

# Automation Products and Solutions

Power, Motor Control,  
and Monitoring

Industrial Motors  
Commercial &  
Appliance Motors

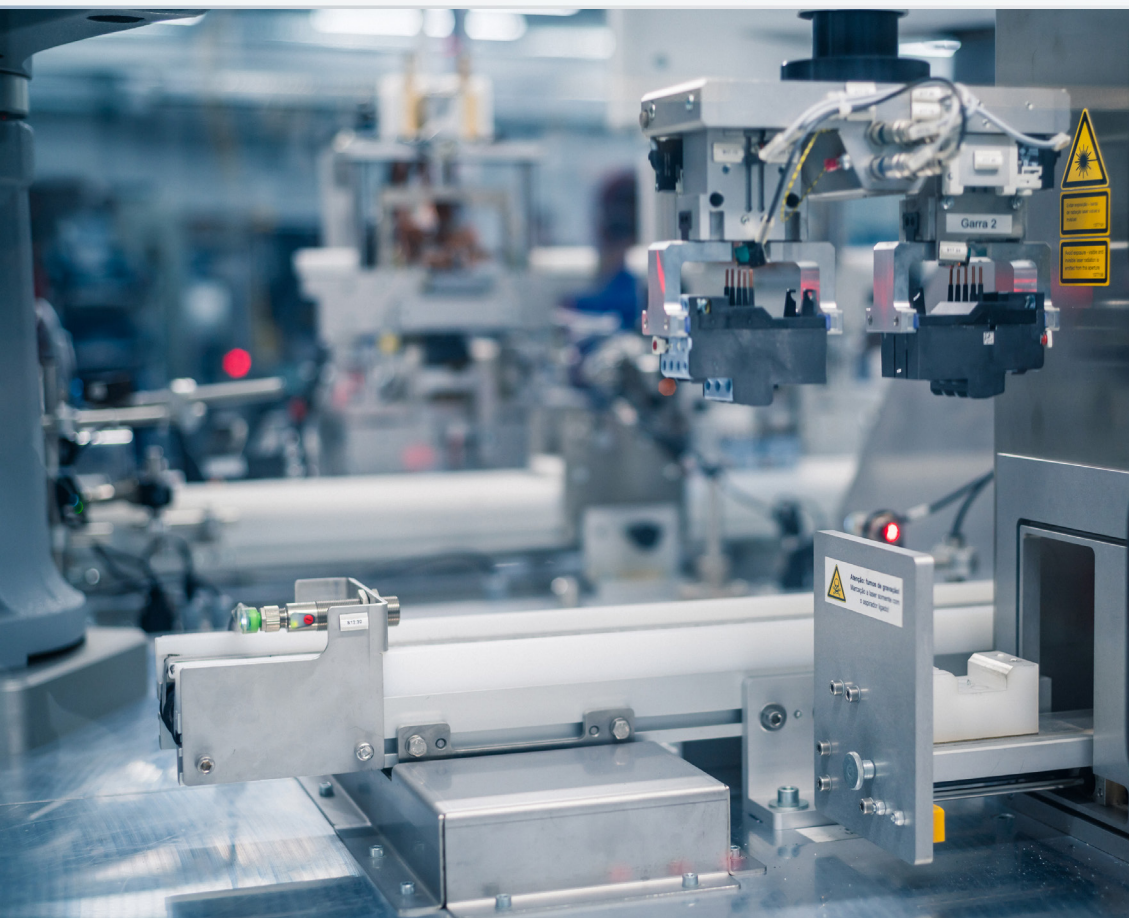
## Automation

Digital &  
Systems

## Energy

Transmission &  
Distribution

Coatings



Driving efficiency and sustainability



# LET'S START SOMETHING



## Power and Controls Products



## Variable Frequency Drives and Soft Starters



## OEM Solution Drives

High technology for motors driving. WEG VFDs offer several features like easy installation and operation and compact size.

### CFW100-G2



#### Variable Speed Drive

- Power range: 0.18 kW, 0.25 kW and 0.75 kW (0.25, 0.50 and 1.0 hp)
- Single-phase
- Power supply voltage: 200-240 V
- Scalar (V/F) or sensorless (VVW)
- Plug-in modules: I/Os, USB, Infrared and Fieldbus communication
- SoftPLC function built-in
- HMI with 2 parameters built-in
- Ambient temperature 50 °C
- All the electronic boards are conformally coated classified as 3C2 according to IEC 60721-3-3
- Protection degree IP20
- External RFI filter (optional)
- Flash memory module: in few seconds, it is possible to download the programming from a CFW100 to others without powering them up
- WPS free software for VFD/SoftPLC programming.

### CFW320



#### Variable Speed Drive

- Power rating: 0.25 to 10 hp (.18 to 7.5 kW)
- Single-phase or Three-phase supply
- Power supply: 110-127 Vac and 230 Vac and 460 Vac
- Rated output voltage: 230 Vac and 460 Vac three-phase
- 150% current overload capacity
- 2.5 to 15 kHz adjustable switching frequency
- V/F linear or quadratic control and WEG Voltage Vector (VVW) control
- Ambient temperature: 50 °C (230V), 40 °C (460V)
- EMC filters (optional)
- Compact dimensions, simplified installation and operation
- Speed adjustment via keypad - standard
- Protection degree IP20.
- Communication modules for Ethernet/IP, Modbus TCP/IP, RS485 (Modbus RTU), CANopen & Profibus-DP.
- WPS free software for VFD/SoftPLC programming.

## Machinery / General Purpose Drive

Advanced technology, developed for fast commissioning, providing great flexibility and competitive features while offering excellent performance and reliability. Designed for industrial use, it's perfect for OEM, system integrators, panel installers and End Users providing great benefits at a competitive price.

### CFW500

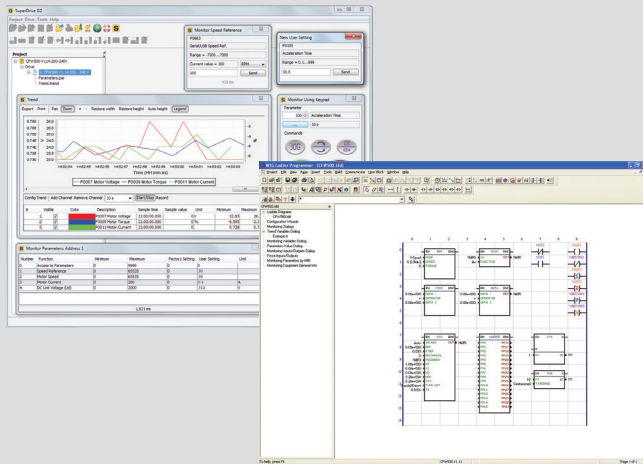


### Machinery / General Purpose Drive

- Power rating: 0.33 to 175 HP
- Single-phase and three-phase
- Power supply: 200-240 V, 380-480 V and 575 V
- Control modes: Scalar (V/Hz), Voltage Vector VVW & Vector control (Sensorless and Closed loop)
- LCD display with backlight and soft-keys
- SoftPLC function allows for ladder programming development
- Built-in RS485 Port for Modbus RTU/BACnet communication
- Up to 50°C ambient temperature
- Conformal coated circuit Board
- Plug & Play accessories:
- Communication modules for Ethernet/IP, Modbus TCP/IP, CANopen, Profibus-DP, DeviceNet, ProfiNet I/O.
- I/Os expansion modules
- USB expansion module
- Flash memory module
- IP20 & IP66 (N4X) Degree protection, optional NEMA1 kits available
- Optional STO/SS1-t Safety Module meets SIL 3 & PLe safety levels
- Optional Remote advance Text Keypad.

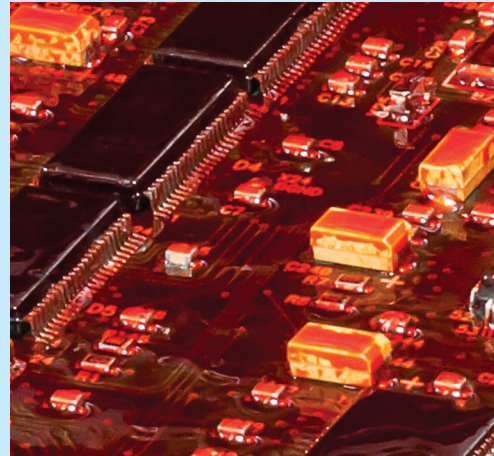


## Programming, Control and Monitoring for Free



Software for WEG VFDs and soft-starters can be downloaded on the website for free. WPS is a powerful tool permitting parameter setting and command/parameter monitoring simulating an oscilloscope. WPS also allows the creation/editing of applications for the SoftPLC being a smart and simple way to make your drive or soft-starter, motor and application work together. WLP is another free software for programming the SoftPLC and is used with our Pump Genius enabled VFDs.

## Reliability as Standard



VFD lifespan is extended by a varnish with protection against dust, humidity, high temperatures and some chemicals. This process called **Conformal Coating** (tropicalization) is standard for all CFW, SSW, SCA and MW500 lines, classified as 3C2 according to IEC 60721-3-3.

# System Drives

The CFW900 and CFW11 Series Drives are System Drives designed with built in high-tech features. The VFDs feature Plug & Play technology and that can automatically recognize and setup accessories. The CFW900 is available in power ratings from 1.5 to 200hp and the CFW11 is available in power ratings from 2 to 2500hp.

## CFW11



### Variable Speed Drive

- Power rating: 0.75 to 750kw (1 to 1000 HP)
- Power supply: 200-240 V, 380-480 V, 575 V and 690 V
- Human Machine Interface (HMI) with backlight, graphic display and soft-keys, and real time clock
- Plug & Play philosophy
- USB connection
- Memory card built-in
- Great variety of control accessories:
  - I/O expansion boards (digital and analog)
  - Incremental encoder interface and communication
- PLC board (positioning applications can be performed)
- Communication: Profibus, DeviceNet, CANopen, Ethernet / IP, Modbus-RTU (optional) and Profinet
- Intelligent thermal management
- Protections with failure and alarm warnings
- Normal Duty and Heavy Duty ratings to adapt optimally to all kinds of load
- IP20 enclosure
- IP21 (NEMA1) and IP55 (option)
- DC choke built-in (no requirement for minimum power supply impedance)



## CFW11M



### Modular Variable Speed Drive

- Power rating: 270 to 2,000 kW (350 to 2,500 hp)
- Power supply: 380-480 V, 500-600 V and 660-690 V
- Configurable rectifier unit for 6, 12, 18 pulses or even regenerative (AFE)
- Control board, Human Machine Interface (HMI) and control accessories common to entire CFW11 line
- Built-in input reactors, USB connection and memory card
- Up to 5 compact power units can be connected in parallel (easy servicing)
- Assembled the cabinet in IP41 as standard and IP42 as option with high speed fuses, main circuit breaker and control power supply circuits (ready to run cabinet)

Power books	380/480 V	500/600 V	660/690 V
1	370 kW (500 hp)	400 kW (500 hp)	400 kW (500 hp)
2	700 kW (900 hp)	710 kW (900 hp)	800 kW (1,000 hp)
3	1,050 kW (1,400 hp)	1,120 kW (1,400 hp)	1,200 kW (1,500 hp)
4	1,400 kW (1,800 hp)	1,500 kW (1,800 hp)	1,600 kW (2,000 hp)
5	1,750 kW (2,300 hp)	1,850 kW (2,300 hp)	2,000 kW (2,500 hp)



## CFW900



## Variable Speed Drive

- Ratings: 1.5 to 100HP @ 3/230 Vac; 2 to 200HP @ 3/460 Vac.
- Built-in Dual DC link reactors reduce harmonics.
- Conformal coated circuit boards.
- Detachable Modern Text/Graphic Keypad with USB port, built-in Bluetooth, Real-time clock with event log, copy function, Oriented start-up, and online help.
- Control Mode: Scalar, VVW (Voltage Vector WEG), Vector Control (Senseless and closed loop), VVW PM (suitable for fan, Pump, and compressor PM Motor).
- IoT - Ready VFD with MQTT protocol allows direct integration with WEG MFM (Online monitoring Platform)
- RFI filter meeting the requirements of electromagnetic compatibility directive "EMC Directive 2004/108/EC".
- RS-485 (Modbus RTU) port & Dual Ethernet ports (Ethernet/IP or Modbus TCP).
- STO (Safe Torque Off) and SS1 (Safe Stop, time controlled) safety functions meet SIL3 & Ple / Category 4 requirements, eliminating the need of Safety relay/safety contactors.
- 24Vdc power supply (max. 800mA); can also accept external 24Vdc power to keep control & communication circuits active.
- Advanced SoftPLC (PLC functionality).

## HVAC-R Solution

## CFW501 HVAC-R



## HVAC-R Variable Speed Drive

- Power rating: 0.18 to 18.5 kW (0.25 to 25 HP)
- Three-phase
- Power supply: 200-240 V and 380-480 V
- Control modes: scalar (V/Hz) or voltage vector VVW
- Normal Duty ratings (ND)
- Special electronic design - Better power factor and no requirement for minimum power supply impedance
- LCD display with backlight and soft-keys
- SoftPLC function allows for ladder programming development
- IP20 Degree protection, optional NEMA1 kits available
- Built-In two (2) RS485 Ports for Modbus RTU/BACnet//Metasys N2 communication
- Built-In RFI Filter
- Up to 50°C ambient temperature
- Conformal coated circuit Board

## Soft-Starters

WEG soft-starters, microprocessor controlled and fully digital, have been designed to provide high performance in starting and stopping electric motors. The keypad offers a user-friendly interface for parameter adjustment making the operation much easier.

### SSW05



#### Soft-Starter

- Power rating: 0.55 to 55 kW (0.75 to 75 hp)
- Power supply: 220-575 V
- Built-in bypass
- DSP control
- Remote keypad (optional)
- Built-in motor protections
- Ambient temperature up to 55 °C (131 °F)
- Easy Programming using Trim pots and Dip switches.
- Conformal coated circuit boards

### SSW07



#### Soft-Starter

- Power ratings: 4.5 to 315 kW (6 to 450 hp)
- Voltage: 220-575 V
- Built-in bypass
- SSW07 applied for heavy duty starts
- Three-phase controlled
- Integral motor and starter protections
- Programmable Kick Start function to start high break-away torque loads
- Optional Local and Remote Keypads
- Very compact product
- It is able to operate in 55 °C without derating
- Conformal coated circuit boards
- Optional RS485 (Modbus RTU), DeviceNet communication.

### SSW900



#### Soft-Starter

- Power rating: 3 to 900 kw (5 to 1200 HP)
- Power supply: 220-575 V and 575-690 V
- Built-in bypass
- Ambient temperature up to 55° (131°F).
- Modern, flexible and easy to use.
- Conformal coated circuit boards.
- Built-in SoftPLC adds the functionalities of a PLC.
- Free WPS software to program both Soft starter and Built-in SoftPLC.
- Detachable Graphic keypad with Bluetooth, Micro USB port, Real time clock, help menu & copy/paste function.
- Voltage ramp, current limit, voltage ramp + current limit, Pump Control, Torque Control, Current Ramp start modes.
- Optional Communication: Modbus RTU (RS485), Ethernet/IP, Modbus TCP/IP, DeviceNet, Profibus DP, ProfiNet I/O, CANopen.

## Enclosed Panel Solutions

### GPH2



### GPH2

- Power Ratings: 10-350HP
- Power Supply: 3/230Vac and 3/460VAC
- Built with SSW07 soft starter
- Rated for 300%, 30s, 10 Starts/hr (450% with Derating)
- Wall mounted / Floor mounted NEMA4 enclosure
- Main circuit breaker with through the door rotary handle
- Fused control power transformer (230/460VAC – 120VAC)
- Enclosure door mounted Start/Stop PBs and Run/fault pilot lights
- Optional:
  - Enclosure door mounted Soft starter keypad
  - AC3 rated full HP ATL soft starter bypass starter

### APS9



### APS9

- Dual rated soft starter panel, unique concept in the market:
- Normal Duty: 350% for 30s, 5-800HP @ 3/460VAC.
- Heavy Duty: 450% for 30s, 5-700HP @ 3/460VAC.
- Built with New SSW900 soft starter.
- UL Type 3R/4/12 rated White Enclosure.
- Main Circuit Breaker with through the door rotary handle.
- 65KA SCCR
- Service Entrance Rated.
- Full HP rated AC3 emergency ATL bypass starter with Class-30 overload relay.
- Fused Control power transformer (208/230/460VAC - 120VAC)
- Enclosure door mounted keypad and full suite of Pilot devices.

### EDP11



### EDP11

- Power Ratings: 2 to 75HP @ 3/230VAC; 2 to 1000HP @ 3/460VAC
- ND / HD ratings.
- Built with CFW11 VFD, reduces harmonics with built-in dual DC bus chokes
- Flange mounted VFDs, VFD heatsink out the back of the enclosure for more efficient heat dissipation
- Wall mounted / Floor mounted NEMA12 and 3R enclosure
- NEMA 3R - EDP11 is Service entrance rated
- Main circuit breaker with through the door rotary handle
- Fused control power transformer (230/460VAC – 120VAC)
- Enclosure door mounted VFD keypad, Start/Stop PBs & Run/fault pilot lights
- Options:
  - 3 – Contactor bypass
  - HOA Selector switch - Potentiometer – Extra terminal blocks

## Medium Voltage Variable Speed Drive

### MVW3000 & MVW01



### Medium & High Voltage Variable Speed Drives

Two topologies available:

- MVW3000 Cascaded H-bridge
  - Output voltage from 1kV to 13.8kV
  - Output power up to 30,000HP
  - Air cooled with N+1 redundant fans
- MVW01 Neutral Point Clamped
  - Output voltage from 2.3kV to 6.9kV
  - Output power up to 50,000HP
  - Air & water cooling
  - External transformer configurations
- Application specific solutions (load sharing, mill control, synchronous motor control, etc)
- Synchronous transfer capability
- Operator interface similar to WEG's LV product lines

## Medium & High Voltage Soft Starters

### SSW7000



### Medium & High Voltage Soft-Starter

SSW7000:

- Motor voltages between 2.3kV to 13.8kV
- Motor Power up to 20,000HP
- Assembled in the US:
  - 2.3kV & 4.16kV
  - Up to 3,000HP
  - NEMA 12 & NEMA 3R Enclosures
  - UL 347 Listed
- Emergency DOL start capability
- Active motor protection in all modes of operation (soft start, DOL start & run modes)
- Ground fault protection & soft PLC included as standard on all models
- 5 different starting modes available including voltage & current ramps, pump control, torque control & current limit
- Flexible Torque Control (FTC) uses vector control principles to enable the operator to adjust the starting torque profile specific to the application such as quadratic loads

## Contactors and Overload Relays

### CWB and RW



### Contactors and Overload Relays

- Ranges 9 to 125 amps
- Narrow foot print with 125A units at only 72mm wide
- Built-in 1NO + 1NC auxiliary contacts
- Mechanical interlock: no additional side space
- Surge suppressor quick-and-easy tool-free front mounting
- Low consumption D.C. coils allow direct control through PLCs without the need for coupler relays
- Bi-metallic or solid state overload protection
- WEG's visual identity

### CWM and RW



### Contactors and Overload Relays

- Complete line from 40 to 800 A (AC-3)
- 3 pole
- Quick mounting on 35 mm DIN rail or screw mounting
- Coils available in AC and DC voltage
- Direct mounting on overload relays up to 105 A
- Bi-metallic or solid state overload protection
- Wide range of accessory
- Star-delta and reversing wiring kits (easy connection) allow fast mounting and reduce space in the panel
- Special contactors for capacitor switching available

### CWC0 and RW



### Compact Contactors and Overload Relays

- Compact Contactors and starters
- AC-3 operation up to 22 A
- Quick mounting on 35 mm DIN rail or screw mounting
- Built-in auxiliary contacts
- Low-consumption DC coil allowing direct connection with PLCs output
- Direct mounting on overload relays
- Fast mounting (clip on) of surge suppressors
- Miniature electronic timing with right-side fast mounting
- Front mounting and quick assembly of mechanical interlock and latch block
- Overload relays with phase failure sensitivity, according to IEC 60947-4-1 and tripping class 10

## Motor Protective Circuit-Breakers

### MPW



### Motor Protective Circuit-Breaker

- Rated currents up to 100 A
- Compact solution for electric circuit protection, motor starting/protection up to 50hp and 460 Vac
- Adjustable thermal tripping for motor overload protection with phase failure-sensitivity, according to IEC 60947-4-1, with tripping class 10
- Magnetic tripping (protection against short-circuit) fixed at  $13 \times I_n$
- High short-circuit breaking capacity
- Wide range of accessories

## Enclosed Starters

### ESW and PESW



### Enclosed Starters

- Three-phase and single-phase DOL starters up to 75hp @460Vac
- Thermoplastic and metallic enclosure
- Start/Stop and Reset or Reset only operators
- Contact factory for alternative operator configurations

## Pushbuttons and Pilot Lights

### CSW

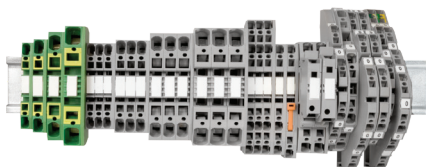


### Pushbuttons and Pilot Lights

- Pushbuttons, pilot lights, selector switches, mushroom and E-Stop pushbuttons
- Designed according to IEC/EN 60974-5-1
- Degree of protection IP66
- Pilot light blocks with integrated LED (high efficiency)
- Contacts blocks and flanges with quick and easy mounting system
- Self-cleaning contacts
- Wide range of accessories
- Control stations and emergency stop stations - PBW Line
- 30mm and 22mm versions

## Terminal Blocks

### BTW



### Terminal Blocks

- Complete line from 2.5 mm to 240 mm
- Screw or spring clamp connections
- Terminal block body in PA66 polyamide with excellent dielectric properties and high mechanical resistance
- Internal conductor element with high current conduction capacity
- Wide range of accessories

# Circuit Breakers

## UBW



### Molded Case Circuit-Breakers

- UL489
- 7 Frame Sizes - 15 to 2500 amps
- kA ratings of 35, 50, 65 and 100
- Rotary and flange handles 1/3R/12 and 4/4X
- Wide range of accessories
- Maintenance mode available on 1200 and 2500 frames

## DWB



### Molded Case Circuit-Breakers for OEM Applications

- 4 Frame sizes, 20 to 600A
- Short-circuit current ratings up to 35KAIC at 460V
- Compact Size
- Rotary Handle and Mechanism
- Meets UL489 specification requirements
- Range of accessories available



## Circuit Breakers

### UMBW



### Miniature Circuit-Breakers 10 kA

- Rated currents from 6 to 63 A
- Tripping characteristic curves B C and D
- MCB in 1, 2 and 3 poles
- UL489
- UL1077
- AC and DC Rated

## Disconnect Switches

### MSW and MSWB



### Switch-Disconnectors

#### MSW Disconnect Switches

- Thermal current ratings from 32 to 160A
- Door, panel, or base (DIN rail) mounting
- Rated to 690V
- Wide range of accessories available
- Designed according to IEC/EN 609743

#### MSWB Enclosed Disconnect Switches

- Ratings from 25 to 80A
- Available in Yellow / Red or Gray / Black color schemes
- Neutral pole or auxiliary contact versions
- Range of available accessories

## Electronic Relays

### RTW, ERWT, RPW, ERWM e RNW



### Electronic Timing and Monitoring Relays

- Precision Electric Design
- Robust Electrical Noise Immunity
- Low Energy Consumption
- LED Status Indicators
- Compact 17.5mm Form Factor (22.5mm for ERTW Relays)
- DIN Rail or Panel Mount
- 2 “form C” Output Relays Standard (DPDT, 2 NO / NC)
- 24 – 240VAC 50/60Hz, 24 – 240VDC Rated

## Control Power Transformers

### CPTW



### Electronic Timing and Monitoring Relays

- Completely encapsulated coils for maximum protection against moisture, dirt, dust, and contaminants in industrial environments.
- Built-in, finger-safe terminals provide up to 30% greater terminal contact area and permit low-loss connections.
- Extra deep barriers reduce the chance of shorts from frayed leads or careless wiring.
- Phil-Slot-Hex head terminal screws designed to accept bare wire, ferrules, spade or ring lugs.
- Molded terminals result in a more robust and compact design.
- Fully threaded quarter-inch long terminal screws prevent stripping and pull outs.
- High-grade silicon steel laminations reduce energy losses through eddy currents.
- High-grade silicon steel cores are machine wound with copper magnet wire for increased electrical resistivity and durability.
- Mounting plate is heavy gauge steel to add strength and provide stability.
- All transformers up to 750VA come standard with secondary fuse clips for quick and easy fusing.
- CPTW transformers are developed in compliance with UL, cUL, CSA, and CE standards

# Power Factor Correction

## UCW



### Single-Phase Capacitive Units

- Power from 0.62 to 6.67 kvar at voltages 208 to 240 V, and from 0.62 to 10 kvar at voltages 380 to 480 V
- Capacitive units for mounting three-phase modules and banks
- Grounding guaranteed by the screw that fixes the capacitive unit to the mounting plate
- Replacement of expanded cells in modules and banks
- Fast-on, Philips and box terminals

## UCWT



### Three-Phase Capacitive Units

- Power from 0.37 to 20 kvar at voltages 208 to 240 V, and from 0.37 to 35 kvar at voltages 380 to 480 V
- Ideal for localized / individual motor correction
- Internally incorporated discharge resistors
- Protecting cover for connections
- Philips and box terminals
- Grounding guaranteed by the screw that fixes the capacitive unit to the mounting plate

## MCW



### Three-Phase Capacitor Module

- Power from 1.85 to 10 kvar at voltages 208 to 240 V, and from 1.85 to 15 kvar at voltages 380 to 480 V
- Power up to 60 kvar with 4 modules in parallel
- Internally incorporated discharge resistors
- Single-phase capacitive units connected in delta
- Equipped with discharge resistors (30s, 1/10 Un)

## CWMC



### Contactors for Switching Capacitors

- Available for switching capacitor banks up to 77 kvar at 480 V
- Mounting with screws or directly on 35-mm DIN rail
- Developed with pre-charge resistances to reduce high in-rush currents

WEG's scope of solutions is not limited to the products and solutions presented in this brochure.

**Contact WEG for information on additional products and solutions.**

**For WEG's worldwide operations visit our website**



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