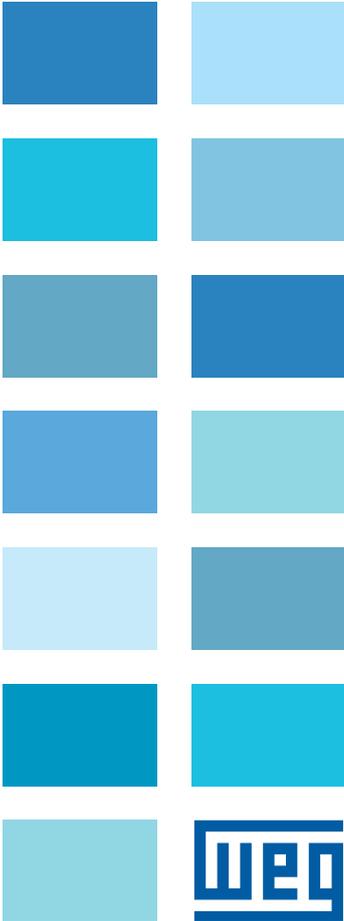
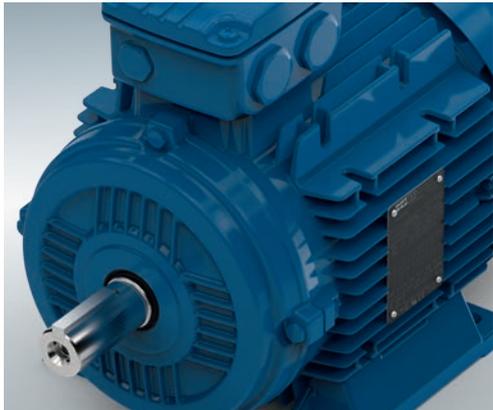
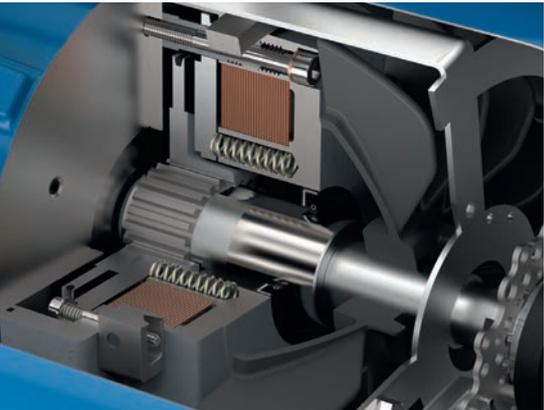
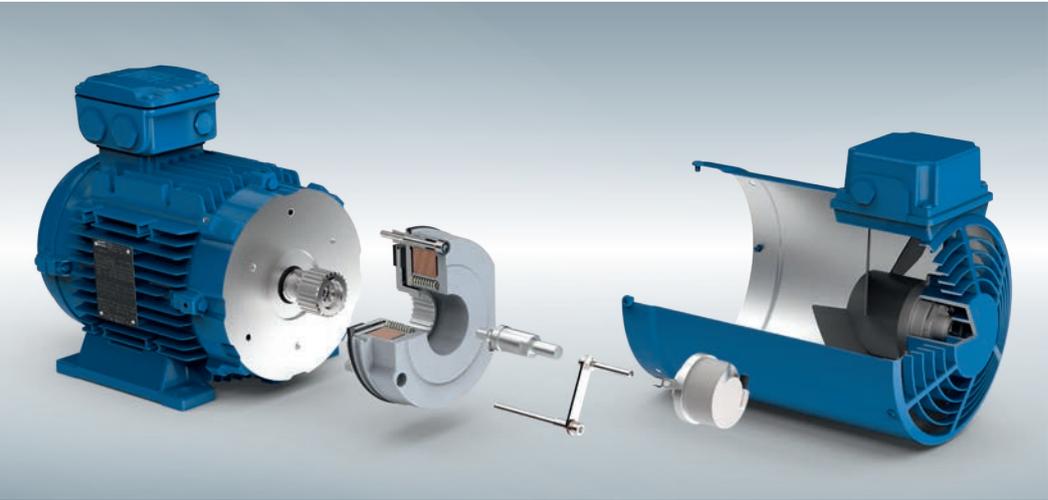


# Modular System Motor

Low Voltage Motors  
IEC Frame Sizes 63 to 315





## WEG. Global solutions in the fields of motors, automation and energy

As an international company WEG manufactures products for energy production, distribution and control allowing industry to operate efficiently and effectively. Founded in 1961 by three Brazilian entrepreneurs, WEG has grown into one of the most important producers for electric motors. WEG has more than 28,000 employees in production sites in Brazil, Argentina, Mexico, USA, Austria, Portugal, China, India and South Africa as well as in branches in 25 countries worldwide.

### Combined competences

Due to the broad range of products and services, the company is able to realise innovative complete solutions in the area of electrical drive engineering, such as low and high voltage motors, transformers, generators, geared motors, switching units and control elements, inverters, soft starters, explosion-proof motors according to ATEX-standards, smoke extraction motors or complete, ready-for-use systems. With the W22 asynchronous mo-

tors, WEG offers one of the broadest range of energy-efficient motors (IE1-IE4) in the industry, thus assuming a leading position.

By acquiring the Austrian manufacturer Watt Drive Antriebstechnik GmbH at the end of 2011, the corporation was able to expand its product range with the addition of gear units and geared motors, while also enhancing its position in the German-speaking market.

### Watt Drive

Watt Drive specialises in developing and producing gear drive solutions. The company is based in Markt Piesting, Austria, but offers its products and services concerning drive engineering and automation on international markets. With the combination of exceptional modular motors and gear systems, Watt Drive has a large range of complete drive systems for production lines and manufacturing plants.

**Watt Drive's most efficient combination for your applications:**  
the modular system motor together with the modular gear system up to 20,000 Nm



## EUSAS® - The versatile system motor

The **EUSAS®**-series (**EU**rope-**USA**-**AS**ia) combines WEG's competence in motor technology with the modular design by Watt Drive on a new level. The system allows the fast realisation of client-specific products worldwide.

### Worldwide voltage

The motor's special winding allows the selection of up to four different connections (star, delta, star-star, delta-delta) via the 12 wires on the terminal board. Therefore, EUSAS® motors are ready for use with almost all line voltages and frequencies worldwide.

### High performance

100 Hz characteristic - double performance. EUSAS® motors are ideally suited for operation with electronic speed regulation. Using the 87/100/120 Hz voltage/frequency characteristic, they can be controlled without special windings in frequency inverter operation mode. As a result, the same motor size can output up to two times the power without being overloaded.

### Client-specific but not expensive

EUSAS® system motors are outstanding due to their versatile possibilities of applications and enhancement. Therefore, a variety of individual solutions according to the client's demands can be realised. Based on high-standard technology and design as well as the advantage of WEG's international distribution network, fast and cost-effective availability of all designs is guaranteed.

### Operational under all conditions

Standard motors are certified according to IP55, external surface ventilation to IEC 60034-6 and the cooling to IC 411. The high insulation class F allows smooth operation in a temperature range from -20 to +40°C. For use in areas of high humidity, a special tropicalised insulation is available. Due to certifications according to CE, CSA, UL and EAC (replaces GOST) standards, operation on markets worldwide is guaranteed.

### One motor - numerous possibilities

The key advantage of the EUSAS® motor is the modular design, which allows the standard device to be extended and adapted according to the client's demands.

- **Brakes:** The motor can be equipped with spring loaded brakes. For special safety demands, a double brake is advisable, in areas with high dust or humidity, the use of a totally closed brake in accordance with protection class IP66 is possible.

Additionally, a manual release can be installed.

- **Forced cooling:** If, due to certain demands on the motor, self-cooling is insufficient, EUSAS® motors are easily equipped with forced cooling.
- **Terminal box design:** If the motor is equipped with extensive modules, the terminal box is replaced by a MIP-box (Multipin-box). With up to 22 sockets additional modules, such as brakes, encoders, etc., can be clearly and tightly attached and arranged.

The MIG (Multiplug) system replaces the terminal box entirely by integrating the wiring into one single plug.

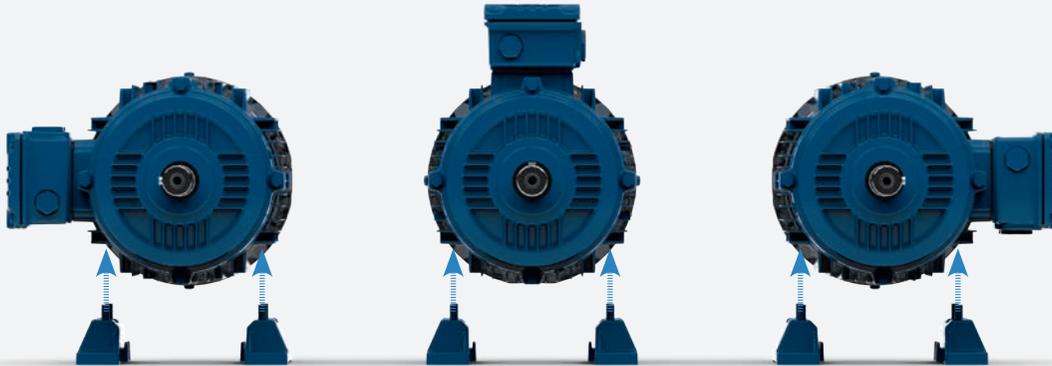
- **Encoders:** Naturally, the EUSAS® system is also prepared for the installation of various encoders, which can be mounted either in or outside the fan cover.
- **Further options:** Back stop, protection cap, hand wheel, condensating water hole, increased climatic protection K1, K2, etc.



## Terminal box

### Position of the Terminal box

Due to the practical design, the position of the terminal box can be adapted as required by simply removing and re-attaching the motor's feet (up to frame size 200).



### MIP - Multipin-box

This extended terminal box was designed to permit additional options, such as brakes, incremental encoders, thermal elements, etc., to be connected in an orderly fashion in the box. It can be equipped with up to 22 sockets, including a brake rectifier.



Execution with MIP-box



Execution with MIG-system

### MIG (Multiplug) connect system

The MIG-connect system is a standardized distributed connection system. Watt Drive uses it for the integration of power and control cabling into a single motor connector. The plug is assembled at Watt Drive and replaces the terminal box.

## Cooling

### Self-cooling (TEFC)

according to IEC 60034-6 (IC411)



Execution with self-cooling

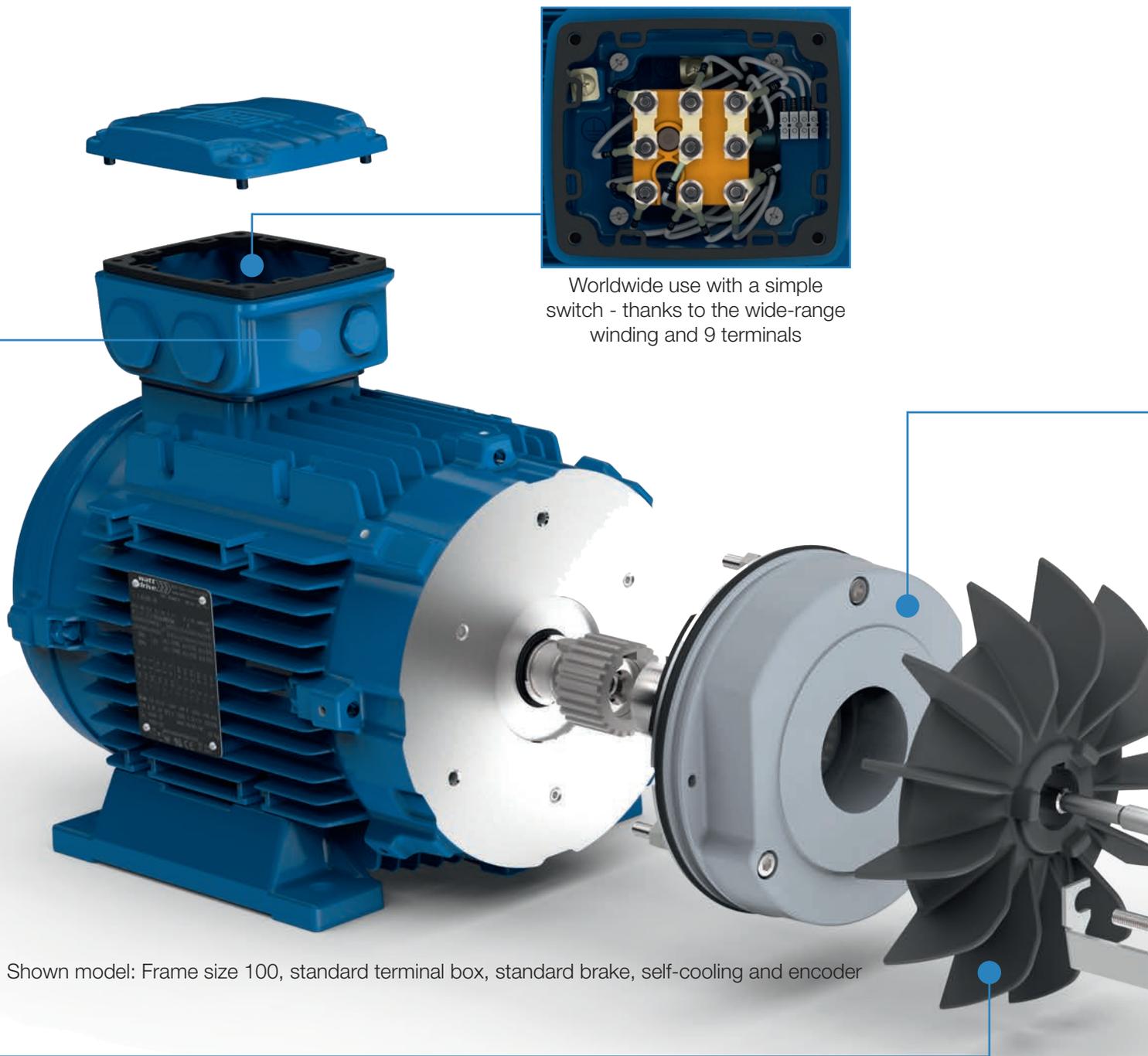
Execution with forced cooling



### Forced Cooling (TEFV)

On applications with high starting frequencies, large loads and/or operations with VFD's, self-cooling of the motor is not always sufficient, so forced cooling may be necessary.

# The motor system for a variety of applications



## IEC designs



Foot mounted B3 (WAG)



Flange mounted B5 (WAF)



Flange mounted B14 (WAC)



Integral motor B5 special (WAR)

## Product Features (Standard)

**Frame size:** 63 to 315  
**Output:** 0.12 to 200 kW  
**Number of poles:** 2, 4, 6  
**Efficiency level:** IE2, IE3  
**IEC design:** B3, B5, B14, B34, B35  
**Protection class:** IP55  
**Insulation class:** F  
**Ambient temperature:** -20°C to +40°C  
**Thermal protection:** Bimetallic switch and PTC thermistor  
  
**Housing material:** Aluminum (up to size 200), grey cast iron (sizes 225 to 315)  
  
**Painting:** RAL 5009  
**Use with frequency inverter:** At voltages up to 460 V

### Voltage:

	50 Hz	60 Hz
Up to frame size 100	220-240 V (D)	220-277 V (D)
	110-120 V (DD)	110-138 V (DD)
	380-420 V (Y)	380-480 V (Y)
From frame size 112	190-210 V (YY)	190-240 V (YY)
	380-420 V (D)	380-480 V (D)
	190-210 V (DD)	190-240 V (DD)
	660-690 V (Y)	660-(830) V (Y)
	330-365 V (YY)	330-415 V (YY)



## Brakes

### Spring loaded brake

The mounted spring loaded brake is a single-disc brake with two friction surfaces. It is released electro-magnetically and brakes by spring pressure, when the brake is de-energised. The DC-brake coil is supplied by a rectifier which is located in the motor terminal box and will be delivered as standard for AC-side connection.

### Manual release

For manual release of brakes from 5 Nm; fitted by factory

### Locking device

For securing the manual release in case of service

### Double spring loaded brake

For high demands on safety (e.g. stage construction in theatres)

### Totally closed spring loaded brake „Heavy Duty“

Protection degree IP66 due to fully encapsulated design with dust- and waterproof cable glands

### Low noise execution

Reduced switching noises by using an o-ring between armature plate and brake body

### Micro switch

Safety device for monitoring the brake's air gap between armature and magnet body

### Corrosion protection IP55 and/or dust protection IP65

For use in special weather and environmental conditions



Double brake „Theatre mode“ with encoder, unventilated



Brake with manual release and locking device

## Encoders

Watt Drive uses encoders with hollow shaft open at one end. The motor shafts of the EUSAS® motors are made ready for the attachment of encoder sets. Add-on kits are easy to retrofit. All models can be installed in- and outside the fan cover, except SSI encoders (only possible inside).

### Standard encoder (HTL / TTL, 1024 ppr)

Optional:

- SINCOS encoder
- Resolver
- DC tachogenerator
- SSI encoder
- Special encoder

Encoder outside the fan cover (IG)



Encoder inside the fan cover (SG) with plug-in connector on the terminal box

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