

# KONČAR Hybrid Box - Diesel Generator Solution

## Characteristics:

- Autonomous power supply
- Renewable sources of electricity with diesel generator
- Modular design

The integrated energy unit contains connections for external energy sources, electrical energy storage, diesel fuel storage, diesel generator, connections for loads, the protection, measurement and control systems, and communication to remote users.

The external sources connected to the Hybrid Box are photovoltaic cells and/or wind turbines. Generated electricity is stored in batteries housed in the Hybrid Box.

Product	KONČAR Hybrid Box Diesel Generator Solution
Rated output power	3.7 kW
Rated voltage	48 Vdc +25/ -15%
Capacity of batteries	800 Ah
Battery type	VRLA
Power Max. Genset	3.7 kW
Fuel tank	500 l
Dimensions	3000 x 2400 x 2800 mm
Mass	approx. 6000 kg
Degree of protection (IEC 60529)	IP 44
Compliance with standards and directives	EN 50272-2 EMC Directive EC/108/2004



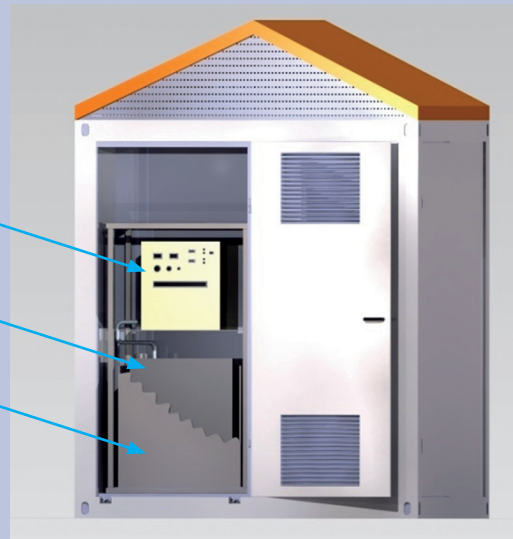
- Apart from generation of electric energy from renewable sources, it is possible to generate electricity using diesel generator (genset) integrated within Hybrid Box. Diesel generator is used for supplying electric energy to the loads via batteries located inside Hybrid Box in case when renewable energy sources are not available.
- The protection, measurement and control system is based on a reliable industrial controller in a failsafe configuration.
- Temperature control enables reliable operation of all the equipment installed in the energy unit in all climatic conditions.
- The integrated energy unit is designed in accordance with relevant regulations and standards. As a type product, KONČAR Hybrid Box is delivered with attached declaration of conformity.

## KONČAR Hybrid Box – Diesel Generator Solution

Diesel generator

Fuel tank 500 l

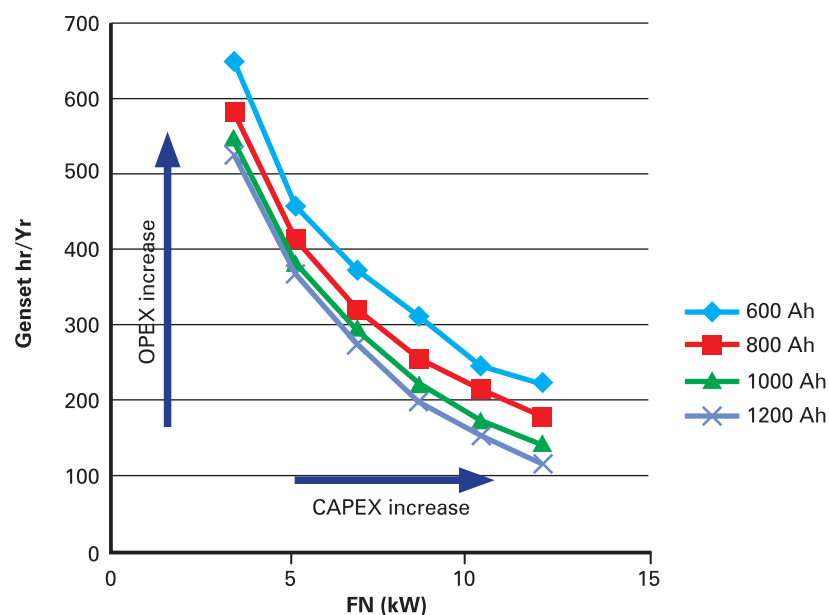
Protection container



KONČAR Hybrid Box – Diesel Generator Solution is optimized to utilize high amount of renewable energy sources (more than 90%) for covering consumption demand. The diesel generator is only used when renewable sources are not available and batteries state of charge is low. Possibility to deploy the diesel generator in such situations reduces the number of photovoltaic cells and capacity of batteries needed to achieve the demanded availability (99.9%). Hence the CAPEX are significantly reduced compared to solution relying just on PV and wind. On the other hand OPEX are more than 20 times lower compared to the solution using just diesel.

Technical solution enables silent work of diesel generator with noise level below 70 dB. Custom made fuel tank is built within in protection container against spills. Container capacity guarantees long autonomy in case renewable energy sources are not available.

Complex control system algorithms are used to optimize energy generation from diesel generator and hence reduce the fuel consumption and generator work time. Running the diesel generator in its optimal conditions and monitoring it's operation ensures minimum maintenance.



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