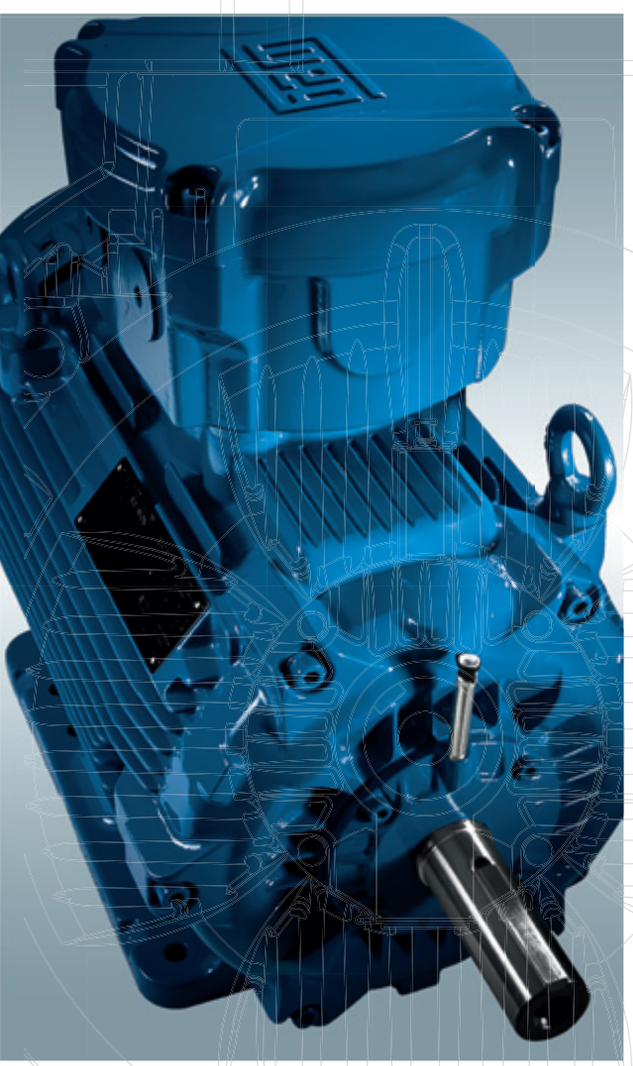
Motors

Product Lines
European Market



Efficiency and Reliability to the Industry

Founded in 1961, WEG is recognized today as one of the world's largest electric motors manufacturer, present in more than 100 countries at the five continents and counting on more than 20,000 employees, producing more than 10 million motors per year.

High performance with the maximum energy efficiency, this is the meaning of WEG's electric motor.

With a wide range of industrial motors, the company serves from simple to dedicated applications in aggressive environments, always focusing on customer needs, offering solutions for any kind of application.

Besides product commercialization through our branches and distributors network, WEG maintains a constant concern about customer service that can be supported by our After Sales Service Network, prepared to offer technical support for applications and installations.

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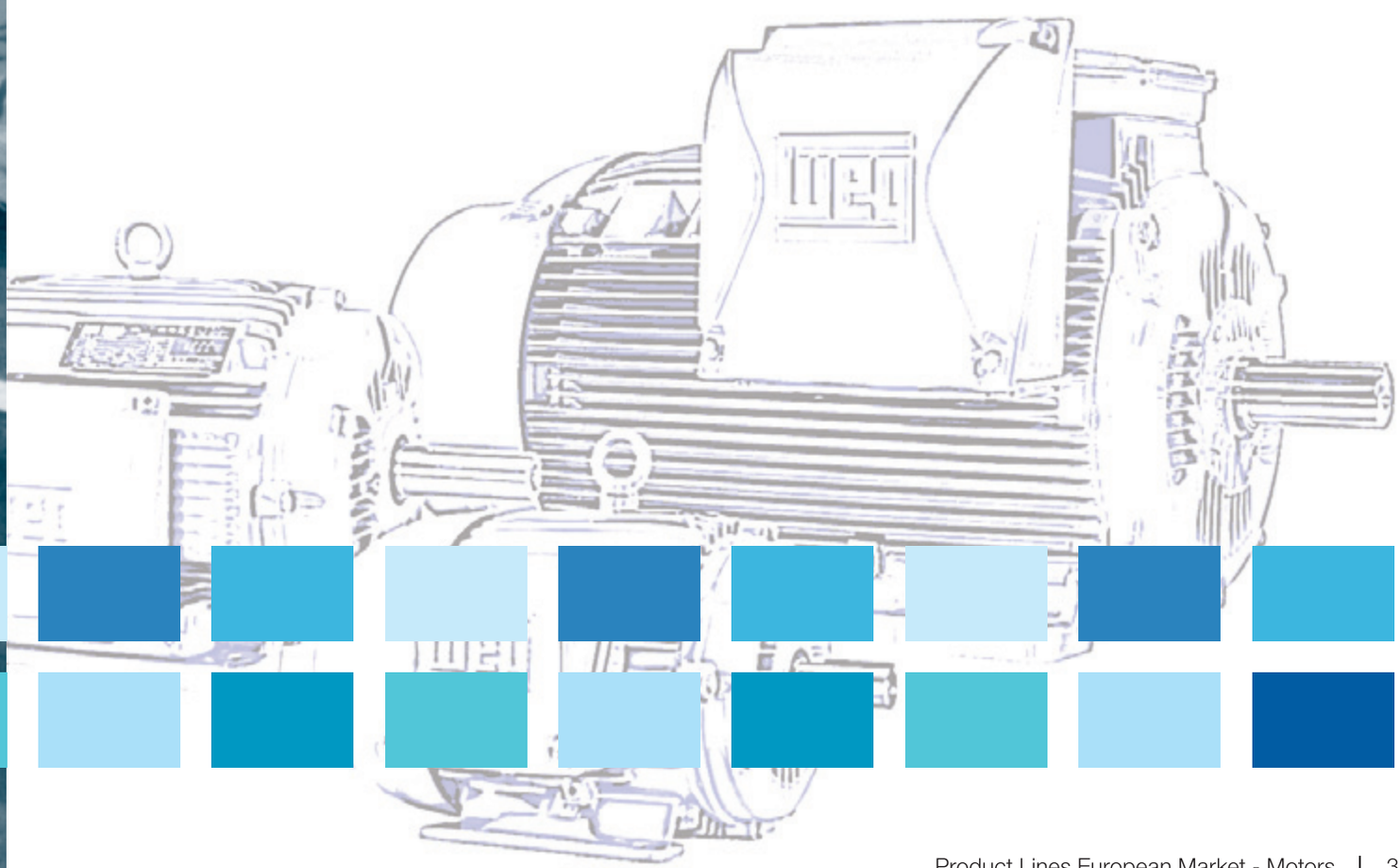
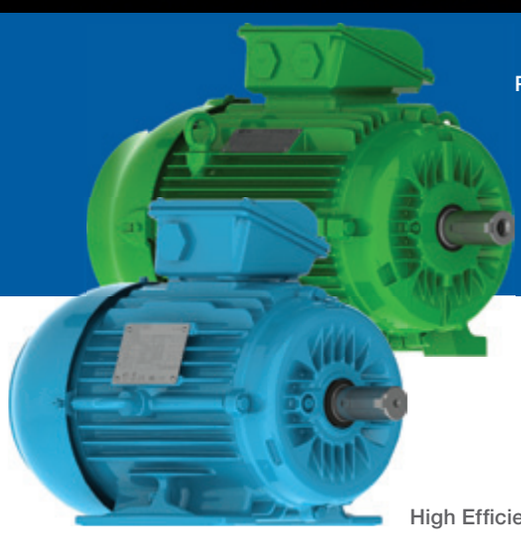


W22 Low Voltage Motors

A high efficiency product, enhancing the productivity to generate the maximum benefit to the customer. This is the focus of the W22 Line, designed to provide not only significantly lower energy consumption, but lower noise and vibration levels, higher reliability, easier maintenance and lower cost of ownership. A motor that anticipates the concepts about energy efficiency, performance and productivity.

Standard Features

- Output: 0,12 kW to 500 kW
- Number of Poles: 2, 4, 6 and 8
- Frequency: 50 Hz
- Voltage: 220-240/380-415 V (up to 100 L)
  380-415/660 V (from 112 M and up)
- Frames: 63 to 355A/B
- Colour: Premium Efficiency - IE3: RAL 6002 - Green
  High Efficiency - IE2: RAL 5009 - Blue



Premium Efficiency

High Efficiency

Versions Available

- High Efficiency - IE2
- Premium Efficiency - IE3
- Multi speed motors (Dahlander, Double Winding, etc.)
- 10 and 12 poles

Applications

Pumps, compressors, fans, crushers, conveyors, mills, centrifugal machines, presses, elevators, packaging equipment, grinders, etc.

Features	Benefits
Efficiency levels	High Efficiency - IE2 - Exceeds the IE2 efficiency levels specified in the IEC 60034-30 and the requirements of the EuP-Directive 2005/32/EC Premium Efficiency - IE3 - Exceeds the IE3 efficiency levels specified in the IEC 60034-30 to provide significant energy savings and a fast return on investment
New frame and endshields design	Higher mechanical stiffness and excellent heat dissipation
New terminal box design	Diagonally split oversized terminal box provides optimal conditions for operators to access main and accessories terminals Provides easy and fast modification to the terminal box mounting position (for frames 225S/M to 355A/B)
Low bearing operating temperature	Extended lubrication intervals and longer bearings lifetime
Exclusive WSeal® Sealing System	Preventing the ingress of contaminant agents into the motor interior (for frames 225S/M to 355A/B)
New ventilation system	Fins design allows an optimized air flow distribution over the frame and reduces the noise levels
Solid and integrated feet	Stiffness, easy alignment and installation
WISE® insulation system	Increases stator electrical strength and allows the motor operation by frequency inverters, without damage by voltage peaks*

**For more information about Frequency Inverter operation, please see page 23.*

W22 Super Premium Efficiency

In the last two decades global energy consumption has increased more then 50%, this increasing demand for electric energy to sustain global development requires constant investment in power supply generation.
One of the main reasons for the global increase in power consumption is the industrial sector: the electric motor represents more than 40% of the total energy consumed globally.
Due to this increase it is more important now that products are manufactured with energy efficiency as the main driver. Aware and concerned about this situation, several Governments are implementing Minimum Energy Efficiency Performance Standards in order to drive the use of highefficient equipment.
With this situation in mind WEG presents its W22 Super Premium Efficiency motor line, exceeding the IE4 Efficiency Levels defined in IEC Technical Specification IEC/TS 60034-31 and draft IEC Standard 60034-30 edition 2.
High overall performance which is translated into a lower Total Cost of Ownership, due to its reliability, easy maintenance and energy savings!

Standard Features

- Output: 3 to 355 kW
- Number of poles: 2, 4 and 6
- Frequency: 50 Hz
- Voltage: 400 V
- Frames: 132S up to 355A/B
- Colour: RAL 6002 - Green

Applications

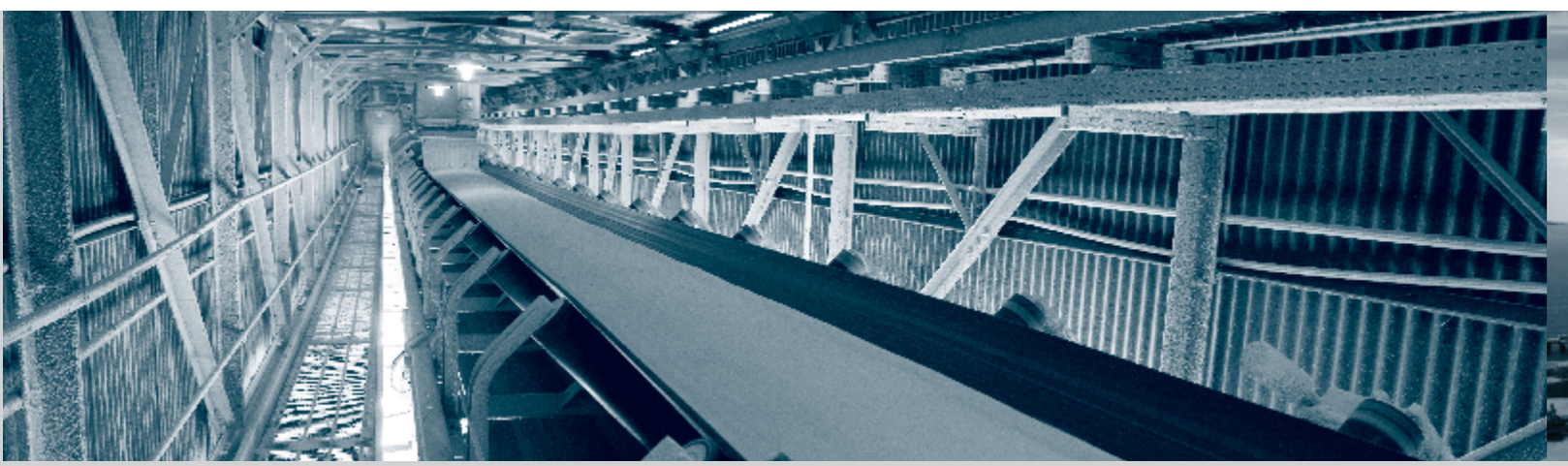
Pumps, compressors, fans, crushers, conveyors, mills, centrifugal machines, presses, elevators, packaging equipment, grinders, etc.

Features	Benefits
Efficiency level	Exceeding the IE4 Efficiency Levels defined in IEC Technical Specification IEC/TS 60034-31 and draft IEC Standard 60034-30 edition 2
W22 Platform	Counts on all the innovative features of the W22 General Purpose Motors Platform
Same output x frame ratio when compared to conventional induction motors	Totally Interchangeable with existing induction motors
WISE® Insulation System	Increases stator electrical strength and allows the motor operation by frequency inverters, without damage by voltage peaks*

**For more information about Frequency Inverter operation, please see page 23.*

W21 Aluminium Motors

WEG Aluminium frame motors with removable feet were specially designed to meet market requirements in reference to mounting flexibility since they allow all mounting positions. The foot mounting system offers great flexibility and allows changing of the mounting configuration without requiring any additional machining process or modification to the motor feet.
Motor terminal boxes can be rotated at 90 degrees allowing motor leads to be connected at any motor side. Besides that these motors are fully interchangeable with existing cast iron frame motors. Reduced stock is needed as onlyt one motor is required for all mounting positions.



Standard Features

- Output: 0.12 kW to 37 kW
- Number of Poles: 2, 4, 6 and 8
- Frequency: 50 Hz
- Voltage: 220-240/380-415 V (up to 100 L)
  380-415/660 V (from 112M and up);
- Frames: 63 to 200 L
- Colour: Premium Efficiency - IE3: RAL 6002 - Green
  High Efficiency - IE2: RAL 5009 - Blue
  Standard Efficiency - IE1: RAL 5009 - Blue

Application

Pumps, compressors, air conditioning systems, fans, cranes, conveyors, machine tools, winding machines, drawing machines, presses, hoists, cranes, elevators, looms, grinders, injectors, extruders, cooling towers, packaging machines, etc.

Features	Benefits
Multimounting	Flexible and easy to change mounting configurations without requiring machining operations or additional changes to the motor feet
Aluminium frame	Provides high protection to the enclosures offering lower and better heat dissipation
Definite purpose derived lines Extended range	W21 Aluminum Multimounting motors line counts on, besides the General Purpose line, several definite purpose derived lines, such as Brake Motors, Single-Phase Motors and Fan & Exhaust Motors (TEAO) The introduction of the 160, 180 and 200 frames allow the W21 aluminum multimounting line to offer rated outputs up to 37 kW, enabling the line to cover even more applications
Extended Range	The introduction of the 160, 180 and 200 frames allow the W21 aluminium multimounting line to cover rated outputs up to 37 kW, enabling this line to cover even more applications
WISE® insulation system	Increases stator electrical strength and allows the motor operation by frequency inverters, without damage by voltage peaks*

**For more information about Frequency Inverter operation, please see page 23.*

WQuattro and WMagnet Motors

The rotor fitted with permanent magnets ensures high performance, reduces the noise levels as well as ensures higher efficiency levels when compared with high efficiency motor ratings. The motors operate at lower temperatures, hence extending lubrication intervals and increasing bearing lifetime.
The WQuattro motor is a hybrid motor fitted with a squirrel cage rotor, making it suitable for direct on line start, and high energy permanent magnets assuring synchronous operation and high efficiency operation.
The WMagnet motors are allows more output levels per frame size, requires less floor space for installation. These motors are fed by WEG frequency inverter and supplies constant torque over a wide speed range.

Standard Features WQuattro

- Output: 0.37 kW to 7.5 kW
- Number of Poles: 4 and 6
- Frequency: 50 Hz
- Voltage: 230/440 or 400/690 V
- Frames: 80 to 132M
- Colour: RAL 6021 - Green

Standard Features WMagnet

- Output: 11 kW to 160 kW
- Speed range: 180 to 3600 rpm
- Voltage: 400 V
- Frames: 132S to 250S/M
- Colour: 091A.3145 - Gray

Application

Compressors, elevators, pumps, fans, exhausters, conveyors, electrical vehicles, textile industry machines and other applications where speed variation, high efficiency, low noise levels and reduced volume are mandatory.

Features	Benefits
Super Premium Efficiency Levels	The motor efficiency meets the impending IE4 levels of the IEC 60034-30, offering energy savings and reduction in CO_2 emissions
Rotor fitted with permanent magnets	Motor extended lifetime, higher output / frame size ratio, higher efficiency, higher power factor and reduced bearing and overall motor temperature
Synchronous operation	Easy speed synchronization with multiple motors fed by the same variable frequency inverter
Wide speed range with constant torque	Ensures operation at lower speeds with the same performance, without requiring a forced ventilation kit, demanding less floor space for motor and MCC installation
WISE® Insulation System	Increases stator electrical strength and allows the motor operation by frequency inverters, without damage by voltage peaks*

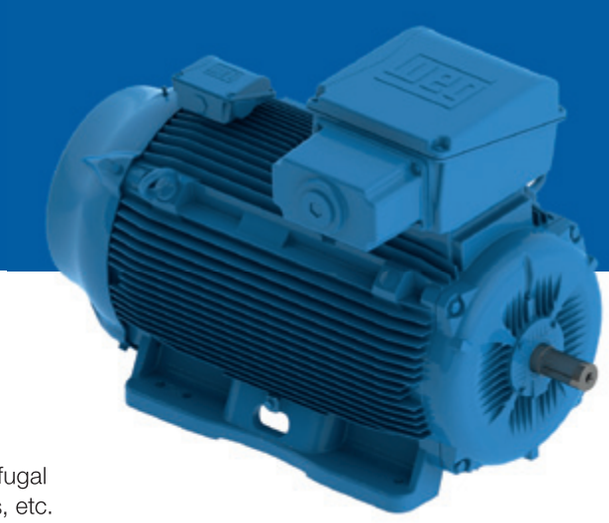
**For more information about Frequency Inverter operation, please see page 23.*

W22 High Voltage Motors

Using electrical design optimizations software and taking advantage of its technical know-how in manufacturing compact pre-formed coils, WEG developed the W22 High Voltage General Purpose Motors Line. The line counts on all innovative features introduced with the launch of the W22 Low Voltage M otors line and represents the best solution for cost-benefit ratio of General Purpose applications that requires High Voltage motors.

Standard Features

- Output: 90 kW to 440 kW
- Number of Poles: 2, 4, 6 and 8
- Frequency: 50 Hz
- Voltage: 1.2 to 6.6 kV
- Frames: 315L and 355A/B
- Colour: RAL 5009 - Blue



Applications

Pumps, compressors, fans, crushers, conveyors, mills, centrifugal machines, presses, elevators, packaging equipment, grinders, etc.

Features	Benefits
Compact construction	One of the most compact High Voltage machines available on the market
W22 Platform	Counts on all the innovative features of the W22 General Purpose Motors Platform
New accessories terminal box	Placed in the top of the frame close to the fan cover, provides easy and safe connection for accessories separated from main terminals, thus avoiding signal interference

HGF Low and High Voltage Motors

The HGF Motors are designed according to the most demanding technological standards available on the market, using modern computer software for mechanical, electrical and thermal analysis evidenced by performing rigid tests and checks. The result of this innovative development is a flexible product, suitable to the requirements of international standards and fully aligned with world market trends.

Standard Features

- Output: 90 kW to 3150 kW
- Number of poles: 2, 4, 6, 8, 10 and 12
- Frequency: 50 Hz
- Voltage: 380 V to 6.6 kV
- Frame sizes: 315 to 630
- Colour: RAL 5009 - Blue

Versions Available

- Standard
- Non-Sparking (Ex nA)

Applications

Pumps, compressors, fans, crushers, conveyors, mills, centrifugal machines, presses, elevators, packing equipment, grinders, etc.

Features	Benefits
New frame design	New frame design aimed at best equation between mechanical rigidity and thermal dissipation possible for enclosures, thereby reducing motor vibration and increasing lifetime
New fan cover design	The new fan cover was designed to direct airflow over the entire frame with minimal recirculation in the motor inside, allowing maximum heat exchange and resulting in a cooler motor
Lower sound pressure levels	The new cooling system allows for sound pressure reductions up to 7 dB(A)
Special Painting Plan for Aggressive Ambients	Higher resistance and painting durability, protecting the enclosure against corrosion and abrasion
Pt-100 thermal detectors	Thermal resistances (Pt-100) installed in the windings and bearings provide precise and constant temperature control and a quickly detect any abnormal operating condition
Sleeve bearings available as optional features	Sleeve bearings require less maintenance due to the fact that the lubrication intervals are up to three times longer than the lubrication intervals of conventional bearings, and specially because they present a lifetime similar or of and longer that of the motor itself
Additional terminal box for accessories fitted with two spare magazines	Thermal detectors and space heaters leads are connected to in different terminal boxes, avoiding any possible signal interference and providing easy and safe connections
Flexibility	everal dedicated features available such as: Non-reverse ratchet, signal transducer, independent hydraulic oil circulation system for sleeve bearing, etc. Motor design adaptable to the most different application and specific needs

ODP Low Voltage Motors

Dedicated for environments where dirt and moisture are minimal. The totally cast iron frame is designed to provide maximum ventilation and heat dissipation, offering low vibration levels, high mechanical stiffness and durability. The ODP Low Voltage motors line now includes a new frame size: 315D/E, offering even more application possibilities.

Standard Features

- Output: 11 kW to 560 kW
- Number of Poles: 2 and 4
- Frequency: 50 Hz
- Voltage: 380-415 / 660 V
- Frames: 160M to 315D/E
- Colour: High Efficiency - IE2 - RAL 5009 - Blue
  Standard Efficiency - IE1 – RAL 7022 - Gray

Versions Available

- High Efficiency - IE2
- Standard Efficiency - IE1
- Fire Pump
- Close-Coupled Pump Motors (JM/JP)

Applications

Pumps, compressors, fans, exhausters, kneader and mixer machines, cutting and sawing machines, presses, industrial machines, conveyors, blowers, cranes, packaging equipment and other sheltered and protected industrial environment applications.

Features	Benefits
High performance	Due to its open enclosure, the motor design features higher rated output levels in comparison with totally enclosed motors, resulting in the most cost-effective option for the driven equipment
Fire pump certification available	The ODP line is UL certified for Fire Pump applications with the ambient temperature up to 50 °C
New IEC 315D/E frame size	The new frame size represents an important improvement in the rated output, from 370 kW to 560 kW at 50 Hz This new frame features an entirely new concept, generating lower noise levels
WISE® insulation system	Increases stator electrical strength and allows the motor operation by frequency inverters, without damage by voltage peaks*

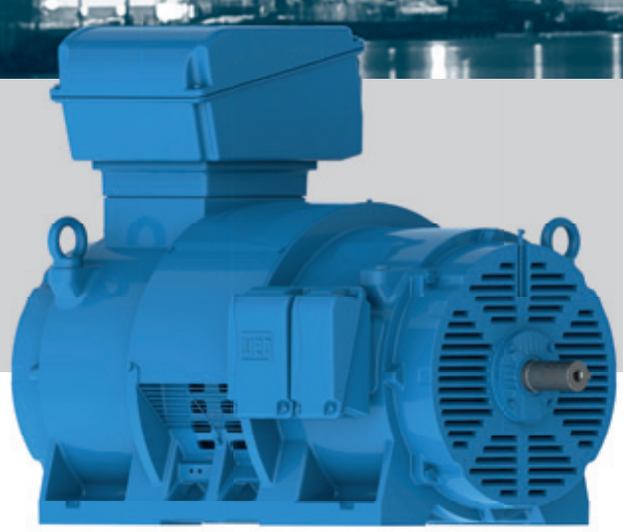
**For more information about Frequency Inverter operation, please see page 23.*

ODP High Voltage Motors

The introduction of the 315D/E design allowed WEG to offer the ODP motors in medium and high voltage ratings.

Standard Features

- Output: 200 kW to 500 kW
- Number of Poles: 2 and 4
- Frequency: 50 Hz
- Voltage: 1.2 to 6.6 kV
- Frame: 315D/E
- Colour: RAL 5009 - Blue



Application

Pumps, compressors, fans, exhausters, kneader and mixer machines, cutting and sawing machines, presses, industrial machines, conveyors, blowers, cranes, packaging equipment and other sheltered and protected industrial environment applications.

Features	Benefits
High performance	Due to its open enclosure, the motor design features higher rated output levels in comparison with totally enclosed motors, resulting in the most cost-effective option for the driven equipment
Compact construction	One of the most compact High Voltage machines available on the market
Additional terminal box for accessories fitted with two spare magazines	Thermal detectors and space heaters leads are connected in different terminal boxes, avoiding any possible signal interference and providing easy and safe connections
New IEC 315D/E frame size	The new frame size represents an important improvement into the offered rated output, from the previous 370 kW to 560 kW in 50 Hz This new frame features an entirely new concept, offering even lower noise levels

Fan and Exhaust Motors

Suitable for the most demanding specifications of OEM's ventilation customers, the Fan and Exhaust design allows high output in light and compact frame sizes for several fan applications.

Standard Features

- Output: 0.06 kW to 355 kW
- Number of Poles: 2, 4, 6 and 8
- Frequency: 50 Hz
- Voltage: 220-240/380-415 V (up to 100 L)
  380-415/660V (from 112M and up)
- Frames: 63 up to 355M/L (for cast iron frames)
  63 to 132M (for aluminium frames)
- Colour: Premium Efficiency - IE3: RAL 6002 - Green
  High Efficiency - IE2: RAL 5009 - Blue
  Standard Efficiency - IE1: RAL 5009 - Blue

Versions Available

- High Efficiency - IE2
- Standard Efficiency - IE1
- 10 and 12 poles
- Multi speed motors (Dahlander, Double Winding, etc.)
- Cast Iron or Aluminium Enclosures

Application

Fan and exhausters for: tunnels, metros, subways, shopping centres, car parks, supermarkets, etc.

Features	Benefits
Mounting Flexibility	Fan and Exhaust motors can be supplied with the following features: pad, foot or flange mounted. Besides the mounting configurations the motor can be also supplied with T-box and terminal block or without T-box and loose cable leads allowing remote assembly of the T-box
Premium motor	IE3 efficiency level available for all motors range
Exhaustion motors	Assured safety for the most diverse places
WISE® insulation system	Increases stator electrical strength and allows the motor operation by frequency inverters, without damage by voltage peaks*

**For more information about Frequency Inverter operation, please see page 23.*

Smoke Extraction Motors

Assuring safety in commercial and industrial facilities is one of the main concern of designers and company owners during the design of shopping centres, factories, warehouses, covered parking lots, tunnels and other places in which a large concentration of people are present.
Smoke Extraction motors are suitable for extracting operation in high temperature and guarantee rapid smoke and heat extraction and delay in fire propagation, allowing free access to emergency exits.

Standard Features
- Output: 0.12 kW to 500 kW
- Number of Poles: 2, 4, 6 and 8
- Frequency: 50 Hz
- Frames: 80 to 355A/B
- Voltage: 220-240/380-415 V (up to 100 L)
  380-415/660 V (from 112M and up)
- Colour: RAL 9006 - Aluminium

Versions Available
- TEFC (Totally Enclosed Fan Cooled) or TEAO (Totally Enclosed Air Over)
- Premium Efficiency - IE3
- High Efficiency - IE2
- Standard Efficiency - IE1
- 10 and 12 poles
- Multi speed motors (Dahlander, Double Winding, etc.)
- F200 (200 °C/2 hrs), F300 (300 °C/2 hrs) and F400 (400 °C/2 hrs)

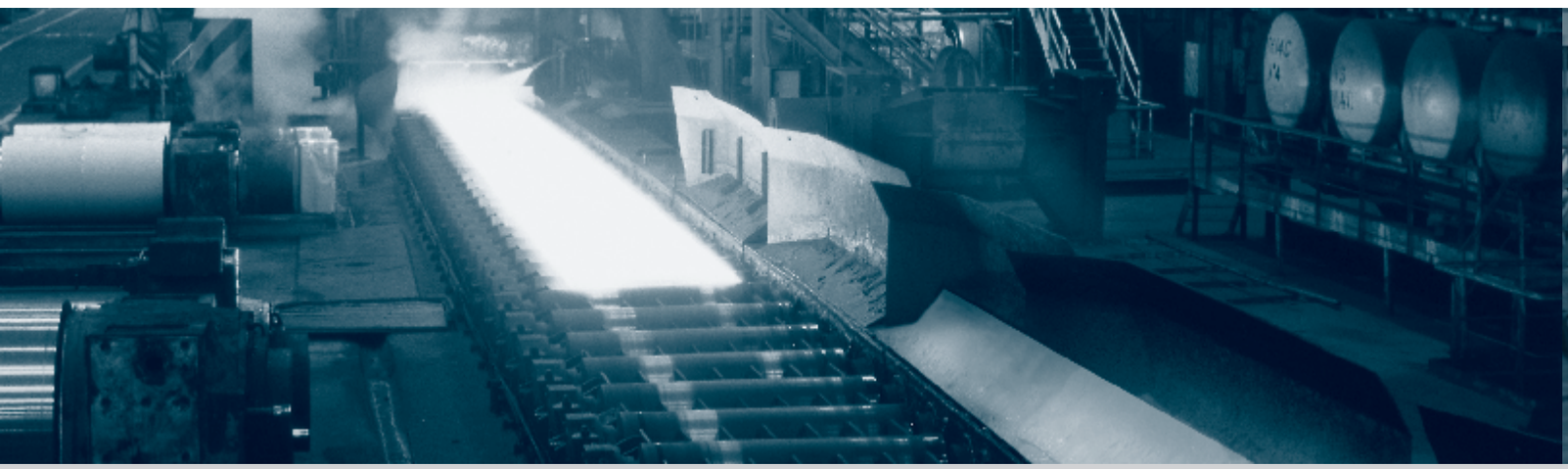
Application
Fan and exhausters for: tunnels, metros, subways, shopping centres, car parks, supermarkets and other applications with large concentration of people.

Features	Benefits
Mounting Flexibility	Fan and Exhaust motors can be supplied with the following features: pad, foot or flange mounted Besides the mounting configurations the motor can be also supplied with T-box and terminal block or without T-box and loose cable leads allowing remote assembly of the T-box
W22 Platform	Offers on all the innovative features of the W22 General Purpose Motors platform (for foot or flange mounted)
Special design for high ambient temperature	Components carefully designed to withstand the operation in extreme temperature conditions
Extensively tested and approved according to EN 12101-3	Safety and reliability
WISE® insulation system	Increases stator electrical strength and allows the motor operation by frequency inverters, without damage by voltage peaks*

**For more information about Frequency Inverter operation, please see page 23.*

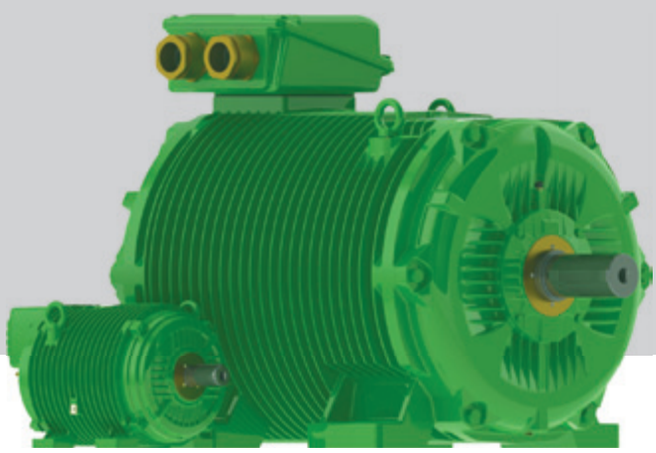
Roller Table Motors

Severe operating conditions require stronger motors. The Roller Table motor's frame is fitted with radial fins that prevent residue accumulation on the frame surface. The line is also fitted with an advanced sealing system, high protection against corrosion and high mechanical strength, thus requiring low maintenance and providing high durability and productivity.



Standard Features

- Output: 3,0 kW to 260 kW
- Number of Poles: 4, 6, 8, 10 and 12
- Frequency: 50 Hz
- Frames: 112M to 400
- Voltage: 380-415/660/440-460 V
- Colour: Ral 6003 - Green



Application

Roller tables and laminating machines for the steel industry.

Features	Benefits
Premium Efficiency - IE3	Exceeds the IE3 efficiency levels specified in the IEC 60034-30 to provide significant energy savings and a fast return on investment
Radial/circular fins	Prevent residue accumulation on motor frame
W3Seal® sealing system and IPW66 degree of protection	Protect the motor against the ingress of contaminants into the motor frame
Sealing at cable inlet and sealing between endshield and frame	Protect the motor against the ingress of contaminants into the motor frame
Shaft, bolts and nameplate are made of stainless steel	Provides high corrosion resistance
Internal epoxi anti-corrosion painting	Prevents corrosion of internal motor components and improves protection of windings
Painting plan for aggressive environments	Provides more resistance in corrosive environments
WISE® insulation system	Increases stator electrical strength and allows the motor operation by frequency inverters, without damage by voltage peaks*

**For more information about Frequency Inverter operation, please see page 23.*

Brake Motors

High-performance companies require equipment tailored to their needs.
WEG brake motors are suitable for equipment where quick and safe stops and accurate load positioning are required. WEG braking solutions allow synergy in the production process, providing agility and safety.

Standard Features

- Output: 0.12 up to 37 kW
- Poles: 2, 4, 6 and 8
- Frame: 63 up to 200L
- Frequency: 50 Hz
- Voltage: 220-240/380-415 V (up to 100 L)
  380-415/660 V (from 112M and up)
- Colour: Premium Efficiency - IE3: RAL 6002 - Green
  High Efficiency - IE2: RAL 5009 - Blue
  Standard Efficiency - IE1: RAL 5009 - Blue

Versions Available

- Premium Efficiency - IE3
- High Efficiency - IE2
- Standard Efficiency - IE1
- Cast Iron or Aluminium Enclosures

Applications

These motors can be used on any machine that requires quick stops and time savings during installation, such as: packing equipment, conveyors, washing and bottling machines, overhead cranes, elevators, printing Machines, gates, wood machinery, etc.

Features	Benefits
High performance braking system	Ensures quick and safe stops and accurate load positioning and requires low maintenance
Manual brake release	Possibility to keep the motor free during emergency situations or whenever necessary
Aluminium frame available	Lower weight with the same reliability
WISE® insulation system	Increases stator electrical strength and allows the motor operation by frequency inverters, without damage by voltage peaks*

**For more information about Frequency Inverter operation, please see page 23.*

W22Xd Flameproof Motors

As a result of intensive research and development, WEG launches its new explosion-proof motor line, the W22X. Incorporating the same innovative concepts of the W22 general purpose motors, the W22X line is an evolution on the market of classified area products offering high efficiency levels, energy saving, low operational costs, extended lifetime, low maintenance and assured safety.

Standard Features

- Output: 1.25 to 330 kW
- Number of Poles: 2, 4, 6 and 8
- Frequency: 50 Hz
- Voltage: 220-240/380-415 V (up to 100 L)
  380-415/660 V (from 112 M and up)
- Frames: 71 - 355M/L
- Colour: Premium Efficiency - IE3: RAL 6002 - Green
  High Efficiency - IE2: RAL 5009 - Blue

Versions Available

- Premium Efficiency - IE3
- High Efficiency - IE2
- Multi speed motors (Dahlander, Double Winding, etc.)
- 10 and 12 poles

Applications

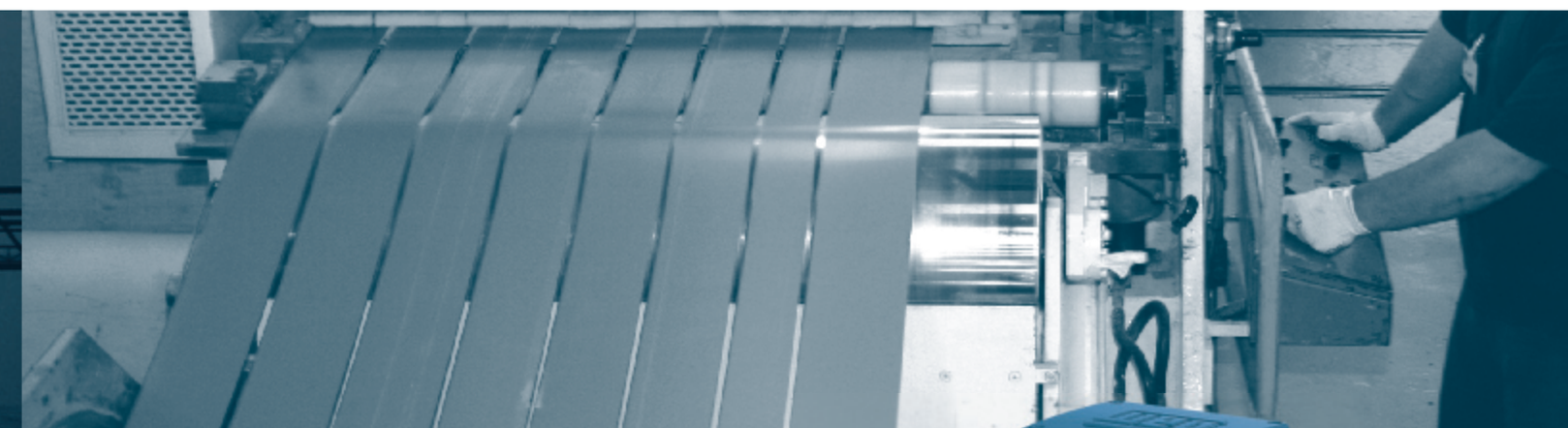
Pumps, compressors, fans, blowers, conveyors and other sever duty applications in explosive atmospheres classified as Zones 1 and 2, gas groups IIA, IIB or IIC.

Features	Benefits
W22 Platform	Offers on several innovative features of the W22 General Purpose Motors platform
High Efficiency Levels	Even through the EN directive does not cover explosion-proof motors, WEG feels that since the introduction of the ATEX Regulations there has been an increase in demand for high-efficienty hazardous area products. Due to this increase, WEG launches the W22X line with the IE2 efficiency level as standard for all IEC motors
New terminal box	The terminal box was designed with plenty of internal space, allowing easy access and safe handling of the power cables, even when large size cables are required
Wide range of certified accessories	The new W22X line offers a wide range of accessories affording suitability for a wide range of customer specifications, without losing focus on the safety of the application
Easy maintenance	The motor components were carefully designed in order to ensure easy maintenance: ■ W22X motors are fitted with bearing caps on the external side of the endshields, for easy bearing inspection ■ The motors also can be supplied with grease nipples and open bearings, which increased the bearing lifetime ■ Easy seal change allows higher degree of protection ■ The motor feet are double drilled, facilitating the replacement of motors already installed at the plant ■ The feet still have provisions for dowel pins, making the alignment of motors easier when removed for maintenance from their mounting bases
Zone 21 and 22 certified	To enable a higher functionality to the W22X line, these motors will be also certified for applications in ambients where combustible dusts/fibers may be expected to be present
IIC Group certified	Safety for hydrogen gases family hazardous areas
Protection	Motor suitable to operate in hazardous locations classified as Zones 1 and 2
WISE® insulation system	Increases stator electrical strength and allows the motor operation by frequency inverters, without damage by voltage peaks*

**For more information about Frequency Inverter operation, please see page 23.*

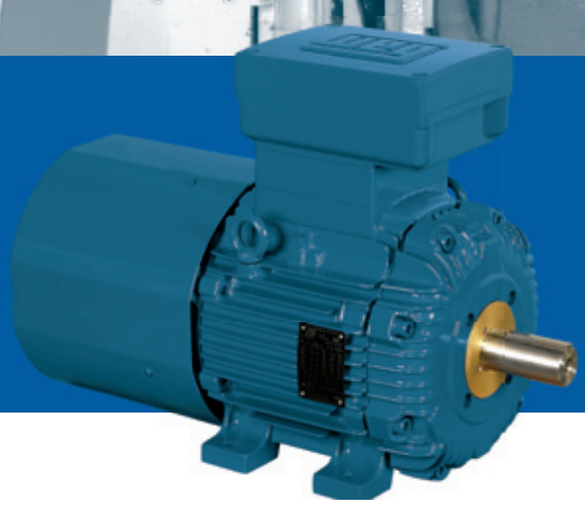
Flameproof Motors with Brake

The installation of electric motors where flammable products are continuously handled, processed or storaged must comply with the most demanding safety standards in order to guarantee life protection, machines and environment. Following to highest safety standards, WEG explosion-proof motors integrate the high performance of the brakes. An effective solution for equipment where fast safety stops are required, as well as precise positioning with safety in hazardous areas such as Zone 1 and Zone 2.



Standard Features

- Output: 2.2 up to 18.5 kW
- Number of Poles: 2, 4, 6 and 8
- Frequency: 50 Hz
- Voltage: 380-415/660 V
- Frames: 132 S to 160 L
- Colour: High Efficiency - IE2: RAL 5009 - Blue
  Standard Efficiency - IE1: RAL 5009 - Blue



Versions Available

- High Efficiency - IE2
- Standard Efficiency - IE1

Applications

Pumps, compressors, fans, blowers, conveyors and other sever duty applications in explosive atmospheres classified as Zones 1 and 2, gas groups IIA or IIB.

Features	Benefits
High performance braking system	Ensures quick and safe stops and accurate load positioning and requires low maintenance
Manual brake release	Possibility to keep the motor free during emergency situations or whenever necessary
Modern flame retention system with robust frame, endshields and T-box	Avoid flame propagation from inside the motor to the external side, guaranteeing safety life protection, machines and environment
W3Seal® sealing system and IPW66 degree of protection	Protect against the ingress of contaminants inside the motor frame
Certification for the use with frequency inverters - T4	Guarantee in speed variation applications and hazardous areas such as
Additional nameplate	Easy identification of the motors in the factory and traceability
Painting Plan for Severe Environments	Special for industrial severe environments, sheltered or not, which may contain
Protection	Motor suitable to operate in hazardous locations classified as Zones 1 and 2
WISE® insulation system	Increases stator electrical strength and allows the motor operation by frequency inverters, without damage by voltage peaks*

**For more information about Frequency Inverter operation, please see page 23.*

W22Xtb Dust Ignition Proof Motors

The W22Xtb motor has been specially designed to maximize safety and quality of motors apllied in explosive atmospheres – Zone 21 (grain processing, cereals, textile fibers, powder coating, polymers, etc.) Reliability and safety is ensured at the presence of conductive dust suspension (cloud) or dust layer (up to 5 mm), according to IEC standards.

Standard Features

- Output: 0.12 up to 315 kW
- Number of Poles: 2, 4, 6 and 8
- Frequency: 50 Hz
- Voltage: 220-240/380-415 V (up to 100 L)
  380-415/660 V (from 112 M and up)
- Frames: 63 to 355M/L
- Colour: Premium Efficiency - IE3: RAL 6002 - Green
  High Efficiency - IE2: RAL 5009 - Blue
  Standard Efficiency - IE1 - RAL 5010 - Blue

Applications

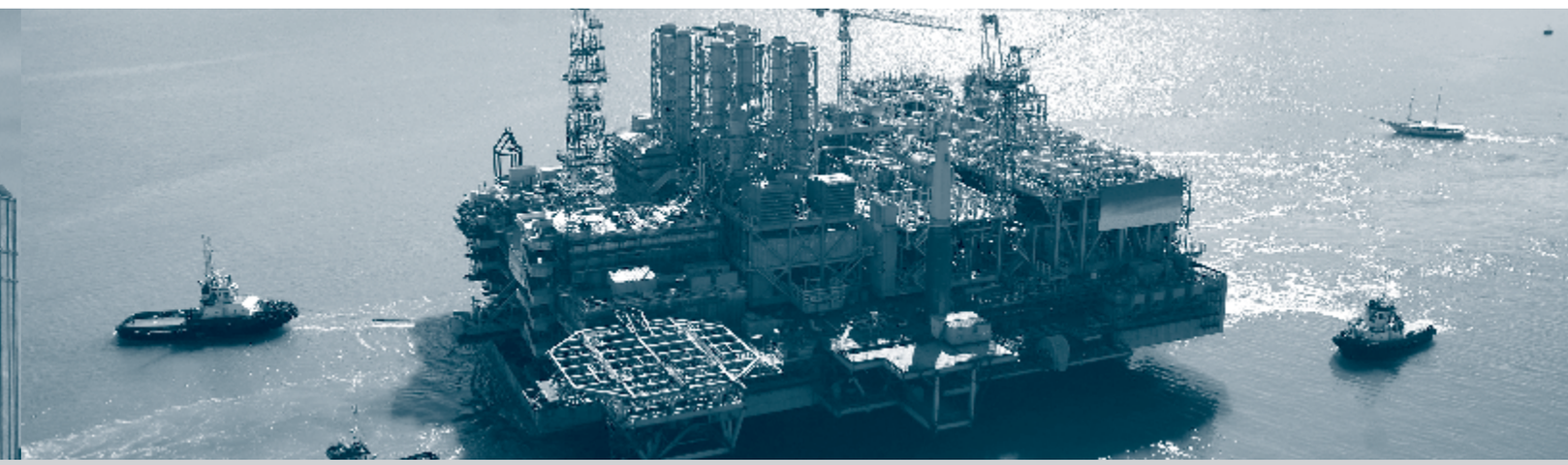
Sugar refining plants, Breweries, cement plants, textiles, pharmaceutical, chemical, agricultural process industries and other applications in explosive atmospheres classified as Zones 21 and 22.

Features	Benefits
Reduced surface temperature	Safety. Prevents the ignition of combustible dust or fibers in contact with the motor
Conductive material fan	Safety, avoiding sparks that could cause the ignition of the combustible material present on the environment
Degree of Protection IP66	Protect against the ingress of contaminants inside the motor frame
Winding Thermal Protection	Protection the motor at abnormal operating conditions, preserving the designed surface temperature
WISE® insulation system	Increases stator electrical strength and allows the motor operation by frequency inverters, without damage by voltage peaks*

**For more information about Frequency Inverter operation, please see page 23.*

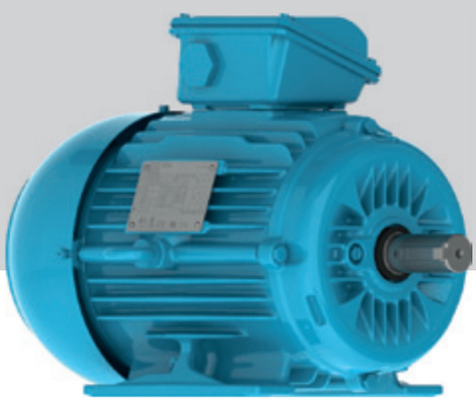
W22Xn Non-Sparking Motors

The installation of electric motors where a flammable mixture is not frequently present but may represent risks, must comply with the most demanding safety standards for life protection, machines and environment. Following to the highest safety standards WEG Ex nA/Ex tc motors are flexible to adapt to various applications allowing your company agility during installation, easy operation, low maintenance cost and safety.



Standard Features

- Output: 0.12 kW to 250 kW
- Number of Poles: 2, 4, 6 and 8
- Frequency: 50 Hz
- Voltage: 220-240/380-415 V (up to 100 L)
  380-415/660 V (from 112 M and up)
- Frames: 63 to 355M/L
- Colour: Premium Efficiency - IE3: RAL 6002 - Green
  High Efficiency - IE2: RAL 5009 - Blue
  Standard Efficiency - IE1 - RAL 5010 - Blue



Applications

Pumps, compressors, fans, mills, presses, elevators, machine tools, woodworking, grinders, looms, packaging machines, conveyors, bootling machines and other applications in explosive atmospheres classified as Zones 2 and 22.

Features	Benefits
Certifications	Guarantee of compliance with the tests of the world's most demanding certification bodies
Protection	Dual certification for Zone 2 (gas) + Zone 22 (non-conductive dusts)
Thermal protections	Safety. Two sets of PTC's; one to prevent the ignition of gases present at the explosive atmosphere and other to ensure low motor surface temperature and the ignition of combustible dusts
Premium motor	IE3 efficiency level available for all motors range
WISE® insulation system	Increases stator electrical strength and allows the motor operation by frequency inverters, without damage by voltage peaks*

**For more information about Frequency Inverter operation, please see page 23.*

Water Cooled Motors

WEG Water Cooled motors can be used in a wide variety of applications and are mainly recommended where space and noise level reduction is required.
Areas with difficult access for maintenance are also part of the scope of application of WEG Water Cooled motors.

Standard Features
- Output: 18.5 kW to 450 kW
- Number of Poles: 2, 4, 6 and 8
- Frequency: 50 Hz
- Voltage: up to 660 V
- Frame: 180L to 355M/L
- Colour: RAL 5009 - Blue

Applications
Compressors, injection machines, water treatment plants, textile industries, mining equipment, vacuum pumps, power train and marine equipment.

Features	Benefits
Cooling method IC71W	Water jacketed system offers excellent heat exchange, increasing bearing and motor lifetime
Higher output x frame ratio	Demands less space on plant, facilitating the access for maintenance operations
Pt-100 thermal detectors	Thermal resistances Pt-100 supplied in windings and bearings provide precise and constant temperature monitoring and a rapid detection of any abnormal operation condition
WISE® insulation system	Increases stator electrical strength and allows the motor operation by frequency inverters, without damage by voltage peaks*

**For more information about Frequency Inverter operation, please see page 23.*

Single-Phase Motors

Flexible and Compact Motors, designed with highest technological available tools and suitable for the most varied domestic, rural and industrial applications.

Standard Features
- Output: 0.25 kW to 7.5kW
- Number of Poles: 2 and 4
- Frequency: 50 Hz
- Voltage: 220 / 440 V
- Frame: 63 to 132M
- Colour: RAL 5009 - Blue

Versions Available
- Cast Iron or Aluminum Enclosures
- Start and run capacitors or Run capacitors

Aplication

Fans, Compressors, Pumps, Pulleys, Cranes, Continuous Conveyorss, Silo Unloaders, Grinders and other general applications.

Features	Benefits
Performance	High starting and operating torques
Start capacitor	High starting torque for most varied severe applications
Run capacitor	Easy adaptation to for double frequency with low vibration and higher reliability
Easy installation and operation	Suitable for domestic and rural power supply conditions
Flexibility	Design adaptable for the most varied applications and needs. Several definite purpose lines available If more information about single-phase dedicated application motors is required, please contact WEG

Tips on How to practice Energy Efficiency for Electric Motors

- Evaluate the technical-commercial feasibility for the replacement of the existing motors with high efficient machines
- Re-rate correctly the motors output according to the current operating load
- Avoid rewinding of old or previous rewound motors
- Install motors suitable for the operating ambient and duty
- Use variable frequency inverters (drives) (CFW) for variable load applications
- Balance the electrical current at the three phases
- Avoid voltage variations
- Adjust the conductors according to the applicable voltage and current
- Check the motors alignment
- Check and eliminate existing noise and vibration sources
- Lubricate/replace the bearings according to manufacturer's instructions
- Avoid starting multiple large motors at the same time

Think Green!

Applying Motors with Frequency Inverters

The stator windings of WEG motors are wound with class “F” insulation (class H optional) and are suitable for either DOL starting or via 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 the table below:

Motor rated voltage	Voltage Spikes	dV/dt *	Rise time*	Time between pulses
	at motor terminals (phase-phase)			
Vrated ≤ 460 V	≤ 1600 V	≤ 5200 V/µs	≥ 0.1 µs	≥ 6 µs
460 V < rated ≤ 575 V	≤ 1800 V	≤ 6500 V/µs		
575 V < Vrated ≤ 690 V	≤ 2200 V	≤ 7800 V/µs		

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

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 met, a filter (load reactor or dV/dt filter) must be installed at 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 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.
5 - From frame size 315S/M upwards additional measures should be taken in order to avoid detrimental bearing currents. This can be accomplished by means of the use of an insulated bearing or an insulated hub endshield at the non drive end side and a shaft grounding brush mounted on the drive endshield.
6 - Motors operating with frequency inverters may present a higher temperature rise than when operating under sinusoidal supply 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. Under these conditions, please contact WEG.
7 - For the application of motors for potentially explosive atmosphere with variable frequency inverters, please contact WEG.

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