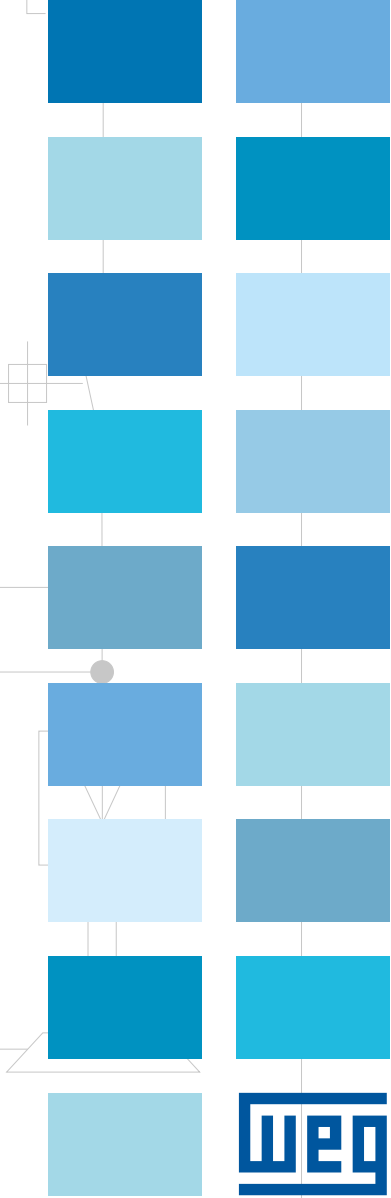
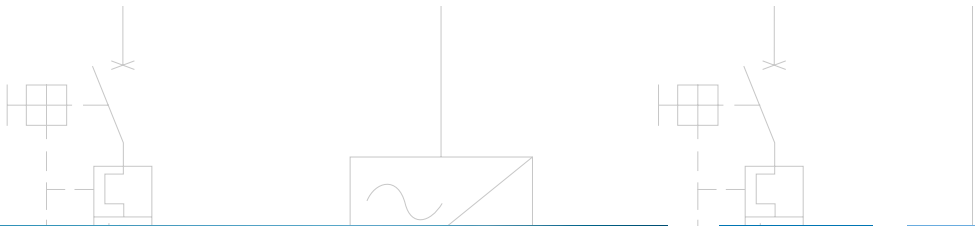


# Automation

## Pump Genius WEG



# Pump Genius WEG

## PUMP INTELLIGENCE TO YOUR SYSTEM

Pumps, pipeline and fittings can get seriously damaged if pressure or flow are out of control and such occurrences are not tracked early.

The Pump Genius is a customizable feature of WEG drives that enables your standard VSD to become dedicated for pumping systems. It ensures **accurate pressure / flow control** throughout the processing cycle, starting with raw water and its usage, ending on wastewater treatment.

With an easy-to-use programming wizard, Pump Genius helps you to **minimize downtime** and **maximize energy savings**. Everything you need is selecting one of the three options that best fits to your application.

**simplex**

**multipump**

**multiplex**



Submersible  
pumps

Wastewater  
plants

Desalination  
plants

Irrigation  
systems

Water  
distribution

## *simplex*

The Simplex software adds ideal features to the VSD for single pump control.



## *multipump*

Multipump is the best choice when a pumping system needs to be integrated with a cost-effective solution. It enables one single VSD to control up to 5 pumps via DOL, soft-starter or other starting methods.



## *multiplex*

Multiplex software is the most complete solution to accurately control flow and pressure with high reliability.

The VSDs control, monitor and manage the entire system on their own. There is no need for additional PLC, HMI or any external devices thus installation costs can be optimized.





# WEG TECHNOLOGY

DEDICATED TO YOUR APPLICATION.  
WATER EFFICIENCY TO OUR PLANET.



*Friendly programming*



*Enhanced control  
of pumping systems*



*Synergy with WEG  
products and solutions*

**Characteristics**

*Dedicated*

*Compatible*

*Increased efficiency*

*Reliable*



## Advantages

## Benefits

Special features to water and wastewater segment

Full protection to pumping systems and maximized usability through special functions

Save costs and space

Eliminates the complexity of existing panels that uses traditional control methods

Reduced maintenance costs

The software provides efficient and equal use of the pumps in the system

Wizards

WEG free of charge macro that can be added to your standard drive

User friendly

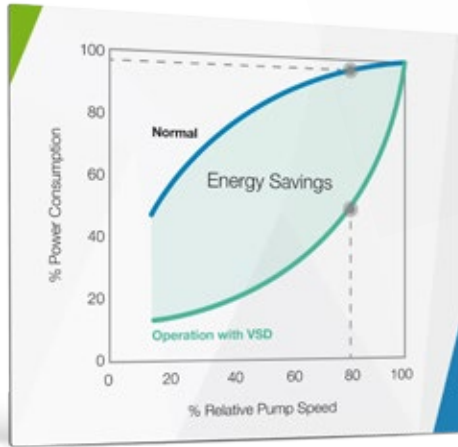
Intuitive interface tool for an easy setup, control and monitoring

Achieves better performance

By using the PID control, excellent results in terms of Energy Savings can be obtained

WEG quality

Same standard robustness and technology found in WEG products

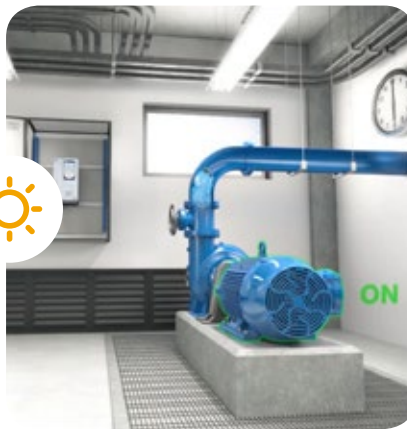


### Energy Savings

PID controller of WEG VSDs helps the pump to achieve the best performance. Even with a minimum speed reduction of 20%, almost unnoticed in the application, the power consumption is cut almost in half.

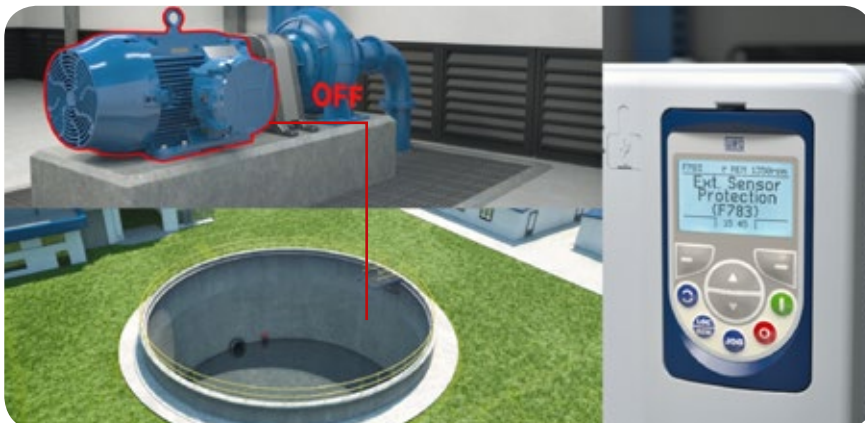
### Pipe Charging Mode

Pipe charging function allows for initial filling and lubrication as it runs for a timeframe at a preconfigured slow speed. Also, as it achieves a soft pipe filling, water hammer is avoided.



### Sleep and Wake-Up Modes / Sleep Boost

Sleep mode allows the pump to save energy and preserve the motor health when demand / flow is below the required for long periods, keeping the pump in standby mode. Along with the Sleep mode the software carries the sleep boost feature where a momentary overpressure is delivered to the pump before the system to be shut off. Wake-up mode restarts the system automatically when the pressure falls below the lower set point.



### Dry Pump Protection

A dry run persisting for long periods can cause potential damages to the pump. Pump Genius detects this operating conditions with no sensor, providing warnings and protection for the system.

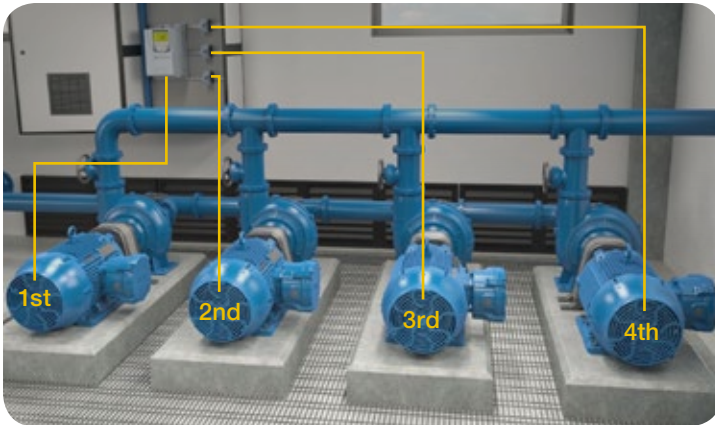


### Broken Pipe or Leakage Detection

Pump Genius diagnoses when a pump is consuming more power than it should. Through load and speed information, the drive automatically monitors and warns if a pipe leaks. Also, maximum system pressure can be configured to trigger when clogged pipe conditions take place.

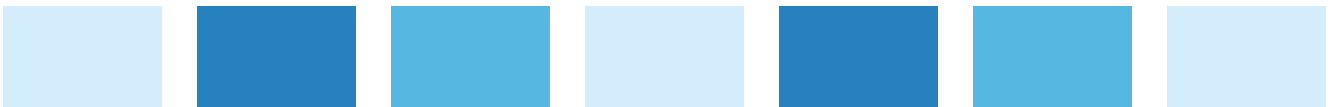
### Pump Cavitation Monitoring

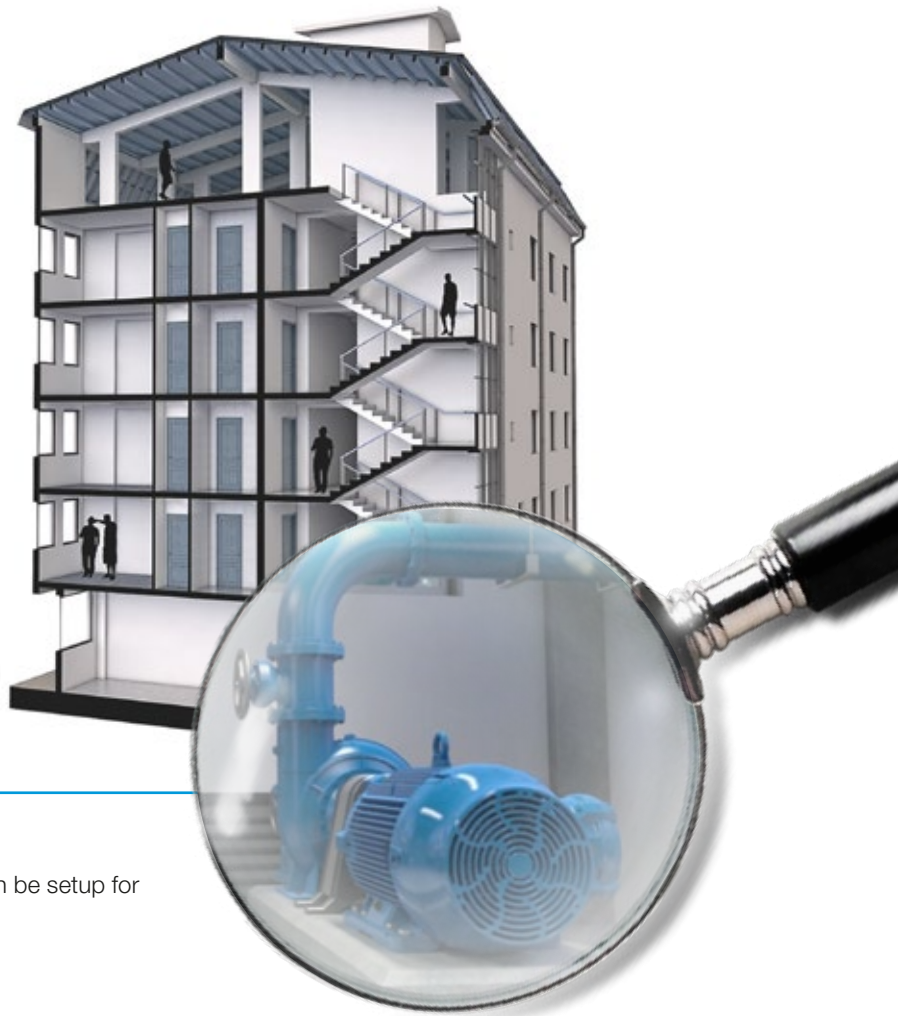
When a pump cavitation condition (e.g. low level of fluid) is detected, the drive reduces the pressure in the pipeline to avoid mechanical breaks and increases the impeller lifetime.



### Fixed or Floating Control

The user is able to select if the pumps will be started over a predetermined or rotating sequences with the intent to obtain equal wear and tear of individual pumps, as the logic monitors the runtime of the individual pumps and based on that, the specific pump is brought in or out.





### Programmable Schedules

Up to 12 programmable setpoints with time schedule can be setup for controlling the water supply.



### Jockey Pump

Under low demand, only the smaller pump is enabled. As the water consumption increases, the larger pump is activated and jockey pump is deactivated.

### Deragging

The drive is able to perform an automatic clean of the impeller every time the pump is started, whenever a clogging is detected or on user demand increasing pump lifetime.







### Master/Slave Configuration

Master/slave modes enable total management of the system. When conditions like broken sensor wire or communication wire is detected, another VSD will be automatically be nominated as master, taking the system management reestablished to keep regular conditions.

### Force Rotation

Force rotation makes the last pump in the system to be shut off when rotation is at certain low speed but it is not yet the sleep level. With old fashion logic the last pump would run indefinitely.



# Pump Genius Solution

Features		Single pump	Multiple pumps		
		SIMPLEX	MULTIPUMP		MULTIPLY
		CFW11 <sup>1)</sup>	CFW11 <sup>1)</sup>	CFW500	CFW11 <sup>1)</sup>
					+ SymbiNet Plugin (RS485, CAN)
Wake-up and sleep modes		✓	✓	✓	✓
Sleep boost		✓	✓	✗	✓
Pipe charging mode		✓	✓	✓	✓
Dry pump protection		✓	✓	✓	✓
Broken pipe or leakage detection		✓	✓	✓	✓
Pump cavitation monitoring		✓	✗	✗	✓
Multiple pumps	Fixed control	NA	Up to 6 pumps	Up to 4 pumps	Up to 6 pumps
	Floating control		Up to 5 pumps	Up to 3 pumps	
	Possibility to force rotation		✓ (Floating Control)	✓ (Floating Control)	✓
Master / Slave configuration		NA	✗	✗	✓
Programmable schedules		✓	✗	✗	✗
Deragging		✓	✗	✗	✗
Jockey pump		✓	✗	✗	✗
Customizable engineering units		✓	✓	✓	✓
Selectable setpoints via digital input		✓	✓	✓	✓
External sensor protection		✓	✓	✗	✓

Note: 1) Special firmware required.



## WEG in Desalination Plant in Algeria

Due to estimates, which shows that in the next 30 years the amount of water available per person in the north of Africa will be reduced to 80%, the Algerian government is investing on seawater desalination.

This includes the construction of three large desalination plants with production capacity of 400 cubic meters of water per day which will greatly benefit a population of over 2 million. Two units have already been concluded and the third is now being installed.

The Tlemcen-Honaine plant, located near the city of Oran, close to the border with Morocco has a production capacity of 150 thousand cubic meters and it will attend to 750 thousand inhabitants directly. It'll be one of the largest in the world.

WEG supplied Variable Speed Drives and soft-starters for the pumps that will withdraw water from the Mediterranean Sea at Honaine providing soft starting and speed variation for pumps which will result in higher efficiency.

It was invested in the three plants a total amount of US\$ 400 m. Besides the desalination plants, the resources will also be used in the construction of dams and for sanitation. According to Daho Ould Kablia, "with the new program, the Algerian government intends to find a balance between the different regions of the country and provide a fair supply and distribution of water and the services related to it."



***Benefit a  
population of over  
2 million***



***Production  
capacity of 400  
cubic meters***



***WEG supplied  
VSDs and  
soft-starters***



## Sustainability

Sustainability has been an integrated part of WEG's philosophy since its foundation. That is why awareness with environment protection has been a **major concern** in the company for the **correct use of natural resources**.

Half of the energy produced around the world is used to operate pumps, while one third of the world's population live in areas experiencing water shortages. As known by nations, the effective use of electric power reduces significantly environmental impacts and helps to guarantee the sustainable use of natural resources for the future generations.

**Guarantee the lowest environmental impact of our products and manufacturing processes by:**



**Being in compliance with the applicable environmental legislation**



**Improving continuously by establishing environmental goals and targets**



**Acting preventively with the aim of protecting the environment**



**Ecoefficient processes and products, saving natural resources**

### Certifications

ISO 50001:2011

ISO 14001:2014

ISO 9001:2008



**BUREAU  
VERITAS**

# Global presence is essential, as much as understanding your needs.

## Global Presence

With more than 30.000 employees worldwide, WEG is one of the largest electric motors, electronic equipments and systems manufacturers. We are constantly expanding our portfolio of products and services with expertise and market knowledge. We create integrated and customized solutions ranging from innovative products to complete after-sales service.

WEG's know-how guarantees our **Pump Genius** is the right choice for your application and business, assuring safety, efficiency and reliability.



**Availability** is to have a global support network



**Partnership** is to create solutions that suits your needs



**Competitive edge** is to unite technology and innovation



# Know



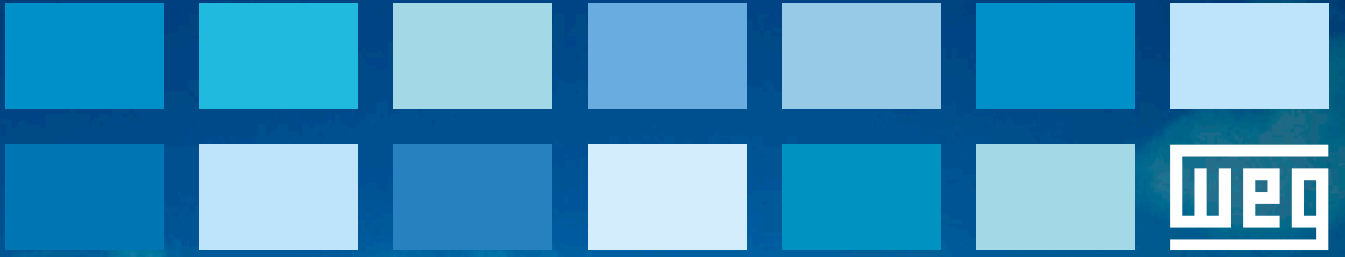
High performance and reliable products to improve your production process.



Excellence is to provide a whole solution in industrial automation that improves our customers productivity.

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

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# SUSTAINABLE ENERGY FOR INNOVATIVE PROJECTS



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