

ELECTRO OPTIC COMPONENTS



BEYOND THE SENSES

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LOGISTIC SUPPORT CONTAINER – MOBILE POWER PLANT FOR EMERGENCY (MPP) –

The product is designed in a versatile, independent version with a whole range of distinct applications from: industry, telecom, oil&gas, emergency situation and can work as island power plant, back-up, peak-load for national grid etc.



LOGISTIC SUPPORT CONTAINER – MOBILE POWER PLANT FOR EMERGENCY (MPP) -



MPP is a product designed and manufactured entirely within the Electro Optic Components company, which owns all the rights to this project, being able at the same time to modify the project in order to adapt to different usage requirements and in different environmental conditions

Electro Optic Components is a Romanian company with full private capital.

In the presented configuration, the product MPP was supplied to Romanian Emergency Authority :

- 42 Mobile power plants of 500 kVA to be used in each county of Romania in emergency situations
- 14 Mobile power plants of 100kVA to be used for refugees camps

If we take into account an installed power of 3 KVA / final consumer, it will result that the product can provide the necessary energy for around 200 ~ 250 locations / families, etc.)

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MPP could be built based on a 20ft ISO container special configured or on a 20ft Abroll (DIN 30722) container.

The product and their components are designed and manufactured for use in harsh environment (salted, humidity and temperature - C (-30°C ... +45°C and 90% humidity)

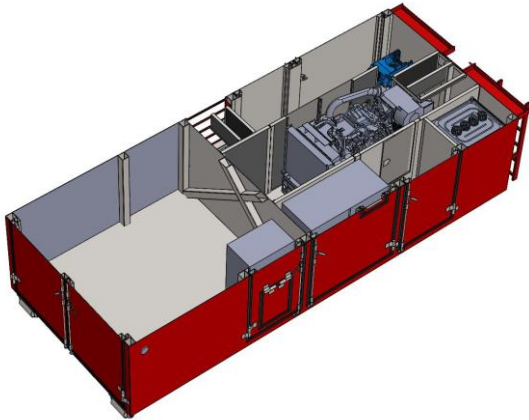
MPP can be transported by various means of land, sea and rail transport.

On request, the MPP can be made to be operated directly from the means of transport.

Note. In the case of transport by naval means, the presented solution can be operated directly from the means of transport, if that it is moored at the quay and the movements of the platform do not exceed an inclination of approximately 15°.

The project complies with all safety regulations and emission standards applied in EU, but can also be adapted/provided with local emission requirements.

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The resistance structure of the container is made of cold formed zinc coated profiles, later primed and painted with paint intended for areas with harsh environmental conditions. The corners are provided with standardized welded corner pieces

The walls and roof are made from self - supporting zinc coated steel thermo - insulated panel of polyisocyanurate (PIR) foam with excellent performances in the reduction of thermal exchange, sound insulation and fire resistance

The floor is made from thermos-insulated panel, cover by hardwood and heavy duty vinyl flooring.

As an option the container could be manufactured from extremely wear steel plate (>450 HB) for very high durability.

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The container is provided with the following access doors:

- Two doors located on the right side and on the left side that allow access for the maintenance of the generator
- A double door in the rear end of the container through which access is made to the rake with extension cable reels and to the distributors. Also in this area is stored a roller trolley for cables reels.



- One access door to the control panel with viewing window of the generator control panel.
- One access door to the distribution panel with sockets
- All doors are equipped with secure closing and key locking systems.
- The air intake grilles will be incorporated into the double rear door, as well as into one of the right side panels. The air exhaust grilles are arranged in the ceiling, in the front end panel and in the front side panels



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The lighting installation consists of:

1. Perimeter lighting installation - is intended for lighting, during the night, over a distance of min. 5 m around the container. The perimeter lighting system is composed of 7 LED lamps with a power of at least 10W each powered at 24V.

2. Interior lighting installation is composed of 4 LED type lamps with a power of min. 10W and three switches, two of which are stair-head type located inside near the access doors to the generating set, and the third in the area of the access doors - evacuation

3. Exterior side marker lights – six side indication lamps

The perimeter and gauge lighting installations are operated by a switch located on the control pane

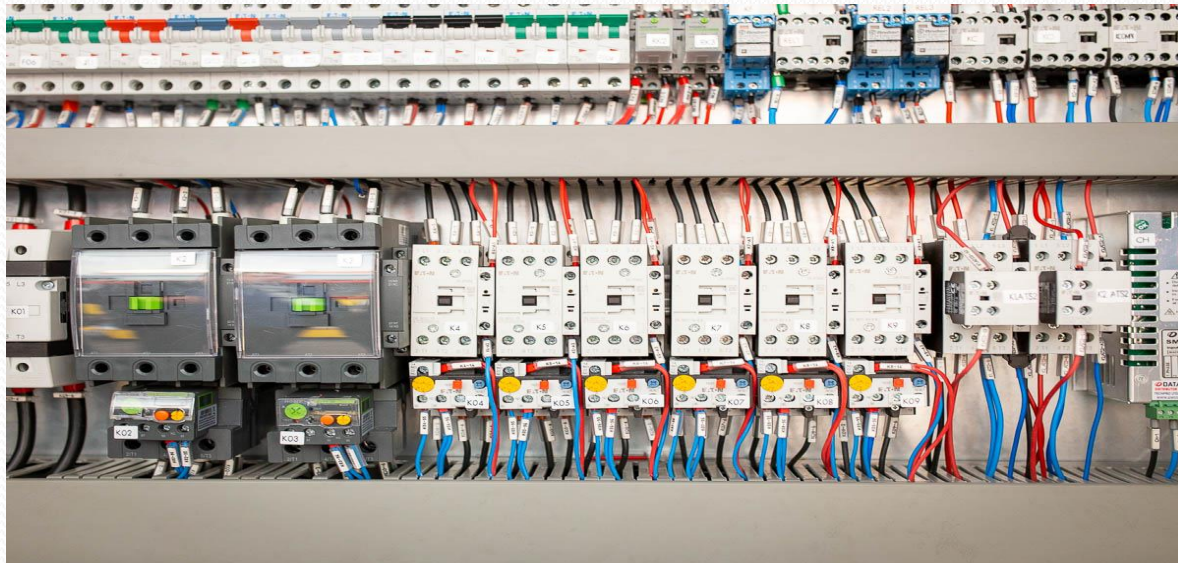
Optional : Foldable Roof Mast with powerful lights system

Security systems based on day/night imagery and movement detection

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The installation of power supply and battery charging

- The battery supply and charging system ensures the power supply of the lighting systems from two 12 V accumulator batteries each, as well as the charging of the batteries from the generating set or from an available supply network in the event of a longer period in which it is not started the generator.
- The system ensures the detection and automatic switching to the available energy source, as well as the disconnection of the power supply of the lighting installations from the batteries, in case the voltage drops below a threshold value.



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Control, command, distribution

- The electronic control, automation and distribution panel performs the start, stop and control of the diesel-generator group, the supply and protection of the mobile distribution boards, the power supply of the buildings and the supply of other various consumers related to the logistic support container.
- It is composed from two metal cabinets with IP54 degree of protection, mounted inside the container behind access doors secured with a key and provided with glass.



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Electric connection and extension cables.

- The following electric extension cables are provided:
 - 6 extension cables x 25m (400V/125A) type H07RN-F 5G25;
 - 10 extension cables x 25m (400V/63A) type H07RN-F 5G10;

The cables are delivered on drums with an aluminum frame and are arranged in the specially designed rack, which can be accessed through the double access and evacuation door located in one of the ends of the container.

A specially designed trolley has been provided for loading/unloading and transporting the cables.

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- Distribution of electricity:
 - 4 pcs. mobile distribution panel 400V/230V/125A – having a 125A plug at the input and two 400V/63A and two 230V/16A sockets at the output;
 - 10 pcs. mobile current distributor 400V/230V/63A – having a 63A plug at the input and four 230V/16A sockets at the output;
- The boards are arranged in the area of the rack with rollers with cables.
- The number of extension cables and mobile distributors may differ depending on the power delivered by the generating set and the specific needs of the objective to be powered.
- The earthing installation consists of
 - 3 pcs. earthing stakes with extraction by twisting;
 - 2 pcs. connecting cables between stakes;
 - 1 pc. connecting cable to the grounding socket of the container;
 - assembly/disassembly tool set

The component elements of the earthing installation are arranged in the storage box with equipment arranged inside the container.

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- In order to carry out the current activities of operating the system, the following facilities are provided:
 - low voltage insulating gloves and boots, dielectric strength 500V - two pairs each;
 - two-piece arc protection suits (overall type trousers and jacket) – 2 pcs.
- protective helmet with visor, dielectric resistance 1000V – 2 pcs.
- Electroinsulating carpets, thickness 6mm, 1.5 x 0.8m = 2 pcs.
- Assembly and disassembly tool kit:
- Trolleys with rollers for removing the generator set = 6 pcs.
- Fire extinguisher type P6 = 2 pcs.
- The equipment is arranged in a compartment in the equipment box.
- Fire extinguishers are arranged inside near the access doors to the generating set.

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LOGISTIC SUPPORT CONTAINER allows the installation of a wide range of generator groups chosen and sized according to the energy supply needs of the various facilities.

The solutions proposed by us are based on Reciprocating Internal Combustion diesel engine produced by VOLVO and John Deere , but we can also provide a solution with an engine for which there is a service network in the area, as follows: Cummins, Deutz, FPT Iveco, John Deere, MTU, Perkins, Scania, etc.

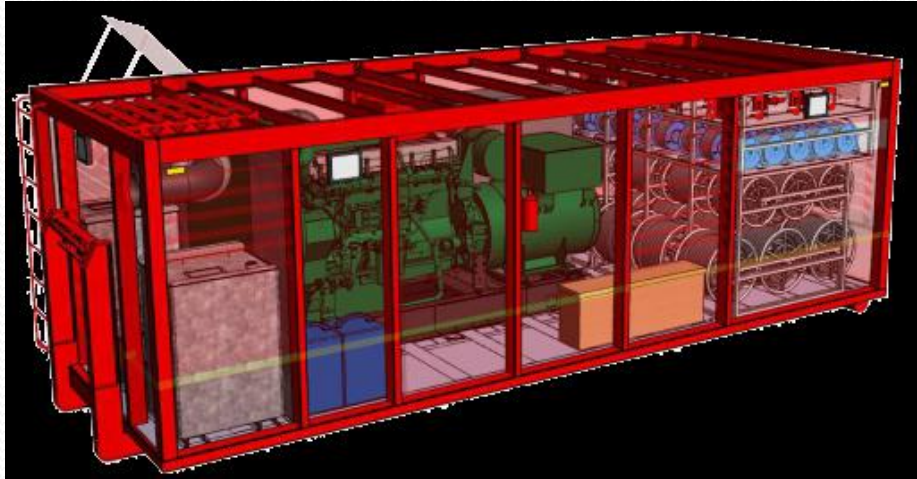
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Possible solutions :

- 1 (one) piece diesel electric generator 100/110kVA PRP/LTP, manual/automatic control panel, 400 liters daily fuel tank, containerized, turn-key machine, equipped with John Deere [FR] engine and Leroy Somer [FR] alternator;
- 1 (one) piece diesel electric generator 200/220kVA PRP/LTP, manual/automatic control panel, 400 liters daily fuel tank, containerized, turn-key machine, , equipped with John Deere [FR] engine and Leroy Somer [FR] alternator;
- 1 (one) piece diesel electric generator 315/350kVA PRP/LTP, manual/automatic control panel, 1000 liters daily fuel tank, containerized, turn-key machine, based only on technical documentation attached, equipped with Volvo Penta [SE] engine and Leroy Somer [FR] alternator;
- 1 (one) piece diesel electric generator 400/440kVA PRP/LTP, manual/automatic control panel, 1000 liters daily fuel tank, containerized, turn-key machine, based only on technical documentation attached, equipped with Volvo Penta [SE] engine and Leroy Somer [FR] alternator;

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Engines

- ☐ STAGE II emissions, optional STAGE IIIA or STAGE V
- ☐ High power density, small footprint
- ☐ Long maintenance interval

- ☐ Approved for use with HVO (Hydrotreated Vegetable Oil) according to EN15940
- ☐ Optimized and certified sound levels
- ☐ Reliable power, even in extreme conditions
- ☐ Optimized fuel consumption
- ☐ Compact footprint
- ☐ Best quality of electricity, high starting and loading capacity, according to ISO8528-5
- ☐ Robust base frames and high-quality enclosures
- ☐ Protection of installations and people
- ☐ Approved in line with the most stringent standard

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Cooling

- ☐ A compact and complete solution using a mechanically driven radiator fan
- ☐ High temperature and altitude product capacity available

Alternator Standard Features

- All models are brushless, rotating-field alternators
- NEMA MG1, IEEE, and ANSI standards compliance for temperature rise and motor starting
- The AVR voltage regulator provides superior short circuit capability
- Self-ventilated and dip proof construction
- Superior voltage waveform

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Commercial information

Delivery date : first unit in 6-7 months and then 2-3 unit by month

Delivery terms : Free Alongside Ship Constanta harbor

Warranty : 12 months from onsite acceptance but no more then 15 months from delivery.

Payment conditions : 40% in advance, 40% at delivery, 20% after OnSite

Acceptance

The offer includes:

Technical manuals for operation and maintenance

Commissioning

Onsite acceptance

Training made by a team of 3-4 manufacturer personnel during one week in the customer premises.

Commissioning will start only after confirmation of installation according to technical manual by the customer.