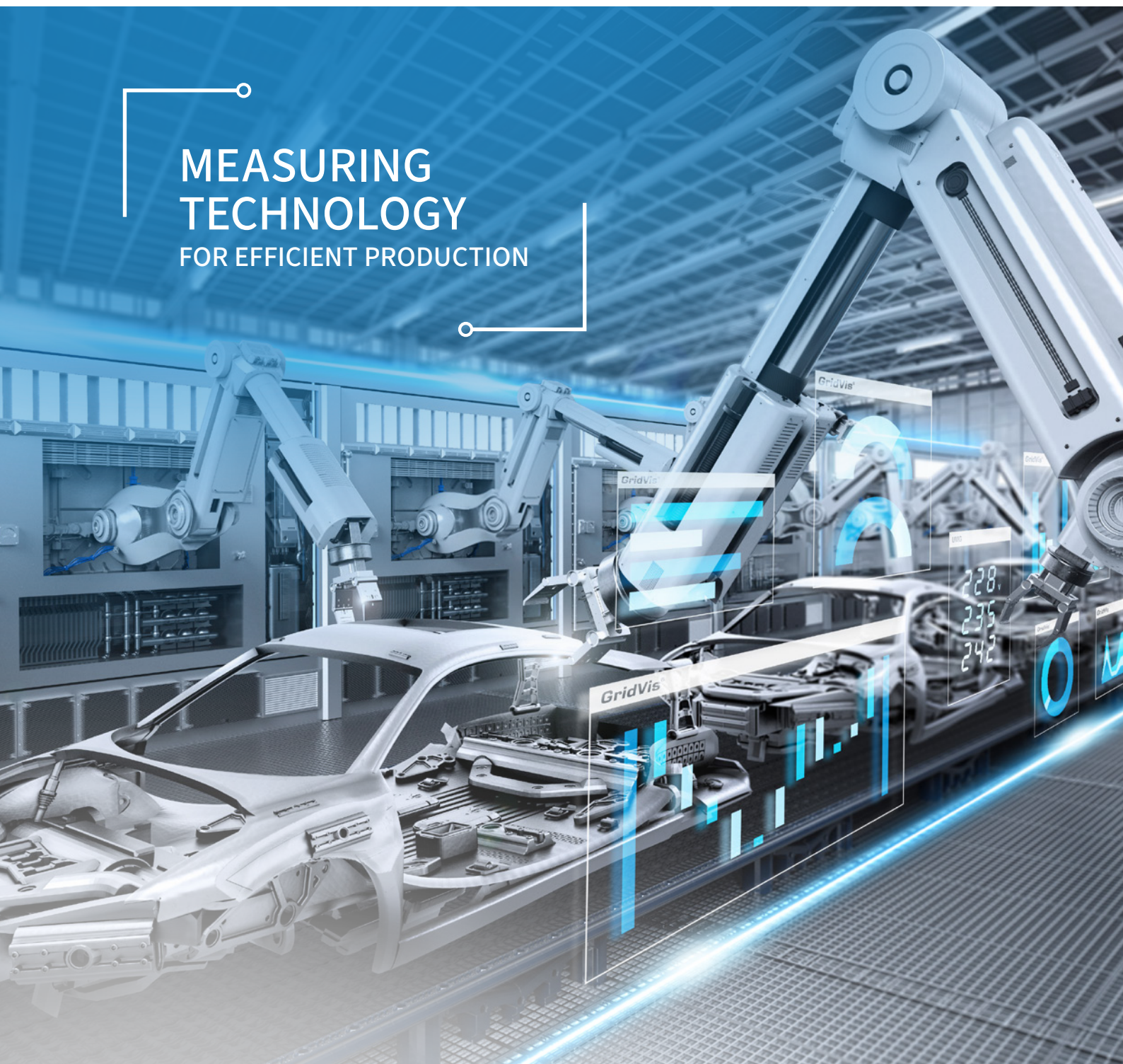


MEASURING TECHNOLOGY FOR EFFICIENT PRODUCTION



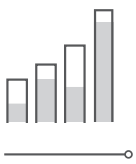
AUTOMOTIVE INDUSTRY

Brief information

Janitza®

EFFICIENT AND HIGHLY AVAILABLE PRODUCTION SITES

Imagine being able to monitor and manage power consumption and quality, to ensure efficiency and meet strict regulations. In the competitive automotive industry, innovation must go hand in hand with reducing environmental impact and controlling costs. As production becomes more complex and energy-intensive, the use of sophisticated measurement technology is key to optimizing energy use, protecting equipment, and ensuring reliable operations.



ENERGY MANAGEMENT – INCREASE ENERGY EFFICIENCY, REDUCE COSTS

Effective energy management not only reduces costs and consumption but also enhances process visibility by minimizing waste. Implementing a tailored Energy Management System (EMS) optimizes energy flow and further lowers associated costs.

- Monitor and analyze energy consumption to reduce energy costs
- Identify and improve inefficient processes
- Provide real-time insights to energy consumption for immediate adjustments
- Seamless integration into an EMS system compliant to standards, such as ISO 50001



RESIDUAL CURRENT MONITORING – INCREASE FIRE PROTECTION, REDUCE DOWNTIMES

Continuous residual current monitoring (RCM) and data analysis can identify insulation and installation faults early, preventing production downtime, fires, and overloads. This proactive approach enhances safety, reduces costs, and addresses problems before they escalate.

- Early fault detection before they cause serious problems, such as fires or system failures
- Increase the overall reliability of electrical systems by maintaining continuous monitoring and protection
- Prevent unexpected production halts by allowing timely maintenance and repairs



POWER QUALITY – ENSURE AVAILABILITY, AVOID PRODUCTION HALTS

Comprehensive power quality monitoring and data analysis can help to prevent power quality issues by identifying and addressing issues promptly, preventing production halts, equipment damage, and safety risks, while also reducing costs and system failures.

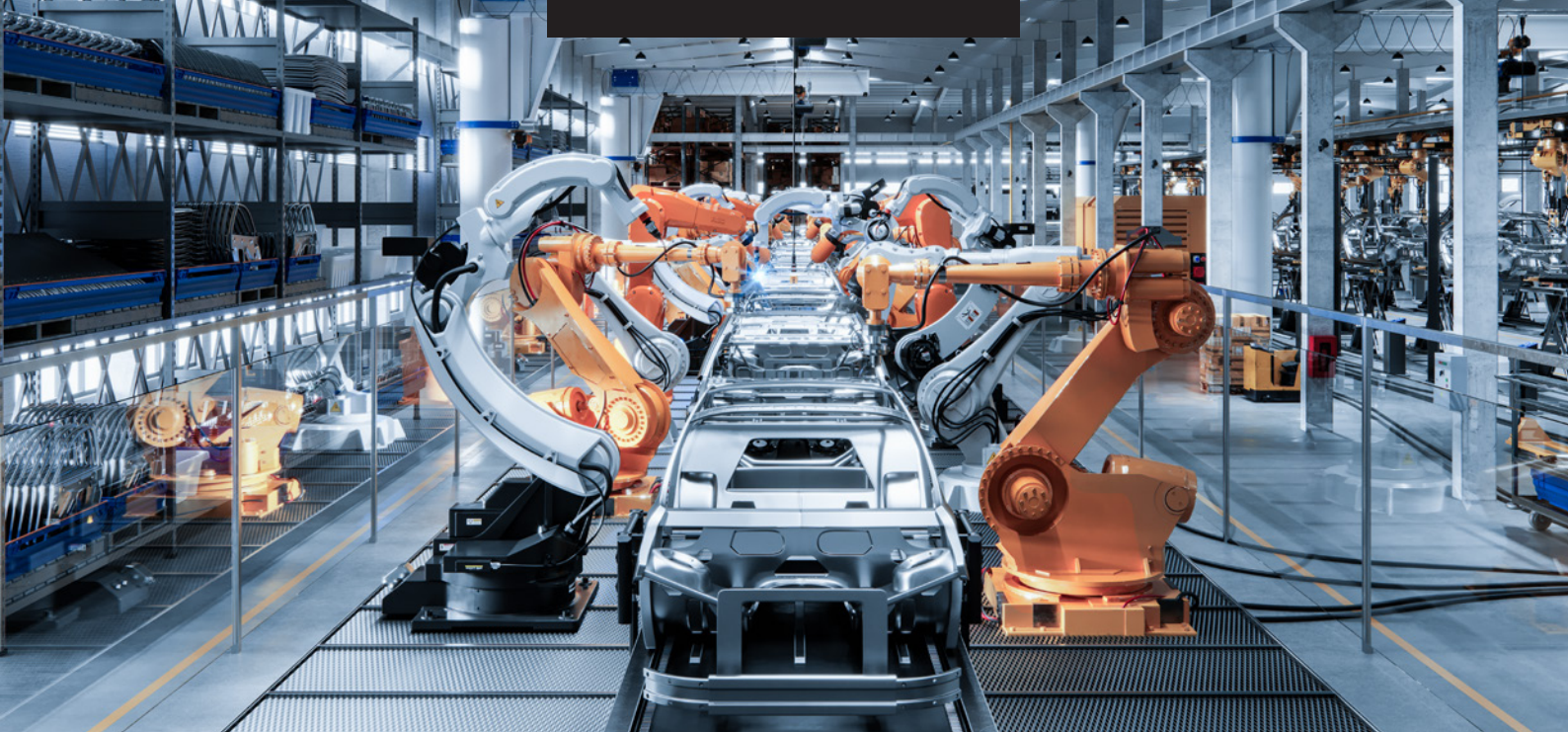
- Ensure stability of electrical systems by monitoring for voltage and frequency fluctuations
- Protect sensitive electronic equipment from damage caused by poor power quality
- Comply with relevant standards and regulations
- Identify potential issues before they lead to equipment failure or system downtime



SUSTAINABILITY – THE PATH TO CO₂ NEUTRALITY

Climate change, endangered ecosystems, and urban air quality are global issues demanding urgent action. The demand for carbon-neutral production is steadily increasing in response to environmental, social and economic requirements (e.g. ESG criteria).

- Energy transparency offers clear insights to quantify and address this complex issue
- Emissions transparency requires recording and analyzing consumption of all media and resulting emissions
- The data serves as a basis for all further actions and as proof of the effectiveness of the measures



BRINGING IT ALL TOGETHER: AVAILABILITY IS KEY

- Optimize and secure energy consumption
- Ensure compliance: adhere to environmental regulations
- Monitor energy usage: energy management via monitoring and control center

Monitoring systems are essential for preventing energy bottlenecks at critical components within the system. It's crucial to proactively monitor electrical high availability of energy supply and promptly report any limit violations.

UP TO 30% ENERGY SAVINGS*

Cost reduction through control of base load costs, operating load costs, peak load costs.

CHALLENGE SPOTLIGHT: DOWNTIME AT AN AUTOMOTIVE MANUFACTURER

In the 2010s, a German city experienced a temporary blackout due to an electrical error at a well-known German automotive manufacturer's power plant. This incident, which occurred on a Saturday, led to the shutdown of the car-maker's plant and also affected its international website, email communications among managers, and neighboring districts. Media reports indicated that the blackout lasted for five hours, resulting in the dismissal of workers on extra shifts and a halt in production. Although the exact financial impact is difficult to quantify, the repercussions included the loss of several hundred vehicles in production, wages for idle work hours, and other associated costs. This highlights the significant expenses resulting from the automotive manufacturer's power outages.

\$ 25 k – 50 k LOSS PER MINUTE

On average, the automotive industry loses 25,000 to 50,000 \$ for every minute of production downtime. Monitoring systems detect failures at an early stage and help prevent those outages.

MEASUREMENT TECHNOLOGY REQUIREMENTS

Measurement technology is essential, serving as the technical foundation for internal management processes and providing a solid basis for effective energy management. Janitza provides a complete package of hardware and software for your Energy Management System (EMS). With our reliable energy meters and ISO 50001 certified energy management software, GridVis®, you can seamlessly adapt your system to changing conditions.

Power Optimization

As a German manufacturer of engineered electrical power monitoring hardware and software, Janitza provides solutions that enable our customers to assess power quality within their facilities. Our solutions help minimize energy expenses, enhance operational uptime, and promote sustainability.

Sustainability

Janitza supports you to capture:

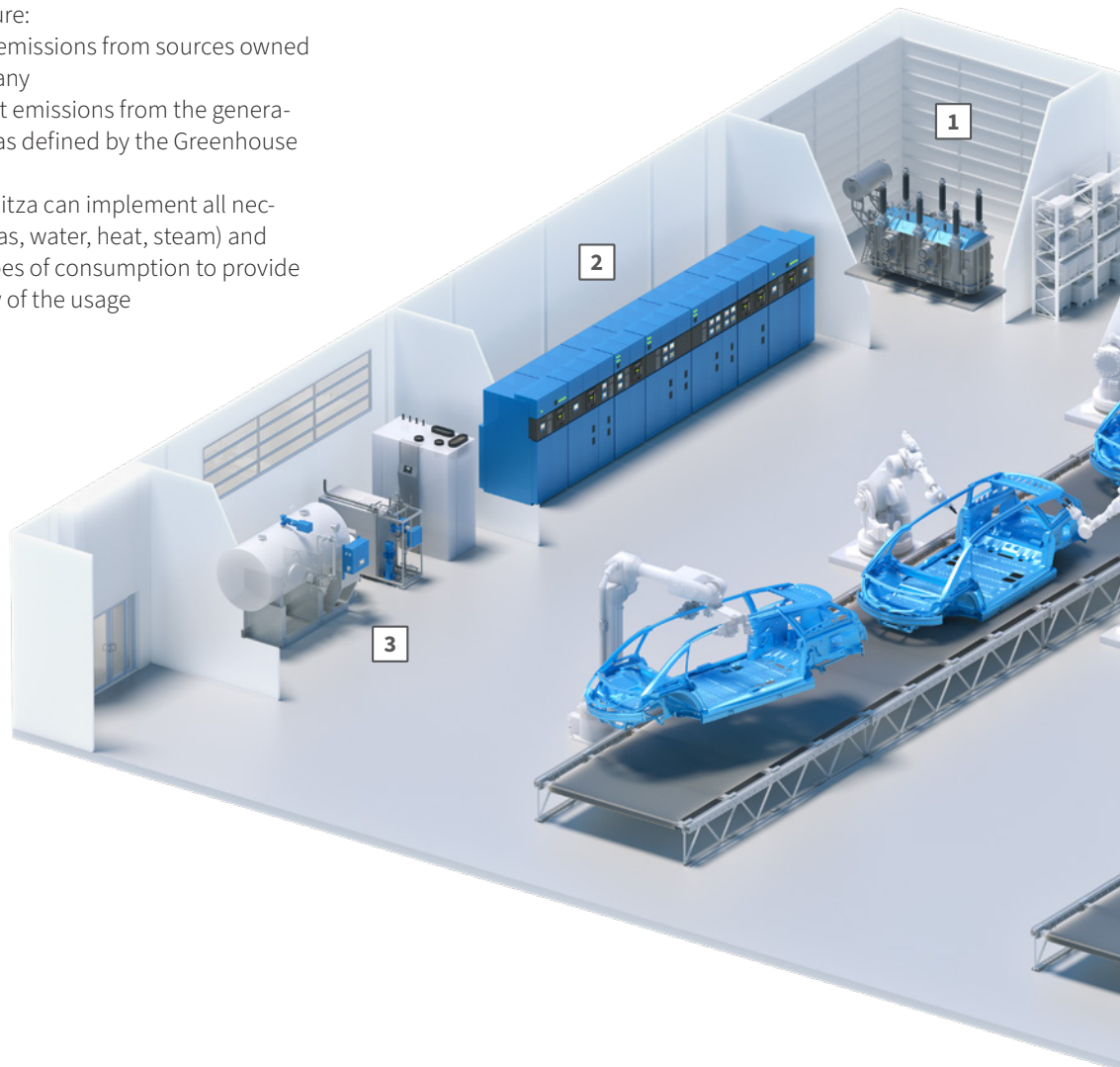
- Scope 1 emissions: Direct emissions from sources owned or controlled by the company
- Scope 2 emissions: Indirect emissions from the generation of purchased energy, as defined by the Greenhouse Gas (GHG) Protocol
- In project-based work, Janitza can implement all necessary meters (including gas, water, heat, steam) and continuously record all types of consumption to provide a comprehensive overview of the usage

ISO 50001 compliance

Janitza is ISO 50001 and ISO 14001 compliant and helps its customers to achieve and maintain compliance as well. ISO 50001 forms the normative basis of a certified energy management system and establishes a framework for continuous improvement, offering guidelines and specifications for effective implementation.

Power Supply Monitoring

Janitza provides a comprehensive range of power monitoring equipment and accessories designed to give you a thorough overview of your power supply. Our intelligent power analyzers enable you to make informed decisions to optimize energy usage and remain in compliance with industry standards, such as EN 50160 or IEEE 519 and IEC 61000 -2-4.



1 TRANSFORMER – INFEED

Level 1

- PQ Monitoring
- Recording of load currents

2 LV MDB

Level 2

- PQ Monitoring
- Detailed measurement of individual outputs
- RCM (Preventive maintenance, fire protection)

3 TECHNICAL ROOM

Heating, heating pump, water...

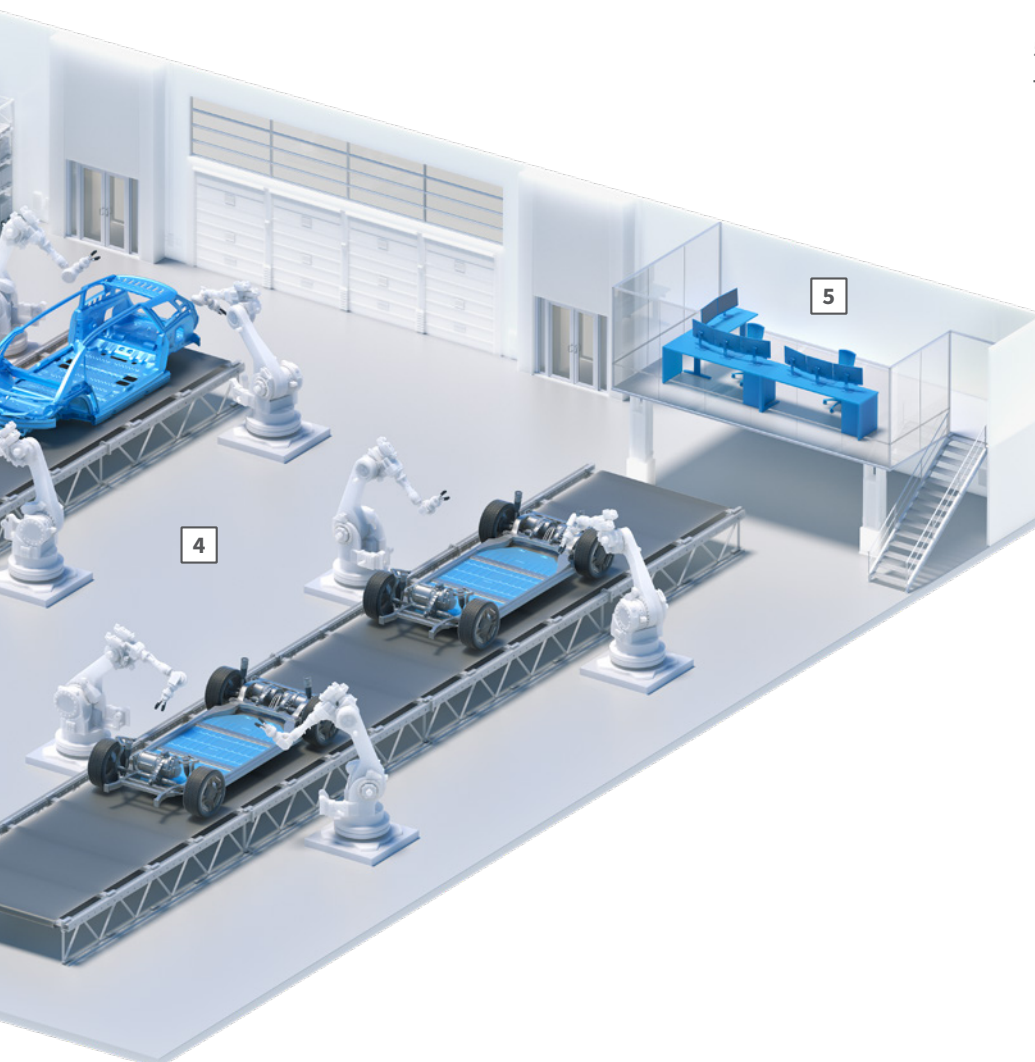
- Detailed recording of gas, water and heat

4 PRODUCTION HALL

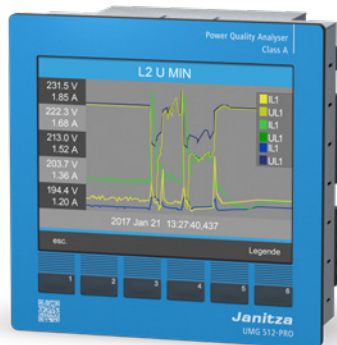
- Measurement of individual consumers directly at machine level and / or
- Measurement of individual consumers at the busbar
- Sub distribution for individual system parts etc.

5 CONTROL CENTER

- Data recording / analysis / visualization / alarming
- Connection to building management system (BMS) and/or process control system (PCS)



JANITZA AUTOMOTIVE MANUFACTURING PRODUCT HIGHLIGHTS



Part number: 5217003 48 ... 110 V AC / 24 ... 150 V DC*
5217011 95 ... 240 V AC / 80 ... 300 V DC*

UMG 512-PRO CLASS A-CERTIFIED POWER QUALITY ANALYZER

- Class A-certified according to IEC 61000-4-30
- Standard-compliant monitoring, e.g. 50160 and 61000-2-4
- Holistic appraisal of power quality, energy consumption and total residual current
- Monitoring and central storage of all relevant electrical energy and network data
- Integration via Ethernet, master function for Modbus RTU



Part number: 5236006 (UL) 95 ... 277 V AC / 90 ... 250 V DC*
5236007 24 ... 90 V AC / 24 ... 90 V DC*

UMG 96-PQ-L-LP MODULARLY EXPANDABLE POWER ANALYZER

- Color graphics display to show all relevant values
- Power quality threshold value monitoring and measuring up to 65th harmonic
- Low-power current inputs allow replacement of classic current transformers by smaller and less expensive ones
- Low-power transformers operate in mV range on secondary side - No converter disconnect terminal required



Part number: 5238001 (UL) External 24 V DC, PELV*
5238002 External 24 V DC, PELV*

UMG 800 MODULAR AND SCALABLE ENERGY ANALYZER

- Transparency of costs down to machine level
- Compact basic device (2 sub-units) with optional modules (1-4 sub-units) – perfect as retrofit solution
- Expandable to up to 96 current measurement inputs
- Integrated web server for simple commissioning, configuration and monitoring
- OPC UA, RS485, Modbus TCP/IP Gateway
- Cost-effective EMS expansion, e.g. ISO 50001 compliant



Part number: 5231003 External 24 V DC, PELV*

UMG 801 EXPANDABLE MODULAR POWER ANALYZER

- Continuous power quality monitoring according to EN 50160 and EN 61000-2-4
- Modular expandability to max. 22 three-phase output measurements, including neutral conductor + 4 multifunctional channels (RCM/temperature)
- Integration via Ethernet (OPC UA and Modbus TCP), master function for Modbus RTU
- Low-power module variants possible

*Supply voltage

GRIDVIS® POWER GRID MONITORING SOFTWARE

The scalable GridVis® software integrates the three application areas of energy management, power quality and residual current monitoring. GridVis® identifies potential energy savings and helps to optimize the utilization of operating equipment as well as detect production failures at an early stage.



ADVANTAGES

ACCOUNTABILITY

EN 50160 Power quality report

SAFETY

Alarm management, limit value monitoring

ENERGY MANAGEMENT

Pursuant to DIN ISO 50001, KPIs, contract management

CONNECTIVITY

OPC UA, CSV, REST API, M-Bus, Modbus

VISUALIZATION & DOCUMENTATION

Report editor, dashboards, reporting

NETWORK ANALYSIS & EVALUATION

Event browser, utilization and high availability reports, RCM reporting

EXPLORE OUR COMPREHENSIVE RANGE OF SERVICES TAILORED TO YOUR NEEDS

After designing, building, and implementing your technical solution, our support continues. This includes personnel training, system maintenance and support, continual education on best practices in safe energy management, and proactive expert guidance on our products and system solutions. We also conduct on-site power analysis of existing systems.

- Onsite inventory at headquarter in Germany and in Ashburn, VA, USA
- Support and training center
- Jasic/App programming and customized reports
- Online tutorials, videos, instruction guidelines
- Consulting design & project planning
- Onsite assistance
- Maintenance contracts
- Complete project solutions



ABOUT JANITZA

Janitza develops comprehensive energy measurement solutions that ensure transparent energy flows and monitor power quality. The global company, headquartered in Germany, provides individual solutions to meet specific customer requirements across a wide range of industries, including data centers, manufacturing, buildings & infrastructure, utilities, and renewable energy.

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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