

# WEG DRIVES AND MOTION - SOLUTIONS FOR METAL

Confiability,  
robustness and  
**energy efficiency**

Industrial Motors

Commercial &  
Appliance Motors

**Automation**

Digital &  
Systems

Energy

Transmission &  
Distribution

Coatings



Driving efficiency and sustainability





# S U M M A R Y

**Applications**

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**Inverters and DC converters**

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**Solutions with common DC bus power supplies**

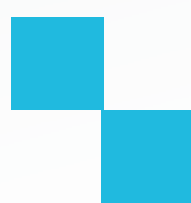
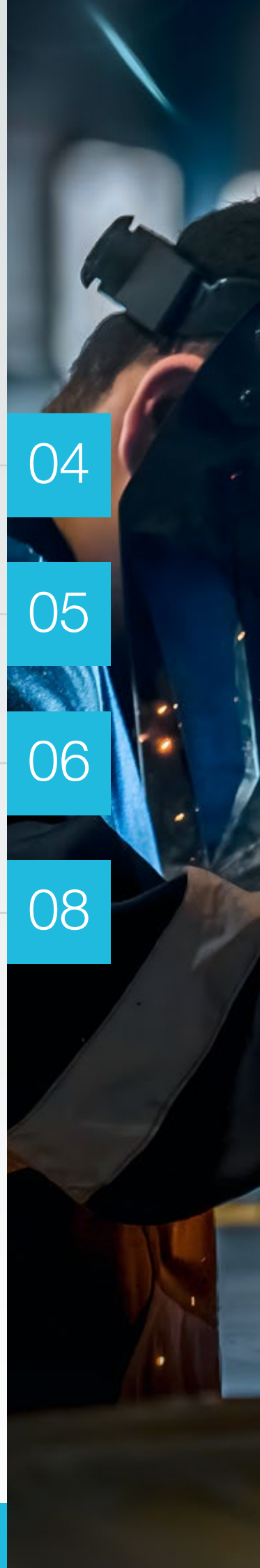
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06

**Software**

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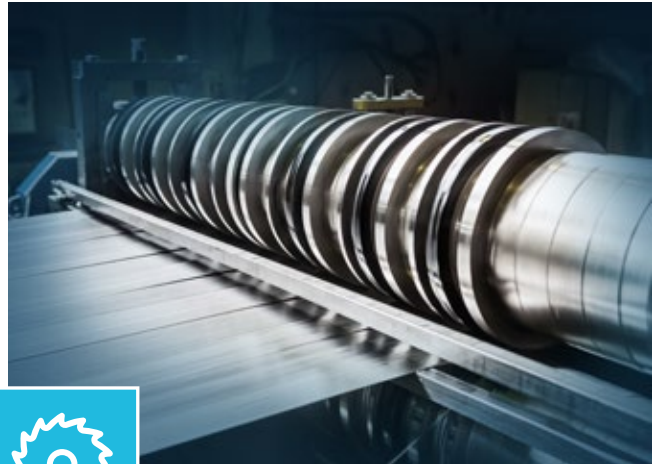




# Applications



Winders & unwinders



Slitter



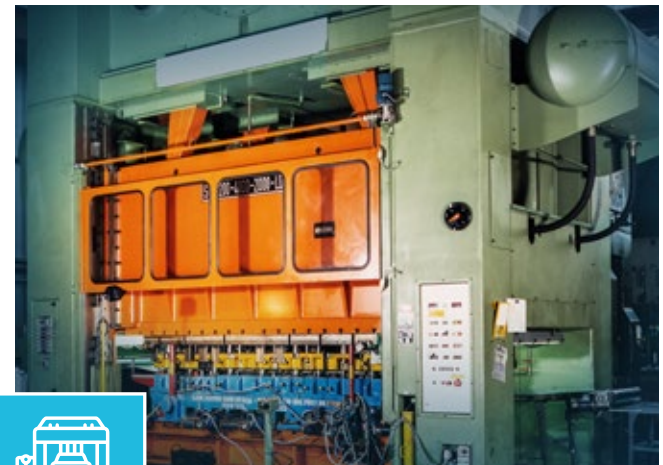
Roll forming



Flying shear



Rolling mills



Presses

## Inverters and DC converters



### ADV200 inverter

ADV200 inverters operate in a power range from 0.75 kW up to 1.6 MW for the control of asynchronous and synchronous brushless motors. They are available for power supplies from 400 V ac to 480 V ac and 690 V ac networks or for a common DC Bus power supply, ensuring the engineering and creation of coordinated system application architectures.

The compactness of modular mechanical devices with the integration of accessories such as EMC filters and DC inductance, provide for a substantial reduction of plant space and the optimization of wiring costs, as well as real design flexibility thanks to the product solutions with both air and liquid cooling.



### ADP200 inverter

ADP200 inverters are specifically designed for electro-hydraulic machine automation.

They combine a high dynamic regulator for pressure and flow control in servo-pump systems and are therefore dedicated to die-casting, pressing and metal bending applications.

They control brushless motors in a range from 7.5 kW up to 75 kW and for power supplies from 400 V ac – 480 V ac networks.

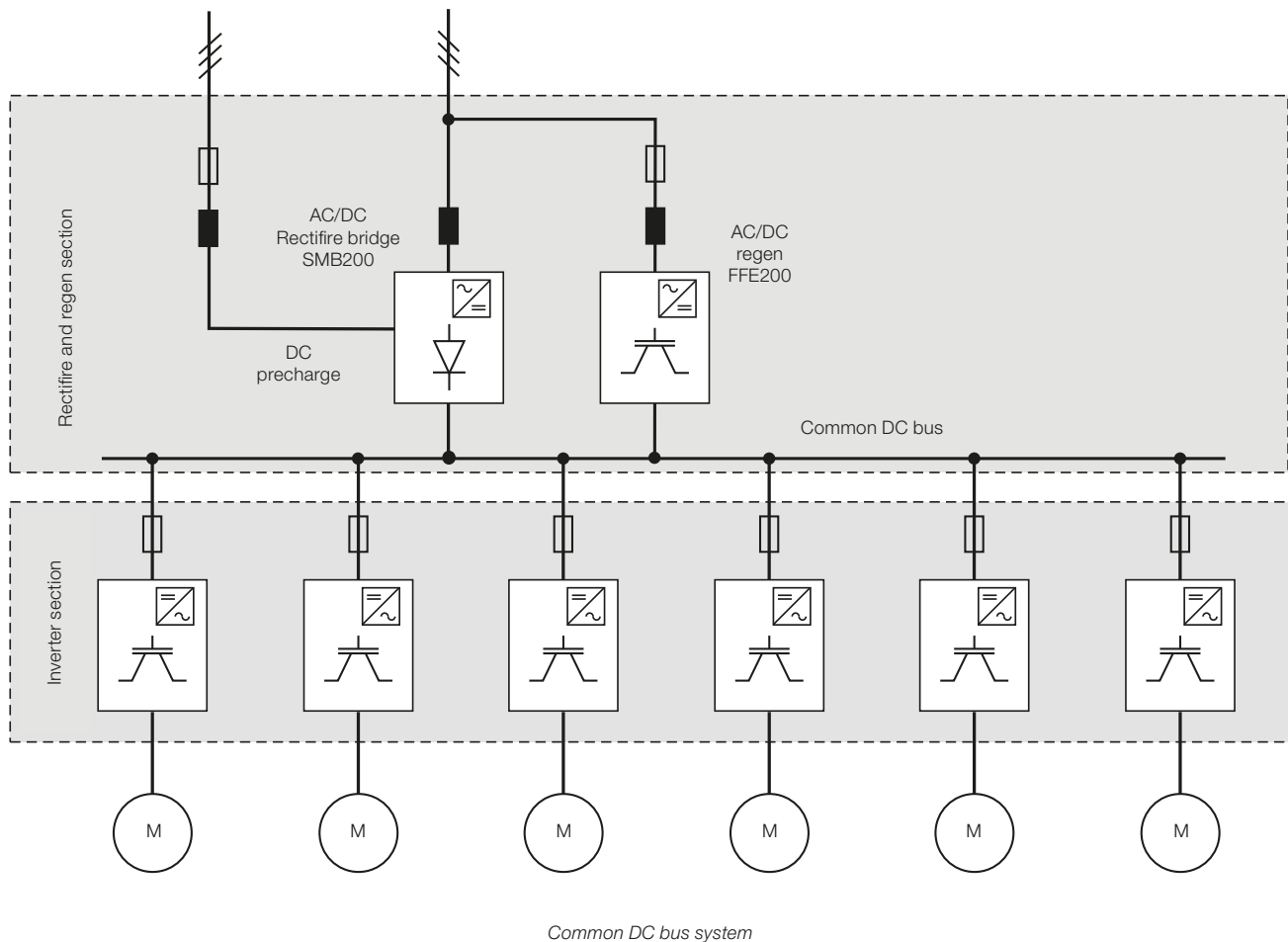


### TPD32 EV converters

The TPD32 EV converter line is available with a current range from 20 to 4,800 A in 2 and 4 quadrant configurations for power supplies from 230 V ac...690 V ac...1,000 V ac networks and also in a version with 12-pulse parallel and series rectifier bridges with the extended benefits in terms of reduced harmonic content on the network.

Dedicated system configurations offer wide benefits for space optimization inside switch panels and for easy use and service, thanks to innovative “compact power frames” up to 2,400 A tetraquadrants.

## Solutions with common DC bus power supplies



Common DC bus system

When several AC motors contribute to the production of a finished product, some of them absorb energy from the power grid, while others often act as brakes and therefore as energy generators.

Correct energy balance can be obtained in these systems, resulting in savings on operating costs, by creating a common DC bus system to which all the inverters that control the motors are connected.

In some processing phases in rolling systems and in large sheet metal cutting lines, the energy generated by motors can be a high percentage or nearly the same as the driving energy.

The use of braking resistors in these applications is certainly inefficient, requires considerable space and can therefore be economically disadvantageous.

Therefore, it is much less costly to regenerate the energy back to the grid in these applications.

FFE200 (Fundamental Front End) just as the AFE200 power supplies enable bi-directional circulation of energy from a common DC bus.

## Solutions with common DC bus power supplies



### Regenerative power supplies

WEG offers energy recovery solutions using AFE200 (Active Front End) and FFE200 (Fundamental Front End) systems, which allow the energy produced by motors to be regenerated back to the grid when they operate as brakes.

This type of solution is ideal for some metal processing machines, such as mechanical presses that operate in the 4 working quadrants and for motors that alternate work as motors and brakes and therefore as energy generators.

Advantages of regenerative solutions:

- Operation on the 4 quadrants
- High system dynamics
- Energy savings
- Operation at  $\cos\phi=1$  (only AFE)
- "THD" Total Harmonic distortion <3% (AFE only)

Regenerative power supplies are designed to operate on networks from 400 V ac up to 690 V ac.

- The AFE200 version is available in a power range from 22 kW up to 1.8 MW.
- The FFE200 version is available in a power range from 350 kW up to 3.8 MW.



### AC/DC power supplies

The SMB200 is a one-way AC/DC power supply designed for common DC bus systems. It has been designed to operate on networks from 400 V ac up to 690 V ac in a power range from 100 kW up to 5.3 MW in heavy duty.

Any excess energy generated by the motors can be dissipated through resistors using the BU200 braking units available for networks from 400 V ac up to 690 V ac in a current range from 20 A up to 300 A in heavy duty.

# Software

## WEG\_eXpress programming software

### Applications

- Configuring parameters of WEG devices (instruments, drives, sensors)
- Tuning control parameters with online tests and trends
- Managing parameter archive for multiple configuration

### Features

- Guided product selection
- Multiple languages
- Creation and storage of recipes
- Oscilloscope
- Simplified settings
- Parameter printout
- Network autoscan



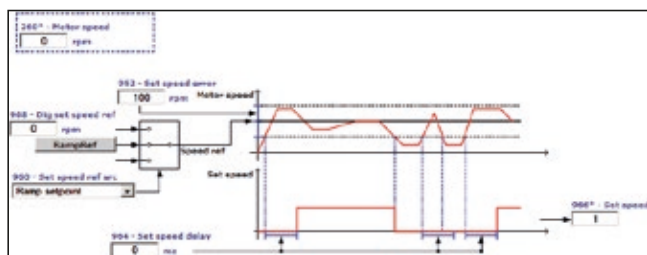
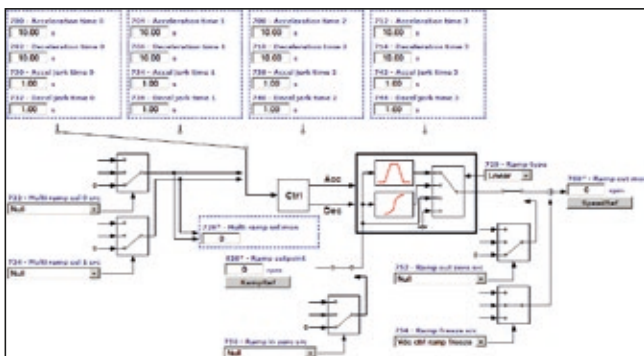
WEG\_eXpress software configures the parameters of the automation components, drives and sensors in the WEG catalogue. The graphic interface makes selecting and configuring parameters easy and intuitive. Devices are grouped according to product type and functions.

Products are searched by means of a context search and a display of product photos.

This provides a single device library for all WEG products.

Complete configuration information for every device is given in XML format to facilitate expansion of the catalogue and parameters.

The adoption of the XML format for the description of the configuration information of all the individual devices facilitates the expansion of the catalog and its parameters.





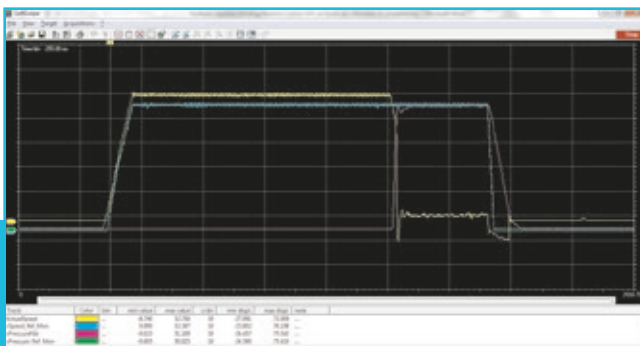
# Software

## SoftScope

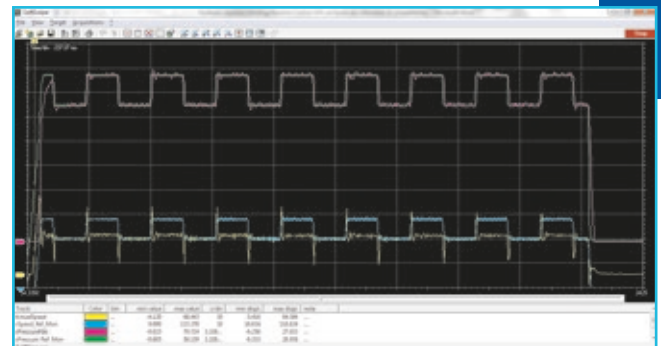
SoftScope is a software oscilloscope with synchronous sampling (buffered with a minimum sampling time of 1ms). With SoftScope, the user can easily and quickly display a number of specific variables, such as commissioning variables, variables for testing performance levels achieved or for tuning control loops.

SoftScope can be used to define the following parameters:

- Trigger conditions (e.g. climbing leading edge of a specific signal)
- Recording quality (a multiple of the basic clock at 1ms)
- Recording duration period
- System sizes to be recorded



*Acquisition of Softscope during injection*



*Example of pressure tuning*

## “MDPlc” advanced development environment

The Motion Drive Programmable logic controller (MDPlc) development environment is a tool for the development of industrial applications based on the ADV200 series of drives.

It is an integrated tool that allows writing, compiling, downloading and debugging of the applications.

MDPlc allows complete personalisation of the drives according to the application requirements using a “friendly” and powerful graphic interface.

The importance of the MDPlc’s performance is particularly evident when defining advanced applications.

The primary feature of MDPlc is its ability to create an application code for the drives in assembly language, by compiling the application written in the MDPlc environment with PLC languages in compliance with the IEC 61131-3 international standard.

When using an MDPlc application with the ADV200, the drive’s basic functions continue to be executed. Two MDPlc application programs can be stored on the drive. One of the two applications (1 or 2) is enabled via a parameter.

The languages that can be used to program specific custom applications are:

- Instruction List (IL)
- Structured Text (ST)
- Ladder Diagram (LD)
- Function Block Diagram (FBD)
- Sequential Flow Chart (SFC)



# 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 **WEG Drives and Motion - Solutions for Metal** are the right choice for your application and business, assuring safety, efficiency and reliability.



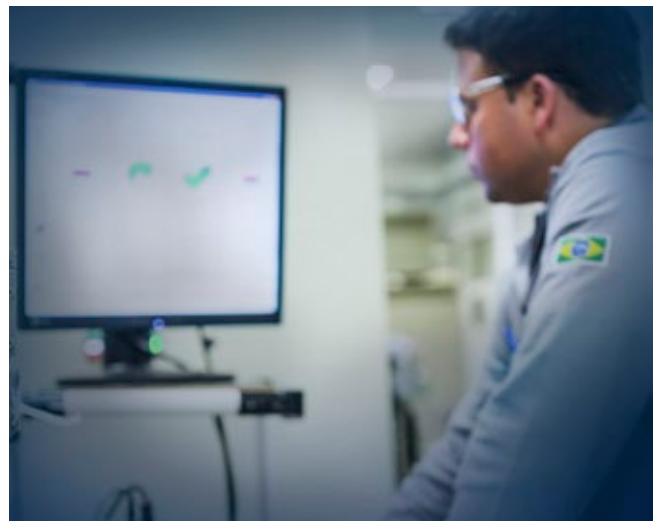
**Availability** is to have a global support network



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



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



# Know More

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)

 [youtube.com/wegvideos](https://youtube.com/wegvideos)

The scope of WEG Group solutions  
is not limited to products and solutions  
presented in this catalogue.


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The values shown are subject to change without prior notice.  
The information contained is reference values.