



SOLUTIONS

FOR INDUSTRIAL APPLICATIONS





TRAFOTEK is experienced at providing transformers, reactors and filters for a wide range of industrial applications. Many global market leaders in their respective industries regularly turn to us when they are looking for solutions for the adjustment of current and voltage. We cater to clients in heavy industries like mining, metal and pulp & paper, as well as to clients involved in fields such as chemistry and water treatment.

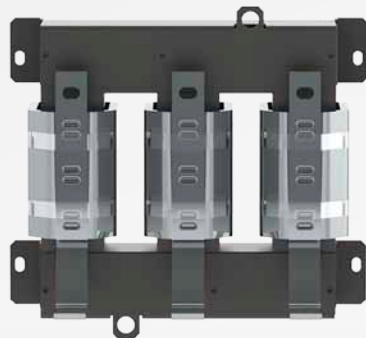
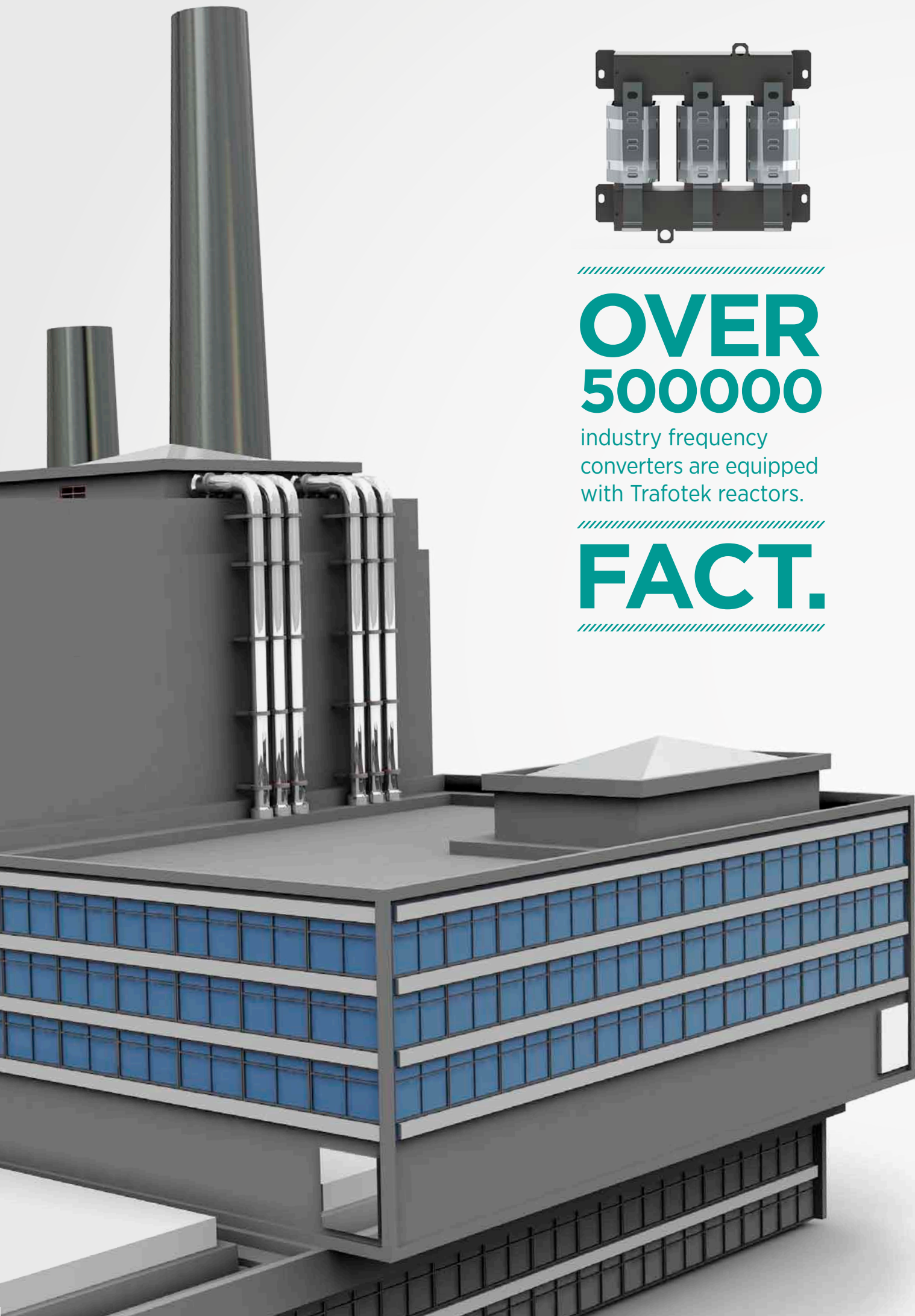




ENERGY EFFICIENCY and the utilization of renewable energy are widely accepted as the core components of a sustainable energy policy. In order to stabilize and eventually reduce carbon dioxide emissions both core components should be developed simultaneously and continuously. Industrial companies and power utilities are among the biggest users of energy. On a global scale, industry's share of electricity consumption reached 40% in 2010. In developing countries that share is generally above average. Because of rising energy prices and

emerging regulatory issues, energy efficiency is especially important for companies operating in energy-intensive industries because of their wide use of electric motors, pumps, rotating machines and compressors. Utilizing technologies that both save electricity and improve its quality provide important cost savings and emission reductions in the short-term while simultaneously enhancing long-term financial growth and profitability. Trafotek provides energy efficiency by offering its customers essential inductive solutions for their modern drives applications.





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**OVER
500000**

industry frequency
converters are equipped
with Trafotek reactors.

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FACT.

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TRAFOTEK offers much more than just a range of simple stock products. Every one of our products is customized to meet customer requirements. By offering close cooperation and tailored services, we are able to deliver solutions that address the technical and physical requirements of each end use.

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INDUSTRIAL STRENGTH

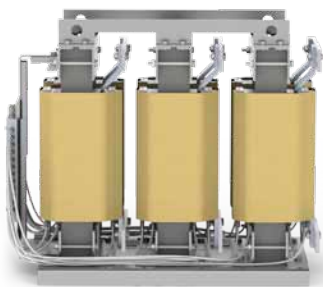
AN UNDERSTANDING OF EACH CUSTOMER'S BUSINESS,

industry-specific needs and requirements and the end-use environments where the product solution will be placed are vital. Trafotek's understanding is based on extensive know-how and long experience in the design of power electronics. Proven technology in critical techniques such as cooling methods and coil manufacturing make us a preferred partner. With strong existing references and ties to numerous market leaders, Trafotek has proven itself as a reliable long-term technology partner.

FLEXIBILITY AND EFFICIENCY are essential in product development as well as production reliability and volumes. Our production, regardless of production site, is always based on modern production equipment and working methods. Our global manufacturing footprint and supplier network secure cost efficient production and timely deliveries around the globe.

TIMO SUOMINEN, SALES MANAGER »



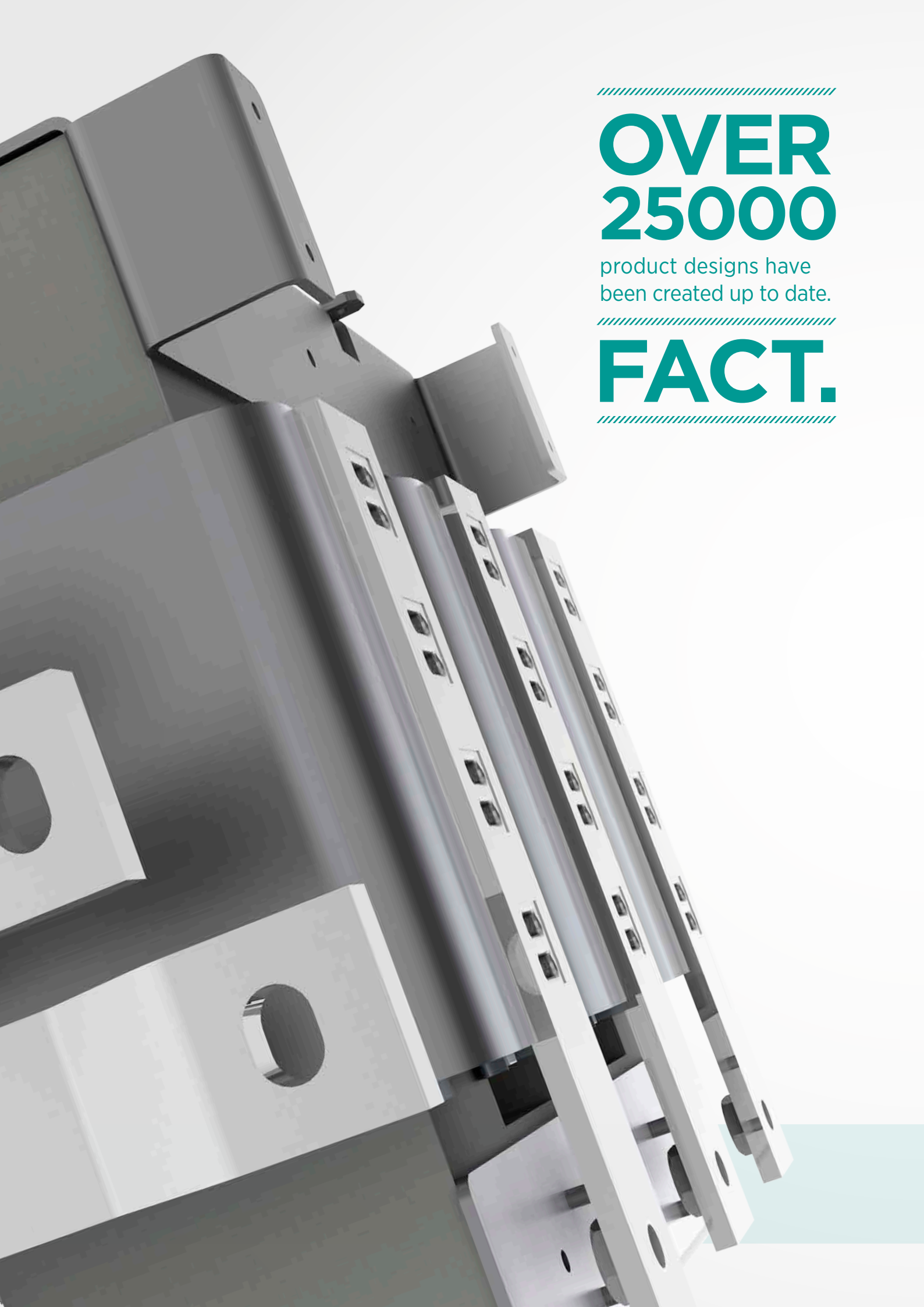


TRAFOTEK specializes in improving power quality in electric motor driven systems and other variable-frequency drive (VFD) applications. Our products help to mitigate harmonic distortion and reduce other power quality disturbances, which are increasingly common problems in industrial power systems.



AROUND TWO THIRDS of global industrial electricity is consumed by electric motors. The largest proportion of motor electricity consumption is attributable to mid size motors in such applications as mechanical movement, compressors, fans and pumps. The introduction of variable-frequency drive solutions has brought about an efficient and smooth way to vary motor speeds, thus creating considerable energy savings. It is estimated that there is still a potential to improve energy efficiency of these systems by about 20%. Such savings could

ultimately reduce the total global electricity demand by 10%. The increasing use of VFD's has mostly had a positive impact on industry by improving energy efficiency and industrial process quality. The downside is that they generate harmonics and noise into an electrical system. Trafotek provides efficient filter and reactor solutions to address these issues by protecting equipment from power surges, bring harmonics into compliance while simultaneously improve drives reliability and produce better energy.



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OVER 25000

product designs have
been created up to date.

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FACT.

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TRAFOTEK has extensive experience in a wide variety of different reactor, filter and transformer solutions. Variations of all products can be designed and manufactured to your specifications. The scaled and customized end products represent the optimal solution to the challenges that they face.

All our products are manufactured with high-quality materials. Products are designed and manufactured to the thermal class F or H. As the conduction material we use either aluminium or copper foil or wire. The products can also be equipped with enclosures and devices for electrical and thermal protection or with other accessories such as switches, wheels, etc. All our products pass through

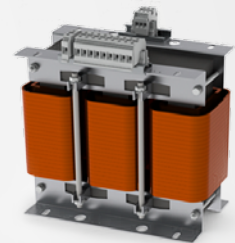
a vacuum-impregnation process, which improves their mechanical and electrical properties. We use a number of cooling techniques, including sophisticated and efficient liquid cooling. Liquid cooling enables the effective and compact transfer of heat losses from electrical premises with up to almost 90% of heat loss transferring into the liquid. Our liquid-cooled solutions can withstand high pressures and have a small fire load.

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» TRANSFORMERS

We produce power transformers in the power range of 1 kVA - 12 MVA, primary voltages up to 17,5 kV. Typical applications for our transformers include supply and output transformers for low and medium voltage frequency converters. We manufacture also excitation transformers which are used to magnetize generators and synchronous motors.

DRIVE TRANSFORMERS // DISTRIBUTION TRANSFORMERS // ISOLATION TRANSFORMERS //
EXCITATION TRANSFORMERS // CONTROL TRANSFORMERS



» REACTORS

With a strong background in coiled and foiled products, Trafotek produces reactors for low and medium voltage solutions. The currents of our reactors are in the range of 10 A - 6300 A. Our reactors are mainly used in frequency converters, DC drives, UPS and reactive power compensation applications.

BLOCKING REACTORS // TRIMMED FILTER REACTORS // LINE REACTORS //
OUTPUT REACTORS // DC-LINK REACTORS // SPECIAL REACTORS



» FILTERS

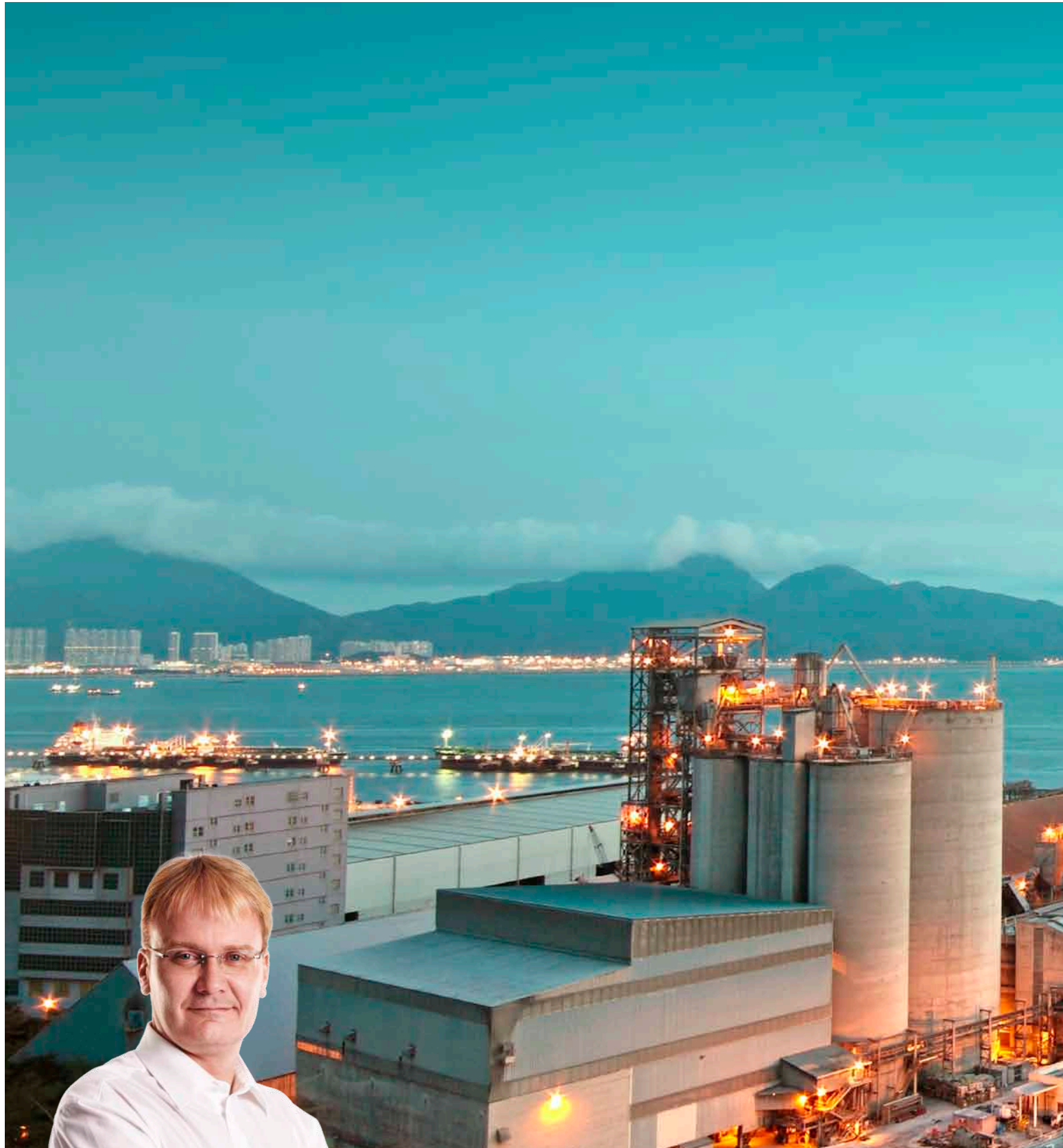
The development of drive technology over time has increased the demand for filters, which are an efficient and economical way of ensuring and improving the quality of power fed from the energy source to the grid, increasing the lifetime of the electrical motor and preventing damage to the electric motor's winding insulator. Trafotek's know-how in the field of filters is based on long experience.

LCL FILTERS // du/dt FILTERS // SINE FILTERS



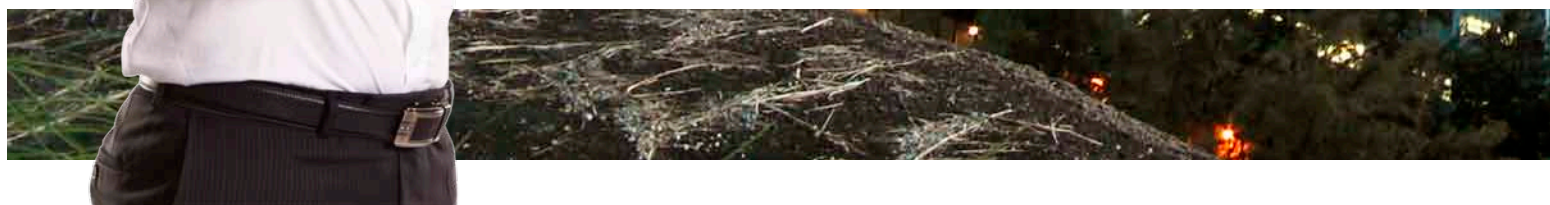
OUR DESIGNS are based on flexible standard structures, enabling short turnaround times and optimal performance-cost ratio, while minimizing the size and weight of the products. In the design work we utilize advanced, proprietary planning software, simulation applications and 3D and FEM modelling. Our pioneering position

in the field of technology is based on innovative liquid cooled products and timely investments in demanding transformer solutions. The high efficiency and field reliability of the over 25,000 different transformer and reactor products we have designed over the past 30 years has resulted in a long list of references and successful installations.



TRAFOTEK has a long history as a trusted supplier of innovative and customized filter, reactor and transformer solutions to its customers in all parts of the world.

– PERTTI ARVONEN, PRESIDENT & CEO



BETTER ENERGY



OUR CUSTOMERS are found in various industries and on every continent. From Oceania to North America, from South America to Asia, our products are in everyday use maintaining industrial production and power generation as well as driving marine transportation. Trafotek's innovative filters, transformers and reactors are designed for continuous duty without maintenance. Whether they are intended for

power generation or for use in any of their many other industrial applications, our products are total solutions optimized individually for each customer's need. With production facilities today in Finland, Estonia and China, Trafotek is steadily extending its global presence. Wherever you are in the world, Trafotek is ready to serve you and work with you towards the shared objective of better energy.



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**ALMOST
40%**

of all energy production
is used by industry.

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FACT.
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