Smart Energy & Power Quality Solutions

FUTURE-PROOF

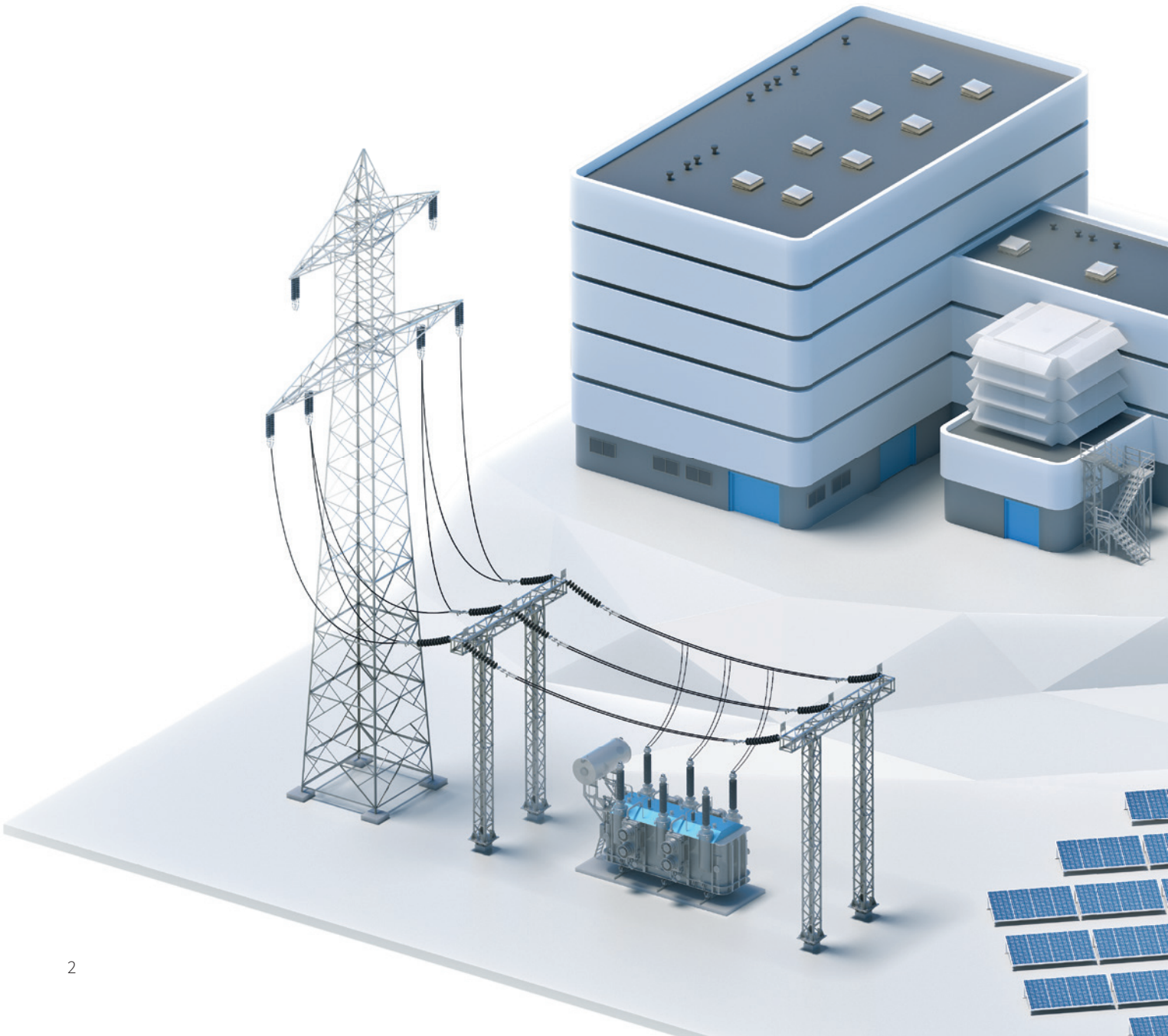
MONITORING SOLUTIONS FOR POWER UTILITIES

DIGITALIZED LOAD FLOW AND POWER QUALITY MEASUREMENTS

in the transmission and distribution grid

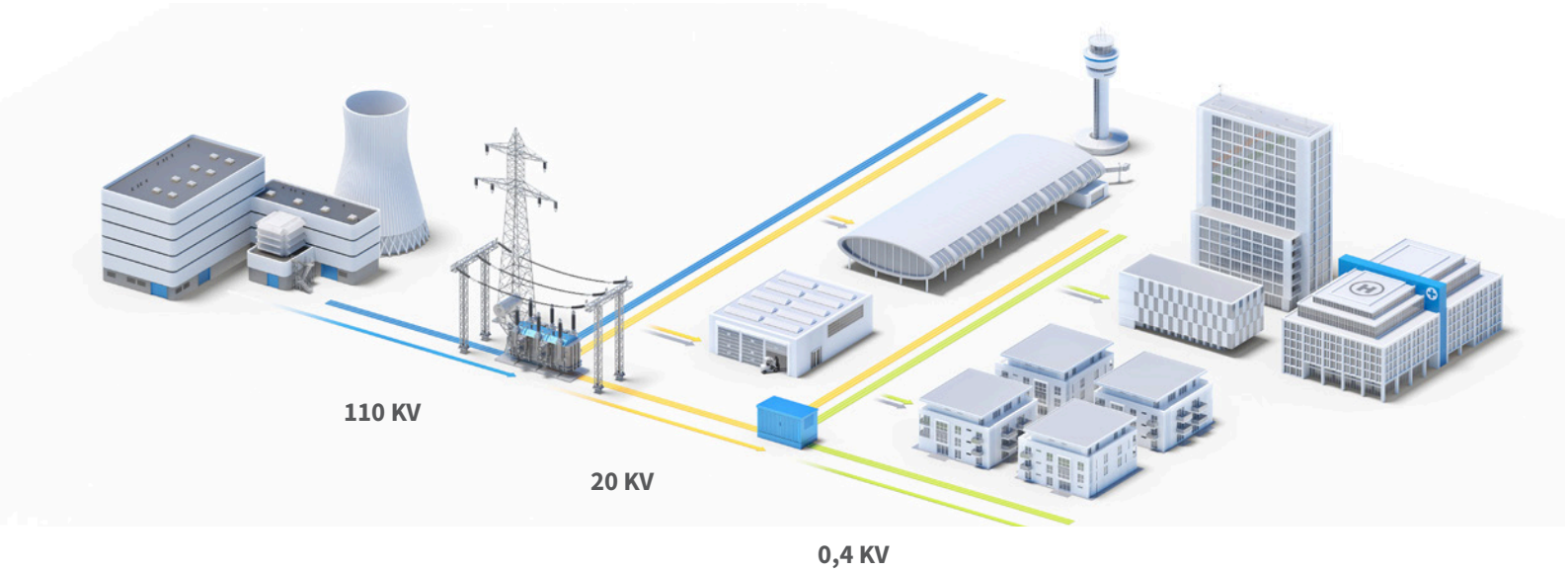
Janitza

CONTENT



DISTRIBUTION GRIDS IN TRANSITION

FROM LINEAR MEASUREMENT CIRCUIT TO BIDIRECTIONAL SMART GRID



Traditional measurement circuit with linear distribution

Measurement circuits are traditionally constructed in a hierarchical structure: Energy flows in line from central power plants to end consumers via the transmission and distribution grid. Network planning was based on predictable load profiles, known consumption patterns, and personal experience. As a result, operators were able to calculate the expected energy flow and power demand of the grid area and to design operating equipment such as transformers, switchgears, or lines based on these assumptions. Flexible and fluctuating loads and feedback from decentralized generators into the grid did not play a role in this yet.

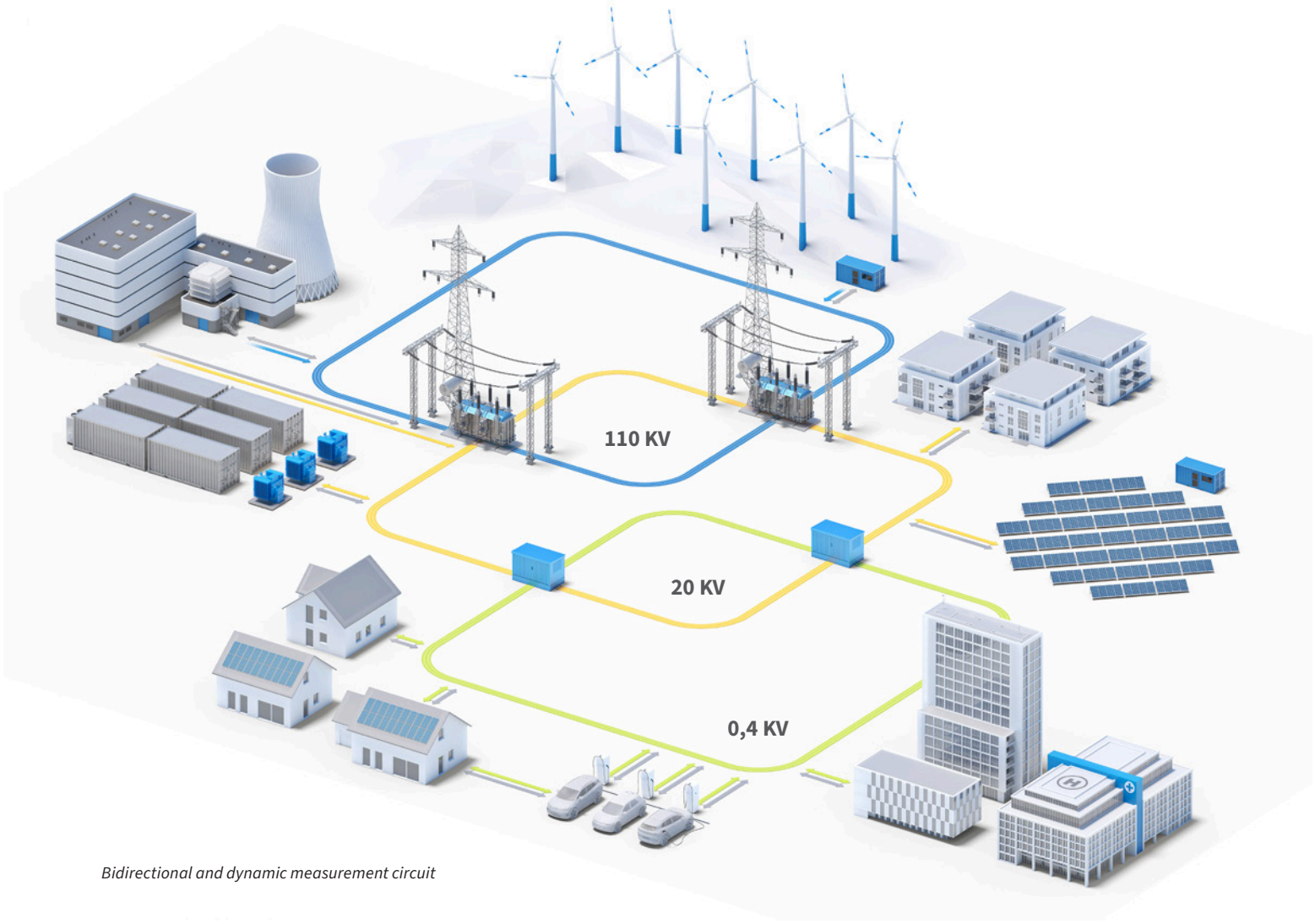
Key topics: Electrification and decentralized energy supply

Grid conditions have been changing around the globe. The share of decentralized energy generation, particularly wind and solar energy, is growing and the electrification of mobility and heat is increasing. This results in new load and feed-in situations. On sunny summer days, photovoltaic systems on house roofs feed large quantities of electricity into the grid – especially in rural areas. In such cases, local generation can exceed the load in the grid area. In this case, the current at the transformer is fed back into the medium voltage grid.

Charging stations for electric vehicles and electric heat pumps are causing new, simultaneous high-load situations in the grid. These requirements were generally not taken into account in the original grid planning. Furthermore, they mainly concern the low- voltage grid, for which very few if any measurements were recorded.

Power quality in transition

The rise in the use of modern electronics, especially inverters and non-linear consumers, is heightening the challenges for power quality in the distribution grid. Harmonics, voltage distortions, asymmetries, or flickers are occurring, placing heavy demands on the equipment in the grid and on consumers. In a grid with increasing volatility, feedback, and at the same time high loads the challenge for grid operators is to maintain the quality parameters within normative requirements, such



Bidirectional and dynamic measurement circuit

as IEEE 519 or EN 50160. The cost of monitoring, analysis, and regulation is also increasing.

Measurement as the basis for energy distribution
A fundamental shift is needed to enable grid operators to guarantee grid stability, security of supply, and regulatory compliance. Only by ensuring a comprehensive and complete measuring infrastructure in the low voltage area is it possible to precisely detect load flows, rate power quality, determine critical operating points, and plan grid expansions.

The future of measurement circuits is bidirectional, volatile, and dynamic. Modern measurement technology creates the transparency that grid operators require to handle current challenges. A smart measuring concept forms the backbone for intelligent and sustainable energy supply and allows the grid to respond dynamically to critical situation and fully utilize existing flexibilities.

MEASUREMENT INFRASTRUCTURE IN THE LOW-VOLTAGE RANGE

Comprehensive and seamless recording of measured values in the low-voltage grid is necessary to:

- Detect load flows
- Rate power quality
- Determine critical operating points
- Plan network expansions in a sound manner

POWER QUALITY MONITORING IN THE DISTRIBUTION GRID

A KEY TO STABLE GRID OPERATIONS

POWER QUALITY INDICATORS AND EVENTS

As renewable energy penetration grows, load profiles shift, and customer sensitivity increases, utilities face rising pressure to ensure grid stability and meet regulatory standards. A forward-thinking Turkish utility addressed this challenge by implementing a comprehensive power quality monitoring system – unlocking early fault detection, ongoing compliance, and data-driven decision-making.

At the core of the solution are Janitza's UMG 512-PRO and UMG 605-PRO power analyzers, strategically deployed across the distribution grid. These devices accurately capture critical parameters such as voltage deviations, harmonics, and flicker in accordance with EN 50160 and IEC 61000-4-30. All data flows into the GridVis® software platform, which offers automated reporting, seamless SCADA integration, and real-time alerts for critical events.

Beyond day-to-day operations, the system empowers long-term asset management and strategic grid planning. Recurring disturbances can be identified, root causes pinpointed, and corrective actions taken efficiently. The result: greater transparency, improved reliability, and measurable gains in grid resilience.

Further information: https://info.janitza.com/userreport-pq-evu

TRANSPARENCY IN THE LOW-VOLTAGE GRID

REAL-TIME MONITORING WITH JANITZA

As power distribution becomes increasingly decentralized, distribution grids face new complexity from rising levels of renewable feed-in, EV charging, and heat pump integration. To stay ahead, a German utility company teamed up with Janitza to introduce real-time load flow monitoring using the UMG 801 – a modular, space-saving power analyzer.

In newly built secondary substations, the UMG 801 enables precise, feeder-specific monitoring of load flows, including detailed power quality metrics. Even existing substations can be upgraded easily – thanks to low-power split-core transformers that allow for non-invasive retrofitting during live operation.

Measurement data is processed using GridVis®, Janitza's powerful software platform for visualization, analysis, and documentation. Grid operators can detect bottlenecks early and initiate targeted upgrades – optimizing capacity without overspending. Open protocols like OPC UA ensure seamless integration into existing SCADA or grid control systems.

The result: greater grid transparency, proactive planning, and a resilient, future-ready low-voltage network.

Further information: https://info.janitza.com/userreport-lfm

RELEVANT STANDARDS FOR POWER QUALITY

LEGAL AND NORMATIVE REQUIREMENTS

Modern power grids must not only ensure the supply of energy but also guarantee the quality of the electrical energy. Grid operators must monitor the power quality in the public grid and evidence compliance with defined quality parameters based on recognized international standards:

EN 50160
European standard EN 50160 describes the parameters for voltage in public distribution grids. It defines limit values for:

- Voltage level
- Frequency
- Harmonics
- Flicker
- Voltage dips, failures, and asymmetries

Power quality at transfer points must be remain within strictly defined tolerances. EN 50160 is also relevant for contractual arrangements with customers.

IEEE 519
The US standard defines limit values for voltage- und current harmonics at transfer points between network operators and end consumers. The standard is often used internationally as a technical reference and clearly defines the responsibilities.

IEC 61000-4-30
The standard defines the measuring method for power quality parameters. It describes the measurement procedure needed to ensure that results are comparable and legally valid. The standard differentiates between class A and class S.

- Class A devices deliver legally compliant and valid power quality measurements with maximum precision
- Class S devices are suitable for internal power quality ratings, but are not legally valid

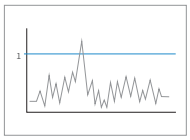
Measurement results and the measurement method must satisfy the normative requirements, otherwise reports cannot be used in regulatory situations.

MEASURING POWER QUALITY

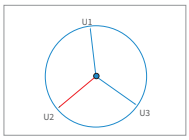
There are many reasons why measuring power quality is worthwhile for power utilities. Benefits include:

- Compliance with normative requirements
- Protection of operating equipment
- Reduction of losses
- Legal certainty through standard-compliant reports

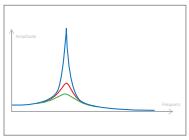
Measurement technology in the distribution grid, and especially in the low-voltage grid, records load flows and current utilization, and ideally also relevant power quality parameters. When the system sends this information in realtime to the control room, operators are quickly alerted to grid problems and faults and can react appropriately. Moreover, the data provide clarity in the event of a dispute and provide important information for troubleshooting.



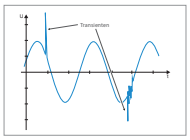
Flicker



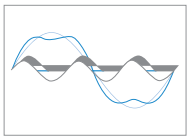
Unbalance



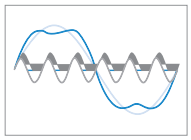
Resonances



Transients



Static Harmonics



Rapid Harmonic Change

MEASUREMENT AT ALL VOLTAGE LEVELS

Comprehensive monitoring of energy distribution grids happens at three levels:

- Primary substations (primary distribution level)
- Secondary substations (secondary distribution levels)
- Low-voltage distribution cabinets / distributed generation plants / Special-contract customer connection points

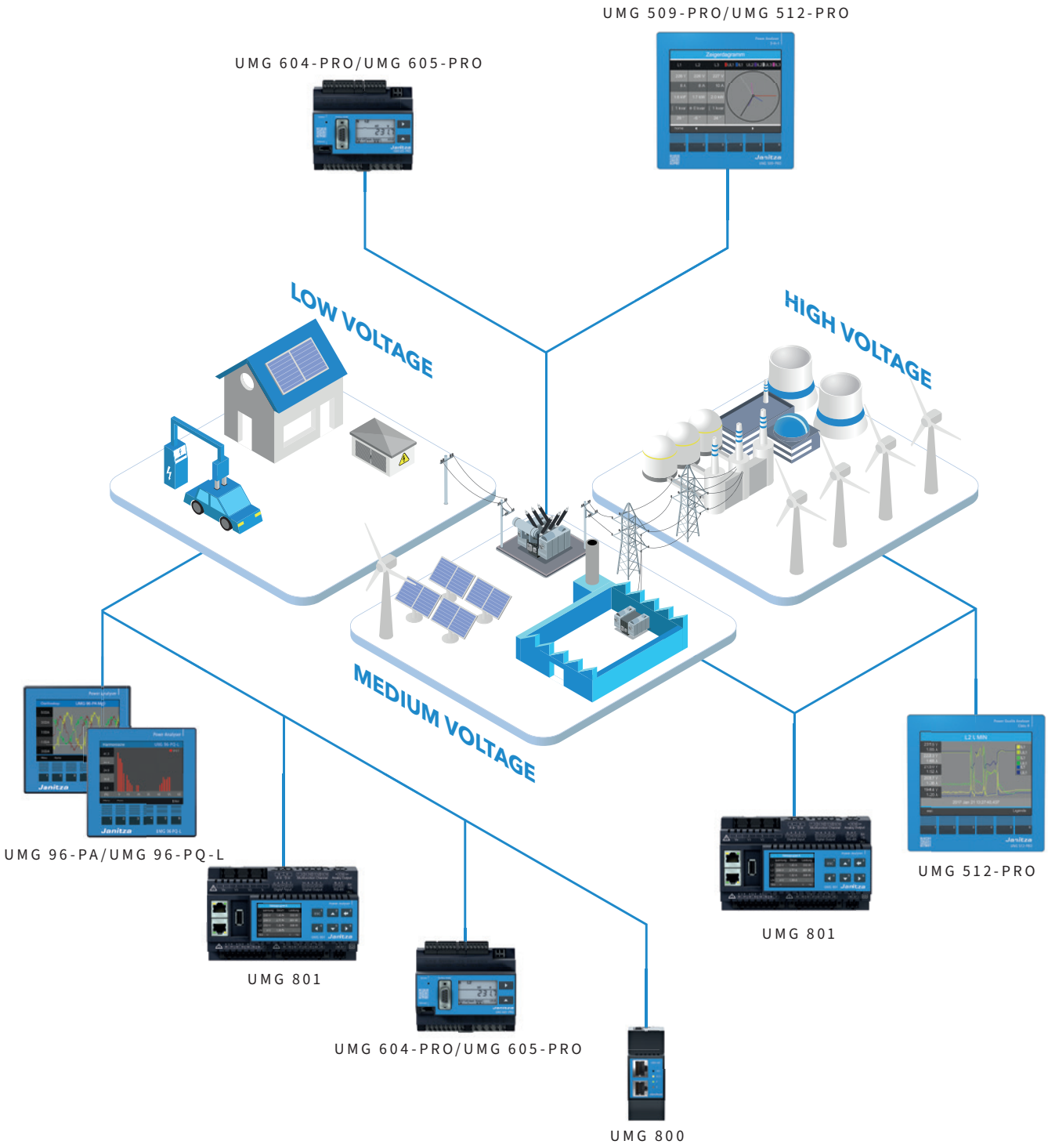
Comprehensive measurement requires the installation of measurement devices at all three levels. Moreover, the fact that intelligent distribution grids require more powerful measurement technology than conventional systems must also be taken into account. Janitza offers customized, scalable solutions with high quality technology for these applications.

YOUR BENEFITS WITH MEASUREMENT TECHNOLOGY AT 3 LEVELS

- Increased availability: Reduction of downtime
- Reduction of transmission, distribution and non-technical losses
- Management of decentralized energy production (e.g. photovoltaics, hydroelectric power plants, etc.)
- Voltage regulation in secondary substations
- Compliance with regulatory and tariff requirements (documentation obligation)
- Monitoring of power quality (e.g., according to EN 50160)
- Controlled integration of new technologies (e.g., electric vehicles, energy storage)
- Faster fault analysis
- Solid basis for grid planning

UMG 801 with modules in a secondary substation

Measurement levels



Possible applications of Janitza measurement devices and solutions at different grid levels

MODULAR MEASURING – FLEXIBLE SCALING

A major challenge for grid operators is increasing transparency in the low-voltage grid. Scalable, space-saving solutions are required in dynamic and decentralized grid structure, in particular, as they integrate well into existing infrastructure, retrofit applications and also into new systems.

Janitza's modular measuring system offers a scalable solution that reliably meets the various requirements of power utilities.

Operating principle
The modular system consists of a basic device (UMG 801 or UMG 800), which can be combined with various expansion modules as required. Modules are connected directly via a proprietary internal bus, without any external wiring, for compact and rapid installation on the DIN rail.

Your advantages briefly:
- Flexible use – from new build to retrofit
- Compact design
- Rapid installation
- Measurement of up to 32 output feeders with a single measuring system
- Can be expanded at any time thanks to modular structure

Janitza's modular measuring system is the ideal allrounder for all requirements in new systems and retrofits.

Example 1 x 800-CT8-LP + 1 x 800-DI14 = 2 module slots required

OFFERS	BY UP TO	UP TO	UP TO
13	**96**	**32**	**100**
Module slots	Current measurment inputs expandable	Output feeders measureable	Meter measurement point bypass

ALL-IN-ONE MONITORING

TYPICAL USE CASE

The UMG 801 is ideal for accurate measuring in the secondary substation with class S power quality measurement on the transformer. It can also monitor transformer temperature. This allows analysis of the load flows of the entire low-voltage distribution system, power quality in accordance with EN 50160.

The UMG 801 is a versatile unit – whether as a stand-alone device with local measured value storage or with a communication connection to the control or transmission technology.

External signals such as error messages from the station are recorded or fans are controlled directly via the digital inputs and outputs.

UMG 801
Part no.: 5231003

800-CT8-LP module
Part no.: 5231234

Highlights
- 1000 V CAT III/600 V CAT IV (IEC)
- Modular expandability for monitoring up to 32 outputs

Communication
- Modbus RTU/TCP, OPC UA, REST API
- Time synchronization via NTP
- 2 x Ethernet (Switched mode or daisy chain) + RS-485 interfaces

Peripherals
- 4 digital inputs
- 4 digital outputs
- 1 analog output
- Multifunction channels to RCM or temperature measurement
- USB connection for optional display

Power quality
- Class S according to IEC 61000-4-30
- Harmonics current up to the 127th (V) and 63rd (A)
- Event and transient analysis
- Export via Comtrade or PQDIF format

SPACE-SAVING MULTICHANNEL SYSTEM

TYPICAL USE CASE

With its various modules, the UMG 800 records extensive measurement data and load flow directions in realtime. It allows accurate measurement in the secondary substation and creates the data basis for control of the distribution grid. Thanks to its compact design and shallow installation depth, the UMG 800 is easy to integrate and retrofit. Even if the data connection is lost, the data remain stored in the memory. Data readouts can be done locally or via a remote display. In addition, the UMG 800 detects faults and deviations in voltage and frequency. Power quality data can simply be exported as Comtrade or PQDIF. This measuring system is the most compact multichannel system on the market.

UMG 800
Part no.: 5238001, 5238002

800-CT8-A module
Part no.: 5231230

800-CT8-LP module
Part no.: 5231234

Highlights

- Width: 2 sub-units
- Modularly expandable for recording an additional 32/24 outputs (3P/4P)
- Individual Modbus address lists
- Realtime data acquisition and recording of the load flow direction

Communication

- Modbus RTU/TCP, OPC UA, REST API
- Time synchronization via NTP
- Modbus TCP/IP Gateway
- 2 x Ethernet (Switched mode or daisy chain) + RS-485 interfaces

Power quality

- Record flickers and harmonics up to the 63rd Harmonic (voltage)
- Event and transient analysis
- Export via Comtrade or PQDIF format

SUPPLEMENTING CURRENT MEASUREMENT INPUTS

TYPICAL USE CASE

Current measuring modules 800-CT8-A and 800-CT8-LP expand basic devices UMG 800 and UMG 801 with 8 additional current measurement inputs. This allows the number of current measurement inputs to be adjusted to the number of measurements required and expanded later if necessary. This creates flexibility and, even in combination with the 800-CT8-LP module, an unbeatable measurement channel price. The compact design saves space in the switchboard cabinet and the integrated bus power supply reduce additional wiring requirements. Additional current transformer disconnect terminals are not necessary with low-power modules.

Space required for 3 x 800-CT8-A modules: 3 x 72 mm = 216 mm

Space required for 3 x 800-CT8-LP modules: 3 x 18 mm = 54 mm

800-CT8-A module
Part no.: 5231230

800-CT8-LP module
Part no.: 5231234

800-CT8-A MODULE

Simple expansion

- 8 current measurement inputs
- Connection of conventional current transformers (1 A / 5 A)
- For retrofit or new units with integrated transformers
- Measuring accuracy 0.5%
- Width: 4 sub-units

800-CT8-LP MODULE

Safe and accurate

- Higher levels of occupational safety during installation thanks to touch-proof secondary voltage
- High operational safety
- High measuring accuracy (0.2%)

Compact expansion

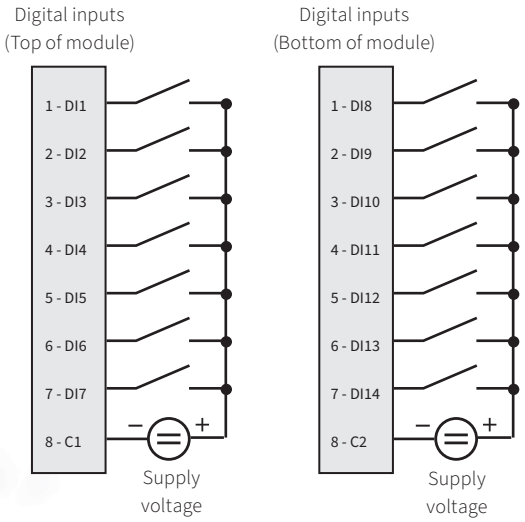
- 8 low-power current measurement inputs
- Compatible with cost-effective 333 mV current transformers
- No current transformer disconnect terminals required
- Width: Just 1 sub-unit

RELIABLE STATION MESSAGES

TYPICAL USE CASE

The digital input module supplements the UMG 800 and UMG 801 basic devices with 14 digital inputs per module. The inputs can record status information via the potential-free contacts in transformer stations, for example door contacts, smoke detectors, collective fault messages, or short circuit/ground fault indicators. Inputs can be named accordingly in the software, which makes them easy to assign.

800-DI14 module
Part no.: 5231214



Compact expansion

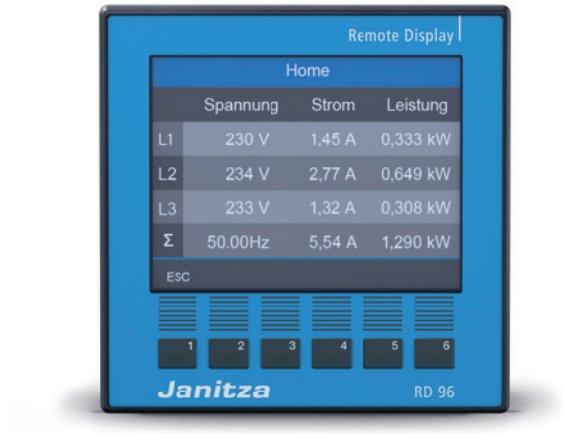
- 14 additional digital inputs used to capture digital status information (on/off, open/closed, etc.)
- Width: 1 sub-unit
- Supply via internal bus, no additional wiring necessary

ON-SITE VISUALIZATION

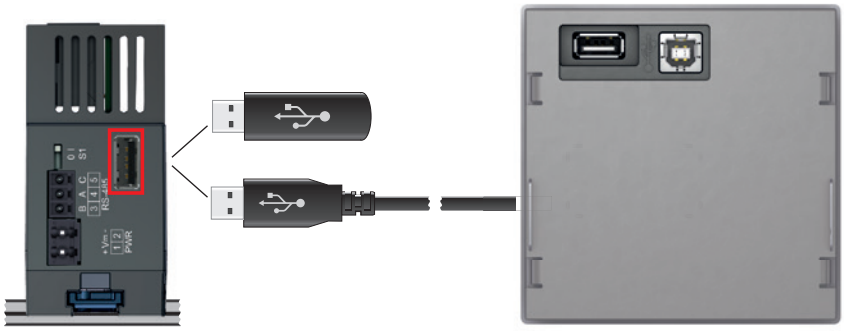
TYPICAL USE CASE

With the RD 96 remote display, the UMG 800 or UMG 801 and all modules connected to the basic device can be operated via the front panel – without opening the switchboard cabinet. The RD 96 also visualizes the measured values for all outputs on-site in the station.

Operation of the RD 96 does not require additional software or drivers. The connection operates via plug and play using the existing USB interface on the basic device.



RD 96
Part no.: 5231212



Installation

- 96 x 96 mm front panel
- Connection via USB interface (plug and play)
- Simple operation via buttons

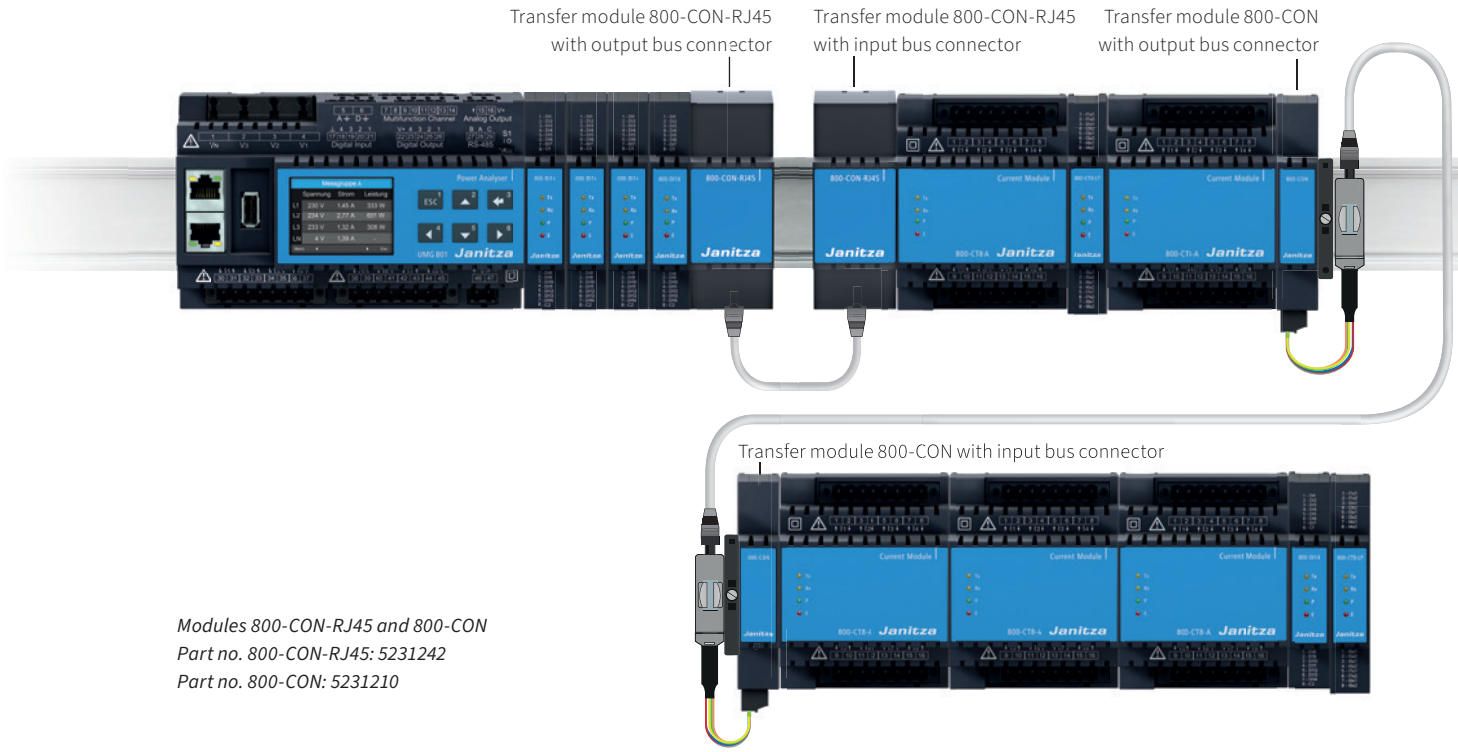
Functions

- Full operation and configuration of the UMG 800 and UMG 801 basic devices and all connected modules
- Display of all measurement data and information (e.g. min/max values, etc.)
- Simple configuration of basic parameters (e.g. communication)

CONNECT REMOTE MEASUREMENT POINTS

TYPICAL USE CASE

The transfer modules allow the easy connection of spatially remote measurement points. For this purpose, a transfer module can be docked to the basic device or another module and connected by cable to another transfer module up to 100 m away. Additional expansion modules are connected to the second module. This allows remote measurements or, if space is limited, distribution of the modules across different DIN rails.



Modules 800-CON-RJ45 and 800-CON
Part no. 800-CON-RJ45: 5231242
Part no. 800-CON: 5231210

MODULE 800-CON-RJ45

Simple connection

- 2 modules connect remote measurement points with each other
- Bridge distances of up to 100 m using cables

Interface

- Connection between the transfer modules via RJ45 interface via standard cable
- Width: 2 sub-units per module

800-CON MODULE

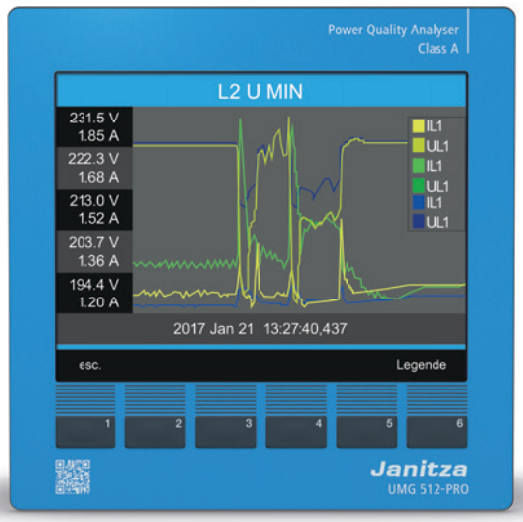
Simple connection

- 2 modules connect remote measurement points up to 100 m via cable
- Width: 1 sub-unit per module
- Connection between transfer modules via terminal block with 8-pin cable

POWER QUALITY CLASS A

TYPICAL USE CASE

The UMG 512-PRO accurately measures power quality in accordance with IEC 61000-4-30, class A. It is typically used at the grid connection point, which is where it records and analyzes the power quality in a legally compliant manner and then documents compliance with standard power quality requirements. The UMG 512-PRO enables to detect transients and helps to detect voltage peaks early on. Long-term recording allows you to analyze and optimize power quality and record extreme values for network planning. In addition, the UMG 512-PRO detects grid faults at an early stage and issues alerts in good time.



UMG 512-PRO
Part no.: 5217011 & 5217003

Power quality

- Certified class A in accordance with IEC 61000-4-30
- Harmonics current up to the 63rd
- Flicker recordings
- Event and transient analysis
- EN 50160, IEEE 519 and EN 61000-2-4 watchdog on the device homepage
- Export via Comtrade format

Communication

- Modbus RTU, Modbus TCP/IP, SNMP
- Ethernet, RS-485 and Profibus
- Ethernet Modbus gateway

Peripherals

- 2 digital inputs
- 2 digital outputs
- Residual current inputs (RCM)
- Temperature measurement input

STATION MEASUREMENT IN RETROFIT

TYPICAL USE CASE

The UMG 96-PQ-L is typically used in secondary substations to measure the transformer supply. It records the most important power quality parameters and the transformer temperature. These are essential for tracking power quality problems. The low-power inputs of the UMG 96-PQ-L-LP are ideal for retrofitting Rogowski coils or low-power transformers to measure the secondary side of transformers or individual outputs. A display specially adapted for power utilities clearly shows the most important parameters.

UMG 96-PQ-L
Part no.:
5236001, 5236002,
5236005, 5236021,
5236022, 5236025

UMG 96-PQ-L-LP
Part no.:
5236006, 5236007,
5236026, 5236027

96-RCM-E module
Part no.: 5232010

Display
- Oscilloscope function
- Drag indicator
- Display and reset maximum values

Communication
- Modbus RTU / TCP (with module)
- RS485 and Ethernet (with module)

Peripherals
- 3 digital inputs and outputs each
- 1 analog output
- Multifunction channels to RCM or temperature measurement (with module)

Power quality
- Harmonics current up to the 65th Harmonic
- With firmware activation class S according to IEC 61000-4-30 incl. flicker measurement, harmonics current, event trigger and predefined profiles according to EN 50160 & IEEE 519

MOBILE GRID ANALYSIS

TYPICAL USE CASE

The MRG 96-PQ-L-LP Flex portable power quality analyzer is typically used for temporary measurements or cross-checks. This ranges from single large events or other unusual grid loads to checking unexplained or conspicuous measured values at individual secondary substations. The measuring case is lightweight and compact making it easy to transport in a backpack. The Rogowski coils are designed for retrofitting in uninterruptible installations and can be easily installed even in confined spaces.

MRG 96-PQ-L-LP Flex
Part no.: 5216907

Flexibility

- Comfortable backpack for easy transportation
- Weight: only 3 kg (6.6 lbs) in total
- Suitable for mobile use – set up exactly where the measurement is needed

Network analysis

- Ideal for analyzing electrical disturbance variables for network problems
- Harmonics current up to the 65th Harmonic as well as short-term interruptions
- 204 sampling points per full wave at 50 Hz, 170 sampling points at 60 Hz

Simple integration

- Ethernet port for simple system integration
- Rogowski coils enable retrofitting without system interruption

STANDARDS-COMPLIANT PQ MONITORING

TYPICAL USE CASE

The UMG 604-PRO makes the ideal partner for a certified PGU control system. It delivers the necessary PQ and energy data to analyze and control the supply – an essential requirement for reliable network operation.

The power analyzer measures parameters such as events (20 ms), transients (50 µs), frequency, symmetry, etc. and stores these in the internal device memory. Data is evaluated via the integrated homepage or an appropriate software.

UMG 604-PRO
Part no.: 5216202 & 5216222

Communication

- Protocols: Modbus RTU/TCP, SNMP
- Ethernet, RS-232 and RS-485 interface

Peripherals

- 2 digital inputs
- 2 digital outputs
- Temperature measurement input

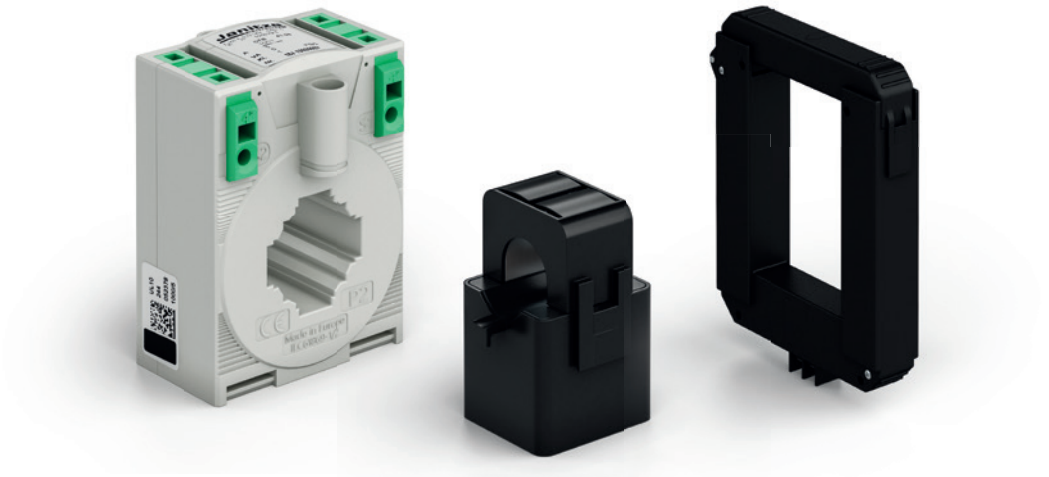
Power quality

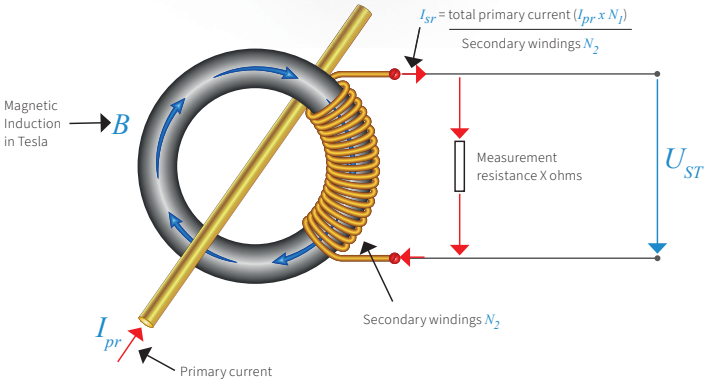
- Harmonics current up to the 40th harmonic
- Acquisition of transients
- Rapid 20 ms measured values with component certificate according to VDE-AR-N 4110 & 4120

RETROFIT WIT LOW POWER

TYPICAL USE CASE

Low-power current transformers and Rogowski coils are typically used for retrofitting in secondary substations. Retrofitting is often a challenge, particularly in older systems, due to limited space, ongoing operation, or tight budget constraints. Low-power transformers offer a quick, simple and cost-effective retrofitting option as the system does not have to be shut down for installation. Thanks to their compact design, the transformers and coils fit into most cable spaces. Combined with the 800-CT8-LP module or the UMG 96-PQ-L-LP, it creates a fully-fledged, precise measurement solution.





Operating principle of the Low-power transformer

Retrofitting

- Low-power transformers can be installed during operation
- Compact design – fits in tight cable spaces
- Can be combined with module 800-CT8-LP and UMG 96-PQ-L-LP
- Standard-compliant measurement solution for retrofitting
- Monitoring load flows and current

Highlights

- Safe voltage signal (333 mV)
- Thinner wires and low loss transmission
- Safe handling without risk from high currents
- No short circuit of the secondary line at the current transformer disconnect terminal required

DIGITAL COMMUNICATION AS KEY TO THE ENERGY TRANSITION

CHALLENGE

Digitalization is fundamentally changing energy supply. For power utilities and grid operators, this means increasing complexity, growing data volumes, and ever-higher demands on real-time communication. Measuring devices in the field must be intelligently networked via secure channels and standardized communication protocols to maintain security of supply and enable safe power grid operation. This must be achieved even with widely distributed measuring points or stations in critical infrastructure, while complying with the highest cyber security standards.

- Decentralized energy generation and smart grids increase communication requirements
- Systems must be interoperable, secure, and future proof
- Data is the key to efficiency, stability, and transparency in the grid
- Cybersecurity standards (such as IEC 62443, NIS2) must be complied with

WAYS TO GRID INTEGRATION

In the field, there are a multitude of heterogeneous systems with different protocols. Different, sometimes proprietary communication standards make integration difficult. Janitza relies on open interfaces and industry-standard communication protocols such as Modbus RTU, Modbus TCP, OPC UA, and MQTT. It processes the data directly on the measuring devices, providing average values or independently monitoring limit values via integrated comparators and logic modules.

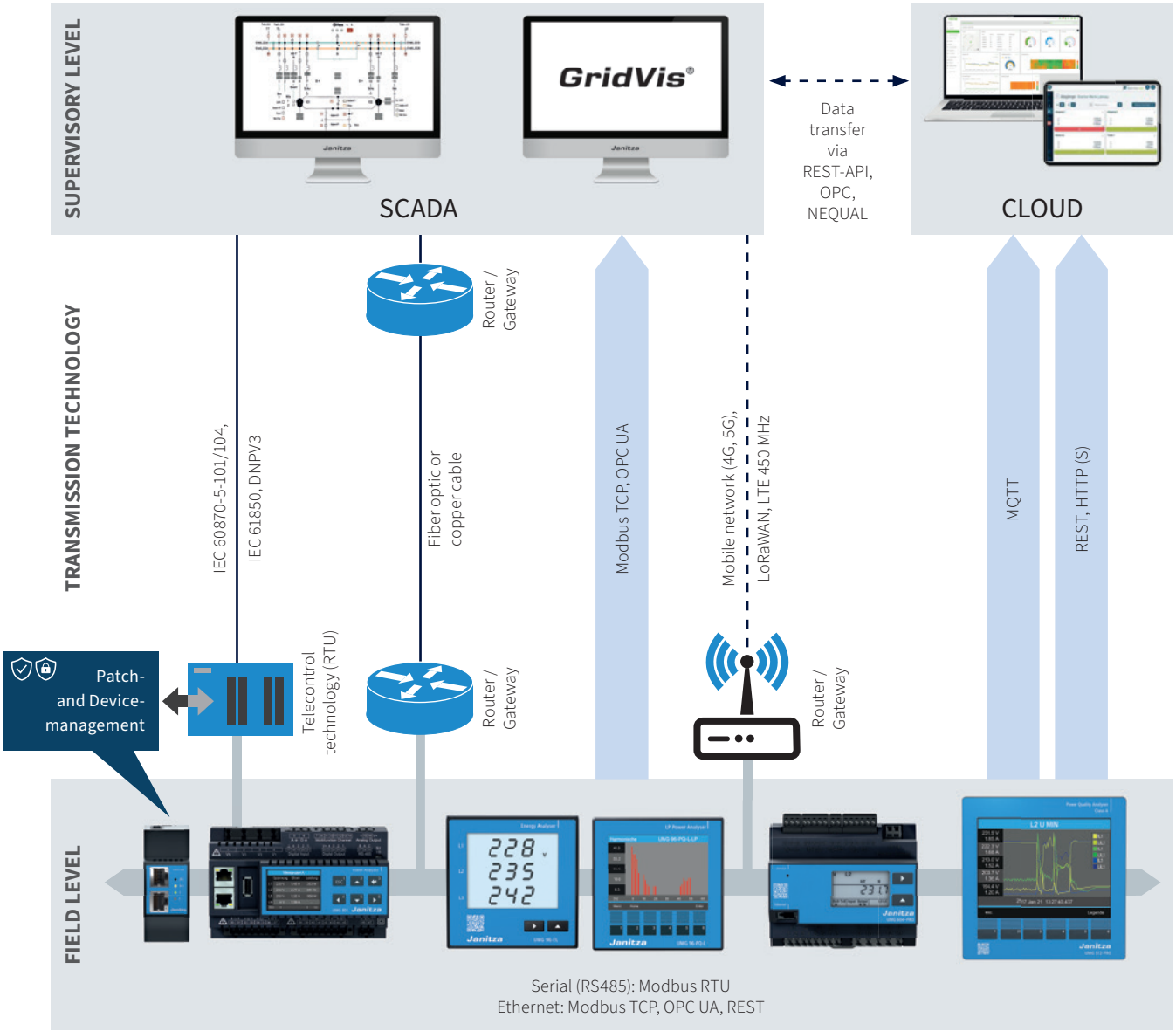
Where continuous data streams need to be processed in real time, Janitza relies on the IoT standard MQTT for lean communication with data platforms and cloud systems in compliance with the highest encryption algorithms.

At substations in the field where telecontrol technology is installed, Janitza measuring devices can be easily connected downstream and thus converted from Modbus RTU to standard SCADA protocols such as IEC 61850 or IEC 60870-5-104.

With scalable measurement and communication solutions, Janitza creates the connection between generation, grid, and consumption – securely, efficiently, and digitally.

- Uniform and openly logged data structures
- Secure integration into control systems and/or cloud portals
- Support for various transmission options (LTE, LoRaWAN, SHDSL, etc.)
- Transparent and traceable data communication
- Integration into patch and device management systems

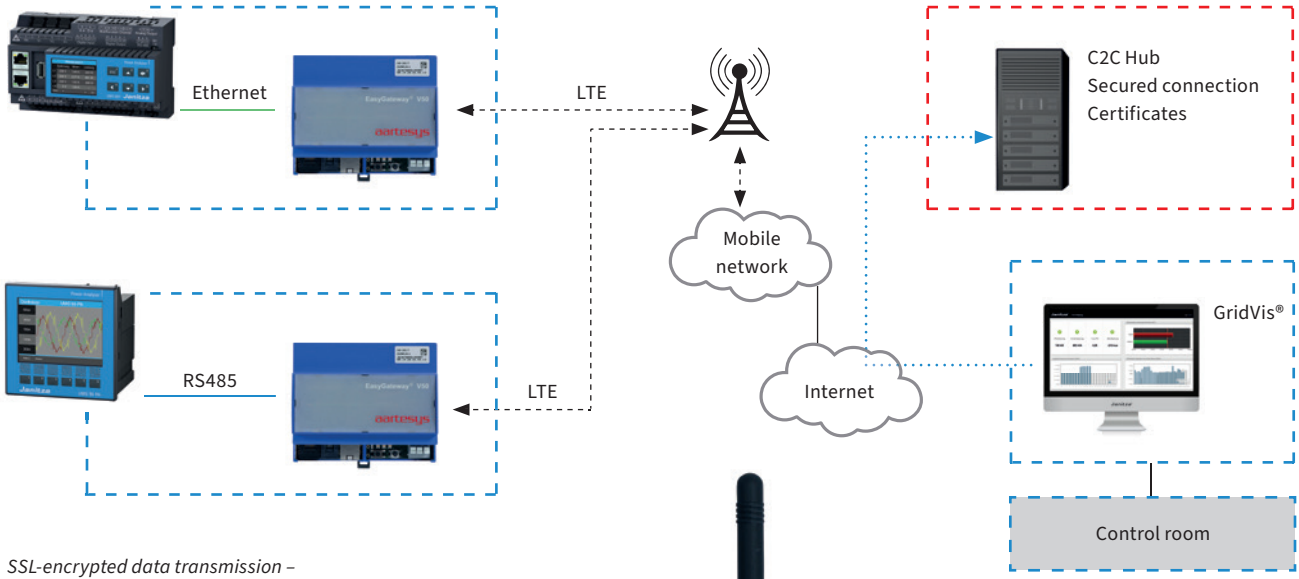
DATA TRANSFER WITH OTHER SYSTEMS



Data communication options as a simplified diagram. The options shown are only possibilities; specific implementation must be agreed upon in each individual case.

THE SIMPLE COMMUNICATION SOLUTION

TYPICAL APPLICATION:
With the EasyGateway V50, Janitza measuring devices can be quickly and reliably connected to the GridVis® Power Grid Monitoring Software via mobile communications. The gateway enables the measuring devices to be connected either via the serial or Ethernet interface, establishing a secure end-to-end connection. Thanks to the driver integrated in GridVis®, the connection is established without any complex configuration. Under a C2C agreement with our partner Aartesys AG, data transmission is SSL-encrypted, ensuring intuitive and secure communication and making real-time data immediately available.



SSL-encrypted data transmission –
Parametrization of the measurement devices via GridVis®/LTE also possible

EasyGateway
Part no.: 1506110, 1506111

Gateway
- The gateway can be used to establish an end-to-end connection.

Connectivity
- UMG measuring devices can be connected to a PC intuitively and securely via mobile communications.

Software
- Intuitive and easy activation and setup via the GridVis® Power Grid Monitoring Software.

THE RIGHT SUPPORT FOR EVERY CHALLENGE

BEFORE, DURING AND AFTER YOUR PROJECT

PROJECT GROUNDWORK
- Exclusive seminars
- Advice in all project phases

COURSES & TRAINING
- GridVis® Basic courses
- GridVis® Expert courses

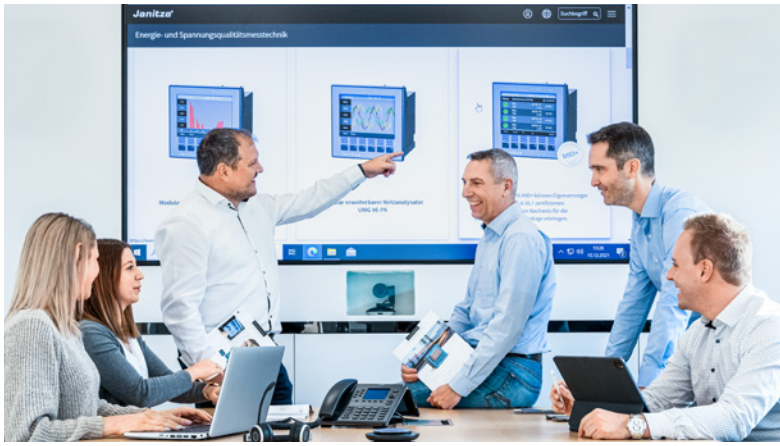
MAINTENANCE
- System check
- Calibration with calibration reports
- Remote maintenance contracts on an annual basis

SUPPORT & FIELD SERVICE
- Remote sessions
- Field service

COMMISSIONING
- Parameter configuration of measurement devices, data loggers and other components
- Installation and setup of the required functions
- Brief instruction of operating personnel

MEASUREMENT DATA ANALYSIS & RENTAL EQUIPMENT
- Measurement data analysis with final report
- PQ Quick Check
- Mobile network analyzers for temporary measurements and fault analysis

INTERNATIONAL NETWORK
- On-site support
- Quality made in Germany



INTEGRATE, VISUALIZE & ANALYZE

Grid analysis & evaluation
GridVis® allows you to analyze and evaluate measurement data. Use numerous tools such as statistics, charts, heatmaps, Sankey diagrams, and key performance indicators.

Historical & live data
GridVis® gives you the perfect overview of all of your data. The software displays both historical and live data, allowing you to identify deviations quickly and easily.

Safety & Alarm management
Monitor limit values of measured variables, consumption data, residual currents, and device communication. Define escalation levels for needs-based alerting via email and web interface.

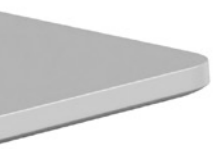
CREATE TRANSPARENCY AND MAKE LOAD FLOWS VISIBLE

GridVis® Power Grid Monitoring Software collects all measurement data and events for your projects – from connected Janitza measurement devices and from external devices, too. The software offers individual design options and is versatile, meaning it can be used for realtime analysis, time comparisons, and long-term documentation.

You can visualize load flows, automatically analyze power quality, and evaluate results. Extensive tools such as the event browser help you to analyze and visualize linked events.

FUNCTIONS

- Configure devices
- Visualize all measured values using a web-based system
- Intuitively create individual dashboards with historical and/or live data
- Create automated reports (e.g. weekly or monthly)
- Integrated alarm management with event notification
- Open interfaces
- Analyze faults in the event browser
- NEQUAL data export to meet regulatory requirements in Austria and Switzerland



Connectivity
Whether OPC UA, REST API or CSV, the GridVis® software offers many options for data import and export as well as data access. An open and future-proof system.

Visualization & Documentation
Visualize data according to your needs. Create dashboards quickly and easily without programming knowledge and use the report editor for customized reports.

Automation
Use the automation functions for time-controlled task management. Plan data imports, report generation or device readouts and create shift schedules.

ANALYZE POWER QUALITY

DETECT EVENTS, UNDERSTAND CAUSES

With GridVis® Power Grid Monitoring Software you can analyze events such as voltage dips, overvoltages, transients, etc. in detail. In the event browser, you can view the voltage and current curve by phase in high-resolution curves.

Various analysis tools allow you to view the current and voltage curve before the event or show additional phases in the diagram. This makes troubleshooting easier and helps to reliably determine the cause.

SIMPLE ANALYSIS

- Numerous analysis tools
- Zoom in on the event
- Visualization of voltage and current curves by phase
- Simple troubleshooting and cause analysis
- Analysis of temporal relationships
- Alarms for limit violations and events

Simple cause identification in the event browser of GridVis®

EXTENSIVE REPORTS

VISUALIZE LOAD FLOWS AND POWER QUALITY

With GridVis® you can create automated reports to help you operate your networks at the optimal level. One of these reports is the utilization report. This report shows which operating equipment in the network area are utilized the most, compared with the fuse rating. It allows you to detect bottlenecks and load trends early on and plan network expansions in a well-founded and targeted manner.

In addition to utilization reports, many other reports are available, such as:

- Power Quality Reports to EN 50160
- PQ Analyses to IEEE 519
- NEQUAL data export

ADVANTAGES OF REPORTS

- Weekly or monthly reports sent automatically via email
- Data basis for network planning
- Investment decision based on real measurement data
- Bottlenecks detected at an early stage
- Standard-based reports for simple evaluation and documentation
- Compliance with regulatory requirements

Automatically generated utilization report

ABOUT JANITZA

Janitza develops complete energy measurement-technology solutions that ensure transparent energy flows and safeguard the quality of an energy supply. The globally active company has its headquarters in Germany and provides customized solutions for customers in a wide range of industries, such as data centers, manufacturing industries, buildings and infrastructure as well as energy supply companies and companies involved in renewable energies.

PORTFOLIO

The Janitza product range consists of innovative measurement devices and GridVis® Power Grid Monitoring Software, which is customized to work perfectly with them all, supplemented with quality components. Janitza clients worldwide benefit from solutions that aid with energy data management, power quality monitoring, load management and residual current monitoring, all within a standardized system environment – Made in Germany.

HEADQUARTERS

Janitza | Germany
Vor dem Polstück 6
35633 Lahnau
Phone: +49 6441 9642-0
Email: anfragen@janitza.de

www.janitza.com

GLOBAL

Janitza | USA
Telephone: +1 888 526 4892
Email: sales-us@janitza.com

Janitza | Austria
Telephone: +43 7942 214 966 194
Email: anfragen-at@janitza.com

Janitza | Mexico
Telephone: +52 56 6674 4808
Email: info@janitza.com

Janitza | Australia
Telephone: +61 411 544 114
Email: sales-au@janitza.com

Janitza | UK
Telephone: +44 7939 697 434
Email: sales-uk@janitza.com

Janitza | India
Telephone: +91 900 387 6980
Email: sales-in@janitza.com

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