Scandinavia Motor code See page 59
	Rated speed (rpm)	% of full load						Full load current In (A)	Rated speed (rpm)	% of full load						Full load current In (A)	
		Efficiency			Power Factor					Efficiency			Power Factor				
		50	75	100	50	75	100			50	75	100	50	75	100		
0,12	650	44,0	50,0	52,5	0,35	0,43	0,50	0,528	650	44,0	50,0	52,5	0,35	0,43	0,50	0,383	W22S08P71-0,12IE3.....
0,18	680	51,0	57,0	58,7	0,45	0,55	0,65	0,545	680	51,0	57,0	58,7	0,45	0,55	0,65	0,395	W22S08P80-0,18IE3.....
0,25	695	54,0	60,0	64,1	0,44	0,57	0,67	0,672	695	54,0	60,0	64,1	0,44	0,57	0,67	0,487	W22S08P80-0,25IE3.....
0,37	690	61,0	66,0	69,3	0,41	0,53	0,62	0,992	690	61,0	66,0	69,3	0,41	0,53	0,62	0,719	W22S08P90S-0,37IE3.....
0,55	690	65,0	70,0	73,0	0,44	0,57	0,67	1,30	690	65,0	70,0	73,0	0,44	0,57	0,67	0,939	W22S08P90L-0,55IE3.....
0,75	710	72,5	75,5	75,5	0,41	0,53	0,62	1,85	710	72,5	75,5	75,5	0,41	0,53	0,62	1,34	W22S08P100L-0,75IE3.....
1,1	710	73,0	76,0	77,7	0,41	0,53	0,62	2,64	710	73,0	76,0	77,7	0,41	0,53	0,62	1,91	W22S08P100L-1,1IE3.....
1,5	705	79,0	79,5	79,9	0,45	0,59	0,68	3,18	705	79,0	79,5	79,9	0,45	0,59	0,68	2,31	W22S08P112M-1,5IE3.....
2,2	710	81,5	82,0	82,1	0,51	0,65	0,72	4,30	710	81,5	82,0	82,1	0,51	0,65	0,72	3,11	W22S08P132S-2,2IE3.....
3	710	82,5	83,5	83,5	0,51	0,64	0,72	5,76	710	82,5	83,5	83,5	0,51	0,64	0,72	4,17	W22S08P132M-3IE3.....
4	725	85,0	86,0	86,0	0,52	0,65	0,72	7,46	725	85,0	86,0	86,0	0,52	0,65	0,72	5,40	W22P08P160M-4IE3.....
5,5	725	86,0	87,3	87,3	0,52	0,65	0,73	10,0	725	86,0	87,3	87,3	0,52	0,65	0,73	7,25	W22P08P160M-5,5IE3.....
7,5	730	87,0	88,3	88,5	0,52	0,65	0,73	13,4	730	87,0	88,3	88,5	0,52	0,65	0,73	9,74	W22P08P160L-7,5IE3.....
9,2	725	89,0	89,3	89,6	0,63	0,75	0,82	14,5	725	89,0	89,3	89,6	0,63	0,75	0,82	10,5	W22P08P180M-9,2IE3.....
11	725	89,5	90,0	90,0	0,55	0,68	0,76	18,6	725	89,5	90,0	90,0	0,55	0,68	0,76	13,4	W22P08P180L-11IE3.....
15	730	89,0	89,6	89,8	0,56	0,68	0,74	26,1	730	89,0	89,6	89,8	0,56	0,68	0,74	18,9	W22P08P200L-15IE3.....
18,5	735	89,8	90,3	90,3	0,63	0,75	0,81	29,2	735	89,8	90,3	90,3	0,63	0,75	0,81	21,2	W22P08P225S/M-18,5IE3.....
22	735	90,3	90,8	90,8	0,63	0,75	0,81	34,6	735	90,3	90,8	90,8	0,63	0,75	0,81	25,0	W22P08P225S/M-22IE3.....
30	735	91,0	91,5	91,5	0,66	0,77	0,83	45,6	735	91,0	91,5	91,5	0,66	0,77	0,83	33,0	W22P08P250S/M-30IE3.....
37	740	91,5	92,0	92,0	0,63	0,73	0,79	58,8	740	91,5	92,0	92,0	0,63	0,73	0,79	42,6	W22P08P280S/M-37IE3.....
45	740	92,2	92,4	92,4	0,63	0,73	0,79	71,2	740	92,2	92,4	92,4	0,63	0,73	0,79	51,6	W22P08P280S/M-45IE3.....
55	740	92,2	92,7	92,7	0,65	0,75	0,80	85,6	740	92,2	92,7	92,7	0,65	0,75	0,80	62,0	W22P08P315S/M-55IE3.....
75	740	92,8	93,3	93,3	0,65	0,75	0,80	116	740	92,8	93,3	93,3	0,65	0,75	0,80	84,1	W22P08P315S/M-75IE3.....
90	740	93,1	93,6	93,6	0,65	0,75	0,80	138	740	93,1	93,6	93,6	0,65	0,75	0,80	100	W22P08P315S/M-90IE3.....
110	740	93,4	93,9	93,9	0,64	0,74	0,79	171	740	93,4	93,9	93,9	0,64	0,74	0,79	124	W22P08P315L-110IE3.....
132	745	93,7	94,2	94,2	0,64	0,74	0,79	205	745	93,7	94,2	94,2	0,64	0,74	0,79	148	W22P08P355M/L-132IE3.....
160	745	94,0	94,5	94,5	0,64	0,75	0,80	244	745	94,0	94,5	94,5	0,64	0,75	0,80	177	W22P08P355M/L-160IE3.....
185	745	95,5	95,9	96,0	0,64	0,75	0,80	278	745	95,5	95,9	96,0	0,64	0,75	0,80	202	W22P08P355M/L-185IE3.....
200	745	94,3	94,8	94,8	0,65	0,76	0,80	305	745	94,3	94,8	94,8	0,65	0,76	0,80	221	W22P08P355M/L-200IE3.....
220	745	94,8	95,6	95,6	0,67	0,78	0,82	324	745	94,8	95,6	95,6	0,67	0,78	0,82	235	W22P08P355M/L-220IE3.....
250	745	95,1	95,7	95,8	0,62	0,73	0,79	382	745	95,1	95,7	95,8	0,62	0,73	0,79	277	W22P08P355K/J-250IE3.....
260	745	95,1	95,7	95,8	0,62	0,73	0,79	397	745	95,1	95,7	95,8	0,62	0,73	0,79	288	W22P08P355K/J-260IE3.....
280	745	95,1	95,7	95,8	0,61	0,73	0,79	427	745	95,1	95,7	95,8	0,61	0,73	0,79	310	W22P08P355K/J-280IE3.....

### Optional frames and output

Output kW	500 V								690 V								WEG Scandinavia Motor code See page 59
	Rated speed (rpm)	% of full load						Full load current In (A)	Rated speed (rpm)	% of full load						Full load current In (A)	
		Efficiency			Power Factor					Efficiency			Power Factor				
		50	75	100	50	75	100			50	75	100	50	75	100		
37	735	91,5	92,0	92,0	0,60	0,72	0,79	58,8	735	91,5	92,0	92,0	0,60	0,72	0,79	42,6	W22P08P250S/M-37IE3.....
55	740	92,2	92,7	92,7	0,60	0,71	0,77	88,8	740	92,2	92,7	92,7	0,60	0,71	0,77	64,3	W22P08P280S/M-55IE3.....
110	740	93,4	93,9	93,9	0,64	0,74	0,79	171	740	93,4	93,9	93,9	0,64	0,74	0,79	124	W22P08P315S/M-110IE3.....
132	740	93,7	94,2	94,2	0,64	0,74	0,79	205	740	93,7	94,2	94,2	0,64	0,74	0,79	148	W22P08P315L-132IE3.....

## W22 – Super Premium Efficiency – IE4 <sup>(1)</sup>

II pole – 3000 rpm – 50 Hz

Output kW	Frame	Full Load Torque (Nm)	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							Full load current I <sub>n</sub> (A)
							Rated speed (rpm)	% of full load			Power Factor							
								50			75	100	50	75	100			
5,5	132S	17,9	7,9	2,6	3,4	0,0252	27	59	69,0	67	2940	89,0	90,6	90,9	0,71	0,81	0,86	10,2
7,5	L132S	24,4	8,3	2,7	3,4	0,0285	16	35	73,0	67	2940	90,3	91,5	91,7	0,69	0,80	0,86	13,7
9,2	L132M/L	30,0	8,7	2,7	3,4	0,0356	16	35	79,0	67	2935	91,0	91,9	92,1	0,72	0,82	0,87	16,6
11	160M	35,6	7,9	2,9	3,5	0,0588	14	31	120	67	2955	91,1	92,3	92,8	0,69	0,80	0,86	19,9
15	160M	48,5	8,2	2,9	3,5	0,0698	11	24	126	67	2955	92,1	93,0	93,3	0,70	0,81	0,86	27,0
18,5	160L	59,9	8,2	3,1	3,5	0,0841	10	22	144	67	2950	92,8	93,4	93,7	0,71	0,82	0,87	32,8
22	180M	71,1	8,2	2,7	3,4	0,1183	8	18	176	67	2955	93,3	93,8	94,0	0,73	0,82	0,87	38,8
30	200L	96,5	8,2	3,4	3,1	0,2119	16	35	265	69	2970	93,0	94,1	94,5	0,70	0,80	0,85	53,9
37	200L	119	8,1	3,4	3	0,2373	14	31	275	69	2970	93,6	94,5	94,8	0,72	0,82	0,86	65,5
45	225S/M	145	7,4	2,3	2,9	0,3641	17	37	425	74	2965	94,8	95,2	95,2	0,82	0,88	0,91	75,0
55	250S/M	177	8,2	3	3,1	0,6068	28	62	520	74	2970	94,6	95,3	95,5	0,81	0,88	0,90	92,4
75	280S/M	240	7,9	2,4	3,1	1,47	50	110	800	76	2980	95,1	96,0	96,3	0,80	0,87	0,90	125
90	280S/M	289	7,8	2,4	2,9	1,64	45	99	890	76	2980	95,5	96,2	96,5	0,82	0,88	0,90	150
110	315S/M	353	7,8	2,3	3	2,32	42	92	992	76	2980	94,9	95,9	96,5	0,79	0,86	0,89	185
132	315S/M	423	7,4	2,3	2,8	2,77	36	79	1095	76	2980	95,6	96,2	96,6	0,83	0,89	0,91	217
150	315S/M	481	7,6	2,4	2,9	3,20	42	92	1197	76	2980	96,0	96,6	96,8	0,82	0,88	0,90	249
160	315S/M	513	7,6	2,4	2,9	3,20	42	92	1197	76	2980	96,0	96,6	96,8	0,82	0,88	0,90	265
185	315L	593	7,9	2,6	2,8	3,50	29	64	1315	77	2980	95,9	96,5	96,8	0,84	0,89	0,91	303
200	315L	641	8,2	2,7	2,9	3,72	32	70	1345	77	2980	96,3	96,8	97,0	0,83	0,89	0,91	327
220	315L	705	8,1	2,7	2,7	3,95	25	55	1390	77	2980	96,3	96,7	96,9	0,85	0,90	0,92	356
250	315L	803	7,5	2,6	2,6	4,15	20	44	1434	77	2975	96,7	96,9	96,9	0,85	0,90	0,92	405
260	315L	835	7,5	2,6	2,6	4,15	20	44	1434	77	2975	96,7	96,9	96,9	0,85	0,90	0,92	421
280	355M/L	896	8,4	2,1	2,9	5,36	32	70	1664	80	2985	96,2	96,8	97,0	0,83	0,89	0,91	458
300	355M/L	960	7,5	2	2,6	5,68	32	70	1751	80	2985	96,5	96,9	97,0	0,86	0,91	0,92	485
315	355M/L	1008	8,2	2,4	2,7	6,01	23	51	1838	80	2985	96,5	96,9	97,0	0,86	0,91	0,92	509
330	355K/J (4)	1056	8,2	2,4	2,6	6,33	24	53	2000	82	2985	96,7	97,0	97,1	0,89	0,92	0,93	527
355	355K/J (4)	1136	8,2	2,3	2,6	6,76	20	44	2043	82	2985	96,8	97,1	97,1	0,89	0,92	0,93	567

Note:

(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.

(4) Fitted with air deflector in the drive end side.



Output kW	500 V								690 V								WEG Scandinavia Motor code See page 59
	Rated speed (rpm)	% of full load						Full load current In (A)	Rated speed (rpm)	% of full load						Full load current In (A)	
		Efficiency			Power Factor					Efficiency			Power Factor				
		50	75	100	50	75	100			50	75	100	50	75	100		
5,5	2940	89,0	90,6	90,9	0,71	0,81	0,86	8,16	2940	89,0	90,6	90,9	0,71	0,81	0,86	5,91	W22S02P132S-5,5IE4 .....
7,5	2940	90,3	91,5	91,7	0,69	0,80	0,86	11,0	2940	90,3	91,5	91,7	0,69	0,80	0,86	7,94	W22S02PL132S-7,5IE4 .....
9,2	2935	91,0	91,9	92,1	0,72	0,82	0,87	13,3	2935	91,0	91,9	92,1	0,72	0,82	0,87	9,62	W22S02PL132M/L-9,2IE4 .....
11	2955	91,1	92,3	92,8	0,69	0,80	0,86	15,9	2955	91,1	92,3	92,8	0,69	0,80	0,86	11,5	W22P02P160M-11IE4 .....
15	2955	92,1	93,0	93,3	0,70	0,81	0,86	21,6	2955	92,1	93,0	93,3	0,70	0,81	0,86	15,7	W22P02P160M-15IE4 .....
18,5	2950	92,8	93,4	93,7	0,71	0,82	0,87	26,2	2950	92,8	93,4	93,7	0,71	0,82	0,87	19,0	W22P02P160L-18,5IE4 .....
22	2955	93,3	93,8	94,0	0,73	0,82	0,87	31,0	2955	93,3	93,8	94,0	0,73	0,82	0,87	22,5	W22P02P180M-22IE4 .....
30	2970	93,0	94,1	94,5	0,70	0,80	0,85	43,1	2970	93,0	94,1	94,5	0,70	0,80	0,85	31,2	W22P02P200L-30IE4 .....
37	2970	93,6	94,5	94,8	0,72	0,82	0,86	52,4	2970	93,6	94,5	94,8	0,72	0,82	0,86	38,0	W22P02P200L-37IE4 .....
45	2965	94,8	95,2	95,2	0,82	0,88	0,91	60,0	2965	94,8	95,2	95,2	0,82	0,88	0,91	43,5	W22P02P225S/M-45IE4 .....
55	2970	94,6	95,3	95,5	0,81	0,88	0,90	73,9	2970	94,6	95,3	95,5	0,81	0,88	0,90	53,6	W22P02P250S/M-55IE4 .....
75	2980	95,1	96,0	96,3	0,80	0,87	0,90	100	2980	95,1	96,0	96,3	0,80	0,87	0,90	72,5	W22P02P280S/M-75IE4 .....
90	2980	95,5	96,2	96,5	0,82	0,88	0,90	120	2980	95,5	96,2	96,5	0,82	0,88	0,90	87,0	W22P02P280S/M-90IE4 .....
110	2980	94,9	95,9	96,5	0,79	0,86	0,89	148	2980	94,9	95,9	96,5	0,79	0,86	0,89	107	W22P02P315S/M-110IE4 .....
132	2980	95,6	96,2	96,6	0,83	0,89	0,91	174	2980	95,6	96,2	96,6	0,83	0,89	0,91	126	W22P02P315S/M-132IE4 .....
150	2980	96,0	96,6	96,8	0,82	0,88	0,90	199	2980	96,0	96,6	96,8	0,82	0,88	0,90	144	W22P02P315S/M-150IE4 .....
160	2980	96,0	96,6	96,8	0,82	0,88	0,90	212	2980	96,0	96,6	96,8	0,82	0,88	0,90	154	W22P02P315S/M-160IE4 .....
185	2980	95,9	96,5	96,8	0,84	0,89	0,91	242	2980	95,9	96,5	96,8	0,84	0,89	0,91	176	W22P02P315L-185IE4 .....
200	2980	96,3	96,8	97,0	0,83	0,89	0,91	262	2980	96,3	96,8	97,0	0,83	0,89	0,91	190	W22P02P315L-200IE4 .....
220	2980	96,3	96,7	96,9	0,85	0,90	0,92	285	2980	96,3	96,7	96,9	0,85	0,90	0,92	206	W22P02P315L-220IE4 .....
250	2975	96,7	96,9	96,9	0,85	0,90	0,92	324	2975	96,7	96,9	96,9	0,85	0,90	0,92	235	W22P02P315L-250IE4 .....
260	2975	96,7	96,9	96,9	0,85	0,90	0,92	337	2975	96,7	96,9	96,9	0,85	0,90	0,92	244	W22P02P315L-260IE4 .....
280	2985	96,2	96,8	97,0	0,83	0,89	0,91	366	2985	96,2	96,8	97,0	0,83	0,89	0,91	266	W22P02P355M/L-280IE4 .....
300	2985	96,5	96,9	97,0	0,86	0,91	0,92	388	2985	96,5	96,9	97,0	0,86	0,91	0,92	281	W22P02P355M/L-300IE4 .....
315	2985	96,5	96,9	97,0	0,86	0,91	0,92	407	2985	96,5	96,9	97,0	0,86	0,91	0,92	295	W22P02P355M/L-315IE4 .....
330	2985	96,7	97,0	97,1	0,89	0,92	0,93	422	2985	96,7	97,0	97,1	0,89	0,92	0,93	306	W22P02P355K/J-330IE4 .....
355	2985	96,8	97,1	97,1	0,89	0,92	0,93	454	2985	96,8	97,1	97,1	0,89	0,92	0,93	329	W22P02P355K/J-355IE4 .....

## W22 – Super Premium Efficiency – IE4 <sup>(1)</sup>

IV pole – 1500 rpm – 50 Hz

Output kW	Frame	Full Load Torque (Nm)	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)	400 V						Full load current I <sub>n</sub> (A)
							Hot	Cold				% of full load			Power Factor			
												50	75	100	50	75	100	
5,5	L132S	35,7	8,8	2,9	3,5	0,0640	16	35	78,0	56	1470	90,8	91,8	91,9	0,63	0,75	0,82	10,5
7,5	L132M/L	48,7	8,8	2,3	3,6	0,0791	14	31	84,0	56	1470	91,4	92,3	92,6	0,62	0,74	0,81	14,4
9,2	160M	59,4	8,6	3	3,3	0,1398	16	35	115	61	1480	91,9	92,9	93,0	0,61	0,74	0,81	17,6
11	160M	71,3	8,2	3	3,5	0,1537	14	31	125	61	1475	92,0	93,0	93,3	0,61	0,73	0,81	21,0
15	160L	97,2	7,2	3	3,2	0,1813	28	62	150	61	1475	92,7	93,6	93,9	0,63	0,75	0,81	28,5
18,5	L180M	119	7,9	2,5	3,4	0,2291	16	35	185	61	1480	93,6	94,2	94,2	0,64	0,76	0,83	34,2
22	L180L	142	8,2	2,7	3,5	0,2594	14	31	200	61	1480	93,7	94,3	94,5	0,63	0,75	0,82	41,0
30	200L	193	7,4	2,8	3,2	0,3979	18	40	284	63	1485	93,9	94,7	94,9	0,60	0,73	0,81	56,3
37	225S/M	238	7,9	2,8	3,2	0,7346	21	46	430	63	1485	94,6	95,1	95,2	0,67	0,78	0,84	66,8
45	225S/M	290	8,3	2,9	3,3	0,7346	15	33	440	63	1485	94,2	95,0	95,4	0,62	0,74	0,82	83,0
55	250S/M	354	8,3	3	3,4	1,21	17	37	531	64	1485	94,9	95,4	95,7	0,66	0,78	0,83	100
75	280S/M	481	7,9	2,4	2,9	2,78	40	88	830	69	1490	95,5	96,1	96,2	0,72	0,81	0,85	132
90	280S/M	579	7,9	2,4	2,9	3,40	40	88	895	69	1485	95,9	96,3	96,4	0,73	0,82	0,86	157
110	315S/M	705	7,4	2,7	2,7	4,42	54	119	1150	71	1490	95,8	96,4	96,8	0,73	0,82	0,86	191
132	315S/M	846	7,5	2,8	2,7	5,29	50	110	1332	71	1490	96,1	96,7	96,9	0,73	0,82	0,86	229
150	315L	962	7,7	3	2,6	5,73	40	88	1430	72	1490	96,3	96,8	96,9	0,74	0,83	0,86	260
160	315L	1026	7,7	3	2,6	5,73	40	88	1430	72	1490	96,3	96,8	96,9	0,74	0,83	0,86	277
185	315L	1186	7,7	3	2,6	6,17	32	70	1480	72	1490	96,4	96,8	96,9	0,74	0,83	0,86	320
200	315L	1283	7,9	3	2,7	6,51	31	68	1527	72	1490	96,4	96,9	97,0	0,74	0,83	0,86	346
220	355M/L	1411	7,9	2,6	2,8	8,95	36	79	1670	74	1490	95,9	96,6	96,9	0,72	0,81	0,85	386
250	355M/L	1603	8,2	2,7	2,8	10,0	33	73	1730	74	1490	96,1	96,7	97,0	0,72	0,81	0,85	438
260	355M/L	1667	8,2	2,7	2,8	10,0	33	73	1730	74	1490	96,1	96,7	97,0	0,72	0,81	0,85	455
280	355M/L	1796	7,9	2,7	2,7	10,5	28	62	1772	74	1490	96,3	96,8	97,0	0,72	0,81	0,85	490
300	355M/L	1924	7,8	2,7	2,6	11,1	24	53	1825	74	1490	96,4	96,8	97,0	0,73	0,82	0,86	519
315	355M/L	2020	7,8	2,9	2,6	11,6	27	59	1878	74	1490	96,5	96,9	97,0	0,73	0,82	0,86	545
330	355K/J (4)	2116	7,3	2,5	2,4	12,5	28	62	2062	76	1490	96,7	97,0	97,0	0,77	0,84	0,87	564
355	355K/J (4)	2277	7,6	2,8	2,5	13,5	23	51	2089	76	1490	96,7	97,0	97,0	0,75	0,83	0,87	607

## Optional frames and high output designs

Output kW	Frame	Full Load Torque (Nm)	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)	400 V						Full load current I <sub>n</sub> (A)
							Hot	Cold				% of full load			Power Factor			
												50	75	100	50	75	100	
220	315L	1411	7,8	2,6	2,6	5,86	16	35	1430	73	1490	96,1	96,6	96,7	0,74	0,83	0,86	382
250	315L	1603	8,0	2,7	2,6	6,41	16	35	1527	73	1490	96,2	96,6	96,9	0,73	0,82	0,86	433
260	315L	1667	8,0	2,7	2,6	6,41	16	35	1527	73	1490	96,2	96,6	96,9	0,73	0,82	0,86	450

Note:

(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.

(4) Fitted with air deflector in the drive end side.

Output kW	500 V								690 V								WEG Scandinavia Motor code See page 59
	Rated speed (rpm)	% of full load						Full load current In (A)	Rated speed (rpm)	% of full load						Full load current In (A)	
		Efficiency			Power Factor					Efficiency			Power Factor				
		50	75	100	50	75	100			50	75	100	50	75	100		
5,5	1470	90,8	91,8	91,9	0,63	0,75	0,82	8,40	1470	90,8	91,8	91,9	0,63	0,75	0,82	6,09	W22S04PL132S-5,5IE4 .....
7,5	1470	91,4	92,3	92,6	0,62	0,74	0,81	11,5	1470	91,4	92,3	92,6	0,62	0,74	0,81	8,35	W22S04PL132M/L7,5IE4 .....
9,2	1480	91,9	92,9	93,0	0,61	0,74	0,81	14,1	1480	91,9	92,9	93,0	0,61	0,74	0,81	10,2	W22P04P160M-9,2IE4 .....
11	1475	92,0	93,0	93,3	0,61	0,73	0,81	16,8	1475	92,0	93,0	93,3	0,61	0,73	0,81	12,2	W22P04P160M-11IE4 .....
15	1475	92,7	93,6	93,9	0,63	0,75	0,81	22,8	1475	92,7	93,6	93,9	0,63	0,75	0,81	16,5	W22P04P160L-15IE4 .....
18,5	1480	93,6	94,2	94,2	0,64	0,76	0,83	27,4	1480	93,6	94,2	94,2	0,64	0,76	0,83	19,8	W22P04PL180M-18,5IE4 .....
22	1480	93,7	94,3	94,5	0,63	0,75	0,82	32,8	1480	93,7	94,3	94,5	0,63	0,75	0,82	23,8	W22P04PL180L-22IE4 .....
30	1485	93,9	94,7	94,9	0,60	0,73	0,81	45,0	1485	93,9	94,7	94,9	0,60	0,73	0,81	32,6	W22P04P200L-30IE4 .....
37	1485	94,6	95,1	95,2	0,67	0,78	0,84	53,4	1485	94,6	95,1	95,2	0,67	0,78	0,84	38,7	W22P04P225S/M-37IE4 .....
45	1485	94,2	95,0	95,4	0,62	0,74	0,82	66,4	1485	94,2	95,0	95,4	0,62	0,74	0,82	48,1	W22P04P225S/M-45IE4 .....
55	1485	94,9	95,4	95,7	0,66	0,78	0,83	80,0	1485	94,9	95,4	95,7	0,66	0,78	0,83	58,0	W22P04P250S/M-55IE4 .....
75	1490	95,5	96,1	96,2	0,72	0,81	0,85	106	1490	95,5	96,1	96,2	0,72	0,81	0,85	76,5	W22P04P280S/M-75IE4 .....
90	1485	95,9	96,3	96,4	0,73	0,82	0,86	126	1485	95,9	96,3	96,4	0,73	0,82	0,86	91,0	W22P04P280S/M-90IE4 .....
110	1490	95,8	96,4	96,8	0,73	0,82	0,86	153	1490	95,8	96,4	96,8	0,73	0,82	0,86	111	W22P04P315S/M-110IE4 .....
132	1490	96,1	96,7	96,9	0,73	0,82	0,86	183	1490	96,1	96,7	96,9	0,73	0,82	0,86	133	W22P04P315S/M-132IE4 .....
150	1490	96,3	96,8	96,9	0,74	0,83	0,86	208	1490	96,3	96,8	96,9	0,74	0,83	0,86	151	W22P04P315L-150IE4 .....
160	1490	96,3	96,8	96,9	0,74	0,83	0,86	222	1490	96,3	96,8	96,9	0,74	0,83	0,86	161	W22P04P315L-160IE4 .....
185	1490	96,4	96,8	96,9	0,74	0,83	0,86	256	1490	96,4	96,8	96,9	0,74	0,83	0,86	186	W22P04P315L-185IE4 .....
200	1490	96,4	96,9	97,0	0,74	0,83	0,86	277	1490	96,4	96,9	97,0	0,74	0,83	0,86	201	W22P04P315L-200IE4 .....
220	1490	95,9	96,6	96,9	0,72	0,81	0,85	309	1490	95,9	96,6	96,9	0,72	0,81	0,85	224	W22P04P355M/L-220IE4 .....
250	1490	96,1	96,7	97,0	0,72	0,81	0,85	350	1490	96,1	96,7	97,0	0,72	0,81	0,85	254	W22P04P355M/L-250IE4 .....
260	1490	96,1	96,7	97,0	0,72	0,81	0,85	364	1490	96,1	96,7	97,0	0,72	0,81	0,85	264	W22P04P355M/L-260IE4 .....
280	1490	96,3	96,8	97,0	0,72	0,81	0,85	392	1490	96,3	96,8	97,0	0,72	0,81	0,85	284	W22P04P355M/L-280IE4 .....
300	1490	96,4	96,8	97,0	0,73	0,82	0,86	415	1490	96,4	96,8	97,0	0,73	0,82	0,86	301	W22P04P355M/L-300IE4 .....
315	1490	96,5	96,9	97,0	0,73	0,82	0,86	436	1490	96,5	96,9	97,0	0,73	0,82	0,86	316	W22P04P355M/L-315IE4 .....
330	1490	96,7	97,0	97,0	0,77	0,84	0,87	451	1490	96,7	97,0	97,0	0,77	0,84	0,87	327	W22P04P355K/J-330IE4 .....
355	1490	96,7	97,0	97,0	0,75	0,83	0,87	486	1490	96,7	97,0	97,0	0,75	0,83	0,87	352	W22P04P355K/J-355IE4 .....

Output kW	500 V								690 V								WEG Scandinavia Motor code
	Rated speed (rpm)	% of full load						Full load current In (A)	Rated speed (rpm)	% of full load						Full load current In (A)	
		Efficiency			Power Factor					Efficiency			Power Factor				
		50	75	100	50	75	100			50	75	100	50	75	100		
220	1490	95,9	96,6	96,9	0,72	0,81	0,85	302	1490	95,9	96,6	96,9	0,72	0,81	0,85	221	W22P04P315L-220IE4 .....
250	1490	96,1	96,7	97,0	0,72	0,81	0,85	346	1490	96,1	96,7	97,0	0,72	0,81	0,85	251	W22P04P315L-250IE4 .....
260	1490	96,1	96,7	97,0	0,72	0,81	0,85	360	1490	96,1	96,7	97,0	0,72	0,81	0,85	261	W22P04P315L-260IE4 .....

## W22 – Super Premium Efficiency – IE4 <sup>(1)</sup>

VI pole – 1000 rpm – 50 Hz

Output kW	Frame	Full Load Torque (Nm)	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							
							Hot	Cold			Rated speed (rpm)	% of full load			Full load current I <sub>n</sub> (A)			
												Efficiency				Power Factor		
			50	75	100	50	75	100										
3	132S	29,6	6,3	1,8	2,5	0,0568	48	106	61,0	52	970	88,0	89,3	88,6	0,53	0,66	0,73	6,69
4	132M	39,4	6,6	2	2,6	0,0643	35	77	68,0	52	970	88,5	89,6	89,5	0,53	0,66	0,73	8,84
5,5	L132M/L	53,9	7,3	2,5	3	0,0833	27	59	84,0	52	975	88,7	90,1	90,5	0,50	0,63	0,71	12,4
7,5	160M	73,1	6,8	2,6	2,9	0,1931	21	46	130	56	980	90,6	91,5	91,3	0,62	0,75	0,81	14,6
9,2	160L	89,7	7,1	2,5	2,9	0,2370	23	51	148	56	980	91,0	91,6	91,8	0,63	0,75	0,81	17,9
11	160L	107	7,3	2,9	3,2	0,2370	14	31	150	56	980	90,3	91,5	92,3	0,58	0,71	0,79	21,8
15	180L	146	8,2	2,8	3,4	0,3765	13	29	210	56	980	92,0	92,6	92,9	0,63	0,75	0,82	28,4
18,5	200L	180	6,6	2,4	2,7	0,4896	23	51	235	60	980	92,7	93,2	93,4	0,63	0,75	0,81	35,3
22	200L	213	7,0	2,6	2,9	0,5246	18	40	250	60	985	92,4	93,2	93,7	0,59	0,72	0,79	42,9
30	225S/M	291	7,4	2,4	2,8	1,02	23	51	430	63	985	93,7	94,1	94,2	0,69	0,80	0,84	54,7
37	250S/M	359	7,3	2,6	2,8	1,65	30	66	520	64	985	94,3	94,7	94,5	0,70	0,81	0,85	66,5
45	280S/M	434	7,0	2,3	2,8	3,25	35	77	723	65	990	94,4	95,0	95,2	0,65	0,76	0,82	83,2
55	280S/M	531	7,2	2,6	3	3,92	36	79	740	65	990	94,6	95,3	95,4	0,64	0,75	0,81	103
75	315S/M	724	6,8	2,3	2,7	7,25	60	132	1106	67	990	95,3	96,0	96,2	0,67	0,77	0,82	137
90	315S/M	869	6,7	2,2	2,4	7,96	48	106	1180	67	990	95,7	96,1	96,2	0,69	0,79	0,83	163
110	315L	1062	6,9	2,5	2,6	9,04	44	97	1320	68	990	95,7	96,2	96,3	0,67	0,77	0,82	201
132	315L	1274	7,2	2,6	2,7	9,95	36	79	1384	68	990	95,9	96,3	96,4	0,67	0,77	0,82	241
150	315L	1448	7,2	2,7	2,6	11,0	30	66	1448	68	990	95,9	96,3	96,4	0,67	0,78	0,83	271
160	315L	1544	7,2	2,7	2,6	11,0	30	66	1448	68	990	95,9	96,3	96,5	0,67	0,78	0,83	288
185	355M/L	1777	6,6	2,1	2,4	13,2	50	110	1854	73	995	95,8	96,4	96,5	0,64	0,75	0,81	342
200	355M/L	1921	6,6	2,2	2,3	14,1	48	106	1912	73	995	95,8	96,4	96,5	0,64	0,75	0,81	369
220	355M/L	2123	6,5	2,1	2,3	15,0	48	106	1970	73	990	95,9	96,5	96,5	0,65	0,76	0,81	406
250	355K/J (4)	2413	6,5	2,2	2,3	17,1	42	92	2246	73	990	96,1	96,5	96,6	0,66	0,76	0,82	456
260	355K/J (4)	2509	6,5	2,2	2,3	17,1	42	92	2246	73	990	96,1	96,5	96,6	0,66	0,76	0,82	474
280	355K/J (4)	2702	6,6	2,3	2,3	18,0	35	77	2300	73	990	95,8	96,4	96,6	0,64	0,75	0,81	517
300	355K/J (4)	2895	6,5	2,2	2,3	18,9	35	77	2346	73	990	95,9	96,4	96,6	0,65	0,76	0,81	553
315	355K/J (4)	3040	6,7	2,4	2,3	18,9	31	68	2346	73	990	95,7	96,3	96,6	0,63	0,74	0,80	588

### Optional frames and high output designs

Output kW	Frame	Full Load Torque (Nm)	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							
							Hot	Cold			Rated speed (rpm)	% of full load			Full load current I <sub>n</sub> (A)			
												Efficiency				Power Factor		
			50	75	100	50	75	100										
110	315S/M	1058	6,9	2,5	2,6	7,23	44	97	1106	67	993	95,7	96,2	96,2	0,67	0,77	0,82	201

Note:

(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.

(4) Fitted with air deflector in the drive end side.

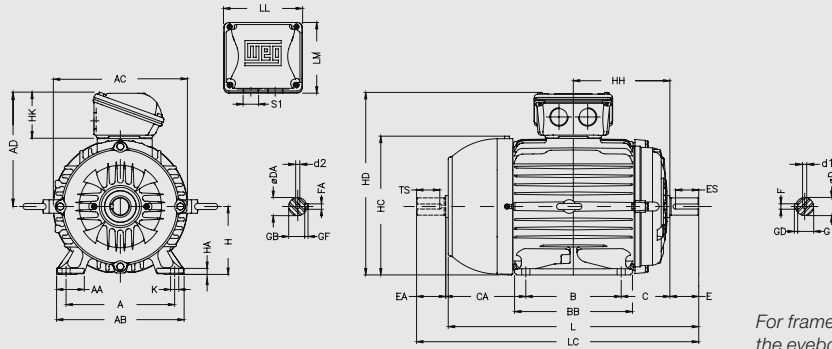
Output kW	500 V								690 V								WEG Scandinavia Motor code See page 59
	Rated speed (rpm)	% of full load						Full load current In (A)	Rated speed (rpm)	% of full load						Full load current In (A)	
		Efficiency			Power Factor					Efficiency			Power Factor				
		50	75	100	50	75	100			50	75	100	50	75	100		
3	970	88,0	89,3	88,6	0,53	0,66	0,73	5,35	970	88,0	89,3	88,6	0,53	0,66	0,73	3,88	W22S06P132S-3IE4 .....
4	970	88,5	89,6	89,5	0,53	0,66	0,73	7,07	970	88,5	89,6	89,5	0,53	0,66	0,73	5,12	W22S06P132M-4IE4 .....
5,5	975	88,7	90,1	90,5	0,50	0,63	0,71	9,92	975	88,7	90,1	90,5	0,50	0,63	0,71	7,19	W22S06PL132M/L5,5IE4 .....
7,5	980	90,6	91,5	91,3	0,62	0,75	0,81	11,7	980	90,6	91,5	91,3	0,62	0,75	0,81	8,46	W22P06P160M-7,5IE4 .....
9,2	980	91,0	91,6	91,8	0,63	0,75	0,81	14,3	980	91,0	91,6	91,8	0,63	0,75	0,81	10,4	W22P06P160L-9,2IE4 .....
11	980	90,3	91,5	92,3	0,58	0,71	0,79	17,4	980	90,3	91,5	92,3	0,58	0,71	0,79	12,6	W22P06P160L-11IE4 .....
15	980	92,0	92,6	92,9	0,63	0,75	0,82	22,7	980	92,0	92,6	92,9	0,63	0,75	0,82	16,5	W22P06P180L-15IE4 .....
18,5	980	92,7	93,2	93,4	0,63	0,75	0,81	28,2	980	92,7	93,2	93,4	0,63	0,75	0,81	20,5	W22P06P200L-18,5IE4 .....
22	985	92,4	93,2	93,7	0,59	0,72	0,79	34,3	985	92,4	93,2	93,7	0,59	0,72	0,79	24,9	W22P06P200L-22IE4 .....
30	985	93,7	94,1	94,2	0,69	0,80	0,84	43,8	985	93,7	94,1	94,2	0,69	0,80	0,84	31,7	W22P06P225S/M-30IE4 .....
37	985	94,3	94,7	94,5	0,70	0,81	0,85	53,2	985	94,3	94,7	94,5	0,70	0,81	0,85	38,6	W22P06P250S/M-37IE4 .....
45	990	94,4	95,0	95,2	0,65	0,76	0,82	66,6	990	94,4	95,0	95,2	0,65	0,76	0,82	48,2	W22P06P280S/M-45IE4 .....
55	990	94,6	95,3	95,4	0,64	0,75	0,81	82,4	990	94,6	95,3	95,4	0,64	0,75	0,81	59,7	W22P06P280S/M-55IE4 .....
75	990	95,3	96,0	96,2	0,67	0,77	0,82	110	990	95,3	96,0	96,2	0,67	0,77	0,82	79,4	W22P06P315S/M-75IE4 .....
90	990	95,7	96,1	96,2	0,69	0,79	0,83	130	990	95,7	96,1	96,2	0,69	0,79	0,83	94,5	W22P06P315S/M-90IE4 .....
110	990	95,7	96,2	96,3	0,67	0,77	0,82	161	990	95,7	96,2	96,3	0,67	0,77	0,82	117	W22P06P315L-110IE4 .....
132	990	95,9	96,3	96,4	0,67	0,77	0,82	193	990	95,9	96,3	96,4	0,67	0,77	0,82	140	W22P06P315L-132IE4 .....
150	990	95,9	96,3	96,4	0,67	0,78	0,83	217	990	95,9	96,3	96,4	0,67	0,78	0,83	157	W22P06P315L-150IE4 .....
160	990	95,9	96,3	96,5	0,67	0,78	0,83	230	990	95,9	96,3	96,5	0,67	0,78	0,83	167	W22P06P315L-160IE4 .....
185	995	95,8	96,4	96,5	0,64	0,75	0,81	274	995	95,8	96,4	96,5	0,64	0,75	0,81	198	W22P06P355M/L-185IE4 .....
200	995	95,8	96,4	96,5	0,64	0,75	0,81	295	995	95,8	96,4	96,5	0,64	0,75	0,81	214	W22P06P355M/L-200IE4 .....
220	990	95,9	96,5	96,5	0,65	0,76	0,81	325	990	95,9	96,5	96,5	0,65	0,76	0,81	235	W22P06P355M/L-220IE4 .....
250	990	96,1	96,5	96,6	0,66	0,76	0,82	365	990	96,1	96,5	96,6	0,66	0,76	0,82	264	W22P06P355K/J-250IE4 .....
260	990	96,1	96,5	96,6	0,66	0,76	0,82	379	990	96,1	96,5	96,6	0,66	0,76	0,82	275	W22P06P355K/J-260IE4 .....
280	990	95,8	96,4	96,6	0,64	0,75	0,81	414	990	95,8	96,4	96,6	0,64	0,75	0,81	300	W22P06P355K/J-280IE4 .....
300	990	95,9	96,4	96,6	0,65	0,76	0,81	442	990	95,9	96,4	96,6	0,65	0,76	0,81	321	W22P06P355K/J-300IE4 .....
315	990	95,7	96,3	96,6	0,63	0,74	0,80	470	990	95,7	96,3	96,6	0,63	0,74	0,80	341	W22P06P355K/J-315IE4 .....

Output kW	500 V								690 V								WEG Scandinavia Motor code
	Rated speed (rpm)	% of full load						Full load current In (A)	Rated speed (rpm)	% of full load						Full load current In (A)	
		Efficiency			Power Factor					Efficiency			Power Factor				
		50	75	100	50	75	100			50	75	100	50	75	100		
110	990	95,7	96,2	96,3	0,67	0,77	0,82	161	990	95,7	96,2	96,3	0,67	0,77	0,82	117	W22P06P315S/M-110IE4 .....

## 18. Mechanical Data

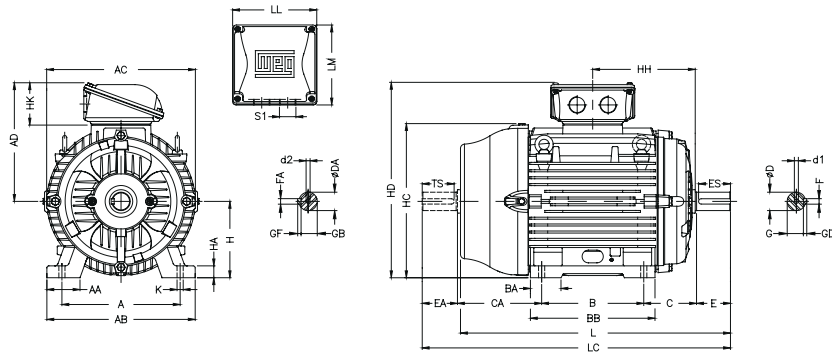
### Foot Mounted Motors, Terminal Box Top

#### Frames 63 to 132M/L

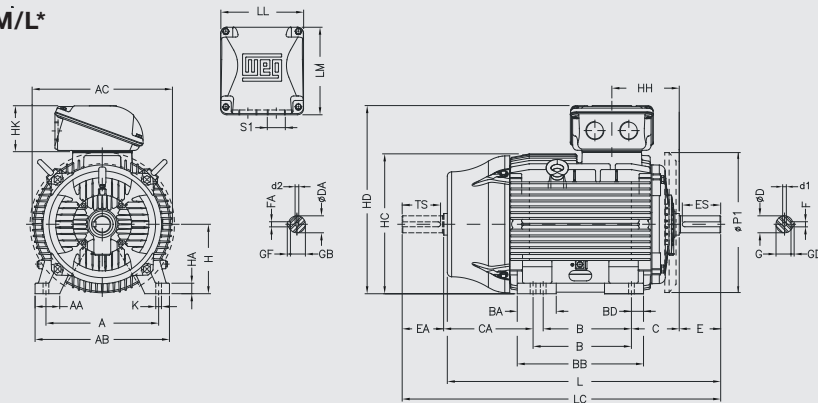


For frames 132S, 132M/L and 132M, the eyebolt will be fitted at 50°.

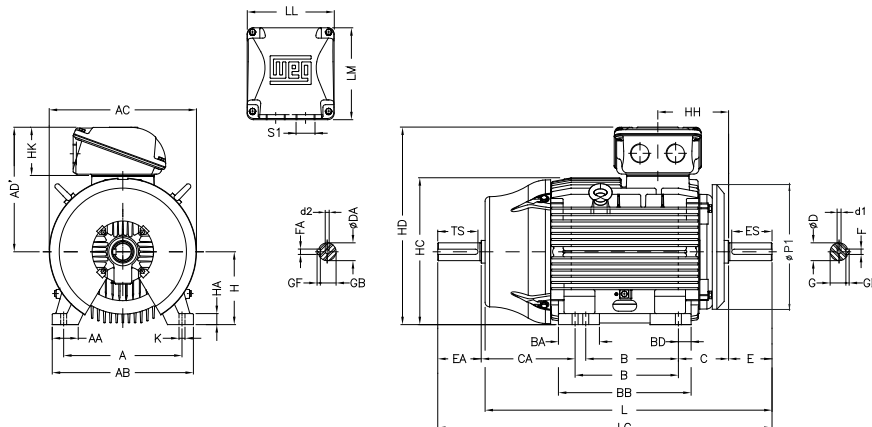
#### Frames 160M to 200L



#### Frames 225 to 355M/L\*



#### Frame 355K/J\*



\* Some outputs in frame sizes 315 and 355 are equipped with an air deflector at the D.E. In this case the dimension P1 will be 780mm and 880mm for frames 315 and 355 respectively.



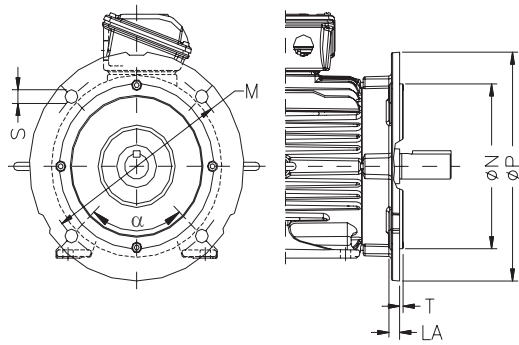
Frame	A	AA	AB	AC	AD	AD'	B	BA	BB	BD	C	CA	Shaft											
													D	E	ES	F	G	GD	DA	EA	TS	FA	GB	GF
63	100	25,5	116	133	123		80		95		40	78	11j6	23	14	4	8,5	4	9j6	20	12	3	7,2	3
71	112	28,5	132	141	131		90		113,5		45	88	14j6	30	18	5	11	5	11j6	23	14	4	8,5	4
80												93												
L80	125	30,7	149	159	140				125,5		50	104	19j6	40	28	6	15,5	6	14j6	30	18		11	
90S												142												
L90S												104												
90L	140	36,5	164	184	159				131		56	135	24j6	50	36		20		16j6	40	28	5	13	5
L90L												104												
L90L												135												
100L												118												
L100L	160	40	188	206	169				173		63	162				8		7	22j6	50	36	6	18,5	6
112M												128												
L112M	190	40,5	220	227	192				177		70	158	28j6	60	45		24		24j6				20	
132S																								
L132S																								
132M	216	45,5	248	272	220				178		89	150	38k6	80	63	10	33		28j6	60	45	8	24	7
L132M																								
132M/L							178/203		250									8						
L132M/L																								
160M							210		254															
160L	254	44	292	329	266		254	63	298		108	174	42k6			12	37		42k6			12	37	8
L160L																								
180M							241		294															
L180M																								
180L	279	78	350	360	281		279	70	332		121	200	48k6	110	80	14	42,5	9	48k6	110	80	14	42,5	9
L180L																								
200M							267		305															
200L	318	82	385	402	319		305	82	370		133	222	55m6			16	49	10						
225S/M	356	80	436	455		384	286/311	124	412	41	149	319/294	55m6*	110*	100*	16*	49*	10*	55m6*	110*	100*	16*	49*	10*
250S/M	406		506	486		398	311/349	146	467	59	168	354/316	60m6	140	125	18	53	11	60m6	140	125	18	53	11
280S/M	457	100	557	599		465	368/419	151	517	49	190	385/334	60m6*			18	53*	11	60m6				53	
315S/M						530	406/457	184	621	70	216	494*/443	65m6	140	125	18*	58*	11*	60m6*	140	125	18	53*	11
315L	508	120	630	657		575	508	219	752	81	216	502	80m6	170	160	22	71	14	65m6				58	
355M/L						620	560/630	230	760	65	254	483/413	65m6*	140*	125*	18*	58*	11*	60m6*	140*	125*	18*	53*	11*
355K/J	610	140	750	736		725	710/800	325	955	70		528/438	70m6	140*	125*	20*	67,5*	12*	60m6*	140*	125*	18*	53*	11*
													100m6	210	200	28	90	16	80m6	170	160	22	71	14

Frame	H	HA	HC	HD	HH	HK	LL	LM	K	L	LC	S1	d1	d2	Bearings	
															D.E.	N.D.E.
63	63		130	186	80					216	241		EM4	EM3	6201 ZZ	
71	71	7	145	202	90	59	108,5	99	7	250	276	2xM20x1.5	DM5	EM4	6202 ZZ	
80	80	8	163	220	100					277	313		DM6	DM4	6204 ZZ	6203 ZZ
L80										325	360					
90S										304	350					
L90S										335	381					
90L	90	9	182	249	106	67	115	104	10	329	375	2xM25x1.5	DM8	DM6	6205 ZZ	6204 ZZ
L90L										360	406					
100L	100		205	269	133					376	431					
L100L										418	475		DM10	DM8	6206 ZZ	6205 ZZ
112M										394	448					
L112M	112	10	235	304	140					423	478				6207 ZZ	6206 ZZ
132S										452	519					
L132S						80	140	133	12	476	544	2xM32x1.5	DM12	DM10	6308 ZZ	6207 ZZ
132M	132	16	274	352	178					489	557					
132M/L										515	582					
L132M/L										538,5	607					
160M										598	712					
160L	160	17	331	426	213					642	756				6309 C3	6209 Z-C3
L160L										676	790					
180M										664	782	2xM40x1.5	DM16	DM16		
L180M										706	824					
180L	180	28	366	461	241,5	101	198,5	190	14,5	702	820				6311 C3	6211 Z-C3
L180L										744	862					
200M										729	842					
200L	200	30	407	519	266,5	119,5	230	220	18,5	767	880				6312 C3	6212 Z-C3
										856*	974*	2xM50x1.5				
225S/M	225	34	453	609	212	153	269	285		886	1034				6314 C3	
250S/M	250	43	493	648	214					965	1113					
280S/M	280	42	580	745	266	151	314	312	24	1071	1223				6314 C3*	
315S/M												2xM63x1.5			6316 C3	
315L	315	48	644						28	1244*	1392*				6319 C3	6316 C3
										1274	1426				6319 C3	6316 C3
										1353*	1506*				6319 C3	6316 C3
										1389	1536				6316 C3*	6314 C3*
355M/L										1412*	1577*		DM20*		6322 C3	6319 C3
										1482	1677		DM24		6316 C3*	6314 C3*
355K/J	355	50	723						35	1607*	1772*	2xM80x2	DM20*		6322 C3	6319 C3
										1677	1872		DM24			

Notes:  
 (\*) Dimension applicable to 2 pole motors

Flange mounted motors

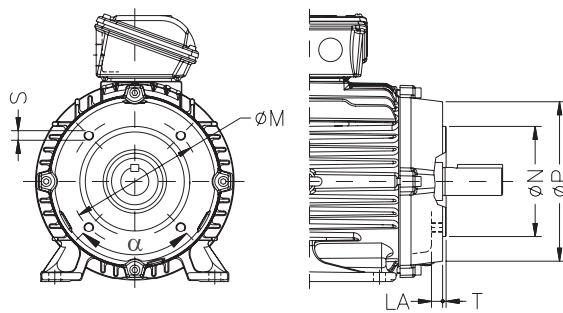
“FF” Flange B5



Flange “FF”									
Frame	Flange	LA	M	N	P	S	T	$\alpha$	N° of holes
63	FF-115	9	115	95	140	10	3	45°	4
71	FF-130		130	110	160				
80	FF-165	10	165	130	200	12	3,5		
90									
100	FF-215	11	215	180	250	15	4		
112									
132	FF-265	12	265	230	300				
160	FF-300	18	300	250	350	19	5		
180									
200	FF-350		350	300	400				
225	FF-400	18	400	350	450	19	5	22°30'	8
250	FF-500		500	450	550				
280									
315	FF-600	22	600	550	660	24	6		
355	FF-740		740	680	800/880*				

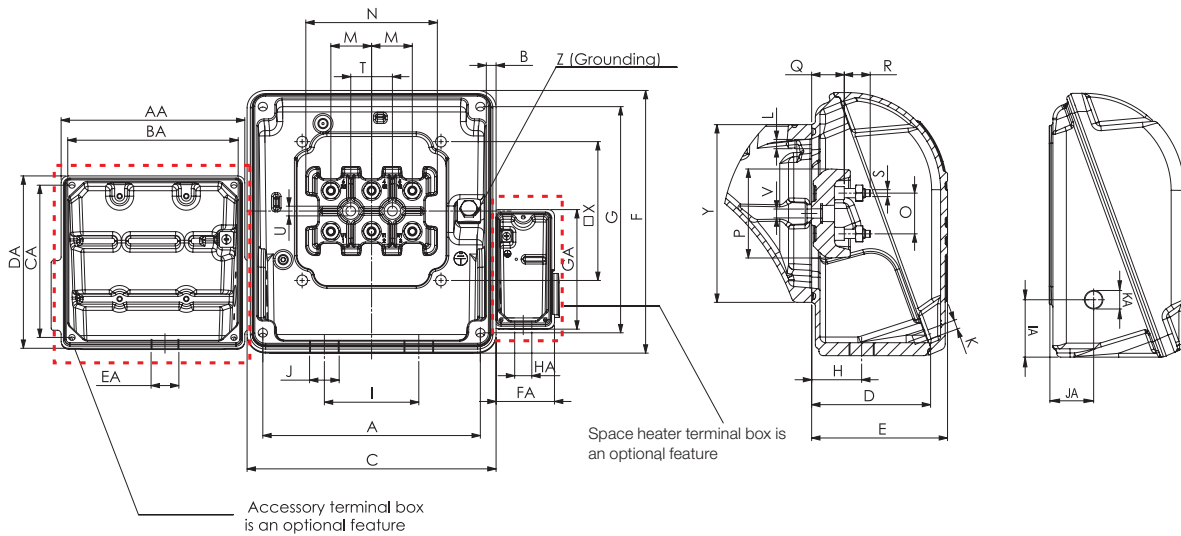
\*Only for motors fitted with air deflector in drive end side.

“C-DIN” Flange B14



Frame	Flange	LA	M	N	P	S	T	$\alpha$	N° of holes
63	C-90	9.5	75	60	90	M5	2.5	45°	4
71	C-105	8	85	70	105	M6			
80	C-120	10.5	100	80	120	M8	3		
90	C-140	12	115	95	140				
100	C-160	13.5	130	110	160		3.5		
112									
132	C-200	15.5	165	130	200	M10			
160	C-250	19	215	180	249	M12x1,75	6,3		

## 19. Terminal box drawings



Frame	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T	U	Flange Size
63	90	3.5	108.5	51.5	59	96	85	27	2xM20x1.5	M5x0.8	M5x0.8	16	75	16	35	13.5	12	M4x0.7	20	5.8	-
71																					
80																					
90	98	3	114.5	59.5	67	101	91	31	2xM25x1.5	M6x1.0	M6x1.0	23	55	23	52	17	16	M5x0.8	23	6.5	
100																					
112	117	2.5	138	71	80	130.5	117	36.5	2xM32x1.5	M8x1.25	M8x1.25	28	90	28	60	21.5	20.5	M6x1	28	6.6	
132																					
160	175	4	198	90	100.5	187.5	175	49	2xM40x1.5 1xM16x1.5	M10x1.5	M10x1.5	44	140	44	94	28	28	M10x1.5	45	10.5	
180																					
200	235	12.5	269	133	153	301	260	71	2xM63x1.5 1xM16x1.5	M12x1.75	M12x1.75	45	153	45	108	34	40	M12x1.75	65	10.5	
225S/M	235	12.5	269	133	153	301	260	71	2xM63x1.5 1xM16x1.5												M10x1.5
250S/M																					
280S/M	275	13.5	314	202	226	422	390	97	2xM63x1.5 2xM20x1.5	-	M14x2.0	65 80***	210	65 80***	146	48	48	M12x1,75 M16x2,0***	65	10.5	
315S/M																					
315L	365	14.5	404	267	355	729	678	187	2xM63x1.5 2xM20x1.5	-	M14x2.0	65 80***	210	65 80***	146	48	48	M12x1,75 M16x2,0***	65	10.5	
355M/L																					
355K/J**	415	-	442	232*	318*	729	678	152*	2xM63x1.5 2xM20x1.5	M10x1.5	M12x1.75	80	-	105	-	-	-	M20x2.5	-	-	

Frame	V	X	Y	Z	AA	BA	CA	DA	EA	FA	GA	HA	IA	JA	KA	Max number of connectors		
																Main	Accessories	Space heater
63	M5x0.8	56	77	0.5-6 mm <sup>2</sup>	109	90	85	98	M20x1.5	68	101.4	M20x1.5	23	17.5	M20x1.5	4	16	4
71			78															
80			81															
90			77															
100			81															
112			107															
132	70	103	2-10 mm <sup>2</sup>															
160	M6x1.0	110	140	5.2-25 mm <sup>2</sup>	139	117	117	133	M20x1.5	68	131.2	M20x1.5	47	40	M20x1.5	12	26	4
180			155	5.2-35 mm <sup>2</sup>														
200	M8x1.25	120	155	5.2-35 mm <sup>2</sup>	139	117	117	133	M20x1.5	68	131.2	M20x1.5	47	45	M20x1.5	12	26	4
225S/M			192	25-50 mm <sup>2</sup>														
250S/M	M10x1.5	150	197	25-50 mm <sup>2</sup>	139	117	117	133	M20x1.5	68	131.2	M20x1.5	62	48	M20x1.5	12	26	4
280S/M			204	35-70 mm <sup>2</sup>														
315S/M	M10x1.5	200	260	35-70 mm <sup>2</sup>	139	117	117	133	M20x1.5	68	131.2	M20x1.5	77	56	M20x1.5	12	26	4
315L			260	85-120 mm <sup>2</sup>														
355M/L	4xM6x1,5	290	300	85-120 mm <sup>2</sup>	139	117	117	133	M20x1.5	68	131.2	M20x1.5	97	79	M20x1.5	12	26	4
355K/J			57	95														

Notes:  
 \* Dimension is applicable to right or left terminal box mounting  
 \*\* Oversized terminal box  
 \*\*\* Full load current ≥ 400 A

## 20. Drip cover data

Utilization of a rain drip cover increases the total length of the motor. The additional land length can be seen in the table.

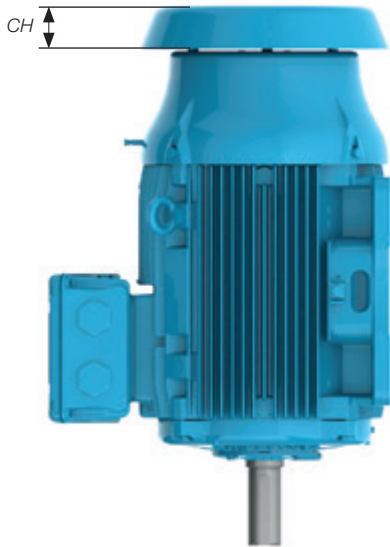


Figure 35 – Motor with drip cover

Frame	Dimension CH [increase motor length (mm)]
63	18
71	
80	
90	
100	28
112	31
132	
160	47
180	57
200	67
225S/M	81
250S/M	
280S/M	91
315S/M	
315L	
355M/L	
355K/J	

## 21. Distance to wall

Ensure that the air inlet and outlet opening are not blocked. The minimum clearance to the nearest wall (L) should be at least  $\frac{1}{4}$  of the fan cover diameter (D), see Figure 7.1. The intake air temperature must be at ambient temperature.

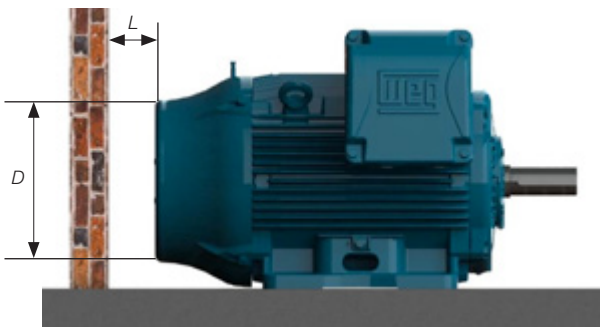


Figure 7.1 – Minimum distance between the fan cover and wall.

Frame	Distance between the fan cover and the wall ( L )
IEC	mm
63	25
71	26
80	30
90	33
100	36
112	41
132	50
160	65
180	68
200	78
225S/M	85
250S/M	85
280S/M	108
315S/M	122
315L	122
355M/L	136
355K/J	136

Table 7.1 – Minimum distance between the fan cover and wall

## 22. External Motor Dimensions with Forced Ventilation

The use of the forced ventilation kit changes the motor length the overall motor length will be increased according to the table below.

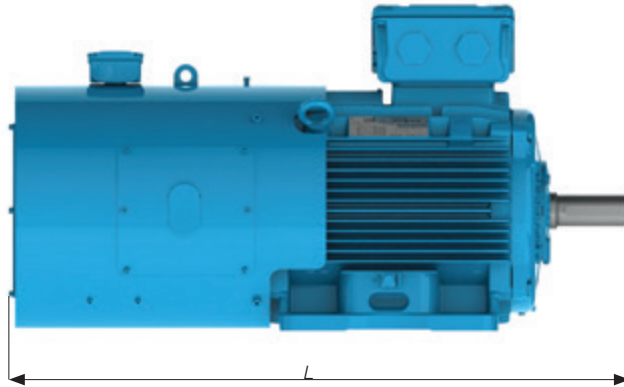


Figure 35 - Motor with forced ventilation

Frame size	Poles	Total motor length in mm (L)	
		Without forced ventilation	With forced ventilation
90S	All	304	548
L90S	All	335	579
90L	All	329	573
L90L	All	360	604
100L	All	376	646
L100L	All	420	690
112M	All	393	660
L112M	All	423	690
132S	All	452	715
132M	All	490	753
132M/L	All	515	778
160M	All	598	855
160L	All	642	899
180M	All	664	908
180L	All	702	946
200M	All	729	976
200L	All	767	1014
225S/M	2	856	1140
	4/8	886	1170
250S/M	2	965	1217
	4/8	965	1217
280S/M	2	1071	1348
	4/8	1071	1348
315S/M	2	1244	1459
	4/8	1274	1489
315L	2	1353	1568
	4/8	1383	1598
355M/L	2	1412	1786
	4/8	1482	1856
355K/J	2	1607	1981
	4/8	1677	2051

## 23. Silencer

The silencer for W22 processmotors reduces the noise level up to 5 dB(A), and it is available on 225–355 frames for foot-mounted and flange-mounted motors.

It is made of 2 mm steel or stainless steel plate and is internally covered by a sound absorbing material. For foot-mounted the silencer fits loosely over the motor, and has a rubber strip to seal against the floor.

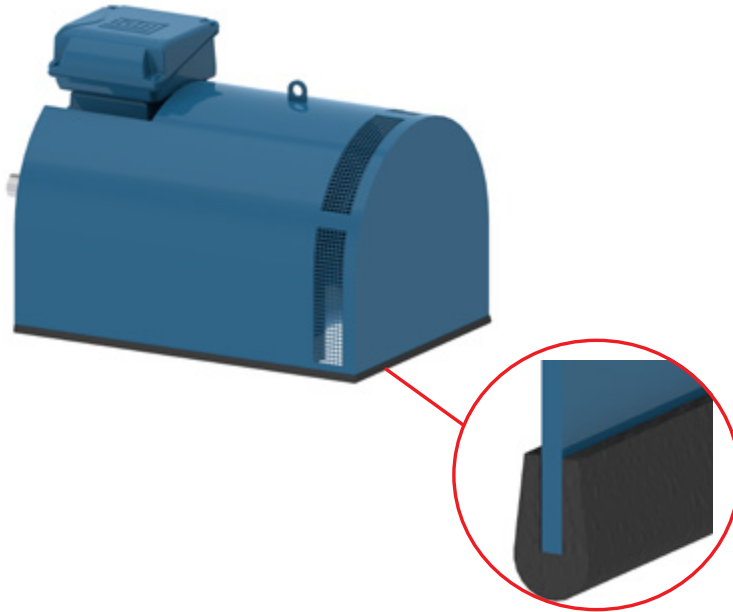
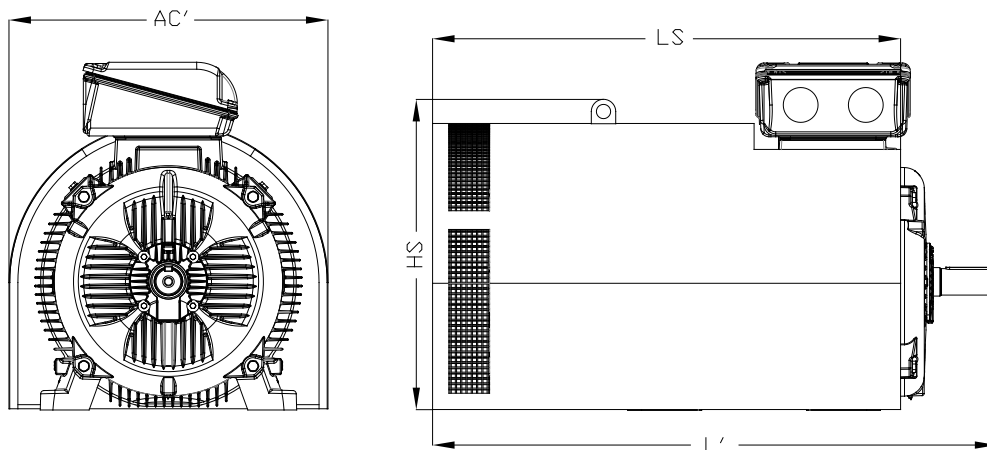


Figure 36 - Silencer for W22 processmotors.

### Silencer dimensional



Frame	AC'	L'	LS	HS
225S/M	564	955*	760	567
		985		
250S/M	604	1065	830	612
280S/M	704	1205	950	687
315S/M	784	1387*	1150	762
		1417		
355M/L	854	1587*	1305	834
		1657		
355K/J	854	1782*	1500	834
		1852		

\* Dimension for 2-pole motors.

## 24. How to order / Motor Code

Use the description as below to enter Motor Code.

On the nameplate, see figure 20 and 21 on page 10, and in the order confirmation we state our part. no. (SAP Code). For us to be able to process your order quickly please use this part. no. (SAP Code) when you order a similar motor again.

Please transmit all purchaseorders directly to our order department at [wsc-order@weg.net](mailto:wsc-order@weg.net)

### WEG Scandinavia Motor Code according to pages 32 to 51

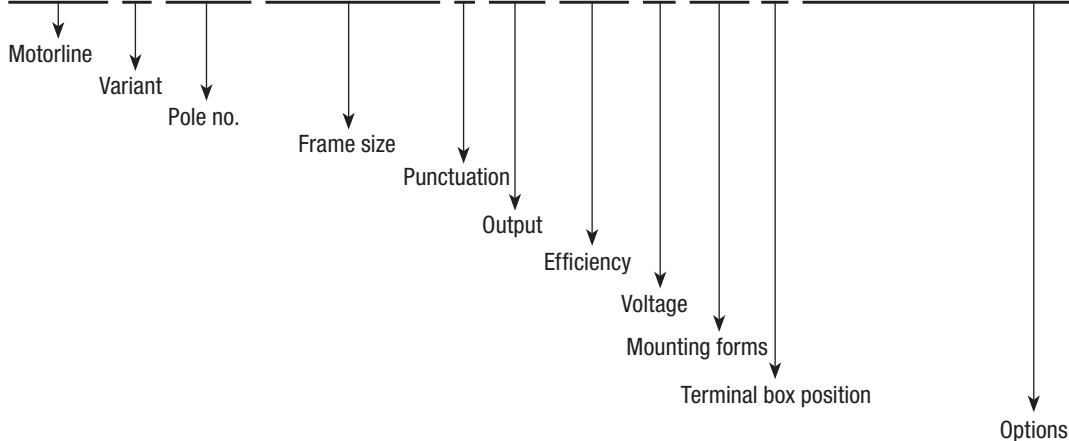
Motorline	Variant	Pole no.	Frame size	Output	Efficiency
W22 – Cast iron	<b>P</b> – Processmotor frame size 160–355 According to catalogue "W22 Three-Phase Electric Motor Technical Catalogue Scandinavian Industrial Market" <b>S</b> – Standardmotor frame size 63–132 According to catalogue "W22 Three-Phase Electric Motor Technical Catalogue European Market"	02P 04P 06P 08P	63-355K/J	0,12 kW-500 kW	IE3 IE4



Voltage	Mounting forms	Terminal box poition	Options
Enter according to below: <b>S</b> for 230/400 V D/Y <b>D</b> for 400/690 V D/Y <b>E</b> for 500 V D <b>F</b> for 500 V Y All 50 Hz	Enter according to page 16 B3, B5, B6, B7, B8, B14, B34, B35 V1, V3, V6, V7, V15, V17, V18, V19, V36, V37	Enter according to below: <b>T</b> for top mounted <b>R</b> for right mounted <b>L</b> for left mounted when facing the D-end	Enter according to page 24 to 31 Enter + symbol between option all codes if several additional options is desired

### Motor code description

**W22 P 04P 280S/M - 90 IE3 D B3 T +01.01+06.02+21.02**





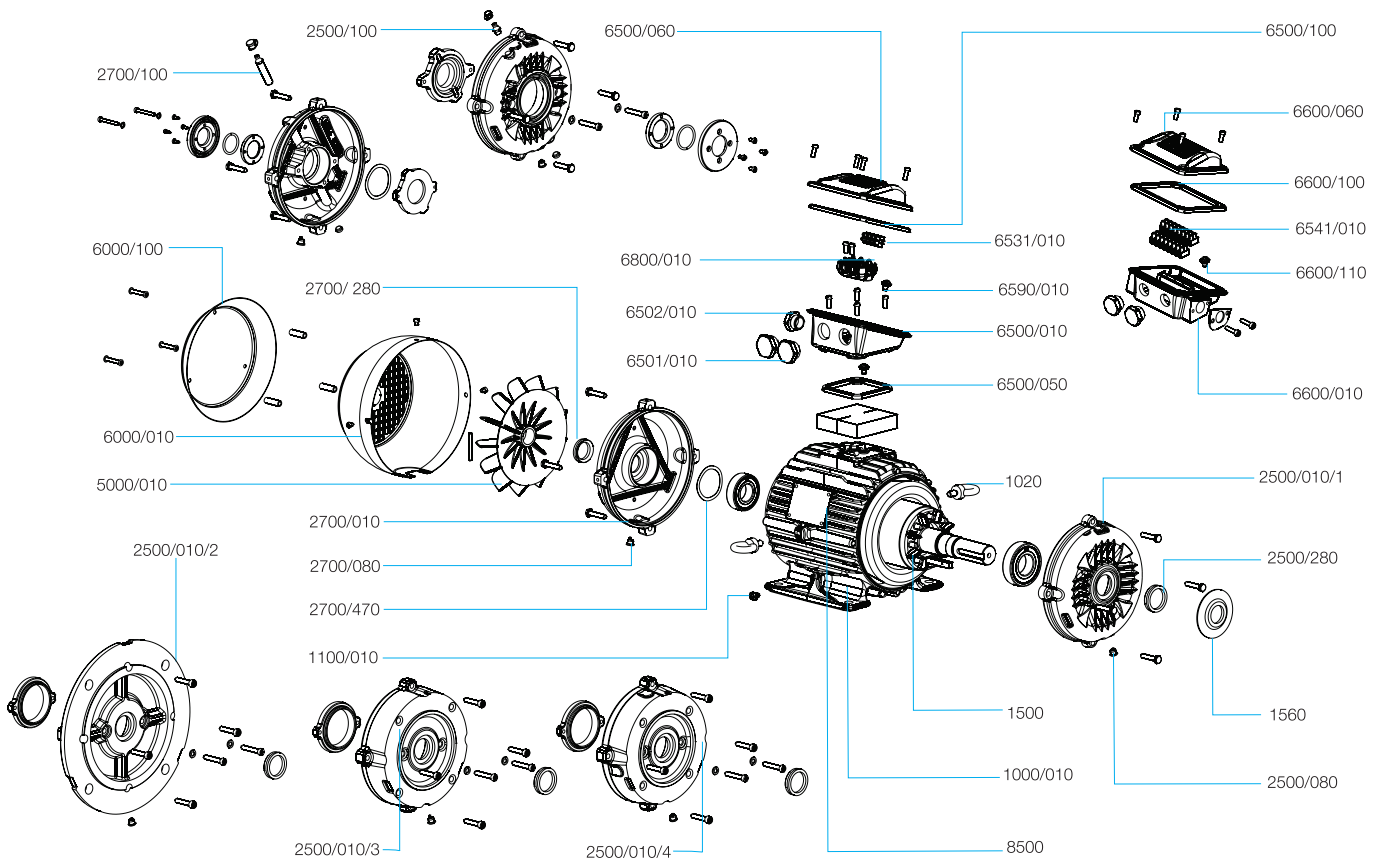
## 25. Spare parts

### General Information

The following information is required when purchasing of spare parts:

- Serial number and manufacturing date, both stamped in the nameplate
- Spare part description
- Codes shown are for reference only. Final codes of spare parts will depend on colour

### Spare Parts Available 63-112

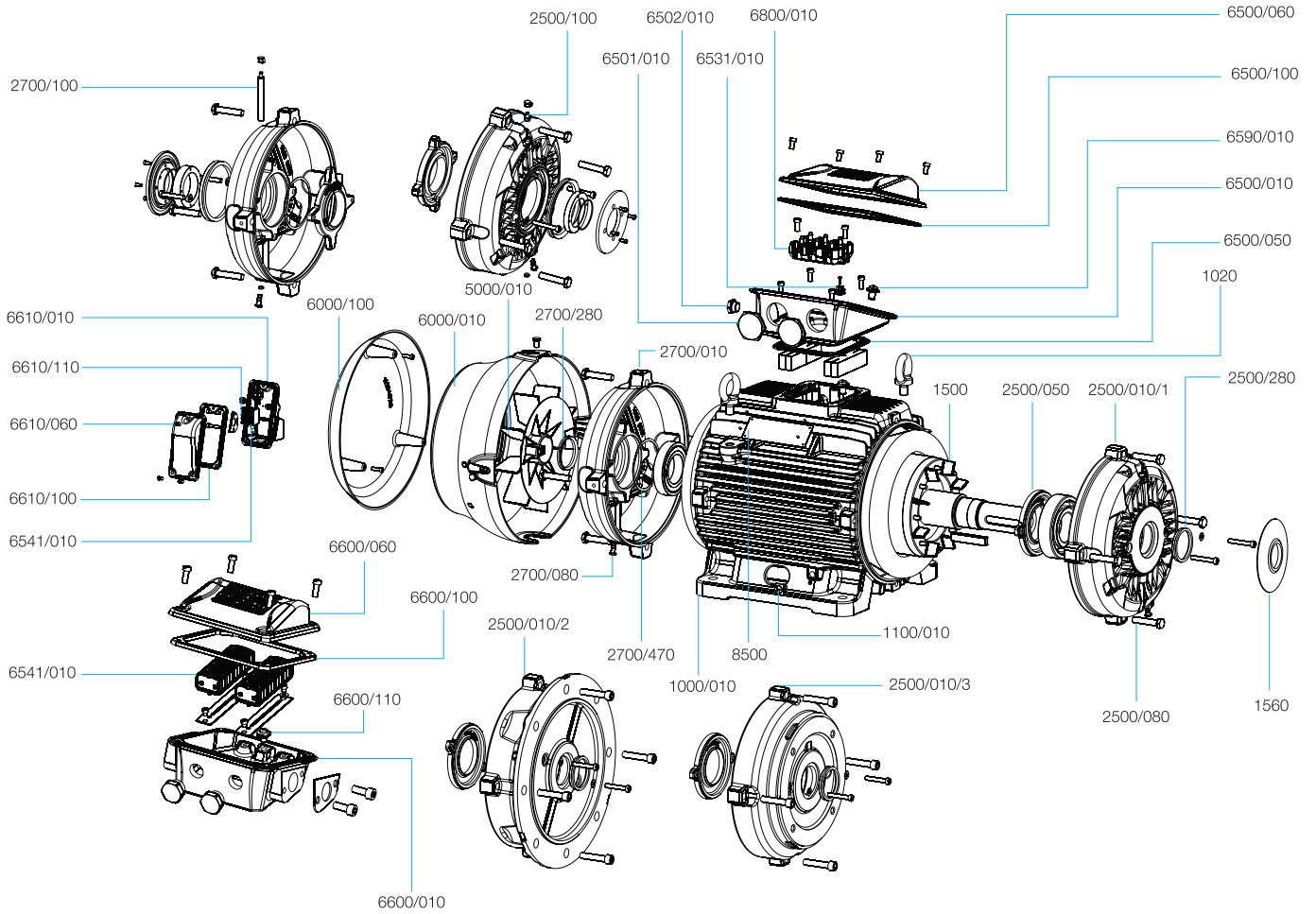


Motor component		Spare part	
Item	Description	Item	Composition
1000/010	Frame with wound stator		
1020	Lifting eyebolt	1020	Lifting eyebolt
1100/010	Earthing terminal		
1500	Rotor, complete with shaft and key		
1560	Slinger	1560	Slinger (recommended for vertical shaft up applications, non-flange mounted)
2500/010/1	Endshield, drive end	2500/1	Endshield, drain plug, shaft seal, bolts and washers
2500/080	Drain plug, drive end		
2500/100	Grease nipple, drive end (2)		
2500/280	Shaft seal, drive end (1)		
2500/010/2	FF Flange	2500/2	FF Flange, drain plug, shaft seal, bolts and washers
2500/080	Drain plug, drive end		
2500/100	Grease nipple, drive end (2)		
2500/280	Shaft seal, drive end (1)		
2500/010/3	C Flange (5)	2500/3	C Flange, drain plug, shaft seal, bolts and washers
2500/080	Drain plug, drive end		
2500/100	Grease nipple, drive end (2)		
2500/280	Shaft seal, drive end (1)		
2500/010/4	C-DIN Flange (5)	2500/4	C-DIN Flange, drain plug, shaft seal, bolts and washers
2500/080	Drain plug, drive end		
2500/100	Grease nipple, drive end (2)		
2500/280	Shaft seal, drive end (1)		
2700/010	Endshield, non-drive end	2700	Endshield, drain plug, shaft seal, bolts and washers
2700/080	Drain plug, non-drive end		
2700/100	Grease nipple, non-drive end (2)		
2700/280	Shaft seal, non-drive end (1)		
2700/470	Wave washer for axial displacement		
5000/010	Fan	5000	Fan (3)
6000/010	Fan cover (4)	6000	Fan cover, bolts
		6050	Fan cover, drip cover and bolts
6000/100	Drip cover	6100	Drip cover, bolts
6500/010	Terminal box	6500	Terminal box complete with lid, gaskets (for lid and terminal box), plugs (for mains and accessories), earthing terminal, bolts and washers
6500/050	Terminal box gasket		
6500/060	Terminal box lid		
6500/100	Terminal box lid gasket		
6501/010	Terminal box plug for main leads		
6502/010	Terminal box plug for accessory leads		
6590/010	Terminal box earthing terminal		
6531/010	Accessory connector	6531	Accessory connector, mounting rail, bolts and washers
6541/010	Accessory connector	6541	Accessory connector, mounting rail, bolts and washers
6600/010	Accessory terminal box	6600	Accessory terminal box, complete with lid, gasket, plugs, earthing terminal, bolts and washers
6600/060	Accessory terminal box lid		
6600/100	Accessory terminal box lid gasket		
6600/110	Accessory terminal box earthing terminal		
6800/010	Terminal block	6800	Terminal block, bolts and washers
8500	Main nameplate		

Notes:

- (1) The shaft sealing may vary with product line. As a spare part, the shaft sealing in the 63-112 range will be supplied as an integral part of the endshield kit. If fitted with labyrinth seal, taconite or W3 Seal®, available from 90 frame upwards.
- (2) When fitted with grease nipple, the endshield spare part kit will also have grease relief, internal bearing cap and labyrinth seal (taconite or W3 Seal®).
- (3) When non-plastic fan is fitted, the spare part kit is also supplied with key and circlip for fan assembly onto the shaft.
- (4) The fan cover material may vary with product line. Considering general purpose, it is steel fabricated in the 63-112 frame.
- (5) C flange dimensions according to NEMA MG1 Part 4 standard or DIN.

### Spare Parts Available 132

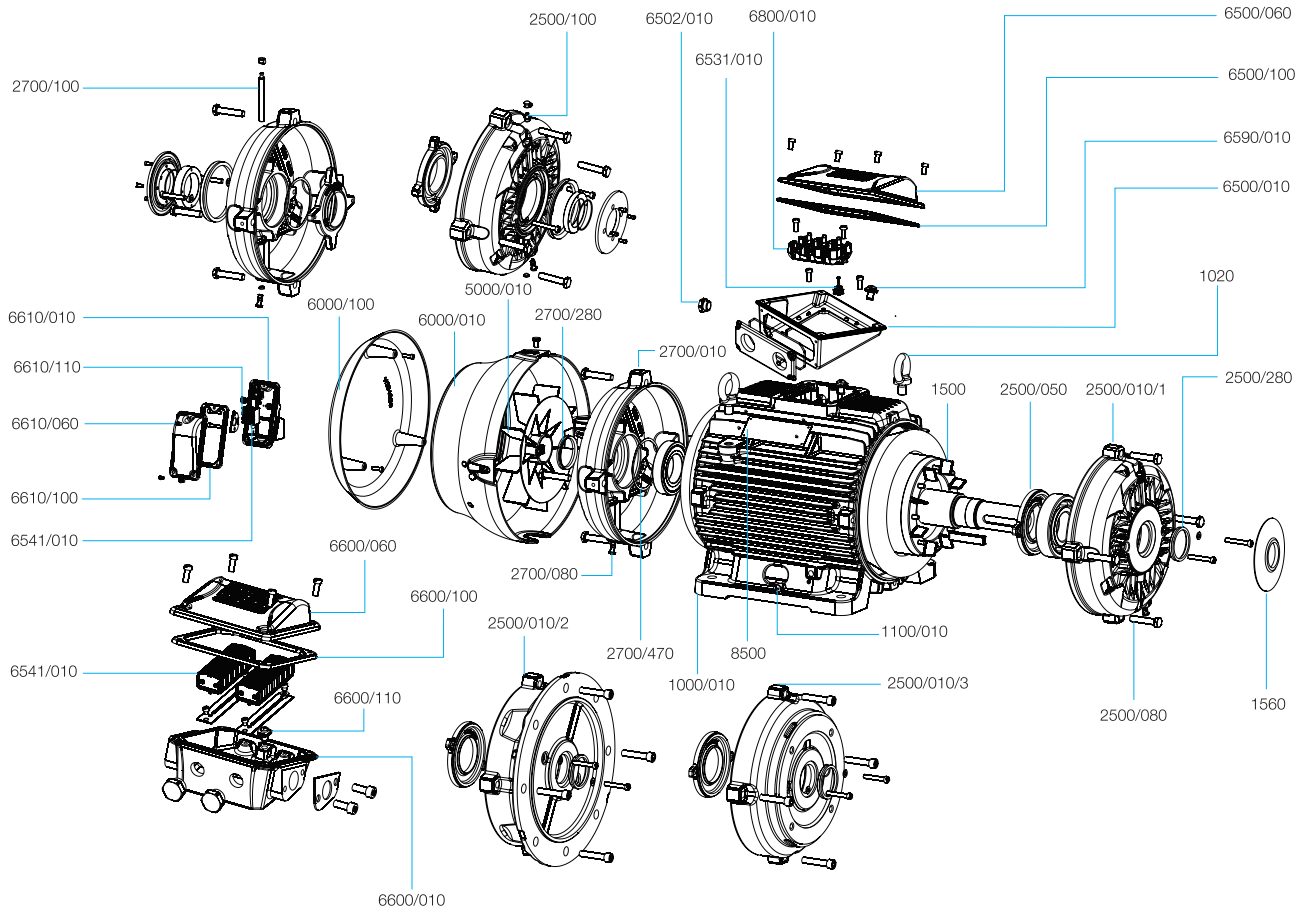


Motor component		Spare part	
Item	Description	Item	Composition
1000/010	Frame with wound stator		
1020	Lifting eyebolt	1020	Lifting eyebolt
1100/010	Earthing terminal		
1500	Rotor, complete with shaft and key		
1560	Slinger	1560	Slinger (recommended for vertical shaft up applications, non-flange mounted)
2500/010/1	Endshield, drive end	2500/1	Endshield, bearing cap, drain plug, shaft seal, bolts and washers
2500/050	Bearing cap, internal, drive end		
2500/080	Drain plug, drive end		
2500/280	Shaft seal, drive end (1)		
2500/100	Grease nipple, drive end (2)		
2500/010/2	FF Flange	2500/2	FF Flange, drain plug, shaft seal, bolts and washers
2500/080	Drain plug, drive end		
2500/100	Grease nipple, drive end (2)		
2500/280	Shaft seal, drive end (1)		
2500/010/3	C Flange (7)	2500/3	C Flange, drain plug, shaft seal, bolts and washers
2500/080	Drain plug, drive end		
2500/280	Shaft seal, drive end (1)		
2500/100	Grease nipple, drive end (2)		
2700/010	Endshield, non-drive end	2700	Endshield, drain plug, shaft seal, bolts and washers
2700/080	Drain plug, non-drive end		
2700/100	Grease nipple (with extensor pipe), non-drive end (4)		
2700/280	Shaft seal, non-drive end (1)		
2700/470	Wave washer for axial displacement (3)		
5000/010	Fan	5000	Fan (5)
6000/010	Fan cover (6)	6000	Fan cover, bolts
		6050	Fan cover, drip cover and bolts
6000/100	Drip cover	6100	Drip cover and bolts
6500/010	Terminal box	6500	Terminal box, complete with lid, gaskets (for lid and terminal box), plugs (for mains and accessories), earthing terminal, bolts and washers
6500/050	Terminal box gasket		
6500/060	Terminal box lid		
6500/100	Terminal box lid gasket		
6501/010	Terminal box plug for main leads		
6502/010	Terminal box plug for accessory leads		
6590/010	Terminal box earthing terminal		
6531/010	Accessory connector	6531	Accessory connector, mounting rail, bolts and washers
6541/010	Accessory connector	6541	Accessory connector, mounting rail, bolts and washers
6600/010	Accessory terminal box	6600	Accessory terminal box, complete with lid, gasket, plugs, earthing terminal, bolts and washers
6600/060	Accessory terminal box lid		
6600/100	Accessory terminal box lid gasket		
6600/110	Accessory terminal box earthing terminal		
6610/010	Space heater accessory terminal box	6610	Space heater accessory terminal box, complete with lid, gasket, plugs, earthing terminal, bolts and washers
6610/060	Space heater accessory terminal box lid		
6610/100	Space heater accessory terminal box lid gasket		
6610/110	Space heater accessory terminal box earthing terminal		
6800/010	Terminal block	6800	Terminal block, bolts and washers
8500	Main nameplate		

Notes:

- (1) The shaft seal may vary with product line. As a spare part, the shaft seal in the 132-300 range will be supplied as an integral part of the endshield kit. If fitted with labyrinth seal (taconite or W3 Seal) internal bearing cap is mandatory from frame 160.
- (2) When fitted with grease nipple, the endshield spare part kit will also have grease relief.
- (3) Valid when ball bearing is fitted in drive end. When the drive end is fitted with roller bearings, the wave washer is not supplied (non-drive end bearing locked with internal bearing cap).
- (4) When fitted with grease nipple in the non-drive end, the endshield spare part kit will also have grease relief and internal bearing cap.
- (5) When non-plastic fan is fitted, the spare part kit is also supplied with key and circlip for fan assembly onto the shaft.
- (6) The fan cover material may vary with product line. Considering general purpose, it is cast iron in the 160-200 range and steel fabricated to 132 frame.
- (7) C flange dimensions according to NEMA MG1 Part 4 standard in the 132-200 range and according to DIN to 132 frame.

### Spare Parts Available 160 - 200

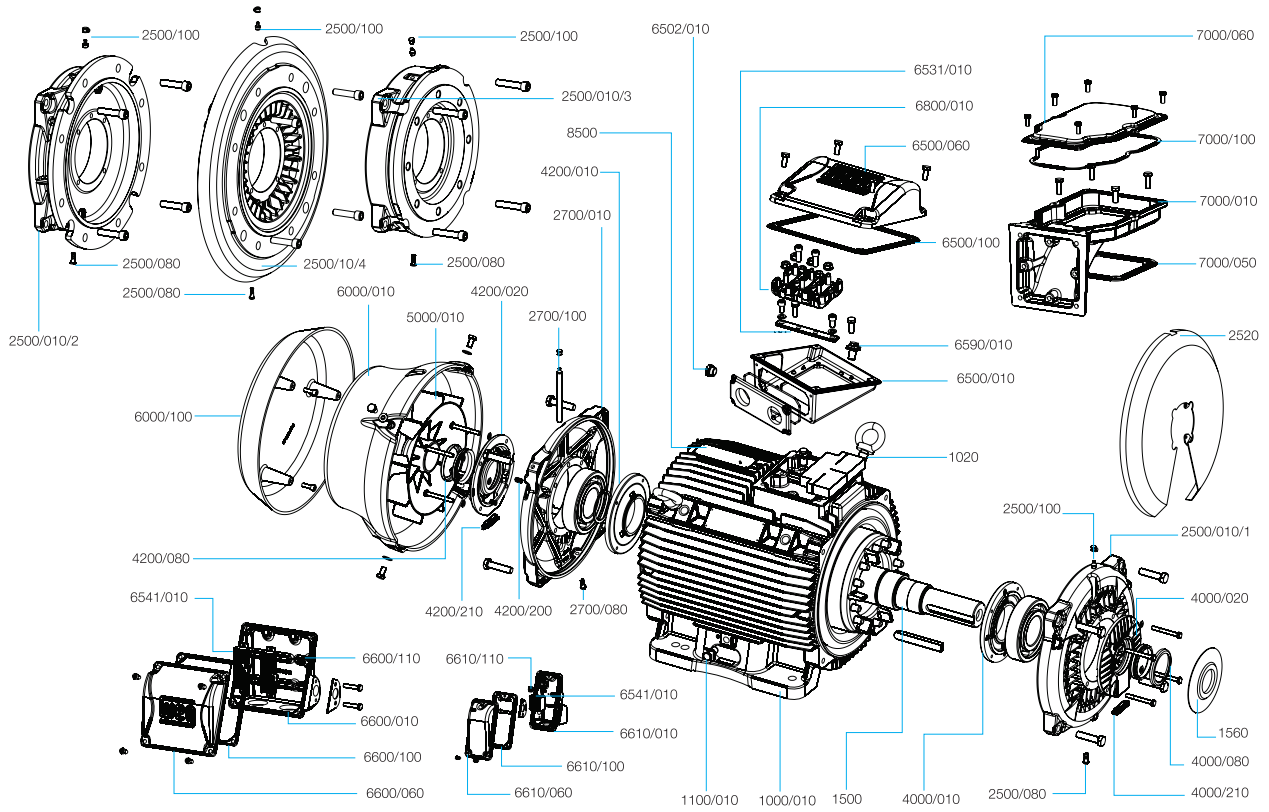


Motor component		Spare part	
Item	Description	Item	Composition
1000/010	Frame with wound stator	1000	Frame with wound stator
1020	Lifting eyebolt	1020	Lifting eyebolt
1100/010	Earthing terminal	1100	Earthing terminal
1500	Rotor, complete with shaft and key	1500	Rotor, complete with shaft and key
1560	Slinger	1560	Slinger (recommended for vertical shaft up applications, non-flange mounted)
2500/010/1	Endshield, drive end	2500/1	Endshield, bearing cap, drain plug, shaft seal, bolts and washers
2500/050	Bearing cap, internal, drive end		
2500/080	Drain plug, drive end		
2500/280	Shaft seal, drive end (1)		
2500/100	Grease nipple, drive end (2)		
2500/010/2	FF Flange	2500/2	FF Flange, drain plug, shaft seal, bolts and washers
2500/080	Drain plug, drive end		
2500/100	Grease nipple, drive end (2)		
2500/280	Shaft seal, drive end (1)		
2500/010/3	C Flange (7)	2500/3	C Flange, drain plug, shaft seal, bolts and washers
2500/080	Drain plug, drive end		
2500/280	Shaft seal, drive end (1)		
2500/100	Grease nipple, drive end (2)		
2700/010	Endshield, non-drive end	2700	Endshield, drain plug, shaft seal, bolts and washers
2700/080	Drain plug, non-drive end		
2700/100	Grease nipple (with extensor pipe), non-drive end (4)		
2700/280	Shaft seal, non-drive end (1)		
2700/470	Wave washer for axial displacement (3)		
5000/010	Fan	5000	Fan (5)
6000/010	Fan cover (6)	6000	Fan cover, bolts
		6050	Fan cover, drip cover and bolts
6000/100	Drip cover	6100	Drip cover and bolts
6500/010	Terminal box	6500	Terminal box, complete with lid, gaskets (for lid and terminal box), plugs (for mains and accessories), earthing terminal, bolts and washers
6500/050	Terminal box gasket		
6500/060	Terminal box lid		
6500/100	Terminal box lid gasket		
6501/010	Terminal box plug for main leads		
6502/010	Terminal box plug for accessory leads		
6590/010	Terminal box earthing terminal		
6531/010	Accessory connector		
6541/010	Accessory connector	6541	Accessory connector, mounting rail, bolts and washers
6600/010	Accessory terminal box	6600	Accessory terminal box, complete with lid, gasket, plugs, earthing terminal, bolts and washers
6600/060	Accessory terminal box lid		
6600/100	Accessory terminal box lid gasket		
6600/110	Accessory terminal box earthing terminal		
6610/010	Space heater accessory terminal box	6610	Space heater accessory terminal box, complete with lid, gasket, plugs, earthing terminal, bolts and washers
6610/060	Space heater accessory terminal box lid		
6610/100	Space heater accessory terminal box lid gasket		
6610/110	Space heater accessory terminal box earthing terminal		
6800/010	Terminal block	6800	Terminal block, bolts and washers
8500	Main nameplate	8500	Main nameplate

Notes:

- (1) The shaft seal may vary with product line. As a spare part, the shaft seal in the 132-200 range will be supplied as an integral part of the endshield kit. If fitted with labyrinth seal (taconite or W3 Seal) internal bearing cap is mandatory from frame 160.
- (2) When fitted with grease nipple, the endshield spare part kit will also have grease relief.
- (3) Valid when ball bearing is fitted in drive end. When the drive end is fitted with roller bearings, the wave washer is not supplied (non-drive end bearing locked with internal bearing cap).
- (4) When fitted with grease nipple in the non-drive end, the endshield spare part kit will also have grease relief and internal bearing cap.
- (5) When non-plastic fan is fitted, the spare part kit is also supplied with key and circlip for fan assembly onto the shaft.
- (6) The fan cover material may vary with product line. Considering general purpose, it is cast iron in the 160-200 range and fabricated steel in 132 frame.
- (7) C flange dimensions according to NEMA MG1 Part 4 standard (frames 132-200) or DIN standard (frame 132)..

### Spare Parts Available 225 - 355





Motor component		Spare part	
Item	Description	Item	Composition
1000/010	Frame with wound stator	1000	Frame with wound stator
1020	Lifting eyebolt	1020	Lifting eyebolt
1100/010	Earthing terminal	1100	Earthing terminal
1500	Rotor, complete with shaft and key	1500	Rotor, complete with shaft and key
1560	Slinger	1560	Slinger
2500/010/1	Endshield, drive end	2500/1	Endshield, grease nipple, drain plug, bolts and washers
2500/080	Drain plug, drive end		
2500/100	Grease nipple, drive end		
2500/010/2	FF Flange	2500/2	FF Flange, grease nipple, drain plug, bolts and washers
2500/080	Drain plug, drive end		
2500/100	Grease nipple, drive end		
2500/0010/3	C Flange (5)	2500/3	C Flange, grease nipple, drain plug, bolts and washers
2500/080	Drain plug, drive end		
2500/100	Grease nipple, drive end		
2500/010/4	FF Flange with air deflector	2500/4	FF Flange with air deflector, grease nipple, drain plug, bolts and washers
2500/080	Drain plug, drive end		
2500/100	Grease nipple, drive end		
2520	Air Deflector	2520	Air Deflector
2700/010	Endshield, non-drive end	2700	Endshield, grease nipple with extensor pipe, drain plug, bolts and washers
2700/080	Drain plug, non-drive end		
2700/100	Grease nipple (with extensor pipe), non-drive end		
4000/010	Bearing cap, internal, drive end	4000	Bearing cap (external and internal), shaft seal, grease relief, bolts and washers
4000/020	Bearing cap, external, drive end		
4000/080	Shaft seal, drive end (1)		
4000/210	Grease relief		
4200/010	Bearing cap, internal, non-drive end	4200	Bearing cap (external and internal), shaft seal, grease relief with extensor pipe, pre-load springs, bolts and washers
4200/020	Bearing cap, external, non-drive end		
4200/080	Shaft seal, non-drive end (1)		
4200/200	Pre-load springs for axial displacement (2)		
4200/210	Grease relief		
5000/010	Fan	5000	Fan (3)
6000/010	Fan cover, cast iron	6000	Fan cover
		6050	Fan cover and canopy
		6100	Canopy
6500/010	Terminal box	6500	Terminal box, complete with lid, gaskets (for lid and terminal box), plugs (for mains and accessories), earthing terminal, bolts and washers
6500/050	Terminal box gasket		
6500/060	Terminal box lid		
6500/100	Terminal box lid gasket		
6501/010	Terminal box plug for main leads		
6502/010	Terminal box plug for accessory leads		
6505/010	Terminal box removable cable gland		
6505/030	Lid gasket of the terminal box removable cable gland		
6531/010	Accessory connector		
6541/010	Accessory connector	6541	Accessory connector, mounting rail, bolts and washers
6590/010	Terminal box earthing terminal	6800	Terminal block, mounting rail, bolts and washers
6800/010	Terminal block		
6600/010	Accessory terminal box	6600	Accessory terminal box, complete with lid, gasket, plugs, earthing terminal, bolts and washers
6600/060	Accessory terminal box lid		
6600/100	Accessory terminal box lid gasket		
6600/110	Accessory terminal box earthing terminal		
6610/010	Space heater accessory terminal box	6610	Space heater accessory terminal box, complete with lid, gasket, plugs, earthing terminal, bolts and washers
6610/060	Space heater accessory terminal box lid		
6610/100	Space heater accessory terminal box lid gasket		
6610/110	Space heater accessory terminal box earthing terminal		
7000/010	Terminal box adaptor base	7000	Terminal box adaptor for side mounted position, complete with lid, gaskets, bolts and washers
7000/050	Terminal box adaptor base gasket		
7000/060	Terminal box adaptor lid		
7000/100	Terminal box adaptor lid gasket		
8500	Main nameplate (4)	8500	Main nameplate

**Notes:**

- (1) The shaft sealing may vary with product line. As a spare part, the shaft sealing in the 225-355 range will be supplied as an integral part of the bearing cap kit.
- (2) Valid when ball bearing is fitted in drive end. When the drive end is fitted with roller bearings, pre-load springs are not supplied (non-drive end bearing locked).
- (3) When non-plastic fan is fitted, the spare part kit is also supplied with key and circlip for fan assembly onto the shaft.
- (4) Main nameplate position will vary with terminal box configuration (top and side mounting)
- (5) C flange dimensions according to NEMA MG1 Part 4 standard.

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