

Industrial Motors  
Commercial &  
Appliance Motors  
Automation  
**Digital &  
Systems**  
Energy  
Transmission &  
Distribution  
Coatings

# e-Houses

Integrated **electrical solution** to provide **flexibility** for your business



Driving efficiency and sustainability



Distributed by Gross Automation | +1 (262) 252-1600 | [sales@grossautomation.com](mailto:sales@grossautomation.com)

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# INTEGRATED ELECTRICAL SOLUTION TO MAKE YOUR BUSINESS MORE FLEXIBLE



## TIME

Reduced building time in comparison to masonry.



## CONVENIENCE

A single contract to supply a full solution.



## WARRANTY

Commissioning at the factory and possibility of platform testing.



## FLEXIBILITY

Robust equipment able to efficient and reliably fulfill the requirements of different applications.



## ELW e-House

Developed to provide maximum flexibility and customization to your business, **WEG e-Houses** are the complete solution for different operations, including those in areas that are difficult to access. With them, you integrate electrical, automation and digitalization systems on a single platform, with custom design and manufacturing, optimizing space and allowing modularization according to the needs of each customer.










Assembled on a single platform, they integrate electrical, automation and digitalization systems, such as transformers, medium-voltage controlgear and switchgear, MCCs, auxiliary equipment and monitoring systems. They are delivered assembled, interconnected and tested at the factory, eliminating the necessity of masonry works and the hiring of several suppliers. In addition, they do not present any size limitations and can be used in small and large installations, in many different (even aggressive) environments and industrial activities. This customization and flexibility make **WEG e-Centers** the ideal solution to optimize your industrial operations.

### Advantages

- Shorter lead time to execute the projects
- Shorter assembly time in the field
- Little infrastructure required at the site (lower mobilization and demobilization costs)
- The assembly at the factory and installation in the field are not subject to weather conditions
- Unique engineering for the integration of all the devices and systems
- Reduction in the storage area and in the works in the field
- Better process control and quality systems
- Special lines of credit for being classified as equipment
- Reduction of engineering, project management and supply costs (optimization of the procurement process)
- Property tax is not charged on the system (it is not considered a building)
- Logistics gain in the manufacturing, platform testing, start-up and commissioning
- Shorter lead time
- In Brazil, due to its fiscal classification, the federal VAT is not charged on this equipment, as well as on its subcomponents, such as rectifiers, UPSs, HVAC systems, CCTV, fire detection and extinguishing system

# Applications

Flexible system for specific compartmentalization and projects, such as:

	Transformer bay		Panel room		IT / operation room
	Automation room		Restroom		Battery room
	HVAC room		Locker room Mobile		5 construction types available: Mobile, Semi-mobile, Fixed, Skid and Onboard

## Technical features

### Construction features



Mobile e-House



Semi-mobile e-House



Fixed e-House



Onboard e-House

# Applications



## Typical components

- Medium voltage switchgear and controlgear
- Medium and low voltage motor control centers (MCCs)
- Load center
- Dry-type and oil transformers
- Control panels and protection relays
- Auxiliary service panels
- Air conditioning and pressurization system
- Fire detection and extinguishing system
- Battery banks and rectifiers
- UPSs
- Medium and low voltage soft-starters and frequency inverters
- Access control
- CCTV
- PLC and field networks
- Busway
- Automation system, including supervisory and control stations



## Mechanical structure

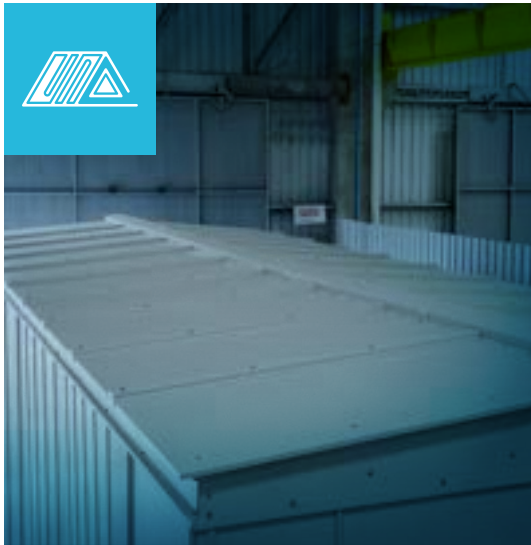
- Base made of ASTM A-572 carbon steel beams
- Fixed or removable floor with ribbed or smooth plates, permissible load up to 1,000 kg/m<sup>2</sup> (other values on request)
- Walls, ceiling and roof in square steel tube structures
- Steel with quality inspection certificate issued by the steel plant
- Monitoring and inspection of the weld and painting processes executed by accredited personnel
- Optional 90 and 120 minute fire rated certified walls (TRRF)



## Walls

- Double steel galvanized sheet
- Thermal insulation on walls and ceiling
- Metallic sheets fastened by self-tapping screws
- The bending shape of the external sheets provides excellent strength and resistance against bad weather
- Inspection doors (pads) may be supplied for easy back access to the panel boards

# Technical features



## Roof

- Frame composed of trusses firmly fastened to the ceiling
- Galvanized sheet metal walls
- Roof load bearing capacity of 200 kg/m<sup>2</sup> (other values on request)
- SPDA: Faraday cage, where the roof is used as a natural down conductor. Optionally, it can be equipped with the Franklin system or the electrogeometric model
- Optional metal or PVC rain gutters
- Top catwalk and lifeline anchorage system may be supplied, ensuring quick and safe access to the roof
- The bending shape of the roof sheets provides excellent strength and sealing against the most adverse weather conditions



## Painting

- Carbon steel frame: mechanical cleaning, removal of oils and greases, and abrasive blasting
- Galvanized sheets: pre-treatment and powder coating
- Internal/external sheets and frame painting: epoxy primer finished with polyurethane paint
- Floor painting: anti-slip paint (optional)
- Finishing color: gray RAL 7035 (other colors on request)
- Optional painting scheme resistant to acids and corrosive fluids (for aggressive environments)
- Painting scheme: developed in accordance with ISO 12944-5, considering the characteristics of the environment, conditions of use and operation, and the cost effectiveness. It ensures the ideal coating system for each customer, providing maximum durability at the lowest possible cost



## Access doors

- Made of galvanized steel sheets, with thermal insulation
- Single doors for people access and double doors for equipment access
- Equipped with panic bar
- Designed with seals to prevent the ingress of water and dust, and to maintain pressure inside the room
- Optional fire doors

## Technical features



### HVAC

Designed to provide the right working temperature for the proper operation of internal equipment, the system is designed considering the dimensions of the e-House, the thermal load of the equipment and the thermal conditions of the installation site. In environments with a high level of contaminants, a pressurization system with filters may be included to prevent the ingress of dust and other contaminants. The customer may request redundant equipment and an automation system so as to ensure constant operation of the solution, providing high reliability. Such a system allows better control of the equipment operation, monitoring the rotation among machines, the environment temperature, humidity and pressure, also enabling the integration with the fire system and the control system of the customer's plant.



### Fire Detection and Alarm System

The WEG e-House is supplied with a fire detection and alarm system that includes fire alarm, smoke detectors, manual actuators, audiovisual indicators and portable fire extinguishers for manual fire fighting. Optionally, heat, flame and gas detectors, linear and aspiration detection, and automatic firefighting using extinguishing agents such as CO<sub>2</sub>, FM200, FK-5-1-12 and aerosol can be included (other extinguishing agents on request), enabling more precise detection and immediate combat at the beginning of a fire. The system can also be integrated, as an option, with the HVAC system of the e-House and the control system of the customer's plant, providing a complete and efficient solution.



### Access Control System and CCTV

The access control system and CCTV may be optionally supplied in order to meet the specific needs of the customer's facilities. The access control system includes a control panel, access reader, electromagnetic lock and door sensors. This system ensures that only authorized people can enter the premises. CCTV provides image monitoring, allowing continuous surveillance. Both systems can be integrated into the customer's plant control system, offering a complete safety solution.

# Technical features



## Testing procedure

- Visual and dimensional inspection
- Electrical continuity
- Insulation resistance
- Dielectrical tests
- Routine tests on the equipment part of the system, in adherence to applicable standards
- Functional testing of the complete set (electrical panels, UPSs, rectifiers, lighting system and sockets, HVAC, fire system, access control, CCTV etc.)
- Routine tests as established by the NBRs (Brazilian Standards) for MV and LV panel boards
- Other tests on request



## External accessories: platforms, ladders, railings and hand rails

Those accessories may be optionally ordered so as to meet the requirements for personnel and equipment access to the e-House and to equipment inspection and maintenance areas. They can be supplied according to the typical model or, optionally, according to the customer's specific plant standard.



## Internal, emergency and external lighting and sockets

The internal lighting system consists of surface-mounted lighting fixtures, designed to meet the specified illuminance levels, with LED tubular lamps that provide proper lighting, low energy consumption and reduced maintenance.

The emergency lighting system uses 2 self-contained LED lamps with sealed battery, in accordance with the requirements of the Brazilian Standard NBR 10898 – Emergency Lighting System.

The external lighting uses lamps installed close to the e-House doors or according to the layout provided by the customer.

External and internal power outlets are installed so as to meet the project specifications, with voltage and current levels and models suitable for the intended application.

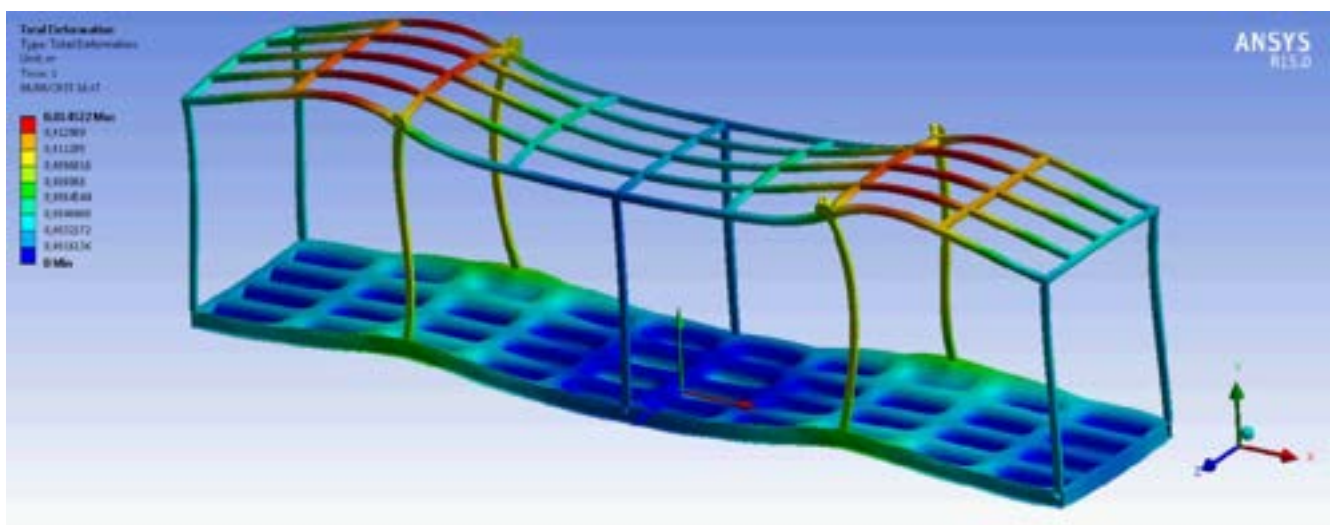
# Technical features

## Structural calculation

In order to design the frame of the e-House, the following parameters are considered:

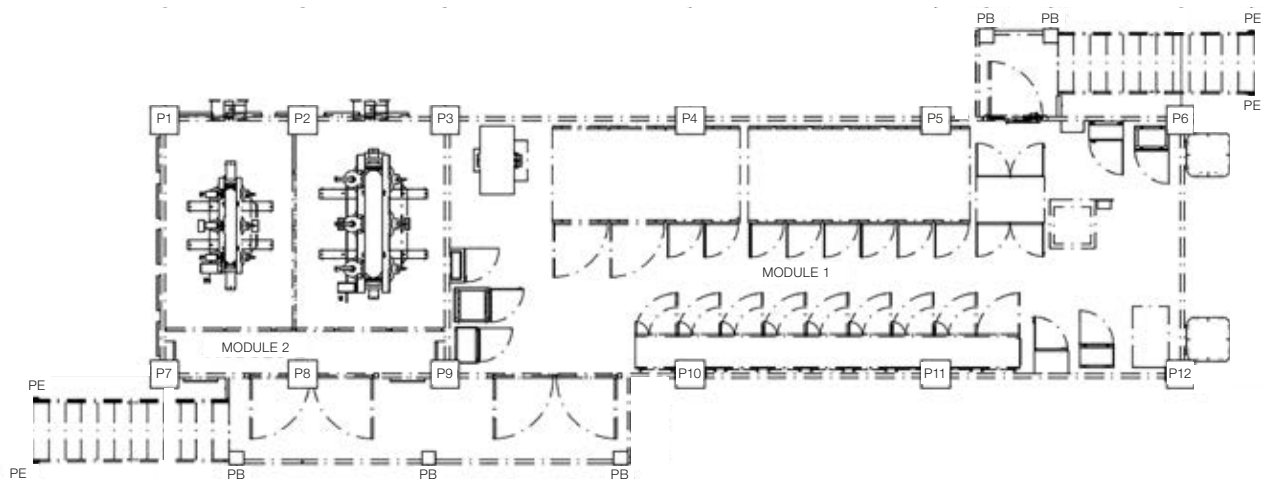
- Sizing of the structure to withstand the most critical situations
- Weight of the e-House
- Weight and position of the equipment inside the e-House
- Wind load
- Earthquake condition (if applicable)
- Roof overload condition (if applicable)
- Use of simulation software to validate calculations

Based on these parameters, the structural calculation is done to determine the stresses and deformations to which the e-House will be subject at the installation site, during transportation and lifting.



## Load plan

- Determination of the number of supports required for the installation of the e-House
- Calculation of the reactions to prepare the civil base project
- Use of simulation software to validate calculations
- Wind load
- Earthquake condition (if applicable)



## Details of e-House transportation and assembly in the field





## Sustainability

Sustainability has been an integral part of WEG's philosophy since its foundation. Therefore, raising awareness of the importance of protecting the environment by means of the correct use of natural resources has been a great concern in the company.

Half the energy produced in the world is used to operate pumps, while one-third of the world population lives in areas where water is scarce. As the nations know, the effective use of electric energy significantly reduces the environmental impacts and helps ensure the sustainable use of natural resources for the generations to come.

To ensure the lowest environmental impact of our products and manufacturing processes by means of:



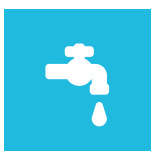
Compliance with the applicable **environmental legislation**



Continuous improvement, establishing **environmental goals and objectives**



Act in advance so as to **protect the environment**



**Eco-efficient** processes and products, saving **natural resources**

### Certifications

ISO 50001:2011  
ISO 14001:2014  
ISO 9001:2008



# Solar e-Houses

Energy flexibility  
wherever you  
need it.



Developed and manufactured with cutting-edge technology in Brazil, Solar e-Houses are a flexible and sturdy solution for greater sustainability in the temporary supply or support for energy distribution. Resistant to the most extreme weather conditions, the solution guarantees application in a wide range of sectors, offering the versatility your business needs. An integrated, customizable product with a modular design, tested at the factory, it can be delivered ready for operation.

- Remote monitoring and geolocation
- High weather resistance
- Lower maintenance
- Easy installation in the field
- It works as a temporary power supply or as an extension of the distribution network

# e-House monitor

## Connectivity and monitoring of e-Houses.



The management of the e-House asset requires a different perspective, as its proper operation is the basis for the reliability of the automation and electrification systems. In addition to offering e-Houses, WEG also offers a smart solution for monitoring the power quality and operational condition of this type of system. Focusing on predictive maintenance and reliability analysis, the WEG e-House Monitor IoT solution can identify anomalies that may generate future problems, thus reducing unnecessary maintenance costs and unplanned downtime in the production process and avoiding financial losses.

### Advantages

- Easy access to current information and all history collected in the e-House environment
- Possibility of replacing or, if not present, implementing this control system
- Monitoring and geolocation of e-Houses
- Schedule and management of services, generating records for each e-House
- Monitoring of ambient temperature, humidity, positive pressure, consumption and quality, in addition to the health of the HVAC system and power transformer
- Possibility of integration with the WEG Transformer Fleet Management software and UPS monitoring
- Monitoring of your fire system and, in case of failure, shutting down of the control system



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# BESS

Battery Energy  
Storage System

**Energy and power  
under control, with high  
availability.**



The BESS solution is offered through e-Houses, that is, complete systems for energy storage and management, assembled and tested, which allow the storage of energy from the power grid, renewable sources or other sources, releasing it when necessary and reducing costs with infrastructure and time-shift. Solutions for various applications, with WEG's cutting-edge technology, as well as local support and engineering.



**Find out more by visiting  
the QR Code.**

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

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

# Global presence

is essential, as much as understanding your needs.

## Global Presence

With more than 45,000 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 **e-Houses** 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







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

**To see our portfolio, contact us.**

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



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



 +55 47 3276.4000

 [digitalesistemas@weg.net](mailto:digitalesistemas@weg.net)

 Jaraguá do Sul - SC - Brasil

Cod: 50145417 | Rev: 00 | Date (m/y): 01/2025.

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