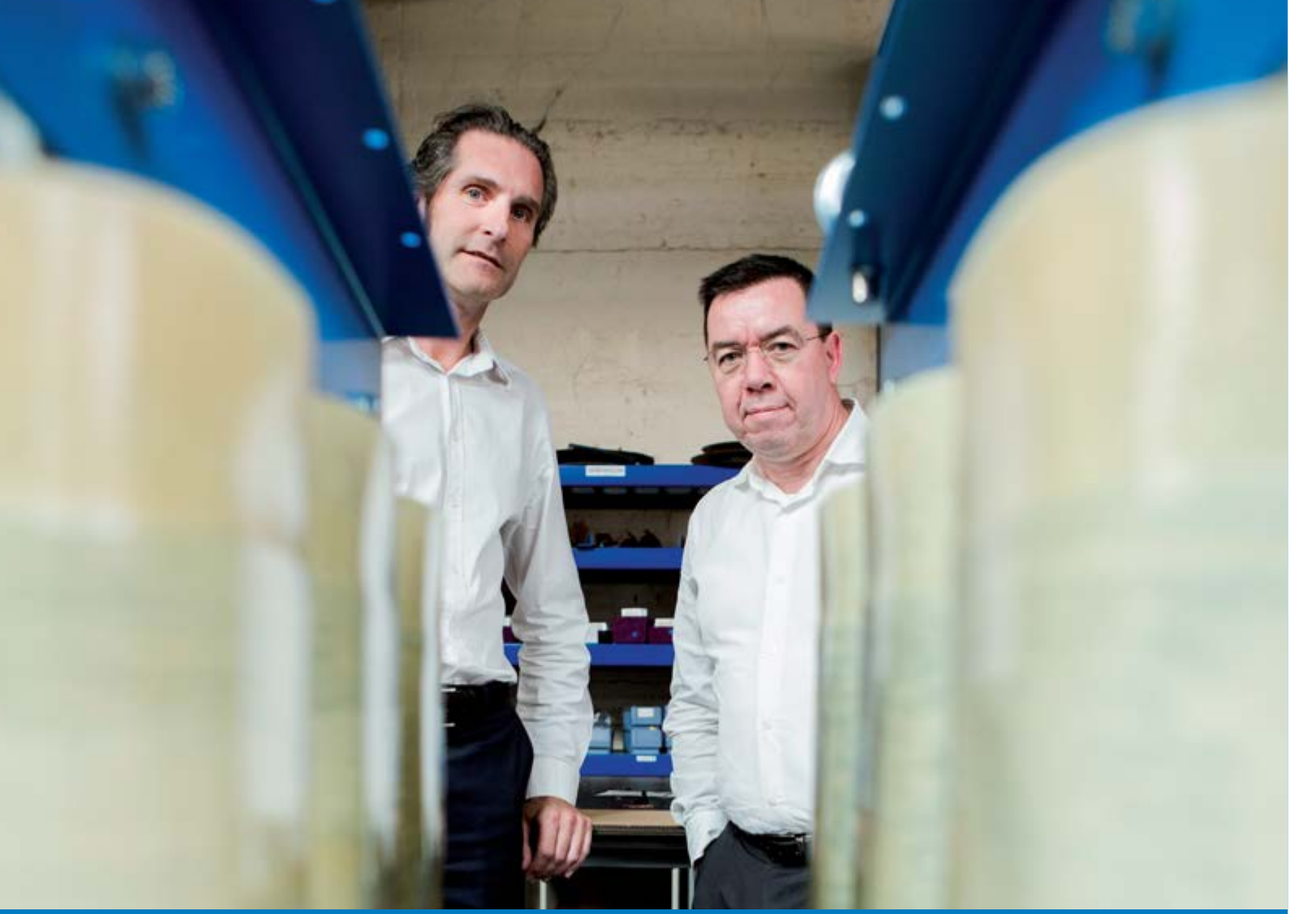
EREA
TRANSFORMERS

erea • energy • engineering

Your guarantee of **reduced energy losses!**

Transforming since 1933



A flair for innovation

Welcome to the EREA Energy Engineering brochure, in which we'll tell you something about who we are, what we do and why we do it. Just as our products are used to transform electricity, the business continues to transform itself. You might call it renewal, evolution. And that's precisely where we aim to make a difference, for you.

Whether it's our range of standard transformers or custom work, the focus of our R&D team is on efficiency and **low energy consumption**.
One highly practical example is provided by the transformers in our blue e³ series. These energy-efficient transformers ensure reduced energy losses. And that means lower energy bills for the end client. You may not be aware that these transformers **can pay for themselves** over the longer term.
Read more about this on page 12.

Or maybe it's custom transformers you are looking for?
We love a challenge, and **custom work** like this is one of our core strengths. It's for this reason that we have made the conscious decision to manufacture all our transformers at our home base in Wijnegem in Belgium. **Made in Belgium.** This keeps our customers close at hand and allows us to respond swiftly to their individual needs.

One thing we should point out: this brochure is not a technical dossier. If you have specific questions or want to know more about a specific application don't hesitate to get in touch. We'll be happy to assist.

When you choose an EREA transformer you are choosing quality, safety and flexibility.

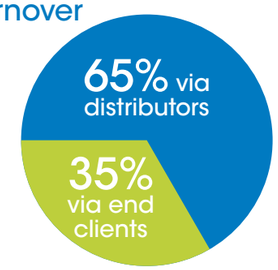
With kind regards,

Jeroen Goetschalckx and Herman Nollet,

Directors

Together we can transform your project

€ 4 million
turnover



Annual production of:

50 000 transformers

50 MVA capacity produced

Designed and Made in Belgium

Every EREA transformer, whether standard or custom, is manufactured in our production facility in Wijnegem in Belgium. This was a conscious decision, as this approach allows us to keep the entire production process under our own strict control, right through to the sheet metal fabrication work for the transformer housings. It's this level of control that allows us to respond **so speedily to customers' individual requirements,**

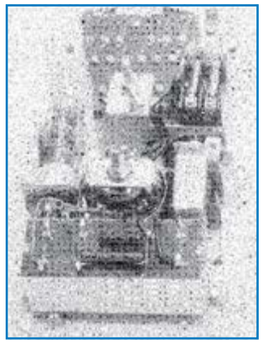
with all the benefits that brings for you as a client.

You can rely on EREA transformers. We have a solid reputation for **quality, safety** and **reliability.**

EREA: the history of the firm

1933

EREA (Etudes Radio-Electriques et Applications) is founded in 1933 by Baron Pierre Cardon de Lichtbuer. The original name was 'E.R.E.A Cardon frères', and the business was located on a park in Wijnegem, manufacturing radio sets and components (loudspeakers, housings, transformers).



1946

Supply of radio components to other radio manufacturers.

1956

Commissioning of new business premises at the current location, with an expanding machine fleet including injection moulding, welding and soldering machines.

1973

Development of a pocket calculator, a revolution in its time.

1971

Exports to the Netherlands and France led to a steady expansion, including the establishment of a 'printed circuits' department.

1984

Production of magnetic alternating-current stabilisers.

1996

Tubetronic: electronic ballast equipment for fluorescent lighting.

1997

A workforce of 200, with an annual production of 2 million transformers, ranging from 1 VA to 100 kVA. EREA take market leader position in Belgium and successfully export to all EU countries as well as Australia, New Zealand and America.

dossena

2018

Launch of collaboration with DOSSENA, the Italian manufacturer of insulation monitoring systems.

2016

Transformers for electric vehicle charging stations.

1930 | 1940 | 1950 | 1960 | 1970 | 1980 | 1990 | 2000 | 2010 | 2020

1943

Assembly of radios ceased, however production of radio components continued.

1951

The switch of mains power from 110V to 220V led to the manufacture of transformers for domestic use.

1954

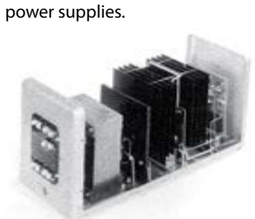
Start of signalling and electrification work on the Belgian rail network with an expansion of the range of three-phase transformers up to 15 kVA.

1959 and 1961

Expansion of the business premises.

1962

Expansion of the product portfolio with rectifiers and power supplies.



1975

Vacuum resin impregnation of transformers, initially up to 30 VA and later up to 630 VA.

1987

Electromagnetic transformers for low-voltage halogen lighting equipment.

1991

Electronic convertors for low-voltage halogen lighting equipment.

1994

Commissioning of new 3,120 m² production facility.

1999

LED modules and power supplies

2010

EREA concentrate on the production of industrial, electromagnetic transformers, with a focus on energy efficiency.
Launch of the blue e³ series.

blue e³

2013

Our transformer activities are taken over by means of a management buyout and placed in the hands of a new company, EREA Energy Engineering.

2015

Custom transformers now available with capacities exceeding 100 kVA.

Industries

EREA transformers are a vital electrical component used by a wide range of industries. Every application is specific. That calls for **customer-focused solutions**, custom work and a continual *drive* towards innovation.

We work in close collaboration with a network of **trusted transformer distributors**, cementing our presence on the industrial market. Over the years we have specialized in the production of transformers used in a range of sectors:

Renewable energy

We can't get away from it nowadays: energy is expensive, and that will inevitably demand efforts on the part of industry to improve energy efficiency and reduce consumption. EREA's focus is therefore on the transformation of energy in an energy-efficient manner. We achieve this via the **production of energy-efficient** single-phase and three-phase **isolating transformers** for applications such as electric vehicle charging stations, photovoltaic installations, heat pumps and wind turbines. Good for the environment and reduced energy costs for the customer!

Hospital facilities

Operating reliability and **patient safety** are crucial in operating theatres. Power supplies to such critical areas are therefore provided via networks using IT earthing systems.
At EREA we have an extensive range of medical isolating transformers for use in creating these **IT networks**. An isolation monitoring system is also required. Working with our partner Dossena we offer all this as a reliable total package.
See page 14.

Charging infrastructure for electric vehicles

Sales of electric vehicles are booming, with a parallel rise in demand for **charging infrastructure** (charging stations) in public areas and on commercial and domestic premises. In certain situations (3x230V grid) where no 'clean' **neutral** is available, EREA will allow charging anyway. We supply transformers specifically intended for use in charging infrastructure.

Medical applications

Hi-tech precision equipment for the medical sector demands extremely reliable transformers. At EREA we manufacture a range of single and multiphase isolating and safety transformers for medical applications.
It goes without saying that the **quality and reliability** of this equipment is unsurpassed.

Public transport

We're all familiar with electrically powered vehicles like trains, trams and trolley buses. To keep things running it's essential that **energy distribution** takes place reliably and efficiently. That's what EREA transformers are there for.
In rail infrastructure, for example, low-voltage transformers are found in substations used for energy distribution and signalling purposes. These are always **designed for the individual situation,** in compliance with current standards and with the most stringent **energy efficiency requirements**.

Telecoms

Telecoms operators ensure the continuity of mobile communication via an extensive network of **transmitter masts.** These are frequently subject to an elevated risk of **lightning strike.** EREA's role is provide dependable energy transformation equipment to power these masts: transformers ensure that your equipment is protected against the high voltages generated in a lightning strike. Similar highly robust energy transformation is required for the power supplies to **server stations**. Our product range includes numerous single-phase and three-phase transformers.

Agriculture

Electrical equipment of varying capacity is in use by small family and medium-sized businesses in the agricultural and horticultural sectors. There is also great diversity in their installations, covering everything from **ventilation technology** to **alarm and feed systems.** Technical progress and reliability are crucial for such long-term investments. EREA will act as your dependable partner and work with you to identify the optimal solution.

Marine and offshore

Flexibility and **continuity of operations** are paramount for the maritime sector. The same requirements apply to the transformers used in these demanding sectors, where they are frequently exposed to extreme environmental conditions. We are able to meet the demand for equipment of different voltages and capacities, multiple outputs and other technical variants. **Speedy delivery** is an inherent element of the business philosophy adopted by EREA for our maritime clientele.

Wellness

Transformers with a high degree of protection are used with pumps, water treatment equipment and dehumidifiers in the wellness sector, another branch of industry where EREA are completely at home. EREA offer custom applications to meet customers' particular requirements.

Products

Medical transformers

Single and three-phase isolating transformers for use in hospitals and other medical settings. Their installation provides for a separated supply network (IT or floating).

View all these products. →

Inrush current limiters

Reduce the inrush current by combining a standard transformer with an inrush current limiter. This equipment limits the inrush current from single- and three-phase transformers, preventing primary fuses from blowing.

← View all these products.

easy start
low inrush current
IRC

Voltage measurement transformers

These single-phase transformers are used to adapt the voltage to the input voltage of the measuring instrument with the highest level of precision, as well as creating galvanic isolation. They are used to convert a voltage signal for measurement equipment, energy meters, relays and other analogue and digital equipment.

View all these products. →

Housings

At EREA we carry an extensive range of housings for transformers of all kinds. These metal housings protect transformers against moisture, impacts and foreign objects. IP20, IP23, IP54, IP65...

← View all these products.

Accessories

Every accessory you could possibly need for a transformer. From DIN rail mounting plates to vibration damping feet, These rubber Silent Blocks suppress vibrations which might otherwise affect structures and equipment around the transformer.

← View all these products.

DC power supplies

Select from a range of single- and three-phase rectifiers, linear stabilised DC power supplies and single-phase switched mode power supplies for DIN rail mounting.

View all these products. →

Energy-efficient transformers

EREA were trailblazers in the market for energy-efficient industrial transformers. Our blue e3 series isolating transformers reduce energy losses.

← View all these products.

blue e3 VINÇOTTE

Alternating-current (AC) stabilisers

Single-phase stabilisers smooth out fluctuations in the power grid, delivering a highly stable 230V output voltage from input voltages between 195 and 265V. Three-phase AC stabilisers are available on request.

View all these products. →

High capacity transformers

Our custom transformers are now also available with capacities up to 400 kVA.

View all these products. →

Low inrush current transformers

Connecting a transformer to the power grid results in a short-lived high-current peak. EREA's IRC range includes transformers with a reduced inrush current as a solution for residential and tertiary sector buildings.

View all these products. ←

easy start
low inrush current
IRC

Mobile Site transformers

These ready-to-use mobile transformers deliver the required voltages on construction, demolition and festival sites. They are compact but fully featured, with all the necessary connections and protective features, so they're ready for immediate use.

View all these products. →

Like to see a handy overview of all our transformers? You'll find them all in our catalogue, with the technical parameters, dimensioning and wiring diagrams.

Download our catalogue. ←

How to find the right transformer or power supply, fast?

We've developed a set of **speedy selection cards** that you can use to easily identify the power supply, transformer (including transformers for e-vehicles and photovoltaic panels) or isolation- or differential current monitoring equipment that you need. The cards serve as a technical roadmap allowing you to find the product you need **at a glance**.

All the products included on the cards are **immediately available** from stock. Order today and they will be with you within 24 hours.

See the speedy selection cards ←

What do the logos on our products mean?

easy start
low inrush current
IRC

This label will allow you to identify the **low inrush current (IRC) transformers** in our range. Connecting a transformer to the grid can generate a short-lived, high-current peak, the IRC transformers deal with this problem.

A second option to facilitate the connection of a transformer is an inrush current limiter, see page 8.

blue e³

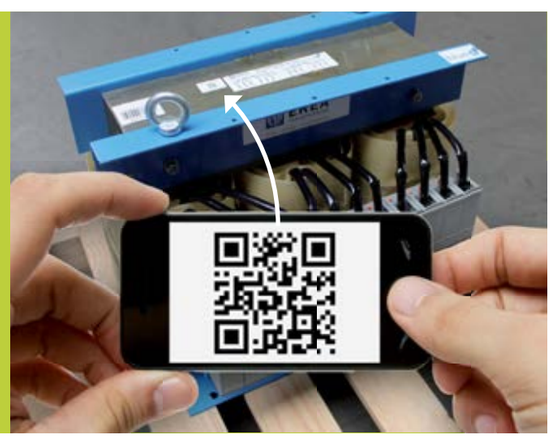
The industrial transformers in our blue e³ series are our most **energy-efficient transformers (BTE) ,** resulting in greatly reduced energy losses. And that means lower energy bills for the end-user.

More than that, **you can earn back the additional cost of this equipment** in just a few years.
Are you also on a quest to reduce your energy consumption? If so, you'll be interested in what's on the next page.

Handy: use the QR code to reveal all the technical information

From now on, all EREA transformers and accessories will carry a QR code. Just scan the barcode with your smartphone or tablet and you'll have all the technical product info at your fingertips: the capacity, the voltage, the voltage drop and a wiring diagram, so that you can **immediately** get on with the **installation**. You can also download the technical specifications to your device.

Useful for installers and users!



Energy transition

As one of Europe's largest transformer manufacturers, EREA and our blue e³ (BTE) transformers have led the way in the development of energy-efficient transformers. This is our contribution to the quest for efficient energy consumption, as high efficiency delivers **reduced energy losses,** Due, in part, to the fact that both the core and the full-load losses are low in comparison with standard transformers.

This is, of course, also **good news for the end-user.** Thanks to the reduced energy losses the additional initial investment can be recouped in a matter of a few years. In the longer term you can even expect to recover your initial investment **in full**!

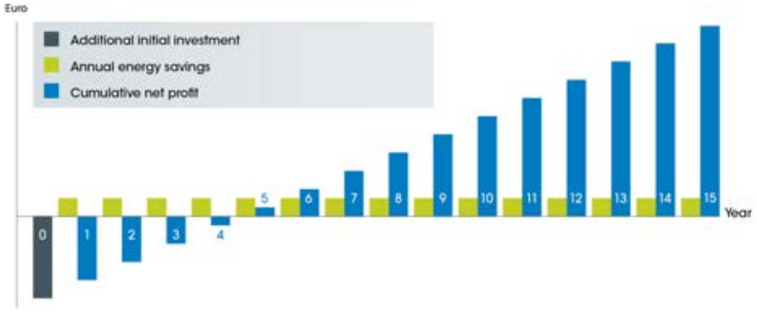
blue e³ VINÇOTTE

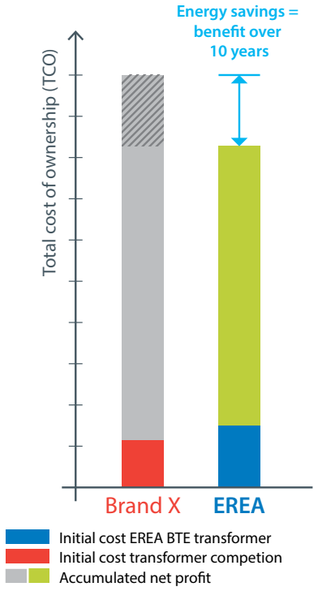
Ecodesign? Yes!

EREA transformers comply with the European Ecodesign Directive which requires equipment to be made more energy efficient right from the design phase. We're proud to say that our ecological designs easily satisfy the minimum requirements for energy efficiency. It's one result of our ongoing quest for innovation.

These transformers can pay for themselves

As the graphs below show, our energy-efficient blue e³ transformers turn out to be the most economical buy. The initial cost is high in comparison with a standard transformer, but, over the complete life cycle, the end-user is guaranteed to come off better, as well as experiencing steeply reduced energy costs. In short, the energy losses are significantly lower over the longer term.





Identify the most energy-efficient transformer in a few easy steps:

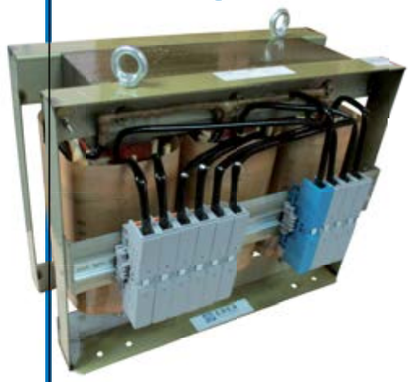
Step 1: Look at your application and analyse your consumption profile.

Step 2: Average consumption profile during daytime use?
➜ Use our **speedy selection cards** and make a selection from our standard range (SPT/BTE, ECT/IRC or PVT/IRC

Step 3: A different consumption profile?
➜ Contact us to discuss the custom manufacture of **an even more energy efficient** transformer.

- a heavy consumption profile 24/24 - 7/7 (e.g. telecommunications transmitter masts)
- a very light consumption profile - a few hours per day (e.g. elevator)

The latest developments in the field of energy-efficient products:



Transformers for charging stations

These transformers adapt the electrical grid in order to resolve a frequent problem, namely the absence of a neutral. They are also designed to correctly match the charging station selected by the customer.

They also feature a low inrush current (IRC) and are energy-efficient (BTE).

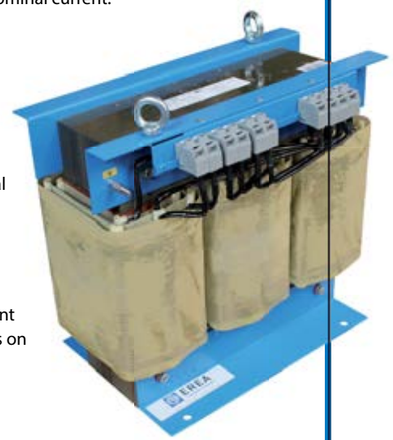
Low inrush current transformers in our ECT series operate on low induction and are able to connect with type C fuses on the basis of the nominal current.

Transformers for solar panels

Transformers for use with **photovoltaic panels** are characterised by an exceptionally low internal voltage drop so that the user is not disadvantaged when feeding back solar energy to the grid.

These transformers are used when modifications to the electrical grid are necessary to resolve a frequent problem, namely the absence of a neutral.
Selection depends on the capacity of your convertor.

They also feature a low inrush current (IRC) and are energy-efficient (BTE). These low inrush current transformers in our PVT series operate at low induction and are able to connect with type C fuses on the basis of the nominal current.



New energy-saving power supplies

Our constant attention to product improvement has led to technical enhancements to our single-phase switched mode and stabilised DC power supplies, with the following three benefits:

- **Even more energy-efficient.** In a nutshell, these power supplies improve the efficiency of the installation.
- They are **more compact.** Some models are half the size of their predecessors. So you gain space.
- All this at the **same price** as the power supplies in our previous.

Our Modular range features two NEW single-phase, 100 watt switched mode power supplies:

- DR-SPS-M-100W12V/BTE and
- DR-SPS-M-100W24V/BTE

Medical transformers now even more efficient!

The safety and continuity of electrical equipment are crucial in hospital facilities such as operating theatres. This is the role of the medical isolating transformers. We carry an extensive range of such transformers at EREA. They comply with a series of stringent requirements in addition to the general standards.
Thanks to painstaking development work our energy-efficient range is now **10-15% more efficient,** without any impact on the price.

Our exclusive partnership with DOSSENA

An Electrical IT network consists of two components. On the one hand there is the **transformer**, which provides for a floating network, on the other hand there is an **isolation monitoring system** which continuously monitors the floating network and reports any isolation faults.

EREA has a long track record in the manufacture of transformers for industrial and medical IT networks. In partnership with the highly-regarded Italian manufacturer of isolation monitoring systems DOSSENA we now offer a highly attractive **complementary total package** for industrial and medical IT networks

Our partnership is focused on the creation of **the safest possible electrical networks,**
an ambition that has become a reality thanks to the many similarities between our two businesses;

- High quality products developed and manufactured in-house;
- A focus on innovation and new products;
- Providing customers with practical solutions;
- Applications in diverse industrial sectors, from rail transport and shipping to hospitals.

dossena

EREA TRANSFORMERS
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Industrial **Isolation Monitoring**

The standard protection features are not sufficient where an elevated level of operating reliability is required and where an installation must continue to operate safely following an initial isolation fault.
The way forward here is to use an isolating transformer which creates **a floating (IT) network**.

As networks of this type have no connection with earth a differential protection system will not work.
An IT network system is therefore **permanently monitored** by an isolation monitoring system. This will provide a warning if the insulation resistance of the network falls below the set threshold value.

← Read more.

Isolation Monitoring **Medical**

The use of an IT network system in medical settings such as operating theatres is crucial for patient safety as well as continuity of operations. A loss of power here could clearly have severe consequences.
Power supplies to such critical areas are therefore provided via **networks using IT earthing systems.** IT network systems with their exceptionally high operating reliability are therefore the ideal solution for this application:

- continuity of operations is guaranteed after an initial isolation fault,
- thus ensuring patient safety.

← Read more.

Differential monitoring **type B Industry**

Industrial electricity grids often require specific safety measures to adequately protect people and the installation itself against the potential presence of DC fault currents (which may be caused, for example, by a frequency regulator). Our type B differential relay **is capable of detecting fault currents of all types (AC and DC)** and allows a threshold value to be specified for shutting off the power.

It is also possible to specify that an **advance alarm** will be given if the fault current approaches the limit. The display or the Modbus provides easily understood feedback on the status of the network being monitored.

← Read more.

Custom projects

The manufacture of custom transformers is a core part of our business. So how do we set about this task? Below you will find our 10-step work procedure, based on a project completed for a client in the energy sector.

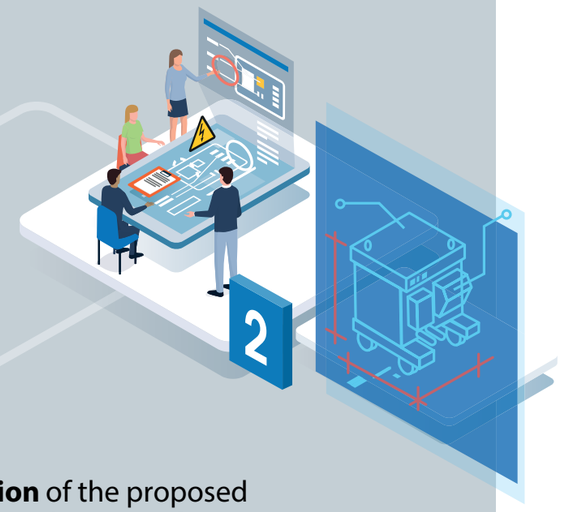
EREA succeeded in developing the transformer for this project in the space of just four weeks.

Custom transformers for the energy sector in ten steps

Based on a real project carried out for a customer.

Speedy completion!

1. **Develop** technical specifications. EREA will refine the electrotechnical aspects.



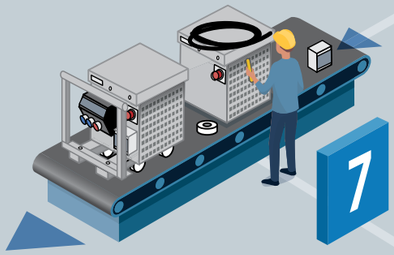
2. **3D sketch**, referring to items in the specifications.

3. **Presentation** of the proposed transformer solution **to the customer.**

4. **Customer holds an internal discussion.** Customer formulates feedback.

5. EREA produce a **prototype** to validate the dimensions.

6. **Customer carries out an internal evaluation.** Customer approves dimensions.



7. **Manufacture** of the transformers in the EREA production facilities.

8. **Delivery** of the transformer to the customer.

9. **Feedback** on initial findings.

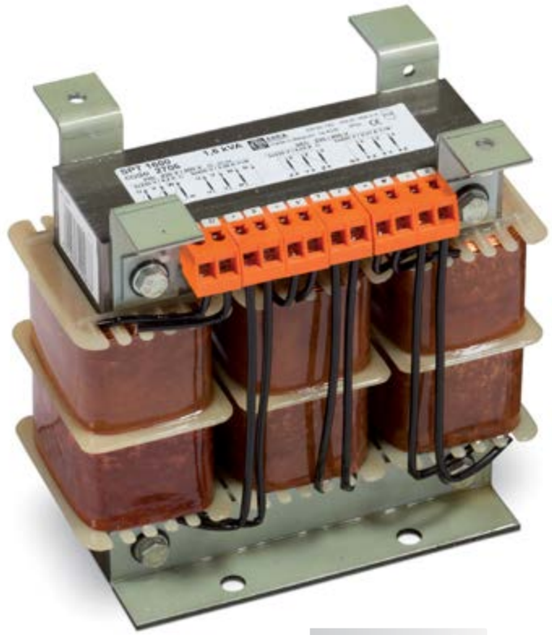
10. **Place repeat orders.** In this case the order for the manufacture of an initial production run of transformers.

EREA: our strengths

- Support and advice on electrotechnical issues.
- The transformers comply with stringent safety standards and electrotechnical requirements.
- Robust, energy-efficient transformers delivering added value to the energy sector.
- Quick delivery times.

See these 10 stages online.

Connection of transformers



The three windings in the three-phase transformers in our SPT range are not yet connected. This allows you – as the user – to arrange the **connection** in line **with the relevant application.**

You can opt for a star (Y) or delta (Δ) connection on both the primary side (PRI) or the secondary side (SEC) of the transformer. There are therefore **4 potential connection options**.

← Identify the correct connection layout.

Technical documentation

Admittedly, the technical language used to describe transformers is not always straightforward.
EREA will always be happy to assist you with clear technical information **to help you get things straight.**
So we've drawn up a series of technical white papers covering a range of topics.

Happy reading!

← They are free to download here.

Innovatory

← Here's a handy overview.

Transformers for charging stations

Low inrush current transformers

Vibration dampers

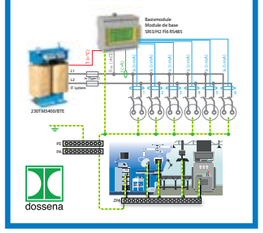
Plug-in spring terminals

Blue e3 Energy Efficient Transformers

Reintroduction of magnetic halogen transformers

Improved DIN rail power supplies

Medical and industrial isolation monitoring



Transformers for photovoltaic installations

Expanding to higher capacities up to 400 kVA

Protective housings, IP20 to IP65

New: Safety terminal blocks

QR codes

Bell transformers available again

Alternating-current stabilisers

Differential current monitoring type B

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Need advice
about the details of your project?
Our committed and experienced
staff stand ready to assist.

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You may find the answer
you are looking for in
the FAQ on our website.

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Transforming since 1933