

## Power Grid Monitoring Software – GridVis®

**GridVis®**



# GridVis® 9

Energy Management, Power Quality Analysis,  
Residual Current Monitoring

**Janitza®**

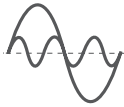
# POWER GRID MONITORING SOFTWARE

## ENERGY MANAGEMENT – POWER QUALITY – RESIDUAL CURRENT MONITORING

Implement the three application areas of energy management, power quality and residual current monitoring with the scalable GridVis® power grid monitoring software. GridVis® identifies potential energy savings and helps to optimize the utilization of operating equipment as well as detect production failures at an early stage. Numerous functions support the fulfillment of standards, the preparation of key figures

and the analysis of measured values. This makes the scalable, user-friendly software perfectly suited for developing standards-compliant energy, residual current and power quality monitoring systems, and it has been classified by the BAFA as energy management software that is funding eligible. Depending on your specific needs, there are three editions with different range of functions available.

### FUNCTIONS AT A GLANCE



#### NETWORK ANALYSIS & EVALUATION

Analyze and evaluate measurement data. Use numerous tools such as statistics, charts, heatmaps, Sankey diagrams and key performance indicators.



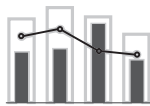
#### SAFETY & ALARM MANAGEMENT

Monitor limit values of measured variables, consumption data, residual currents and device communication. Escalation levels for needs-based alerting via email and web interface.



#### VISUALIZATION & DOCUMENTATION

Visualization according to your needs. Quickly and easily create dashboards without programming knowledge and use the report editor for custom-designed reports.



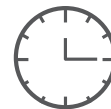
#### ENERGY MANAGEMENT

Certified according to ISO 50001. With Janitza GridVis®, you are in safe hands when it comes to issues such as funding opportunities or peak balancing issues according to SpaEfV.



#### CONNECTIVITY

Whether it's OPC UA, REST API or CSV, we offer many options for data import & export as well as data access. An open and future-proof system.



#### AUTOMATION

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

# EDITIONS OVERVIEW



For the latest version of the editions overview, please visit our website at [www.gridvis.com](http://www.gridvis.com).

	GridVis® ESSENTIALS	GridVis® STANDARD	GridVis® EXPERT	GridVis® CLOUD
<b>SYSTEM FUNCTIONS</b>				
Device configuration	•	•	•	–
Server-based service	–	•	•	–
Software as a Service (SaaS)	–	–	–	•
HTTPS encryption	–	•	•	•
User management	–	•	•	•
Alarm management	–	–	•	–
Monitoring of device communication	–	•	•	•
Database (MySQL, MSSQL)	–	•	•	–
Key performance indicators	–	–	•	–
Automation	–	•	•	–
Sending emails	–	–	•	–
Software-based measurement recording	–	•	•	•
<b>VISUALIZATION</b>				
Customized dashboards	–	•	•	–
Static dashboards	–	–	–	•
Sankey diagram	–	–	•	–
Hierarchy management	–	•	•	•
Customized list function	–	•	•	–
Energy and measurement analysis	•	•	•	–
Event/transient analysis	•	•	•	–
<b>REPORTS AND EXPORTS</b>				
Basic package	•	•	•	–
RCM (Residual current monitoring)	•	•	•	–
Power quality	•	•	•	–
Energy monitoring	–	•	•	•
Energy management	–	•	•	–
Customized reports	–	–	•	–
<b>CONNECTIVITY</b>				
Data import (CSV & MSCONS)	–	•	•	–
Data export (MSCONS)	–	–	•	–
REST API	–	•	•	–
OPC UA Client	–	–	•	–
Third-party Modbus device	–	–	•	•

# DATA VISUALIZATION

## CLEAR AND CUSTOMIZED DASHBOARDS

The Dashboard Editor for the Standard and Expert editions allows for the customizable design of dashboards. Save time and effort when creating your documents with the intuitive tools and drag-and-drop system. Customizable measured

values and templates help you to have an overview of the most important values. With the new dashboard period and customizable time periods for each object, you can quickly and easily compare the values from different time periods.



## ENERGY MONITORING PORTAL

The GridVis® Cloud Edition offers an easy-to-use interface for energy monitoring. Combined with the Cloud Connector, basic consumption data is collected and clearly prepared. You benefit from worldwide access to your data. Conveniently view CO<sub>2</sub> emissions and energy costs on predefined dashboards and compare values across different time periods.

## CUSTOMIZE REPORTS

The GridVis® Expert Report Editor enables you to customize reports, archive them and make them available as PDFs in compliance with standards. Additionally, they can be sent automatically via email. Embed images and logos and use various objects, such as charts, in the design of your reports. Reports such as the meter reading cycle and utilization reports are now also available in the web application.



# ESSENTIALS EDITION

## FUNCTIONS OF THE ENTRY-LEVEL PACKAGE

The free GridVis® Essentials offers basic functions for the configuration of Janitza energy measurement devices as well as a graph function for the visualization of current and historical measured values. In addition, a tool for evaluating events and transients is included. Standard reports, includ-

ing the EN 50160 evaluation, are available. This edition also includes residual current monitoring (RCM) reports with compatible hardware. CSV/XLS data exports make it simple for you to use GridVis® data in creating your own reports.



### SYSTEM FUNCTIONS

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#### Device configuration

Configure your measurement devices using numerous settings and parameterization options.

### VISUALIZATION

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#### Event browser

Events and transients can be analyzed easily and in detail using graphs, the CBEMA curve and statistics.

#### Device overview

Overview of all measurement devices as well as a search and filter function.

### DOCUMENTATION

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#### Basic data export

CSV exports and various reports (commissioning report, energy report and EN 50160 report)

#### RCM data exports

The RCM report allows clear and uncomplicated display of measurement data from residual current monitoring.

# STANDARD EDITION

## COMPREHENSIVE FUNCTIONS

In addition to the basic functions of the Essentials edition, GridVis® Standard has several options for visualizing data and is suitable for implementing an energy management system certified according to ISO 50001. Extensive system functions facilitate measurement data management, cre-

ating a quick overview and simplifying processes. Data exports in the form of various reports facilitate evaluation. The data import function enables you to import external data such as turnover or quantities into GridVis®.



## SYSTEM FUNCTIONS

### Logic

Use logic links and operations to create cost centers or virtual measurement points.

### Automation & monitoring

Data readout and tariff management and notifications in the event of faulty device communication. Online recorder tool for recording.

### Databases & users

Use database actions and MSSQL/MySQL drivers. The user management allows you to set up roles and permissions.

## VISUALIZATION

### Dashboard Editor

Build custom dashboards and visualize measured values with numerous visualization objects.

## CONNECTIVITY

### Data import

Data imports from CSV or MSCONS files.

### REST API

Interface for developers and application engineers.

## DOCUMENTATION

### Basic data export

CSV exports and various reports (commissioning report, energy report and EN 50160 report)

### RCM & EnMS data export

RCM report for clear presentation of the measurement data. For energy management, the utilization report and the energy bill are available.

### PQ data export

Data exports for power quality assessment, such as the high availability report, the LET report or the EN 50160 annual evaluation as well as the NeQual data export.

# EXPERT EDITION

## FULL RANGE

GridVis® Expert provides the full range of GridVis® functions. This includes additional visualization options, system functions and optimal adaptation to your needs. You can create key performance indicators as well as quantity flow diagrams and combine them clearly. Your data can be imported securely and easily with the OPC UA Client. Additionally,

third-party devices can be integrated via Modbus/TCP or Modbus/RTU. Furthermore, other protocols and interfaces are also supported by the software. This means GridVis® Expert enables optimal processing of your data.





## SYSTEM FUNCTIONS

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### Active Directory

Connection to a central Windows user management using LDAP protocol is possible.

### Alarm management

Monitoring of data and communication as well as alerting via different channels; logbook and escalation levels are included.

## VISUALIZATION

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### Other visualization objects

Other useful extensions that can be placed on dashboards include CO<sub>2</sub> emissions, regression analysis and heatmaps.

### Sankey diagram

Creation of quantity flow diagrams. Visual representation of energy consumption based on historical values and live values.

### Key performance indicators (KPI)

Creation and evaluation of key performance indicators. Recognize changes and improvements in the energetic baseline (EnB).

## DOCUMENTATION

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### Report editor

Create reports based on your own preferences, archive them within the software and download them as PDFs.

### RCM & EnMS data export

RCM report for clear presentation of the measurement data. For energy management, the utilization report and the energy bill are available.

### Basic and PQ data export

CSV exports and basic exports, such as the commissioning report. Evaluation of the power quality, for example, via the high availability report or the NeQual data export

## CONNECTIVITY

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### Third-party Modbus devices

Integrate third-party devices via Modbus/TCP or Modbus/RTU (RS485).

### OPC UA Client

Integration of OPC UA servers to access their data.

### Comtrade & MSCONS Data export

Events and transients can be filed in the COMTRADE format, consumption data in the MSCONS format.

# CLOUD EDITION

## ENERGY MONITORING PORTAL

The GridVis® Cloud is perfectly suited for central energy monitoring. It provides convenient, standardized dashboards for a quick overview. Have your energy costs, consumption and CO<sub>2</sub> emissions automatically calculated and displayed. The load profile also gives you a direct over-

view of the composition of the energy that you consume. The Cloud Connector serves as an interface between the GridVis® Cloud and the measurement devices. The GridVis® Cloud is particularly user-friendly for those who prefer a simple consumption overview.

Janitza ID profile →  
 Help →  
 Release notes →  
 Switch project  
 Logout

Janitza®

Central user and project management with password-secured access.

Standardized diagrams - with no additional configuration needed

Customizable navigation:  
 Fast data preparation based on your own patterns.

Contract	CO <sub>2</sub> emissions	Price
Contract Wetzlar Sample company GmbH	2,33 g/kWh	0,23 €/kWh
Gas contract Sample company GmbH	2,33 g/kWh	0,11 €/kWh

Electricity, gas, water:  
 All media at a glance

## SYSTEM FUNCTIONS

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### Web-based access

Access via standard browser on a PC or laptop with no VPN needed. Optimum display even on a tablet.

### Supported media

In addition to generated and consumed electricity, the GridVis® Cloud also supports the recording and display of gas and water.

### Software-based recording

Online recorder for recording measured values from measurement devices without measured value memory or from third-party devices.

## VISUALIZATION

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### Dashboards

Predefined dashboards and media-related display as well as filter display to one measurement point.

### List function

Device overview with a search and filter function. Hierarchical display of measurement points with automated consumption totaling.

### Energy consumption analysis

Display graphs over various comparison periods and an aggregation function for easy evaluation.

## CONNECTIVITY

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### Cloud Connector

Transfer measurement data automatically to the cloud with the Cloud Connector.

### Data import

Manually enter data that cannot be transferred via the Connector.

### Modbus devices

Integrate third-party devices via Modbus/TCP or Modbus/RTU (RS485).

## DOCUMENTATION

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### CO<sub>2</sub>-emissions

Enter calculation values for CO<sub>2</sub>-emissions and display CO<sub>2</sub>-emissions generated.

### Calculate costs

Save contracts and conversion factors and have costs automatically calculated.

# CUSTOMIZED DASHBOARDS

## VISUALIZE ENERGY AND MEASUREMENT DATA EASILY AND PROFESSIONALLY

With the all new Dashboard Editor of GridVis® 9, you can now create individual dashboards that are completely tailored to your personal requirements even more easily and comprehensively. With various visualization objects, you can keep track of your measurement and energy values

at any time and clearly display key performance indicators. Whether it's live values or historical values, with the clear display you can see an overview and easily compare data from different time periods and measurement points.



## SELECTED FUNCTION HIGHLIGHTS

### DASHBOARD TIME PERIOD

Change the dashboard's centrally shown time period. Individual visualization elements can deviate from the central dashboard period, for example, to compare and display measurement and energy data from different periods.

### GRID POSITIONING

With the Dashboard Editor and the new positioning tools, place visualization objects based on your needs, using the adjustable grid and the tools for aligning the objects.

### OBJECT LIST

Lock, duplicate, hide, select, delete - with the object list you can control all objects exactly as needed. Using the practical drag and drop function, you can also control which objects are in the foreground or background of the dashboard.

### REUSE DASHBOARDS FOR ANY DEVICES

Save time and reuse dashboards. In just a few clicks you can configure your dashboards with the data from another measurement device. This eliminates the need to reconfigure.

### PIN MEASURED VALUES

Always have your important measured values in view. Easily pin measurement devices and value pairs to keep them visible when using a template.

### AUTOMATIC SCALING

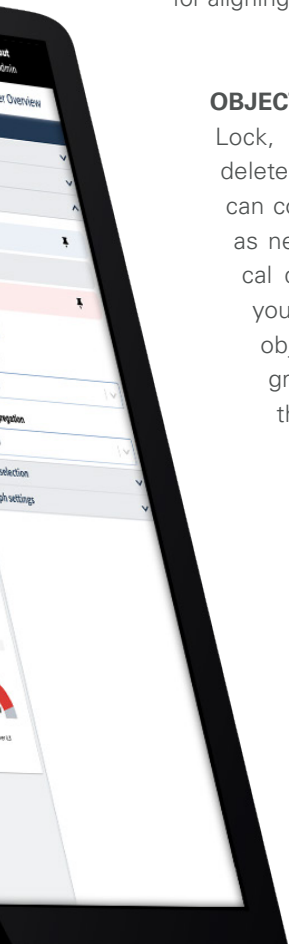
Your dashboards will display optimally on any device, automatically scaled to fit the size of the display.

### IMPORTING & EXPORTING

Dashboards can be exported with just one click and archived away from GridVis® or reused on another system. Importing an existing dashboard saves you a lot of time, and the device swap feature allows you to instantly reuse your dashboard even on a system with different measurement devices. This enables you to create consistent templates and use them across your sites for all of your projects.

### CUSTOMIZED DESIGN

Customize your dashboard's design to fit your personal needs. Whether diagrams, text fields or images, you can place individual visualization objects on the dashboard via drag and drop.



# CUSTOMIZING REPORTS

## STANDARDS-COMPLIANT DOCUMENTATION

Create reports and overviews directly in GridVis®, without detours via other programs. With the Report Editor, you can visually prepare your measurement data, print it or save it as a PDF. Various objects are available for visualization, such as image elements to include your logo or text elements to add additional information. The measurement data can be displayed using diagrams and can be flexibly adapted to your needs. The elements are integrated according to the drag and drop principle. The page view shows the final representation in digital (PDF) and printed form.

GridVis® data exports, such as the meter reading cycle report or the commissioning report, can be accessed in the GridVis® Web application. All executed data exports (whether manual or automated) are stored in a versioned manner in the GridVis® database and are available as a PDF or XLS file.

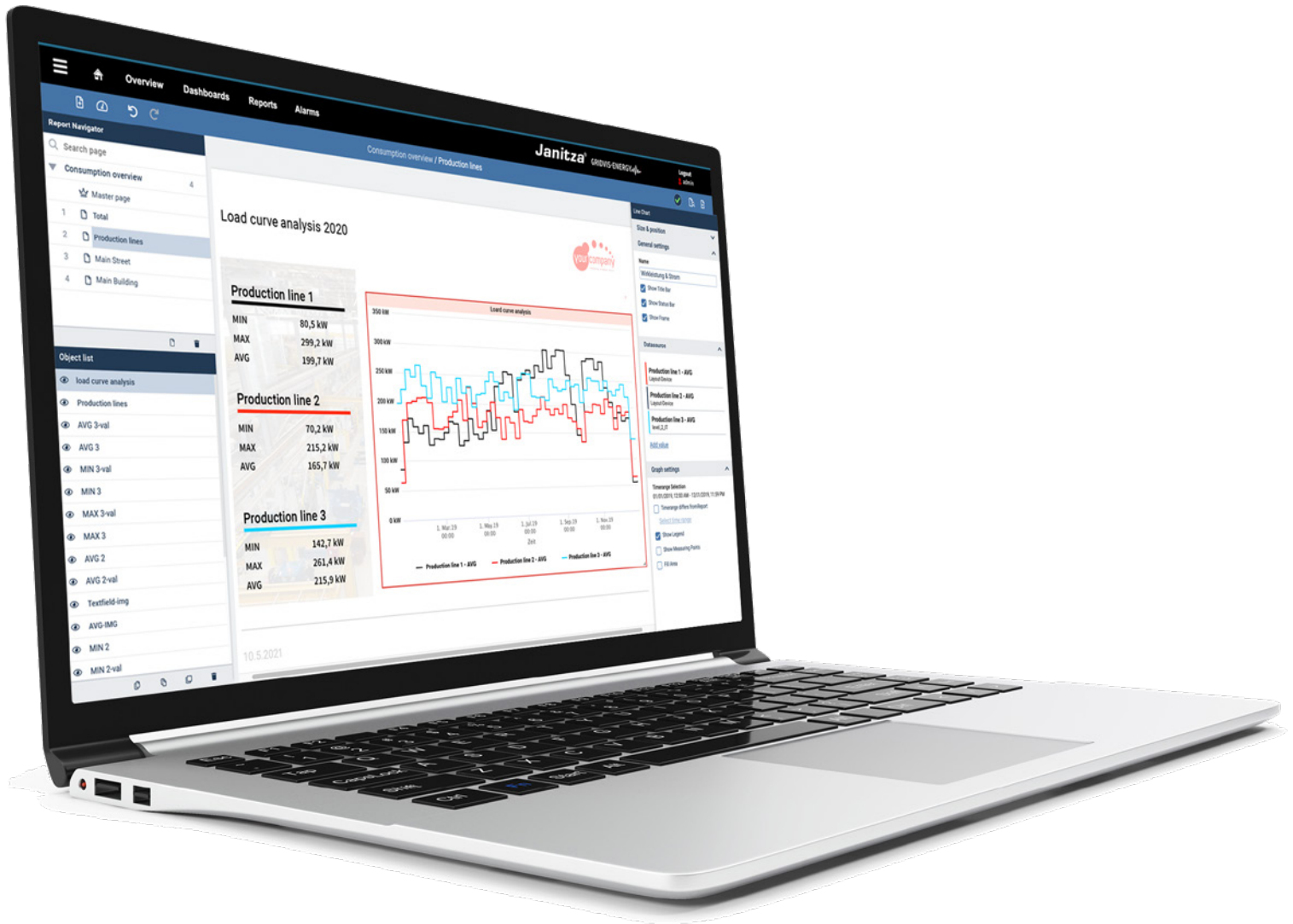
## OVERVIEW

- Easy operation using drag and drop
- Complete freedom when designing your reports
- Create layouts for recurring reports
- Save all relevant information in PDF format or print directly
- Define observation periods flexibly and easily
- Data exports/reports available at any time in the web application





# Report Editor



## CUSTOMIZED DESIGN

Customize the design of your reports to fit with your corporate identity. Whether diagrams, text fields or images, you can drag and drop individual objects onto the pages and place them anywhere. Include logos and important information. The page view corresponds to the output in digital form (PDF) and in printed form. An object list further simplifies working with multiple objects.

## DOCUMENTATION

You can save your reports as PDF, print them directly or archive them. This makes it easier to share and file.

## ALWAYS AVAILABLE

The standard data exports, such as the commissioning, utilization or high availability reports, are available in the GridVis® web application. Thus, you always have access to important reports and information.

## PERFECTLY PREPARED MEASUREMENT DATA

Configure individual objects, e.g. diagrams, exactly according to your requirements. You can directly select the measurement devices, measured values and time periods and adapt the display, such as size or colors, to your needs. In addition, headlines can be created for individual objects and graphs.

## SAVE TIME USING TEMPLATES

Save yourself time and work. Create **master pages** to include elements such as logos or dates on each report page with fixed position. This way, you benefit from a consistent design, no matter how many pages your report has.

Create **layout pages** that apply to multiple report pages to present data in the same design.

# ONLY TWO STEPS TO GET YOUR OWN GridVis®

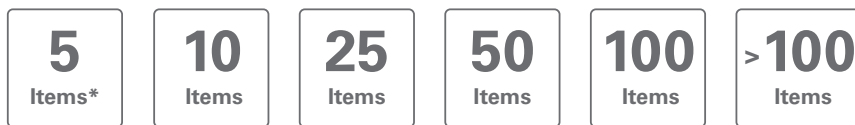
## 1. SELECT THE GridVis® EDITION



There is no limit on the number of items with Essentials, so the following step can be omitted.

## 2. SELECT THE BASIC PACKAGE

Depending on the size of the project, different basic packages can be selected. The package size is specified in items. The Standard and Expert editions include a one-year update time period including current releases. The basic package of Edition Cloud includes a usage period of 12 months.



\* 5 items are only available for GridVis® Cloud

### What are items?

Items are used to describe the size of a project. The larger the project, the more items needed. Items are:

<p><b>Devices</b> (UMG 801 measurement device &amp; UMG 20Cm-Module) <i>Virtual devices are not counted as items</i></p>	<p><b>Users</b> (created users)</p>	<p><b>Data import<sup>1</sup></b> (OPC, CSV, MSCONS groups)</p>
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An item corresponds to a measurement device, a created user or a data import. Modbus devices from third party suppliers as well as the modules of the UMG 801 and UMG 20CM also count as items. You can add more items at any time. An item enhancement enables you to cost-effectively increase your project size.

<sup>1</sup> A data import or third-party Modbus device can be integrated with up to 50 configured variables



## OPTIONS, UPGRADES AND EXPANSIONS

### Update time period / extend usage period (available for Standard & Expert / Cloud):

You can purchase an extension of your update time period (Standard & Expert) or your usage period (Cloud) for 1 or 3 years at any time. Here, too, you can choose from various package sizes. The purchased packages are then charged and credited based on your existing items and the previous expiry date. Never miss a day of measurement.



### Upgrade to GridVis® Expert (available for Standard):

An upgrade can expand the functional scope of GridVis® Standard to GridVis® Expert. The upgrade is available anytime. When you upgrade, the update time period is automatically extended by 12 months. Please note that the upgrade depends on the number of items.

### Item extension (available for Standard, Expert and Cloud):

The basic packages can be flexibly expanded with additional items.



\* 5 items are only available for GridVis® Cloud

### Item calculation using the example of GridVis® Standard

**GridVis®**

Measurement devices	50
Modules	10
GridVis® users	2
Data import	1
<small>One data import can contain up to 50 variables or measured values per group</small>	
<b>Total items</b>	<b>63</b>
Item packages required	<b>50 + 25 = 75</b>
Items still available	12

# MULTIPROTOCOL SERVER

## INCREASE CONNECTIVITY

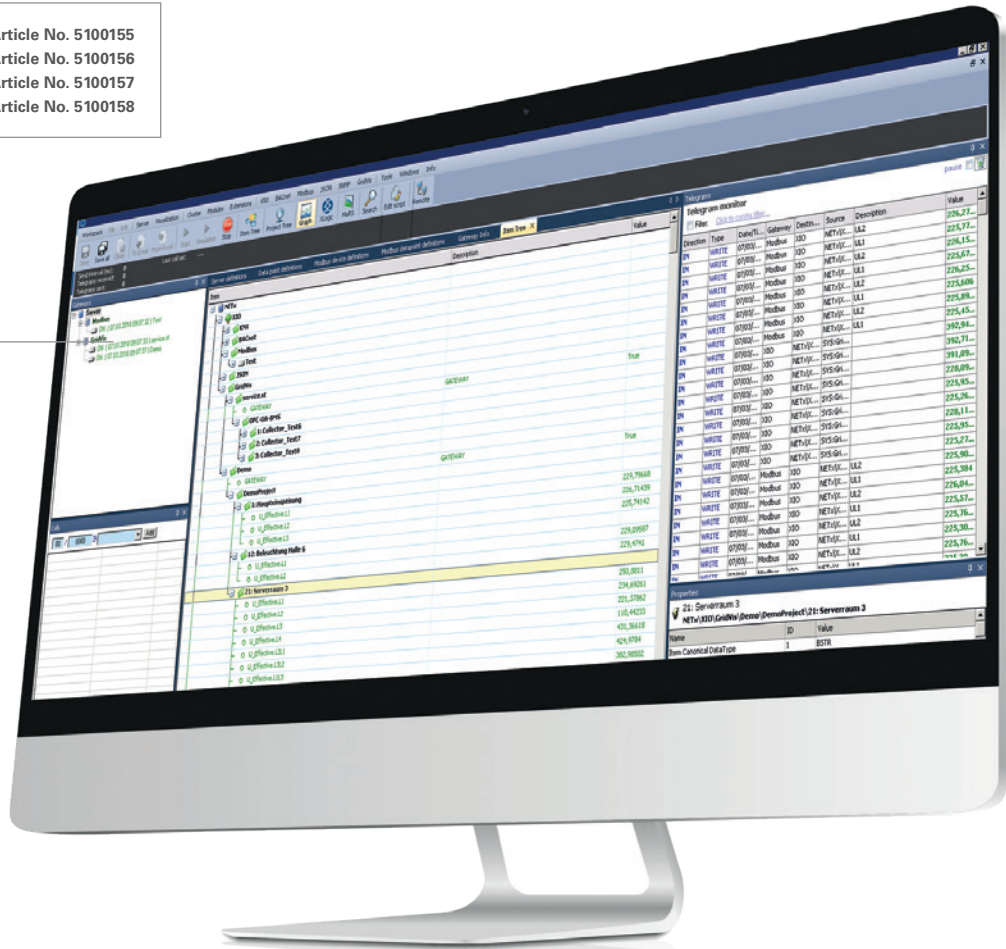
Extend the connectivity of GridVis® with the Multi Protocol Server (MPS) from NETxAutomation offer measurement data on OPC UA level. The Multi Protocol Server from NETxAutomation with integrated GridVis® driver is exclusively available from Janitza and can be used in addition to the OPC UA client.

The server enables direct access to measurement data and key performance indicators of GridVis®. Clear advantages of the integrated driver include the little setup effort required and the high availability of all measurement data. In addition, the complete GridVis® measurement device structure is available directly in the OPC UA tree. Establishing multiple GridVis® projects is also supported. OPC UA clients,

including the GridVis® OPC UA Client, building management systems, SCADA systems, ERP systems and many more, can thus process online data from GridVis®. In addition to the direct GridVis® connection, the Multi Protocol Server offers KNX, BACnet, Modbus, SNMP Traps V1/V2/V3, OPC, MQTT as well as logic functions, which are included in the scope. Janitza's specialists are well-trained to support you in the installation and commissioning of the server upon request.

Note: The Multi Protocol Server is a stand-alone application and can be purchased in addition to GridVis®. Billing is based on required data points. We would be delighted to provide you with a customized offer.

Multi Protocol Server 1000	Article No. 5100155
Multi Protocol Server 2500	Article No. 5100156
Multi Protocol Server 5000	Article No. 5100157
Multi Protocol Server 10000	Article No. 5100158



# GridVis® COLLECTOR

## MOBILE DATA READOUT

As a mobile unit, the GridVis® Collector provides the option of reading measurement data from Janitza meters without an on-site communication link. This data can be compared and evaluated with other measurement points in a project. With a battery life of up to 9 hours, the GridVis® Collector can manage up to 500 meters. Its installation is easy to understand and can be performed in a few simple steps by an electrician.

The measurement data can be synchronized with locally installed GridVis® via Ethernet or WLAN.

The GridVis® Collector provides the ideal solution for collecting measurement data in distribution substations or other self-supporting electrical distributions that have no radio or network connection.

GridVis® Collector Article No.: 5100400



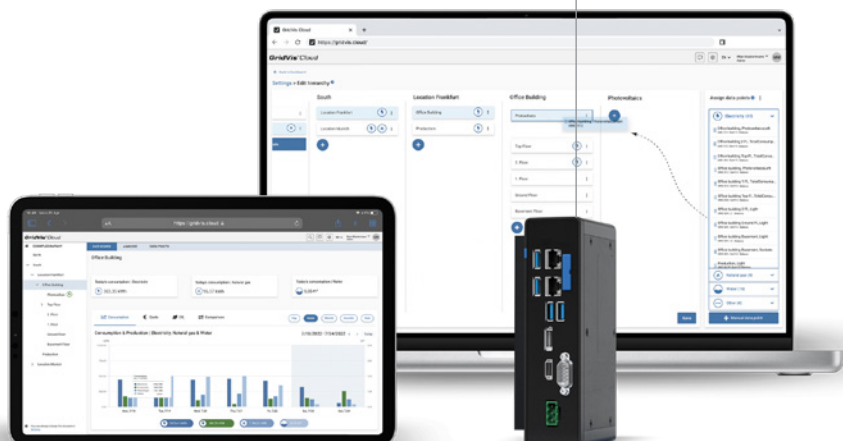
## CLOUD CONNECTOR

The Cloud Connector is the interface between the measurement devices and the GridVis® Cloud Portal. It ensures that on-site data are packaged and securely transferred to the Cloud, so you can access your information anytime, anywhere.

Installation is quick and easy thanks to the presets. The Cloud Connector connects to the local network completely automatically and the Janitza Ethernet devices are also detected automatically.

To connect to the energy monitoring portal, a one-time login to the cloud must be made via the web front-end of the connector. Afterwards, the connected devices and their status can be retrieved and additional measurement devices can be integrated manually. The energy readings are automatically transmitted to the Cloud cyclically, allowing them to be retrieved as needed.

GridVis® Connector Article No.: 5100420



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The latest version of the brochure is available at [www.janitza.com](http://www.janitza.com).