

TAILOR-MADE COPPER SOLUTIONS
FOR THE RENEWABLE ENERGY SECTOR



ELECTRIS
POWER COMPONENTS



Power components for a cleaner future

CUSTOM-MADE ELEMENTS TO FULFIL THE NEEDS THE EVER-DEVELOPING RENEWABLE ENERGY INDUSTRY



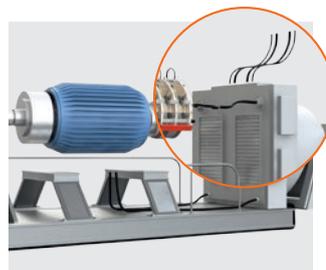
Electris is a world class specialist in the production of custom-made copper and aluminum elements for your industry.

We are a Polish, family-owned enterprise that is a customer-focused business in the most competitive field. The ability to produce high-quality products, in all sizes of runs, at competitive prices has made Electris one of the very best fabricators of copper elements in the European market.



Innovative components (such as specialized laminated bus bars) for the **RENEWABLE ENERGY SECTOR** companies that produce **SOLAR, WIND AND WATER SYSTEMS** occupy a prominent place in our product portfolio. These products, based on the customer's specification, fit perfectly into our mission, part of which is acting for the benefit of the natural environment.

We produce components for the converters and inverters in generators, and for the transformers in wind turbines. These include, for example, products such as **CUSTOMIZED COMPONENTS FOR THE CONTROL CABINETS AND CONVERTERS.**

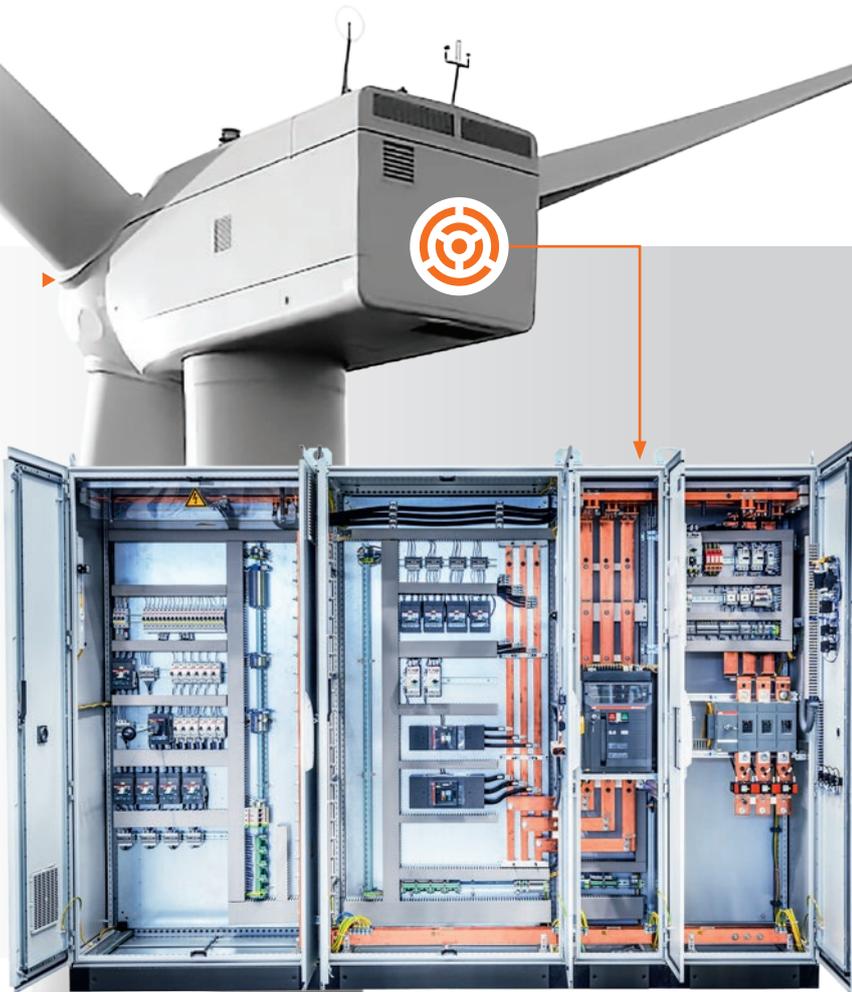


We also prepare **AIR AND WATER HEAT SINK RADIATORS** and many other **PARTS FOR PHOTOVOLTAIC INVERTERS.**

ELECTRIS PRODUCTS

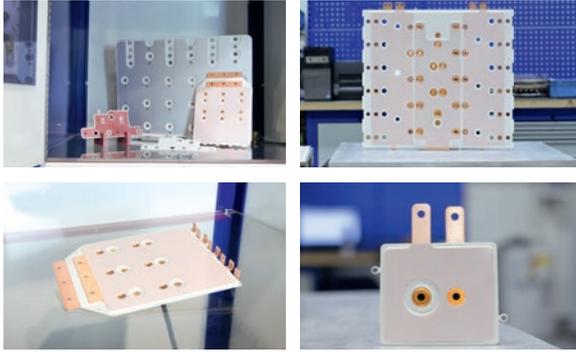
Components for the control cabinets and converters.

- ▶ **CUSTOMIZED BUS BARS**
plated bars (tin, nickel, gold, silver),
insulated bars (powder coated,
heat shrinkable)
- ▶ **LAMINATED BUS BARS**
- ▶ **RADIATOR COOLING PLATES**
air-cooled and liquid-cooled
- ▶ **PINS AND CONNECTORS**
turned and machined parts
- ▶ **INSULATION BOARDS (GPO3)
AND INSULATING FOILS**
(NOMEX, MYLAR)
- ▶ **BUS BARS COVER -
POLYCARBONATE
SHIELDINGS / PLATES**
- ▶ **CUSTOM-MADE CABLE TRAYS**



LAMINATED BUS BARS

Electris' quality-engineered laminated bus bars use state-of-the-art materials and manufacturing techniques that minimize the weight and maximize the simplicity of construction. Our laminated bus bars reduce system costs, improve reliability, increase capacitance and eliminate wiring errors.



- ▶ Electris manufactures laminated components with **different shapes (650 x 800 mm** – maximum size of bus bars).
- ▶ Material used: copper sheets (**type Cu-ETP or Cu-OF**) and aluminum sheets (**type AW-1050 or AW-5754**).
- ▶ Internal tooling and internal HV (30kV) and PD test are performed.
- ▶ Possible configurations: **SINGLE LAYER** – consisting of a single conductor and **MULTILAYER** – consisting of two or more conductors separated by an insulator.
- ▶ UL-approved insulation materials: **GPO3 / Macrolon / Mylar / Nomex** and other insulation foils are applied.

CUSTOMIZED BUS BARS

Electris prepares products according to our customers' requests. Bus bars are properly:

- ▶ bent,
 - ▶ twisted,
 - ▶ deburred
 - ▶ and appropriate insulation coatings are applied.
- The items are powder coated, undergo a lamination process, electroplating and a combination of powder coating and galvanisation (tin, nickel, gold, silver), of all surfaces where applicable and when the customer requires this.



RADIATOR COOLING PLATES

LIQUID-COOLED

Water-cooled heat sink is a type of highly efficient radiator. It is used for controlling the temperature of the power module so the temperature in the working environment does not exceed the maximum temperature specified in the regulations and standards.

We usually produce our water-cooled heat sinks out of **COPPER OR ALUMINUM**.

The most common passive heat sinks are created from aluminum profiles cut to the appropriate length.

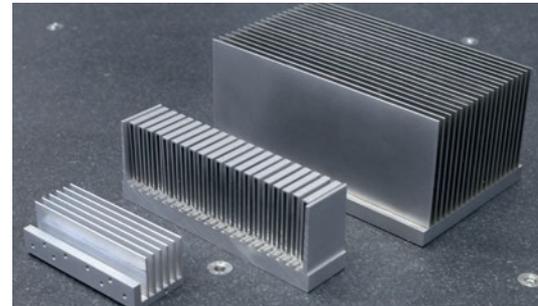
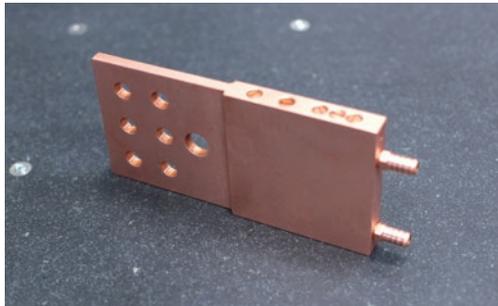
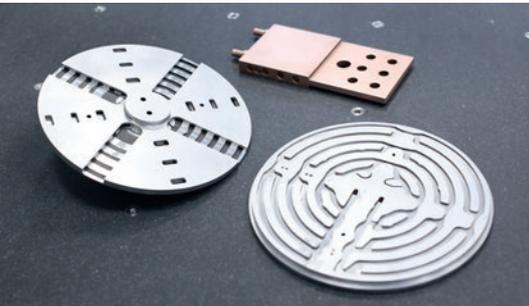
400 x 400 mm - MAXIMUM SIZE OF THE LIQUID-COOLED HEAT SINK WE CAN PRODUCE.



AIR-COOLED

Electris produces passive heat sinks based on the technical specifications of our customers.

Air heat sinks are commonly used in electronic circuits, for example to cool integrated systems, amplifiers and refrigeration equipment. They are also used to cool electric motors, which, due to the large amount of heat emitted, need components to dissipate it.



INSULATION BOARDS AND INSULATING FOILS

Electris manufactures various types of insulation components for electrical and thermal protection. Depending on individual technical requirements, we create insulating elements from various materials, including those from well-known and valued manufacturers.



GPO-3 is a fibreglass laminate comprising polyester resin reinforced with a fibreglass mat base.

LEXAN / MAKROLON is a solid polycarbonate material that combines very high impact resistance with very high permeability. It is a great alternative to glass.

NOMEX is a flame-resistant meta-aramid material, which provides lightweight, heat and flame-resistant performance for many applications.

MYLAR is made from PET plastic sheet.



PINS AND CONNECTORS

At Electris we are able to prepare customized connectors, always according to the customer's order.



BUS BARS COVER - POLYCARBONATE SHIELDINGS / PLATES

We produce special custom-made polycarbonate busbar covers in different shapes and sizes.



OUR SUSTAINABILITY STRATEGY



Sustainable development and the highest ecological standards in our factory is the direction that Electriss has been heading since the beginning of its activity.

That is why we make efforts to minimize carbon dioxide emissions and gradually increase the share of renewable energy sources in our everyday activity year-by-year.



We protect the climate by **REDUCING CO₂** and dusts **EMISSIONS INTO THE ATMOSPHERE** by using green energy – **25% reduce CO₂** emissions by 2030.



We co-operate with and supply copper **COMPONENTS FOR COMPANIES IN THE RENEWABLE ENERGY SECTOR.**



SUSTAINABLE MANUFACTURING – our production runs on modern and energy-efficient machinery.



ECOLOGICAL INVESTMENTS – we continuously improve our production technology and the factory environment.



We are saving electricity and using **GREEN ENERGY, PHOTOVOLTAIC POWER STATION** and energy-efficient **LED LIGHTING.**



SOLUTIONS FOR VARIOUS INDUSTRIES



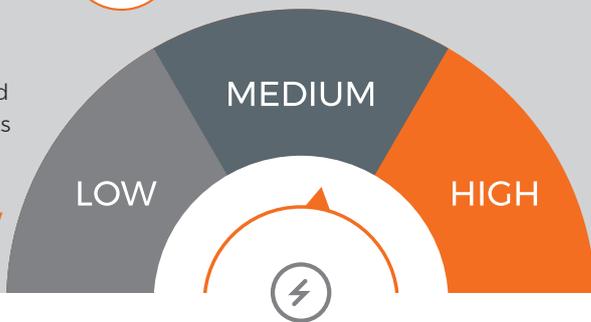
Our offer includes components which are used in **SWITCHING STATIONS, CONTROL PANELS, CONTROL CABINETS, MAINTENANCE SYSTEMS, VOLTAGE SUPPORT SYSTEMS, WIND CONVERTERS AND FOR SOLAR INVERTERS, AC AND DC POWER SYSTEMS, SWITCH GEARS, TRANSFORMERS** and many others, which are used in many sectors: renewable energy sources, communication, railroad, shipbuilding, power engineering and aviation.

We have an extremely wide range of copper component manufacturing capabilities.

We have developed dedicated products for solutions involving: **HIGH, MEDIUM** and **LOW** voltage.



VOLTAGE



ELECTRIS
POWER COMPONENTS

ELECTRIS

**Spółka z ograniczoną
odpowiedzialnością Sp.k**

Białka 620

34-220 Maków Podhalański
Poland

Phone: (+48) 33 874 49 30

E-mail: sales@electris.pl



www.electris.pl