



# ZREW Transformers

Perfection in Detail

# ZREW

## Your partner for high quality transformers

A basic requirement for power transformers is a reliable and efficient transmission of power to the end user.

In order to serve our customers in the best way, each and every transformer is one of a kind and specifically designed to meet the customers' needs in regards to voltage, power, climate, sound pressure and a lot of other criteria.

Established in 1956, ZREW with its headquarters in Łódź has become the leading transformer manufacturer in Poland. Today the brand ZREW is a synonym for reliability and quality in the market.

State-of-the-art production processes and lean manufacturing, highly qualified employees as well as an integrated management system are the cornerstones for today's success.

### **The portfolio – as diverse as the applications of our customers**

The product portfolio includes power transformers for different applications with voltages up to 170kV and power up to 125MVA.

- Step-up / step-down transformers
- Rectifier transformers
- Furnace transformers

Besides the production of transformers, the portfolio of ZREW is complemented with offerings for maintenance, modernization and diagnostics.



Transport of a power-transformer in our factory in Łódź, Poland



Type of transformer: TJRc 16 000/110  
Power rating: 16 MVA  
Voltage: 110/10,5 kV

# Quality has a name

## Developed with long-standing experience

ZREW combines tradition and innovation in development and production.

### R&D as the key to success

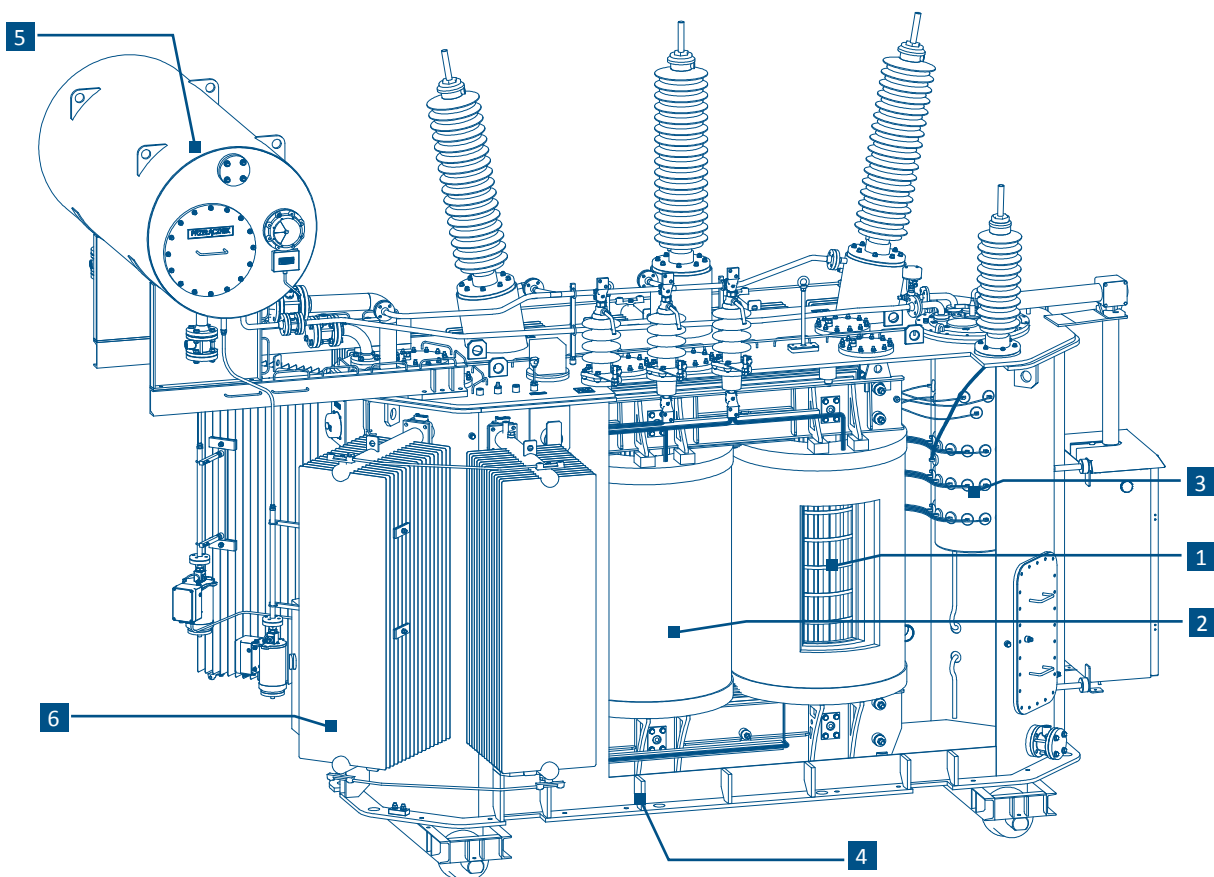
At ZREW, we are firmly convinced that only as a pioneer of new technologies we can offer our customers the most innovative and high-quality products for the respective requirements of the various projects.

ZREW has a high focus on R&D and deeply anchored this focus in the organization. Many years of experience and intensive cooperation with power companies and different industries have helped us to develop our transformers in a way to meet and exceed our customers' requirements.

Only in this way have we been able to become the market leader in our home market and set standards that are self-evident today.

### The transformer and its components

1. Core
2. Windings
3. Tap changer
4. Tank
5. Conservator
6. Cooling system



Perfection in detail





### Core

- Manufactured from high-quality, cold rolled metal cut metal plates
- Stacked with step-lap method
- The manufacturing process ensures low no-load losses and low noise levels



### Windings

- Windings made of copper with paper or synthetic insulation, with elevated thermal parameters
- Disc coils for high voltages
- Radial and axial ducts for oil cooling
- Oil impregnated and precisely measured
- Highest mechanical stability



### Tap changer

- Enabling on-load and off-load voltage regulation
- Tap changers are from renowned manufacturers such as MR Reinhausen and ABB Components
- Tap changers have motor drive which can be remotely or locally controlled electrically
- Tap changers can be equipped with tap number indicators



### Tank

- Quality controlled tanks of own production
- Compensation of inner and outer pressure -950/+500hPA
- Compact design, static safe and dense
- Corrosion protection in accordance with ISO 12944 for long-life cycle of the tank



### Conservator

- Twin-chamber oil conservator for transformers with tap changers
- Each chamber equipped with magnetic oil indicator
- Conventional or maintenance free air dryer for each chamber
- Optionally a membrane or a polyurethane bag



### Cooling system

- Tank with removable galvanized radiators
- Different types of cooling system for a long and reliable lifetime
- Oil air cooling (ONAN, ONAF, OFAF or ODAF)



### Standard equipment

- Porcelain bushings on the HV and LV side
- Ball valves for filling, draining and filtering of oil
- Taps for drawing oil samples from the upper and lower section of the tank
- Earthing terminals at the tank
- A chassis with wheels for moving the transformer in two directions



### Control and measurement equipment

- Buchholz-relais with contacts for signaling and function to turn-off the transformer
- Magnetic oil level indicators with contacts for signalization of oil level threshold
- Silica gel breathers (either conventional or maintenance free)
- Contact thermometer to measure oil temperature with a signalling function
- Resistance thermometer with electronic indicator
- Pressure relieve valve with contacts to indicate its activation





ZREW transformer installed in a substation



Transformer equipped with Pfisterer Connex

# Our service offerings

## Tailored to your needs

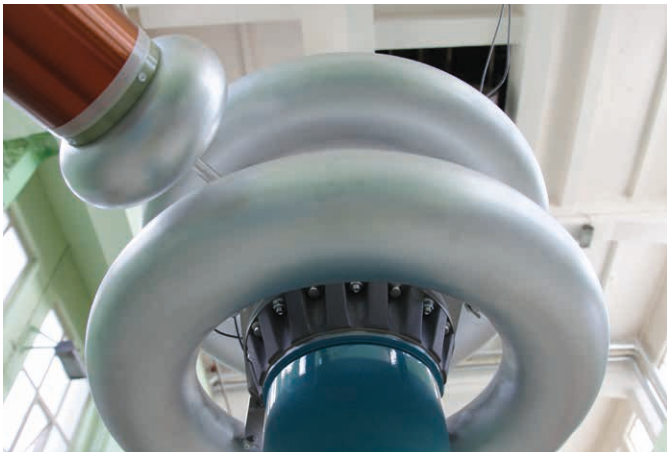
A one - stop shop - from new products to services and diagnostics.

ZREW offers its customers comprehensive services for transformers and is a reliable partner throughout the entire life cycle. Starting from troubleshooting and maintenance all the way to diagnostics, upgrades and retrofit.

Our highly qualified staff in our factory, known for high quality work, has decades of experience in the field of service. Our service is geared towards our customers. We would be glad to perform simple work on site. For more complex tasks we transport the transformer back to the factory.

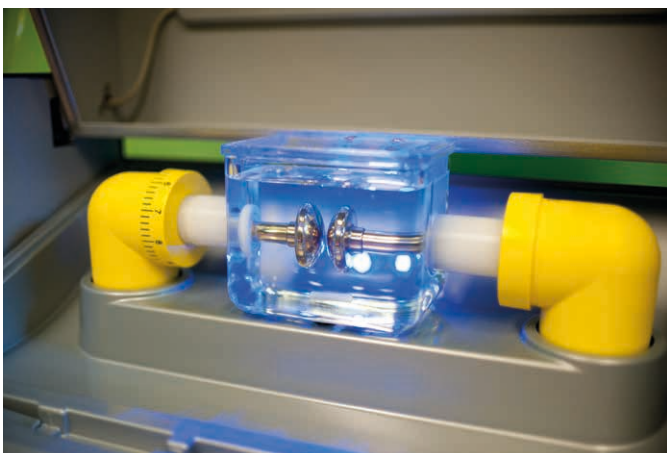
Here, we can analyse your transformer in detail in our state-of-the-art and top-notch equipped laboratory. Based on your individual needs, we will develop the technically and economically most viable solution for extending the life cycle of your transformer.

Since the foundation of ZREW, more than 1'000 transformers with powers up to 150 MVA have been repaired and modernized in our factory.



### Electrical diagnostic

- Dielectric strength
- Measurement of losses
- Partial discharge
- Acoustic pressure
- Mechanical testing of windings by the SFRA method
- Computer testing of OLTC change times
- Moisture testing of fixed insulation by the FDS and PDC methods



### Chemical oil diagnostic

- Physicochemical parameters
- Dielectric properties
- Analysis of aging processes of paper-oil insulation
- Indicators of ecological use of oil



# Our processes

## Up-to-date and innovative

Highly trained employees are the key to the successful implementation of our processes.

The highest quality can only be achieved through clearly defined production processes, state-of-the-art equipment and highly trained employees.

Based on a long-standing quality management program and ISO 9001, ISO 14001 and OHSAS 18001 certification, ZREW's goal is to exceed industry standards. A wide range of processes are constantly being challenged, from development to manufacturing, sales and services, to ensure the highest level of customer satisfaction.

- Repair and modernization
- Service and maintenance of tap changer
- Oil service
- Transport of transformers

### International standards and requirements

- All transformers meet the requirements of the Eco-Design Directive of the European Commission No. 548/2014



Our laboratory - the most modern in Poland



Final assembly



Transformers ready for transport

# ZREW - a company of R&S

## An international oriented Group

The companies of the R&S have a long-standing history and experience in manufacturing power products with the ambition for improvement and innovation.

The R&S Group, founded in 2012 is an international oriented Group with its headquarters in Sissach, Switzerland and offices worldwide.

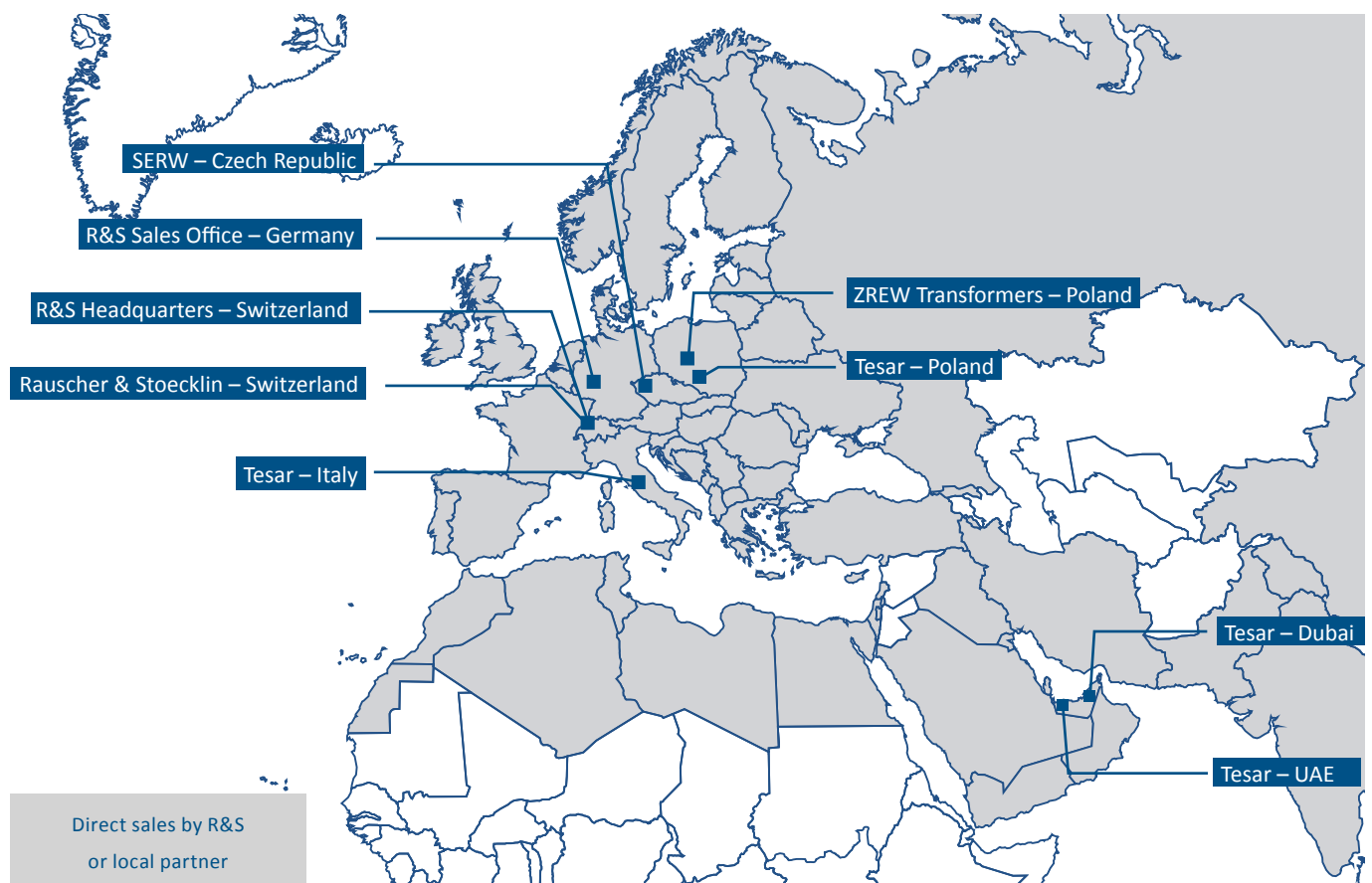
### The success of the R&S is built upon:

- Longtime experience of the different companies in their particular core competencies
- Highly motivated and trained employees
- Products based on proven technologies that go hand in hand with innovative and efficient manufacturing processes

The results are products with highest possible quality and reliability for our customers.

### Companies of R&S

- Rauscher & Stoecklin  
Distribution transformers, railway switches, high current connectors
- SERW  
HV and MV switching devices
- ZREW Transformers  
Power transformers
- Tesar  
Cast resin transformers, distribution transformers, instrument transformers



Our offices worldwide



# Companies of R&S

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