

## Modularly expandable energy analyzer – UMG 800



# UMG 800

Endless opportunities –  
Rise to the challenge with flexibility

# ALWAYS FLEXIBLE – SAFELY PLAN

## **A foundation for today and growth for tomorrow**

The flexible UMG 800 energy analyzer is ideal for output and main measurements. Various modules can be added to the basic device – in line with the demands of the application.

You can easily adapt the UMG 800 energy analyzer to handle new requirements and regulations, as well as add additional functions and measurement inputs at any time with minimal effort.

This enables you to handle current and future challenges without having to replace the measurement technology.

## **Space-saving and efficient**

The compact UMG 800 includes 2 sub-units. Additional compact modules can be purchased and easily integrated into any switchboard cabinet. The intuitive plug-and-play system speeds up installation whilst making it simpler. This can reduce installation costs.

## **Optimal communications and data management**

The UMG 800 can be seamlessly integrated into existing and higher-order systems thanks to numerous interfaces and protocols, allowing for efficient data transmission in real time. It also has an internal data memory for data handling.



# Modularly expandable energy analyzer – UMG 800

## ADVANTAGES

### SCALABLE

Can be modularly expanded if the need for energy data rises

### FUTURE-PROOF

New modules and functions can be added at any time without replacing the basic device

### FLEXIBLE

Easily adjusted to meet new requirements with different modules

### VALUE DRIVEN

Only install essential functions at the beginning, then use modules for cost-effective expansion if further measurement inputs are required

### COMPACT

Compact design includes 2 sub-units with the option of expansion units with 1–4 sub-units

### SIMPLE TO INSTALL

Plug-and-play for simple installation as well as an integrated web server for ease of configuration

### SAFE

Modbus white listing and integrated comparator for early warnings if threshold values are exceeded

### COMMUNICATIVE

Various interfaces and protocols for simple integration into existing systems



Industry applications

# APPLICATIONS

**THE UMG 800'S MODULES GIVE IT THE FLEXIBILITY TO RISE TO ANY CHALLENGE.**



# Industry applications

Find out more about how the UMG 800 is used in certain industries:  
[www.janitza.com/umg800-industries](http://www.janitza.com/umg800-industries)



## **Transparency of costs down to the machine level**

A cost-effective energy monitoring system can be set up with the UMG 800. It ensures transparency at machine level and can be easily integrated into tap-off boxes. Equipped with such in-depth insight into energy consumption, you can take targeted measures to improve energy efficiency whilst lowering energy costs.

- Increase energy efficiency – control costs
- Transparent down to the lowest levels
- Perfectly designed for tap-off boxes

## **Determination of network status**

Due to its compact design, the UMG 800 and the space-saving 800-CT8-LP modules can be readily integrated into existing distribution substations. Data recording in real time, ease of integration into existing systems.

- Ease of integration into the system (e.g. into control engineering)
- Real-time data acquisition and recording of the load flow direction
- Space-saving design and simple to retrofit

## **Optimize power supply up to the server level**

Together with its modules, the UMG 800 provides up to 96 current measurement inputs for output measurement. The compact design and open interfaces simplify integration with your system. Energy measurement in real time and harmonics current analysis provide early warning of faults in power quality and help users take action in real time.

- Space-saving output measurement
- Recording and analysis of power quality (e.g. harmonics)
- Energy measurement in real time

# AT A GLANCE



UMG 800  
Part no.: 5238001

## BASIC DATA

- Size – 2 sub-units
- 300 V CAT III
- Measuring accuracy: Voltage 0.2 %
- 4 GB data memory
- High sampling frequency (51.24 kHz)
- 1024 samples for voltage measurement
- Effective values of half waves 10 ms

## PERIPHERALS

- RS-485
- 2 x Ethernet
- USB A

## COMMUNICATION

- OPC UA
- NTP
- Modbus TCP/IP Gateway for up to 31 slaves

## GRIDDED AVERAGE VALUES

- Stores critical 200 ms min/max values in order, for example, to detect load peaks at an early stage and avoid costly downtime
- Gridded or moving average values Quickly detect trends and make decisions that contribute to sustainable energy usage

## MODULARITY

- Expandable by up to 12 + 1 modules
- Up to 96 current measurement inputs
- Up to 182 digital inputs
- Up to 100 m measurement point bridging via the connector module

## WEB SERVER

- Integrated web server for ease of commissioning and configuration
- Convenient, remote monitoring, diagnostics, and maintenance



Learn more here:  
[www.janitza.com/umg800](http://www.janitza.com/umg800)

## MEASUREMENT GROUPS

- With virtual meters – create and combine measured variables and measurement groups – totally without additional hardware
- Use virtual parameters and drastically reduce hardware costs (savings of up to 25 % per measurement channel)
- Monitor and analyze energy consumption and power over several modules – even for 3- and 4-phase applications

## USB PORT

- Convenient and safe fault analysis directly on site via a connectable external display
- Quick commissioning: Quickly and easily upload device configurations and updates via USB

## ETHERNET

- Dual Ethernet with switched mode and daisy chain function
- Maximize network capacity and safely connect other devices in series
- Double the network safety and flexibility: Integration into two networks for safe and efficient data management
- Dedicated bandwidth for optimal power during critical processes

## MODBUS

- Gateway for seamless integration of other devices from downstream measurement levels
- Extensive scope for communications with the combination of RS-485 remote communication and high-speed Ethernet
- Fast initial commissioning due to fixed patterns on Modbus address lists
- Customized address lists: Shift each value in accordance with specific requirements and create individual modbus addresses

## MODBUS WHITELISTING

- Improve operational safety via the modbus protocol with intelligent firewall
- Secure data transmission and isolate threats effectively

## COMPARATOR

- 125 comparators in 32 comparison groups
- Early warnings if threshold values are exceeded or deviations occur during use
- Avoid expensive downtime via overcurrent alarms and collective fault signals
- Reliable data transmission via OPC UA or modbus

## POWER QUALITY

- Avoid downtime and interruptions whilst improving operating efficiency
- Identify potential faults and protect systems from damage by early detection of deviations within the measurement circuit
- Record flickering and harmonics up to the 63rd harmonics current
- Capture waveforms for root cause and event analysis

## EVENTS AND TRANSIENTS

- Detect transients and events with real-time monitoring
- Quick reaction times due to flexible settings for threshold values
- 18 µs transient detection

## COMTRADE AND PQDIF

- Quick analysis due to a standardized file format
- Data exchange directly from the device via SFTP and web server

# MODULES – AT A GLANCE



800-CT8-LP current measuring module  
Part no.: 5231234

### SAFE AND VALUE DRIVEN

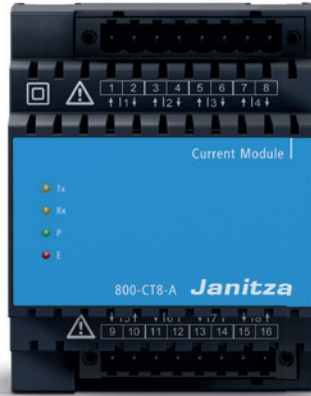
- 8 lower power current measurement inputs
- Compatible with cost-effective 333 mV current transformers
- Higher levels of occupational health and safety during installation
- No short-circuit plugs required
- High measuring accuracy (0.2 %)
- High operational safety

### LOW FOOTPRINT REQUIREMENT

- Just 1 sub-unit

### MODULE SLOTS

- Requires 1 module slot



800-CT8-A current measuring module  
Part no.: 5231230

### SIMPLE EXPANSION

- Has 8 current measurement inputs
- Connection of conventional current transformers
- Ideal for existing or new systems with integrated transformers
- High measuring accuracy (0.5 %)

### COMPACT

- Size of 4 sub-units

### MODULE SLOTS

- Requires 1 module slot



800-CT24 current measuring module  
Part no.: 5231247

### MAXIMUM EFFICIENCY

- 24 current measurement inputs per module
- Compatible with 333 mV current transformer (connector)
- Modules can be quickly and easily attached to the DIN rail
- Up to four 800-CT24 modules can be directly connected to each other in series.
- Connection via the module 800-CON-RJ45

### QUICK AND COST-EFFECTIVE

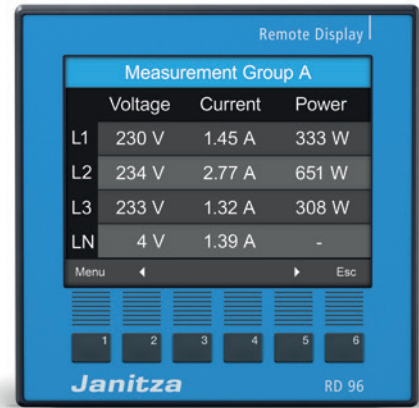
- Simply connect the current transformers (plug & play) for quick installation
- Low channel price

### MODULE SLOTS

- 3 module slots required



## UMG 800 other modules



*800-CON-RJ45 transfer module  
Part no.: 5231242*

*Transfer module 800-CON  
Part no.: 5231210*

### COMPACT

- 800-CON module only 1 sub-unit per module
- 800-CON-RJ45 module 2 sub-units per module

### MEASUREMENT POINT BRIDGING

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

### CONNECTIVITY

- Plug & Play
- 800-CON-RJ45 modules have an RJ45 interface and can be connected via a standardized cable here
- 800-CON modules are connected via shield clamps to a pair-stranded, shielded data cable

### MODULE SLOTS

- No module slots required

*800-DI14 digital input module  
Part no.: 5231214*

### DIGITAL INPUTS

- Provides 14 additional digital inputs
- Status recording of, for example, door contacts or status contacts (fans, valves and other equipment)
- Triggering of actions

### COMPACT

- Compact 1 sub-unit size

### MODULE SLOTS

- Requires 1 module slot

*Remote Display RD 96  
Part no.: 5231212*

### FRONT PANEL CAN BE RETROFITTED

- 96 x 96 mm front panel display for reading off data and on-site operation
- Full operation and configuration of the UMG 800 and the modules
- Easy to operate via keys on the front of the display
- Connection via USB interface
- All data available including the module views

### MODULE SLOTS

- No module slot required

# FLEXIBLE USE – MAXIMUM BENEFITS

Thanks to the modules, the UMB 800 basic device can be readily adapted to your needs and requirements. Flexibility is a feature of this energy analyzer and means it is highly versatile.

For example, the UMG 800 can be expanded using current measuring modules to up to 96 current measurement inputs, or use the digital input model to add digital inputs. All modules can be combined with each other as needed.

The transfer modules make it possible to bridge distances of up to 100 meters between the basic device and individ-

ual measurement points. The only restriction for the use of modules are the virtual module slots.

## What are module slots?

13 module slots\* are available for connecting modules. Janitza supplies various expansion modules for the UMG 800, which require a different number of module slots. All modules can be combined with each other. Modules that do not require any module slots can be connected as often as you like.

*\*Current measuring modules can only be connected up to a maximum of 96 current measurement inputs (12 module slots).*

## EXAMPLES OF MODULE COMBINATIONS WITH 13 MODULE SLOTS



### EXAMPLE 1

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

### EXAMPLE 2

2 x 800-DI14  
+ 6 x 800-CT8-A  
+ 2 x 800-CON\*\*  
= 8 module slots



### EXAMPLE 3

3 x 800-CT24\*\*\*  
+ 4 x 800-DI14  
= 13 module slots



*\*\* 800-CON does not require a module slot  
\*\*\*800-CT24 requires 3 module slots per module*

# OPTIMIZE USAGE WITH SUITABLE COMPONENTS

## Maximize value with GridVis® software

The UMG 800 opens up new possibilities, particularly when combined with the power grid monitoring software GridVis®. Uncover the full potential of your energy data with comprehensive analysis and visualization tools.

GridVis® enables you to prepare detailed reports and also helps you detect unusual consumption patterns, identify faults in power quality, and accurately analyze energy flows. This helps reduce energy costs and significantly improve energy efficiency.

## Ideal current transformers

Ideal current transformers are essential for measurement technology to function properly. Janitza has the current

transformers for every module that can be connected. This ensures that your measurements are accurate.

## Contact us

Our expert team provides support before and after commissioning. A comprehensive range of training classes and webinars on energy and energy measurement technology help you effectively use and continuously develop your system.

Regardless of whether you need support with analysis or in planning further projects – Janitza is the partner you can trust. Janitza's solutions are designed so all products work well with each other.



Learn more:  
Contact us  
[www.janitza.com/contact](http://www.janitza.com/contact)



## ABOUT JANITZA

Janitza is a German manufacturer of energy measurement technology, specializing in improving energy efficiency and ensuring a secure energy supply. The company offers tailored solutions designed to meet individual customer requirements across a wide range of industries.

## PRODUCT RANGE

Janitza's portfolio includes innovative measuring devices and the perfectly integrated Power Grid Monitoring Software GridVis®, complemented by high-quality components. Customers worldwide benefit from solutions in energy data management, power quality monitoring, and residual current monitoring, all within a unified system environment – Made in Germany.

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