A man in a blue work uniform and a yellow hard hat is working on a large industrial pump. He is holding a clipboard and looking at the pump. The pump is a large, dark-colored machine with a prominent fan or motor housing. The background is a dark, industrial setting.

How about saving  
up to 50% of  
energy in water  
pumping?

**WEG shows you how.**

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## Did you know you can save energy and reduce the need for maintenance by using WEG variable speed drives in your water pumping operation?

WEG has over 40 years of expertise in providing pumping solutions, offering a complete line of products and features to ensure energy savings, operational reliability, and precise control in industrial and water utility applications.

### Everything the Pumping Systems sector needs:



**Minimize risk**



**Control pressure/flow accurately**



**Reduce maintenance downtime**



**Maximize energy savings**

### TURNKEY SOLUTIONS FOR

**Automation and power distribution**

**Sustainable energies**

**Electric mobility**

**Digital systems**

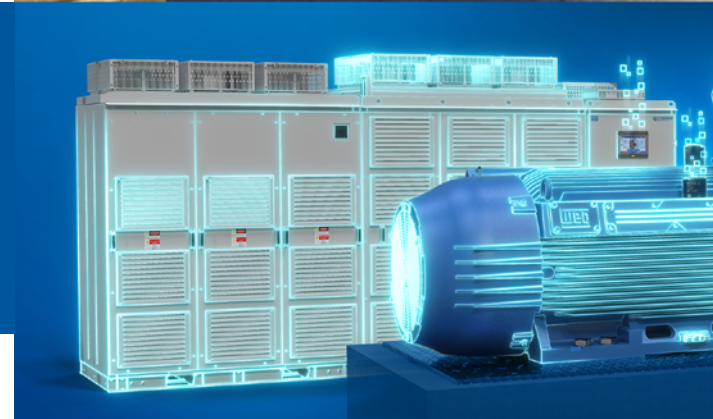
**Industrial coatings and clearcoats**

## Discover more reasons to choose WEG products for pump control

In addition to being considered one of the largest manufacturers of electric motors on the planet, WEG is also one of the largest and most complete providers of end-to-end global solutions, with product lines focused on automation, energy generation and distribution, systems digital, electrification, and much more.

### In-house Research and Development

With in-house research, development and testing laboratories, WEG provides customized solutions with efficiency and reliability, meeting the specific needs of each customer.



# The numbers that support our solutions

+ 60 years of experience  
in Brazil and  
around the world

Products  
present on 5  
continents

+ 47,000 employees  
spread across all  
continents

+ 4,700  
engineers

+ 1.1  
billion drives and  
electromechanical  
components ever  
manufactured

12,100  
hectares of  
reforestation, 55%  
of which is made  
up of renewable  
resources  
and 45% of  
untouched native  
forest

+ 70,000  
motors produced  
a day

**weg**

## A trusted name all over the planet



66 manufacturing sites  
in 18 countries



Commercial operations and  
technical support in 42 countries



Distributors in more  
than 120 countries

## Wherever you are we are with you



Efficient and responsive technical  
support, available in over 113 countries  
around the world



Maximize the lifespan of your equipment  
by close and personalized local support  
when you need it

## A sustainable choice for your equipment

68.7% of revenue from  
sustainable products



Leading global rating agency  
for corporate Sustainability  
Management



Leading global classification  
agency for Decarbonization  
Management



SUSTAINALYTICS

Measures company  
ESG risks

Find out more details in our Sustainability Report

# Global presence



66 MANUFACTURING SITES  
in 18 countries



+47,000  
Employees worldwide

Distributors/  
Agents in  
120  
countries

Sales to over  
135  
countries



COMMERCIAL OPERATIONS  
in 42 countries

- |           |          |           |             |              |                      |
|-----------|----------|-----------|-------------|--------------|----------------------|
| Algeria   | Chile    | France    | Kazakhstan  | Poland       | Sweden               |
| Argentina | China    | Germany   | Malaysia    | Portugal     | Switzerland          |
| Australia | Colombia | Ghana     | Mexico      | Russia       | Thailand             |
| Austria   | Denmark  | India     | Netherlands | Saudi Arabia | Türkiye              |
| Belgium   | Ecuador  | Indonesia | New Zealand | Singapore    | United Arab Emirates |
| Brazil    | Egypt    | Italy     | Norway      | South Africa | UK                   |
| Canada    | Finland  | Japan     | Peru        | Spain        | USA                  |

AFFILIATED COMPANIES

## WEG Group

**WEG** AUTRIAL

**cemp**  
WEG Group

**EM**  
WEG Group

**AKH**  
WEG Group

**WEG** CESTARI  
SUDUTEX

**Balteau**  
Grupo WEG

**marathon**  
WEG Group

**VOLTAN**  
WEG Group

**WEG** PPI-Multitask  
Factory 4.0

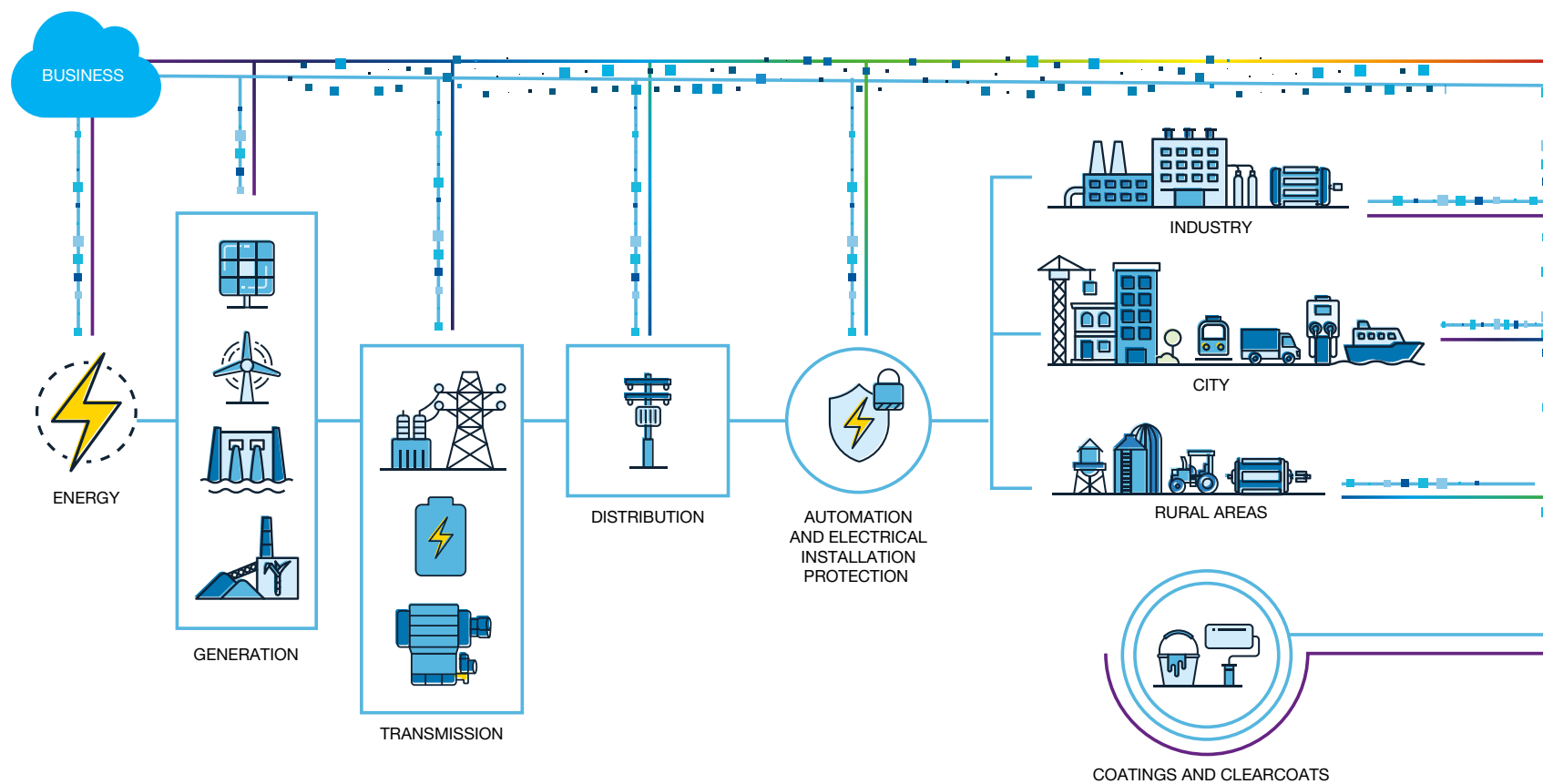
**rotor**  
WEG Group

**Volt**  
WEG Group



## End-to-end solutions

The global solution in electrical machines, automation and digitalization for industry, infrastructure, electric mobility and energy systems.



## WEG is intelligent, precise and reliable pumping

WEG solutions for intelligent pumping make your Variable Speed Drive suitable for pumping systems, ensuring precise pressure/flow control throughout the entire processing cycle, from water intake to sewage treatment. With an easy-to-use programming wizard, they help minimize maintenance time and maximize energy savings.

### Up to 50% energy savings using PID control

The PID controller, combined with the energy-saving function of WEG Variable Speed Drives, helps achieve optimal performance. Even with a minimal speed reduction of 20%, almost imperceptible in the application, energy consumption is reduced by nearly half.

#### And also:



User-friendly interface



High reliability



Reduction of CO<sub>2</sub> emissions



Reduced installation costs and space requirements



Integration capability with other WEG products and solutions



Reduced wear (efficient and balanced use of all pumps in the system)





# WEG solutions for intelligent pumping

AVAILABLE FOR CFW500, CFW11 AND CFW900 SERIES

Integrate with WEG solutions such as: Contactor, motor protectors, overload relay, fuse, miniature circuit breaker, motor, PLC and HMI.

## Simplex



## Multipump



## Multiplex



## Main differentiators

### Cloud data

Integrated with the CFW900, the WEG Motion Fleet Management (MFM) provides advanced monitoring, offering access to a large amount of data on the performance of the WEG Variable Speed Drive. This enables detailed operational analyses, allowing more precise and reliable decision-making, as well as predictive maintenance strategies that reduce costs and extend the equipment service life. For the CFW500 and CFW11 VSDs, connection to MFM can be made via the WEGscan 1000 gateway, ensuring that the entire VSD fleet is monitored in real time and integrated into WEG's digital ecosystem.

### Smooth pipe filling

The Pipe Filling function allows initial lubrication and filling operating for a certain time at a pre-set slow speed. In addition, soft filling helps prevent water hammer.

### Dry-run protection

Running the pump dry for extended periods can cause damage. Pump Genius detects such operating conditions without the need for a sensor, providing alarms and system protection.



### Anti-cavitation protection

When a pump cavitation condition is detected (e.g., low fluid levels), the VSD reduces the pipeline pressure to prevent mechanical damage and extend the rotor life.

### Sleep and Wake Mode/Sleep Boost

The sleep mode allows the pump to save energy and preserve the motor health when the demand/flow is below the required level for extended periods, keeping the pump in standby. Along with the Sleep mode, the software includes the Sleep Boost function, delivering a brief overpressure to the pump before the system is shut down. The wake mode automatically restarts the system when the pressure falls below the lower setpoint.

### Over- and under-pressure protection

### Energy Saving Function

The performance of an induction motor is directly related to how efficiently it converts electrical energy into motion. To ensure more efficient operation, it is essential to minimize losses and optimize the motor flux. Induction motors are designed to operate with higher efficiency when using around 75% of their full capacity. When the load falls below this level, efficiency decreases, resulting in higher energy consumption. To prevent waste, advanced technologies automatically adjust the motor voltage and frequency, ensuring that the magnetic flux is optimized for each load level. The energy-saving function reduces losses by adjusting the motor flux according to demand, activating whenever load and speed reach specific limits. In addition, the minimum necessary voltage is maintained to protect the equipment from damage. These intelligent strategies improve energy efficiency, reduce operational costs, and extend the motor life.

**Control of motors and permanent magnet motors, which offer the highest efficiency on the market.**

## AND ALSO:

**No need for PLC, HMI, or any other additional external device**

**Pipe break alarm**

**Graphical programming wizard**

**Programmable setpoints**

**Use of auxiliary pump for low-demand control (Jockey Pump)**

**Unclogging function**

**Master/slave configuration**

**Forced rotation function**

Learn more about each feature in our catalog.

# Variable Speed Drives - High Performance and Reliability

## POWER RANGES

Wide power ranges and great overload capacity.



## CFW500

0.18 to 2.2 kW – 0.25 to 3.0 HP /  
200-240 Vac - single-phase

1.5 to 55 kW - 2 to 75 HP /  
200-240 Vac - three-phase

0.18 to 110 kW – 0.25 to 150 HP /  
380-480 Vac - three-phase



## CFW11

1.5 to 2.2 kW - 2 to 3 HP /  
200-240 Vac - single-phase

1.1 to 110 kW - 2 to 150 HP /  
200-240 Vac - three-phase

1.5 to 630 kW - 2 to 970 HP /  
380-480 Vac - three-phase



## CFW900

1.1 to 2.2 kW – 1.5 to 3.0 HP /  
200 – 240 Vac - single-phase or three-phase

1.1 to 90 kW – 1.5 to 125 HP /  
200 – 240 Vac - three-phase

1.1 to 440 kW – 1.5 to 550 HP /  
380 – 480 Vac - three-phase

### Communication networks

The CFW series can be connected to the main industrial communication networks, using globally recognized protocols such as Modbus-TCP, CANopen, Profibus-DP, DeviceNet, PROFINET IO, EtherNet/IP, EtherCAT and BACnet through plug-in modules. In addition, any plug-in module comes with an integrated RS485 Modbus-RTU serial interface.

### Cloud communication

For low- and medium-voltage VSDs, data capture and transmission to the WEG Motion Fleet Management are performed directly via the WEGscan 1000 & 1001.

### Conformal coating

A special clearcoat is applied to electronic boards to extend their lifespan, protecting against dust, moisture, and corrosive chemicals. Class 3C2 protection is standard across the entire CFW series and complies with IEC 60721-3-3. An Extra-Coating option, Class 3C3, is also available for protection against corrosive gases in harsh environments.

### Low harmonic distortion

CFW VSDs are equipped with a DC-link inductor for harmonic mitigation, ensuring compliance with IEC 61000 parts 3-2 and 3-12, regarding harmonic injection into the grid.



# Pump Genius Configuration Wizard

Program your VSD using a computer through a friendly and intuitive wizard.

Using the free WLP (CFW500 and CFW11) and WPS (CFW900) software, it is possible to configure the Pump Genius application via a step-by-step graphical configuration wizard, guiding the setup of parameters and functions relevant to each application.

The WLP and WPS assist in creating automation applications, allowing graphical monitoring, parameterization and programming in Ladder language.



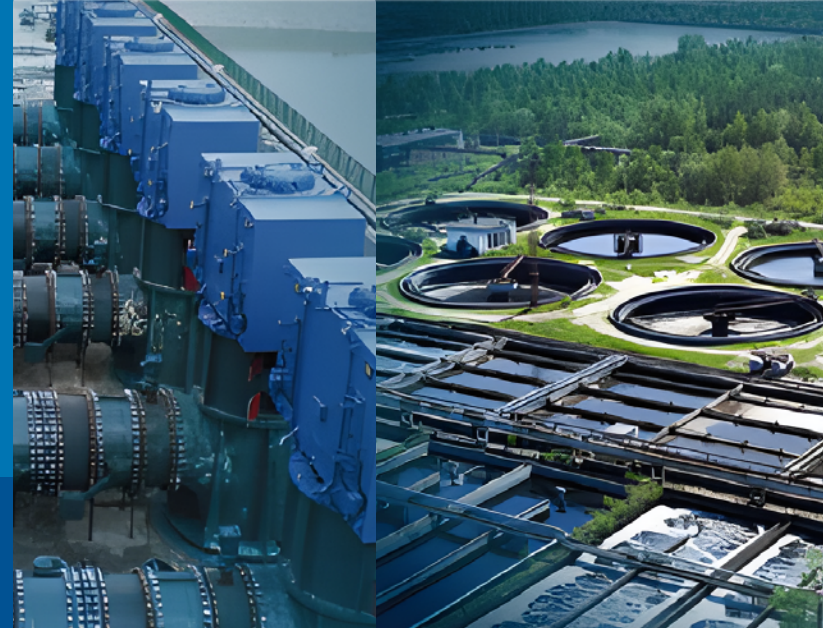
Tools with an intuitive interface



Easy configuration, control and monitoring



Reduced maintenance costs



## WLP (CFW500 and CFW11) | WPS (CFW900)



### Monitoring

You can view dashboards and graphs of the drive performance.

### Parameter list

Allows navigation of numeric parameters, enumerations and bit strings, with the parameter description and detailed help text.

### Parameter Backup

Allows recording backups. When restored, the backup is compared with the current parameterization.

### Oriented start-up

Allows performing the parameter setting following a guided sequence.

### Trend

Allows the creation of graphs containing multiple channels with different scales and units. Includes the option to share captured images or export data via .csv file.

### Fault, alarm, and event log

Allows consultation of the device's fault, alarm and event history. Includes the option to share logs via .csv file.

# Energy savings of up to 50%

## IDEAL FOR



**Submersible pumps**



**Wastewater treatment plants**



**Desalinization plants**



**Irrigation systems**



**Water distribution**



**Constant-pressure systems for hotels, shopping malls, factories and stadiums**

## Segments



**Water and wastewater**



**Chemical industries**



**Desalination plants**



**Agriculture**

## Why choose WEG?

For WEG, providing solutions that convey reliability to the customer also means caring for the environment and addressing sustainability in an integrated way. With this in mind, we offer a broad portfolio of products that deliver energy efficiency and advanced process technology to our customers. Strong relationships with our business partners, combined with our global production capacity (footprint), demonstrate our flexibility and ability to customize solutions for each type of application. We have a global presence and local operations to uniquely meet your needs. In addition, we offer robust after-sales support through a global technical assistance network to better serve you around the world.

“We deliver efficient and sustainable solutions for the Water Segment, contributing to the construction of a more efficient and sustainable world.”



## CASE

# One of Boston's tallest buildings relies on WEG Pump Genius pumping solutions



## With 46 floors, One International Place is the sixth tallest building in Boston.



The company Industrial Pumps Sales & Service was hired by the management company of One International Place to modernize its old pumping system. Booster pumps, essential equipment in modern high-rise water systems, are responsible for “increasing” water pressure in the piping to ensure circulation to the upper floors.

With 46 floors, One International Place is the sixth tallest building in Boston, and any building over five floors requires a booster system, as water pressure decreases with height. Industrial Pump Sales & Service was tasked

with installing a 75 psi (pounds per square inch) system — the same pressure at street level — and increasing discharge pressure to 315 psi. “We were tasked with modernizing the entire system,” explains Joe Dias, Sales Manager at Industrial Pump Sales & Service. “Therefore, we selected three vertical multi-stage pumps, three 60 HP motors and three WEG CFW11 Pump Genius Variable Speed Drives.”


The VSDs were chosen because they are equipped with the Pump Genius software, a customized function of WEG VSDs. In this specific system, Pump Genius proved ideal for controlling this multi-pump configuration.

The Pump Genius software works with the CFW11 to control the system, monitor pressure, and maintain a flow of 600 gallons per minute per pump. The Pump Genius Multiplex function allows control of up to five pumps and offers an intuitive interface for easy programming, control and monitoring. The software can detect when a pump is consuming more energy than it should and, using load and speed information, the VSD automatically monitors and sends alerts in case of pipe leakage. Maximum system pressure can also be programmed to be activated in the event of

pipe blockage. Industrial Pump Sales & Service has experience and in-depth knowledge of WEG Pump Genius, having supported numerous installations in New England. When it was decided to modernize the pumping system of One International Place, choosing Pump Genius was easy, although installation was challenging. “Installing the new system was not easy, as the building was occupied — it’s like performing surgery on a patient while they’re playing a tennis match,” laughs Dias. “We worked overnight to get the first pump operational so the building would have water available the next morning, and we spent the following three nights putting the rest of the system into operation.”

The new system has been operating perfectly since 2014, with WEG Pump Genius ensuring that all three pumps work in harmony to meet the water demand of One International Place.



 +55 47 3276.4000

 automacao@weg.net

 Jaraguá do Sul - SC - Brazil

[www.weg.net](http://www.weg.net)