

## Modular network analyzers – UMG 96-PQ-L Series



RELIABLE &  
INNOVATIVE

Complete power quality transparency

# CLARITY FOR POWER QUALITY

Whether it's energy monitoring, power quality, residual current or temperature monitoring: The UMG 96-PQ-L range offers the right functions for every application. The UMG 96-PQ-L cost-effectively and clearly shows the power quality of a measurement plane and avoid system failures.

Due to its high memory depth and the smart architecture for the memory, long-term monitoring of all relevant measurement data can be carried out over periods of several years alongside the high-resolution power quality

recordings. Full-wave events can also be readily shown and analyzed on the intuitive color graphic display in addition to the measured values.

Furthermore, Janitza also provides a variety of feature enhancements and variants for the UMG 96-PQ-L series. Expansion modules can be added to the network analyzer. Once the software is activated, the device carries out measurements in accordance with IEC 61000-4-30 Class S. With different device versions, the 96-PQ-L can be used in IT networks or with low power current transformers.



## UMG 96-PQ-L

**Part no.: 5236001 (230 V; TN & TT networks)**

**Part no.: 5236002 (24 V; TN & TT networks)**

**Part no.: 5236005 (230 V; TN, TT & IT networks)**

- Full-wave events
- High memory depth
- Analysis option on the display
- Suitable for TT, TN and IT networks



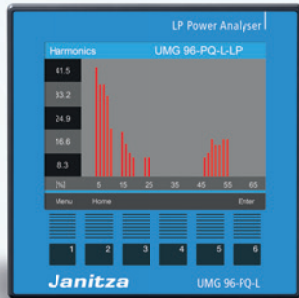
## UMG 96-PQ-L (Class S)

**Part no.: 5236021 (230 V; TN & TT networks)**

**Part no.: 5236022 (24 V; TN & TT networks)**

**Part no.: 5236025 (230 V; TN, TT & IT networks)**

- Standard-compliant power quality data according to IEC 61000-4-30, class S
- Predefined comparator profiles for EN 50160, IEEE519 and 61000-2-4 with GridVis®



## UMG 96-PQ-L-LP

Part no.: 5236006 (230 V; TN & TT networks)

Part no.: 5236007 (24 V; TN & TT networks)

- Current measuring channels for low power current transformers or Rogowski coils
- 4th current measurement channel directly on basic device
- Integrator input for passive Rogowski coils



## MODULE 96-PA-RCM-EL

Part no.: 5232010

- 4th current measurement channel (1/5 A)
- Ethernet port with Modbus TCP/IP, NTP
- Multifunction channels for residual current measurement or temperature monitoring

## FIRMWARE ACTIVATION

Part no.: 5236020

- Post-installation activation of all product versions (except UMG 96-PQ-L-LP) on IEC 61000-4-30 Class S
- Only necessary for devices purchased without Class S

# AT A GLANCE

## POWER QUALITY

- Harmonics current up to the 65th harmonic
- High sampling rate with 280 sampling points per full wave
- 20 ms RMS value memory for full-wave events

## VISUALIZATION

- Oscilloscope function
- Phasor diagram on the display
- Drag indicator history on the display
- Resetting of the drag indicator values via display or remotely

## INSTALLATION & INTEGRATION

- Overvoltage category 600 V CAT III / 300 V CAT IV
- Easy installation thanks to 96 x 96 mm front panel
- Serial interface with Modbus RTU



# Features of the UMG 96-PQ-L range

## ENERGY MANAGEMENT

- Identify savings potentials
- Active energy class 0.5S
- Compliance with regulatory and tax requirements

## OPERATION

- 6-button operation on the color graphic display
- Intuitive operation
- Configuration directly on the display
- On-site operation
- Configurable home screen and jump-back point

## COMMUNICATION

- Client / Server\*
- Gateway function\*
- Ethernet interface\*
- RS-485
- 5 simultaneous Modbus TCP connections\*
- Synchronous via Modbus RTU in accordance with IEC 60870

## PERIPHERALS

- 3 digital inputs
- 3 digital outputs
- 1 analog output

## LIMIT VALUE MONITORING

- 50 comparators in the device
- Hysteresis
- Predefined comparator profiles for quick configuration with GridVis®

## EVENTS

- Representation in the display
- Read out last event via Modbus
- Display root-mean-square value curves in the GridVis® event browser
- Detection and recording of events such as undervoltage, overvoltage and overcurrent
- Trigger via Modbus or a digital input with a 20 s lead time and 20 s lag time
- Recording the type of event, duration, deviation, date and RMS value

## MODULARITY

- Temperature measurement with monitoring via integrated comparator
- Ethernet interface and Modbus gateway
- Multifunction inputs for residual current measurement or DC power measurement
- 4th current measuring channel (except UMG 96-PQ-L-LP)

## RECORDING

- Record and investigate events and time periods with a clear focus
- Configuration of up to 14 recording sets
- Calculation of the memory duration during configuration

## MEMORY

- High memory depth with low memory requirements
- Memory depth up to 15 years with 23 measured values of 15 min. each and 8 measured values of 1 hour each
- Memory partitioning into long-term memory and high-resolution PQ short-term memory

\* with module 96-PA-RCM-EL

# PROGRESSIVE & VARIABLE



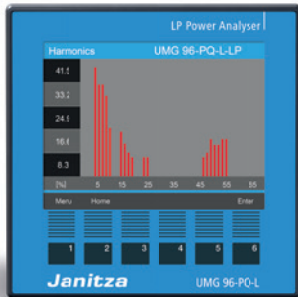
## UMG 96-PQ-L (Class S)

The UMG 96-PQ-L can be purchased with activation according to Class S. In this variant, it records additional power quality parameters such as flicker and interharmonics that are required to satisfy the requirements of standards such as EN 50160. In the variant as per Class S, the UMG 96-PQ-L has additional pre-defined recording profiles in GridVis® that make it simpler to configure for selected standards.

Measurement in accordance with Class S can also be purchased later as firmware activation.



# Variants



## UMG 96-PQ-L-LP

The current inputs on the UMG 96-PQ-L-LP are suitable for low power current transformers or Rogowski coils. Low power current transformers allow for cost-effective, space-saving measurements. Rogowski coils are particularly good for retrofitting. They can be readily installed in tight spaces or around large cross sections.

The device is flexible when it comes to the connection of low power current transformers as well as active or passive Rogowski coils. Furthermore, the UMG 96-PQ-L-LP has a 4th current measuring channel on the basic device.



## UMG 96-PQ-L-IT

On the inside, the IT variants differ widely from the other devices in the UMG 96-PQ-L series. Their unique design means that the measurement devices have no effect on mains impedance. As a result they are ideally suited for use in IT networks. The UMG 96-PQ-L-IT can be purchased with or without Class S.

# MEASURE AND ANALYZE RELIABLY

## Capture

Numerous power quality parameters can be captured with the UMG 96-PQ-L series, such as events and harmonics current. This provides a clear overview of the power quality.

- Detection and recording of events such as undervoltage, overvoltage and overcurrent
- Trigger via Modbus or a digital input with a 20s lead time and 20s lag time
- Recording of: the type of event, duration, deviation, date and RMS value

## Store

Thanks to the innovative memory configuration and division into individual partitions, the measured values can be recorded exactly as they are needed. Recording sets allow bundling and common configuration of measurement data. The high-resolution partition can be enabled and disabled

via the settings or selected triggers. This allows for accurate viewing of selected time periods or events without affecting the memory duration of important data. Thanks to the live calculation of the memory space, you can see at any time how long the measurement data can be stored in the device with the current configuration.

- Activation of user-defined high-resolution recording via events with 15 min lag time or manually via Modbus
- Memory partitioning into long-term memory and high-resolution short-term memory
- Calculation of the memory duration during configuration
- Configuration of up to 14 recording sets
- Record and investigate specific events and time periods with a clear focus
- Averaging time down to 3s for standard-compliant recording (EN 50160 and IEEE519)





# Power quality

## Visualize and analyze

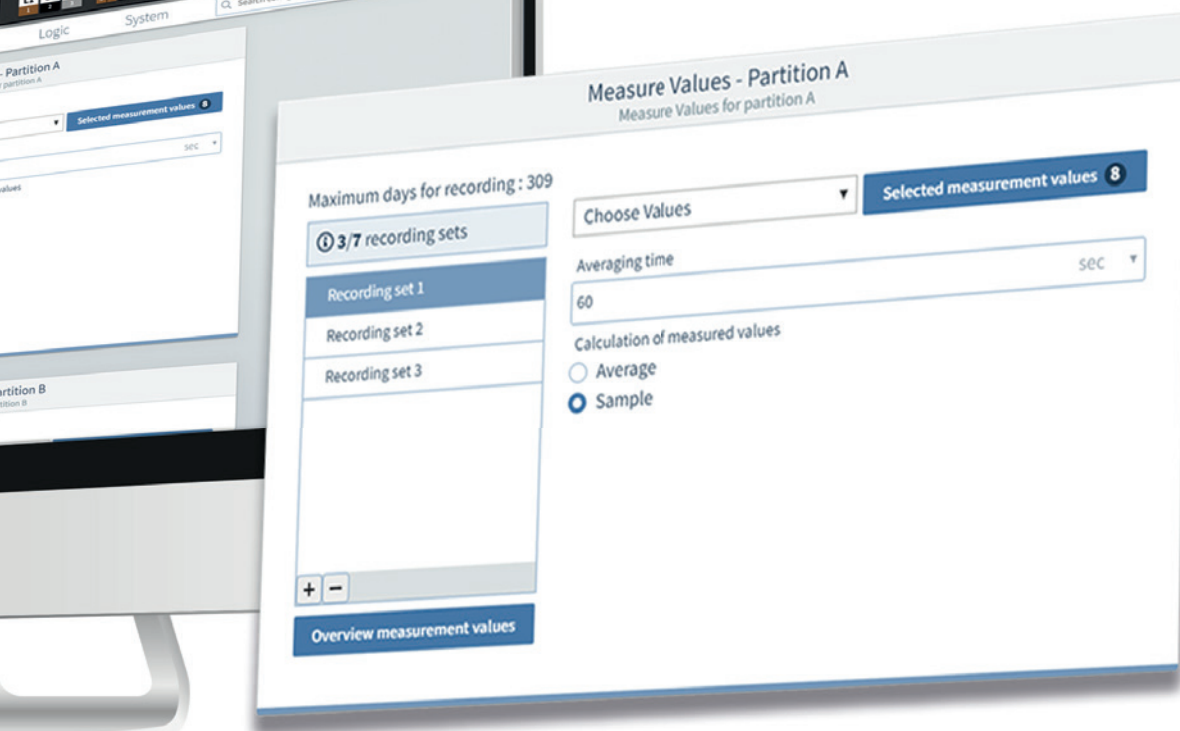
The waveform, harmonics current and drag indicator can be displayed and analyzed directly on the color graphic display. Use the GridVis® power grid monitoring software to evaluate your data quickly and easily with tools such as the event and transient browser. The device configuration feature in

GridVis® offers graphical and user-friendly configuration options on the web – online and offline.

- Direct representation of the waveform on the display
- Drag indicator history on the display and in GridVis®
- Quick and easy evaluation via the GridVis® event and transient browser
- Automated evaluation of the power quality standards with the GridVis® reports
- Overloads and peaks can be recognized at a glance on the display



Configuration of storage partitions and recording sets



# ACTIVE & PASSIVE ROGOWSKI COILS

## Benefits of Rogowski coils

Rogowski coils are ring-shaped air coils that can capture alternating current. The flexible coil is wrapped around the primary conductor to this effect. The conductor does not have to be in the very center of the coil, and along with the flexible form, it is very suitable for installing in areas where space is at a premium.

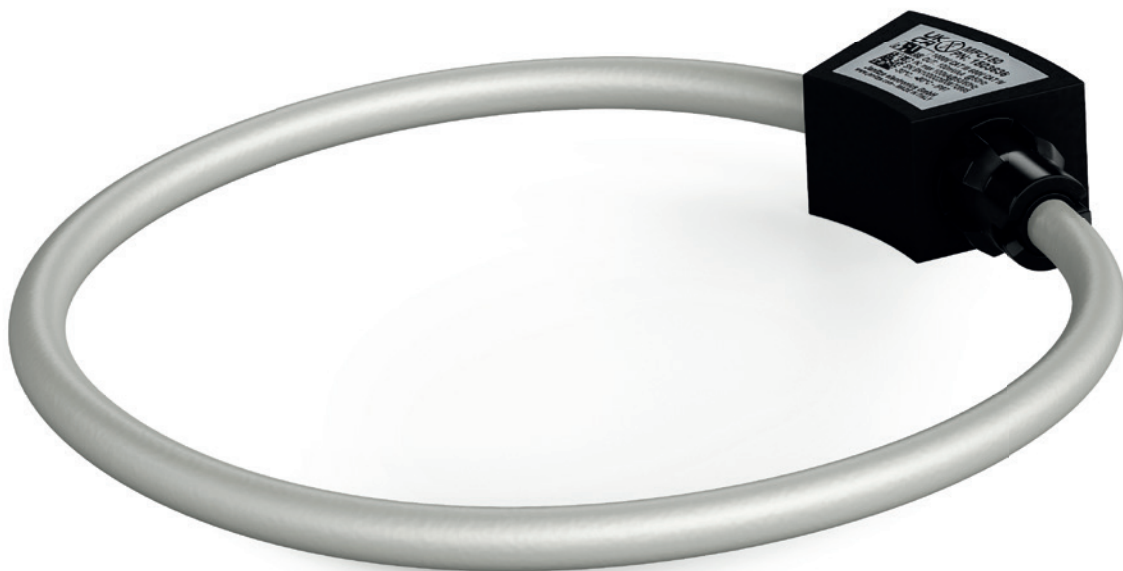
Rogowski coils have several benefits compared to conventional current transformers:

- They can be retrofitted easily without separation from the primary circuit
- They are ideally suited for measuring high and high-frequency currents

## Active or passive?

Rogowski coils are separated into active and passive coils. Unlike current transformers, the output signal of a Rogowski coil cannot be processed directly by most measurement devices as it is a phase-shifted voltage signal.

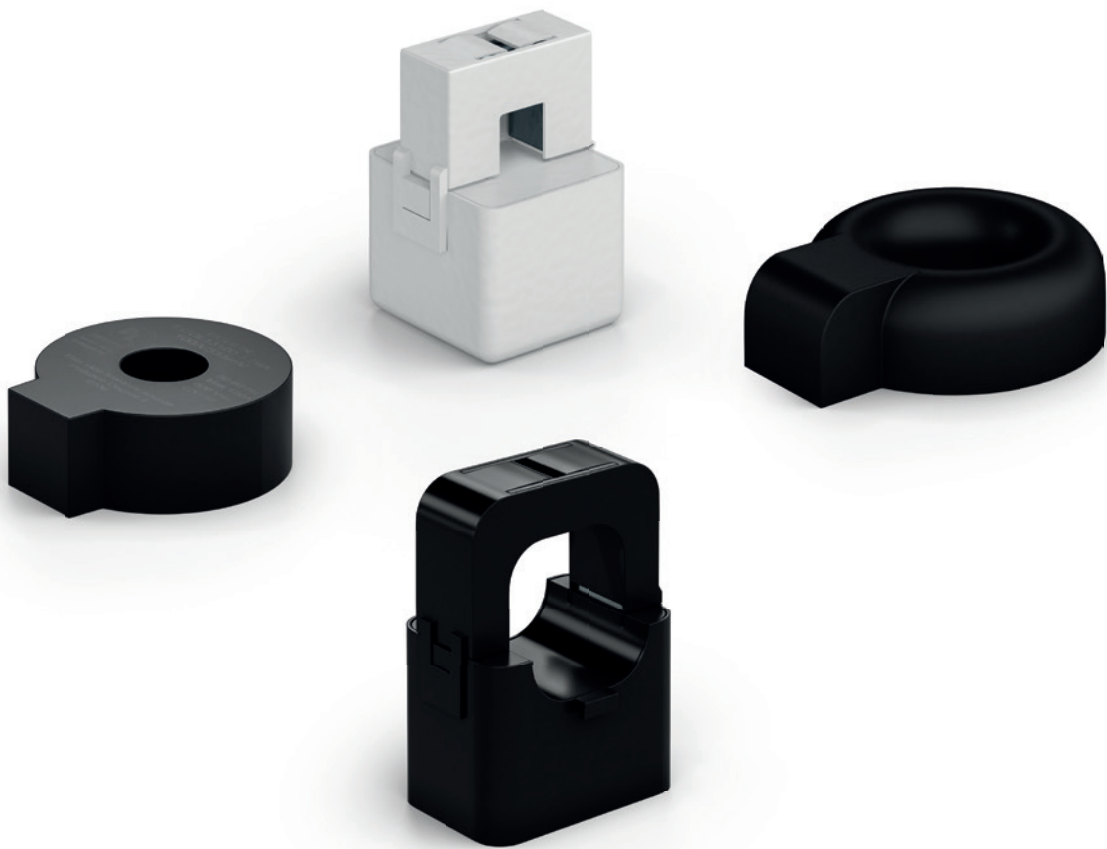
An integrator circuit for correcting the signal is therefore included in active Rogowski coils. This is why the active Rogowski coil requires an external power supply. Passive coils do not have an integrator circuit and therefore do not require an external power supply. They are also cheaper to purchase. However, they can only be connected to measurement devices that can correctly process the output signal from the passive coil, such as the UMG 96-PQ-L-LP.



# LOW POWER CURRENT TRANSFORMERS IN COMPARISON

Low power current transformers provide several advantages compared to conventional transformers. They do not require a transformer disconnect terminal, saving on space and time during cabling and connection, as well as less expensive for said terminal. Furthermore, they are considerably cheaper to purchase compared to conventional current transformers. In order to use low power current transformers measurement devices with corresponding low power inputs must be used, such as the UMG 96-PQ-L-LP.

- No transformer disconnect terminals required
- Price advantage of low power current transformers compared to conventional transformers
- Less work required for cabling and connection
- Higher levels of occupational health and safety during installation



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