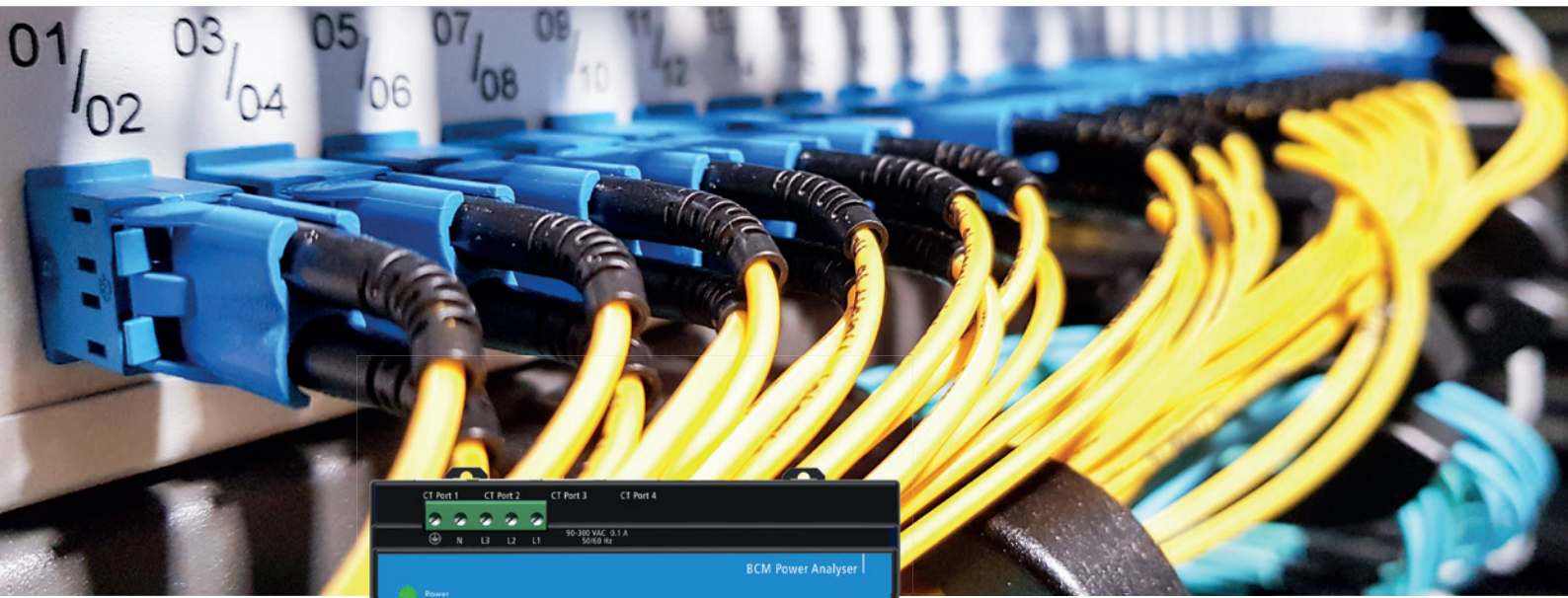


UMG 804 – UMG 806 – UMG 20CM



# LEVEL 3 MONITORING FOR DATA CENTERS

# UPTIME IN DATA CENTERS

The primary function of the data center is to ensure continuous power supply to IT infrastructure without interruption. In order to achieve these goals, UPS systems and generators are used to create complex grid backup systems which minimize or eliminate downtime should a fault occur. Multiple power solutions create power circuitry with many redundancy options, so high-end monitoring systems are essential to create the transparency needed so that energy shortfalls can be prevented.

The Janitza grid visualization software GridVis® proactively monitor's electrical uptime, giving alarms and reports when limit values have been exceeded.

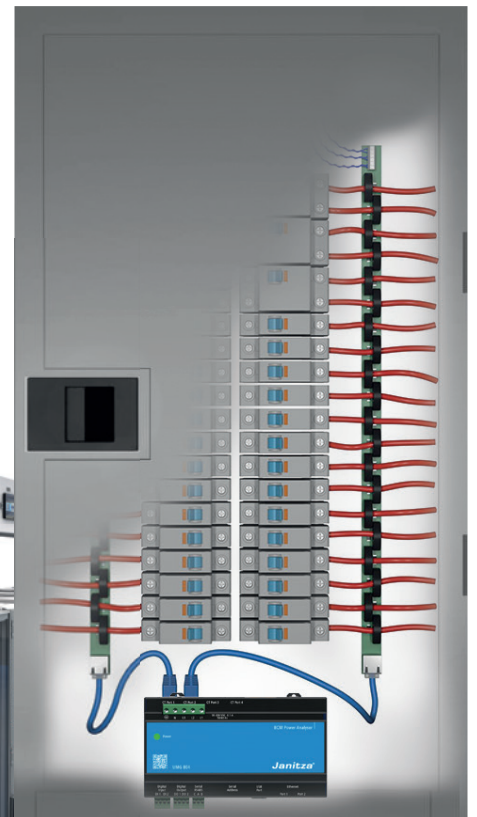
Also, with ISO 50001 energy certification, GridVis® allows for transparency of energy efficiencies & infrastructure planning that ensure the data center is operated cost effectively and competitively.

It is primarily a question of proactively monitoring electrical uptime and reporting when limit values have been exceeded. However, energy efficiency also plays an increasingly important role in ensuring data centers are operated cost efficiently and competitively. Effective operation and planning of the available infrastructure is only possible with a suitable energy management system.

*Tap Off monitoring in bus way systems*



*Branch circuit monitoring in PDUs*



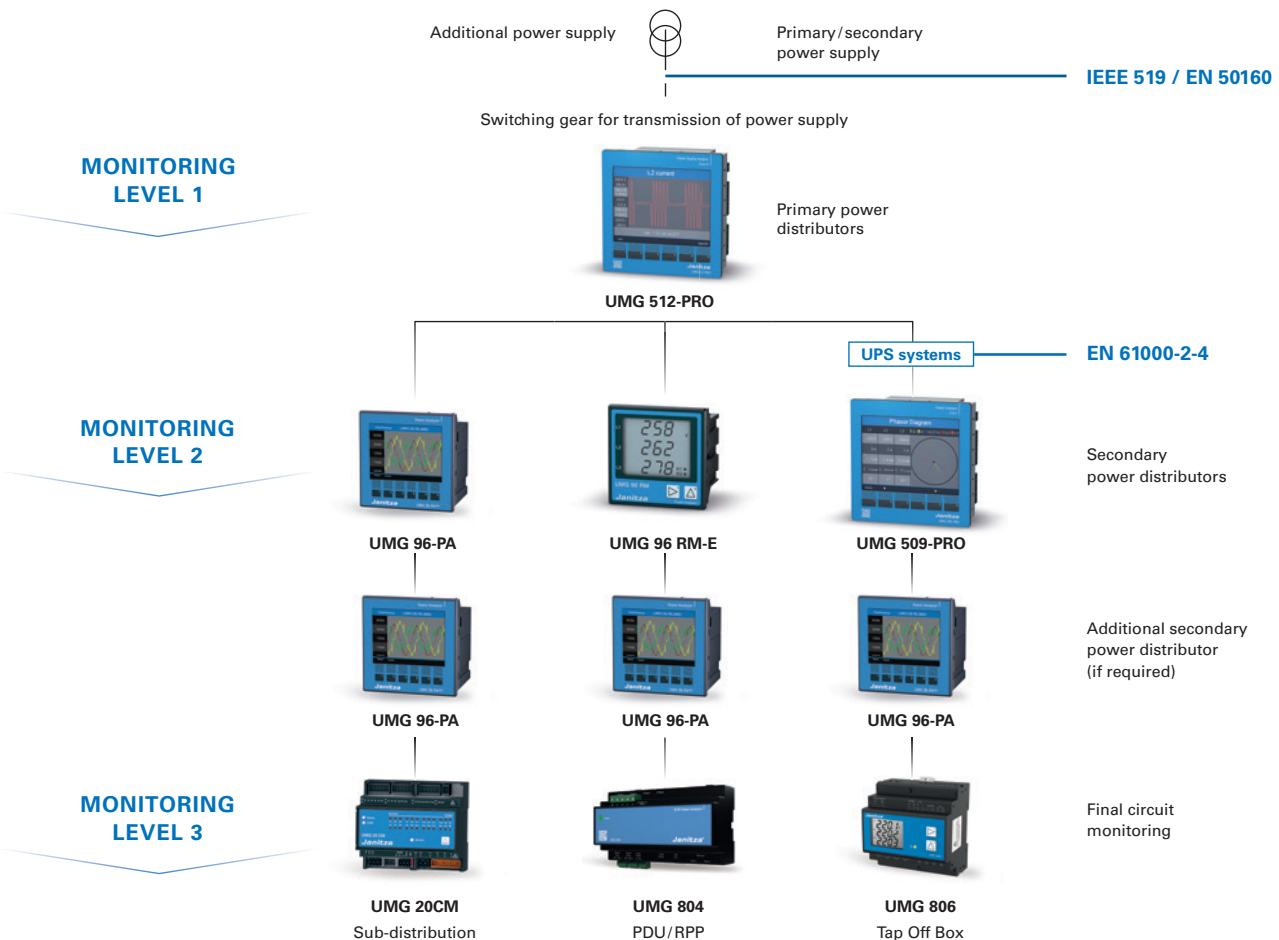
# MAXIMUM SYSTEM RELIABILITY

## Branch Circuit Monitoring in PDUs

Janitza's branch circuit monitoring solution UMG 804 can be integrated into all types of PDU. The UMG 804 is available with solid core CT strips, and also split core CTs for easy retrofit applications. UMG 804 measurements are available in real-time, giving the data center manager essential rack visibility and quick access to data and alarms. One of the highlights of the UMG 804 is the voltage detection functionality that accurately indicates breaker switching status, even under no load condition.

## Monitoring in Tap Off Boxes

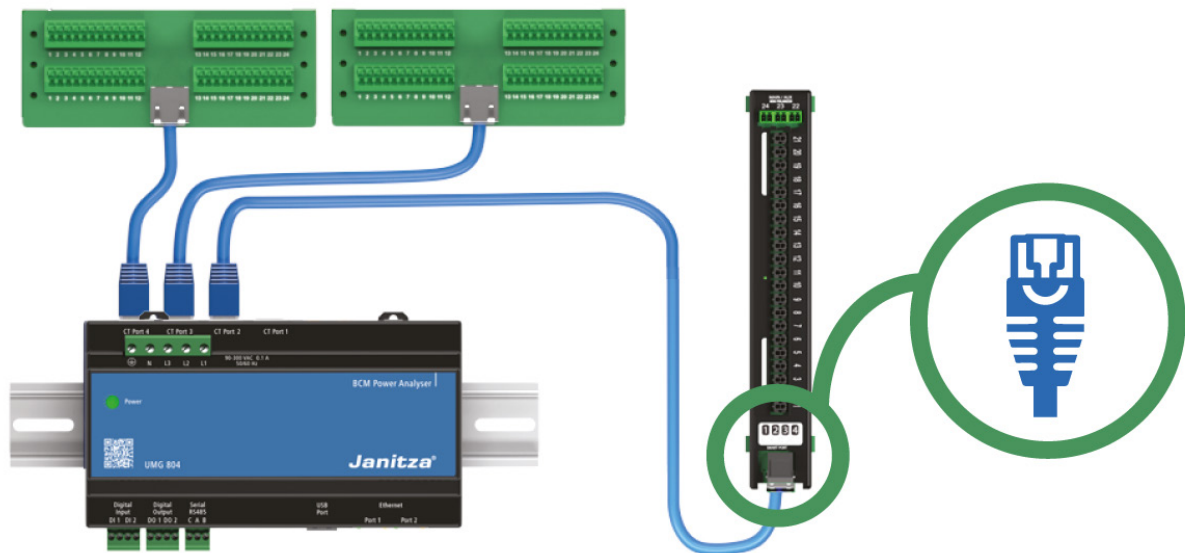
Janitza's UMG 806 is an innovative new metering solution that innovates data hall monitoring in busway (busbar) Tap Off Boxes. The UMG 806 is a 3-phase device with optional utilization of a 4th CT channel for neutral conductor monitoring. Measurement is via conventional 1/5A CT's or low power mV CTs. MID, ground fault monitoring (RCM), temperature monitoring, digital I/O, and several different communication options are available in the UMG 806 modular system. This powerful and compact measurement solution allows for fast monitoring of load and alarm conditions, creating an intelligent busway system with the critical information needed to monitor the availability of the data center whitespace.



Janitza is one of the few manufacturers that offers metering solutions for all 3 levels. Starting at the incoming feed with a class A device, at the distribution level and UPS outputs, and down to PDU and tap off boxes for the final circuit level of the server racks, Janitza provides monitoring solutions at every level.

# BRANCH CIRCUIT MONITORING IN PDUs

## UMG 804 – ENERGY MONITORING REVOLUTIONIZED



### Solid core branch circuit monitoring

- Economical solution for monitoring new installations
- Core module is small enough to fit inside most PDUs and panels
- Presence of voltage detection accurately indicates breaker status even under no load conditions

### Split core branch circuit monitoring

- Economical solution for monitoring new installations or existing installations in switchgear or any electrical equipment
- Compact interface board mounts close to CTs

### True circuit display

- Allows data to be expressed according to the actual panelboard configuration by indicating pole position, circuit type, friendly and more to each circuit

### Scalable measurement system

- Monitors up to 96 circuits
- Demand management with alarming function
- On-board web server provides immediate access to real-time data

### Communication

- Select from multiple connectivity options including
  - Modbus RTU
  - Modbus TCP/IP
  - BACnet IP

# MONITORING OF TAP-OFF BOXES

## UMG 806 – FUNCTIONAL EXPANSION WITH MODULES



### Peripherals

- 4 voltage / 4 current channels via current transformer 1/5 A
- Residual current measurement
- Thermistor input
- Pulse output

### Communication

- Modbus RTU – on board
- Modbus TCP – per module
- SNMP V2c – per module

### Power Quality

- Harmonics current up to the 31st harmonic
- 4 MB of internal data memory

### Residual current monitoring

- RCM input on board
- With EI1 module, compatible with RCM 202-AB, for retrofitting of Type A and Type B measurement

### Universal range of application

- Ideal for DIN rail applications in data centers and industry

# MONITORING IN SUB DISTRIBUTION BOARDS

## MULTI-CHANNEL OPERATING AND GROUND FAULT MONITORING (RCM)



### Operating and ground fault monitoring (RCM)

- RCM monitoring 10 mA – 15000 mA with burden
- Operating current possible up to 600 A
- Standard measurements: V, A, kW, kVA, kWh, PF
- Harmonics up to 63rd for analysis channel
- Minimum and maximum value for each channel with time stamp
- Each channel individually configurable

### Scalable measurement system

- Install friendly retrofit option with a wide range of different current transformers, tailored to the individual application conditions

### Communication

- Modbus RTU directly on board for easy integration into your system

### Alarming

- Notifications if nominal currents are exceeded, includes memory function for notification that limit values have been exceeded

# GridVis® – POWER GRID MONITORING SOFTWARE

**VISUALIZING, ANALYZING, ALARMING, REPORTING**

**Utilization report**

22.03.2014

GridVis®

Janitza

*Utilization report – load analysis*



*Uptime report – detailed voltage sag analysis*

## Utilization report

- Display and analysis of nominal over the entire electrical distribution system
- Tabular display of capacity utilization for selected metering points in %
- Detect in real-time limit violations, exceeding capacity utilization and power reserves
- Free configuration of metering points in order to calculate and display redundancies

## Uptime report

- Evaluation of voltage sag disturbances
- Availability and outage time of each individual phase of a measurement device are analyzed and visualized
- Display of the availability in %
- Detection and analysis of time-equal disturbances
- The heatmap easily identifies which metering points are mostly affected at what time

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