



**Łukasiewicz**  
Instytut  
Elektrotechniki

## Products for the power industry

The "Gecko" system allows for various power converter connections to be configured to suit application needs and is also equipped with a comprehensive MV protection and monitoring equipment system.



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## DTH – Distribution Hybrid Transformer

This circuit is designed for unstable LV power grids, where fluctuating loads such as compressors, pumps or welding machines cause rapid voltage changes. This solution offers real-time compensation to ensure stable voltage even in the event of sudden spikes. This is particularly important if this network supplies sensitive consumers, such as healthcare facilities or computing centres. The transformer is designed for installation in LV distribution substations with a transformer of up to 630 kVA and  $3 \times 15 \text{ kV}/3 \times 0.4 \text{ kV}$ , as well as in factory networks supplied from transformers of up to 630 kVA and  $3 \times 6.3 \text{ kV}/3 \times 0.4 \text{ kV}$ .



## High power supply – for the Hyperloop railway

The power supply is designed for the Hyperloop high-speed railway. It consists of a complete AC/DC/AC converter system with integrated components mounted in the container station, including: MV switchgear, 12-pulse diode rectifier with input filter, split DC voltage circuit, circuit with braking resistor, voltage equalisation circuit, two three-level NPC voltage inverters and output filters. The Hyperloop power supply includes screw terminals, a 20 V medium-voltage switchgear, a Yyd transformer with 20 V primary winding, switching and protection equipment, a 1-phase transformer, an LV switchgear, an isolation transformer, power supplies, cooling systems, mains converters, a DC voltage equalisation circuit, a braking resistor and a three-phase inverter.



## High Power Mobile Power System – Gecko

The Mobile High Power and Medium Voltage Power System, known as a "gecko", is a solution for supplying ships in a seaport with electricity from the quay to the benefit of the environment. The power supply offers an output voltage of 6.6 kV/11 kV, a frequency of 50/60 Hz and a maximum power of 6 MW. Through the use of power electronic converters, the system provides increased functionality and power distribution capabilities. It can be configured to suit application needs and can be equipped with a comprehensive system of protection and monitoring equipment. The solution proposed forms the basis for building both flexible and specialised power systems, reducing costs compared to fixed systems.

