

WEG MOTION FLEET MANAGEMENT

Asset condition monitoring and industrial fleet management



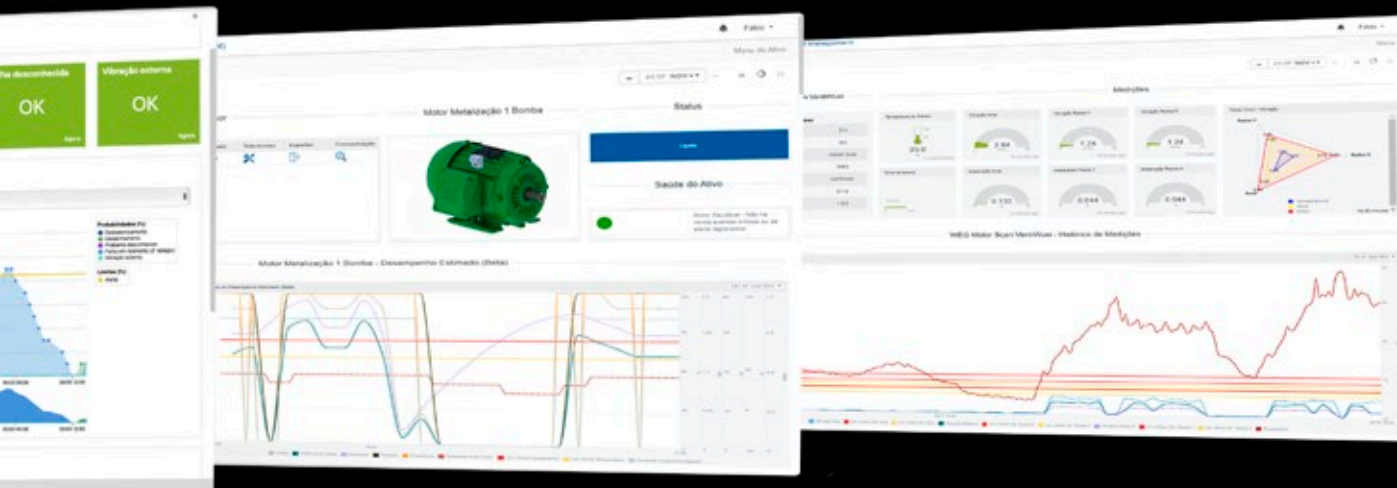
Motors | Automation | Energy | Transmission & Distribution | Coatings

SMART MONITORING OF YOUR PLANT

Developed to simplify and speed up the operation, maintenance and management of industrial plants, the WEG Motion Fleet Management is the ideal solution for monitoring and increasing the uptime of your industrial drive fleet. Based on cloud computing technology, the performance of assets can be monitored at any time, from any part of the world.

The WEG Motion Fleet Management allows checking the operating status of low and medium voltage motors and drives (VSDs and soft-starters), gearboxes, gearmotors, compressors and other assets installed in any type of industry or facility. Through periodic data collection and advanced data processing, both on the edge and in the cloud, valuable insights are obtained. Thus, it is possible to establish predictive maintenance plans taking into account the operating condition of the fleet (condition-based maintenance).

This approach reduces the unplanned downtime, optimizes repair actions and speeds up the decision-making of the Operations and Maintenance team. The result is increased uptime and reduce the drive fleet TCO (total cost of ownership).



CONTROL FLEXIBILITY, MANAGEMENT EFFICIENCY AND MAINTENANCE PLANNING

Benefits



Condition-based
maintenance



Data-driven
decisions



Operational cost
reduction



Safe and intelligent
management



The Importance of Online Asset Monitoring

One of the main reasons an industry loses productivity and profitability is unplanned production downtimes. Most corrective maintenance events could be avoided if machine and equipment parts were being continuously monitored (online monitoring).

The WEG Motion Fleet Management solution is a high-level tool for the operation and maintenance team to monitor and manage the drive fleet by means of data collection hardware, gateways for sending data to the cloud and software for data view and advanced analysis. With the WEG Motion Fleet Management, it is possible to implement a well-planned predictive maintenance methodology, taking into account the operating condition of the asset.

Knowing the condition of assets online helps to optimize the operation and maintenance resources, for example, improving spare part management, increasing asset uptime and reducing costs (direct and indirect). Additionally, approaches of this kind contribute to increasing the service life of the assets, since, in general, a sudden failure results in stress and degradation of the mechanical and electrical elements of the equipment.

Main Features of the MFM Solution

- Dedicated and robust hardware for data acquisition
- Data processing on the edge and in the cloud
- Periodic fleet reports
- Maintenance order creation and management
- Asset prioritization tool
- Specialist Modules with Analytics and Artificial Intelligence for failure diagnosis
- Exchange Modules for data integration with other platforms (via REST API)

Advantages and Benefits of the MFM Solution

- Monitoring of multiple assets and plants in a single environment
- Solution under constant development, both hardware and software
- Drive Fleet management view with reports and indicators
- Ready-to-use solution
- Layout customization for multi-level navigation (geolocation, site, plant, device)
- Definition of favorite assets for easy tracking of their status
- Daily notifications of assets in alert and/or critical condition (via email)
- Customization of tolerances to generate alerts and notifications
- Condition-based maintenance management
- Dashboards with indicators, charts and history of measured data
- Screens for managing users and subscriptions
- Flexible solution available for industrial service providers
- Reduction of the total cost of ownership (TCO)
- Multilanguage application



Segments



Petrochemical



Pulp and Paper



Mining



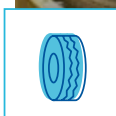
Cement



Water & Sewage



Chemical Products



Plastic & Rubber



Infrastructure



Power Generation



Metals



Marine



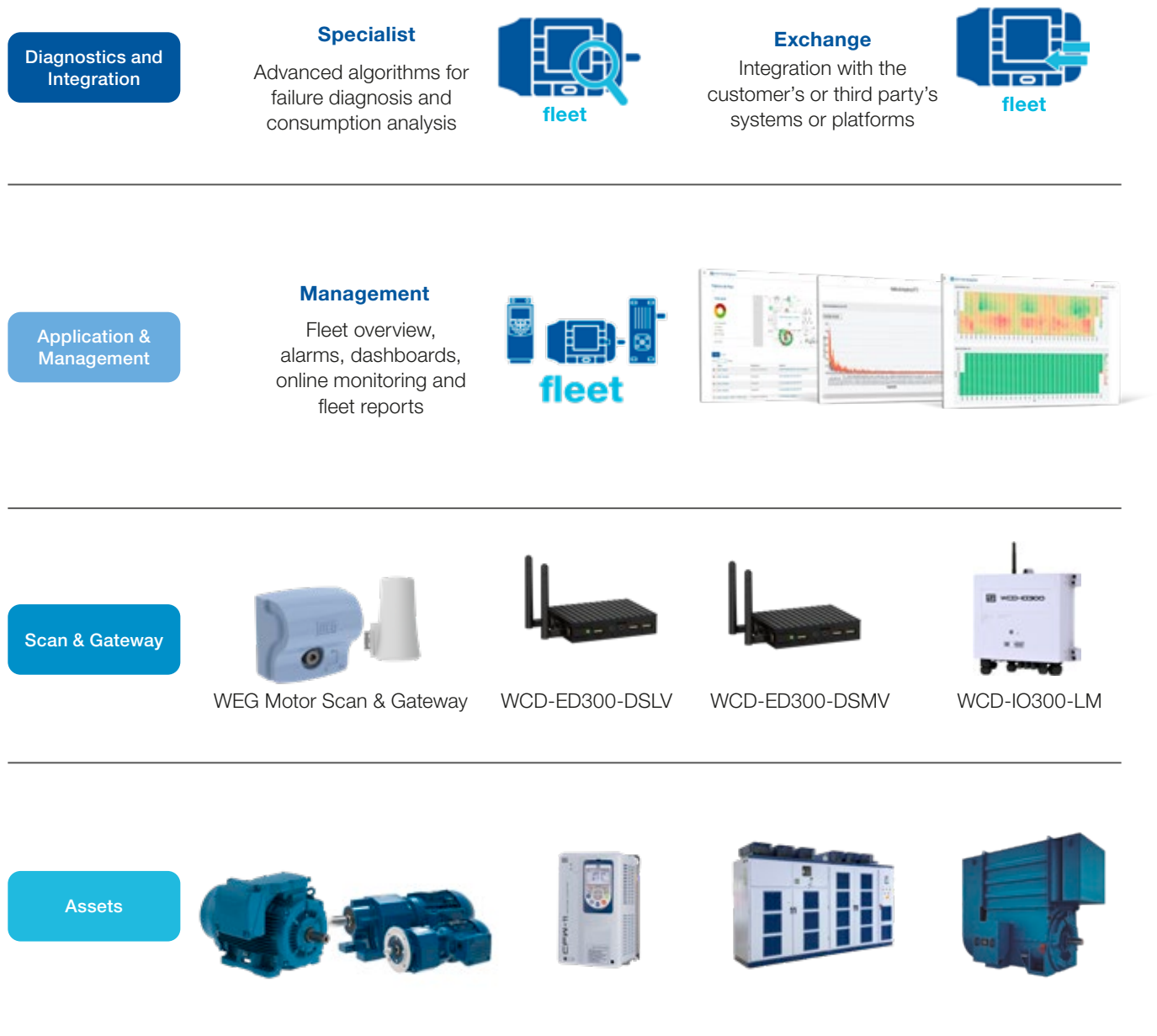
Sugar & Ethanol

Structure

The WEG Motion Fleet Management is a modular solution, with a flexible structure based on layers, which meets the customers' needs.

Assets

The WEG Motion Fleet Management allows online monitoring of low and medium voltage motors and drives, as well as gearboxes, gearmotors, compressors, pumps and fans/exhausters.







Structure

Scan

WEG Scans and Gateways are hardware designed for collecting data and connecting assets to the WEG cloud server, which hosts the WEG Motion Fleet Management application. For motor monitoring, the WEG Motor Scan and Gateway Cassia X1000 are used — data can be uploaded via gateway or smartphone. For low or medium voltage drives, data is sent through the WEG Drive Scan.



The WEG Scans available for asset monitoring are:

WEG Motor SCAN	WCD-ED300-DSL	WCD-ED300-DSMV	WCD-IO300-LM ¹⁾
			
WEG Scan used to capture signals from low voltage motors and other assets such as pumps, gearboxes and even compressors	WEG Scan used to capture signals from WEG low voltage variable speed drives and soft-starters	WEG Scan used to capture signals from WEG medium voltage variable speed drives	WEG Scan used to capture signals from WEG medium voltage motors

Note: 1) On request.

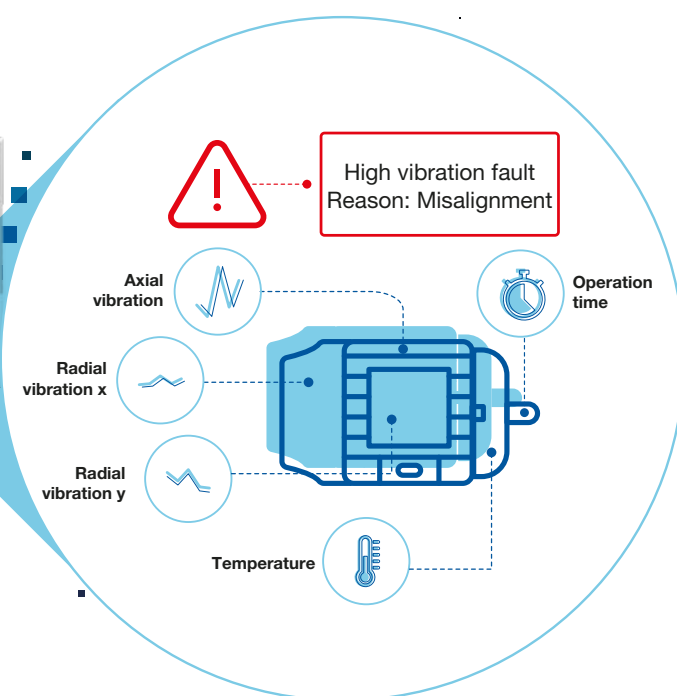
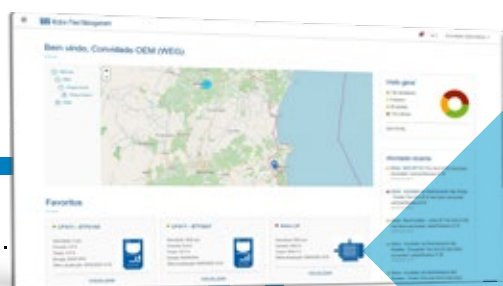
Structure

Management Layer

The Management layer of the WEG Motion Fleet Management application receives data from the WEG Scans, and it allows exploring the features present in the solution — it is the basic layer. It is worth of notice that the solution is under constant improvement, and new features will be frequently added to the solution. Additionally, users will be able to complement their experience with the Specialist and Exchange modules. It can be accessed anywhere via internet whenever a subscription plan to the system is available (the plans are annual).

Users will be able to view information related to the monitored assets, such as:

- Asset operating condition (normal, alert or critical)
- Operation history
- Faults/Events and Interventions
- Configurable alerts and notifications
- Operating parameters such as:
 - Speed
 - Temperature
 - Vibration
 - Power
 - Consumption
 - Current
 - Voltage



Structure

Diagnostics and Integration

With active subscriptions to the Management layer of the WEG Motion Fleet Management, users will be able to complement their experiences by subscribing to specific modules such as the WEG Specialist and the WEG Exchange.

Specialist Module

The Specialist module uses algorithms specially developed by WEG for advanced data analysis through Machine Learning and Artificial Intelligence. Those algorithms are applied to the data collected by WEG Scans and thus generate useful information, something essential for an efficient fleet management. The WEG Motor Specialist has a sub-module for diagnosing mechanical failure and another for assessing the motor energy consumption. Both features were developed by WEG's team of specialists and were validated in the company's laboratories.

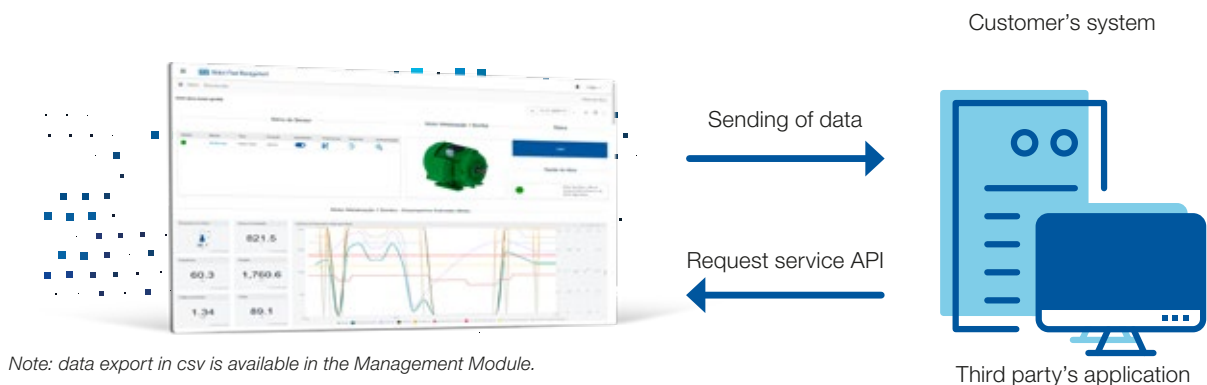
Those advanced analysis algorithms observe and learn the operating patterns and deviations of the monitored electric motor, generating fault indicators due to unbalance, misalignment, bearing (advanced failure) and external vibration. This kind of information is very useful for the operation and maintenance team, promoting the data-driven decision-making, speeding up the repair process and minimizing the unscheduled downtime. To benefit from the Specialist layer, the respective assets must have an active subscription to the WEG Motion Fleet Management layer. Both subscriptions are annual and per asset.



Structure

Exchange Module

The Exchange module allows the customer to integrate the collected and stored data in the WEG Motion Fleet Management with their own management system and/or platforms. By means of periodic and automatic data requests via REST API, the data from the WEG Motion Fleet Management can be integrated with automation systems (SCADA), corporate management systems (ERP), maintenance management systems (CMMS), manufacturing execution and scheduling systems (MES) or another proprietary software. To benefit from the Exchange layer, the respective assets must have an active subscription to the Management layer. The Exchange subscriptions are annual and per data packages.



Products available to explore the MFM solution	Software to explore the MFM solution
WEG Motor Scan	WEG Motion Fleet Management
Gateway Cassia X1000	WEG Motor Specialist
WEG Drive Scan	WEG Drive Specialist ¹⁾
WEG Drive Scan MV	WEG Drive Specialist MV ¹⁾
WEG Motor Scan LM ¹⁾	WEG Motor Specialist LM ¹⁾
WEG Gear Scan ¹⁾	WEG Motion Fleet Exchange ¹⁾

Note: 1) On request.

Subscription Plans

The modules provide the user with the following resources:

WEG Motion Fleet Management subscription plans			
	Management	Specialist ¹⁾	Exchange ¹⁾
Number of user	10 included	-	-
Plants	Unlimited	-	-
Data storage	365 days	365 days	-
Dashboards	Yes	Yes	-
Subscription period	1 to 2 years	1 to 2 years	1 to 2 years
Email notifications	Yes	-	-
Fleet report	Yes	-	-
Asset prioritization tool	Yes	-	-
Monitored assets ²⁾	Unlimited	-	-
Software update	Automatic	Automatic	Automatic
Artificial intelligence	-	Yes	-
Data integration via API	-	-	Yes

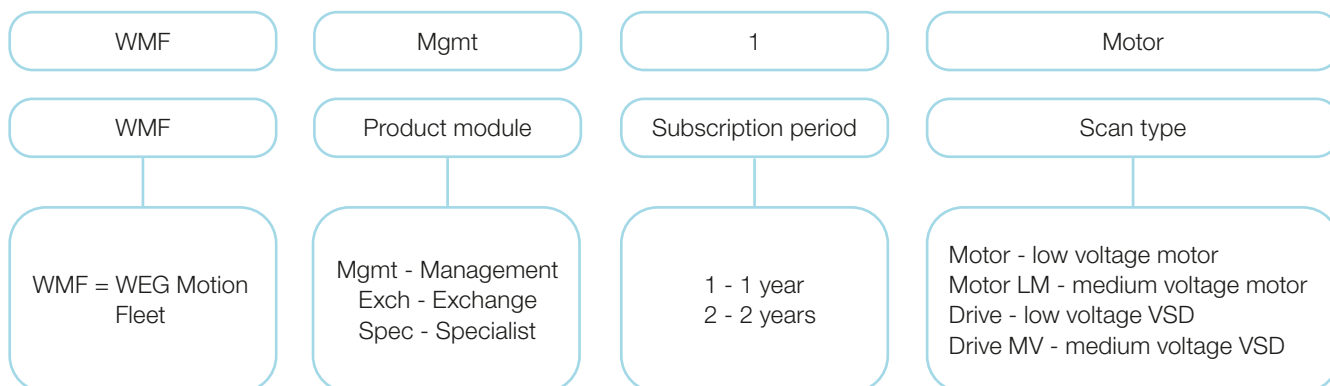
Notes: 1) To hire those packages, the customer must purchase the Management module.

2) Monitored assets: LV and MV motor, LV and MV variable speed drive, gearboxes, gearmotors, compressors, pumps and fans/exhausters.

3) Simultaneous screen accesses limited at basic package. If additional users and multiple simultaneous access are necessary, contact WEG.

Subscription Plans

Module subscriptions are annual and per device. Therefore, users can select among the options that best suit them:



Reference	Module	Characteristics	Period (years)	Scan	Type	Code
WMF-MGMT-1-Motor	Management	Maintenance planning, dashboards (temperature, vibration, current, dc link voltage, etc.), alert and critical events	1	WEG Motor SCAN	SaaS	80002160
WMF-MGMT-2-Motor			2	WEG Motor SCAN	SaaS	80002169
WMF-MGMT-1-Drive			1	WEG Drive Scan	SaaS	80002209
WMF-MGMT-2-Drive			2	WEG Drive Scan	SaaS	80002210
WMF-SPEC-1-Motor	Specialist	Diagnostics sub-module for autonomous assessment of vibration and consumption sub-module for assessment of power and financial consumption of the motor operation	1	WEG Motor SCAN	SaaS	80002161
WMF-SPEC-2-Motor			2	WEG Motor SCAN	SaaS	80002170
WMF-EXCH-BASIC	Exchange	Subscriptions available per data packages	1 and 2	-	SaaS	On request
WMF-EXCH-STANDARD			1 and 2	-	SaaS	On request
WMF-EXCH-PLUS			1 and 2	-	SaaS	On request

Note: contact us if you need to subscribe to other modules.

Technical Data of Drive Scan

Scan model	WCD-ED300-DSLV for Low Voltage	WCD-ED300-DSMV for Medium Voltage
Reference	WCD-ED300-DSLV	WCD-ED300-DSMV
Connectable products	CFW11, CFW500, CFW300, CFW100	MVW-01 and MVW3000
Maximum number of devices	10 via RS485 and 10 via Ethernet Total: 20 inverters ²⁾	5 via RS485 and 5 via Ethernet Total: 10 inverters ²⁾
Future versions	SSW900, SCA06, SRW01	-
Communication networks	2 Gigabit Ethernet ports with RJ45 connector and dual band 802.11a/b/g/n Wi-Fi interface	
Interfaces	4 2.0 host USB ports with type-A connector	
	1 RS485 serial port with RJ11 connector	
	1 RS232 serial port with micro-USB connector	
Protocols for communication with inverters	Modbus-RTU, Modbus-TCP	
Supply voltage	1.0 A 100 to 240 V power supply and 12 V dc output	
Operating temperature	0 °C to 70 °C	
Relative humidity	10% to 90% (operation) 5% to 95% (storage)	
Protection rating	IP20 and IP42 ¹⁾	
Dimensions	108 x 83 x 24 mm	
Weight	450 g	
Material	Aluminum	

Notes: 1) On request.

2) Check if the inverter in question has the accessory described in the manual to perform the desired integration.

WEG Motor Scan Data Sheet

Parameters

WEG Motion Fleet Management

WEG Motor Specialist

Supported Measurements

Global vibration on 3 axes (mm/s)	•	•
Vibration spectrum	•	•
Surface temperature (°C)	•	•
Operation time (h)	•	•
Power supply frequency (Hz)	•	•
Speed (rpm)	•	•
Load (%) ^{1) 2)}		•
Energy consumption (kWh) ^{1) 2)}		•
Diagnostic Analysis ¹⁾		
■ Unbalance		•
■ Misalignment		•
■ Bearings (advanced failure)		•
■ External vibration		•

Notes: 1) Resource available for direct online drives; in the future it will also be available for variable speed drives.
2) Estimated values.

Motor Electric Supply

Direct online starter	•	•
Soft-starter	•	•
Variable speed drive	•	

Protection Rating

IP66	•	•
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Certifications¹⁾

CE, Anatel, FCC, IC, ICASA, ACMA, NOM, EAC, IMDA, SIRIM and SUBTEL	•	•
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Note: 1) Check out the latest certifications at www.weg.net/wegmotorscan.

Hazardous area (Inmetro, ATEX, IECEx and MASC)

■ Ex ia I Ma	•	•
■ Ex ia IIC T4 Ga	•	•
■ Ex ia IIIC T135°C Da	•	•

Minimum Requirements

- For a better experience, it is recommended to use tablets or computers.
- For tablets, the browser must support HTML5 and the screen must be at least 10".
- Other devices must have a web browser in its latest version (preferably Google Chrome or Mozilla Firefox) and support HTML5. The minimum resolution for the monitor is 1024 x 768 (we recommend 1920 x 1080).

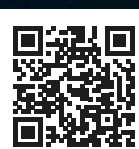


WEGdigital SOLUTIONS

The constant evolution of the industry demands increasingly smart and integrated solutions. That is why we created the **WEG Digital Solutions**. An efficient sum of optimized processes, internet of things (IoT) and data processing. With well-structured Big Data, the objective is to connect manufacturing plants to data generation, using information strategically to generate opportunities, improve productivity and increase assertiveness in decision-making.

This is efficiency. This is Industry 4.0. This is WEG Digital Solutions.

Learn more





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 the **WEG Motion Fleet Management** is the right choice for your application and business, assuring safety, efficiency and reliability.



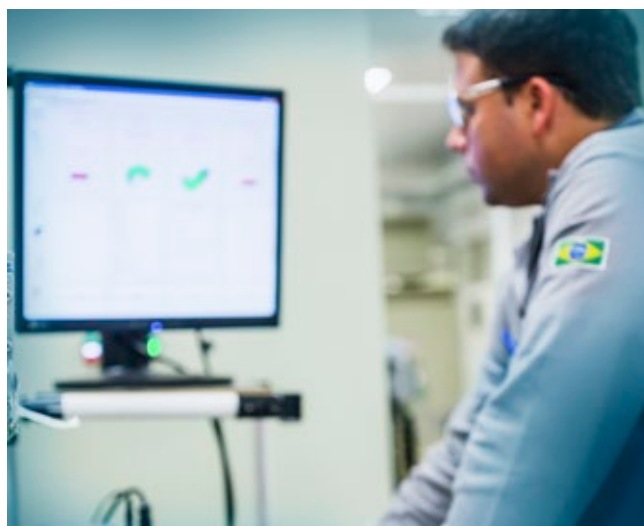
Availability is to have a global support network



Partnership is to create solutions that suit 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.

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