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# THE NEW GENERATION – THE UMG PRO SERIES

Energy Management, Power Quality,  
Residual Current Monitoring

An aerial night photograph of a city skyline. A prominent skyscraper with a glowing top is on the left. A river flows through the center, with light trails from boats. The city is illuminated with various lights, creating a vibrant scene.

# ADDED VALUE

## LATEST TECHNOLOGY – FUNCTIONAL DESIGN

The new PRO series combines the latest technology with excellent functions and attractive design. The increased variety of functions and comprehensive illustration options enable measurement data and measurement results to be analysed and interpreted more easily.

Data can be processed, visualised and analysed with the help of the pre-installed Janitza APPs. APPs are a function extension of the device homepage. The traffic-light principle makes complex power quality analyses, for example, understandable for everyone.

# INCLUDING



### YOUR BENEFITS

- Functional expansion of the Janitza measurement devices through in-house APPs
- Automatically integrated analysis of power quality measurement data according to international standards by traffic light display.
- Representation of the most important parameters (status, consumption, events and power quality) directly on the front page of the device homepage
- Presentation of the APPs available and their functions via the APP management
- Redundancy – 100% security for your measured data in the device memory
- The most important information at a glance through QR code

APPS INCLUDING



# HARDWARE AND SOFTWARE

## THE NEW GENERATION – THE UMG PRO SERIES

In this age of large data quantities, collectively known as “Big Data”, mere data acquisition through measurement equipment is no longer enough.

A tight meshing of the Janitza UMG measurement devices with the GridVis® visualisation software as well as the software extensions (APPs) offers the optimum conditions for efficient measurement data analysis. Janitza have provided an open and easily-integrated communications architecture for some time now and this is a prerequisite

for the requirements of Industry 4.0 and the Internet of Things (IoT).

Integrated extensions of the device software (APPs) as well as simple integration into the superordinate systems (e.g. APP Push service) are some of the core elements of the Janitza PRO series to ensure compliance with the requirements of the latest processes in the future per Industry 4.0.

### UMG 509-PRO

Powerful network analyser with Jasic (PLC functionality), comprehensive logging versatility and integrated residual current monitoring.

The network analyser measures with an accuracy of 0.2%.



### UMG 604-PRO

Network analyser for DIN rail mounting with Ethernet, PROFIBUS, Jasic (PLC functionality) and integrated homepage. Comprehensive power quality measurements can be undertaken.



### UMG 605-PRO

Power quality analyser with standard-compliant measurement per IEC 61000-4-30, EN 50160 or EN 61000-2-4.



### UMG 512-PRO

The class A power quality analyser with integrated residual current monitoring measures the power quality parameters per standards EN 50160, IEC 61000-2-4.



# IN PERFECT COMBINATION

## APPS – SMART FUNCTIONAL EXTENSIONS, DIRECTLY “ON BOARD”

With the help of APPS, the Janitza measurement devices are expanded with new functions. All APPS can be transferred with the device manager (constituent part of GridVis®) and via Ethernet-connected devices – to just one device or to multiple measurement devices simultaneously.

Janitza has equipped the PRO series with APPS in order to increase the capabilities of the measurement devices. Thanks to the connection of the measurement devices, APPS and software, the measurement data is more easily interpreted and is available to the user, any-time, any-place. This avoids time-intensive and cost-intensive manual calculations.

The APPS expand, for example, the analysis and visualisation tools, with which voltage events per “IEC 61000-2-4” and “EN 50160” can be analysed and reproduced on the device’s own homepage. Simple presentation facilities (e.g. traffic-light function) make faults visible in good time. This enables timely intervention and so operational processes are able to continue uninterrupted.

In addition, it is also possible to implement further function modules, monitor threshold values and send fault messages via email.



# UMG 509-PRO & UMG 512-PRO

## MULTIFUNCTIONAL POWER QUALITY ANALYSERS WITH RESIDUAL CURRENT MONITORING

The power quality analysers UMG 509-PRO and UMG 512-PRO are used in all levels of TN & TT networks as well as in IT networks for monitoring the power quality, the residual current monitoring and for energy data management. The Ethernet-capable devices have different IP protocols and interfaces and can be easily integrated into superordinate systems (such as PLC, SCADA solutions, etc.) via diverse communication structures.

The UMG 509-PRO network analyser is a multi-purpose unit that continuously monitors the power quality and analyses electrical disturbances in the event of network problems.

The UMG 512-PRO is a class A certified power quality analyser per IEC 61000-4-30. Power quality parameters such as harmonics up to the 63rd harmonic, flicker, short term interruptions, etc., are measured per class A.

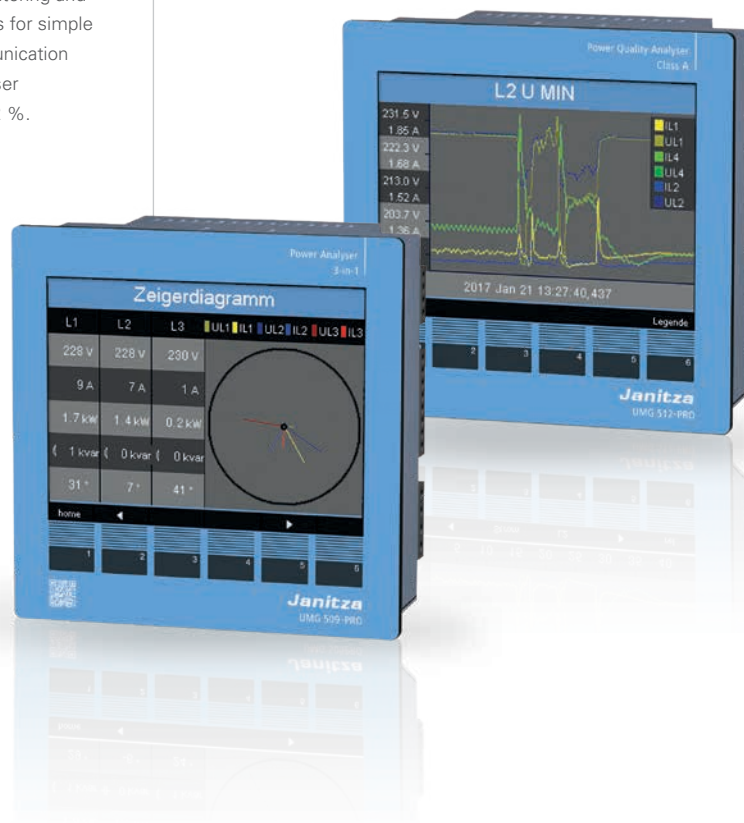
Certified measurement processes with high accuracy of measurement are applied to check the power quality per EN 50160 at the energy handover point (PCC) as well as in the internal supply network per EN 61000-2-4.

### UMG 509-PRO

Powerful network analyser with colour-graphic display and high degree of user-friendliness, residual current monitoring and comprehensive range of protocols for simple incorporation into existing communication architectures. The network analyser measures with an accuracy of 0.2 %.

### UMG 512-PRO

Class A power quality analyser: Measures power quality parameters (e.g. harmonics up to the 63rd., flicker, short term interruptions, etc.) and is used for residual current monitoring. It is also equipped with Ethernet, an integrated homepage, Modbus, enables Jasic programming (PLC functionality) and Power Quality Reporting.



# UMG 509-PRO & UMG 512-PRO

## Functions & features

APPS INCLUDING



- High-performance power quality analysers
- Class A certified (UMG 512-PRO)
- Integrated residual current monitoring (RCM measurement)
- High accuracy of measurement
- Can be used in a great variety of network types
- Multiple interfaces and open communication architecture with numerous protocols (Modbus, IP) for simple integration into superordinate systems
- Inclusive thermistor input and two digital inputs and outputs each
- 256 MB integrated measurement data memory for redundant and secure measurement data acquisition
- Display of current and historical measurement data via the device homepage as well as parameterising and assessment software GridVis® Basic
- Integrated watchdog function as web-based visualisation
- Power quality monitoring without specialist knowledge
- Threshold value monitoring by means of traffic-light principle
- Graphical programming: Jasic (PLC functionality)



# UMG 604-PRO & UMG 605-PRO

## NETWORK QUALITY ANALYSERS FOR DIN RAIL MOUNTING

The power quality analysers UMG 604-PRO and UMG 605-PRO are the equivalent of the front installation devices, but in slim and cost-optimised DIN rail mounting form. They can be used to monitor the power quality and implement comprehensive energy management. Incorporation into the communication structure is possible with both devices, including by means of the Ethernet interface and the numerous IP protocols offered.

Measurements of the network system and analyses of the power quality are carried out with the UMG 604-PRO. Thanks to its standard-compliant measurement process (IEC 61000-4-30), the UMG 605-PRO enables power quality measurement in accordance with standards DIN EN 50160 and DIN EN 61000-2-4. The analysis and visualisation are implemented by means of the GridVis® network visualisation software or through the APPs – as local intelligence. Numerous further APPs are offered for both device types.

### UMG 604-PRO

Power analyser for DIN mounting rail with latest communication capabilities (Ethernet, PROFIBUS and integrated homepage).

### UMG 605-PRO

The UMG 605-PRO enables power quality measurement in accordance with standards DIN EN 50160 and DIN EN 61000-2-4. Measurement process implemented in accordance with DIN EN 61000-4-30.





# UMG 604-PRO & UMG 605-PRO

## Functions & features

APPS INCLUDING



- High-performance network quality analysers for DIN rail mounting
- Power quality measurement in accordance with standards DIN EN 50160 and DIN EN 61000-2-4
- High accuracy of measurement
- Can be used in a great variety of network types
- Multiple interfaces and open communication architecture with numerous protocols (Modbus, IP) for simple integration into superordinate systems
- Including thermistor input
- 128 MB measurement data memory for redundant and secure measurement data acquisition
- Display of current and historical measurement data via the device homepage as well as parameterising and assessment software GridVis® Basic
- Integrated watchdog function as web-based visualisation
- Power quality monitoring without specialist knowledge
- Threshold value monitoring by means of traffic-light principle
- Graphical programming: Jasic (PLC functionality)



# DEVICE HOMEPAGE

## ASSESSMENT AVAILABLE AT ALL TIMES

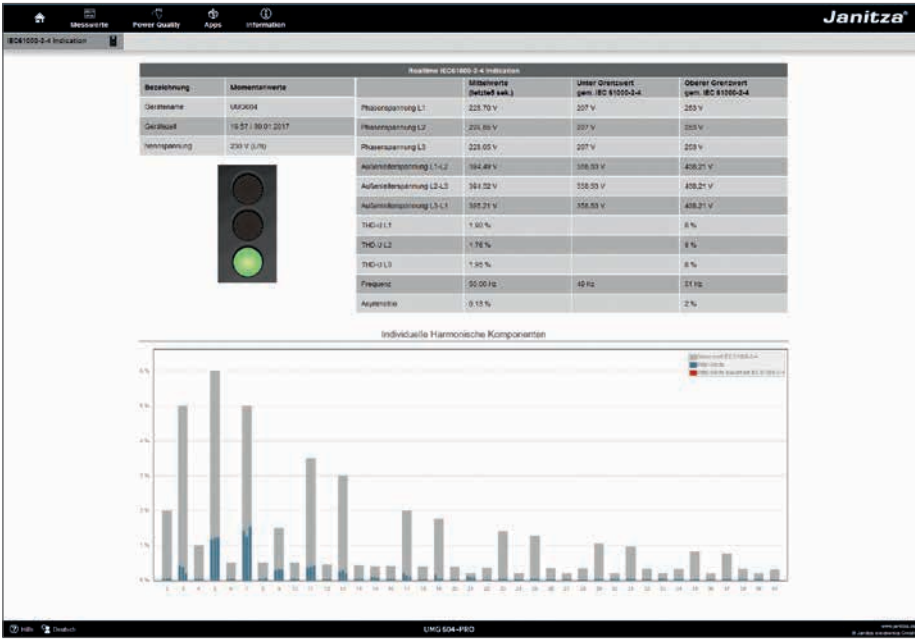
Each measurement device has an integrated web server, which has a separate homepage. The measurement device can be operated in the same way via its homepage as with the device display. Furthermore, extensive current and historic measurement data, including the power quality analysis, can also be called up. An advantage of the device homepage is the constant availability of the

measurement data – without prior software installation. The user can immediately obtain an overview of all energy data. The device homepage can be displayed on any end device and will be adapted to suit the device functions (Responsive Design). Simple operation is possible thanks to the uniform design of the GridVis® visualisation software and the device homepage.



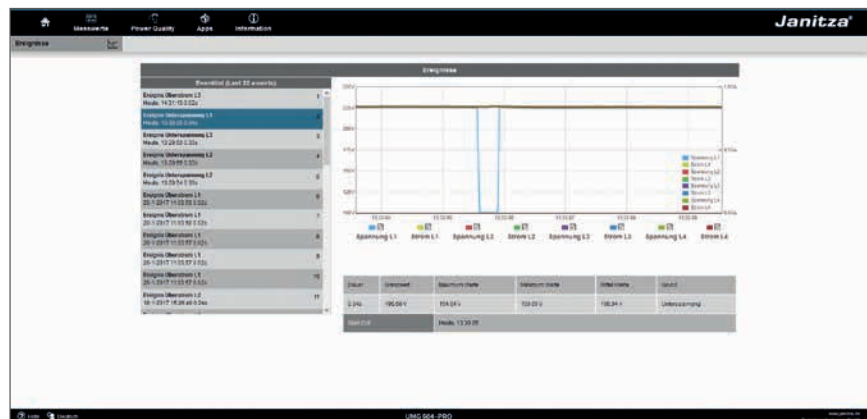
Power quality status overview

# Device homepage



IEC 61000-2-4 Analyse with traffic-light principle

PQ display – under-voltage event



- Access to powerful device homepage via web browser
- Constant availability of the measurement data
- No software installation necessary
- Online data, historical data etc. can be called up directly via the device homepage
- Function expansion possible through APPs
- Remote operation of the device display via the homepage
- Integrated PQ watchdog
- Hyperlinks deliver more detailed information
- Integrated measured value monitor
- Overview of events and transients in the network
- Convenient selection of the calculation mode for displaying the measurement data per standard IEC 61000-2-4 or EN 50160\*

\* Applies to UMG 605-PRO and UMG 512-PRO

## YOUR BENEFITS

# MEASUREMENT MONITOR



## GRAPHICAL REPRESENTATION ON THE DEVICE'S OWN HOMEPAGE WITHOUT ADDITIONAL SOFTWARE INSTALLATION

The "Measurement monitor" APP shows a user-defined selection of real-time measured values as well as historical measured values from the internal memory, in the form of diagrams on the homepage of a Janitza UMG device. The most important measured values for the user are shown graphically in a visually attractive manner through the "drag & drop" function. The time window of the historical measurement data can be scaled by the user directly in the diagram. The detailed view of the graphs is thus interactive.

Scaling is automatic when displaying real-time measured values. Alongside the colour-coding of the diagram presentation, it is also possible to export the graphs as graphics files.

Data can be simply analysed at a first glance with the help of this graphical preparation. The web-based solution offers the advantages of constant availability, both on mobile end devices and on computers.

- Access to current and historical measured values
- Quick and easy operation with "drag & drop"
- Can be called up on different devices such as PC, Laptop, Tablet and Smartphone
- Display with scalable timebase
- Web-based solution without additional software installation

### ○ YOUR BENEFITS



# EN 50160 WATCHDOG



## PERMANENT MONITORING OF THE POWER QUALITY PER EN 50160 IN ENERGY SUPPLY NETWORKS

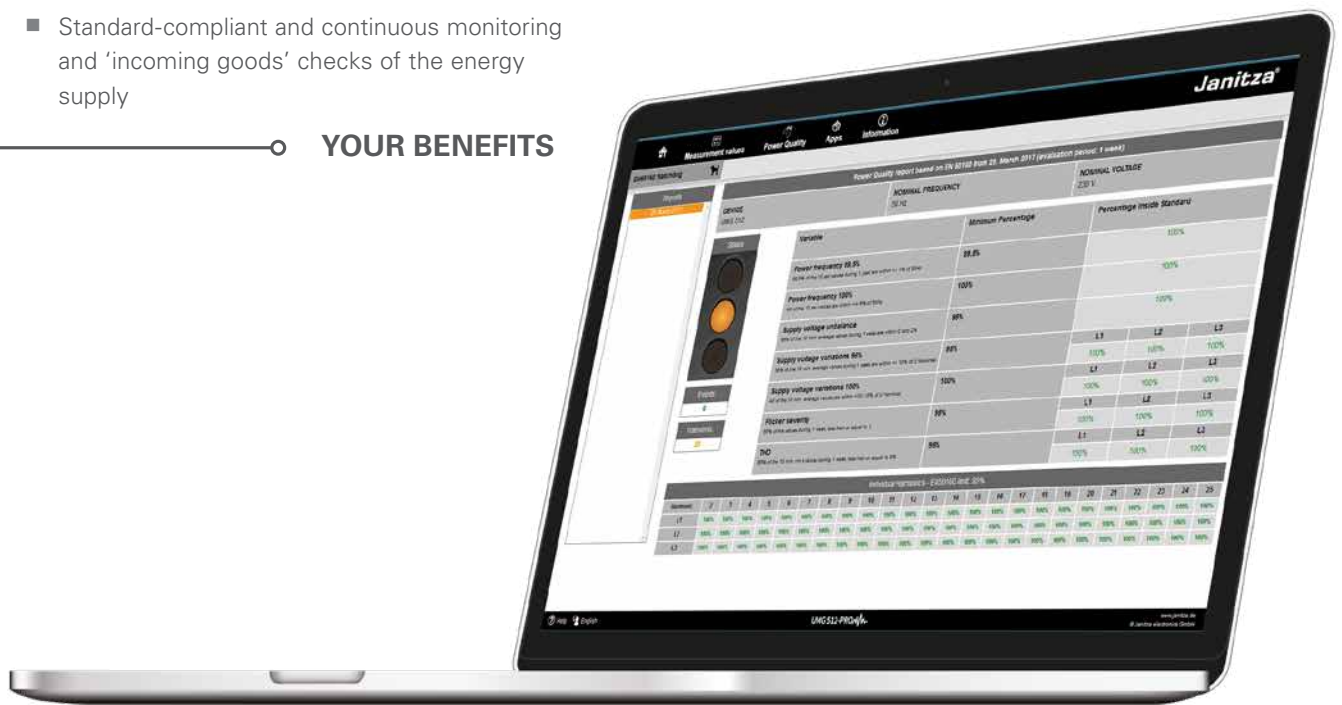
As the applicable standard, EN 50160 forms the reference point for the quality description of the electrical energy supply in public supply networks and is applicable throughout Europe.

Voltage distortions that occur in the public power distribution systems likewise lead to distortions in the customers' industrial networks and can result in damage to machinery suites and interruptions in the production processes. In order to avoid long-term disruption and possible damage, it is essential that the energy drawn is subjected to an 'incoming goods' check. Legally secure and continuous monitoring of the power quality is necessary for this.

The power quality APP "EN 50160 Watchdog" helps have the standard interpretation carried out directly by the measurement device, in the form of an analysis of the relevant data and its comparison with the threshold values. The integrated visualisation, designed in the form of a traffic-light style indicator, enables immediate detection in the event of an infringement of the threshold values from the standard.

- Integrated watchdog function for automatic standard interpretation and threshold value monitoring (per EN 50160)
- Local data analysis – No need to transmit large volumes of measured data from the measurement device to a host system
- Network quality analysis possible even without comprehensive PQ knowledge
- Rapid detection of events that do not comply with the quality agreements
- Standard-compliant and continuous monitoring and 'incoming goods' checks of the energy supply

### YOUR BENEFITS



# IEC 61000-2-4 WATCHDOG



## PERMANENT MONITORING OF THE POWER QUALITY PER IEC 61000-2-4 IN CUSTOMERS' ENERGY SUPPLY NETWORKS

The standard "IEC 61000-2-4" defines limits for industrial and private power distribution systems. It represents a guiding standard for many product and machinery construction standards and defines immunity levels for the voltage distortions that the machinery and systems in industrial operations must comply with in all operating states. If this level is exceeded – in particular over extended periods of time – this can lead to failures, unnecessary repair costs and possibly even to production shutdowns.

Continuous monitoring of the power quality in all technical systems per IEC 61000-2-4 is necessary in order to guarantee fault-free operation of the systems and machinery installed.

The Janitza APP "IEC 61000-2-4 Watchdog" automatically carries out the complex analysis of the measurement data in accordance with the threshold values of the standards for the user.

- Integrated watchdog function for automatic standard interpretation and threshold value monitoring
- No need to transmit large volumes of measured data from the measurement device to a host system
- Network quality analysis without comprehensive PQ knowledge
- Rapid detection of events that do not comply with the quality agreements
- Standard-compliant and continuous monitoring to protect company's own installed systems

### YOUR BENEFITS



# GridVis® APP-MANAGEMENT

## MANAGE APPS QUICKLY AND CONVENIENTLY



- Simple and convenient installation and removal of APPs
- Preview with information and images from the respective APP
- APPs are available free-of-charge in GridVis®, ready for download
- Upload and installation of customer-specific APPs

### YOUR BENEFITS

With the new APP management, which is a constituent component of the GridVis® device manager, users have the ability to expand and enhance functions – unique flexibility. With the APP management, APPs can be installed, removed or updated on multiple devices simultaneously. Furthermore, the APP management provides a clear APP preview with detailed information and a detailed graphic for each APP. This preview provides information on functional scope, compatibility or prerequisites for the installation of the APP. The simple

and intuitive menu guidance supports the user during the installation and indicates which APPs can be installed or which APPs are compatible with which devices.

Furthermore, it is also possible to make some existing devices “APP-compatible” with the help of a firmware update. This means that it is possible for the user to acquire APPs and to enhance existing devices.

# VISUALISATION SOFTWARE

## GridVis® INCLUDED IN THE SCOPE OF SUPPLY

With GridVis®, Janitza offers powerful, user-friendly software to develop energy, RCM and power quality monitoring systems. The basic software version GridVis® Basic, which is supplied together with the measurement devices, is used both to program and configure the Janitza measuring devices, as well as to read out, save, display, process and analyse the measurement data.

GridVis® is a comprehensive and scalable software solution for energy suppliers, industrial applications, facility management, the building market and infrastructure projects. GridVis® provides technicians and managers with the data required to identify potential energy savings, reduce energy costs, avoid production shut-downs and optimise utilisation of production resources.

You can expand the free GridVis® Basic version at any time with the Professional, Service or Ultimate editions. You can find more information at [www.janitza.com](http://www.janitza.com)



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### Energy management DIN EN ISO 50001

- Reduces CO<sub>2</sub> emissions
- Reduces energy costs
- Improves energy efficiency

### Power quality monitoring DIN EN 50160

- Highly available power supply
- Reduces downtimes
- Optimizes maintenance

### Residual current monitoring (RCM)

- Minimal expense for DGUV V3
- Increases the reliability of supply
- Identifies faults faster
- Improves fire protection



# ONE SYSTEM – TRIPLE BENEFIT

- Configuration of the measurement system and the UMG measurement devices
- Certified ISO 50001 Energy management software
- Automatic or manual readout of measurement data
- Graphical illustration of current and historical measurement data
- Comprehensive alarm management
- User management
- Generic Modbus devices, virtual meters
- Graphic user interface (topological view) for visualising real-time data and messages
- Minimum, average and maximum values displayed in a graph
- Statistical evaluation of the measured data
- Comprehensive export functions (e.g. Excel)
- Reports for energy usage and power quality (EN 50160, IEEE 519, EN 61000-2-4) manual or time-controlled with individual schedule
- Saving the data in a central database including database management (e.g. MySQL / MS SQL / Derby / Janitza database)

## YOUR BENEFITS

**MADE  
IN  
GERMANY**



Janitza measurement devices

# ENERGY MONITORING SYSTEMS "MADE IN GERMANY"

## Digital integrated measurement devices

Individual, tailored solutions for RCM, energy and power quality measurement technology to meet every requirement

Energy measurement devices

## GridVis® network visualisation software

Software for the development of an RCM, energy and power quality monitoring system. Both PC and web-based solutions are available.

GridVis®

## Energy-Portal (SaaS)

The Cloud solution for your energy management

Energy-Portal

## APPs

Software-based developments with ‚know-how‘

APPs



**Log and display energy data, reduce costs**

Nowadays, energy management is not only relevant for the environment and for society but is also a critical competitive factor. Only those who can keep a close eye on their energy consumption can reduce costs and increase efficiency.

Alongside measurement devices and accessories, Janitza also offers the associated software – a complete solution that guarantees efficient energy management. With Janitza measurement technology the customer has everything – from current transformers through to measurement devices, from communications devices through to the IT environment. After developing the technical solution and the commissioning, Janitza also offers personnel training, regular training and maintenance & support for the systems.



Current transformer

**Current transformers**

The link between heavy current and digital technology

Service

**Service**

Janitza provides support with selection, maintenance and support of the systems

Commissioning

**Commissioning**

Commissioning of the monitoring systems

Training

**Training**

Training of the personnel

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