SIEMENS

SIMATIC

SIMATIC Energy Manager Basic V7.2 - Operation

Operating Manual

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Legal information

Warning notice system

This manual contains notices you have to observe in order to ensure your personal safety, as well as to prevent damage to property. The notices referring to your personal safety are highlighted in the manual by a safety alert symbol, notices referring only to property damage have no safety alert symbol. These notices shown below are graded according to the degree of danger.

⚠ DANGER

indicates that death or severe personal injury **will** result if proper precautions are not taken.

⚠ WARNING

indicates that death or severe personal injury **may** result if proper precautions are not taken.

⚠ CAUTION

indicates that minor personal injury can result if proper precautions are not taken.

NOTICE

indicates that property damage can result if proper precautions are not taken.

If more than one degree of danger is present, the warning notice representing the highest degree of danger will be used. A notice warning of injury to persons with a safety alert symbol may also include a warning relating to property damage.

Qualified Personnel

The product/system described in this documentation may be operated only by **personnel qualified** for the specific task in accordance with the relevant documentation, in particular its warning notices and safety instructions. Qualified personnel are those who, based on their training and experience, are capable of identifying risks and avoiding potential hazards when working with these products/systems.

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Siemens products may only be used for the applications described in the catalog and in the relevant technical documentation. If products and components from other manufacturers are used, these must be recommended or approved by Siemens. Proper transport, storage, installation, assembly, commissioning, operation and maintenance are required to ensure that the products operate safely and without any problems. The permissible ambient conditions must be complied with. The information in the relevant documentation must be observed.

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Disclaimer of Liability

We have reviewed the contents of this publication to ensure consistency with the hardware and software described. Since variance cannot be precluded entirely, we cannot guarantee full consistency. However, the information in this publication is reviewed regularly and any necessary corrections are included in subsequent editions.

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Introduction 1

1.1 Security information

Siemens provides products and solutions with industrial security functions that support the secure operation of plants, systems, machines and networks.

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens' products and solutions constitute one element of such a concept.

Customers are responsible for preventing unauthorized access to their plants, systems, machines and networks. Such systems, machines and components should only be connected to an enterprise network or the internet if and to the extent such a connection is necessary and only when appropriate security measures (e.g. firewalls and/or network segmentation) are in place.

For additional information on industrial security measures that may be implemented, please visit (http://www.siemens.com/industrialsecurity).

Siemens' products and solutions undergo continuous development to make them more secure. Siemens strongly recommends that product updates are applied as soon as they are available and that the latest product versions are used. Use of product versions that are no longer supported, and failure to apply the latest updates may increase customers' exposure to cyber threats.

To stay informed about product updates, subscribe to the Siemens Industrial Security RSS Feed visit (http://support.automation.siemens.com).

1.2 Note on the EU General Data Protection Regulation (GDPR)

Siemens adheres to the principles of data protection, in particular the principle of data minimization (privacy by design). For this product, SIMATIC Energy Manager, this means: The product processes/stores the following personal data:

User name, first name and surname, e-mail address, department, address, country, phone number and user role. In addition, relevant changes to the configuration, such as data points, MEVAs/KPIs, reports or changes to measured values are logged together with time stamps and user information.

The above data is required for login, internal user administration (the authorized user can see the role and status of other users) and audit trail.

The storage of data is appropriate and limited to what is necessary to identify the authorized operators and to meet basic audit trail requirements.

The above data will not be stored anonymously or pseudonymized, as the purpose (identification of the operating personnel) cannot be achieved otherwise. The data will be used only within the product and will not be automatically passed on to third parties or unauthorized persons.

Our product does not provide for automatic deletion of the above data.

Regarding cookies, please refer to the Siemens cookie guidelines (http://www.siemens.com/cookie-policy-en).

1.3 Why we need energy management

Energy costs take a substantial slice in the cost balance of many companies. However, it is possible to significantly reduce this cost factor by optimizing energy consumption and taking advantage of the benefits offered by the liberalized energy market. Investments in this optimization process can be amortized on a short-term basis in many cases. Utilization of the entire spectrum of energy cost reduction demands integrated system solutions: the range covers the monitoring, analysis, and evaluation of the relevant energy and operational data, as well as energy forecasts and optimization functions. Under the aspect of a continuous adaptation process that is enforced based on requirements of the liberalized energy market, it must be possible to adapt the systems used without considerable investment. The following sections provide more arguments in favor of energy management.

- Rising energy costs.
- Only partial transparency across infrastructure processes, preventing an overall assessment of all processes and media.
- Cost centers or cost units change continuously.
- The existing heterogeneous system environment poses high demands on interface management.
- Equipment for automatic measurement data recording is not available in the relevant areas.
- Poor transparency prevents further optimization of energy supply contracts.
- In many cases, energy costs represent an extremely high portion of unmanaged production costs.

1.4 What can Energy Manager Basic contribute to the topic of energy management?

Energy Manager Basic is the ideal entry-level solution for a comprehensive energy management approach. Energy Manager Basic can be updated to Energy Manager PRO. Thanks to its flexible **scalability**, Energy Manager PRO can serve both medium-sized companies and large corporations with location-spanning requirements.

The **interface management**, which can be configured by the user, provides direct interfaces to Siemens products such as OPC UA, WinCC, PCS 7, Modbus and Energy Suite. At the interfaces, configuration synchronization of the data points is supported.

Functions for **data plausibility checks** and various substitute value strategies are available to achieve a high-quality database.

Transparency of the energy flows in all types of media in a company is indispensable for energy management. Energy Manager Basic is the ideal tool for calculating **energy and material balances** as well as **key figures** that can be used to compare different processes or even different operations.

Only the allocation of energy costs based on the cost-by-cause principle generates **cost transparency** and increased awareness of the topic of energy costs. The **Cost Center Management** tool of Energy Manager Basic maps cost centers and allocates consumption accordingly based on distribution codes, area data, employees, or measured data.

It also enables the mapping of cost center changes during the year, as the calculation logic and all changes are recorded. **Reproducibility** of report results is of particular importance in this area. All changes made to the data are also recorded. This means that users can always rely on the old data for their evaluations.

An automatic reporting system that is easy to configure forms a key factor that results in a significant reduction of personnel workload. At the same time, the quality of the reports is greatly improved.

1.5 Areas of application

Energy Manager Basic acts as a link between the process and office environments, focusing on energy management in industry.

1.6 Preface

Purpose of this documentation

This documentation contains information pertaining to the functionality of Energy Manager Basic. Energy Manager Basic is a functionally limited version of Energy Manager PRO Web. The complete functionality of Energy Manager PRO Web is described in this manual. If a function described in this manual is not available to the Energy Manager Basic user or only partially available, this is indicated by user prompts in the appropriate place. The user information a limited function of Energy Manager Basic do not apply to the Energy Manager PRO user.

This documentation is aimed at plant managers, planners, and plant operators as well as service and maintenance personnel.

Basic knowledge required

General knowledge in the fields of IT, automation engineering, as well as general electrical engineering is indispensable for comprehension of this manual.

⚠ WARNING
Working with electrical systems
Energy Manager Basic does not exempt users from responsibilities with respect to the handling of electrical systems.

Moreover, it is presumed that users have appropriate knowledge related to the use of computers running on a Windows operating system.

Scope of this manual

This manual is valid for Energy Manager Basic.

Guides in the manual

The manual contains the following guides that support rapid access to the information you require:

- A complete table of contents and a list of all tables are available in the opening section of the manual.
- An overview of the topical contents is provided at the beginning of each chapter.

Basics

2

2.1 Introduction

Overview

Energy Manager Web is a browser-based user interface for the Energy Manager energy management system. Energy Manager PRO Web is used to access Energy Manager PRO via the Internet/Intranet.

The administrator configures the data you may access in Energy Manager.

Note

Installation of Energy Manager Web

You can find information on the installation of Energy Manager Web in the installation manual "Energy Manager - Installation", section "Setting up Energy Manager Web".

NOTICE
Secure connection between web client and web server If you configure the connection between web client and web server, use only secure Cipher Suites. A list of secure Cipher Suites can be found in the reference under "Cipher Suites".

Login and logout

In order to work with Energy Manager Web, you need a user name, a password associated with it, and rights to the data that you want to view.

For security reasons, a user is automatically logged out after a period of inactivity. The duration of inactivity is configurable globally in the Web.config file or in Microsoft Internet Information Services (IIS).

User interface of Energy Manager Web

The following figure shows the user interface of Energy Manager Web:

① Navigation area

In the navigation area, select the objects you want to view or edit. Use the menu or Quicklinks to navigate. The navigation options available depend on your user rights.

② Detail area

In the detail area, Widget Dashboards and objects such as reports or charts are displayed. The selection in the navigation area and the selected query type and observation period determine which objects are displayed.

Tasks in Energy Manager Web

Use Energy Manager Web to handle the following tasks:

- Viewing, configuring and creating:
  - Reports
  - Charts
  - Matrices
  - Widget Dashboards
  - Folder
- Opening documents and uploading new documents in Energy Manager
- Viewing and editing energy efficiency measures
- Manual measurement data value acquisition
- Creation and configuration of data sources, data points, parameters and key performance indicators
- Configuring the system settings

Note

Functionality of Energy Manager Basic

The configuration of energy efficiency measures and file management is not available in Energy Manager Basic.

See also

Navigation (Page 20)

Login (Page 15)

Definition of home page (Page 18)

Configuration of the analysis objects (Page 76)

Manual data acquisition (Page 62)

Project configuration (Page 157)

Settings (Page 229)

Data analysis (Page 31)

2.2 Login

Overview

You can open the Energy Manager Web home page at the following URL:

- http://<Energy Manager Webserver>/EnMPROWeb

Contact your administrator to obtain the address or name of the Energy Manager Web Server.

Energy Manager Web supports secure communication with the Energy Manager Web Server via https. Your administrator can provide you with all information needed to use https communication.

If you log into Energy Manager Web with Active Directory, check the following settings of the web browser, if necessary:

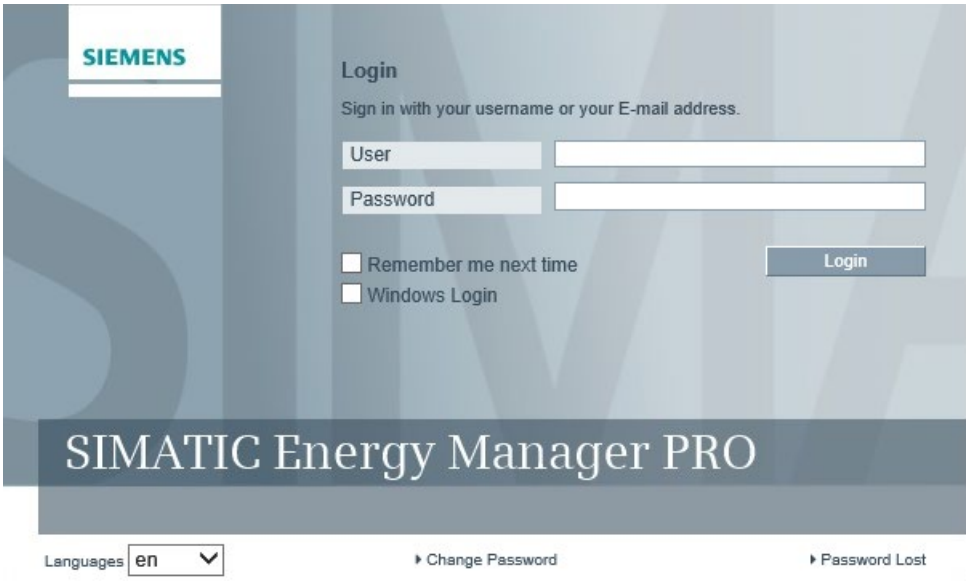
- Microsoft Internet Explorer:
  - "Internet options > Advanced > Security > Enable Integrated Windows Authentication".
- Mozilla Firefox:
  - Enable the URL of Energy Manager Web in "about:config" of the web browser.
  - Open Energy Manager Web via "Fully-Qualified Host Name".

You can find additional information in the section "Setting up Energy Manager Web" in the installation manual "Energy Manager - Installation".

Procedure

1. Start an Internet browser and enter the appropriate URL .

   The login page of Energy Manager Web opens.



2. If the "Single Sign On" option is activated for your user account or your user group, the user name and password do not have to be entered. Click the "Windows logon" button instead. You are then logged into Energy Manager PRO Web with your Windows user name and your Windows password.

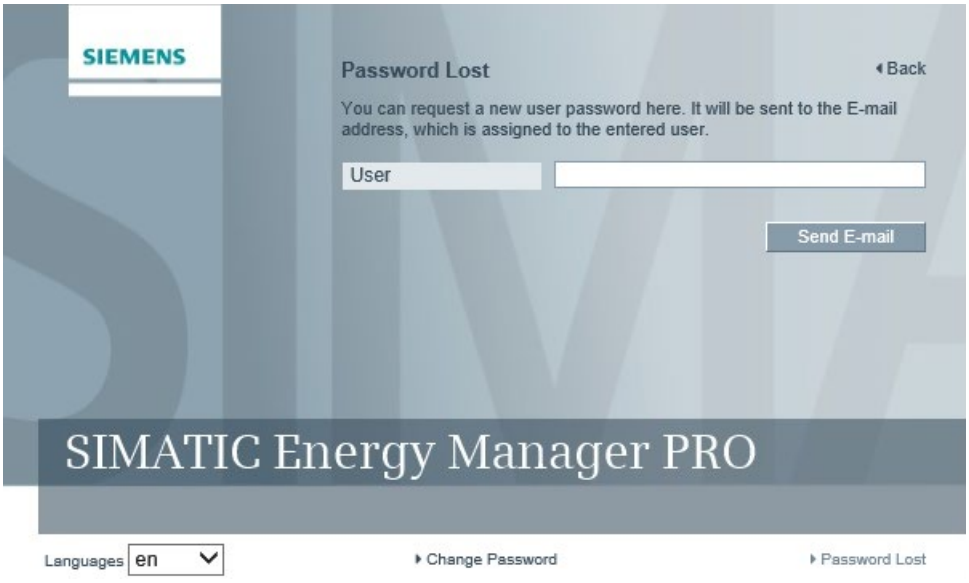
   Note
   Functionality of Energy Manager Basic
   The ""Single Sign On" option is not available in Energy Manager Basic.

3. If the option "Single Sign On" is not activated for your user account, enter the user name and password.

   To do this, use your login information for Energy Manager.

4. Activate the "Remember user name" check box to save the login data for the next authentication.
5. Select the language in the "Languages" drop-down list, if necessary. You can select the following languages:
   - German
   - English
   - Spanish
   - French
   - Italian
   - Chinese
6. If you want to change your password, click "Change Password".
7. If you want to generate a temporary password, click "Password Lost".

   The "Password Lost" page is opened.



8. Click "Login".

Result

You are now logged in to Energy Manager Web .

Changing passwords

You can change your Energy Manager password in the login dialog. To change it, you need your current password or a temporary password.

Note

You will be separately notified via email regarding a password change. If you have received such an email, without having changed your password, your user account may have been hacked. Please contact your administrator in this case.

Forgot password

If you have forgotten your password, you can have a temporary password generated. The temporary password will be sent by email to the email address that is stored in your Energy Manager user account.

If you have received the email with the temporary password, click "Change password" in the login dialog.

See also

Introduction (Page 12)

Creating users (Page 243)

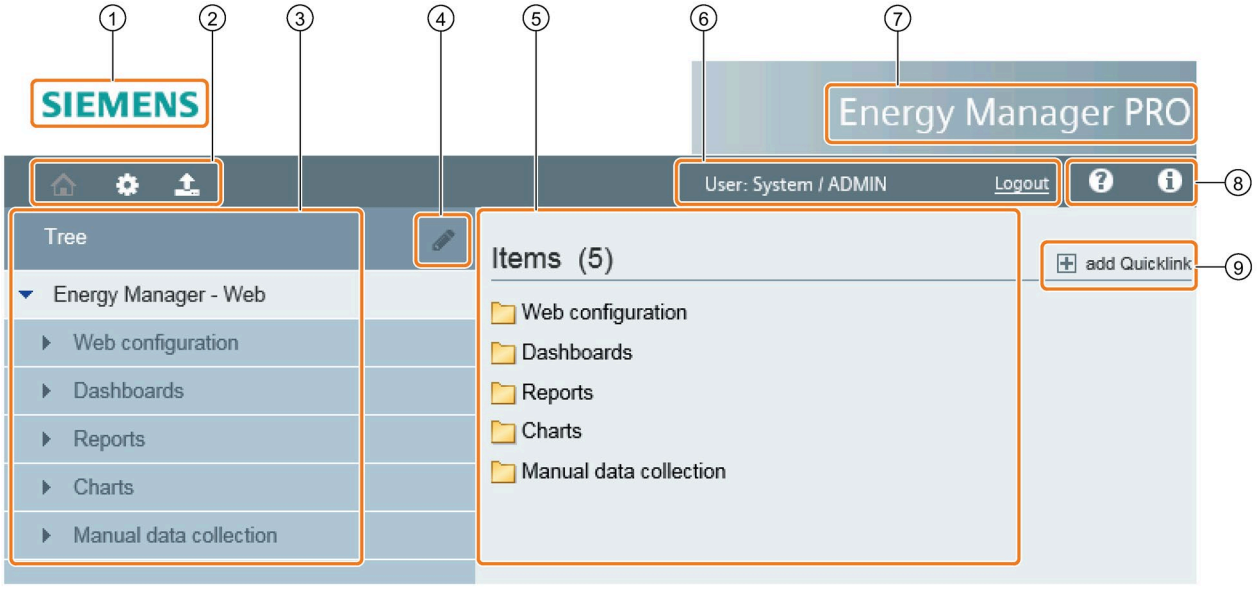
Definition of home page (Page 18)

2.3 Definition of home page

Home page of Energy Manager Web

After logging into Energy Manager Web you automatically go to the home page of Energy Manager Web. Use the Quicklinks or tree structure for navigation. Quicklinks are links to frequently used objects. An overview of existing Quicklinks is available in the navigation area under "Quicklinks". With the help of the tree structure you navigate through the object and folder structures within your system. You open the tree structure by clicking on "Tree" in the navigation area.

The following figure shows the home page of Energy Manager Web:



① Logo

The SIEMENS logo is set by default. You can select your own company-specific logo in the "Web Client settings".

② Menu bar

The menu bar consists of the following three menus:

- Home: Navigate through the folder and object structures with the help of the navigation area. Have the corresponding folder contents and objects in the detail area.
- Configuration: Configure data sources, data points, parameters and MEVAs / KPIs as well as the system settings.
- Data import: Import measured values of data points from a csv file.

③ Navigation area

In the navigation area, select the objects you want to view or edit. Use the menu items or Quicklinks for navigation. The folder contents and objects that are available to you in the navigation area depend on your user rights and the entry point of the respective user group in Enegry Manager Web.

④ "Enable edit mode"

Click on the Edit icon to enable edit mode. In editing mode you create new objects and configure created objects. You also have the option of individually structuring your Energy Manager system.

⑤ Detail area

Folder contents and objects are displayed in the detail area. The selection in the navigation area determines which objects are displayed.

⑥ User name and logout

- Displays the name of the logged in user.
- To log off from Energy Manager Web, click on the "Logout button".

⑦ Product name

The product name "Energy Manager Basic" or "Energy Manager PRO" is set by default. You can enter your individual product name in the "Web Client settings".

⑧ Help and version information

- Online Help for Energy Manager: Forwards you to the online help of Energy Manager.
- About Energy Manager: Displays basic information about Energy Manager .

⑨ "Add Quicklink"

Create Quicklinks for frequently used objects by clicking on the "Add Quicklink" button. More information about Quicklinks and creating Quicklinks can be found in the section "Quicklinks".

See also

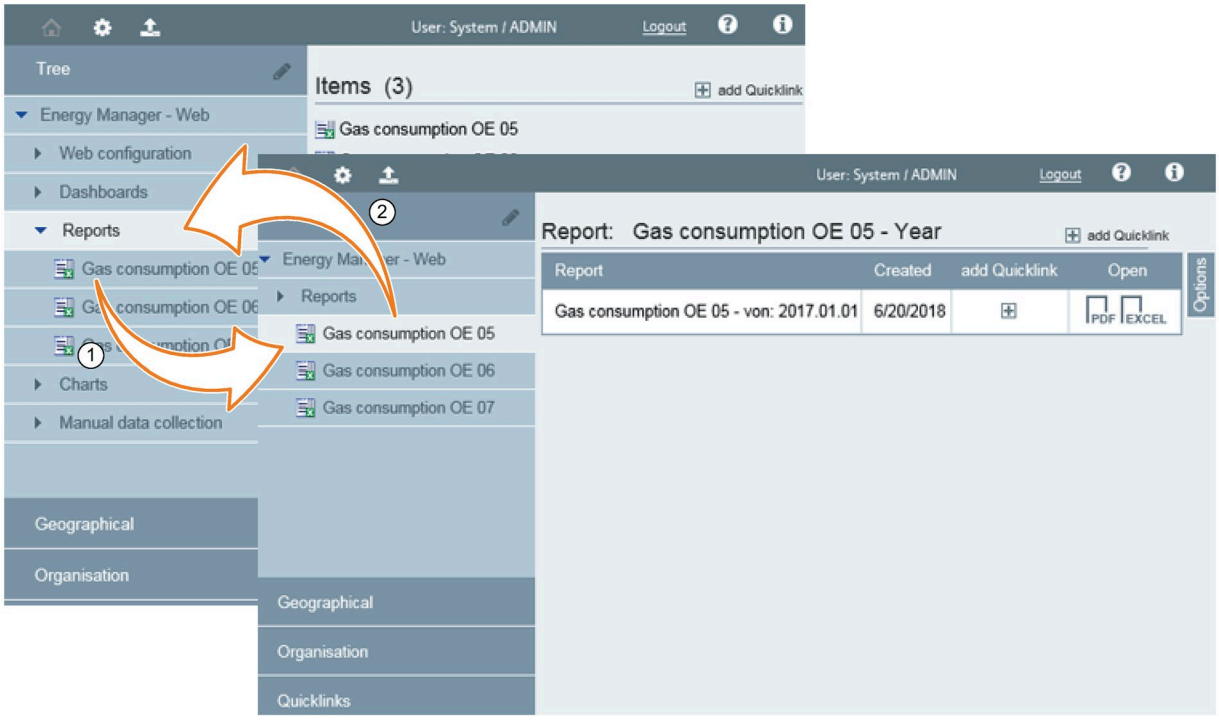
Introduction (Page 12)
Login (Page 15)
Web Client settings (Page 239)
Importing measured values (Page 72)
Editing mode (Page 76)
Creating Quicklinks in the Web (Page 24)
Quicklinks (Page 24)

2.4 Navigation

Navigation via the menu

All objects enabled for Energy Manager Web are arranged according to the breadcrumb trail method in the navigation area.

The following figure shows the navigation principle in the navigation area:



① Clicking on the menu item itself displays its structure in the navigation area as well as its content in the detail area (in the example "Gas consumption OE 05"). All remaining menu commands on the same level are hidden.

Clicking on the arrow of a menu item opens and closes its structure again in the navigation area without updating or reloading the content of the detail area. When you click on the icon of an object in the navigation area, its structure (e.g. data points used) is also opened and closed again in the navigation area without updating the detail area.

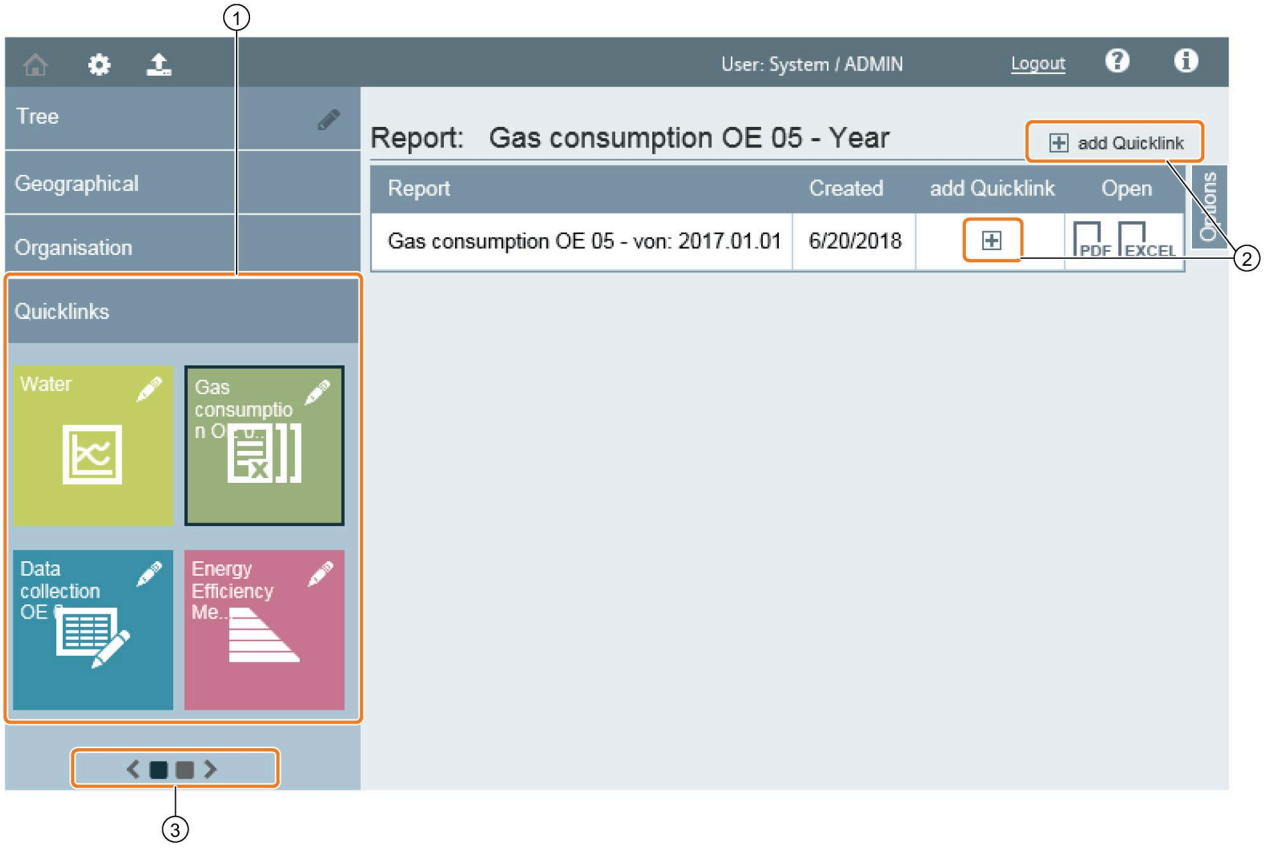
② You go back to the previous display by clicking on the parent menu command (in the example "Reports").

Navigation via Quicklinks

Quicklinks work like bookmarks in Internet browsers. Quicklinks gives you access to frequently used objects. They are stored as tiles in the "Quicklinks" area.

You can specify a Quicklink as a home page in Energy Manager Web. The content of the object to which the Quicklink refers is then displayed upon the next login.

Your personal Quicklink settings are stored and linked to your user account. This means that your Quicklink settings are available on other PCs.



① Quicklinks

Design and name are copied by default from the object to which the Quicklink refers. You can edit the Quicklink by clicking the Edit icon. You can change the order of the Quicklinks using drag-and-drop.

② Create a new Quicklink for a selected object.

③ Scroll through the Quicklink list

Scroll forward and backward through the Quicklink list using the "<" and ">" buttons. The points show the number of pages in the Quicklink list.

See also

Introduction (Page 12)

Creating Quicklinks in the Web (Page 24)

Editing Quicklinks in the Web (Page 27)

2.5 Consumers and structured view on the web

Requirement

- The Consumer functionality is licensed separately.

Overview

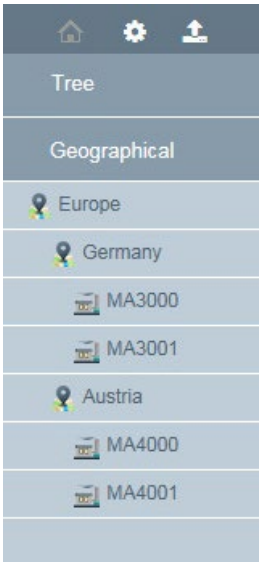
In Energy Manager Web, you have the option of having all consumers defined in the Energy Manager PRO Client displayed by their location or their organization unit.

Procedure

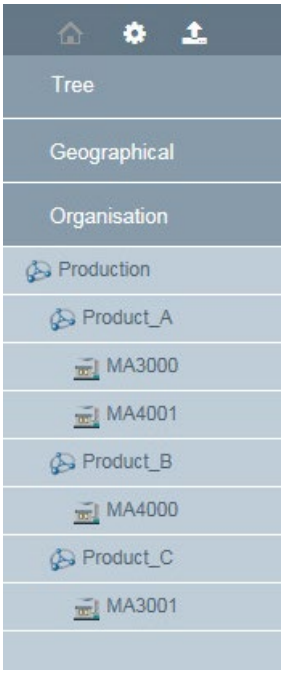
1. If you want to display all consumers of a location, click the menu item "Geographical".
2. If you want to display all consumers of an organization unit, click the menu item "Organisation".

Result

1. All consumers of a location are displayed.



2. All consumers of an organization unit are displayed.



When you click on the icon of a location or organizational unit, the structure of the object opens and closes in the navigation area. When you click on the writing of the object, the related Widget Dashboard is displayed in the detail area. The administrator sets the definition and configuration of this Widget Dashboard in the consumer templates.

See also

Navigation (Page 20)

2.6 Quicklinks

2.6.1 Creating Quicklinks in the Web

Overview

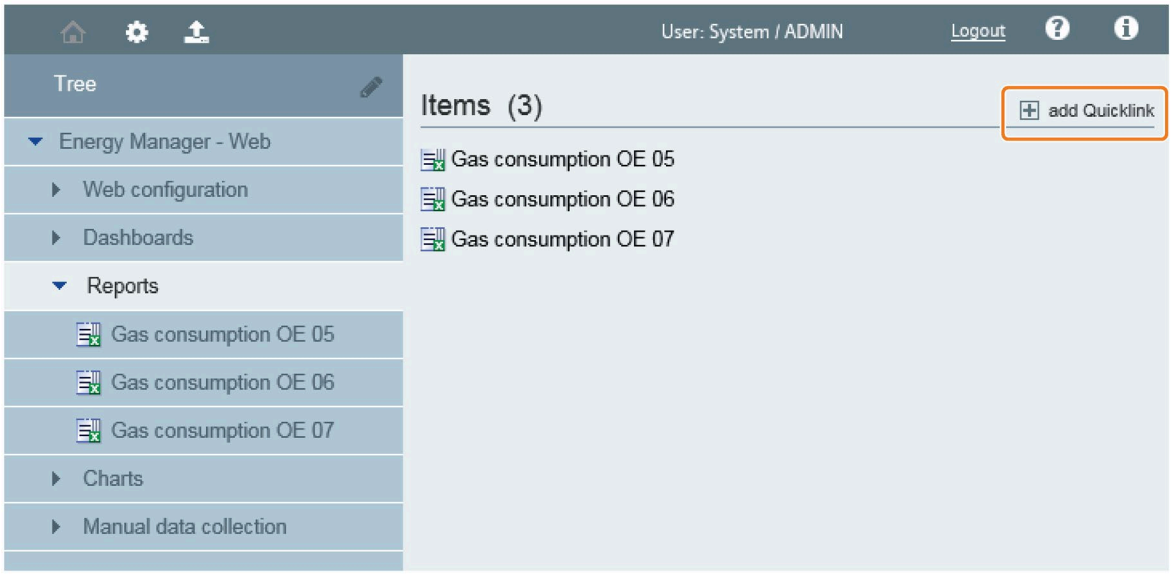
In Energy Manager Web you create Quicklinks to frequently used objects.

Requirement

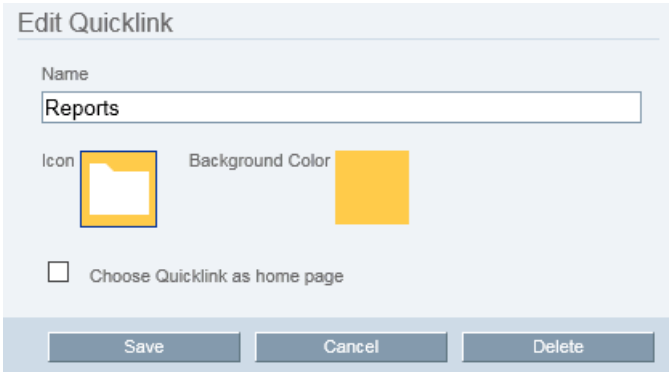
- You have the functional authorizations "Create Quicklinks" and "Configure Quicklinks".

Procedure

1. In the navigation area, click the object for which you want to create a Quicklink, for example, "Reports".
2. Click the "Add Quicklink" icon.



The "Edit Quicklink" configuration dialog opens.

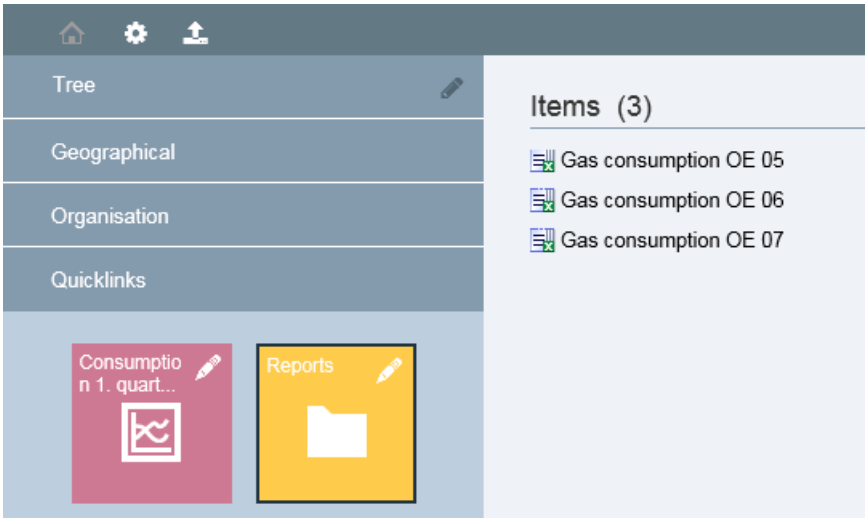


3. To create the Quicklink, click on the "Save" button.

Result

The Quicklink is created as follows:

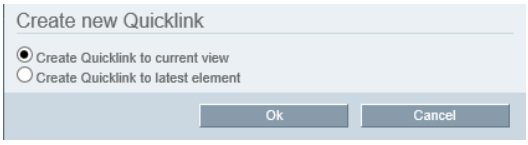
- The object name is adopted.
- The preset icons and background color are used.



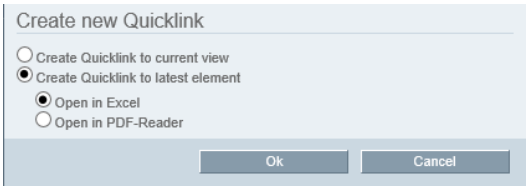
Exception: Creating Quicklinks for reports

1. Select the required report in the navigation area and click the "Add Quicklink" icon.

   The "Create new Quicklink" dialog opens.



2. If you want to create a Quicklink to the overview of the report, activate the option "Create Quicklink to current view".
3. If you want to create a Quicklink to the latest result of the report, select the option "Create Quicklink to latest element".
4. Select the required format, e.g. Excel or PDF.



   If you select the Quicklink, the report opens in the selected format.

5. Edit the Quicklink as desired and save your entries.

See also

Definition of home page (Page 18)

Navigation (Page 20)

Reports (Page 46)

Editing Quicklinks in the Web (Page 27)

2.6.2 Editing Quicklinks in the Web

Overview

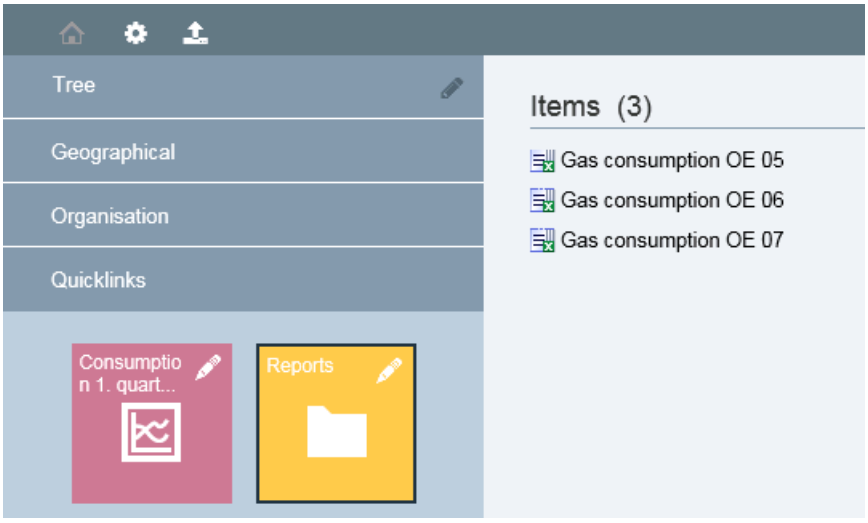
You can change the order of the Quicklinks in the "Quicklinks" area. If you no longer require Quicklinks, you can delete the Quicklinks again. You can also customize the Quicklinks, for example, by changing the background color or the icon.

Requirement

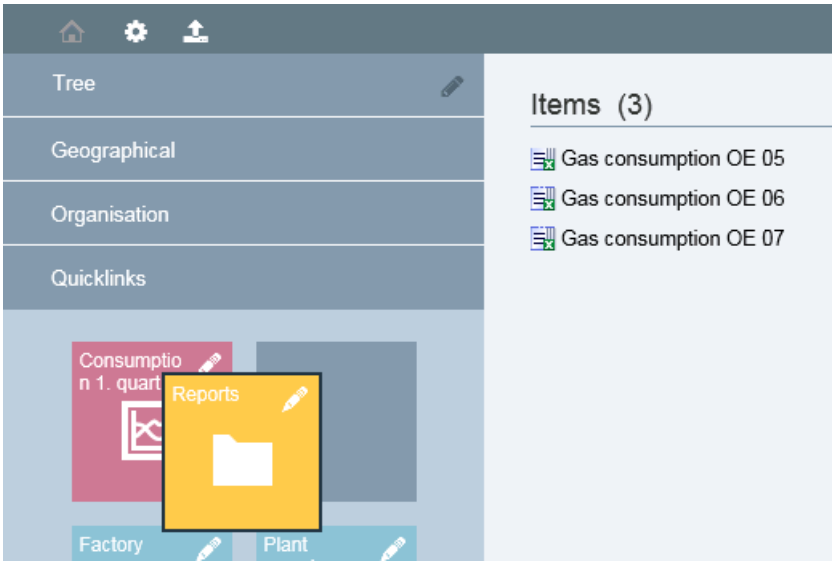
- You have the functional authorizations "Configure Quicklinks" and "Delete Quicklinks".

Change the sequence of the Quicklinks

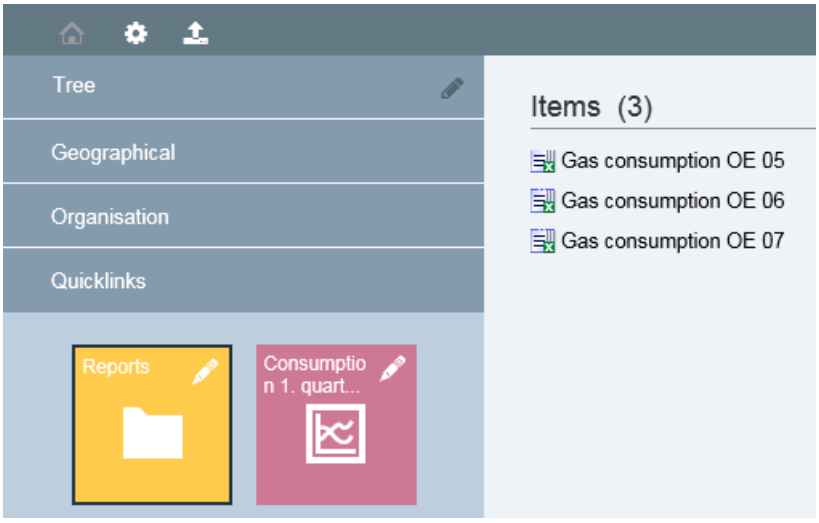
1. Click on the menu item "Quicklinks".



2. To move a Quicklink, use drag-and-drop to place it at the required position.



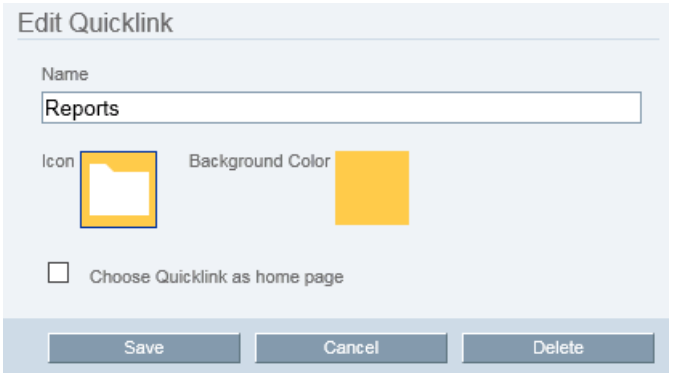
The Quicklink is placed at the respective location.



Customize Quicklink

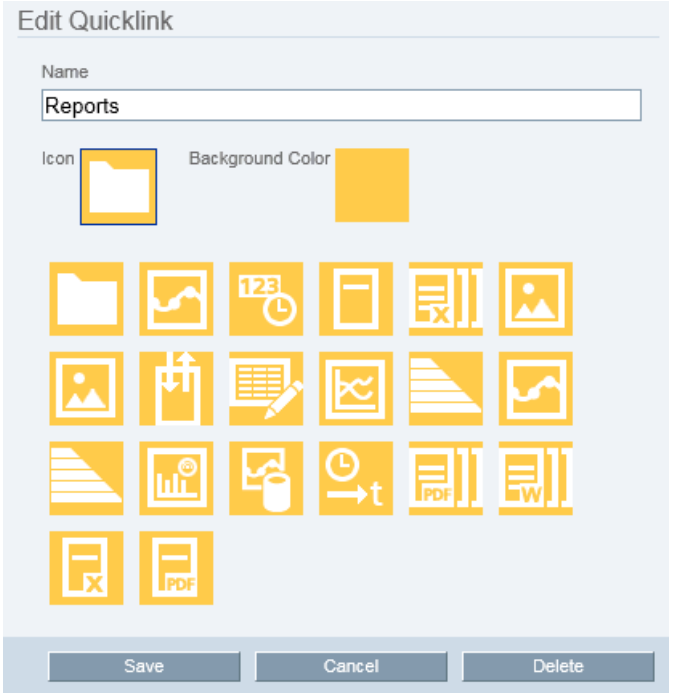
1. Click the Edit icon in the "Quicklinks" area above the required Quicklink.

The "Edit Quicklink" dialog box opens.

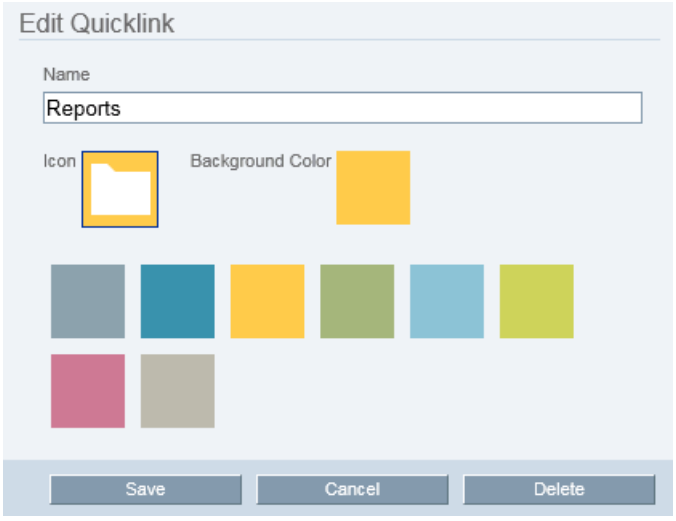


2. To rename the Quicklink, enter the desired name in the "Name" entry field.
3. To change the Quicklink icon, click on "Icon" and select the desired icon.

   You can choose from 18 predefined icons.



4. To change the background color of the Quicklink, click on "Background color" and select the required background color.



5. To specify the Quicklink as home page, select the "Choose Quicklink as home page" check box.

Note

If you do not specify any Quicklink as homepage, the first Quicklink in the "Quicklinks" area is used as homepage page.

6. Click on the "Save" button.

Delete Quicklink

1. Click the Edit icon icon above the desired Quicklink.

   The "Edit Quicklink" dialog box opens.

2. Click the "Delete" button.

   The Quicklink is deleted.

See also

Navigation (Page 20)

Creating Quicklinks in the Web (Page 24)

Data analysis

3

3.1 Folder

Overview

In Energy Manager Web you can see all folders and their contents which were defined by the administrator as an entry point for you. The available options depend on the user rights of the respective user group to which you are assigned. The administrator configures the user rights of the user groups in the Energy Manager PRO Client.

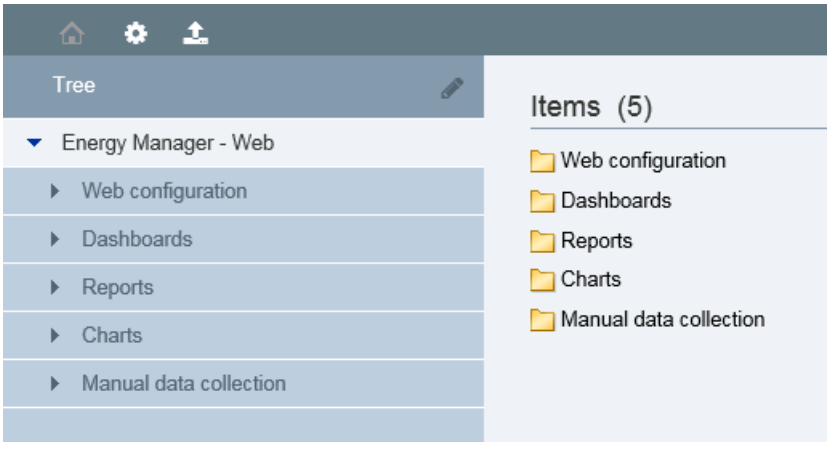
Note

Functionality of Energy Manager Basic

In Energy Manager Basic the following entry point is always used for the user: "Energy Manager - Web".

View folder contents

1. Click on the entry point ("Energy Manager - Web") in the navigation area.
2. Click the folder whose contents you want to see.



Result

The content of the desired folder is displayed in the detail area. You can learn how to create, edit and delete new folders in the section "Configuration of analysis objects" in the section "Folder".

See also

Creating users (Page 243)
Creating folders (Page 153)
Folders (Page 153)

3.2 Widget dashboards

3.2.1 Overview of Widget Dashboards

Widget Dashboards allow rapid visualization of a wide variety of plant data on a single page. Widget Dashboards are designed for display in the Web or on mobile devices. For this reason, only configure Widget Dashboards in Energy Manager Web. In the Energy Manager PRO Client you can only create and delete Widget Dashboards.

Note

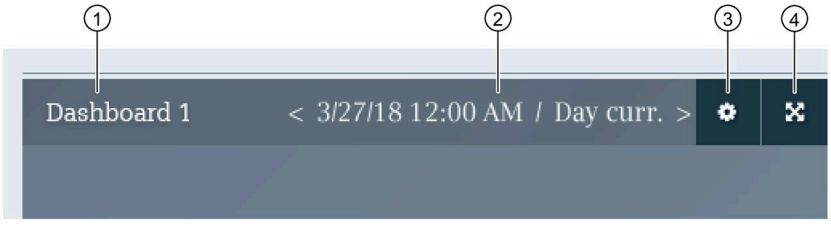
The functional authorization "Widgets/Dashboards - create, remove, configure" is required to create, delete and configure a Widget Dashboard. In addition, the "view" authorization is available for displaying and "configure" solely for the configuration.

Requirements

- The Widget Dashboard is created in Energy Manager.
- The Widget Dashboard is enabled for the user.

Display of Widget Dashboards

To open a Widget Dashboard in Energy Manager Web, click in the navigation area on the corresponding Widget Dashboard. The Widget Dashboard is displayed in the detail area.



① Name of the dashboard
② Changing the observation period
③ Configuration of the Widget Dashboard
④ Display of the Widget Dashboard as a full screen

When you click on ④, the Widget Dashboard is displayed as a full screen.

When you click on ③, you open the configuration mode of the Widget Dashboard.

① Add new widgets.
② Edit the settings of the Widget Dashboard.
③ Close configuration mode.

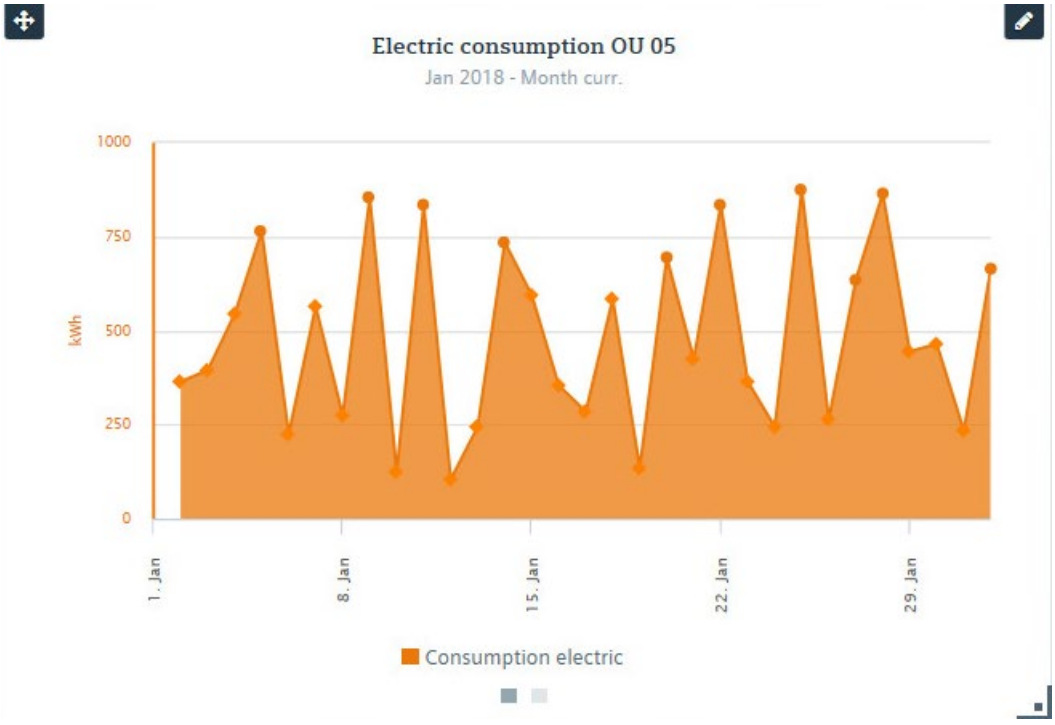
To create new widgets in the Widget Dashboard, click on the "Add Widget" button. For more information on creating widgets, refer to the section "Creating widgets".

Click on the "Settings" button to configure the generally valid settings of the Widget Dashboard. You can find additional information on configuring widgets in the section "Editing Dashboards".

To close the configuration mode, click on ③.

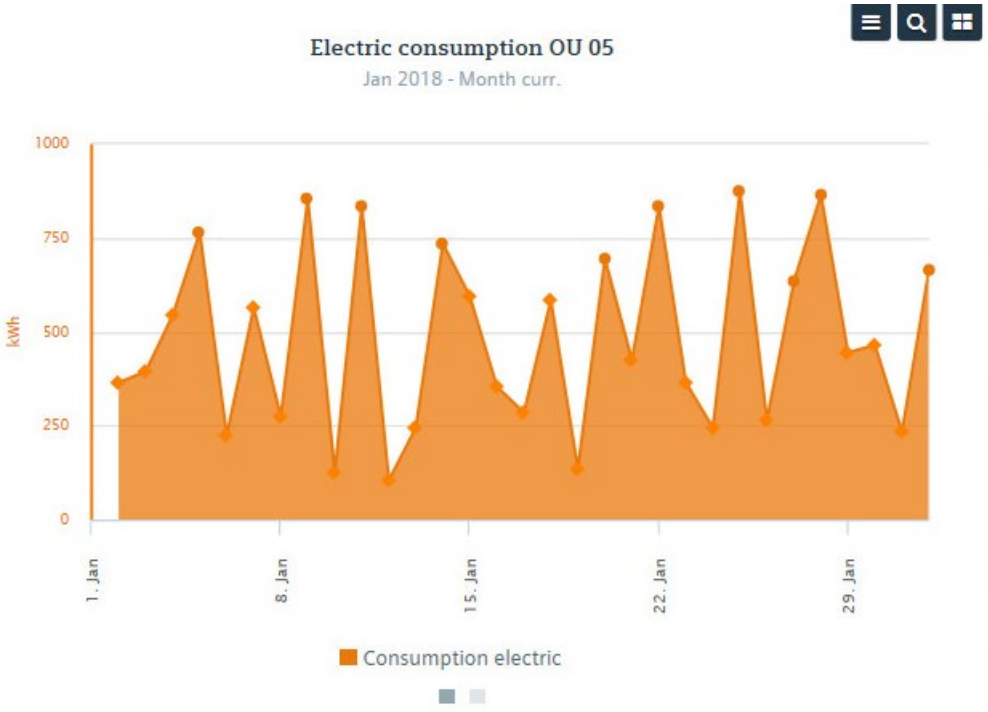
Displaying widgets in the Widget Dashboard

The following figure shows a created and already configured Chart Widget in the configuration mode of the Widget Dashboard:



- Using the icon in the top left-hand corner, move the widget using drag and drop.
- Using the Edit icon in the top right-hand corner, open the configuration dialog of the widget.
- Using the icon in the bottom right-hand corner, adjust the size of the widget using drag and drop.

When you close the configuration mode of the Widget Dashboard, the widget is displayed in the selected size and position in the Widget Dashboard. The following figure shows the same Widget Dashboard in non-configurable mode:



- Using the magnifying glass symbol in the top right-hand corner, open the detail view of the widget.
- With the Dashboard link icon to the right of the magnifying glass icon, change to the Dashboard selected in the "General"tab ("Dashboard" drop-down list).
- With the CSV Export icon to the left of the magnifying glass icon, export the measured values for a Chart Widget as a CSV file to the download directory of your Internet browser. The export file is saved with the name "EnMPRO_dashboardname.csv".

With the exception of the following widgets, each completed widget shows the following additional information in addition to the actual display.

- Report
- Text
- Image
- Map
- Alarmlist

You can define the display information via the grey dots in the bottom part of the detail view of the widget. The grey dots are also available in the normal view for the following widgets:

- Chart
- Duration Curve
- Sankey
- MVRA

In the detail view you can alternatively define the display information using the arrow buttons on the right-hand and left-hand side of the widget.

The following additional information is available:

- Widget:

  Displays the main information of the widget.

- History:

  Displays the values of the data points as a chart in the defined observation period.

- Histogram:

  Displays the values as a histogram with equal intervals. The display corresponds to the histogram in the Energy Manager PRO Client. In addition, the statistical values minimum, maximum, median, average and standard deviation are displayed. Values outside the plausibility limits are not marked in the histogram.

- Regression:

  Shows the correlation and regression analysis as well as the linear correlation as a formula.

You can find out how to configure the individual widgets via the respective tabs in the section "Widget configuration".

Changing the observation period

To change the observation period of the dashboard and the widgets contained therein, follow these steps:

1. Click on the date of the Dashboard in the top part of the Dashboard.

   The appointment calendar opens.

2. Select the (start) date and time.
3. Click the "Apply changes" button.
4. Click on the adjacent query type in the top part of the Dashboard.

   A list with the selection of the query type opens.

5. Select the query type associated with the start time.

The observation period of the Dashboard adapts to your settings. If you have selected the check box "Use dashboard settings" in the configuration settings of the widgets as the query type, the observation period of the widgets changes accordingly.

Note

If you have selected a particular date including query type in the configuration settings of a widget, the observation period of the widget in question does not change.

See also

Widget Dashboards for consumers (Page 38)

Creating Widgets (Page 87)

Editing dashboards (Page 83)

Editing widgets (Page 90)

Dashboards (Page 81)

Widget configuration (Page 112)

Available widgets (Page 91)

3.2.2 Widget Dashboards for consumers

Requirement

- The license for the Consumer functionality is available.

Overview

You have the option of creating Widget Dashboards for individual consumers as well as for entire locations or organization units. The functionality of selecting associated datapoints and MEVAs for consumers is available. When you assign a consumer to a consumer template in the Energy Manager PRO Client and define a default Widget Dashboard, this Widget Dashboard is displayed when you click on the consumer. You can then configure this Widget Dashboard. More information about creating a consumer and a consumer template can be found in the sections "Consumers and structured view "and "Consumer templates" in the complete operating manual of Energy Manager PRO.

If you want to view the entire consumer structure in Energy Manager Web, copy the consumer to the entry point defined for the user group.

Opening the Widget Dashboard for consumers

To open the Widget Dashboard for consumers, follow these steps:

1. In the navigation area, click under the menu item "Geographical" or "Organisation" on the consumer whose Widget Dashboard you wish to display.

   The default Widget Dashboard in the Energy Manager PRO Client is opened.

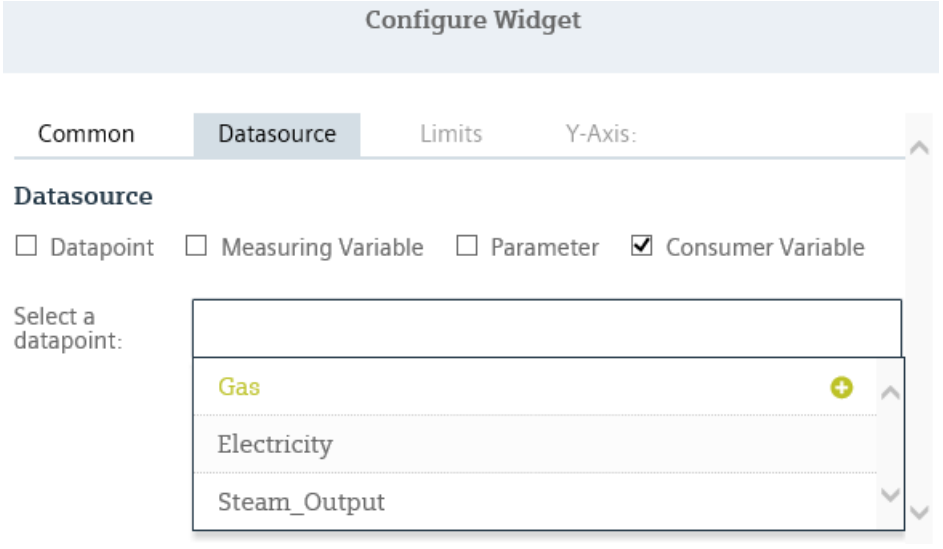
2. To open the configuration mode, click on the gear icon.
3. In the "Data source" tab, select the check box "Consumer variable".

   Only data points and MEVAs of the consumer are listed.

   Note

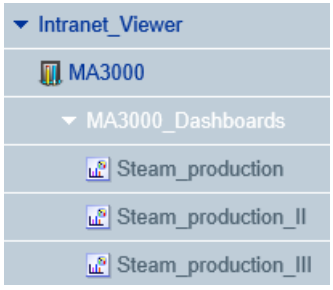
   If you create the Widget Dashboard at the geographical or organization unit level, the data points and MEVAS of all consumers located below are available for selection. You thus have the option of designing a Widget Dashboard as an overview of all consumers of a location or an organization unit.

4. Select the data points and MEVAS you want to display in the widget.



5. Complete the configuration of the widget in accordance with section "Widget configuration".

If you have created several Widget Dashboards for a consumer, the Widget Dashboards are displayed in the tree structure of the navigation area below the consumer.



If you have selected a Widget Dashboard, change between the individual Widget Dashboards by clicking one of the nodes visible at the bottom.

Use of placeholders for designations

When configuring the Widget Dashboard you have the option of using placeholders. These placeholders are replaced with specific names or descriptions. You can use the placeholders in the title of the dashboard, in the title of a widget and in the widget "text" as well as in the text itself.

You can use the following placeholders:

- {MACHINE_NAME} corresponds to the name of the consumer
- {MACHINE_DESCRIPTION} corresponds to the description of the consumer
- {MACHINE_PRODUCER} corresponds to the producer of the consumer
- {MACHINE_TEMPLATE} corresponds to the name of the consumer template
- {MACHINE_LOCATION} corresponds to the location of the consumer
- {MACHINE_BALANCING_GROUP} corresponds to the organization unit of the consumer
- {ORG_NAME} corresponds to the name of the organization unit
- {ORG_DESCRIPTION} corresponds to the description of the organization unit
- {LOCATION_NAME} corresponds to the name of the location
- {LOCATION_DESCRIPTION} corresponds to the description of the location
- {LOCATION_LOCATION} corresponds to the "Location" entry field in Location

Use the expressions including the curly brackets.

See also

Overview of Widget Dashboards (Page 33)
Setting up dashboards (Page 81)
Configuring the "Data Source" tab (Page 115)
Widget configuration (Page 112)

3.3 Online Monitoring

Online Monitoring enables you to display data points of Modbus devices and OPC channels in real time. The sections AUTOHOTSPOT and Creating OPC DA, OPC HDA, OPCUA channels describe how to configure the Online Monitoring for Modbus devices and OPC channels.

You can find all data points with Online Monitoring in the navigation field under the structure "Web Konfiguration > Monitoring".

This folder structure is also adopted in the Energy Manager PRO Client. However, in Energy Manager PRO Client you cannot make any changes to the objects in the folder "Monitoring".

To open Online Monitoring, click on the corresponding entry.

Configuration

Under "Configuration", configure the Online Monitoring. You can activate the following functions for each data point:

- Display in chart: The corresponding data point is displayed in the Online Monitoring chart.

  You can activate this function for a maximum of 10 data points at the same time.
- Archive data: The values of the data point are saved for Online Monitoring for 62 days. Historical values are displayed in the chart only for these data points. When you deactivate this function, already archived data are not deleted.

Note

A maximum of 1000 data points per acquisition component and a maximum of 25 data points per device can be simultaneously archived.

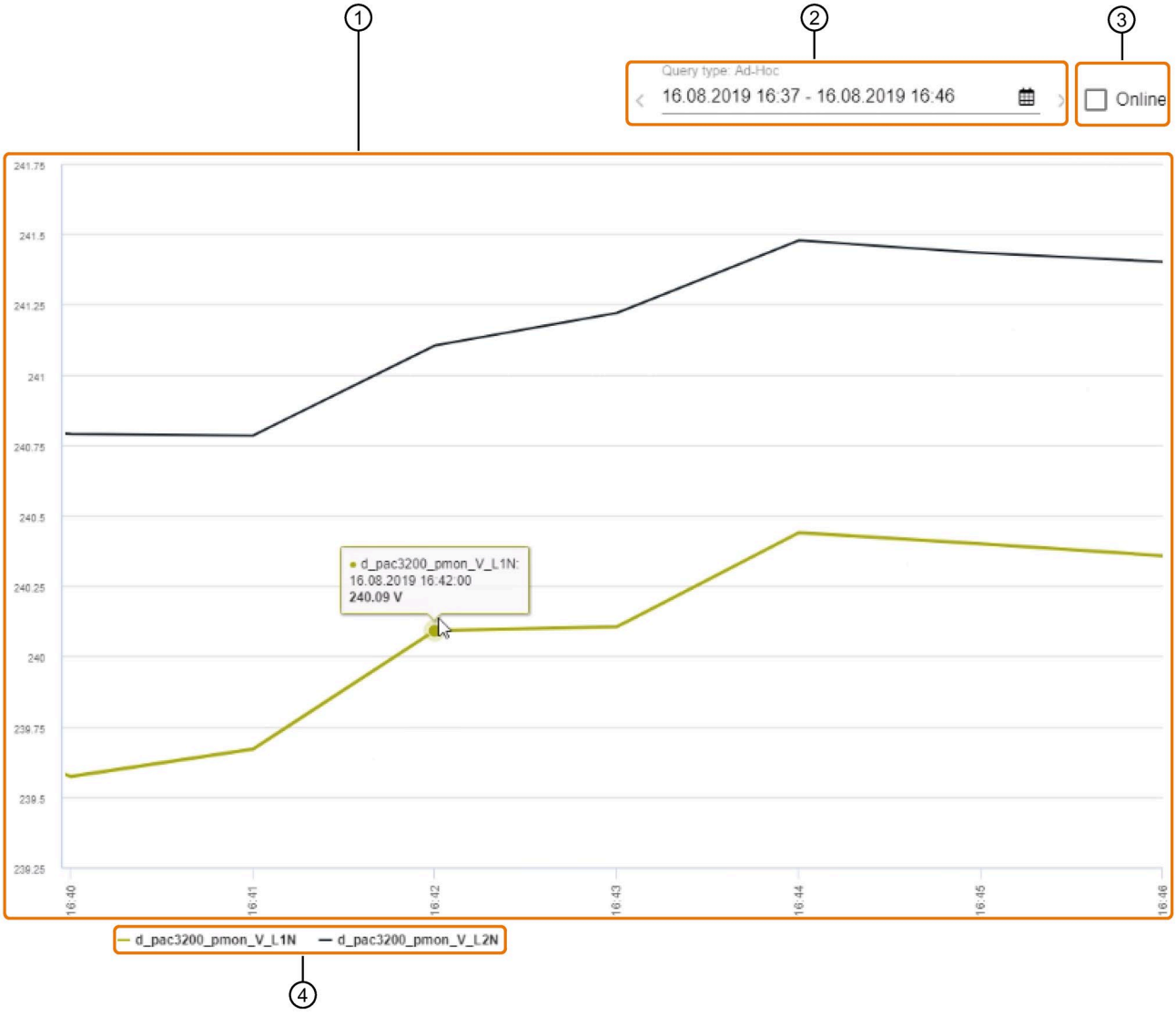
The data points are displayed in tabular form:

The table contains the following six columns:

Column	Function
Name	Name of the data point
Unit	Unit of the value of the data point
Value	Current value of the data point This value is updated in the acquisition cycle of Online Monitoring.
Show in chart:	If this option is selected, the corresponding data point is shown in the Online Monitoring chart:
Archive data	If this option is activated, the values of the corresponding data point is saved for 62 days.

Chart

The data points selected under "Configuration"are graphically displayed under "Chart".



① Visualizing the data points

To observe a specific area, keeping the mouse pointer pressed draw a frame around the desired area.
To reset the display, click on the "Reset zoom" button at the top right-hand corner of the chart.

② Selection of the displayed time period

If you select a time period while the online mode is activated, the online mode is deactivated.

③ Online mode

While the online mode is activated, the current minute and the past 14 minutes are always displayed in the chart.

④ Legend

To hide a data point, click on the corresponding data point in the legend.
Click on the data point again to display it again.

Note

If you select a time period with a large number of measured values, loading the chart make take a considerable amount of time.

See also

Creating a Modbus TCP channel (Page 185)

3.4 Reports

Overview

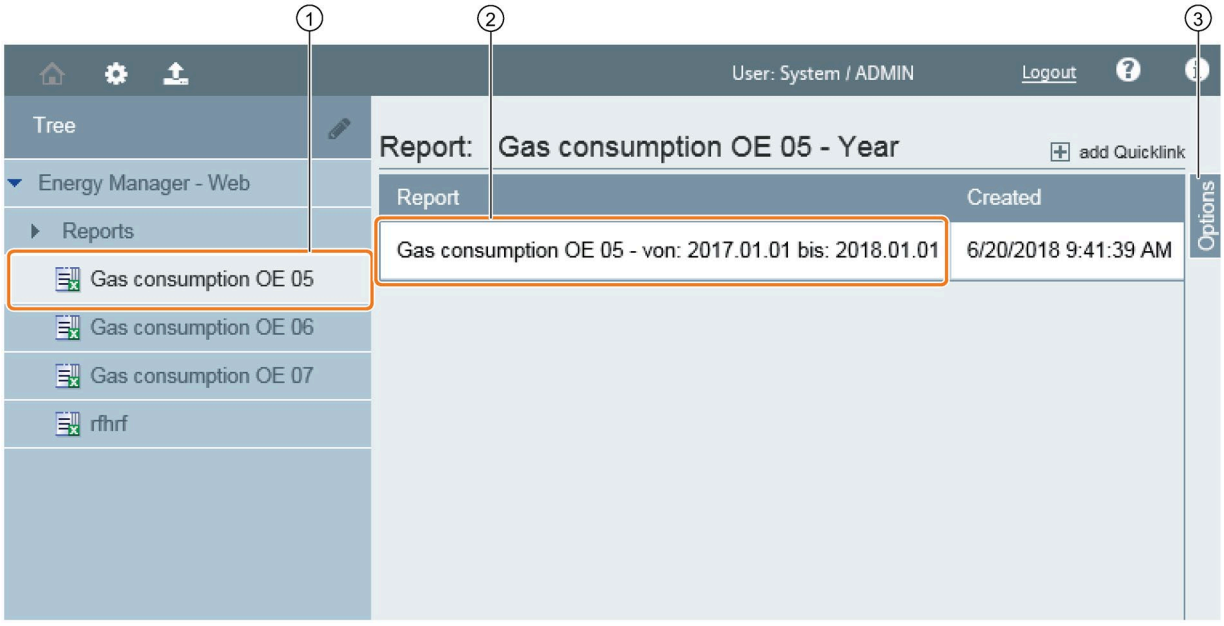
Energy Manager PRO Web shows you the reports you configured in Energy Manager PRO Client. You can also generate new reports in Energy Manager Web .

Note

Functionality of Energy Manager Basic

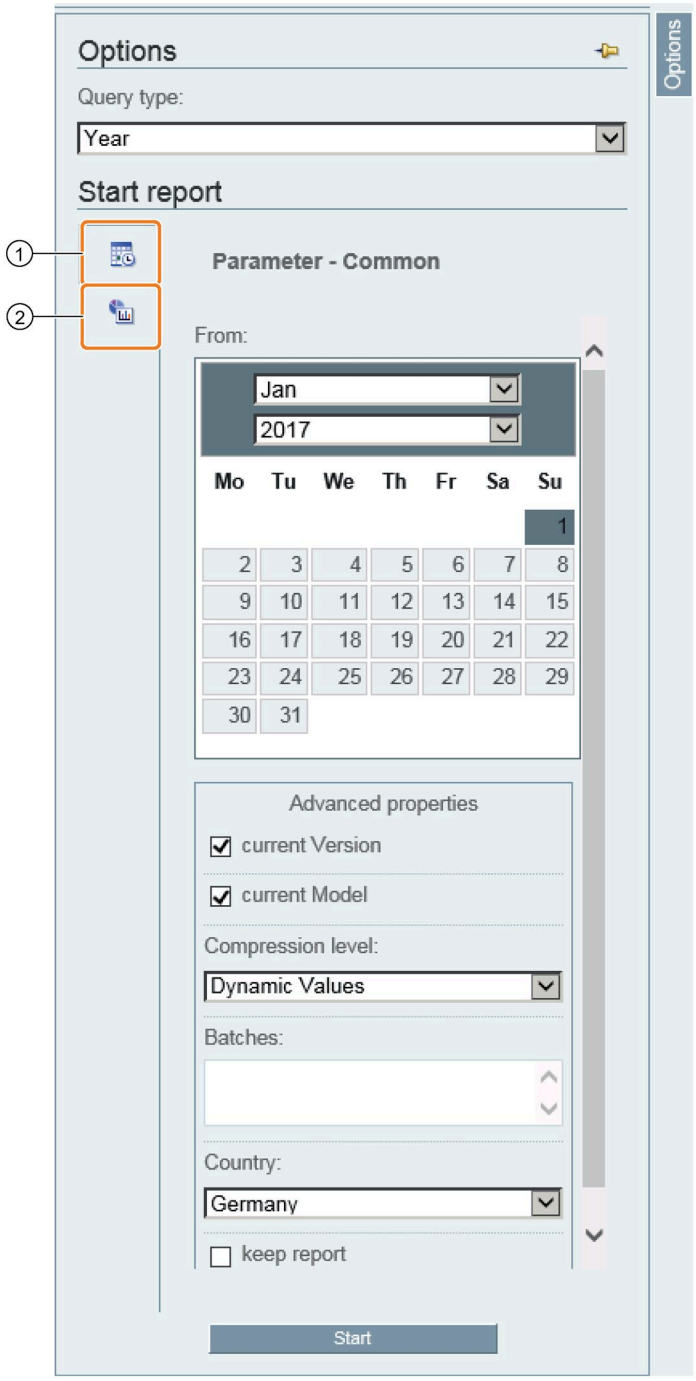
In Energy Manager Basic you can create reports only with the help of five predefined templates. All the settings are predefined in these report templates.

The structure of a report result in Energy Manager Web consists of the following objects:



① Report
② Report results
③ "Options" tab

The figure below shows the "Options" tab for a report:



① In this area, depending on the time range, you configure the query type and as needed additional settings, such as the use of a different calculation model.

② If the report contains configurable modules, each of these modules is displayed as a separate area.

Report creation is based on the configuration for automatic reporting.

Requirement

- The report has been created in Energy Manager .
- The report has been released for the current Web application.
- Microsoft Excel and PDF-Reader are installed on the PC.

Generating a report in the Energy Manager Web

1. To generate the report in Energy Manager Web , select the desired report and then click the "Options" tab in the right window pane.

   The "Options - Start report" dialog opens.
2. In the "Options" area, select a query type for the report.
3. Under "Start report - General parameters", specify the time range for the report.
4. Click "Advanced settings" to set the additional parameters for report generation.
5. In order to change the starting parameters for the modules that are used, select the desired module on the left, and change the starting parameters as desired.
6. Click "Start".

   The report is generated.

   You can display or open the report.

Specifying additional parameters for the report (optional)

1. Click "Options" in the " Advanced Settings" dialog.

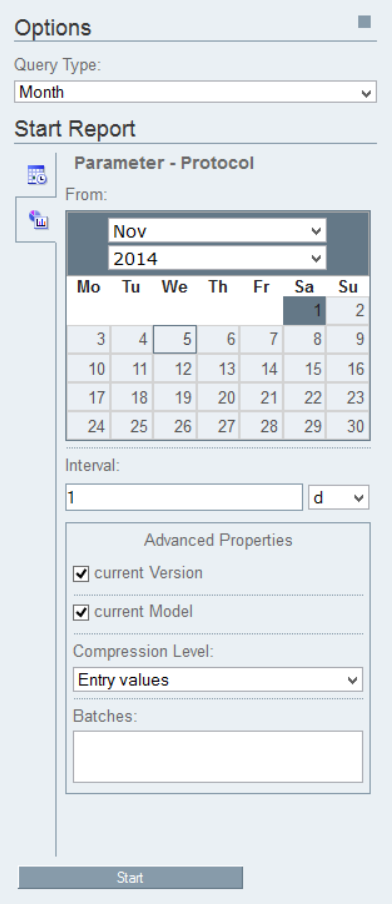
   The advanced settings are displayed.
2. Disable "Current version" and select a date to define the measured value version for evaluation.
   All measured values generated prior to this date are evaluated.

   The current date is activated by default.
3. Deactivate "Current model" and select a model date to define a calculation model for evaluation of the report.
   The report is evaluated by default based on the current calculation model.
4. Select the compression level in a report to evaluate the compression level values.
5. If necessary, select the required batch under "Batches".
6. Under "Country", select the desired country.
7. You can exclude the report from cyclic delete actions by activating "Retain report" option.
   If you do not activate "Retain report", the delete job for evaluations will be performed later.

Editing module start parameters (optional)

1. Select the tab for the desired module.
2. Specify the query type and time range if you have activated the "Query interval at start" option in the module configuration.
3. You can always edit the interval, as well as the high and low limit of configured module start parameters.

   The start parameters are derived from the module configuration.



Displaying or opening a report in Energy Manager Web

1. To display the report as a preview in PDFformat in Energy Manager Web , click the report result.

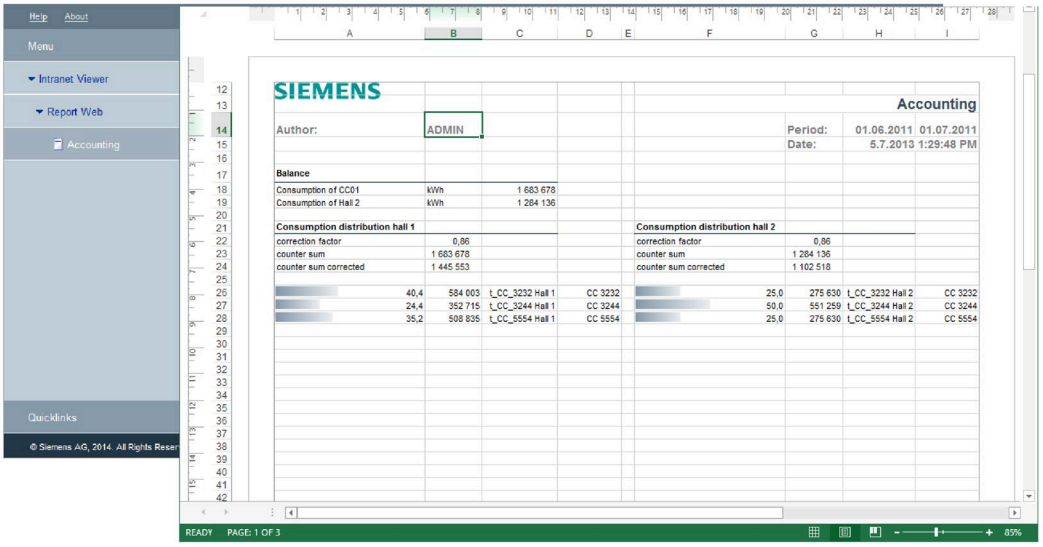
   The report is displayed in the detail area.

2. To open the report in PDF format, click the "PDF" icon in the row with the report result.

   The report is displayed in Acrobat Reader .

3. To open the report in Microsoft Excel , click the "EXCEL" icon in the row with the report result.

   The report is displayed in Microsoft Excel .



Note

If you change the result of the report, these changes are **not** saved in Energy Manager.

See also

Creating reports (Page 136)

Reports (Page 136)

3.5 Diagrams

3.5.1 Overview

You use the Chart to display historical as well as current values. Use the chart for the visualization of measurement series.

The Diagram or Chart functionality is available as a separate tab for the following objects:

- Data point
- Matrix
- Chart object

Chart tab for matrices and data points

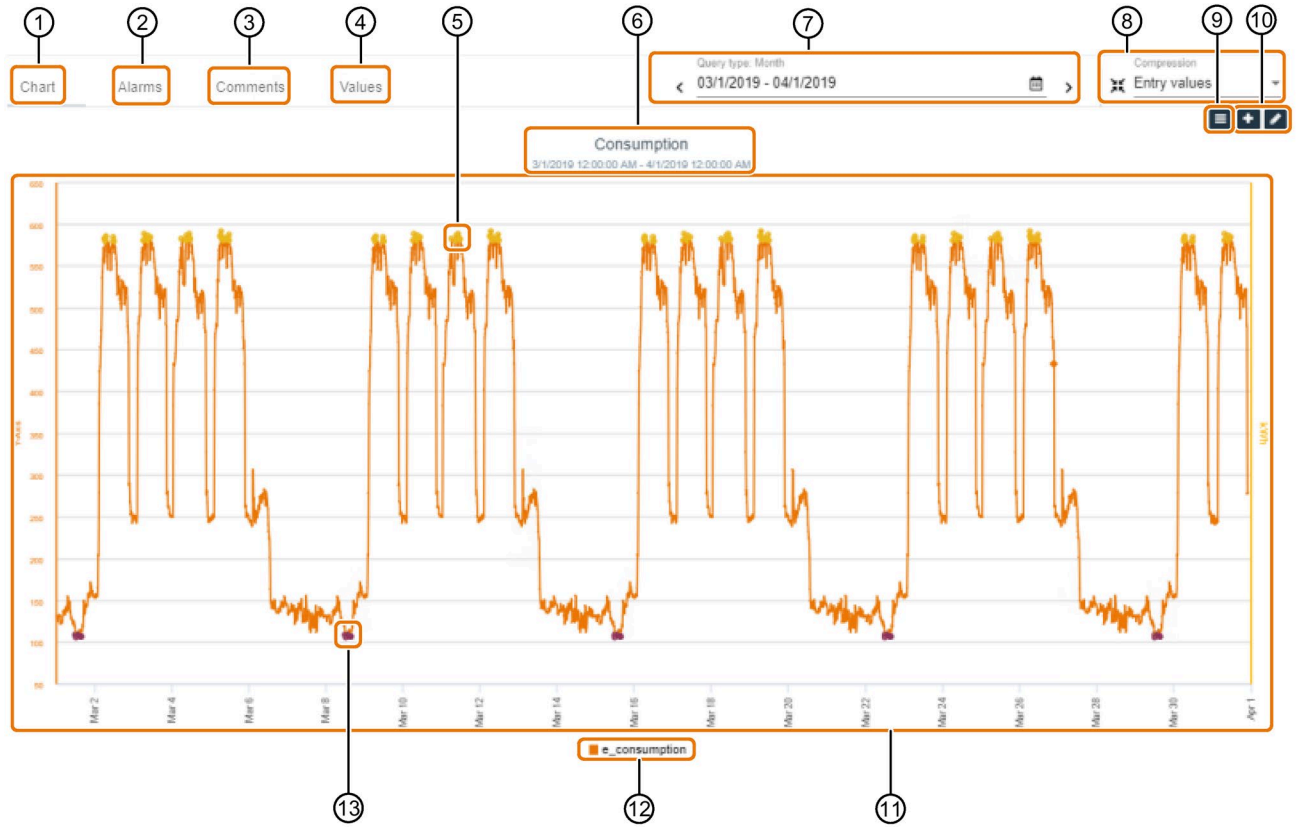
With matrices and data points, the Chart tab is available immediately after a click on the respective object. Configurations set in the chart, such as the number of displayed data points and the query type, are stored automatically for the active user. The configuration is saved with the object in the database. The selected time range is not stored. On a renewed display of the chart the current time range is always displayed.

Own chart object

There is also a separate chart object that you can use to visualize up to ten data points simultaneously. The configuration via the chart object is not referenced to a user. Thus it is possible to make a preconfigured chart available to several users. Open the chart by clicking on the corresponding chart in the navigation area.

Structure of the Chart tab

The following figure shows the display of the chart in Energy Manager Web:



① Selection of the "Chart" tab

② Selection of the "Alarms" tab

③ Selection of the "Comments" tab

④ Selection of the "Values" tab

⑤ Data point with a warning

⑥ Name of the chart and displayed time period

⑦ Selection of the displayed time period

To change the time period, click on the arrow keys or . When you click , you open the time and date selection.

You can find more information about time and date selection below.

When the page is reloaded, the chart once again displays the time period specified by the configuration.

⑧ Selection of the displayed compression level

⑨ Exporting the chart

You can export the displayed chart in the following form:

- The values of the chart that are displayed at this time are saved as a file in "*.csv" format

⑩ Configuration of the chart

To open the "Data sources" tab of the configuration, click on .

To open the "General" tab of the configuration, click on .

⑪ Visualizing the data points

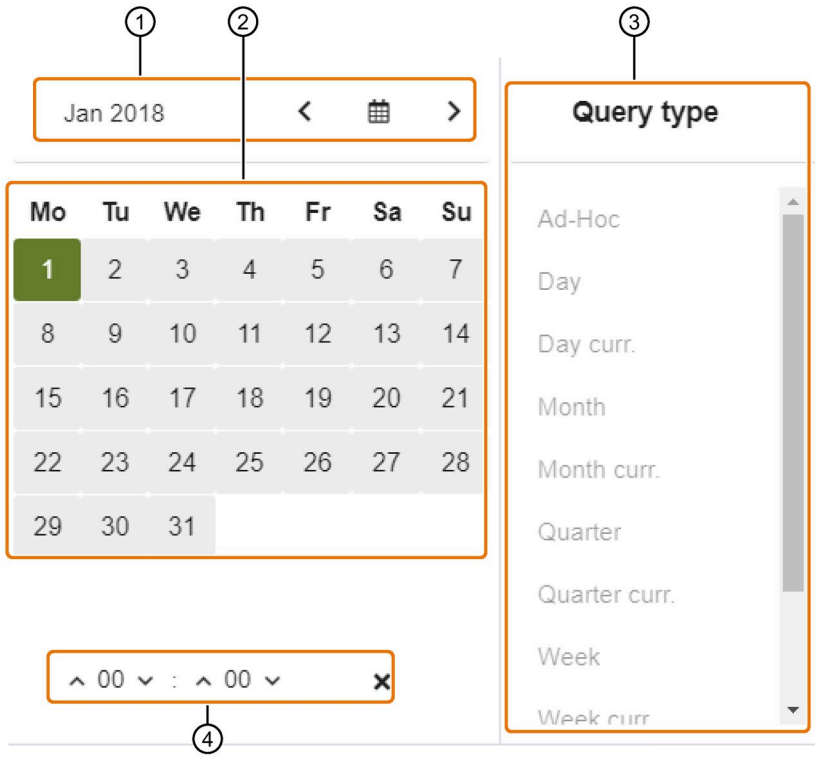
To observe a specific area, keeping the mouse pointer pressed draw a frame around the desired area.
To reset the display, click on the "Reset zoom" button at the top right-hand corner of the chart.

⑫ Data points with legend

⑬ Data points outside of limits

Date and time selection

The following figure shows the date and time selection.



① Selection of the displayed month

To display another month in the calendar, proceed as follows:

1. Click on the text with the month and year displayed.
2. Select a year.
3. Select a month.

To display the previous or next month, click the arrow buttons.

To select the current time period, click on .

② Selection of the displayed time period.

To display a time period on the chart, click a day in the calendar. The corresponding time period is selected automatically.

If you selected the Ad-Hoc query type, select the start and end of the custom time period.

③ Selection of the query type

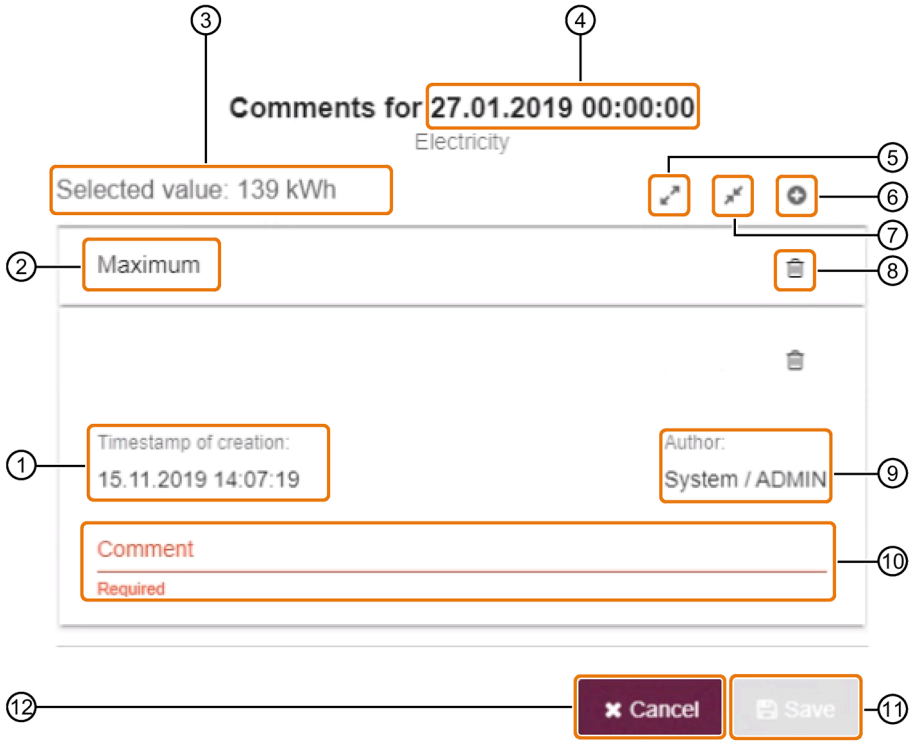
To display a time period with a user-defined start and end on the chart, select the "Ad-Hoc" option.

④ Selection of the time

This function is only supported with the "Ad-Hoc" query type.

Adding comments

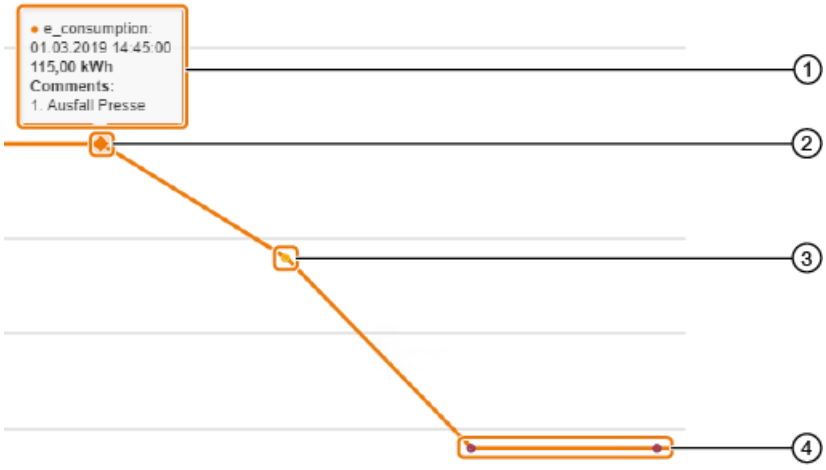
If you double-click a value in the diagram, the following dialog box opens:



① Time stamp of creation of the comment
② Comment (details hidden)
To display the details of the comment, click the comment.
③ Selected value
Count value of the selected value.
④ Time stamp of the selected value
⑤ "Show all" button
Click this button to show the details of all comments.
⑥ "New comment" button
Click this button to add a new comment to the selected value.
⑦ "Hide all" button
Click this button to hide the details of all comments.
⑧ "Delete" button
Click this button to delete the comment.
⑨ Author
Author of comment
⑩ Comment
Edit or write the comment in this input field.
⑪ "Save" button
Click this button to leave the dialog box and save the changes.
⑫ "Cancel" button
Click this button to leave the dialog box and not save the changes.

Display of details in the chart

The figure below shows which details are displayed for the measured values of a measurement series in the chart:



① Details

Move the mouse pointer over the corresponding measured value to display the details of a measured value. The following information is included:

- Data point name
- Time stamp
- Value
- Comments

② Measured value with comment

Measured value with comments are marked with a hash character.

③ Measured value outside warning levels

Measured values which have exceeded the warning levels defined in the chart configuration are marked with a yellow dot.

④ Data point outside limits

Measured values which have exceeded the limits defined in the chart configuration are marked with a purple dot.

Note

If a value displayed as a column exceeds or falls below a limit or warning value, the entire column is colored accordingly.

Note

If a series is displayed as a bar chart, the diamonds that show comments are not visible for that series.

Structure of the Alarms tab

A list with all the alarms for the shown period is displayed using the "Alarm" tab.

The display table consists of the following five columns:

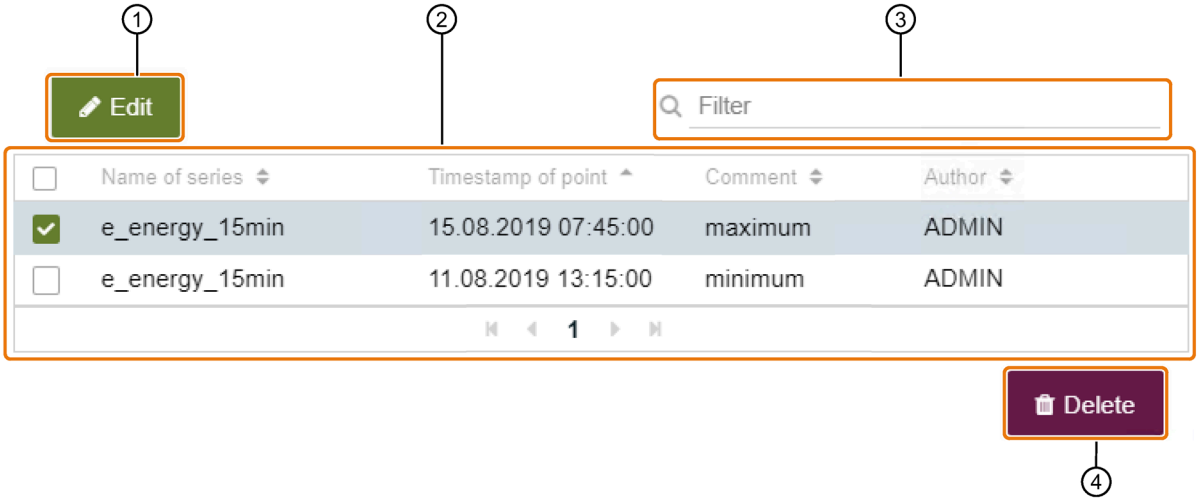
Column	Function
Name of the series	Name of the data point relating to the message
Time stamp of measuring point	The time of measurement
Time stamp of creation	The time of creation of the message
Level	Message type
Comment	Comment on the message This comment is created automatically

When you click on the column header of one of the columns, the corresponding column is sorted in alphabetical order. When you click on the same column header again, the column is sorted in the reverse order.

When you enter a text in the "Filter" text box, all columns are searched and the corresponding entries are displayed in the display table. Delimitation of messages is recommended when there is a large number of messages.

Structure of the Comments tab

A list with all the comments for the displayed period is displayed using the "Comments" tab.



① Edit
To edit the selected comment, click on this button.
If you selected several comments, this button is disabled.

② Table with comments of the selected time period.

③ Filter function
When you enter a text in the "Filter" text box, all columns are searched and the corresponding entries are displayed in the display table. Delimitation of comments is recommended when there is a large number of comments.

④ Delete
To delete a comment, select the comment and double-click this button.
Multiple selection is possible.

The table contains the following four columns:

Column	Function
Name of the series	Name of the data point relating to the comment
Time stamp of measuring point	Time stamp of the measurement
Comment	Content of comment
Author	Author of comment

Values tab

You can find more information on the Values tab in the Matrices section.

3.5.2 Configuring charts

Follow these steps to configure a chart:

1. Click on the chart in the navigation field.
2. To open the configuration dialog, click on .
3. Configure the tabs of the configuration dialog as described below.
4. Click the "Save" button.

Configuring the "General" tab

To configure the "General" tab, follow these steps:

1. Enter the name of the chart in the "Name" text box.
2. Enter the number of decimal places to be displayed in the detail field of a measuring point in the "Decimal format" text box.
3. If you enable "Current date", the current time is always used as the basis for the query type.

   If you disable "Current date", a defined time is used as the basis for the query type.

   In this case, select the time in the text box "From".
4. From the "Query type" drop-down list, select the type of the displayed time period.
5. From the "Compression" drop-down list, select the compression level to be displayed in the chart.
6. If you enter a number other than zero in the "Offset" text box, the chart will not display the selected time period. The displayed time period is shifted by offset times the cycle of the query type. For example, if you have selected Month as the query type and an offset of -2, the chart will display March instead of May.
7. If you enable "Use initial time stamp", the values at the beginning of your cycle are displayed in the chart.

   Background: The end time stamp is always used in the Energy Manager. End time stamping means that all values get the time stamp at the end time of their cycle. This means, for example, that the first daily value of a month is stamped at midnight on the second day of the month. Accordingly, the last daily value of a month has a time stamp of midnight of the first day of the following month. These values are also displayed in the chart if you have not activated "Use initial time stamp".
8. To compare the time period displayed in the chart with another time period, enable "Comparison", "Static" or "Dynamic".

   If you have enabled "Static", select the start of the period to be compared from the calendar under "From". This time period does not change.

   If you have enabled "Dynamic", enter a number in the "Offset" text box. The period to be compared is offset from the displayed period by a multiple of the cycle of the query type. The function is the same as in step 6.

Configuring the "Data sources" tab

To configure the "Data sources" tab, follow these steps:

1. To add a data point or MEVA/KPI, select the object from the "Select" drop-down list. When you enter a term in the drop-down list, the displayed objects are filtered by that term.

   The only objects displayed in the drop-down list are of a type enabled under "Filter".

   Alternatively, you can use the structure browser. To open the Structure Browser, click on .

   Note

   You can display values in the chart that are stored locally on the acquisition component. This data is deleted from the acquisition component 62 days after it is created and can then no longer be displayed in the chart.

2. To configure a selected object for the chart, click on the object in the "Currently selected" list.

   You can enter an alternative name. If you enabled the option button in the corresponding row, the alternative name or description of the object is displayed as the name of the data series in the chart.

   Under "Category", select the category of values to be displayed in the chart. The conversion between energy/consumption and power/flow is made automatically.

   From the"Function" drop-down list, select the type of values of the object are to be displayed in the chart

3. To delete an object from the chart, click on .

Configuring the "Display" tab

To configure the "Display" tab, proceed as follows:

1. To configure the display of an object in the chart, click on the corresponding object.
2. From the "Color" drop-down list, select the color with which the values of the object are to be displayed in the chart.
3. From the "Type" drop-down list, select the way in which the values of the object are to be displayed in the chart.
4. From the "Y-axis" drop-down list, select the y-axis to which the object is assigned in the chart.
5. If you disable "Visible", the object is not displayed in the chart.
6. If you enable "Stacked", all objects where this option is enabled and assigned to the same axis are displayed stacked on top of each other.

Configuring the "Limits" tab

To configure the "Limits" tab, follow these steps:

1. To configure the limits of an object's values on the chart, click on the object.
2. In the "Upper warning" text box, enter the numeric value of the upper limit.
3. In the "Upper warning" text box, enter the numeric value of the upper warning limit.
4. In the "Lower warning" text box, enter the numerical value of the lower warning limit.
5. In the "Lower limit" text box, enter the numerical value of the lower limit.

To successfully configure the limits, adhere to the following nonequivalence: Upper limit ≥ Upper limit warning ≥ Lower limit warning ≥ Lower limit

Configuring the "Axes" tab

To configure the "Axes" tab, proceed as follows:

1. To add a new y-axis, click on .
2. To configure an axis, click on the corresponding axis.

   In the "Name" text box, enter the name of the axis. The name of the axis is displayed in the chart.

   In the "Lower limit" text box, enter the lowest numerical value on the axis that is displayed in the chart. If you leave this box empty, the axis is automatically scaled.

   With the "Area" display type, the chart is always displayed in the zero-point display.

   In the "Upper limit" text box, enter the highest numerical value on the axis that is displayed in the chart. This numerical value must be greater than the lowest numerical value on the axis. If you leave this box empty, the axis is automatically scaled.
3. To delete an axis, click on .

Manual data acquisition

4

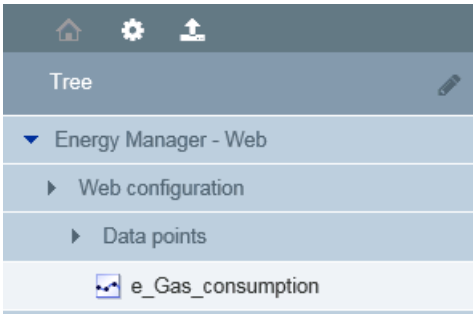
4.1 Datapoints

Overview

A datapoint serves to store measured values. In Energy Manager PRO Web you can see all the data points that were defined in the client under the entry point. Restrictions can exist with regard to the user rights.

Procedure

1. Click on the data point whose value you want to display.



   The detail area opens.

2. You can adapt the settings in the detail area. The datapoint values for the selected settings are shown in the detail area.

   With datapoints, the Chart tab is available immediately after a click on the respective object.

① Selection of the "Chart" tab
② Selection of the "Alarms" tab
③ Selection of the "Comments" tab
④ Selection of the "Values" tab
⑤ Selection of the displayed time period

To change the time period, click on the arrow keys or . By clicking on , you open the time and date selection.

You can find more information on the time and date selection in the Charts section.

⑥ Selection of the displayed compression level
⑦ Table with the values of the datapoint and the time stamps of the values.
⑧ Edit a value.

Click this button to open the dialog in which you can change the value. You cannot change the entry of the "Sum" field in the dialog of a counter value.

Values tab

Value changes made in the table are automatically saved in the datapoint. The selected time range is not saved.

On a renewed display of the dialog, the current time range is always displayed.

Chart, Alarms and Comments tabs

You can find more information on the Chart, Alarms and Comments tabs in the Charts section.

See also

Creating data points (Page 198)

Data point (Page 196)

Configuration of the data points (Page 199)

4.2 Parameters

Overview

With a Parameter you can acquire a fixed value that is generally valid, or is limited by the entry of a time range in its validity duration. You can, for example, define electricity or gas prices for specific periods or specify conversion factors such as a CO_2 conversion factor.

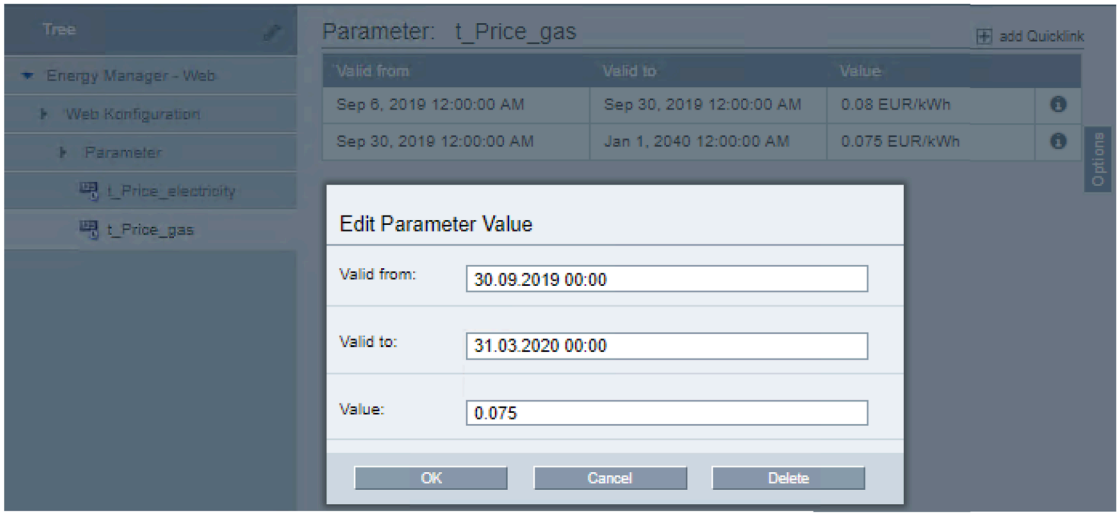
The entry of a parameter value in the Energy Manager PRO Client corresponds to the entry in the Energy Manager Web.

Procedure

1. Click the parameter for which you want to enter or edit a value in the navigation area.

   In the detail area you can see an overview of the configurable validity periods including parameter value.

2. If you click the info symbol at the end of the line of a validity period, you can edit or delete the validity period and the parameter value.



3. To define a new validity period including a parameter value, select the "Options" tab and click "New parameter value".

   The "New parameter value" dialog opens.

4. Select the validity period and enter the parameter value.

5. Click the "OK" button.

See also

Creating parameters (Page 218)

Parameters (Page 216)

4.3 Matrices

4.3.1 Overview

The matrix allows you to display both historical and current values as numbers in a table. Besides that,

you change the values via the Matrix.

The matrix or value functionality is available as a separate tab for the following objects:

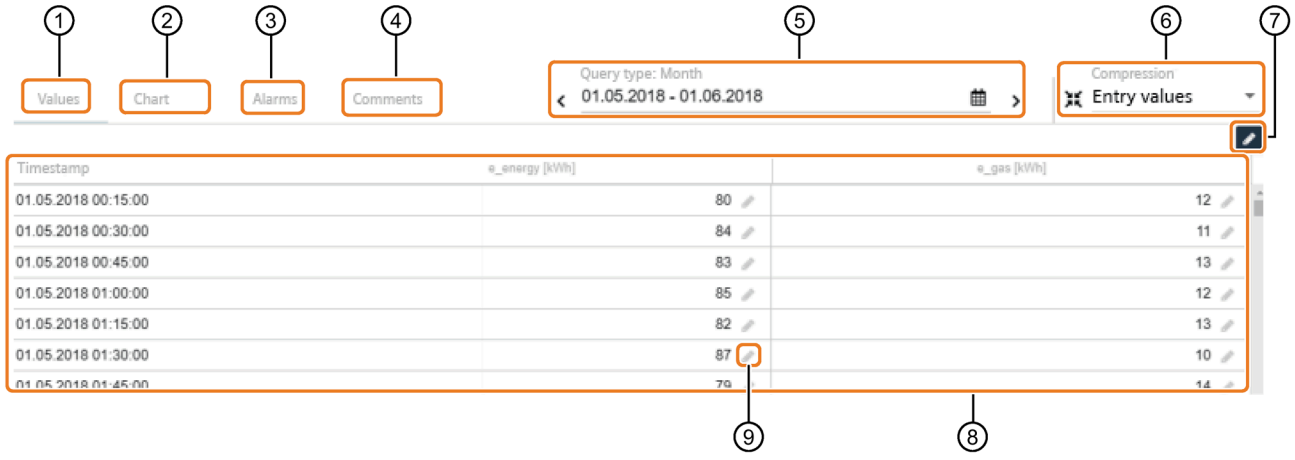
- Data point
- Matrix
- Chart object

Configuring the Values tab for data points and chart objects

For data points and chart objects, the Values tab page is available immediately after you click on the relevant object. Value changes made in the matrix are automatically saved in the data point. The selected time range is not saved. When the matrix is displayed again, the current time range is always displayed. You cannot configure the matrix of these objects.

Layout of the Values tab

The following figure shows a representation of the matrix in the Energy Manager Web:



① Selection of the "Values" tab
② Selection of the "Chart" tab
③ Selection of the "Alarms" tab
④ Selection of the "Comments" tab

⑤ Selection of the displayed time period

To change the time period, click on the arrow keys or . By clicking on , you open the time and date selection.

You can find more information on time and date selection in the Charts section.

⑥ Selection of the displayed compression level

⑦ Configuration of the matrix

To open the matrix configuration, click on .

⑧ Table with the values of the data points and the time stamps of the values.

⑨ Edit a value.

If you click on this button, the dialog opens where you can change the value.

You cannot change the entry of the "Sum" field in the dialog of a counter value.

You cannot change values of MEVAs/KPIs.

Chart, Alarms and Comments tabs

You can find more information on the Chart, Alarms and Comments tabs in the Charts section.

4.3.2 Configuring matrices

To configure a matrix, proceed as follows:

1. Click on the matrix in the navigation field.
2. To open the configuration dialog, click on .
3. Configure the tabs of the configuration dialog as described below.
4. Click the "Save" button.

Configuring the "General" tab

To configure the "General" tab, follow these steps:

1. In the "Name" text box, enter the name of the matrix.
2. Enter the description of the matrix in the "Description" text box.
3. In the "Decimal places" text box, enter the number of decimal places displayed in the matrix.
4. If you enable "Allow only data view", you cannot change any values in the matrix.
5. If you enable "Plausibility check", the values in the matrix that violate the plausibility limits configured in the data point are highlighted accordingly.
6. If you enable "Transposed data presentation", the time stamps are displayed above the columns and the data points above the rows.
7. If you enable "Current date", the current values are always displayed in the matrix.
8. If the "Current date" is not enabled, enter the time from which values are displayed in the matrix in the "From" box.
9. From the "Query type" drop-down list, select the period to be displayed.
10. From the "Compression" drop-down list, select the compression level to be displayed.
11. If you enter a number other than zero in the "Offset" text box, the matrix will not display the selected time period. The displayed time period is shifted by offset times the cycle of the query type. For example, if you have selected the Month query type and an offset of -2, the matrix displays March instead of May.
12. If you enable "Acyclic", the values are not assigned to a cycle. This option is useful for matrices with data points without an acquisition cycle.
13. If "Acyclic" is disabled, select the cycle in which the values of the data points are displayed from the "Cycle" drop-down list.

Configuring the "Data Source" tab

To configure the "Data source" tab, follow these steps:

1. To add a data point, select the object from the "Select" drop-down list. When you enter a term in the drop-down list, the displayed objects are filtered by that term.

   The only objects displayed in the drop-down list are of a type enabled under "Filter".

   Alternatively, you can use the structure browser. To open the Structure Browser, click on .

   Note

   You can display values in the matrix that are stored locally on the acquisition component. This data is deleted by the acquisition component 62 days after its creation and can then no longer be displayed in the matrix.

2. To configure a selected object for the matrix, click on the object in the "Currently selected" list.

   You can enter an alternative name. If you enable the option button in the corresponding row, the alternative name or description of the object is displayed as the name of the data series in the matrix.

3. To delete an object from the chart, click on .

4.4 Setting up mobile data acquisition with the SIMATIC Energy Manager app for iOS and Android

Overview

In addition to manual data acquisition in Energy Manager and Energy Manager Web, you can acquire data manually using the SIMATIC Energy Manager App. With the Energy Manager App you manually acquire measured values (e g. energy data),which are then transferred to Energy Manager for further analyses. The measured values are synchronized via encrypted communication (https) with Energy Manager. To acquire count values in the Energy Manager App, you need a configured reading route. You configure this reading route in Energy Manager. After logging into the Energy Manager App, the app downloads the approved reading routes from Energy Manager and displays these reading routes. In addition to the reading route, the app also applies the appropriately configured data points as well as their main plausibility settings.

Note

Functionality of Energy Manager Basic

Mobile data acquisition is not available for Energy Manager Basic.

Requirements

- The user has the functional right "Matrix".
- The user has the functional right "Measurement".

Procedure

To configure a reading route for manual acquisition with the Energy Manager App, follow these steps:

1. Create a Matrix object with a meaningful name.

   You can find more information in the section "Manual acquisition with the matrix".

2. Create a data point of the "Counter" category below the matrix object:

   You can find more information in the section "Creating a data point".

3. Create a valid counter for the data point.

   You can find more information in the section "Configuring counters".

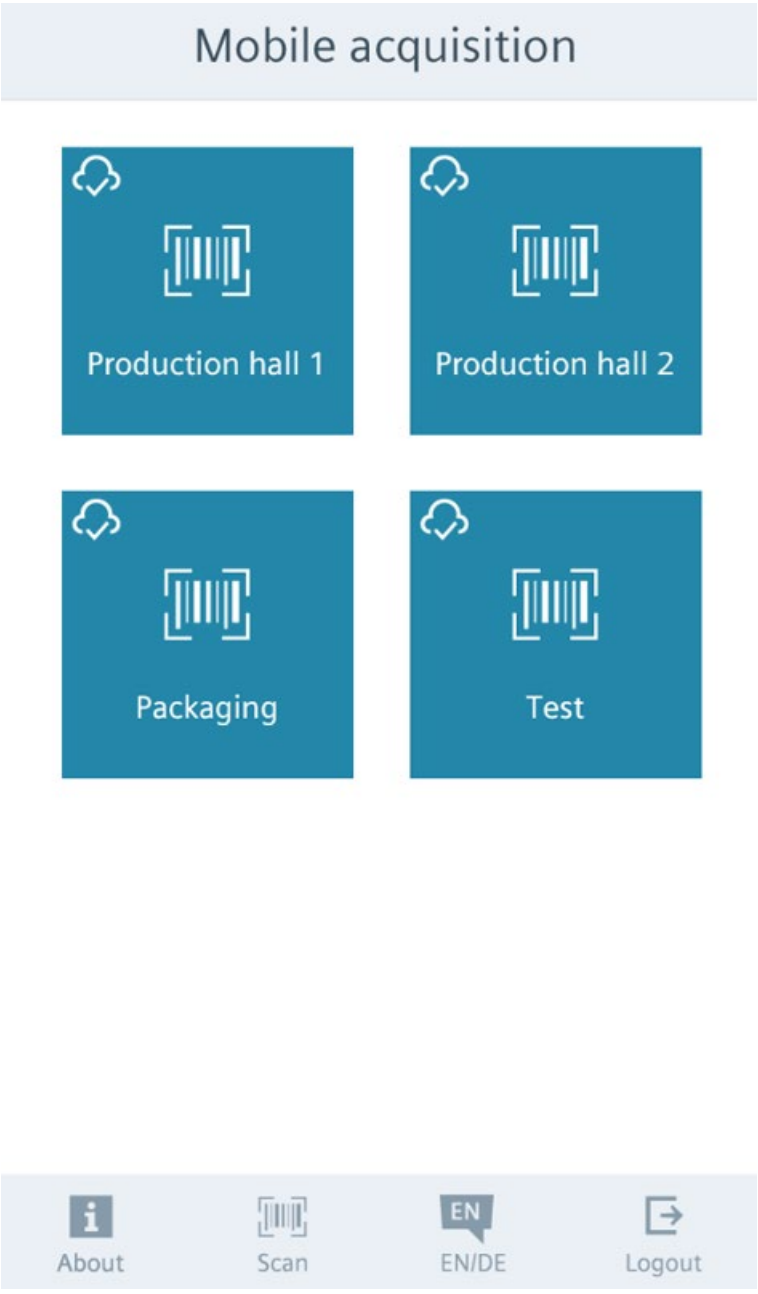
4. Define your limits below the plausibility settings of the data point.
   You can find more information in the section "Configuring the plausibility".

5. Add the matrix object as a Quicklink.
   You can find more information in the section "Quicklinks".

Result

The reading route for manually entering the counter values in the Energy Manager App is configured. Quick links of the "Route" data type are available in the "Mobile acquisition" interface of the app. If no Quicklinks have been created in Energy Manager yet, a message appears in the app.

The following figure shows four Quicklinks from the Energy Manager App:



You can find additional information on the Energy Manager App including data acquisition using the app in the "SIMATIC Energy Manager V1.0" manual.

See also

Creating Quicklinks in the Web (Page 24)
Creating data points (Page 198)
Configuring counters (Page 204)
Configuring the plausibility settings (Page 206)
Creating matrices (Page 149)

4.5 Importing measured values

Overview

In Energy Manager Web you have the option of importing measured values for one or more data points in CSV format. A wizard guides you through the import procedure.

Note

If a timestamp is already present in a datapoint, the time stamp and its value are overwritten during the import.

Note

- The decimal delimiter between the individual numbers in the import file depends on the language with which you logged in to Energy Manager Web:
  - German: The decimal places are separated from the integer with ","; "." is ignored.
  - English: The decimal places are separated from the integer with "."; "," is ignored.

  Login to Energy Manager Web in the language in which the import file was generated.
- The time stamp in the import file depends on the language with which you logged in to Energy Manager Web:
  - German: dd.MM.yyyy hh:mm:ss - 24-hour format
  - English: MM/dd/yyyy hh:mm:ss - 12-hour format

The columns in the import file are separated by ";" in German and in English.

Requirements

- The data points are set up in Energy Manager .
- The measured values are available in a CSV file.
- The measured values are available in UTC time format.
- The interval between timestamps corresponds to the configured acquisition cycle of the data point.

Procedure

To import measured values for one or more data point(s) in Energy Manager Web, follow these steps:

1. Click on the icon for data import in the menu bar.

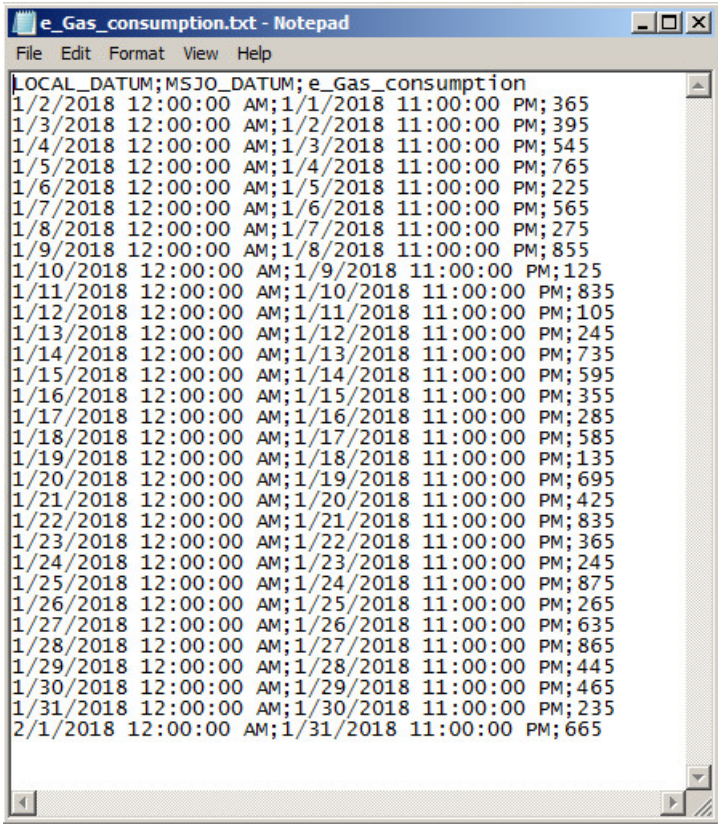
Note

The icon for data import is only available in the home area.

2. Click on the "Browse..." button in the detail area.

3. Select the required file.

   The following figure shows the content of a valid import file.

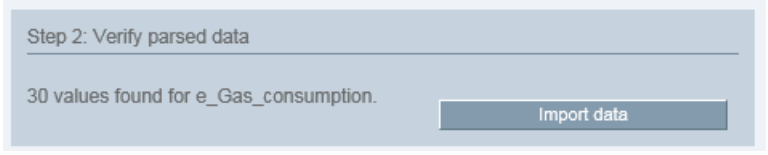


Note

Make sure that the name of the data point in the CSV file and the name of the data point in Energy Manager match.

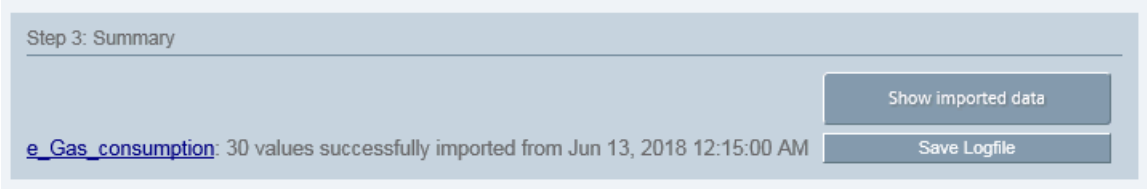
The content of the selected file is automatically checked. The result of the check is displayed.

4. To start the data import, click on the "Import data" button.



The result of the data import is summarized.

5. If you want to view the imported data, click on the "Show imported data" button.
   The values are displayed graphically on a separate web page.
6. If you want to save the summary as a file, click on the "Save Logfile" button.



Result

The measured values for the corresponding data point are imported.

See also

Login (Page 15)

Creating data points (Page 198)

Configuration of the analysis objects

5

5.1 Editing mode

Overview

Manage your system structure in Energy Manager Web with the help of the editing mode. The editing mode includes the shortcut menu and the configuration tools. In a similar way as in the Energy Manager PRO Client, you create and configure folders and analysis objects using the shortcut menu. The following objects, including folders, are analysis objects:

- Dashboards
- Reports
- Charts
- Matrices
- Folder

Move and rearrange the objects as you wish using the configuration tools.

Enable edit mode

To enable the editing mode, follow these steps:

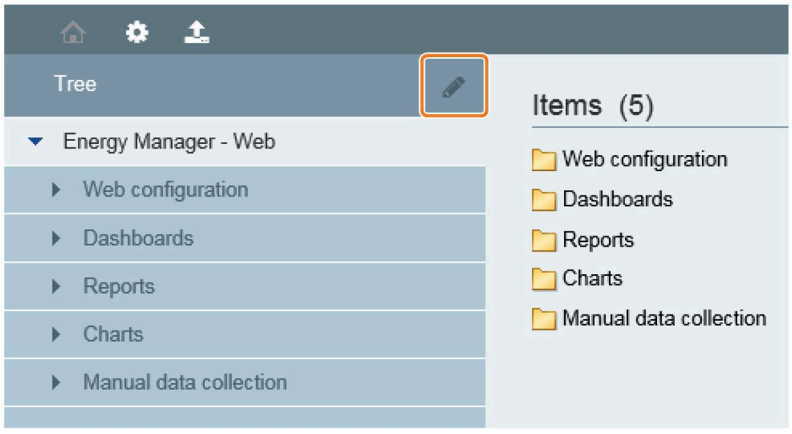
1. Log in with your user name in Energy Manager Web.

   The start screen of Energy Manager Web is displayed.

2. Click the navigation header "Tree" in the navigation area.

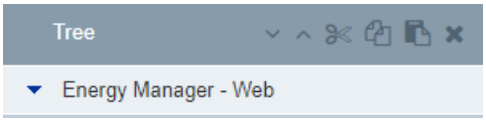
   The Quicklink view changes to the tree view.

3. Click the edit icon ("Enable edit mode") in the navigation header of the navigation area.



Result

The editing mode is enabled. Instead of the edit icon, the configuration tools of the editing mode are displayed in the navigation header.

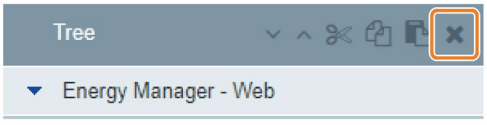


Note

You can only enable the editing mode in the home area of Energy Manager Web .

Disable edit mode

To close the editing mode, click on the "Disable edit mode" icon in the navigation area.



See also

Setting up dashboards (Page 81)

Creating reports (Page 136)

Creating charts (Page 145)

Creating matrices (Page 149)

Creating folders (Page 153)

Configuration tools (Page 78)

Shortcut menu (Page 79)

Definition of home page (Page 18)

5.2 Configuration tools

Overview

The configuration tools enable you to restructure objects in the navigation area within a folder or to move objects to a different folder. Structural changes in Energy Manager PRO Web are also adopted in the Energy Manager PRO Client and vice versa.

Using configuration tools

To use the configuration tools, follow these steps:

1. Enable the editing mode.
2. Click in the navigation area on the object you wish to rearrange.
3. Click on the corresponding configuration tool in the navigation header.

The following table shows an overview of the existing configuration tools and their function:

Configuration tool	Function
Move down	Moves the selected object one position down in the navigation area. Move down is only possible within a folder.
Move up	Moves the selected object one position up in the navigation area. Moving upward is only possible within a folder.
Cut	Cuts the selected object from the current folder. You then insert the cut object at a different position in the navigation area.
Copy	Copies the selected object to the clipboard. You then insert the selected object at a different position in the navigation area.
Paste	Inserts the selected object at the last position of the new folder in the navigation area. Before you insert the selected object in the new folder, you first have to select the new folder in the navigation area.
Disable edit mode	Closes the editing mode.

Note

Clicking the icon of an object in the navigation area opens the corresponding object structure. To use an additional data point in a chart, for example, you thus open the object structure of the chart and insert the data point below the chart.

See also

Editing mode (Page 76)

5.3 Shortcut menu

Overview

Using the shortcut menu of the editing mode, create new objects and configure already existing objects in Energy Manager Web. Newly created objects and object configurations in Energy Manager PRO Web are also adopted in the Energy Manager PRO Client and vice versa. The shortcut menu of the editing mode consists of the following menu commands:

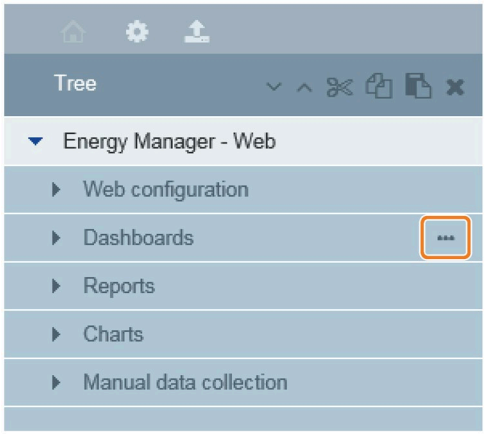
- Edit
- Add dashboard
- Add report
- Add chart
- Add matrix
- Add folder

Open shortcut menu

To open the shortcut menu of the editing mode, follow these steps:

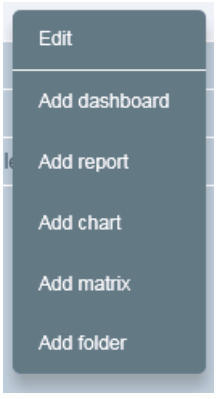
1. Enable the editing mode.
2. Place the mouse pointer over a folder in the navigation area.

   The shortcut menu is displayed on the right-hand side of the menu item.



3. Click on the shortcut menu icon.

   The shortcut menu of the editing mode opens.



Note

When you move the mouse pointer over a dashboard, a report, a chart or a matrix in edit mode, an Edit icon is displayed on the right-hand side of the menu item instead of the shortcut menu icon. When you click on the Edit icon, you open the corresponding configuration dialog in which you configure the selected object.

See also

Editing mode (Page 76)

Configuration tools (Page 78)

Setting up dashboards (Page 81)

Creating reports (Page 136)

Creating charts (Page 145)

Creating matrices (Page 149)

Creating folders (Page 153)

Editing folders (Page 155)

5.4 Dashboards

5.4.1 Overview

To visualize various measurement and plant data in a clear manner in Energy Manager Web, you can create Widget Dashboards with the help of the shortcut menu. The data is visualized in the dashboards via widgets. Widget Dashboards are designed for display in Energy Manager Web or on mobile devices. For this reason, only configure Widget Dashboards in Energy Manager Web.

5.4.2 Setting up dashboards

Requirements

- The folder has been created.
- The user has the functional right "Widgets/Dashboards - create, remove, configure".

Procedure

To create a new Widget Dashboard, follow these steps:

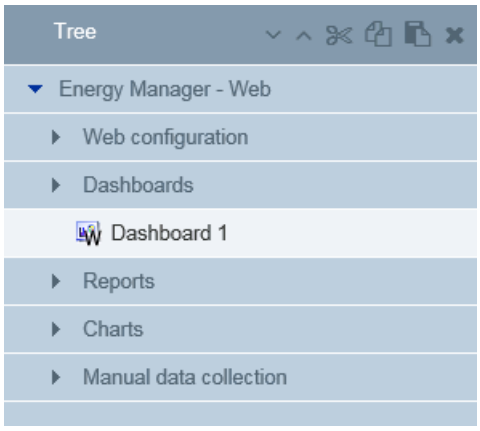
1. Enable the editing mode.
2. Place the mouse pointer over the folder in the navigation area in which you would like to set up the Widget Dashboard.

   The shortcut menu icon is displayed in the right-hand area of the menu item.
3. Click on the shortcut menu icon.

   The shortcut menu opens.
4. Click on the menu command "Add dashboard".

Result

The new Widget Dashboard is set up in the selected folder of the navigation area.



See also

Editing mode (Page 76)

Shortcut menu (Page 79)

Editing dashboards (Page 83)

Deleting dashboards (Page 86)

Overview of Widget Dashboards (Page 33)

Creating Widgets (Page 87)

5.4.3 Editing dashboards

Requirements

- The Widget Dashboard has been set up.
- The user has the functional right "Widgets/Dashboards - create, remove, configure" or the functional right "Widgets/Dashboards - configure".

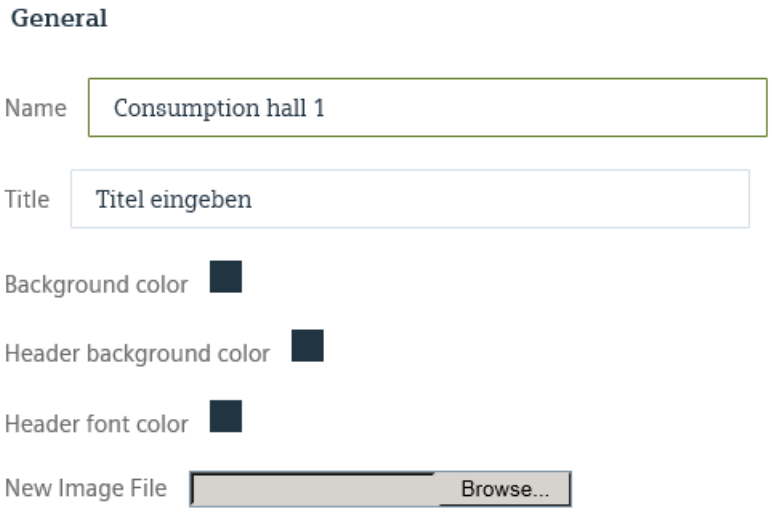
Procedure

To edit Widget Dashboards, follow these steps:

1. Enable the editing mode.
2. Place the mouse pointer over the Widget Dashboard in the navigation area that you would like to edit.

   The Edit icon is displayed in the right-hand area of the menu item.
3. Click on the editing icon.

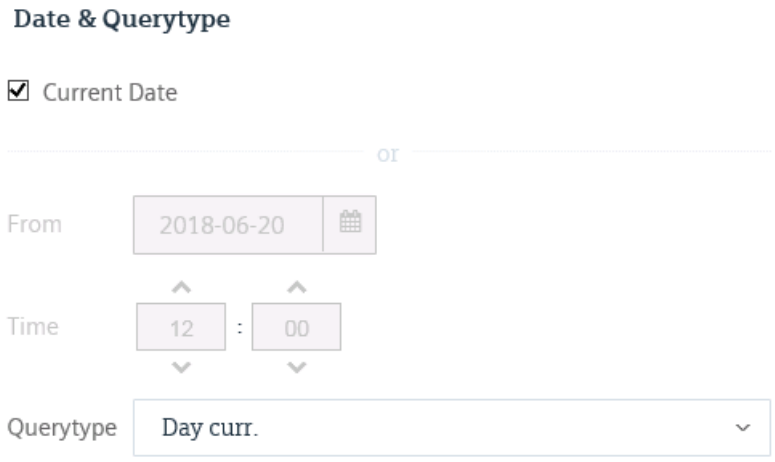
   The configuration dialog "Edit Dashboard" opens.



4. Enter the name of the Widget Dashboard in the "Name" entry field.
5. If required, enter an additional title of the Widget Dashboard in the "Title" entry field.
6. Select a "Background color", a "Header background color" and a "Header font color".
7. In order to use a custom background image, if required, click on the "Select file" button and select the corresponding image.

   The background image is positioned centrally and displayed unscaled. The maximum size of the image is 2 MB.

8. To display the current date of the widgets in the dashboard, select the "Current Date" check box.



9. If you want to display a specific time period of the widgets in the dashboard, clear the "Current Date" check box. Select the required date and time from the selection boxes.
10. Select the observation period of the data in the Widget Dashboard from the drop-down list "Query type".
11. To save the configuration, click on the "Save" button.

Result

The configured settings generally apply for the entire dashboard. You can subsequently add different widgets to the dashboard. More information on adding widgets to a dashboard can be found in the section "Creating widgets". Settings which you configure in the configuration dialog of the individual widgets are only valid for the widget in question.

See also

Setting up dashboards (Page 81)

Cloning dashboards (Page 85)

Overview of Widget Dashboards (Page 33)

Creating Widgets (Page 87)

5.4.4 Cloning dashboards

Requirements

- The Widget Dashboard has been set up.
- The user has the functional right "Widgets/Dashboards - create, remove, configure".

Procedure

To clone Widget Dashboards, follow these steps:

1. Enable the editing mode.
2. Place the mouse pointer over the Widget Dashboard in the navigation area that you would like to clone.

   The Edit icon is displayed in the right-hand area of the menu item.
3. Click on the editing icon.

   The configuration dialog "Edit Dashboard" opens.
4. Click on the "Clone" button.

Result

The Widget Dashboard is cloned with the general settings of the dashboard and all associated widgets. The cloned Widget Dashboard is set up in the same folder in the navigation area as the original Widget Dashboard. The name of the cloned Widget Dashboards is made up of the name of the original Widget Dashboard and the ending "Copy_0". When you clone a Widget Dashboard several times, the number at the end of the name is incremented by 1, for example, from "Copy_0" to "Copy_1". You can then move the cloned Widget Dashboard to the required position in your navigation structure with the configuration tools.

See also

Editing dashboards (Page 83)

5.4.5 Deleting dashboards

Requirements

- The Widget Dashboard has been set up.
- The user has the functional right "Widgets/Dashboards - create, remove, configure".

Procedure

To delete Widget Dashboards, follow these steps:

1. Enable the editing mode.
2. Place the mouse pointer over the Widget Dashboard in the navigation area that you would like to delete.

   The Edit icon is displayed in the right-hand area of the menu item.
3. Click on the editing icon.

   The configuration dialog "Edit Dashboard" opens.
4. Click on the "Delete Dashboard" button.

Result

The Widget Dashboard is deleted from the system.

See also

Editing dashboards (Page 83)

5.4.6 Widgets

5.4.6.1 Creating Widgets

Overview

With the help of widgets you display your plant and measurement data in a different way depending on the widget. You have the option of inserting up to 32 widgets in a dashboard. You can freely position the widgets within the Widget Dashboard and adjust their size. The displayed values are updated in accordance with their cycle time and the query type of the Widget Dashboard.

Requirement

- The user has the functional right "Widgets/Dashboards - configure" or "Widgets/Dashboards - create, remove, configure".

Basic procedure

To create a widget in the Widget Dashboard, follow these steps:

1. Click in the navigation area on the Widget Dashboard in which you want to add a new widget.

   The Widget Dashboard is displayed in the detail area.

2. To enable configuration mode, click on the gear icon in the top right-hand part of the detail area.

3. To add a widget, click on the "Add Widget" button.

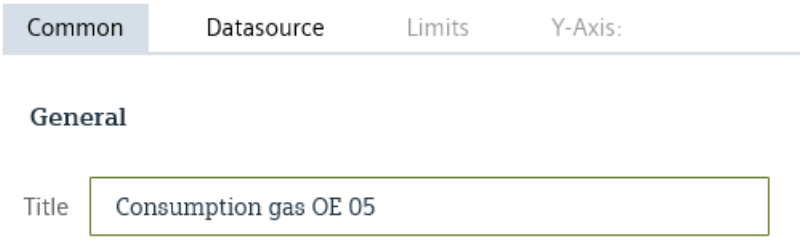
① Add new widgets.
② Edit settings of the Widget Dashboard.
③ Close configuration mode.

   The "Available Widgets" dialog window opens.

4. Click on the widget you wish to create.

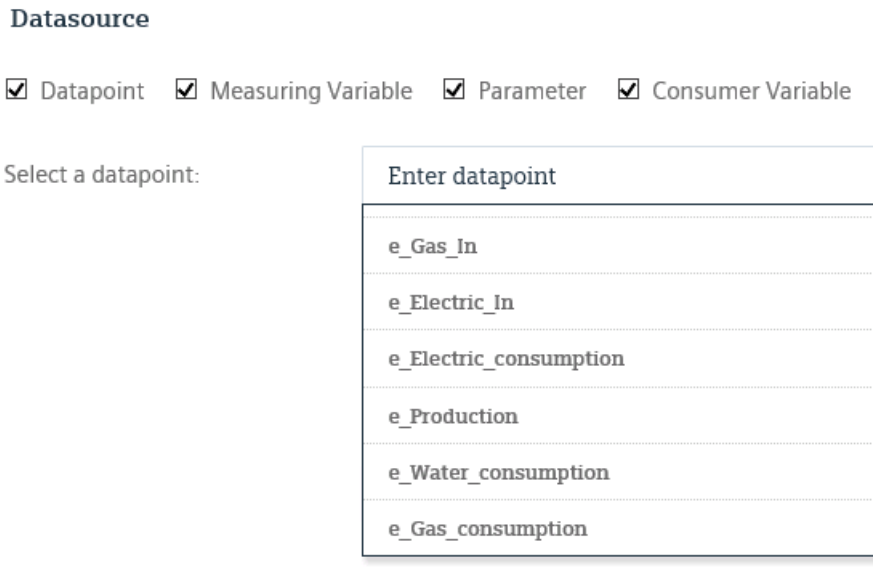
   The configuration dialog "Configure Widget" opens.

5. Enter a meaningful name for the widget in the "Title" entry field in the "General" tab.



The input of a name is required.

6. From the drop-down list "Select a data point" in the "Data source" tab select the data points that you want to use or display in the widget. You can enter the data points in the entry field. After the first three letters, a corresponding selection list is proposed. By selecting or clearing the check boxes "Data point", "Measuring Variable", "Parameter" and "Consumer Variable" you further refine the search.



Selected data points are displayed in the "Currently selected" list.

7. Click on the "Add Widget" button.

The "Edit" configuration dialog opens.

Note

When you have added the widget to the Widget Dashboard, you can configure the remaining tabs of the widget. You can find out how to configure the tabs of the individual widgets in the section "Widget configuration".

8. Click on the "Save Widget" button.

Result

The corresponding widget is created in the selected Dashboard.

See also

Setting up dashboards (Page 81)

Editing widgets (Page 90)

Overview of Widget Dashboards (Page 33)

Configuring the General tab (Page 112)

Configuring the "Data Source" tab (Page 115)

Available widgets (Page 91)

Widget configuration (Page 112)

5.4.6.2 Editing widgets

Requirements

- The Widget Dashboard including widget has been set up.
- The user has the functional right "Widgets/Dashboards - create, remove, configure" or the functional right "Widgets/Dashboards - configure".

Procedure

To edit widgets in a Widget Dashboard, follow these steps:

1. Click in the navigation area on the Widget Dashboard which contains the widget to be edited.
2. Click on the gear icon in the top right-hand corner of the Widget Dashboard.

   The configuration mode of the Widget Dashboard opens.
3. Then click on the edit icon in the top right-hand corner of the widget to be edited.

   The widget configuration dialog opens.
4. Configure the widget via the individual tabs.

   You can find out how to configure the individual tabs in the section "Widget Configuration".
5. Click on the "Save Widget" button.

See also

Creating Widgets (Page 87)

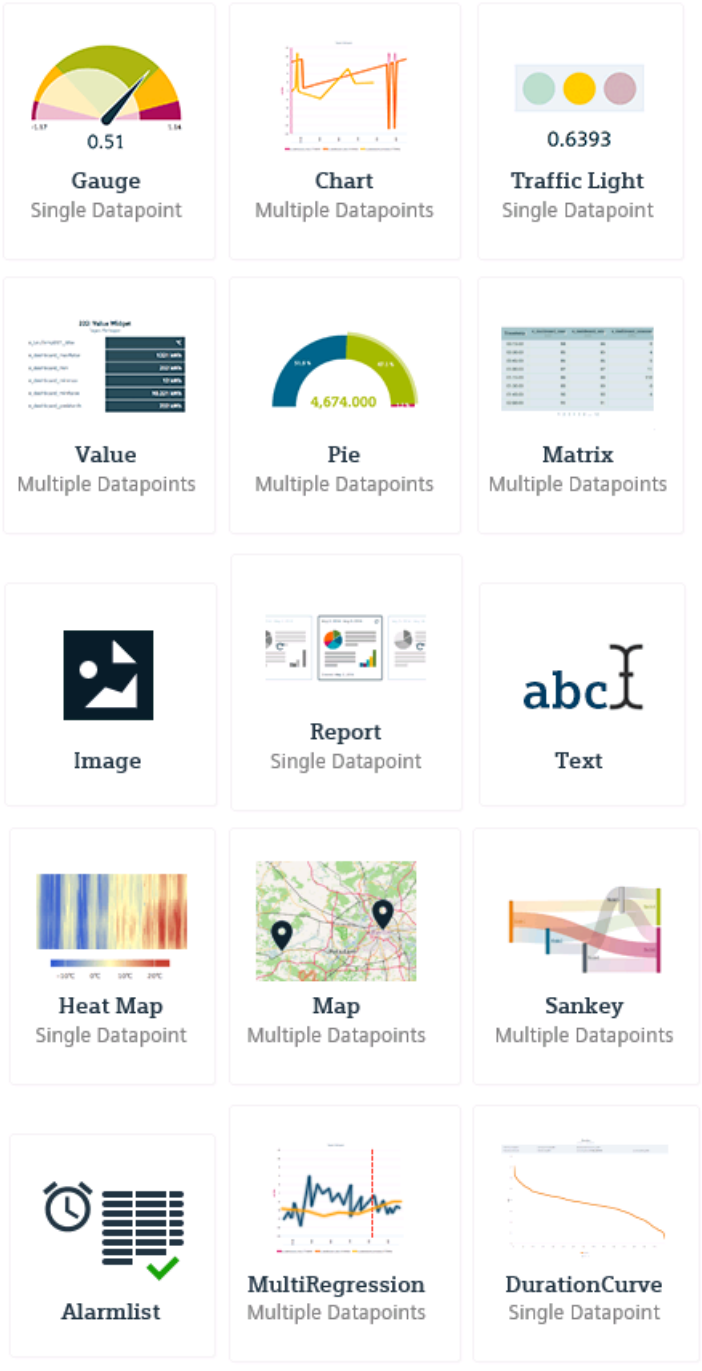
Widget configuration (Page 112)

5.4.6.3 Available widgets

Overview

In the dialog window "Available widgets" you can create 15 different widgets. You can find out how to open the dialog window "Available widgets" and add individual widgets to a Widget Dashboard in the section "Creating Widgets".

The following image shows you the available widgets:



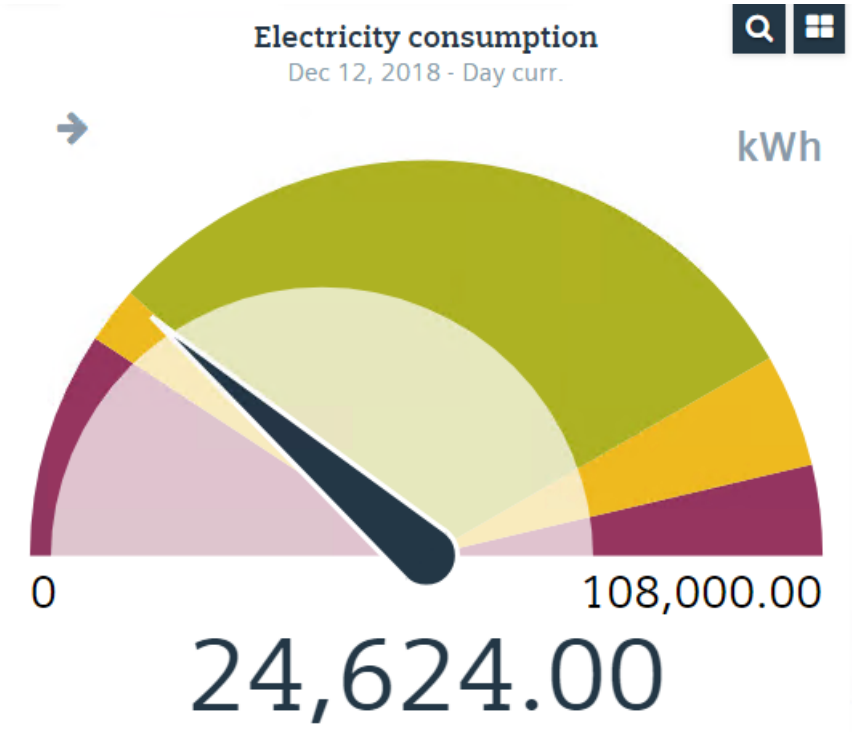
Depending on the widget, you can use one or more data points. The following table provides an overview of the available widgets and the number of data points that you can use in the respective widget.

Widget	Individual data point	Multiple data points
Gauge	x	-
Chart	-	x
Traffic Light	x	-
Value	-	x
Pie	-	x
Matrix	-	x
Image	-	-
Report	x	-
Text	-	-
Heat Map	x	-
Map	-	x
Sankey	-	x
Alarm list	-	-
MultiRegression	-	x
Duration curve	x	-

The "Image", "Text" and "Alarmlist" widgets are special cases and do not require any data points.

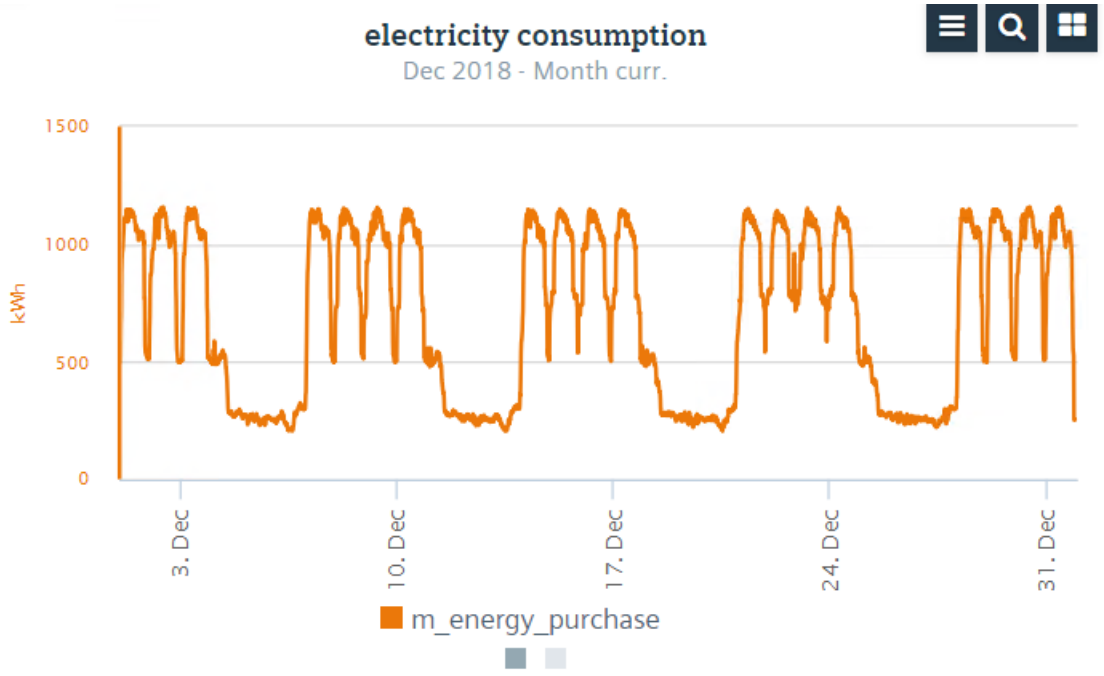
Gauge

The "Gauge" widget shows the value of the data point in a speedometer and displays the configured warning limits, upper and lower limits in color.

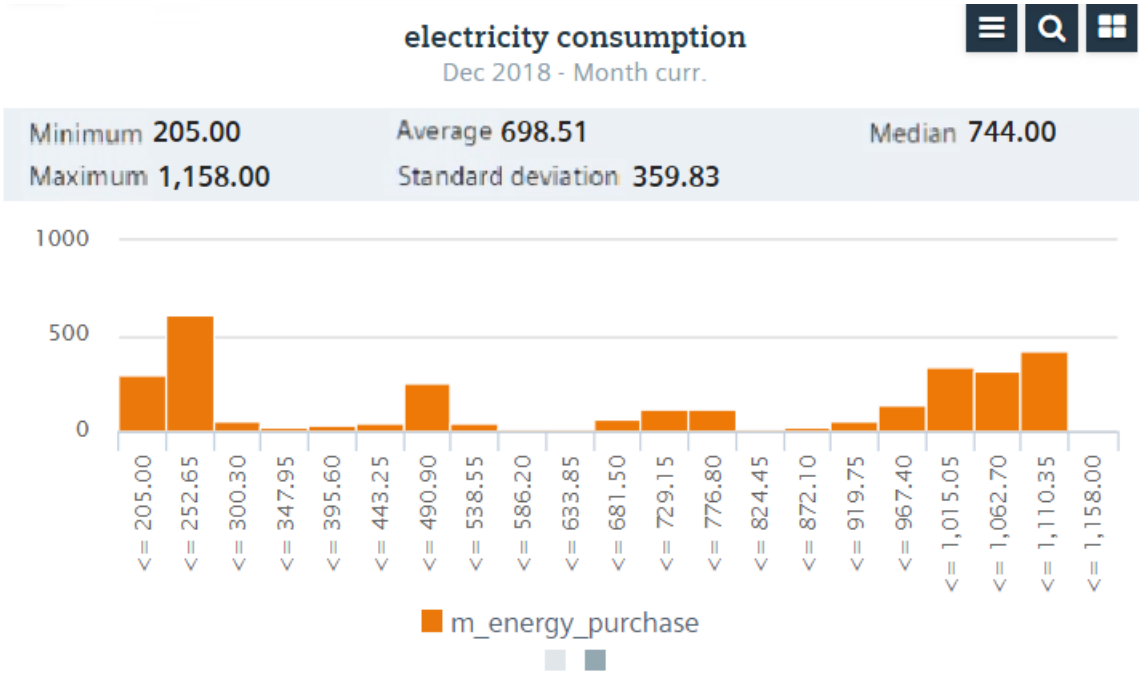


Chart

The "Chart" widget displays the data points in different graphs during the observation period. If you are in the configuration mode of the dashboard, you can change the display (bar, line, etc.) by clicking on a data point in the legend. You can change the color of the graph to be displayed if a second X-axis exists. When you have configured the y-axes, you can adapt the axis assignment of the y-axes.



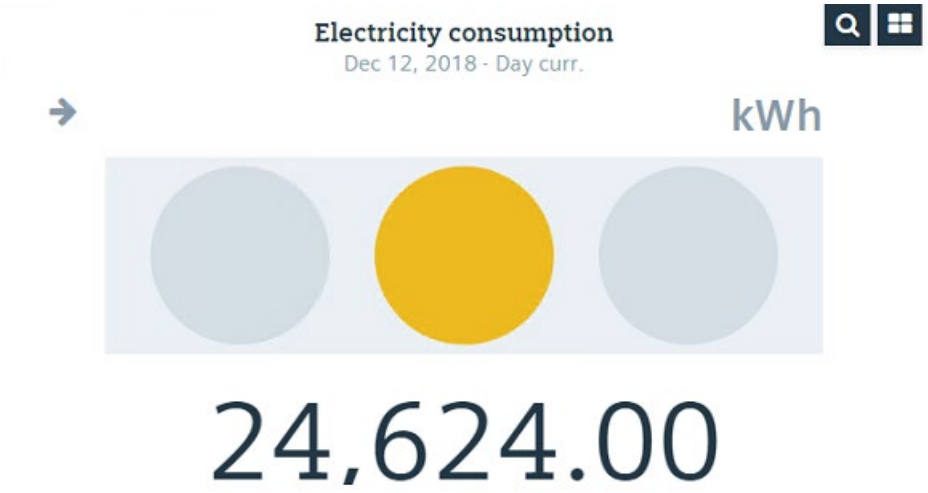
The second field shows different performance indicators and a histogram with the distribution of values.



If you are not in configuration mode, you can highlight the data point by clicking on a data point in the legend. If you have configured plausibility limits in the widget, these limits are displayed in the graph. Warning levels are displayed as yellow lines, high and low limits are displayed as red lines. Plausibility limits are not displayed in the histogram.

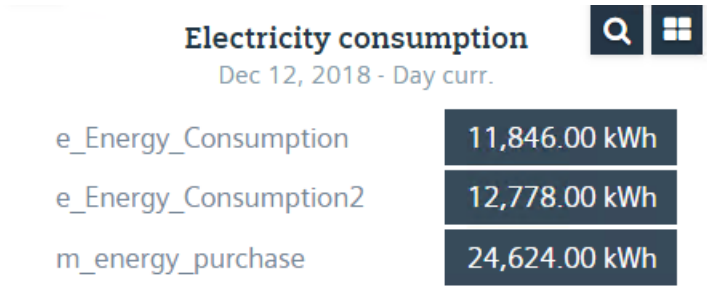
Traffic Light

The "Traffic Light" widget shows the values of the data points in one of the three traffic light colors, depending on the defined limits. If you do not define any limits in the widget, the traffic light always displays green or red.



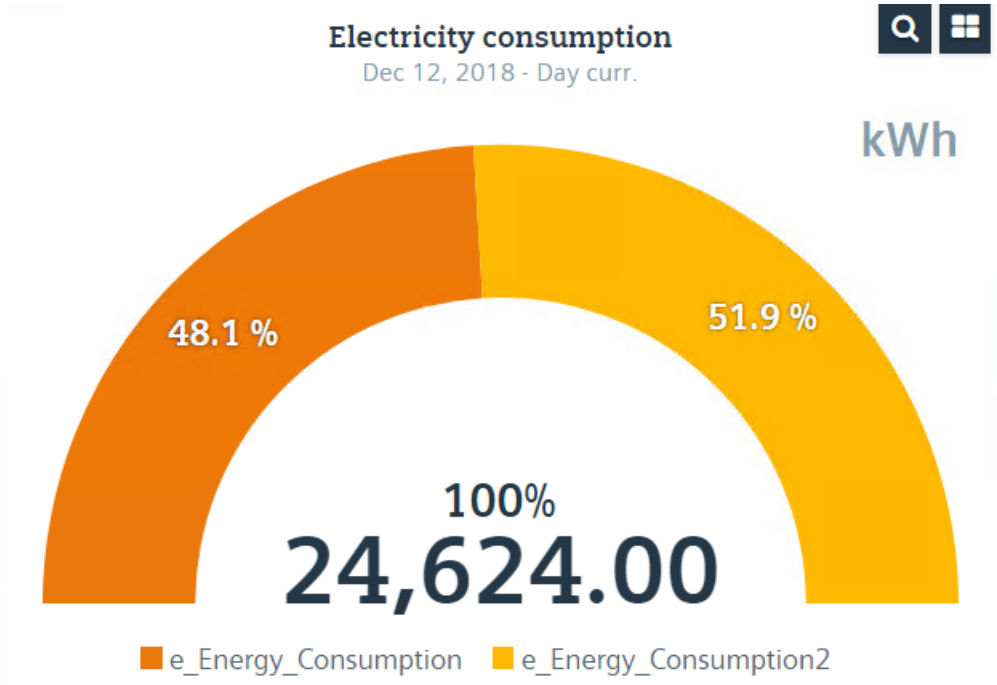
Value

The "Value" widget shows the name of the data points, their overall value and the associated unit over the selected observation period.



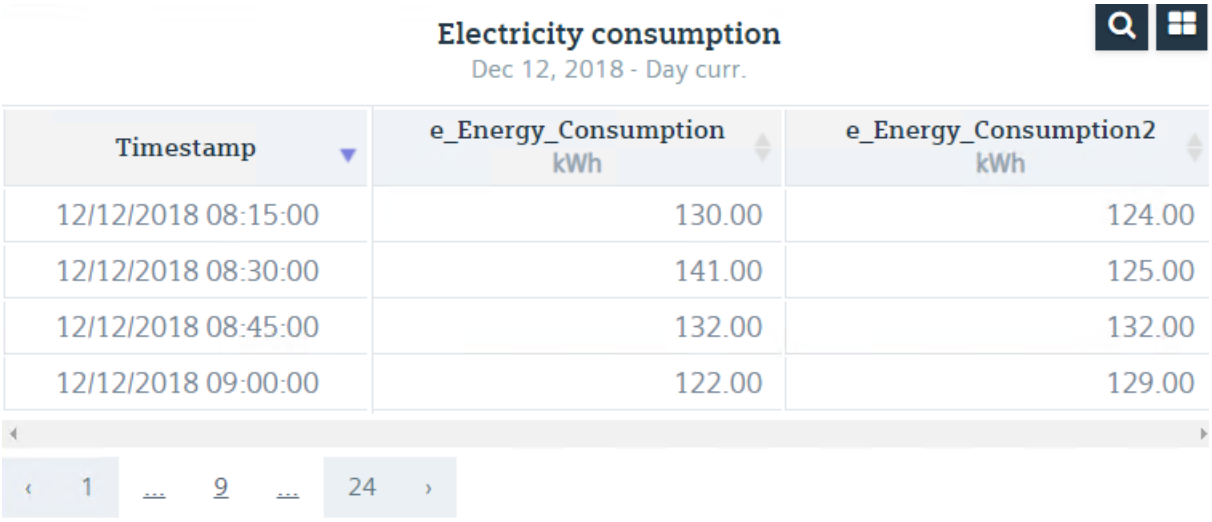
Pie

The "Pie" widget shows the complete value of all data points of the observation period within the semicircle. The individual sections of the pie chart show the percentage of the respective data points. Clicking an individual section of the pie chart shows the value of the individual data point within the semicircle. When you click on a data point in the legend, you can change the display color of the corresponding data point.



Matrix

The "Matrix" widget displays the values of the data points as a matrix with the corresponding cycle time or time stamp. If you configure plausibility limits in the data point, violations of warning levels are displayed in yellow, while violations of high and low limits are displayed in red.



Electricity consumption

Dec 12, 2018 - Day curr.

Timestamp	e_Energy_Consumption kWh	e_Energy_Consumption2 kWh
12/12/2018 08:15:00	130.00	124.00
12/12/2018 08:30:00	141.00	125.00
12/12/2018 08:45:00	132.00	132.00
12/12/2018 09:00:00	122.00	129.00

‹ 1 ... 9 ... 24 ›

Image

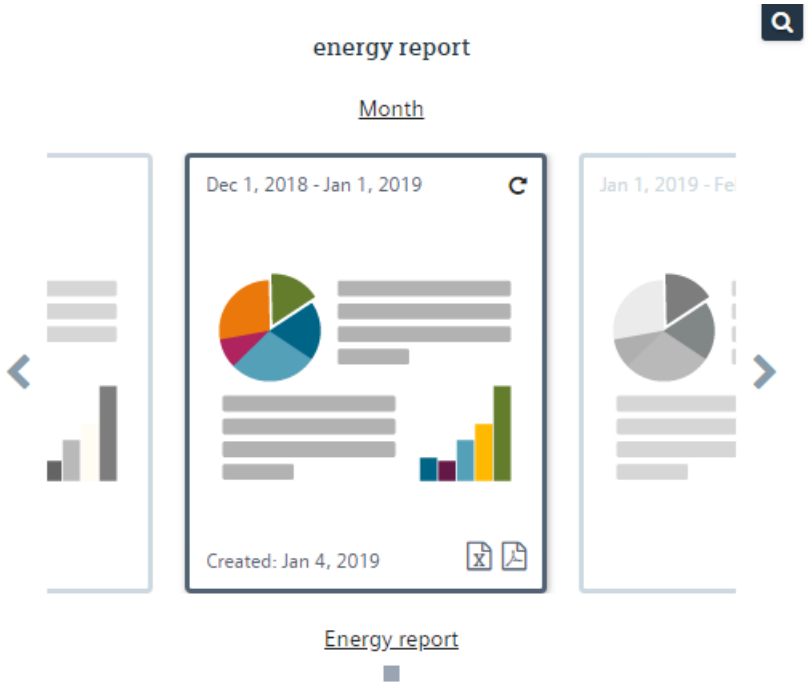
Depending on the configuration, the "Image" widget shows the selected image either centered in the original size or stretched across the entire length of the widget.

Report

The "Report" widget displays the selected report. You can scroll forwards or backwards in defined intervals in order to also have past periods or future periods displayed.

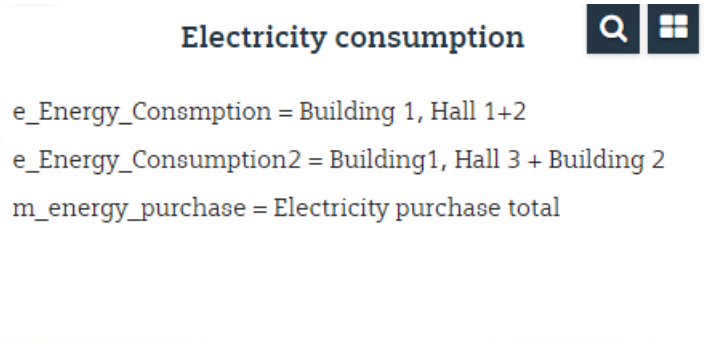
If there is no report available for the displayed period, the displayed image is grayed out. Click on the image to create the report.

Two icons are available for downloading the report as an EXCEL or PDF file.



Text

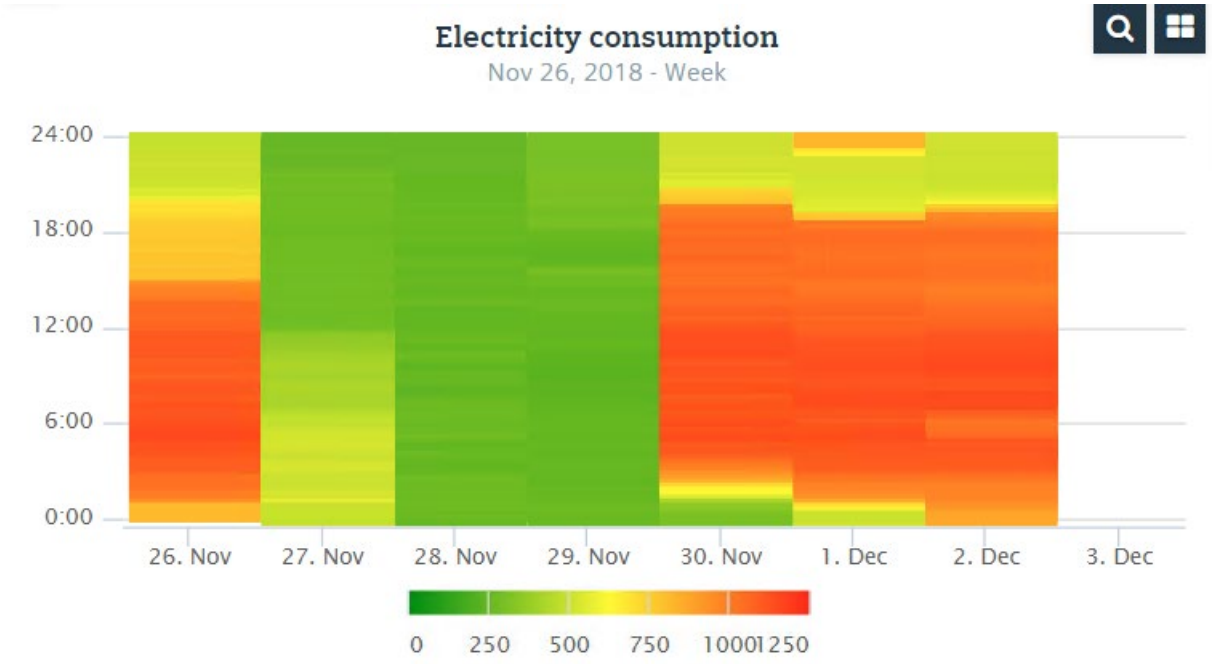
The "Text" widget shows you the entered text in the widget. When you click on a link in the widget, either the URL opens in the Internet browser or the e-mail program opens depending on the link.



Heat Map

The "Heat Map" widget shows you a graphical overview of the acquired measurement values at specific times of the day. You can individually configure the lower and upper limits. In this way, you can track the time at which your defined limits were exceeded or undershot. When displaying data, you can choose between display over 24 hours or over a week.

The figure below shows an example of a "Heat Map" widget. The measurement data between noon and 6 p.m. lie for the most part in the lower value range.



See also

Configuring the Heat Map tab (Page 125)

Map

Note

Functionality of Energy Manager Basic

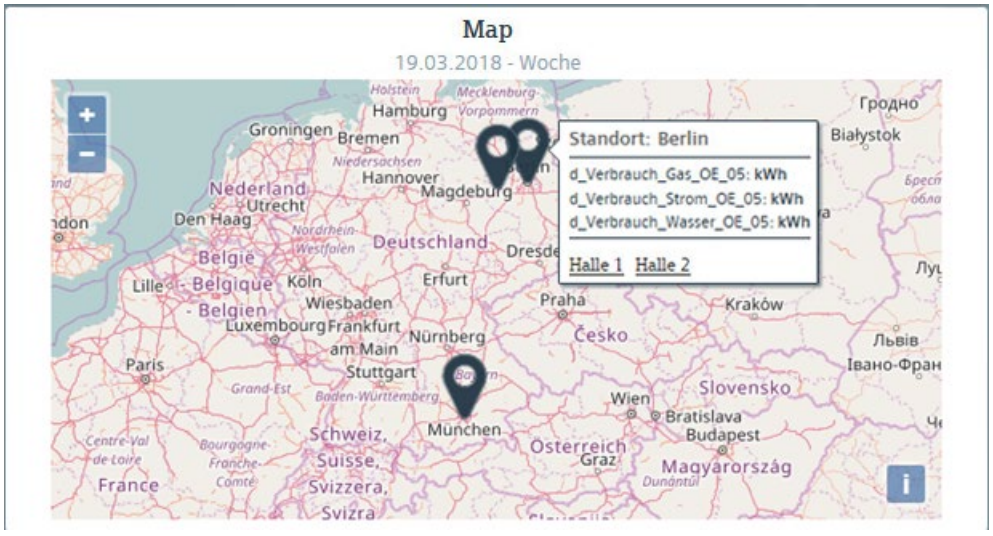
The "Map" widget is not available in Energy Manager Basic.

The "Map" widget is ideal when you are managing several locations in one system. With the "Map" widget you can see the geographical position of the locations on a map and view the main, location-specific KPIs. You can also open two created, location-specific Widget Dashboards. The focus of the map is always selected in such a way that all locations are available. When you click on the Plus or Minus icon, you zoom into or out of the map.

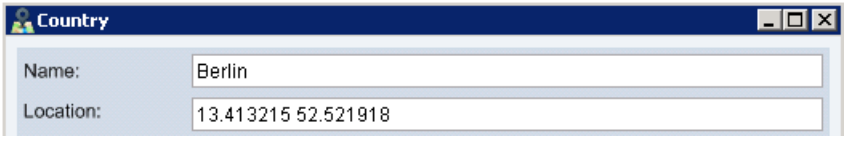
Note

Open Street Map is used as the map. You therefore require an appropriate Internet connection.

The figure below shows a "Map" widget of a Energy Manager system with several locations in Germany:

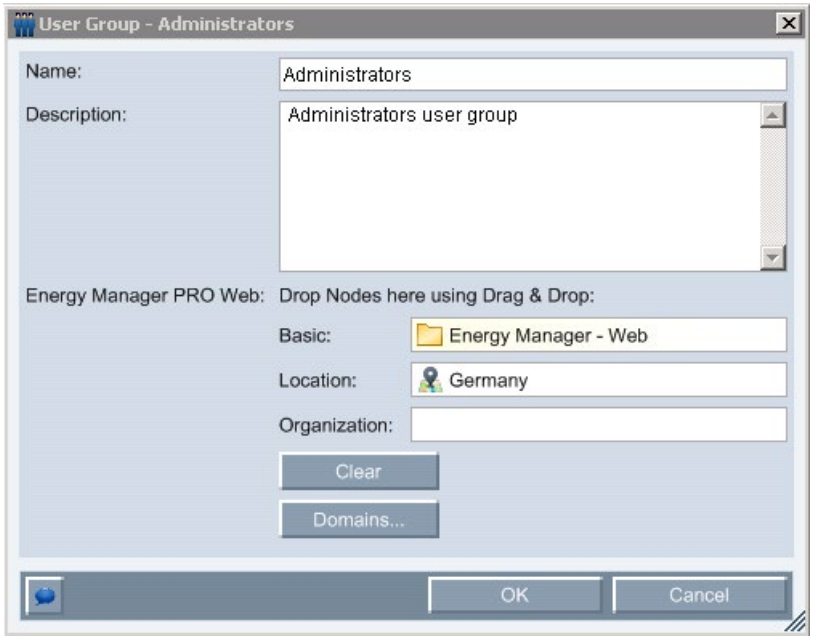


To display your created locations in the widget, you have to enter the geographical coordinates of the location in the location object in the Energy Manager PRO Client. Only locations with valid coordinates are available for selection in the widget. You can determine the coordinates using Google Maps, for example and copy them to the location object. Enter the coordinates in the "Location" entry field. You must separate the two coordinates with a blank space.



Move your location objects (e.g. Berlin and Munich) under a higher-level location object which represents your country.

You then have to assign the location object to the corresponding user group in the "Location" text field using drag and drop.



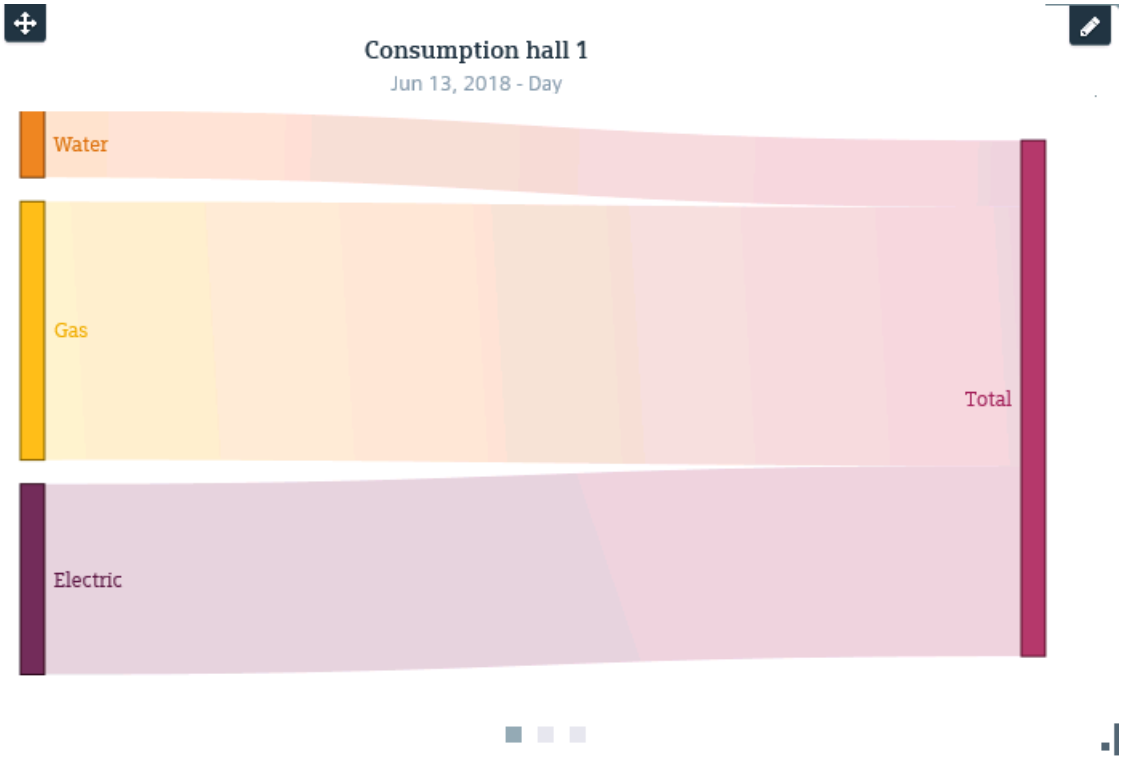
See also

Configuring the Locations tab (Page 126)

Sankey

The Sankey diagram can be used to show an energy flow diagram for a quick overview of the overall energy situation. You define nodes in the Sankey diagram. You connect these nodes with links (data points). You configure the color of the nodes in the settings. When you click on a link, a tooltip shows you the consumption value of the corresponding link. If you display different types of energy (media) in an energy flow diagram, you have to recalculate the energy consumption of the medium to the primary energy which is needed for generation of the medium. If a plant consumes, for example, electrical energy and compressed air, you have to calculate the consumption of compressed air to the electrical energy required for generating consumption. This correlation is defined via the scaling factor.

The figure below shows a Sankey diagram in which the total consumption of an example hall is shown:



In addition to the graphical overall display, you see an overview of all the links in the 2nd tab (Links). The values and the primary energy and the interconnection of the links are shown in this view.

Link Name	From Node	To Node	Value	Primary Energy
e_Electric_consumption	Electric	Total	14,653.00 kWh	43,959.00 kWh
e_Gas_consumption	Gas	Total	14,899.00 kWh	59,596.00 kWh
e_Water_consumption	Water	Total	15,428.00 kWh	15,428.00 kWh

You see an overview of all the nodes in the 3rd tab (Nodes). The corresponding balance sums of input, output, difference and the relative deviation are displayed in this view.

Consumption hall 1

Jun 13, 2018 - Day

Node Name	Input	Output	Difference	Relative
Water	0.00 kWh	15,428.00 kWh	15,428.00 kWh	100.00 %
Gas	0.00 kWh	59,596.00 kWh	59,596.00 kWh	100.00 %
Electric	0.00 kWh	43,959.00 kWh	43,959.00 kWh	100.00 %

When you click on the Info icon next to the numerical value, details of the scaling factor, for example, are displayed. If several links go into or out of a node, the calculation of the value is displayed.

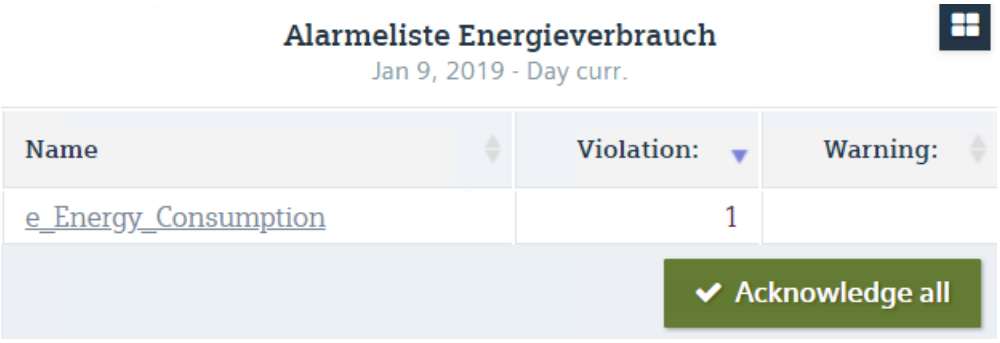
See also

Configuring the Sankey tab (Page 128)

Alarm list

The "Alarm list" widget displays KPI breaches. The data points whose limits have been violated in the selected time window are listed in the overview display. In addition to the name of the data point, the number of warnings and the number of violations are also displayed. You can acknowledge all messages in this overview.

The figure below shows the overview of an alarm list with three limit violations:



When you click on the data point, the detail window opens. The detail window contains an overview of the individual messages.

You can acknowledge each individual message or all messages at the same time in the detail window.

See also

Configuring the Alarms tab (Page 130)

MultiRegression

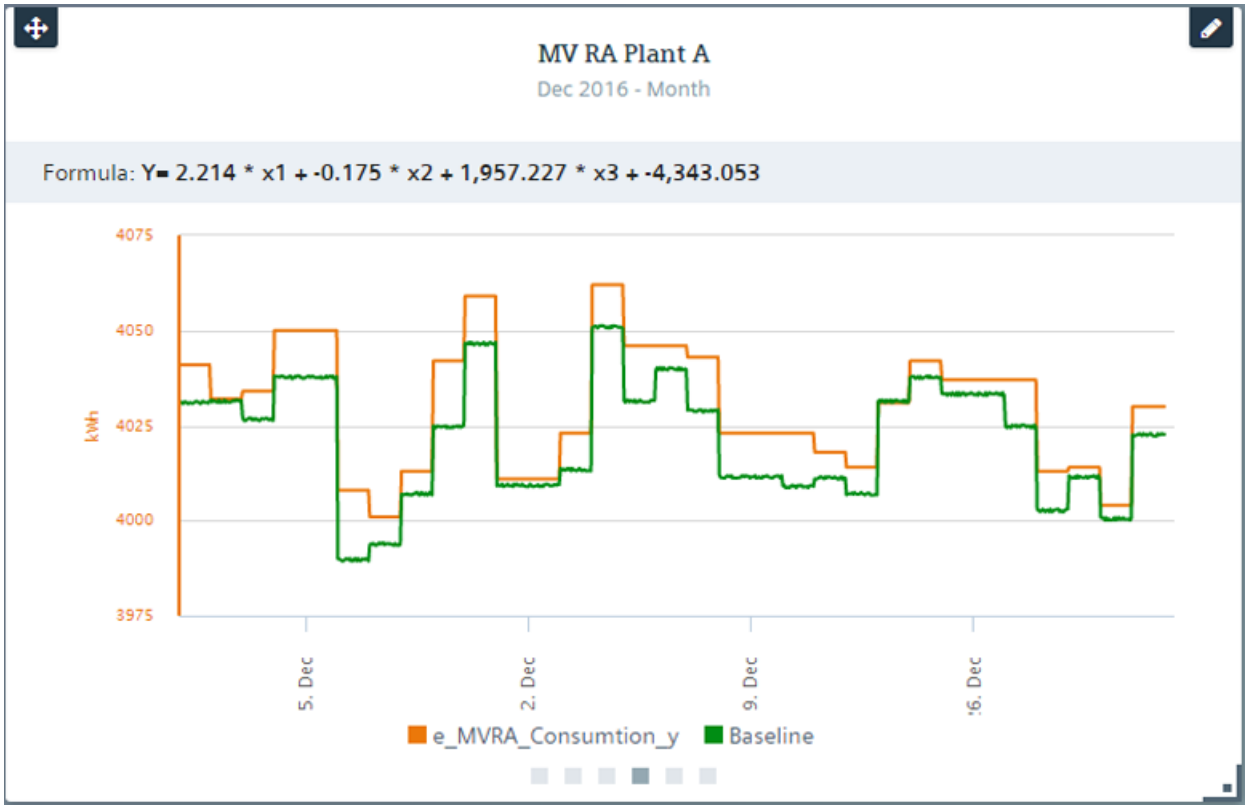
Note

Functionality of Energy Manager Basic

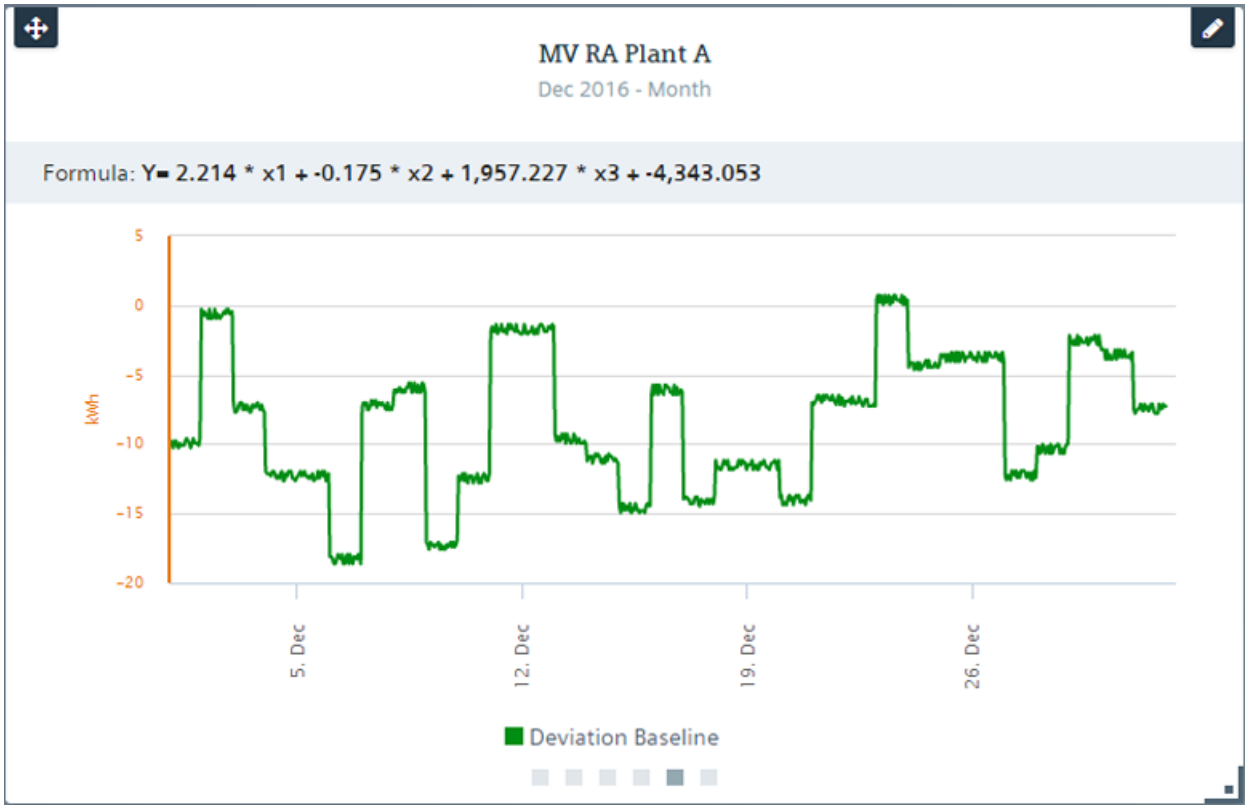
The "MultiRegression" widget is not available in Energy Manager Basic.

With the "MultiRegression" widget you determine the Baseline (theoretically calculated value) of a specific value, for example, the theoretical energy consumption of a plant. If the energy consumption is dependent on known variables, you can determine the theoretical energy consumption. The correlation is determined via a linear regression analysis . In addition to the pure calculation of the theoretical energy consumption, you can also display the deviation of the actual energy consumption from the theoretical energy consumption. This means you can evaluate the current energy situation taking into account the ambient conditions and take appropriate measures in case of deviations. You can also forecast future energy consumption with the model by integrating the influencing factors into the system in the future. If the energy consumption strongly depends on the outdoor temperature, for example, you have to integrate the outdoor temperature into the system in the future.

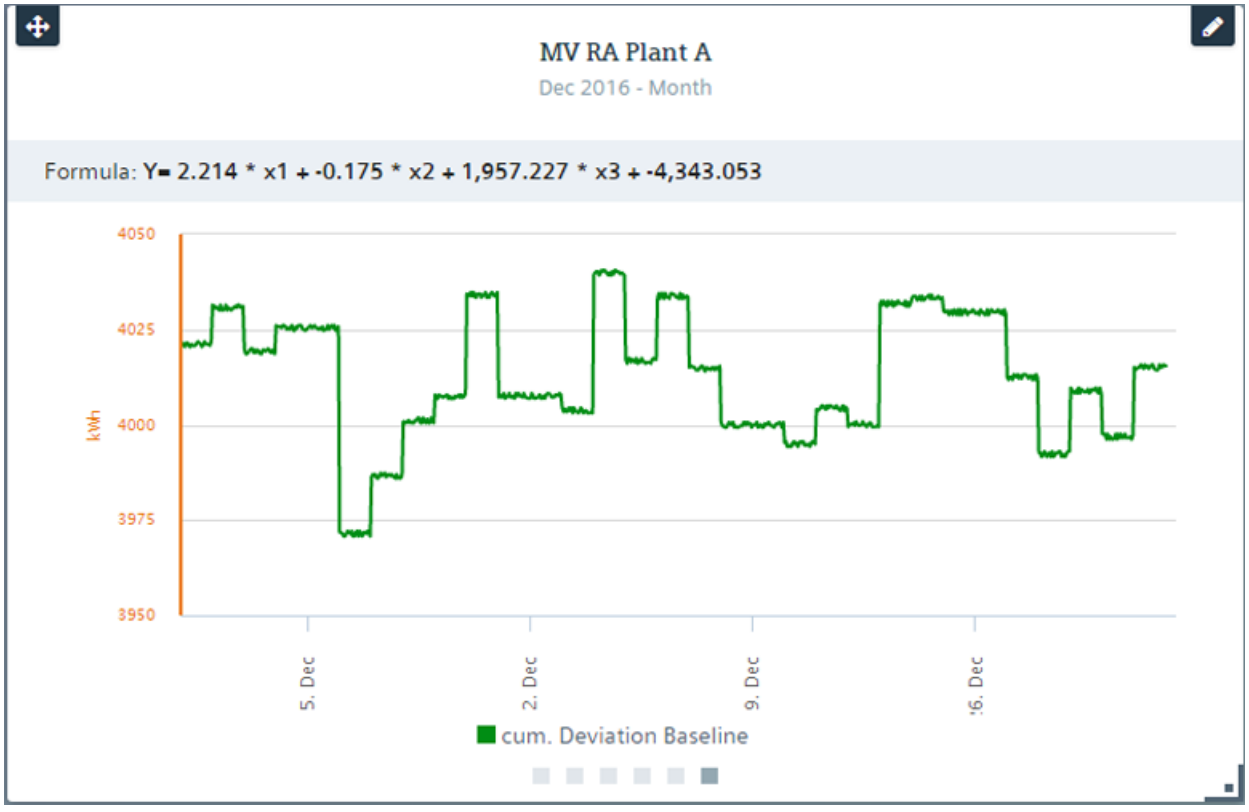
The "MultiRegression" widget is essentially an extension of the Chart widget. The first three tabs correspond to the Chart widget. The actual and theoretical consumption is shown in the 4th tab (Baseline vs. Actual). When you enable the Forecast function, the Forecast is also displayed based on the forecasted data of the influencing factors.



The deviation between the theoretical and the actual energy consumption is shown in the 5th tab (Deviation). When you enable the Forecast function, the deviation of the Forecast from the actual consumption is displayed.



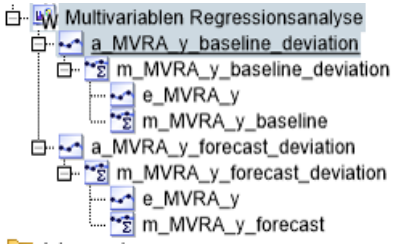
In the 6th tab (Cumulative deviation) the deviation of the Baseline and the Forecast is shown cumulatively.



If the Forecast function is enabled and the data points are assigned, the calculated model is saved twice. Once for the Baseline Management and again for the Forecast. When the first model is saved, data points derived in the Energy Manager PRO Client are created with a measuring variable below the dashboard. The derived data points contain the following data:

- Measurement data for the baseline
- Deviation from actual consumption
- Forecast and deviation of the Forecast from the actual consumption

In the following example, the Y data point is called "e_MVRA_y". The MEVAs used and derived data points are automatically derived from the name.



For Baseline and Forecast, a separate derived data point is created with the ending "baseline_deviation" and "forecast_deviation". This data point represents the deviation of the actual values from the Baseline or the Forecast. When you subsequently change the name of the Y data point, the names of the derived data points or measuring variables do not change. You can also use the derived data points in other widgets, for example, in the "Traffic Light" widget. If the deviation from the Baseline exceeds a particular value, the traffic light changes to red.

See also

Configuring the Model Definition tab (Page 131)

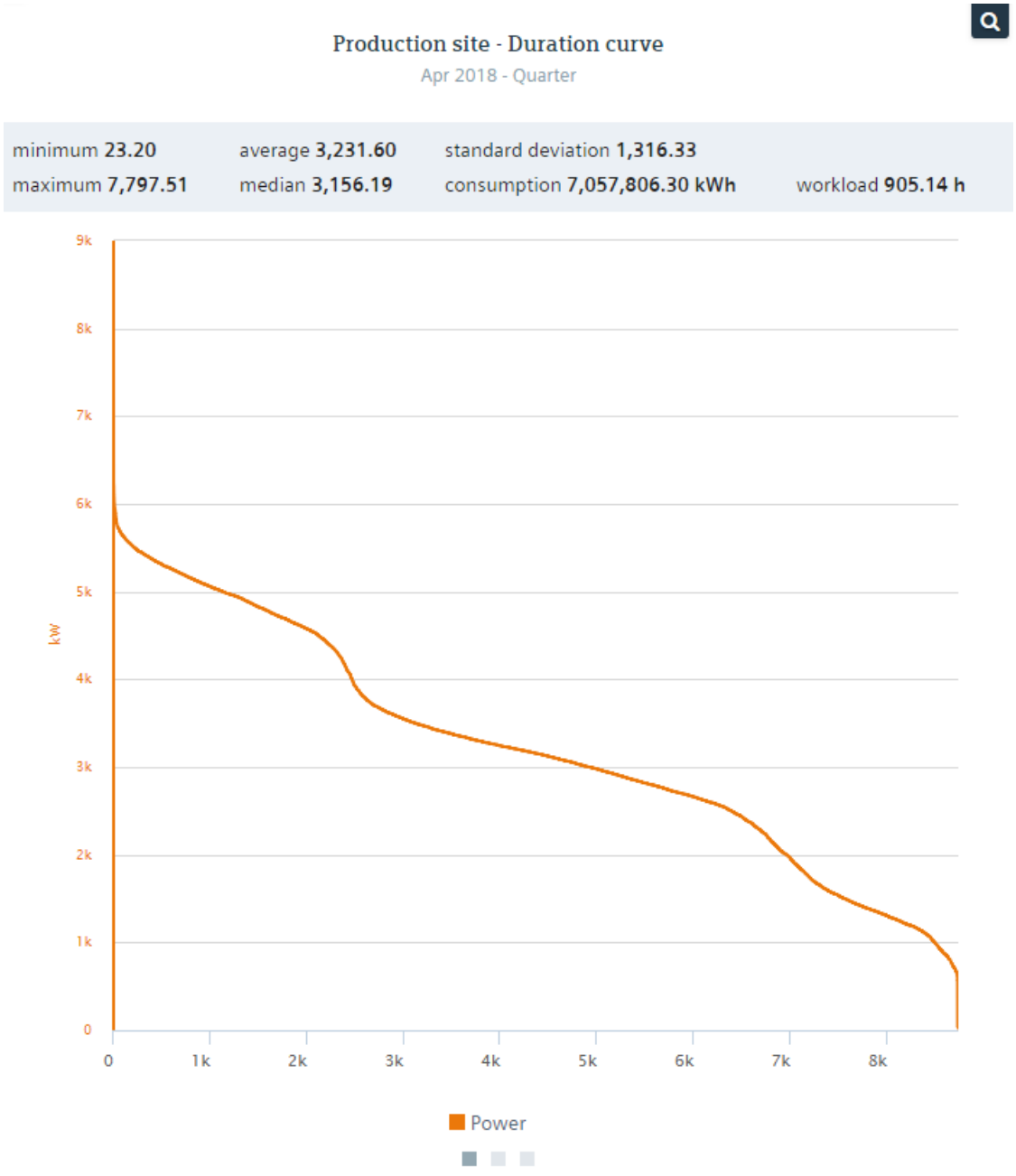
Configuring the Model Overview tab (Page 134)

Duration curve

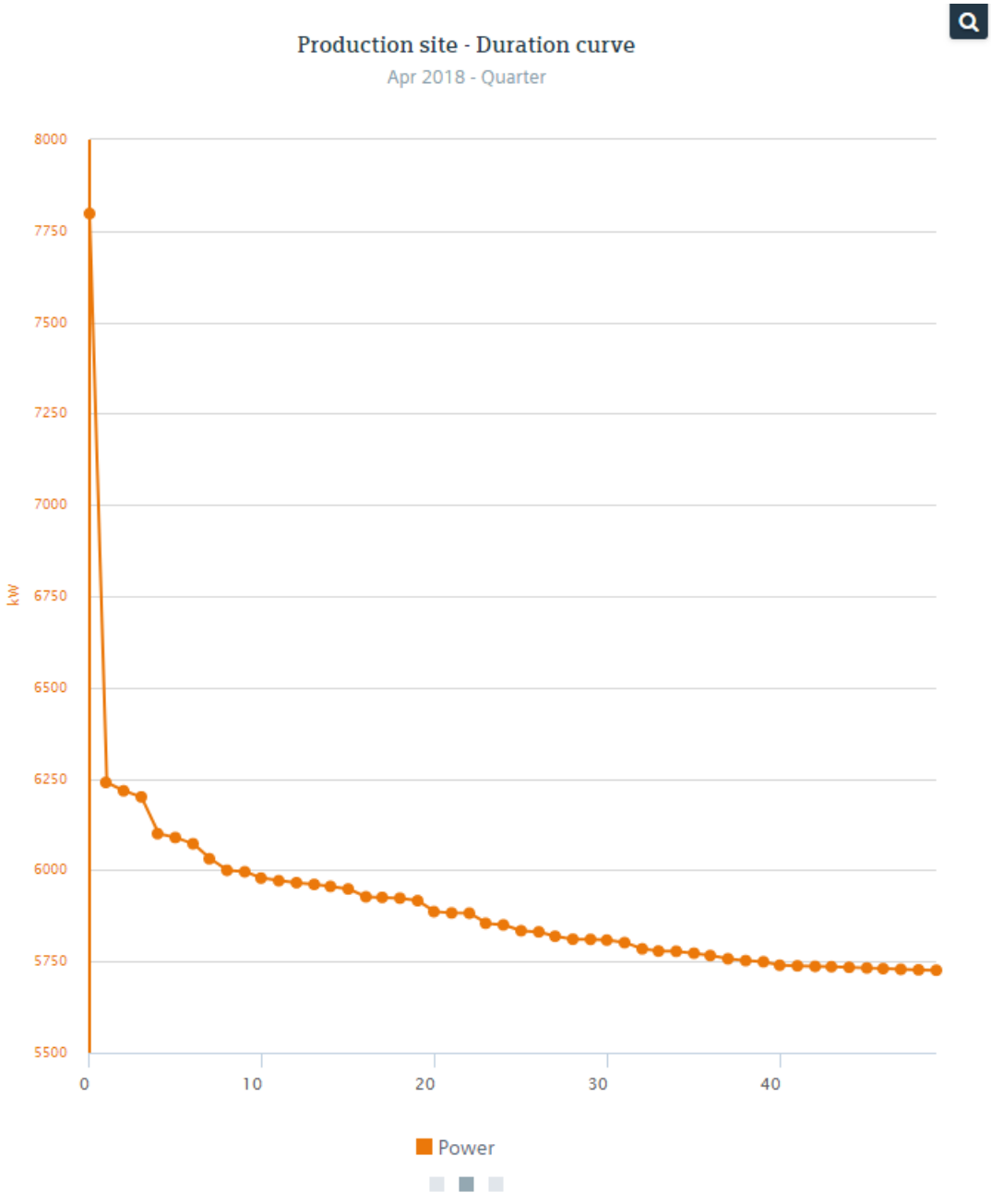
The "Duration Curve" widget shows you measurements for a particular time period in a duration curve. The widget shows three types:

- Value-sorted duration curve
- Value-sorted duration curve of the n-highest values
- Hour-based representation of the n-highest values

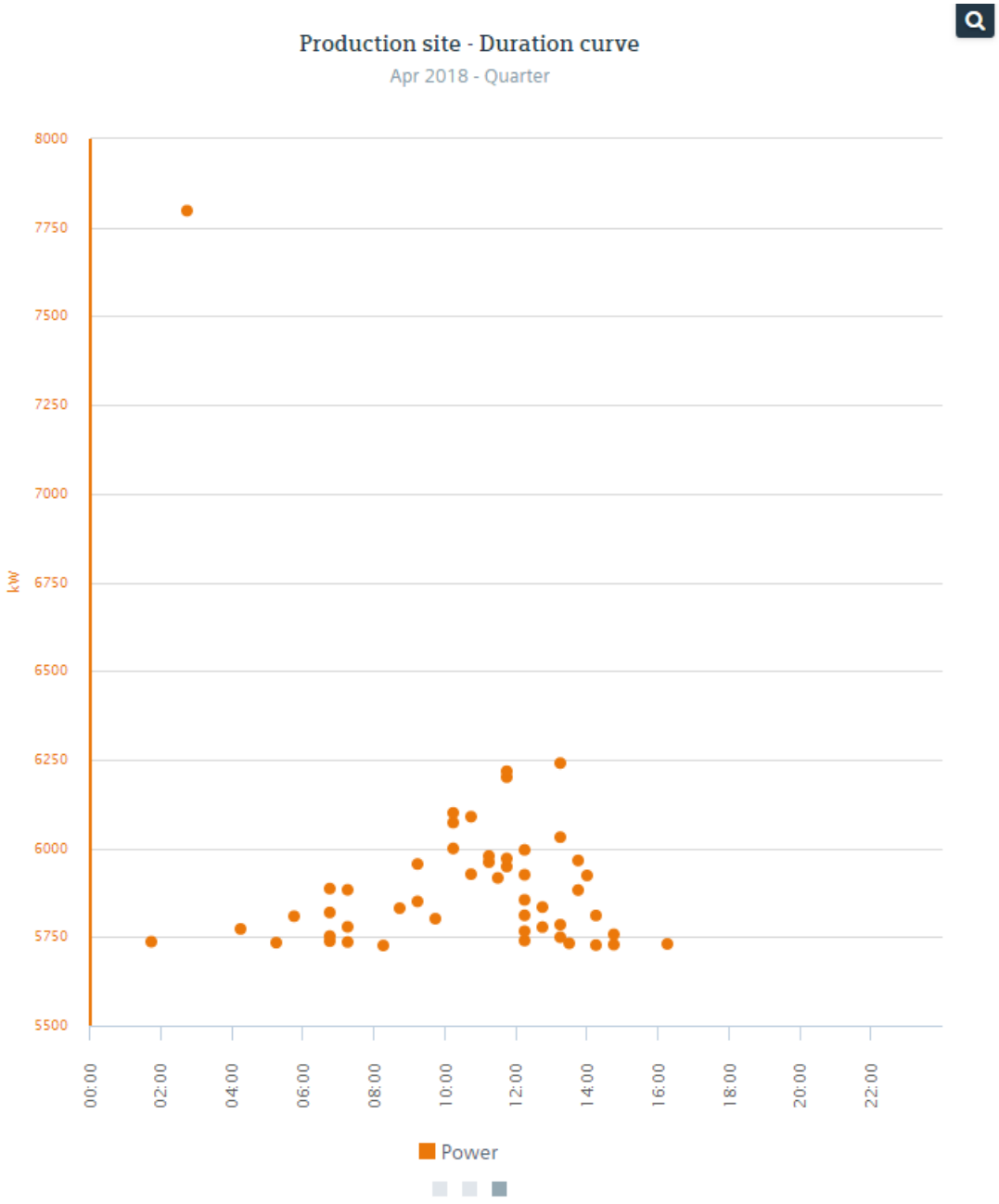
In the 1st tab (Widget), the duration curve is shown from the highest to the lowest values in the observation period. The values are shown via the Usage hours. The statistics are displayed at the top of the tab. In addition to the standardized statistics, Consumption and Usage hours are also calculated. The Consumption includes the entire consumption in the observation period. The Usage hours describe the relationship of the total consumption to the maximum measured value.



In the 2nd tab (Section) the duration curve of the n-highest values is shown in the observation period. The number of measured values which you set in the "Display options" tab determines the number n. The measured values are displayed via the number of measured values n.



In the 3rd tab (Scatter Plot), the n-highest values are shown hour-based on a daily cycle. The time stamp of the measured values correlates with the hour-based x-axis. The measured values are shown over 24 hours. The number of measured values which you set in the "Display options" tab determines the number n.



See also

Configuring the Display options tab (Page 135)

5.4.6.4 Widget configuration

Available tabs

You configure your created widgets using the available tabs.

Note

To configure the tabs, you need either the functional right "Widgets/Dashboards - Configure" or the functional right "Widgets/Dashboards - Create, remove, configure".

Overview

The following table shows an overview of the configurable tabs per widget:

Widget	General	Data source	Limits	Y-Axis	Image	Text	Heat map	Locations	Sankey	Alarms	Model Definition	Model Overview	Display options
Gauge	x	x	x	-	-	-	-	-	-	-	-	-	-
Chart	x	x	x	x	-	-	-	-	-	-	-	-	-
Traffic Light	x	x	x	-	-	-	-	-	-	-	-	-	-
Value	x	x	-	-	-	-	-	-	-	-	-	-	-
Pie	x	x	-	-	-	-	-	-	-	-	-	-	-
Matrix	x	x	x	-	-	-	-	-	-	-	-	-	-
Image	x	-	-	-	x	-	-	-	-	-	-	-	-
Report	x	x	-	-	-	-	-	-	-	-	-	-	-
Text	x	-	-	-	-	x	-	-	-	-	-	-	-
Heat Map	x	x	-	-	-	-	x	-	-	-	-	-	-
Map	x	x	-	-	-	-	-	x	-	-	-	-	-
Sankey	x	x	-	-	-	-	-	-	x	-	-	-	-
Alarm list	x	-	-	-	-	-	-	-	-	x	-	-	-
MultiRegression	x	x	x	x	-	-	-	-	-	-	x	x	-
Duration	x	x	-	-	-	-	-	-	-	-	-	-	x

Configuring the General tab

The "General" tab is available to all widgets to a similar scope. In the tab you configure the basic information of the widget as well as the date and query type of the display range. The area "Date & Querytype" is not required with the widgets "Text", "Image" and "Report". Instead, these widgets have corresponding tabs for entering a text or for selecting an image or a report.

Procedure

To configure the "General" tab, follow these steps:

1. Enter the name of the widget in the "Title" entry field.

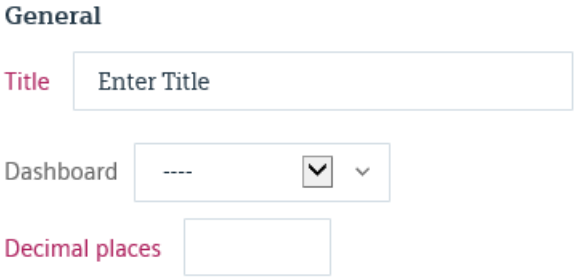
   The input of a name is required.

2. If you have created several Widget Dashboards, you can select a dashboard link from the drop-down list "Dashboard". When you close the configuration mode of the dashboard, the following icon is displayed in the top right-hand corner:

   When you click on the icon, you change to the selected Widget Dashboard.

3. Enter the number of decimal places for displaying the data point values in the "Decimal places" entry field.

   Entry of the number of decimal places is required.

4. To adopt the date and the query type of the configured Widget Dashboard, select the "Use dashboard settings" check box.

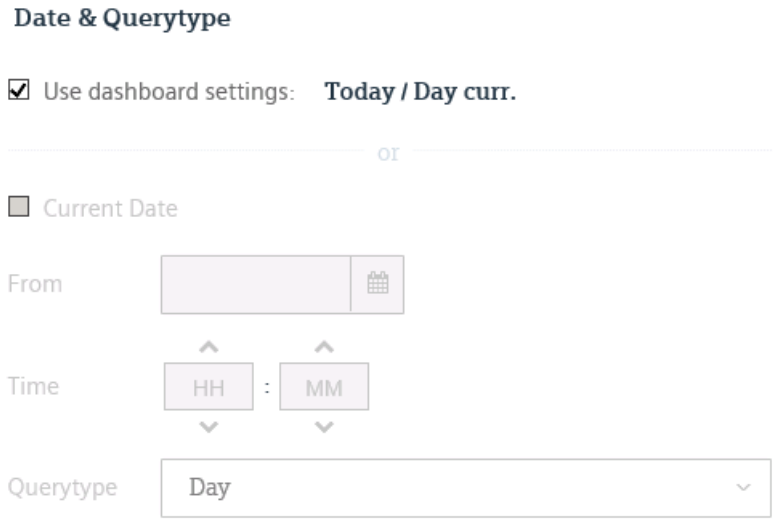
   The selection of a particular timespan and the selection of a query type are deactivated.

5. To use a specific date and a specific query type, clear the "Use dashboard settings" check box.

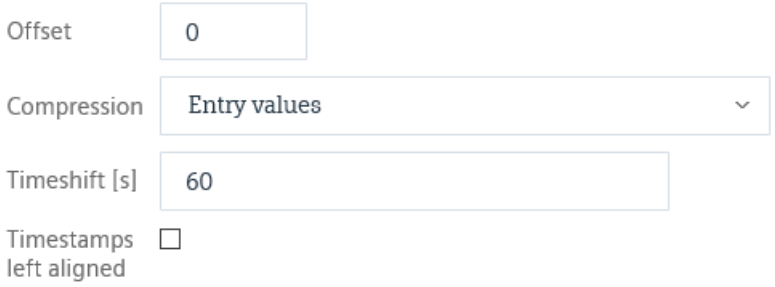
6. To display the current date, select the "Current Date" check box.

7. If you want to display a specific time, select the required start date with the associated time from the "From" list.

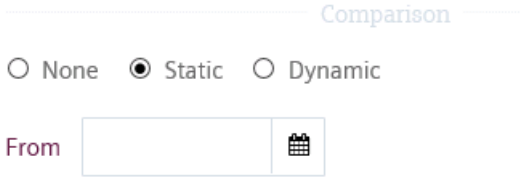
8. Select the required observation period linked to the date from the drop-down list "Query type".



9. If required, enter the time offset for the start of the measured value series, for example, change 00:00 to 08:00 in the "Offset" entry field.
10. Select the compression level of the measured values from the drop-down list "Compression". By selecting the compression level you can compress, for example, the cyclically recorded 15-minute values to hourly values.
11. If you enter a numerical value in the "Offset [s]" entry field, the measured values are only updated after the duration entered has expired.
12. When you select the "Timestamps left aligned" check box, the start time (timestamp) of the measured values is displayed.



13. The "Comparison" area is only available in the "Chart" widget; you use it to display the time comparison of the selected data point graphically. When you select the "Static" check box, you set a fixed time range with the help of the entry field. When you select the "Dynamic" check box, enter the time offset with regard to the query type for which the comparison is used in the "Offset" entry field. A negative value jumps back to the past by one time offset, a positive value jumps to the future.



Configuring the "Data Source" tab

You configure the "Data source" tab for almost all available widgets. In the tab, select the data points you want to visualize in the corresponding widget.

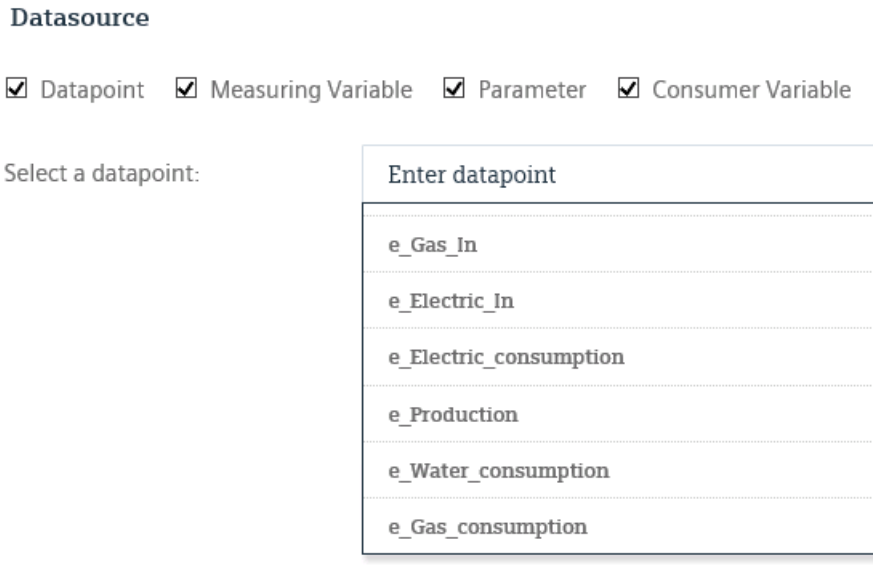
Requirement

- The data points have been created.

Procedure

To configure the "Data source" tab, follow these steps:

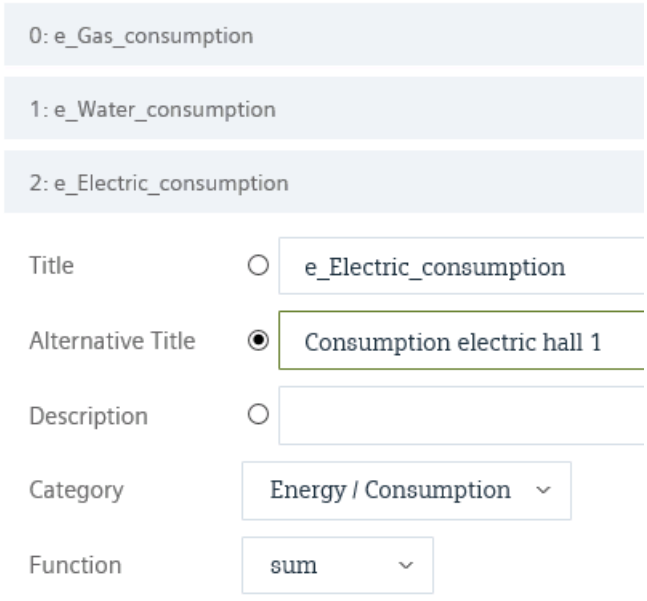
1. From the drop-down list "Select a data point" select the data points that you want to use in the widget. You can enter the data points in the entry field. After the first three letters, a corresponding selection list is proposed. By selecting or clearing the check boxes "Data point", "Measuring Variable", "Parameter" and "Consumer Variable" you further refine the search. Depending on the widget, you can select one or more data points for the display.



Selected data points are displayed in the "Currently selected" list.

2. To configure further information of the selected data points, click on the corresponding data point.

   A drop-down list with additional setting options opens.



3. Select the "Title" check box to use the name of the data point in the display.

   It is not possible to change the name in the adjacent entry field.

4. Select the "Alternative title" check box if you want to use an alternative name of the data point in the display. Enter the name in the adjacent entry field.

5. Select the "Description" check box if you want to use the description of a data point in the display.

   It is not possible to enter a description. You enter the description text when creating a data point.

6. Select the display type of the values in the widget from the drop-down list "Category". The drop-down list is only available for data point types of the category "Energy", "Power" or "Count value".

   You can choose between the following display types:

   – Energy / consumption
   – Power / Flow
   – Counter (only available for acquisition category "Count value")

   If you use a data point of the acquisition category "Energy / Consumption", for example, and set the display type in the widget to "Power / Flow" the original energy values change to the corresponding power values. The unit in the display of the widget also changes accordingly, for example, from kWh to kW.

   Note

   If you change the display type, the unit of the y-axis does not change. The unit of the y-axis is initialized with the first data point added. You set the unit of the y-axis in the "Y-Axis" tab.

   The conversion of the unit is always hour-related, for example, from J to J/h or from W to Wh.

7. Select the information type which you would like to display from the drop-down list "Function". You can choose from the following information types:

   – sum: Shows the values from the "Sum" column of the measured value editor in the defined observation period.
   – min: Shows the values from the "Minimum" column of the measured value editor in the defined observation period.
   – max: Shows the values from the "Maximum" column of the measured value editor in the defined observation period.
   – avg: Shows the values from the "Average" column of the measured value editor in the defined observation period.
   – last value: Shows the values from the "Last value" column of the measured value editor in the defined observation period.

   The information type "avg" is automatically and unalterably enabled for the category "Power / Flow" selected in step 6. The default setting for the "Energy / consumption" category is the information type "sum"; the default setting for the "Counter" category is the information type "last value". You can change both information types later.

Configuring the Limits tab

The "Limits" tab is available in the following widgets:

- Gauge
- Chart
- Traffic Light
- Matrix
- MultiRegression

In the tab, define a validity range for the measurement data by setting limits.

Procedure

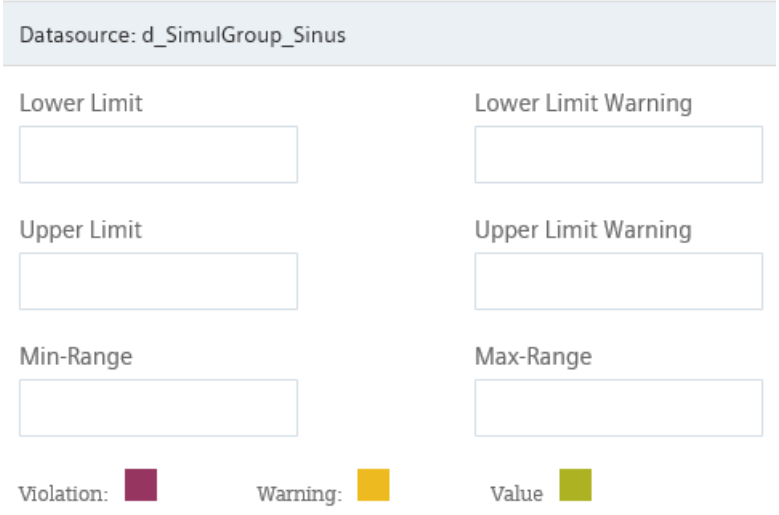
To configure the "Limits" tab, follow these steps:

1. Enter the limits for the alarm range in the "Lower limit" and "Upper limit" entry fields.
2. Enter the limits for the warning range in the "Lower limit warning" and "Upper limit warning" entry fields.

   Note

   If you have already configured plausibility for a data point and have defined the limits for the alarm and warning range, these entries are automatically adopted in the tab.

3. Select the corresponding colors for the areas "Violation", "Warning" and "Value".
4. In the case of a Gauge widget, enter the start of display or end of display in the "Min-Range" and "Max-Range" entry field, respectively.



Note

The entries configured in the widget only apply to this widget and are not updated in the data point. A change in the limits in the widget does not trigger a change in the plausibility settings in the data point.

Configuring the Y-Axis tab

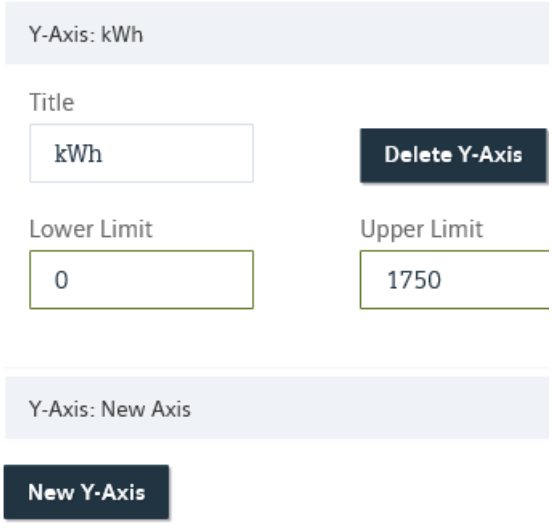
The "Y-Axis" tab is available in the "Chart" and "MultiRegression" widgets. In the tab, add additional y-axes in the chart. You can add up to five additional Y-axes. If you have added more than one y-axis, you can delete y-axes that are no longer required by clicking on the "Delete Y-Axis" button.

Procedure

To configure the "Y-Axis" tab, follow these steps:

1. Enter the name for the y-axis in the "Title" entry field. The unit of the data point measured values is usually entered.
2. Enter the limits of the y-axis in the "Lower Limit" and "Upper Limit" entry fields.
3. Click on the "New Y-Axis" button to add an additional Y-axis.

   A new Y-axis is created in the list.
4. Enter the title and limits again for the new Y-axis.



Note

In the widget, the title or the unit of the y-axis is initialized with the first added data point.

Note

When you do not enter any limits in the "Lower Limit" and "Upper Limit" entry fields, the y axis is automatically adapted.

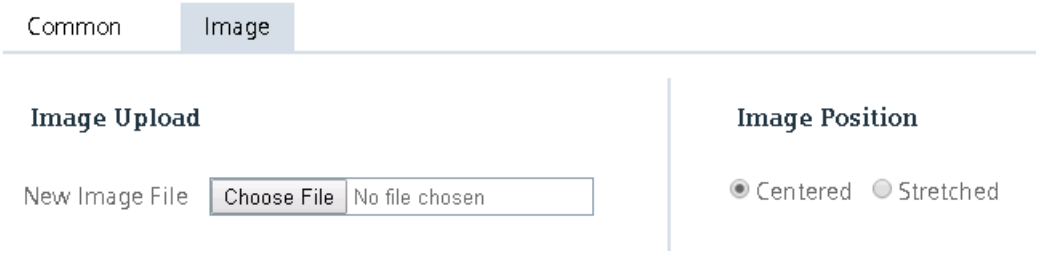
Configuring the Image tab

The "Image" tab is available in the "Image" widget. With the tab you display a custom image in the Widget Dashboard.

Procedure

To configure the "Image" tab, follow these steps:

1. Click on the "Select file" button.
2. Select the image you wish to upload.
3. In the right-hand side of the tab, select whether you want to display the image "Centered" and in the same size or "Stretched".



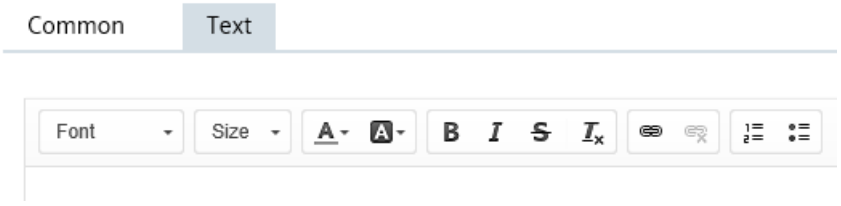
Configuring the Text tab

The "Text" tab is available in the "Text" widget. With the tab you compose a custom text that is displayed in the widget. You can also insert a URL link or an e-mail address with a particular message text as text. When you click on the URL link after configuration, the page is opened in your Internet browser. When you click on the e-mail link, your default e-mail program opens to which the entered texts are copied.

Procedure

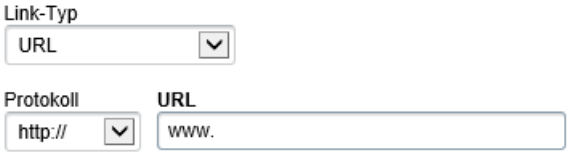
To configure the "Text" tab, follow these steps:

1. Enter the required text in the text field. When entering the text you can choose from the following functions for editing the text:
   - Font
   - Font size
   - Text color
   - Background color
   - Bold
   - Italic
   - Strikethrough
   - Delete formatting
   - Insert/edit link
   - Delete link
   - Numbered list
   - List

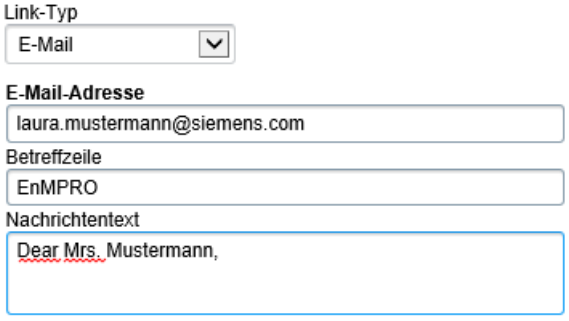


2. When you click on the "Insert link" icon, the dialog window "Link" opens.
3. To display a URL in the text field, select the menu command "URL" from the drop-down list "Link type".
4. Select one of the available transfer protocols from the drop-down list "Protocol".

5. Enter a valid URL in the "URL" entry field.



6. To send a text via e-mail, select the menu command "E-mail" from the drop-down list "Link type".
7. Enter the recipient's-mail address in the "E-mail address" entry field.
8. Enter the subject in the "Subject line" entry field.
9. Enter the text message in the "Message text" entry field.



Configuring the Data Source Report tab

A special view of the "Data source" tab with the area "Reports" is available for the "Report" widget. In the tab, select the report that is generated in the widget.

Requirement

- The report has been created.

Procedure

To configure the "Data source" tab of the "Report" widget, follow these steps:

1. Enter the report you wish to use in the widget in the "Select report" entry field. When you enter a text in the entry field, a corresponding list of the reports is displayed.

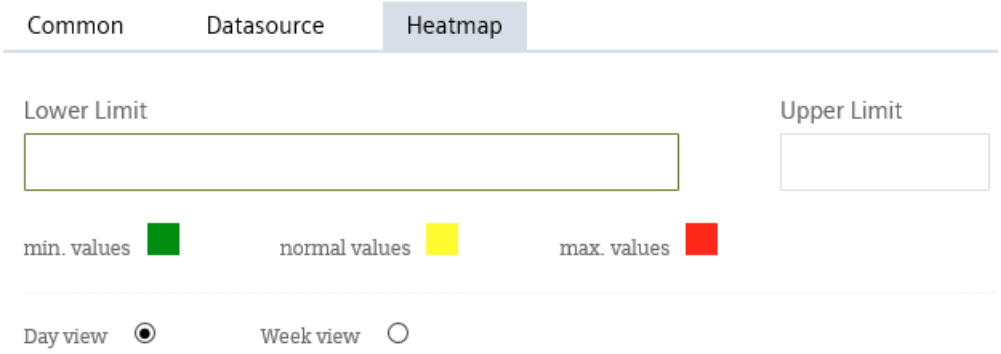
Configuring the Heat Map tab

The "Heatmap" tab is available in the "Heat Map" widget. With the tab you set the limits and the display of the measured values.

Procedure

To configure the "Heatmap" tab, follow these steps:

1. Enter your individual limits for the measurement data in the "Lower limit" and "Upper limit" entry fields. In this way you define a valid range for your measurement data. If you do not enter any values in the entry fields, the maximum and minimum measured value is used as the limit.
2. Select the display color of the measured values for the settings "Min values", "Normal values" and "Max values".
3. If you want a daily display of the measurement data, select the "Day view" check box. For a weekly display of the measured data, select the check box "Week view". With the "week view" you can choose between display beginning on Monday or on Sunday.



See also

Heat Map (Page 99)

Configuring the Locations tab

The "Locations" tab is available in the "Map" widget. With the tab you configure the location-specific KPIs and dashboards you want to view from your system.

Requirements

- The location object with valid GPS coordinates has been created.
- The location object is assigned to the corresponding user group.
- The dashboards have been created.
- The KPIs have been created.

Procedure

To configure the "Locations" tab, follow these steps:

1. Select the locations for which you want to display the location-specific dashboards and KPIs from the drop-down list "Select location".

Note

To display your created locations in the widget, you have to enter the geographical coordinates of the location in the location object in the Energy Manager PRO Client. Only locations with valid coordinates are available for selection in the widget. You can determine the coordinates using Google Maps, for example, and copy them to the location object. You must separate the two coordinates with a blank space.

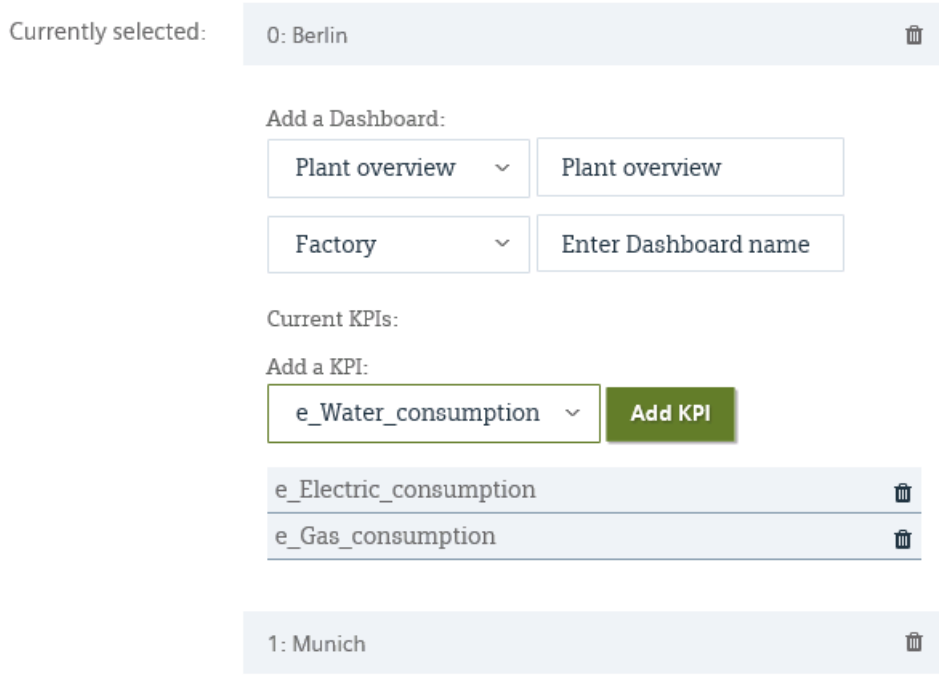
In addition, you have to assign the location object to the corresponding user group.

You can find more detailed information on location selection in the "Map" paragraph of the "Extended widgets" section.

The selected locations are displayed in the "Currently selected" list.

2. To select the location-specific dashboards and KPIs, click the corresponding location.
3. Select up to two dashboards to which you want to jump directly from the location tooltip for each location in the drop-down list "Add dashboard".
4. Enter the name of the dashboard in the adjacent entry field.
5. Select up to five KPIs you want to display for each location from the drop-down list "Add KPI".

6. Click on the "Add KPI" button.



Note

You can configure up to 50 data points or KPIs in the "Map" widget.

7. When you click on the Delete icon, you remove KPIs which are no longer required.

See also

Map (Page 100)

Configuring the Sankey tab

The "Sankey" tab is available in the "Sankey" widget. With the tab you configure the nodes and data points which you use in the Sankey diagram.

Requirement

- The data points have been created.

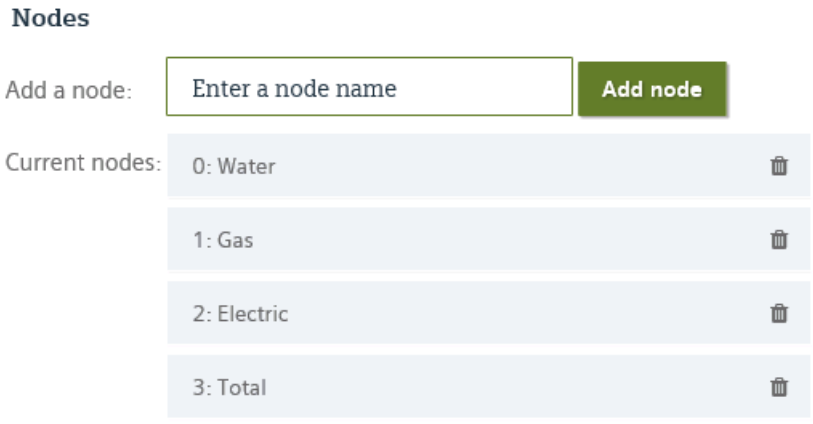
Procedure

To configure the "Sankey" tab, follow these steps:

1. Enter the name of the node (media) you want to show in the Sankey diagram in the "Add a node" entry field.

   Use meaningful names for the corresponding nodes.

2. Click on the "Add node" button.



   The node is added to the list "Current nodes".

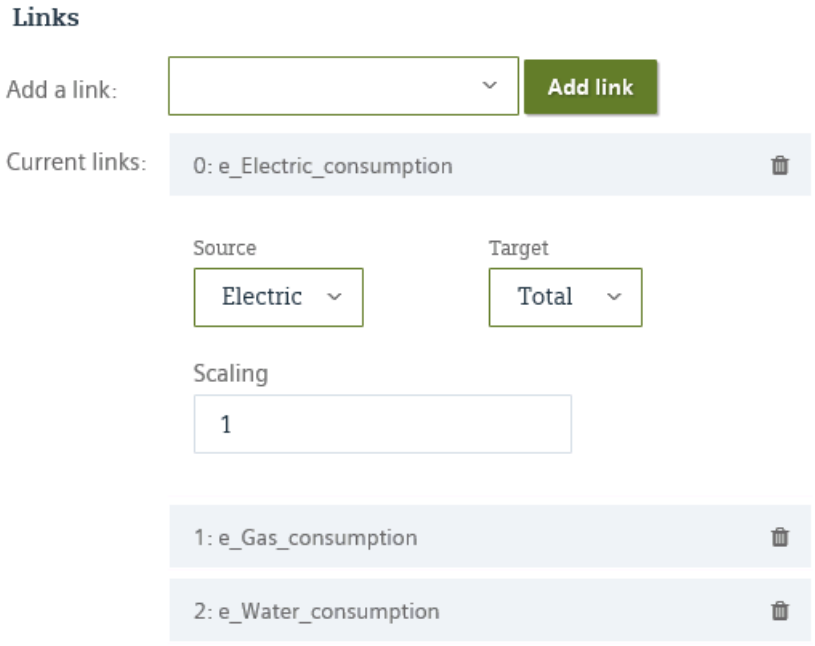
3. Click on the name of a node and select a color.
4. From the drop-down list "Add a link" select the data points that you want to use in the Sankey diagram.
5. To incorporate the data points in the Sankey diagram, click on the "Add link" button.

Note

You can configure up to 50 nodes and data points in the Sankey diagram.

The data points are displayed in the list "Current links".

6. To link the data points with the corresponding nodes, click on the data points.



7. Select the incoming quantity flow of the respective data points from the drop-down list "Source", and the outgoing quantity flow of the respective data points from the drop-down list "Target".

Note

When linking the data points with the nodes you have to assign the "source" and "target" of a data point to different nodes.

8. Enter a scaling factor in the "Scaling" entry field. The scaling factor is required for recalculation to the primary energy in an energy flow diagram with different media.
9. You can remove nodes or data points which are no longer required from the Sankey diagram with the help of the delete icon.

See also

Sankey (Page 102)

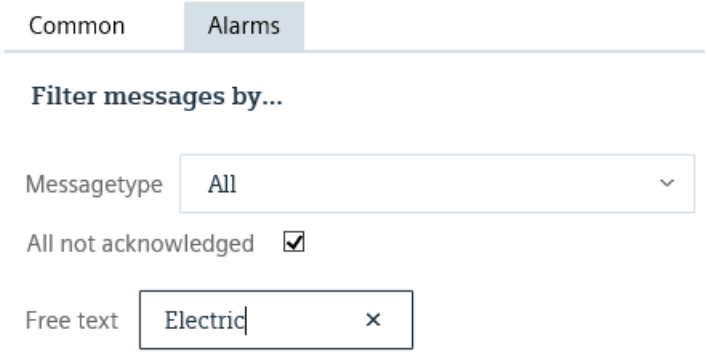
Configuring the Alarms tab

The "Alarms" tab is available in the "Alarm list" widget. With the tab you manage the display of message lists.

Procedure

To configure the "Alarms" tab, follow these steps:

1. Select the type of messages you wish to display from the drop-down list "Message type". You can choose between "All", "Violation" and "Warning".
2. To only show unacknowledged messages, select the "All not acknowledged" check box.
3. To filter messages by a particular designation, enter the corresponding text in the "Free text" entry field.



See also

Alarm list (Page 104)

Configuring the Model Definition tab

The "Model Definition" tab is available in the "MultiRegression" widget. With the "Model Definition" tab you define the data points to determine the Baseline and Forecast.

Requirement

- The data points have been created.

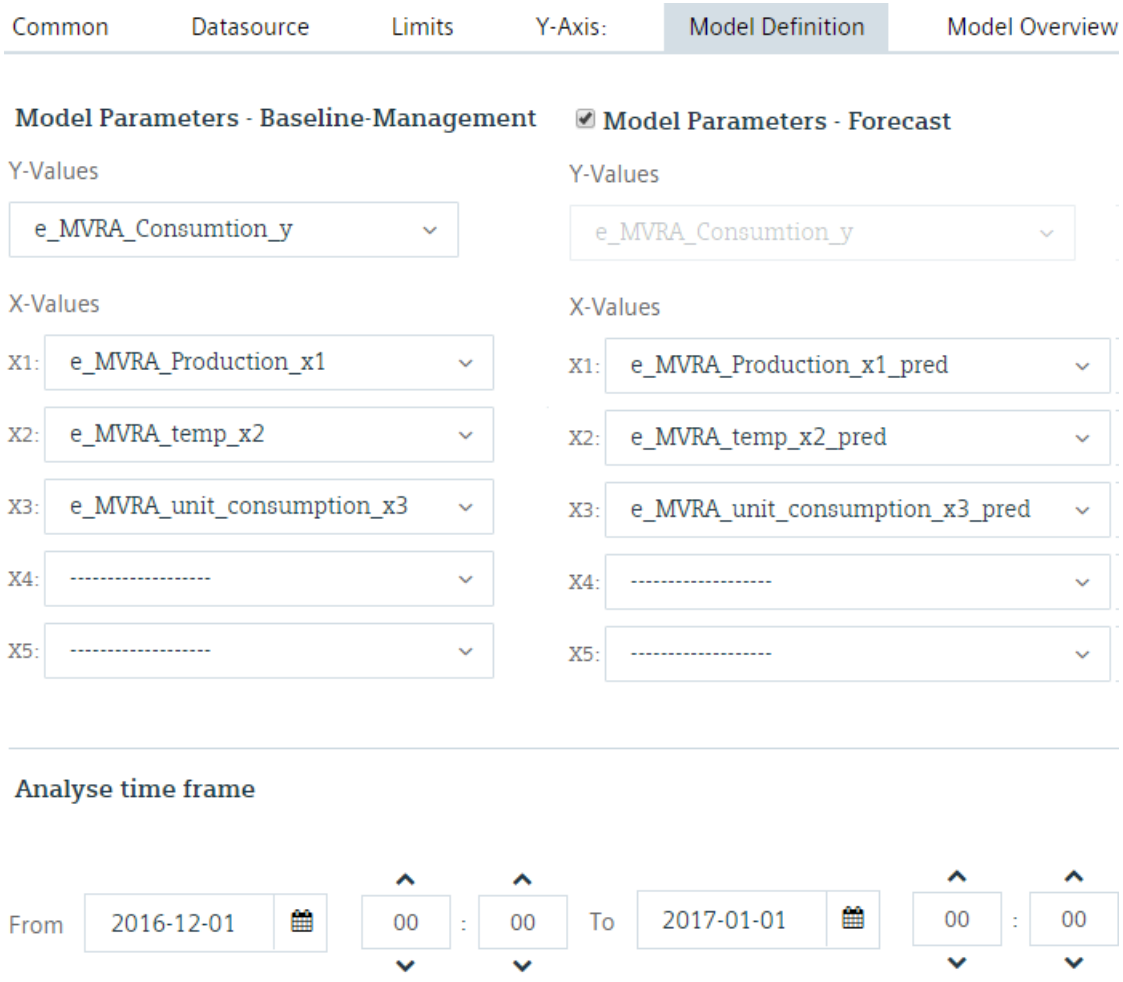
Procedure

To configure the "Model Definition" tab, follow these steps:

1. Select the data point whose Baseline you want to determine, for example, energy consumption of a plant, from the drop-down list "Y-Values".
2. Select the data points which influence the y data point from the drop-down lists "X-Values". You can select up to five data points.
3. If you want to use the Forecast function, select the "Model Parameters - Forecast" check box.
4. In turn, select the corresponding x values from the drop-down lists.

   The same number of parameters is required for the Baseline and the Forecast.

5. With the help of the corresponding selection boxes, select the analysis time window in which you want to analyze the selected data.



Note

No one-time special effects should exist in this time window, because they would influence the result.

6. To eliminate spikes in the values from the calculation, select the "Ignore spikes" check box.

   The entry field in which you can enter a value is activated. The value 100% means that a deviation greater than 100% between the calculated and actual y value is not included in the calculation.

7. Click on the "Calculate formula" to start the analysis.

   The result is output with the "coefficient of determination" and the "F-Ratio". The coefficient of determination specifies the correlation between the values. The coefficient of determination lies between the value 0 and the value 1. In addition, the color adjusts to the coefficient of determination:

   – 0 - 0.3 No or little correlation (red)
   – 0.3 - 0.6 Medium correlation (yellow)
   – 0.6 - 1: Good or full correlation (green)

8. If the result shows a corresponding correlation, you can set the validity time of this model.
9. Click on the "Save event" button.
10. If the result shows a corresponding correlation, you can load a previously calculated analysis by clicking on the "Load result" button.

See also

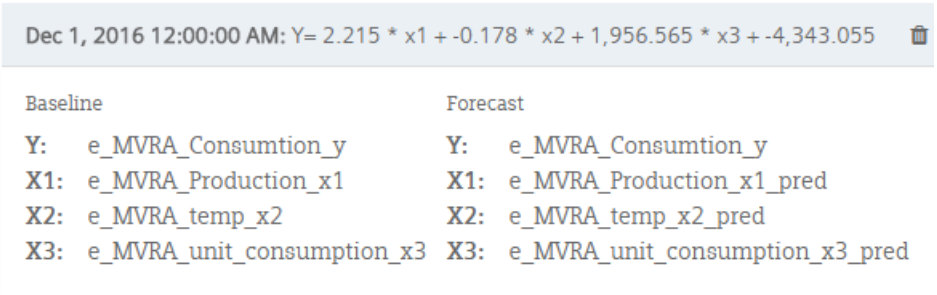
MultiRegression (Page 105)

Configuring the Model Overview tab

The "Model Overview" tab is available in the "MultiRegression" widget. With the tab you see an overview of the models defined in the "Model Definition" tab.

Procedure

In the "Model Overview" tab you cannot configure any parameters, but only delete models. You delete models by clicking on the delete icon. Only the defined models are displayed in the model overview. The date specifies the validity time of the model.



See also

MultiRegression (Page 105)

Configuring the Display options tab

The "Display options" tab is available in the "Duration Curve" widget. With the tab, enter the number of measured values you want to use for displaying the duration curves.

Procedure

To configure the "Display options" tab, follow these steps:

1. Enter the number of measured values you want to use for displaying the duration curves in the "Amount of data for detail view" entry field.

   The number of measured values is used for the display of the 2nd and 3rd tab in the "Duration Curve" widget.

See also

Duration curve (Page 108)

5.5 Reports

5.5.1 Overview

To evaluate measurement data in Energy Manager Web, you can create and configure reports with the help of the shortcut menu. The creation of reports in Energy Manager Web is based on report templates. You cannot configure these report templates in Energy Manager Web, but only in the Energy Manager PRO Client. Newly created reports and configurations on already existing reports in Energy Manager PRO Web are also adopted in the Energy Manager PRO Client and vice versa.

5.5.2 Creating reports

Requirements

- The folder has been created.
- The data points, measuring variables and parameters have been created.
- The report templates have been configured.
- Users have been created.
- The user has the functional right "Report - create, remove, configure".

Procedure

To create reports, follow these steps:

1. Enable the editing mode.
2. Place the mouse pointer over the folder in the navigation area in which you would like to create the report.

   The shortcut menu icon is displayed in the right-hand area of the menu item.
3. Click on the shortcut menu icon.

   The shortcut menu opens.
4. Click on the "Add report" menu command.

   The configuration dialog "New - Report" is opened.

Configuring the "General" tab

1. Enter a meaningful name for the report in the "Name" text box.

   The input of a name is required.

   Note

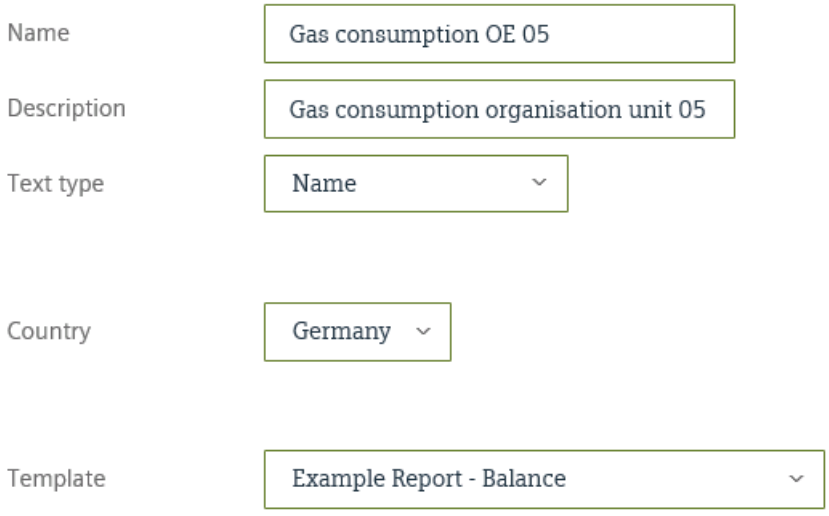
   Do not use Excel-specific expressions such as A1 or =FG14 during the report creation.

   The report name cannot contain any special characters. The following characters are permitted:

   - A to Z
   - a to z
   - 0 to 9
   - _
   - Space

2. If required, enter a description of the report in the "Description" text box.
3. Select the display type of the name in the report from the drop-down list "Text type".
4. Select the appropriate country from the drop-down list "Country".

5. Select the required report template from the drop-down list "Template". The following report templates are available:
   - Balance Calculates the total value of the selected data points, measuring variables and parameters over the entire observation period of the report.
   - Balance comparing In addition to the "Balance" template, it calculates the total value of the previous observation period and that of the previous year.
   - Protocol Returns the values of the selected objects in the selected interval within the observation period.
   - Protocol with from/to In addition to the "Protocol" template, it specifies the timestamp with the start and end of the interval.
   - Duration curve Sorts the values (from the largest to the smallest) of the selected objects in the selected interval within the observation period.



The selection of a report template is required. The query types which you configured in the report template are automatically adopted as query types.

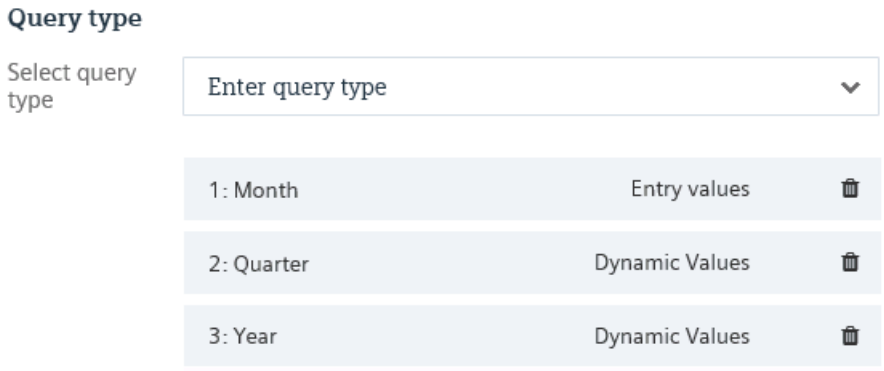
6. You have the option of selecting further query types from the drop-down list "Select query type".

   The selected query types are displayed in the overview list. The query type which you configured in the report template is marked with the compression level "Entry values". Added query types are displayed with "Dynamic values".

   Note

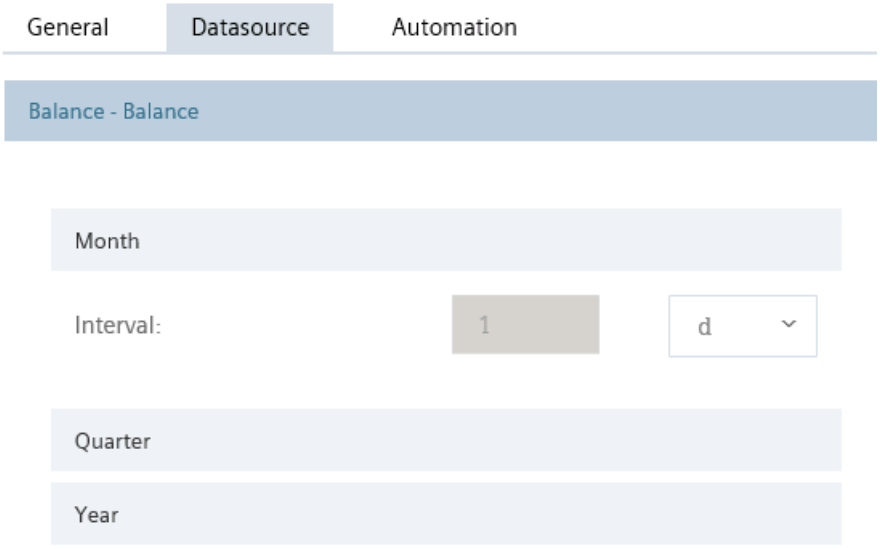
   The compression level "Dynamic Values" means that the calculation logic automatically uses the best possible compression level for calculation.

7. To remove query types that are no longer required, click on the Delete icon.



Configuring the "Data Source" tab

1. In the event of an interval configuration, select the corresponding time interval for each existing query type on the left-hand side. Using the time interval you divide the observation period into equally sized intervals.



2. Select the data points, parameters and MEVAs that you want to use in the report from the drop-down list "Select a data point". You can enter the data points in the text box. After the first three letters, a corresponding selection list is proposed. By selecting or clearing the check boxes "Datapoint", "Measuring Variable" and "Parameter" you further refine the search.

   Selected data points are displayed in the "Currently selected" list.

   Note

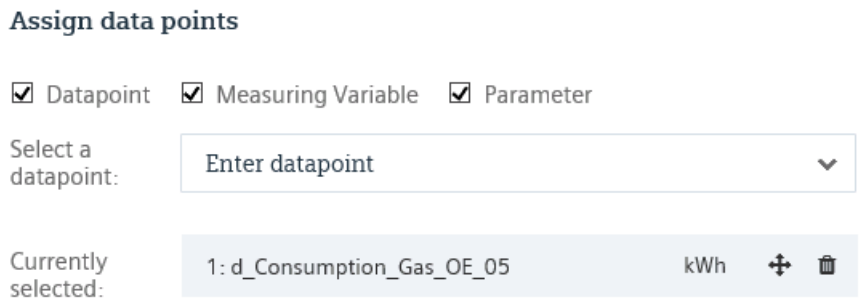
   Object descriptions of Data points, Measuring variables and Parameters must not contain Excel-specific expressions such as A1 or =FG14.

   If you output the properties of objects in reports, do not use Excel-specific expressions in the output properties.

3. You can change the sequence of the data points using drag and drop of the Move icon.

   You must observe the sequence of the data points for module types.

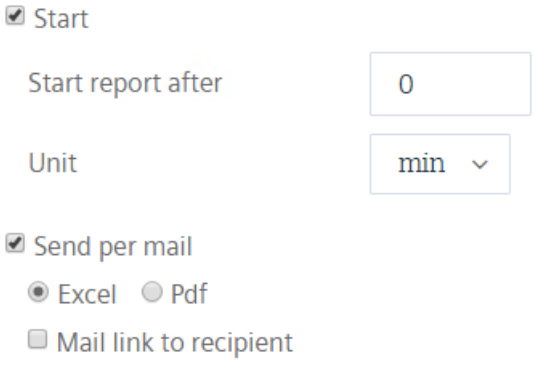
4. You can remove data points which are no longer required from the list by clicking the Delete icon.



5. Repeat steps 1 to 4 for each selected module.

Configuring the "Automation" tab

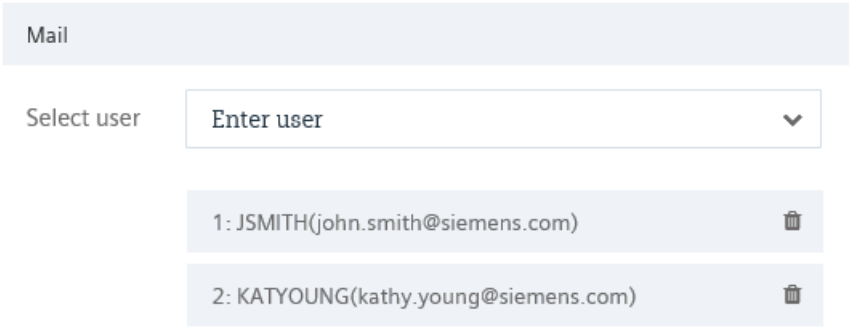
1. To enable automatic report generation, select the "Start" check box.
2. To delay automatic report generation, enter the desired delay in the text box "Start report after". Select the associated unit from the "Unit" drop-down list.



3. To automatically send the generated report to selected users via e-mail, select the "Send per mail" check box.
4. Select the format of the report: You can choose between PDF and Excel format.
5. When you select the "Mail link to recipient" check box, a link with a URL is sent to the recipient. When the recipient clicks on the link, the corresponding report is opened in the Internet browser.
6. Select the users who will receive the report from the drop-down list "Select user". Only users with an assigned e-mail address are displayed.

   The recipients of the report are displayed in an overview list.

7. To remove users from the list again, click on the Delete icon.



8. Repeat steps 1 to 6 for each selected query type.
9. Click on the "Save" button.

Result

The report has been created.

See also

Editing mode (Page 76)
Shortcut menu (Page 79)
Editing reports (Page 143)
Deleting reports (Page 144)
Creating users (Page 243)
Reports (Page 46)
Creating MEVAs / KPIs (Page 224)
Creating parameters (Page 218)
Creating data points (Page 198)

5.5.3 Editing reports

Instead of selecting a report template when editing a report, you can export and import report templates. You can edit and then reimport report templates which you export. You can also import other saved report templates. The imported report template is used for the next report generation.

Requirements

- The report has been created.
- The data points, measuring variables and parameters have been created.
- The report templates have been configured.
- Users have been created.
- The user has the functional right "Report - configure" or the functional right "Report - create, remove, configure".

Procedure

To edit reports, follow these steps:

1. Enable the editing mode.
2. Place the mouse pointer over the report in the navigation area which you want to edit.

   The Edit icon is displayed in the right-hand area of the menu item.
3. Click on the editing icon.

   The configuration dialog "Edit - Report" opens.
4. You can configure all the settings again which you defined on creation of a report.

   The input of a name is required.
5. To export report templates, click the "Export" button. You can open the report templates directly or save the report templates. Saved report templates are exported to the standard download directory of your browser as an .xlsm file.
6. To import report templates, click the "Import" button.
7. Select the report template you want to import.

   The settings in the report template are adopted for the selected report.

   Note

   When you import a new report template for an existing report, the current configurations are deleted and instead the configuration of the new report template is used.
8. Click on the "Save" button.

See also

Creating reports (Page 136)

5.5.4 Deleting reports

Requirements

- The report has been created.
- The user has the functional right "Report - create, remove, configure".

Deleting a report

To delete reports, follow these steps:

1. Enable the editing mode.
2. Place the mouse pointer over the report in the navigation area which you want to delete.
   The Edit icon is displayed in the right-hand area of the menu item.
3. Click on the editing icon.
   The configuration dialog "Edit - Report" opens.
4. Click the "Delete" button.
5. Click the "Delete" button again to confirm the deletion process.

Result

The report is deleted from the system.

See also

Editing reports (Page 143)

5.6 Diagrams

5.6.1 Overview

To graphically display measurement data in Energy Manager Web, you can create new charts and configure existing charts with the help of the shortcut menu. Newly created charts and configurations on already existing charts in EnergyManagerPROWeb are also adopted in the Energy Manager PRO Client and vice versa.

5.6.2 Creating charts

Requirements

- The folder has been created.
- The data points have been created.
- The user has the functional right "Chart Object - create".

Procedure

To create charts, follow these steps:

1. Enable the editing mode.
2. Place the mouse pointer over the folder in the navigation area in which you want to create the chart.

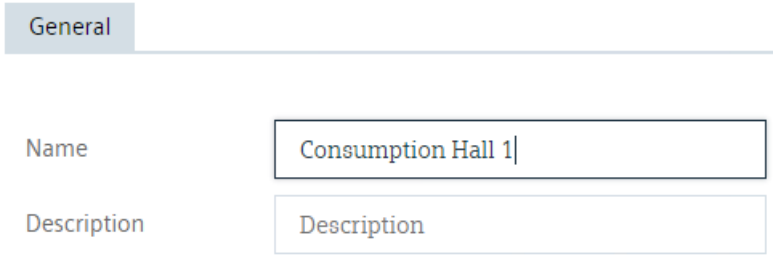
   The shortcut menu icon is displayed in the right-hand area of the menu item.
3. Click on the shortcut menu icon.

   The shortcut menu opens.
4. Click on the menu command "Add chart".

   The configuration dialog "New - Chart" opens.
5. Enter a meaningful name for the chart in the "Name" entry field.

   The input of a name is required.

6. If required, enter a description of the chart in the "Description" entry field.



7. Click the "Save" button.

Result

The chart has been created.

See also

Creating data points (Page 198)
Editing mode (Page 76)
Shortcut menu (Page 79)
Editing charts (Page 147)
Deleting charts (Page 148)

5.6.3 Editing charts

Requirements

- The chart has been created.
- The data points have been created.
- The user has the functional right "Chart Object - configure".

Procedure

To edit charts, follow these steps:

1. Enable the editing mode.
2. Place the mouse pointer over the chart in the navigation area which you want to edit.
   The Edit icon is displayed in the right-hand area of the menu item.
3. Click on the editing icon.
   The configuration dialog "Edit - Chart" opens.
4. As with creating a chart, you can configure the name and description again.
   The input of a name is required.
5. Click on the "Save" button.

See also

Creating charts (Page 145)

5.6.4 Deleting charts

Requirements

- The chart has been created.
- The user has the functional right "Chart Object - delete".

Procedure

To delete charts, follow these steps:

1. Enable the editing mode.
2. In the navigation area, place the mouse pointer over the chart which you want to delete.
   The Edit icon is displayed in the right-hand area of the menu item.
3. Click on the editing icon.
   The configuration dialog "Edit - Chart" opens.
4. Click the "Delete" button.
5. Click the "Delete" button again to confirm the deletion process.

Result

The chart is deleted from the system.

See also

Editing charts (Page 147)

5.7 Matrices

5.7.1 Overview

To manually acquire measurement data in Energy Manager Web or define a reading route for mobile data acquisition using the Energy Manager App, you need matrices. You create matrices and configure them in Energy Manager Web. Newly created matrices and configurations on already existing matrices in Energy Manager PRO Web are also adopted in the Energy Manager PRO Client and vice versa.

5.7.2 Creating matrices

Requirements

- The folder has been created.
- The data points have been created.
- The user has the functional right "Matrix - create, remove, modify".

Procedure

To create matrices, follow these steps:

1. Enable the editing mode.
2. Place the mouse pointer over the folder in the navigation area in which you would like to create the matrix.

   The shortcut menu icon is displayed in the right-hand area of the menu item.
3. Click on the shortcut menu icon.

   The shortcut menu opens.
4. Click on the menu command "Add matrix".

   The configuration dialog "New - Matrix" opens.
5. In the "Name" text box, enter the name of the matrix.
6. Enter a description of the matrix in the "Description" text box. This entry is optional.
7. Click on the "Save" button.

Result

The matrix has been created.

See also

Editing mode (Page 76)

Shortcut menu (Page 79)

Editing matrices (Page 151)

Deleting matrices (Page 152)

Setting up mobile data acquisition with the SIMATIC Energy Manager app for iOS and Android (Page 69)

Creating data points (Page 198)

5.7.3 Editing matrices

Requirements

- The matrix has been created.
- The data points have been created.
- The user has either the functional right "Matrix - create, remove, modify" or the functional right "Matrix - modify".

Procedure

To edit matrices, follow these steps:

1. Enable the editing mode.
2. Place the mouse pointer over the matrix in the navigation area which you want to edit.

   The Edit icon is displayed in the right-hand area of the menu item.
3. Click on the editing icon.

   The configuration dialog "Edit - Matrix" opens.
4. You can configure all the settings again which you defined on creation of a matrix.

   The input of a name is required.
5. Click on the "Save" button.

See also

Creating matrices (Page 149)

5.7.4 Deleting matrices

Requirements

- The matrix has been created.
- The user has the functional right "Matrix - create, remove, modify".

Procedure

To delete matrices, follow these steps:

1. Enable the editing mode.
2. In the navigation area, place the mouse pointer over the matrix which you want to delete.
   The Edit icon is displayed in the right-hand area of the menu item.
3. Click on the editing icon.
   The configuration dialog "Edit - Matrix" opens.
4. Click the "Delete" button.
5. Click the "Delete" button again to confirm the deletion process.

Result

The matrix is deleted from the system.

See also

Editing matrices (Page 151)

5.8 Folders

5.8.1 Overview

To create a custom navigation structure in Energy Manager Web, create new folders and configure existing folders with the help of the shortcut menu. Newly created folders and configurations on already existing folders in Energy Manager PRO Web are also adopted in the Energy Manager PRO Client and vice versa.

5.8.2 Creating folders

Requirement

- The user has the functional right "Folder - create, delete"

Procedure

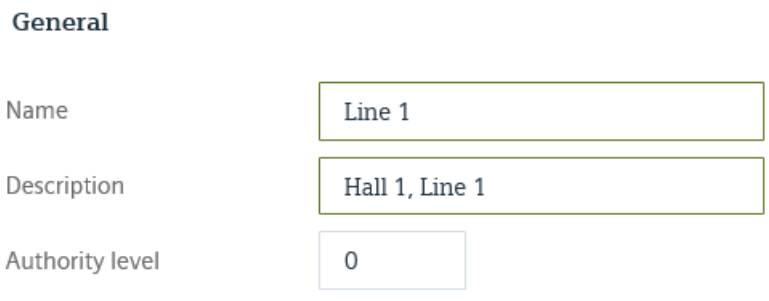
To create folders, follow these steps:

1. Enable the editing mode.
2. Place the mouse pointer over the folder in the navigation area in which you want to create a new folder.

   The shortcut menu icon is displayed in the right-hand area of the menu item.
3. Click on the shortcut menu icon.

   The shortcut menu opens.
4. Click on the "Add folder" menu command.

   The configuration dialog "New - Folder" opens.
5. Enter a meaningful name for the folder in the "Name" entry field.



The input of a name is required.

6. If required, enter a description of the folder in the "Description" entry field.
7. Enter the authority level for the folder in the "Authority level" entry field.
8. Click on the "Save" button.

Result

The folder has been created.

See also

Folder (Page 31)
Editing mode (Page 76)
Shortcut menu (Page 79)
Editing folders (Page 155)
Deleting folders (Page 156)

5.8.3 Editing folders

Requirements

- The folder has been created.
- The user has the functional right "Folder - configure".

Procedure

To edit folders, follow these steps:

1. Enable the editing mode.
2. Place the mouse pointer over the folder in the navigation area which you want to edit.
   The shortcut menu icon is displayed in the right-hand area of the menu item.
3. Click on the shortcut menu icon.
   The shortcut menu opens.
4. Click on the menu command "Edit".
   The configuration dialog "Edit - Folder" opens.
5. Configure the name, the description, if required, and the authorization level of the folder.
   The input of a name is required.
6. Click on the "Save" button.

See also

Folder (Page 31)
Shortcut menu (Page 79)
Creating folders (Page 153)

5.8.4 Deleting folders

Requirements

- The folder has been created.
- The user has the functional right "Folder - create, delete".

Procedure

To delete folders, follow these steps:

1. Enable the editing mode.
2. In the navigation area, place the mouse pointer over the folder which you want to delete.
   The shortcut menu icon is displayed in the right-hand area of the menu item.
3. Click on the shortcut menu icon.
   The shortcut menu opens.
4. Click on the menu command "Edit"
   The configuration dialog "Edit - Folder" opens.
5. Click the "Delete" button.
6. Click the "Delete" button again to confirm the deletion process.

Result

The folder is deleted from the system.

See also

Editing folders (Page 155)

Project configuration

6

6.1 Overview

In the "Project configuration" folder you create new data sources and data channels as well as their processing calculations in Energy Manager Web. You can also configure already existing objects.

You can configure the following acquisition and processing objects:

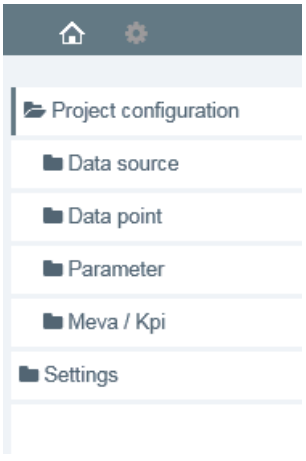
- Data sources
- Data points
- Parameter
- MEVAs / KPIs

Opening the project configuration

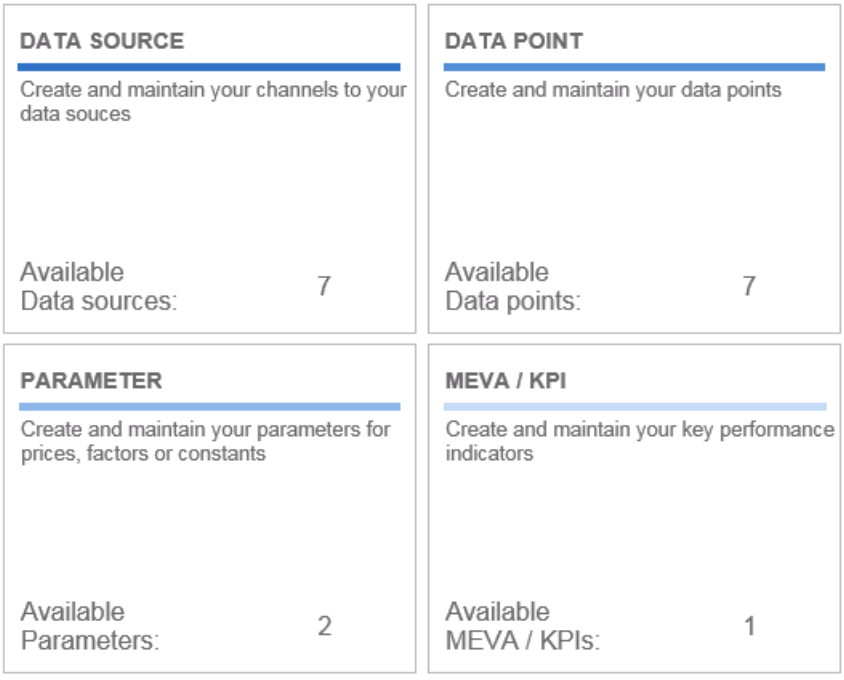
To open the "Project configuration" folder, follow these steps:

1. Click in the menu bar on "Configuration".

2. Click the menu item "Project configuration" in the navigation area.



In the detail area you see an overview of the configurable objects in tile form.



The number of available objects is displayed in the bottom part of the tiles.

Note

Data points, Parameter and MEVAs / KPIs are only available in the configuration area in Energy Manager Web if the following criteria are met:

- The object is linked at least once in the entry point of the user in the Web.
- The authority level of the object is lower than or the same as the authority level of the user.
- The object and the user are assigned to the same domain.

3. To configure the respective object, click on the corresponding tile in the detail area. As an alternative, you can click on the corresponding menu item in the navigation area.

Note

The folder structures are automatically created after the installation of Energy Manager and cannot be deleted by the user. The structure of the configuration area is created in the Energy Manager PRO Client under the path "System > Configuration > Web Configuration".

See also

Data source (Page 162)
Data point (Page 196)
Parameters (Page 216)
MEVA / KPI (Page 222)

6.2 Creating subfolders

In Energy Manager Web you can create new subfolders in the "Data point", "Parameter" and "MEVA / KPI" folders. When you create a new data point, parameter or KPI, you can select the folder in which you want to create the object from the "Structure" drop-down list.

Requirement

- The user has the functional right "Folder - create, delete"

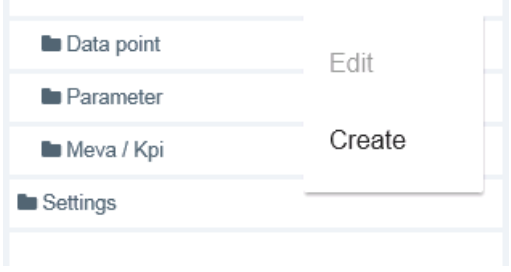
Procedure

To create a new subfolder, follow these steps:

1. Click on the "Configuration" icon in the menu bar.
2. Click the menu item "Project configuration" in the navigation area.
3. Place the mouse pointer in the navigation area either over the menu item "Data point", "Parameter" or "MEVA / KPI".

   The shortcut menu icon is displayed on the right-hand side of the corresponding menu item.
4. Click on the shortcut menu icon.

   The shortcut menu is opened with the menu commands "Edit" and "New".



5. Click on the menu command "New".

   The configuration dialog "New - Folder" opens.

6. Enter a meaningful name for the folder in the "Name" entry field.

   The input of a name is required.

7. If required, enter a description of the folder in the "Description" entry field.
8. Click on the "Save" button.

Result

The new folder is created under the selected folder. You can create an additional folder in the new folder using the same procedure. You can therefore create a structure of up to five levels. Click on the menu command "Edit" in the shortcut menu to edit already created folders.

Note

You cannot edit the automatically created "Data points", "Parameter" and "MEVAs / KPIs" folders in this way.

See also

Creating parameters (Page 218)

Creating data points (Page 198)

Creating MEVAs / KPIs (Page 224)

6.3 Data source

6.3.1 Overview

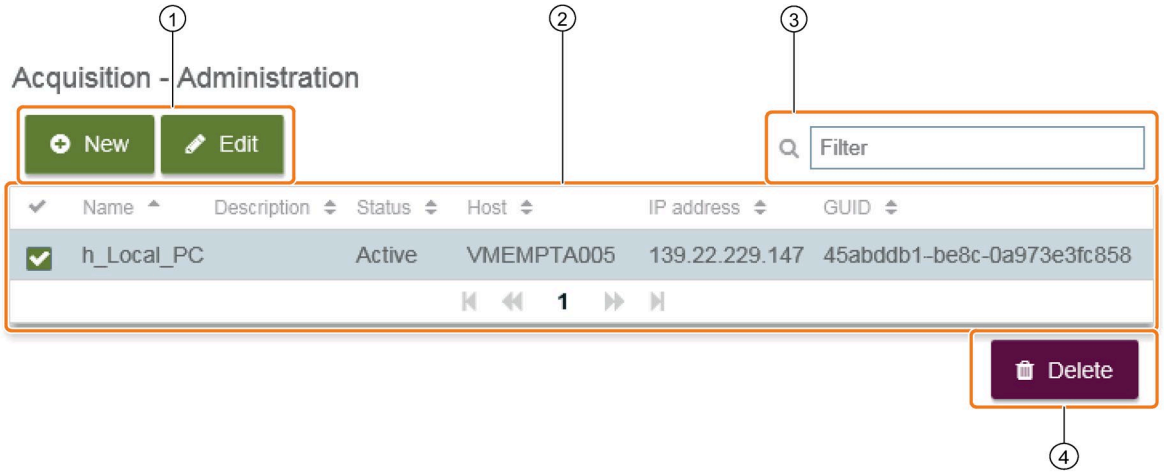
When configuring data sources you create new acquisition objects and data channels in Energy Manager PRO Web. From these data channels you can create new data points per data channel. Newly created data sources and changes to already existing objects in Energy Manager PRO Web are also adopted in the Energy Manager PRO Client and vice versa.

Note

Functionality of Energy Manager Basic

The creation of new data sources is not available in Energy Manager Basic. Only the automatically installed data source is available.

When you click on the menu item "Data source" in the navigation area in the "Project configuration" folder, the detail area "Acquisition - Administration" opens. The following figure shows the detail area "Acquisition - Administration":



① "New" and "Edit" buttons: Creating and editing new data sources.

② Display table of existing data sources.

③ Filter function: When you enter a text in the "Filter" entry field, all columns are searched and displayed accordingly in the display table. Delimitation of the data sources is recommended when a large number of data sources exist in the system.

④ "Delete" button: Deleting created data sources from the system.

Newly created data sources and already existing data sources in the system are displayed in tabular form in Energy Manager Web. The display table consists of the following seven columns:

Column	Function
Selection	You can select individual data sources and any number of data sources with the help of the check boxes. Clicking on the check box in the column header selects all data sources. Clicking on the check box again in the column header deselects all data sources again.
Name	Shows the name of the data source.
Description	Shows the description of the data source.
Status	Shows the status of the data source. If the status of the data source shows "Active", data acquisition is enabled. If the status of the data source shows "Inactive", data acquisition is not enabled.
Host name	Shows the host name of the data source.
IP address	Shows the IP address of the data source. Is assigned by the system itself.
GUID	Shows the acquisition ID of the data source. Is assigned by the system itself.

When you click on the column header of one of the columns, the corresponding column is sorted in alphabetical order. When you click on the same column header again, the column is sorted in the reverse order.

See also

Editing data sources (Page 166)

Deleting data sources (Page 167)

Overview (Page 169)

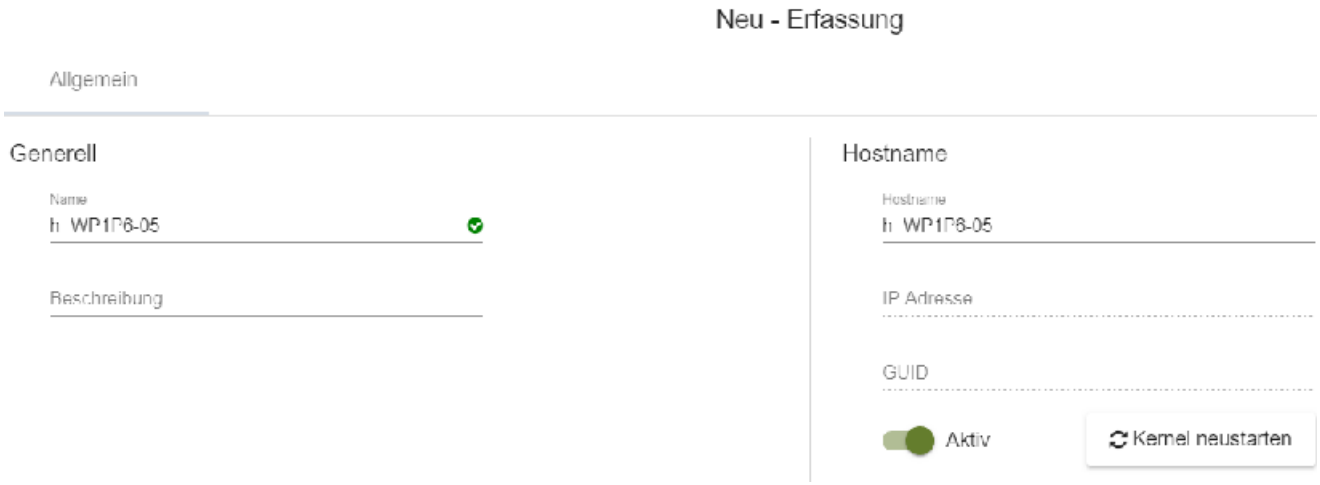
6.3.2 Creating data sources

Note
Functionality of Energy Manager Basic
The creation of new data sources is not available in Energy Manager Basic.

Procedure

To create a new data source, follow these steps:

1. Click on the "New" button in the detail area "Acquisition - Administration" .
   The configuration dialog "New - Acquisition" opens.



2. Enter a meaningful name for the data source in the "Name" entry field.
   The input of a name with the prefix "h_" is required.
3. If required, enter a description of the new data source in the "Description" entry field.
4. Enter a meaningful host name in the "Hostname" entry field.
   The input of a host name is required.
5. To acquire measurement data from the data source, enable the option "Active". The status of the data source is therefore set to "Active" in the display table.
6. Click on the "Restart Kernel" button to restart the kernel.
7. Click on the "Save" button.

Result

The data source is created under the "Data source" folder in the navigation area. The corresponding object can be found in the Energy Manager PRO Client under the following path: "System > Configuration > Web Configuration > Data sources". However, to acquire measurement data from this data source and create data points, you must create data channels for every data source afterwards. How to create data channels is described in the section "Creating data channels".

Note

As soon as you create an additional data source or the data source runs on a different computer than the Energy Manager Server, you have to connect the data source with the server. You set up the connection via the 'Acquisition' user interface.

See also

Editing data sources (Page 166)

6.3.3 Editing data sources

Requirement

- The data source has been created.

Procedure

To edit an already created data source, follow these steps:

1. Click on the data source to be edited in the display table.
2. Click the "Edit" button. As an alternative, place the mouse pointer in the navigation area over the data source to be edited and click on the Edit icon.

   The configuration dialog "Edit - Acquisition" opens.
3. Edit names, description and host names.

   The input of a name with the prefix "h_" and the input of a host name is required.
4. Data acquisition is enabled when you enable the option "Active".
5. Click on the "Save" button.

Note

You can only edit single selected data sources.

See also

Overview (Page 162)
Creating data sources (Page 164)
Deleting data sources (Page 167)

6.3.4 Deleting data sources

Requirement

- The data source has been created.

Procedure

To delete one or more data sources from the system, follow these steps:

1. Click on the data source to be deleted in the display table. You can also select one or more data sources to be deleted with the help of the check boxes.
2. Click the "Delete" button.
3. Click the "Delete" button again to confirm the deletion process. As an alternative, you can delete individual data sources from the system in the configuration dialog "Edit - Acquisition" by clicking the "Delete" button twice.

Result

The data source is deleted from the system.

Note

When you delete a data source, all the lower-level object links are deleted from the system.

See also

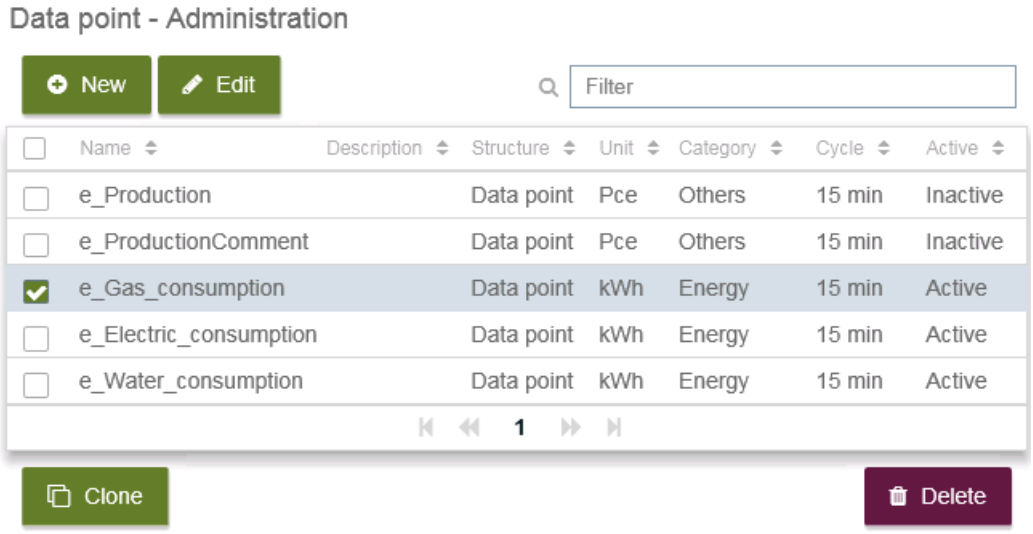
Overview (Page 162)

Editing data sources (Page 166)

6.3.5 Manual acquisition

When installing Energy Manager, the "Manual acquisition" folder is automatically created in the project folder "Data source", in which you can create, edit and delete manual data points. The folder is not an acquisition object as such, but rather contains only an overview of all manual data points. In the Energy Manager PRO Client you can find the folder under the following path: "System > Configuration > Web Configuration> Data sources".

To open the "Manual acquisition" folder, click on the menu item "Manual acquisition" in the navigation area under the "Data source" project folder. The following figure shows the detail area "Data point - Administration" with an overview of all manual data points in the "Manual acquisition" folder:



The display table with the columns contained there corresponds to the display table of the other data sources.

6.3.6 Derived data points

When installing Energy Manager, the "Derived data points" folder is automatically created in the project folder "Data source". You can create, edit and delete derived data points in this folder. The folder is not an acquisition object as such, but rather contains only an overview of all derived data points. In the Energy Manager PRO Client you can find the folder under the following path: "System > Configuration >Web Configuration > Data sources".

To open the "Derived data points" folder, click on the menu item "Derived data points" in the navigation area under the "Data source" project folder.

The display table with the columns contained there corresponds to the display table of the other data sources.

6.3.7 Data channels

6.3.7.1 Overview

To create data points in Energy Manager Web, and hence acquire measurement data, you need data channels. You can create different data channels for each data source created. Newly created data channels and changes to already existing channels in Energy Manager PRO Web are also adopted in the Energy Manager PRO Client and vice versa. You can only create the following channel types for data acquisition in Energy Manager PRO Web:

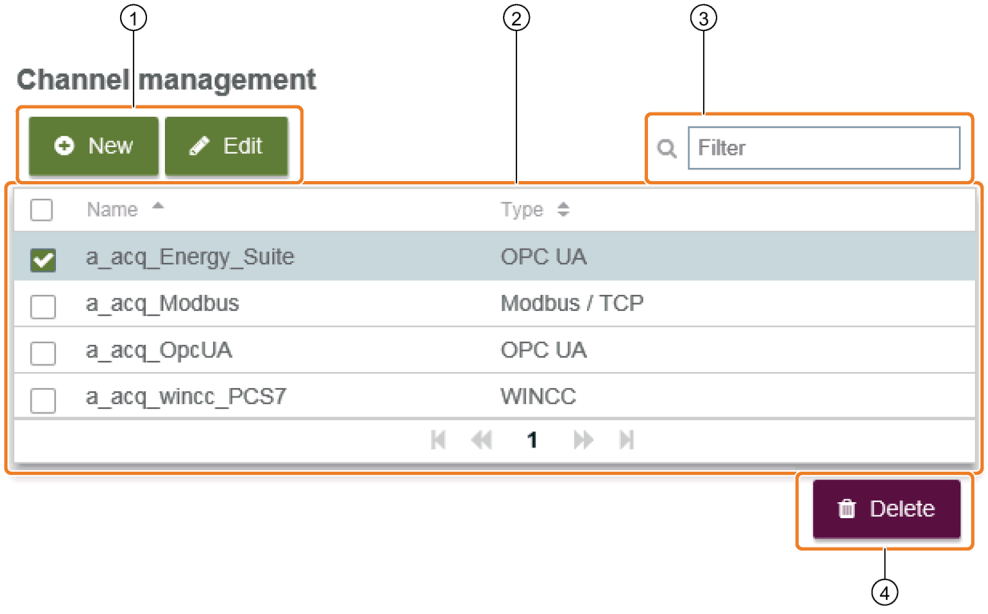
- OPC UA, DA, HDA
- WinCC
- Energy Suite
- Modbus / TCP

Note

Functionality of Energy Manager Basic

Only the automatically installed data channels are available in Energy Manager Basic.

When you click on a data source in the navigation area, the associated data channels are displayed in the detail area in tabular form and in the navigation area under the data source. The following figure shows the detail area "Channel management" with an overview of the existing data channels of a data source:



① "New" and "Edit" buttons: Creating and editing new data channels.
② Display table of existing data channels per data source.
③ Filter function: When you enter a text in the "Filter" entry field, all columns are searched and displayed accordingly in the display table. Delimitation of the data channels is recommended when a large number of data channels exist per data source.
④ "Delete" button: Deleting created data channels from the system.

Newly created channels and channels available per data source are displayed in tabular form in Energy Manager Web. The display table consists of the following three columns:

Column	Function
Selection	You can select individual data channels and any number of data channels with the help of the check boxes. By clicking on the check box in the column header you select all data channels. Clicking on the check box again in the column header deselects all data channels again.
Name	Shows the name of the data channel
Type	Shows the channel type.

When you click on the column header of one of the columns, the corresponding column is sorted in alphabetical order. When you click on the same column header again, the column is sorted in the reverse order.

See also

Overview (Page 162)
Creating data channels (Page 171)
Editing data channels (Page 191)
Deleting data channels (Page 192)
Data point - Administration (Page 193)

6.3.7.2 Creating data channels

Requirement

- The data source has been created.

Procedure

To create a new data channel, follow these steps:

1. Click on the data source in which you want to create a new data channel in the navigation area under the "Data source" folder.

   The detail area "Channel management" is displayed.

2. Click the "New" button.

   The configuration dialog "New - Channel" opens.

3. Select the channel type from the "Source" drop-down list. You can choose from the following channel types:
   - Energy Suite
   - Modbus / TCP
   - OPC DA
   - OPC HDA
   - OPC UA
   - WINCC
   - ASCII
   - Desigo CC

Depending on the channel type, you have to configure different settings.

See also

Overview (Page 169)
Editing data channels (Page 191)
Data point - Administration (Page 193)
Create OPC DA, OPC HDA, OPC UA channel (Page 176)
Creating an Energy Suite channel (Page 180)
Creating a WinCC channel (Page 183)
Creating a Modbus TCP channel (Page 185)

6.3.7.3 Creating an ASCII channel

With an ASCII channel you read data from ASCII file of a local system or an FTP server. After successful configuration, transfer of the ASCII files from the directory to the Energy Manager acquisition component is carried out automatically.

Requirements

If you obtain ASCII data from an FTP server, the following requirements apply:

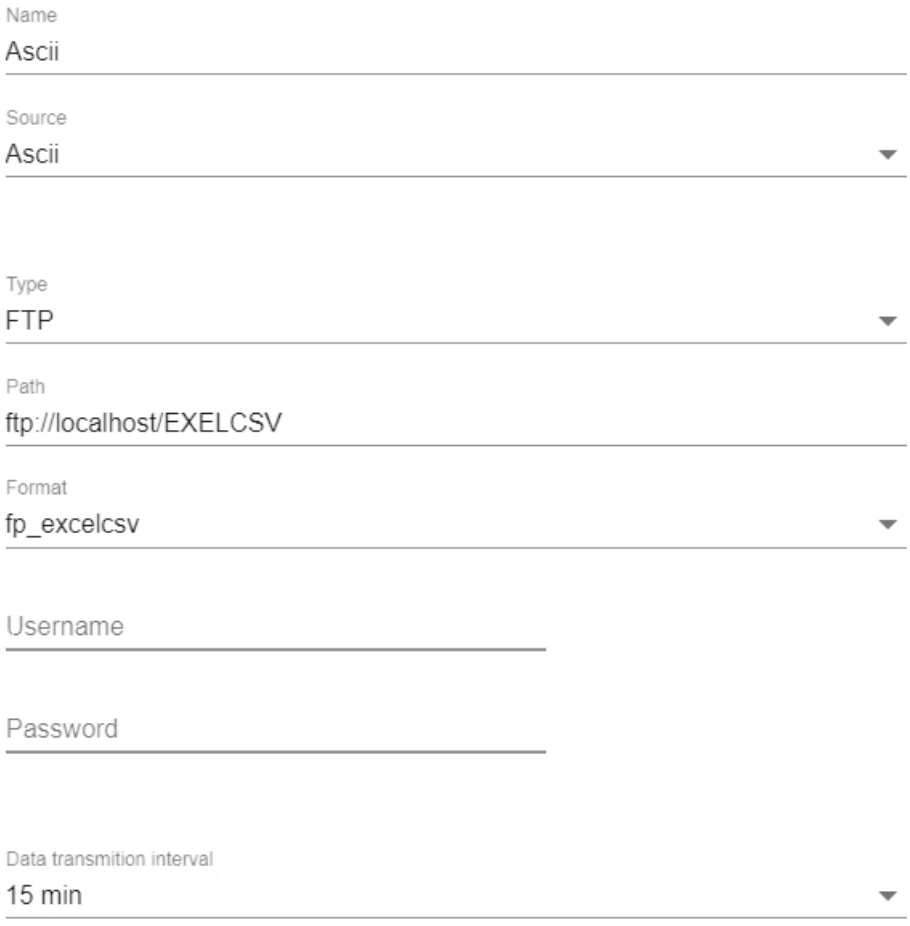
- The acquisition component is logged in to the Energy Manager.
- The FTP server can be accessed.
- You have the access data for the FTP server.

Procedure

To create an ASCII channel, proceed as follows:

1. Enter a meaningful name for the new channel in the "Name" entry field.
   The input of a name is required.
2. Select the entry "Ascii" from the "Source" drop-down list.

3. Select one of the following entries from the "Type“ drop-down list:
   - FTP
   - SFTP (secure FTP)
   - File (direct entry)



4. Enter the directory of the file in the "Path" entry field.

   The source directory has to be specified.

   Note

   Ensure that there are no blank spaces in the source directory. Data acquisition is only possible with a source directory without blank spaces.

5. Select the format of the file from the "Format" drop-down list.
6. If you have selected the type "FTP" or "SFTP", enter your access data in the entry fields "User name" and "Password".
   The access data is required.
7. Select the time interval in which the data is transmitted from the "Data transmission interval" drop-down list. This selection corresponds to the cycle time of the IO buffer in the Energy Manager PRO Client.

8. Select the required data points in the navigation field.
9. Click the "Save" button.

To add a data point to the navigation field, proceed as follows:

1. Enter the name of the data point in the "Data point" entry field.
2. Enter the address of the data point in the ASCII file in the "Address" entry field.

   You can find additional information on this in the entry on the corresponding file format in the section ASCII FTP formats.
3. In the "Data type" drop-down list, select the data type.
4. Click the "Add" button.

Result

The ASCII channel with the selected data points is created under the data source.

6.3.7.4 Create OPC DA, OPC HDA, OPC UA channel

You use the channel type "OPC" to retrieve the data provided by an OPC server. The data channel "OPC UA" ("OPC Unified Architecture") is a specification for the transmission of process values and archive data.

Security concept

The OPC UA server uses the TCP/IP protocol for data exchange. For authorization, certificates are exchanged between server and client. In addition, you can encrypt the data traffic.

Requirements

- The data source is logged in to the Energy Manager Server and activated.
- An OPC Server and/or an OPC Client is installed on the data source.
- An understanding of addressing and communication with OPC.
- The certificate exchange is provided for at the time that the interface is configured.

Procedure

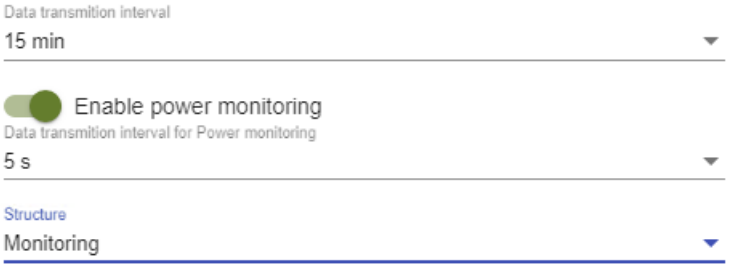
To create an OPC channel, follow these steps:

1. Enter a meaningful name for the new channel in the "Name" text box.

   The input of a name is required.
2. Select one of the following entries from the "Source" drop-down list:
   - OPC DA
   - OPC HDA
   - OPC UA
3. Enter the address of the OPC Server in the "OPC server name" text box.

4. Click the "Connect" button.
   The system checks whether there is a server connection. If a server connection exists, the available servers are loaded to the "Data source" drop-down list. If there is no connection, check your entries.
5. Depending on the selected OPC type, a distinction is made between the following three cases for the option "Acquire historical data (HDA)":
   - OPC DA: The option is not available.
   - OPC HDA: The option is automatically enabled.
   - OPC UA: You can enable the option. When you enable the option, you use the functionality of an HDA channel. When you disable the option, you use the functionality of a DA channel.
6. Select the aggregation function for an HDA channel or a UA channel with HDA functionality from the "Aggregation" drop-down list.

   The acquired values are aggregated depending on the selection. For example, if "Average" is selected, the arithmetic mean of the reading interval is formed.
7. Select the time interval with which the data is cyclically transmitted from the "Data transmission interval" drop-down list. This selection corresponds to the cycle time of the IO buffer in the Energy Manager PRO Client.
8. If you want to use Online Monitoring, activate the option "Enable power monitoring". The Online Monitoring is only available for OPC UA servers.



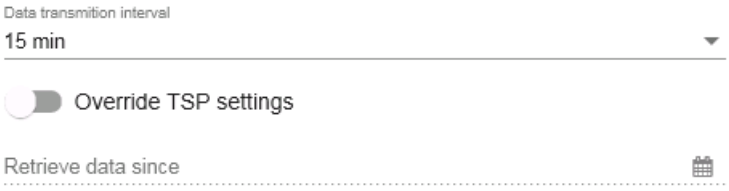
   If you use Online Monitoring, you can create data points of the OPC server in a separate folder structure for real-time monitoring.

   Select the time interval in which the data is cyclically transmitted from the "Data transmission interval" drop-down list.

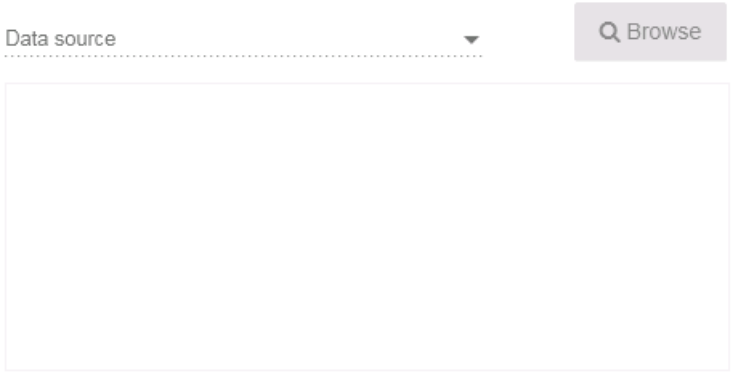
   Select the folder structure in which the data points are saved from the "Structure" drop-down list. The folders must already exist and be part of the "Monitoring" structure.

   For more information, refer to Online Monitoring in section "Online Monitoring".

9. If the "Acquire historical data (HDA)" option is enabled, you can reload measurement data as of a specific date. Enable the option "Override TSP settings" and select the date in the "Retrieve data since" text field.



10. Select the server with the required data points from the "Data source" drop-down list You have to select a "Siemens OPC UA" server.
11. Click the "Browse" button.



Note

When configuring the OPC UA server, activate at least one "Security policy" and its associated "Security mode". Otherwise, the OPC UA server and the clients will communicate insecurely.

During the first access to an encrypted OPC UA server instance a certificate for encrypting the data is created. You have to accept this certificate individually in the respective server product. You may have to perform this operation twice.

- Siemens SIMATIC NET V15: With the help of the "Siemens Communication Settings" software in the "OPC UA certificates" menu command.
- Siemens WinCC TIA V15: Moving of the new certificates from the path "C:\Program Files (x86)\SIEMENS\Automation\SCADA-RT_V11\WinCC\opc\UAServer\PKI\CA\rejected\certs'" to "'C:\Program Files (x86)\SIEMENS\Automation\SCADA-RT_V11\WinCC\opc\UAServer\PKI\CA\certs"

The available data points are loaded to the overview list.

12. Select the required data points from the available data points.
13. If you have activated Online Monitoring, click the "Online Monitoring" tab. Select the data points for Online Monitoring.

    You can use these data points only for Online Monitoring. To be able to use the other functions of Energy Manager with the data points of this server, create separate data points in the usual folder structure.
14. Click on the "Save" button.

Result

The OPC channel with the selected data points is created under the data source.

Note

If you change the server address for an existing OPC UA server connection, restart the KERNEL service via the Service Cockpit.

See also

Creating data channels (Page 171)

6.3.7.5 Creating an Energy Suite channel

Data acquisition over the "Energy Suite" interface corresponds to the "OPC UA" interface. The channel type "Energy Suite" also offers the advantage that information from the WinCC archive of the Energy Suite is copied to Energy Manager. You therefore no longer have to configure this information in the data points.

Security concept

The OPC UA server uses the TCP/IP protocol for data exchange. For authorization, certificates are exchanged between server and client. In addition, you can encrypt the data traffic.

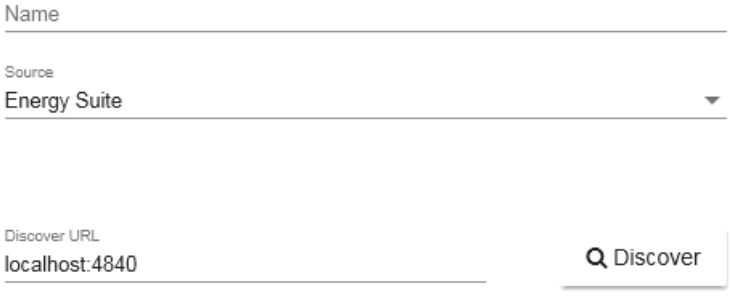
Requirements

- The data source is logged in to the Energy Manager Server and activated.
- An OPC Server and/or an OPC Client is installed on the data source.

Procedure

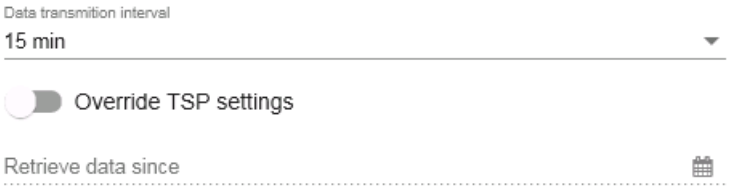
Follow these steps to create an Energy Suite channel:

1. Enter a meaningful name for the new channel in the "Name" entry field.
   The input of a name is required.
2. Select the entry "Energy Suite" from the "Source" drop-down list.

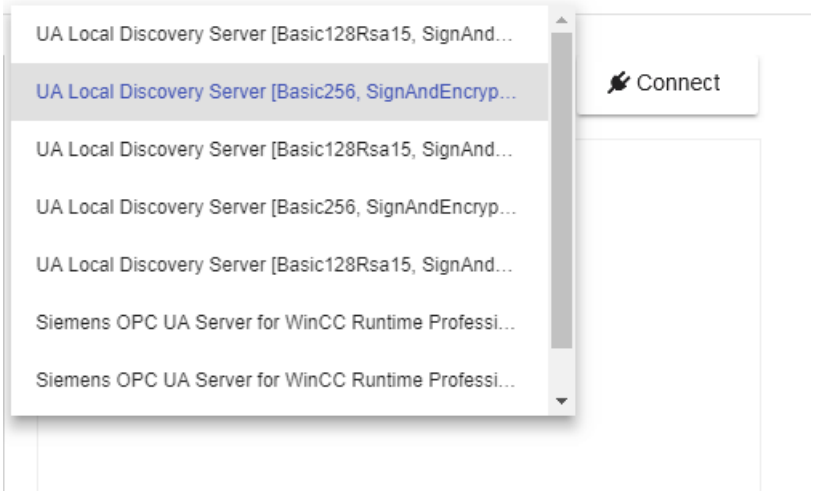


3. Enter the URL of the WinCC Professional OPC UA Server in the "Discover URL" entry field.
4. Click the "Browse" button.
   The system checks whether there is a server connection. If a connection to the server exists, the existing archives are loaded to the "Data points" drop-down list. If there is no connection, check your entries.
5. Select the time interval with which the data is cyclically transmitted from the "Data transmission interval" drop-down list. This selection corresponds to the cycle time of the IO buffer in the Energy Manager PRO Client.

6. When you select the option "Override TSP settings", you can transmit the measurement data again as of a specific date. Select the date in the "Retrieve data since" text field.



7. Select the required archive from the "Data points" drop-down list. You have to select a "Siemens OPC UA" server.



8. Click "Connect".

Note

When configuring the OPC UA server, activate at least one "Security policy" and its associated "Security mode". Otherwise, the OPC UA server and the clients will communicate insecurely.

During the first access to an encrypted OPC UA server instance a certificate for encrypting the data is created. You have to accept this certificate individually in the respective server product. You may have to perform this operation twice.

- Siemens SIMATIC NET V15: With the help of the "Siemens Communication Settings" software in the "OPC UA certificates" menu command.
- Siemens WinCC TIA V15: Moving of the new certificates from the path "C:\Program Files (x86)\SIEMENS\Automation\SCADA-RT_V11\WinCC\opc\UAServer\PKI\CA\rejected\certs"' to "'C:\Program Files (x86)\SIEMENS\Automation\SCADA-RT_V11\WinCC\opc\UAServer\PKI\CA\certs"

All available data points are loaded from the archive to the overview list.

9. Select the required data points.
10. Click on the "Save" button.

Result

The Energy Suite channel with the selected data points is created under the data source.

See also

Creating data channels (Page 171)

6.3.7.6 Creating a WinCC channel

You use the "WinCC" interface to retrieve values from a process value log or compressed log. You need a separate data channel for each log.

Note

Functionality of Energy Manager Basic

In Energy Manager Basic you can click the automatically installed WinCC channel directly in the navigation area under the data source that was also automatically installed. To add a new WinCC archive including the data points contained therein, click on the "Add archive" button in the detail area. The configuration dialog "New - Channel" opens in which you define the archive settings. For more information on creating a WinCC archive, refer to the sections "Creating a WinCC channel" and "Data point - Administration".

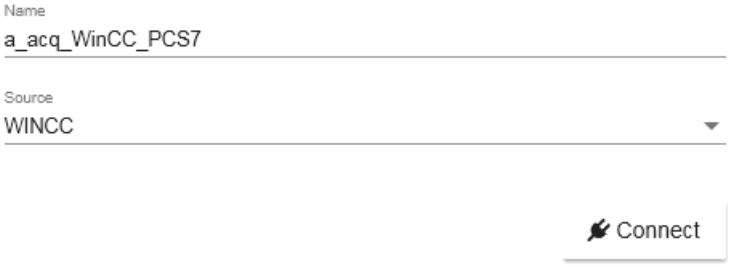
Requirements

- The data source is logged in to the Energy Manager Server and activated.
- An WinCC Server and/or a WinCC Client is installed on the data source.
- WinCC projects are activated.

Procedure

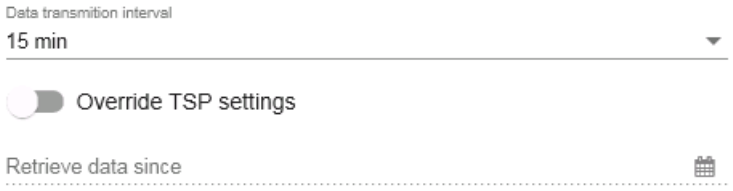
To create a WinCC channel, follow these steps:

1. Enter a meaningful name for the new channel in the "Name" entry field.
   The input of a name is required.
2. Select the entry "WINCC" from the "Source" drop-down list.

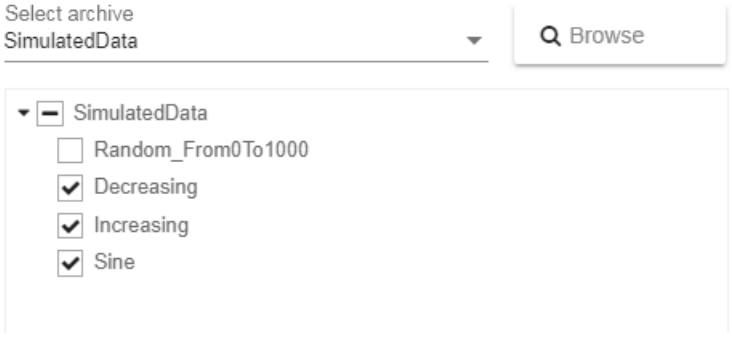


3. Click the "Connect" button.
   The system checks whether there is a server connection. If a connection to the WinCC server exists, the WinCC archives are loaded to the "Select archive" drop-down list.
4. Select the time interval with which the data is cyclically transmitted from the "Data transmission interval" drop-down list. This selection corresponds to the cycle time of the IO buffer in the Energy Manager PRO Client.

5. When you select the option "Override TSP settings", you can transmit the measurement data again as of a specific date. Select the date in the "Retrieve data since" text field.



6. Select the WinCC archive from which you want to create the data points from the "Select archive" drop-down list.
7. Click the "Browse" button.



   All available data points are loaded from the archive to the overview list.
8. Select the required data points.
9. Click on the "Save" button.

Result

The WinCC channel with the selected data points is created under the data source.

See also

Creating data channels (Page 171)

Data point - Administration (Page 193)

6.3.7.7 Creating a Modbus TCP channel

You use the "Modbus" interface to retrieve data from measuring devices with Modbus support and Ethernet interface, for example, SENTRON PAC measuring devices. The "Modbus" interface supports the following two types:

- Modbus TCP
- Modbus RTU

Datapoints acquired by the following measuring devices are pre-configured in Energy Manager.

- SENTRON PAC 2200 CLP
- SENTRON PAC 3200
- SENTRON PAC 4200
- ET 200SP MF HF
- Janitza UMG64

Note

Devices for separate listing of third-party consumption values

The SENTRON PAC 2200 CLP and Janitza UMG64 devices are required for separate listing of third-party consumption values.

Note

Supported modules

The ET device

Note

Functionality of Energy Manager Basic

In Energy Manager Basic you can click the automatically installed Modbus TCP channel directly in the navigation area under the also automatically installed data source. To add a new device including the data points contained therein, click on the "Add device" button in the detail area. The configuration dialog "New - Channel" opens in which you define the device settings. For more information on creating a device, refer to the sections "Creating a Modbus TCP channel" and "Data point - Administration".

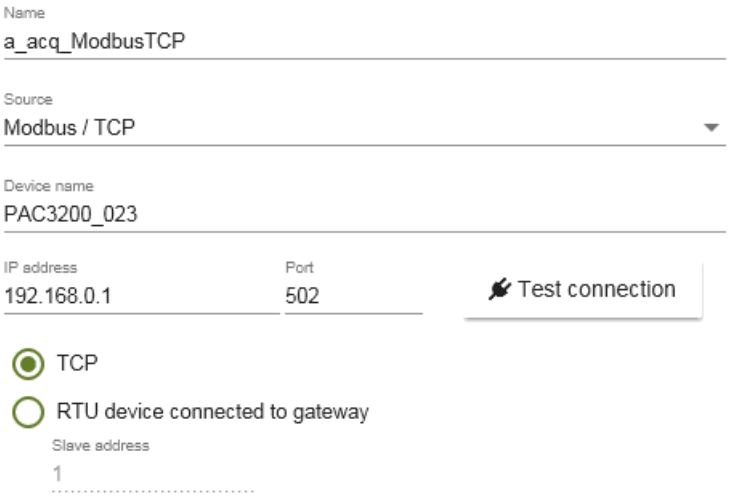
Requirements

- The data source is logged in to the Energy Manager Server and activated.
- The TCP/IP connection data of the measuring device is known.
- The operating instructions of the measuring device are available.

Procedure

Follow these steps to create a Modbus TCP channel:

1. Enter a meaningful name for the new channel in the "Name" entry field.
   The input of a name is required.
2. Select the entry "Modbus/TCP" from the "Source" drop-down list.



3. Enter a meaningful device name in the "Device name" entry field.
   The input of a device name is required. The device name is used on creation of the channel for the IO buffer.
4. Enter the IP address and the associated port of the device in the in "IP address" and "Port" entry fields.
5. Click the "Test connection" button.
   The system checks whether there is a connection to the IP address entered. If there is no connection, check your entries.
6. If this is a device with Modbus TCP interface, select the "TCP" check box. If the device is of the Modbus RTU type, select the "RTU device" check box.
7. In the case of an RTU device, you have to enter the address of the RTU device in the "Slave address" entry field.
8. For an ET 200SP MF HF, enter the offset in the "Register Offset" field.

Note

Register offset

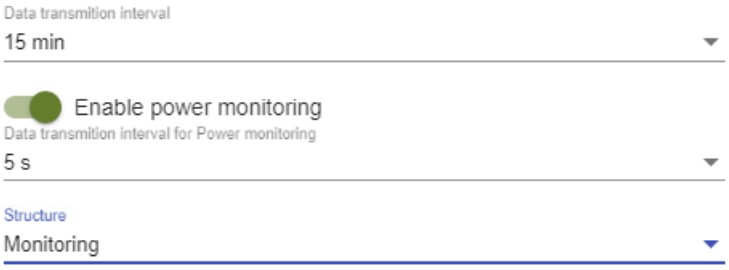
The pre-configured datapoints correspond to the EE@Industry E3 profile. The length of the profile for the AI Energy Meter is 53 Modbus registers.

With an additional AI Energy Meter module, the register offset starts at 54.

Via the register offset, you define the module from which data is acquired.

9. Select the time interval with which the data is cyclically transmitted from the "Data transmission interval" drop-down list. This selection corresponds to the cycle time of the IO buffer in the Energy Manager PRO Client.

10. If you want to use Power Monitoring, select the check box "Enable power monitoring".



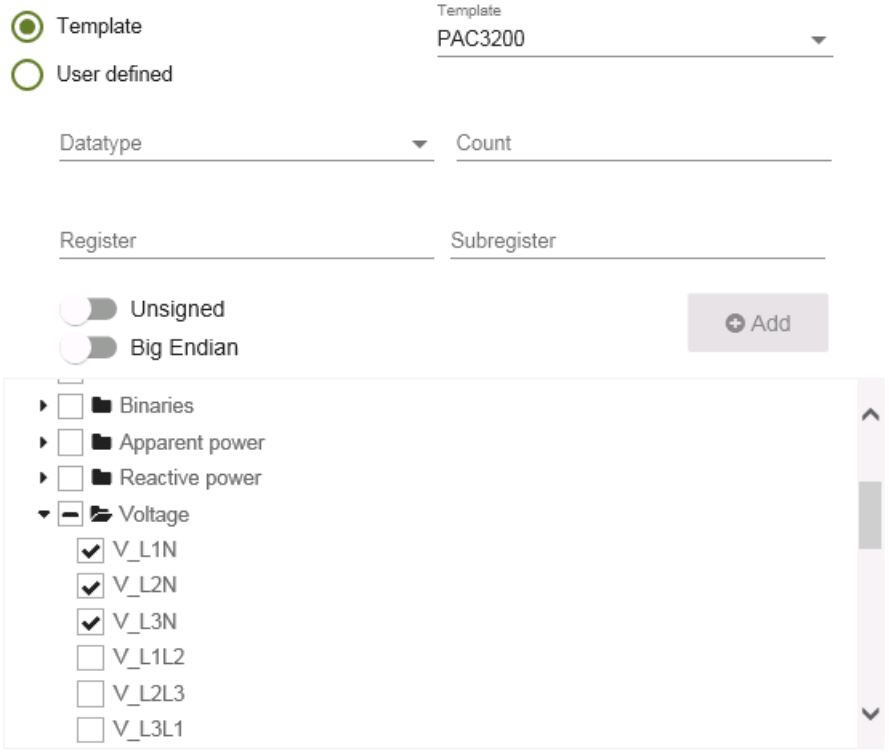
If you use Online Monitoring, you can create data points of the Modbus device in a separate folder structure for real-time monitoring.

Select the time interval in which the data is cyclically transmitted from the "Data transmission interval" drop-down list.

Select the folder structure in which the data points are saved from the "Structure" drop-down list. The folders must already exist and be part of the "Monitoring" structure.

For more information on Online Monitoring, refer to the section "Online Monitoring".

11. If you want to use data points from a device template, select the "Template" check box. The measuring devices PAC 3200 / 4200 are available in the template. If the template does not contain your measuring device, select the "User defined" check box.



12. If you use a measuring device from the template, select the corresponding device from the "Template" drop-down list.
All available data points from the template are loaded to the overview list.

13. Select the data points you want to create.
14. You have to configure the following settings for the user-defined case:
    - Select the type of data point from the "Data type" drop-down list.
    - Enter the address of the data point using the operating instructions of the measuring device in the "Register", "Count" and "Subregister" entry fields.
    - If you want to acquire only positive measured values, enable the option "unsigned ".
    - If the device uses big endian encoding, enable the option "Big Endian".
    - To create the data points, click the "Add" button.
      The data points are displayed in the overview list.
15. If you have activated Online Monitoring, click the "Online Monitoring" tab. Select the data points for Online Monitoring.

    You can use these data points only for Online Monitoring. To be able to use the other functions of Energy Manager with the data points of this server, create separate data points in the usual folder structure.
16. Click on the "Save" button.

Result

The Modbus TCP channel with the selected data points is created under the data source.

See also

Creating data channels (Page 171)

Data point - Administration (Page 193)

6.3.7.8 Creating a Desigo CC channel

Use the interface "Desigo CC" to read out the data saved on a Desigo CC system via the Desigo CC web service. Energy Manager supports Desigo CC V3.0.

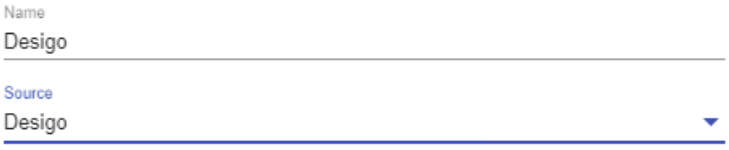
Requirement

- The data source is logged in to the Energy Manager Server and activated.
- The Desigo CC web server is online and can be accessed.

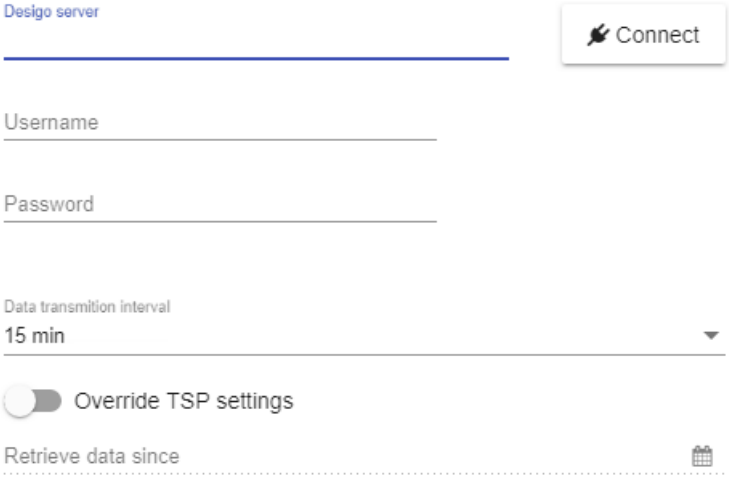
Procedure

To create a Desigo CC channel, follow these steps:

1. Enter a meaningful name for the new channel in the "Name" entry field.



2. Select the entry "Desigo CC" from the "Source" drop-down list.
3. Enter the URL of the Desigo system in the "Desigo Server" entry field.



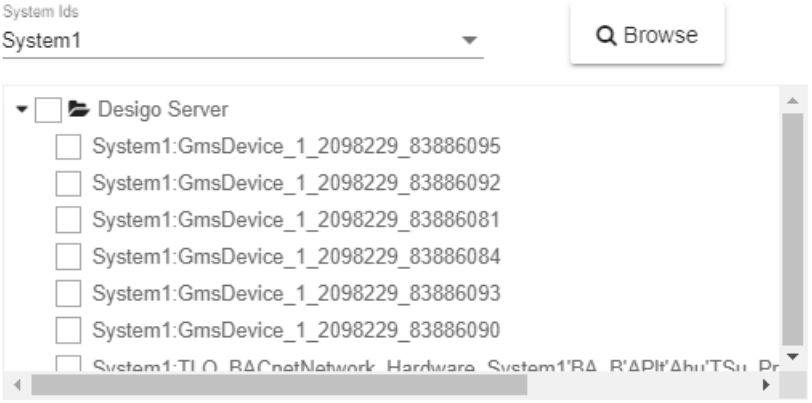
4. Enter your access data in the entry fields "User name" and "Password".
5. Select the interval in which the acquisition component acquires the values from the drop-down list "Data transmission interval". This selection corresponds to the cycle time of the IO buffer in the Energy Manager PRO Client.
6. In the entry field "Retrieve data since" you can define the time from which historical data is retrieved.

7. Click "Connect".

   The system attempts to establish a connection. If a connection to the Desigo server exists, the possible data sources of the server are loaded to the "System IDs" drop-down list.

   If a connection exists, the color of the plug on the "Connect" button is green.

8. Select the desired system ID from the "System IDs" drop-down list.
9. Click the "Browse" button.
   All available data points from the data source are loaded to the navigation field.



10. Select the desired data points for the data acquisition.
11. Click the "Save" button.

Result

The Desigo CC channel with the selected data points is created under the data source.

6.3.7.9 Editing data channels

Requirements

- The data source has been created.
- The data channel has been created.

Procedure

To edit an already created data channel, follow these steps:

1. In the navigation area under the "Data source" folder, click on the data source in which you want to edit the created data channel.

   The detail area "Channel management" is displayed.
2. Click on the data channel to be edited.
3. Click the "Edit" button.

   The configuration dialog "Edit - Channel" opens.
4. Edit all configurations which you selected on creation of a data channel.

   Note

   When editing a data channel you can no longer change the channel type.

   Note

   When adding new data points of already existing data channels, the data points which are already used in Energy Manager are grayed out. You can only create data points which do not yet exist in the system.
5. Click on the "Save" button.

See also

Overview (Page 169)

Creating data channels (Page 171)

6.3.7.10 Deleting data channels

Requirements

- The data source has been created.
- The data channel has been created.

Procedure

To delete a data channel of a data source, follow these steps:

1. Click on the acquisition component from which you want to delete the created data channel in the navigation area under the "Data source" folder.

   The detail area "Channel management" is displayed.
2. Click on the data channel to be deleted. You can select several data channels with the help of the check boxes.
3. Click the "Delete" button.
4. Click the "Delete" button again to confirm the deletion process. As an alternative, you can delete individual data channels from the system in the configuration dialog "Edit - Channel" by clicking the "Delete button twice".

Result

The data channel including the substructures (process, driver source, driver, IO buffer, data points) is deleted from the system.

Note

If the data points are linked to other objects in the system. you cannot delete the data channel. To delete the data channel, you must first disconnect all data point links with other objects in the system.

See also

Overview (Page 169)

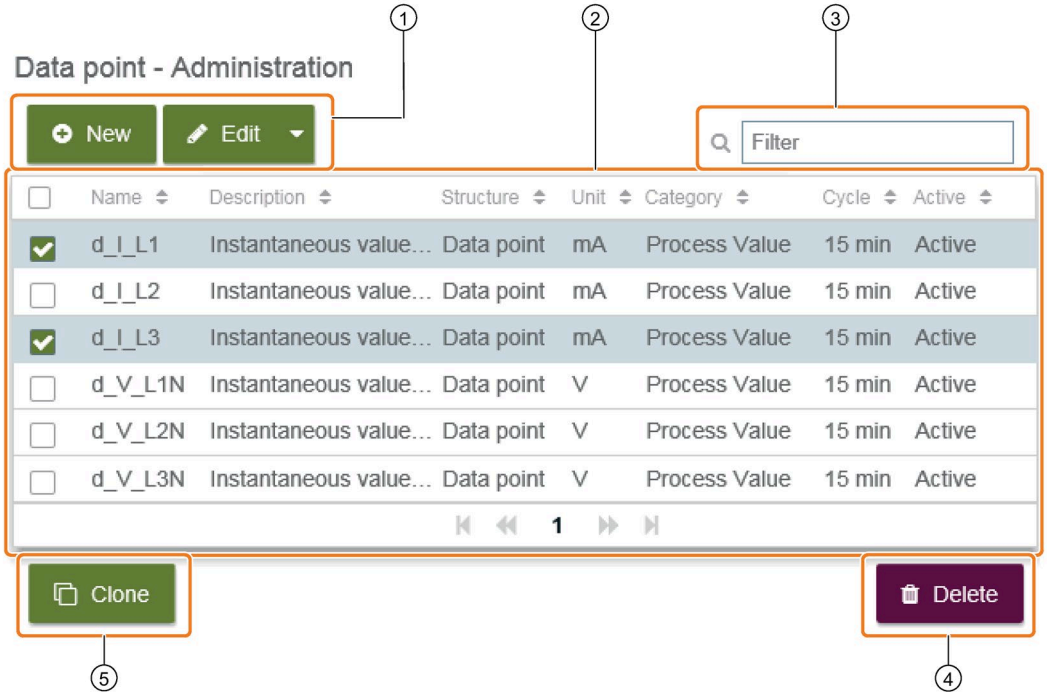
6.3.7.11 Data point - Administration

Introduction

Channel-specific data points are displayed in tabular form in Energy Manager Web. You can create channel-specific data points from this overview table and configure existing data points. Newly created data points and configurations on already existing data points in Energy Manager PRO Web are also adopted in the Energy Manager PRO Client and vice versa.

Overview of data point - Administration

To display the data points of a data channel, click on the corresponding data channel in the navigation area under the data source. The following figure shows the detail area "Data point - Administration" over the data points created in an OPC channel:



① "New" and "Edit" buttons: Creating and editing new data points.

② Display table of existing data points per data channel.

③ Filter function: When you enter a text in the "Filter" entry field, all the columns are searched and displayed accordingly in the display table. Delimitation of the data points is recommended when a large number of data points exist per channel.

④ "Delete" button: Deleting created data points from the system.

⑤ "Clone" button: When you clone a data point, an exact copy of the data point with the name ending in "Copy_0" is created. If you create several copies of a data point, the number at the end of the name is incremented by one, for example, from "Copy_0" to "Copy_1". You can also clone several data points at the same time with the help of the check boxes.

The display table consists of the following eight columns:

Column	Function
Selection	You can select individual data points and any number of data points with the help of the check boxes. Clicking on the check box in the column header selects all data points. Clicking on the check box again in the column header deselects all data points again.
Name	Shows the name of the data point.
Description	Shows the description of the data point.
Structure	Shows the folder in which the data point is created.
Unit	Shows the unit of the data point.
Category	Shows the acquisition category of the data point.
Cycle	Shows the cycle time of the data point.
Status	Shows the status of the data point. If the status is set to "Active", the measurement data of the data point is acquired. If the status is set to "Inactive", no measurement data is acquired.

When you click on the column header of one of the columns, the corresponding column is sorted in alphabetical order. When you click on the same column header again, the column is sorted in the reverse order.

To create a new channel-specific data point, click on the "New" button. You can find out how to create a new data point in the section "Creating data points".
To edit a data point, click on the corresponding data point and then click the "Edit" button. You can find out how to edit a data point in the section "Editing data points".
To delete one or more data points, select the data points and then click the "Delete" button. Confirm the deletion process by clicking on the "Delete" button again.

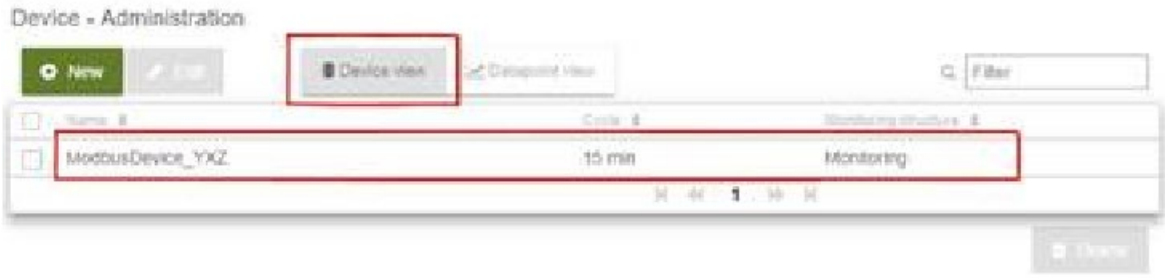
Special feature of Modbus TCP

There are two display tables for Modbus TCP channels. The display table "Device view" shows a list of all Modbus devices of the channel.

The table "Device view" consists of the following columns:

Column	Function
Selection	You can select individual devices and any number of devices with the help of the check boxes. Clicking on the check box in the column header selects all devices. Clicking on the check box again in the column header deselects all devices again.
Name	Shows the name of the device.
Cycle	Displays the cycle time of the device.
Monitoring structure	Displays the folder structure of the device in the Monitoring area of the navigation area.

You can also add a new device. A separate IO buffer is used for each device. Click the "New" button to create a new device.



You can find out how to create a new device with the corresponding data points in the section "Creating a Modbus TCP channel".

If you want to edit an existing device in the display table, select the appropriate device and click the "Edit" button.

The display table "Data point view" has the same functionality as the view table of the other channels. The table "Datapoint view" is only extended by the column "Device". The "Device" column shows the device name in which the data point is saved.

Special feature of WinCC

In a similar way to the Modbus data channel, there are two display tables in the display table of WinCC channels. The table "Archive view" shows a list of the WinCC archives.

You can also add a new archive including data points. To add a new archive, click on the "New" button. You can find out how to select a new archive with the corresponding data points in the section "Creating a WinCC channel".

If you want to edit an existing archive in the display table, select the appropriate archive and click the "Edit archive" button.

The display table "Data point view" has the same functionality as the view table of the other channels. The display table "Data point view" is only extended by the column "Archive". The "Archive" column shows the name of the WinCC archive in which the data point is archived.

See also

Overview (Page 169)

Creating data channels (Page 171)

Creating a WinCC channel (Page 183)

Creating a Modbus TCP channel (Page 185)

Creating data points (Page 198)

Manual acquisition (Page 168)

Configuration of the data points (Page 199)

6.4 Data point

6.4.1 Overview

In the configuration of data points, create new data points in the Energy Manager Web client and configure existing data points. The creation of new data points in the Energy Manager Web client is only possible for manual and external data points. Newly created data points and changes to already existing data points in the Energy Manager PRO Web client are also adopted in the Energy Manager PRO Client and vice versa.

When you click on the menu item "Data point" in the navigation area under the "Project configuration" folder, the detail area "Data point - Administration" opens. The following figure shows the detail area "Data point - Administration":

① "New" and "Edit" buttons: Creating and editing new data points.

② Display table of existing data points.

③ Filter function: When you enter a text in the "Filter" entry field, all the columns are searched and displayed accordingly in the display table. Delimitation of the data points is recommended when a large number of data points exist in the system.

④ "Delete" button: Deleting created data points from the system.

⑤ "Clone" button: When you clone a data point, an exact copy of the data point with the name ending in "Copy_0" is created. If you create several copies of a data point, the number at the end of the name is incremented by one, for example, from "Copy_0" to "Copy_1". You can also clone several data points at the same time with the help of the check boxes.

Note

In the "Data point" folder not all the data points in the system are displayed, but only the data points contained in the folder.

The data points are displayed in tabular form in Energy Manager Web: The display table consists of the following ten columns:

Column	Function
Selection	You can select individual data points and any number of data points with the help of the check boxes. Clicking on the check box in the column header selects all data points. Clicking on the check box again in the column header deselects all data points again.
Name	Shows the name of the data point.
Description	Shows the description of the data point.
Structure	Shows the folder in which the data point is created.
Unit	Shows the unit of the data point.
Category	Shows the acquisition category of the data point.
Cycle	Shows the cycle time of the data point.
Source	Shows the data channel of the data point. Data points of the type "Generic", "Constant" and "Derived" are marked with the entry "-".
Active	Shows the status of the data point. If the status is set to "Active", the measurement data of the data point is acquired. If the status is set to "Inactive", no measurement data is acquired.
Device/Archive	Shows the device name or the archive from which the data point originates.

When you click on the column header of one of the columns, the corresponding column is sorted in alphabetical order. When you click on the same column header again, the column is sorted in the reverse order.

See also

Creating data points (Page 198)

Deleting data points (Page 215)

6.4.2 Creating data points

Requirements

- The data source has been created.
- The data channel has been created.
- The user has the functional right "Measurement - create, remove, configure".

Procedure

To create a new data point, follow these steps:

1. Click on the "New" button in the detail area "Data point - Administration".

   The configuration dialog "New - Data point" opens.
2. Configure the data point using the following tabs:
   - General
   - Interface
   - Counter
   - Plausibility
   - Compression
   - Replacement
   - MindSphere

   You can find out how to configure the individual tabs in the section "Configuration of data points".
3. When you have configured the tabs, click the "Save" button.

Result

The data point has been created in the selected folder. In the Energy Manager PRO Client the data point is created under the IO buffer of the corresponding data channel.

See also

Datapoints (Page 62)

Creating subfolders (Page 160)

Overview (Page 196)

Data point - Administration (Page 193)

Configuration of the data points (Page 199)

6.4.3 Configuration of the data points

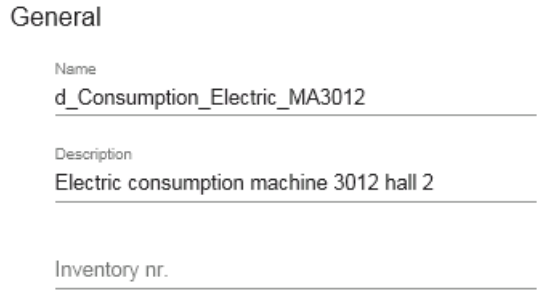
6.4.3.1 Configuring general settings

Enter the basic information of the data point under "General".

Procedure

To configure the basic information, follow these steps:

1. Enter a meaningful data point name in the "Name" entry field.
2. If required, enter a description of the data point in the "Description" entry field.
3. If required, enter a KKS/AKS number or free text in the "Inventory number" check box.



If you select "KKSText" as a text type in a report, for example, the text from the entry field is output in the report result.

4. Select the unit of the data point from the "Unit" drop-down list.
5. Select the cycle time with which the measured values are acquired from the "Cycle" drop-down list.

Note

If you select a cycle time that does not match a compression level, only the values which were acquired while this cycle time was configured are displayed.

If a cycle time is then selected which matches a compression level, a gap in the values arises. The gap corresponds to the data which was acquired with the cycle time that did not correspond to a compression level.

Configure a compression level before you select the corresponding cycle time.

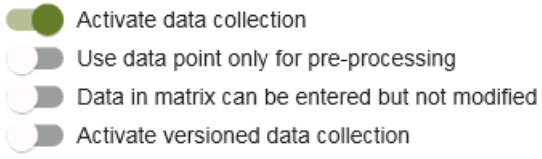
Configure compression levels in the "Compression" tab.

Select the category of the data point from the "Acquisition category" drop-down list.

The input of an acquisition category is required.

6. Select the folder in which you want to create the data point from the "Structure" drop-down list.

7. Select the country in which the data point is valid from the "Country" drop-down list.
8. When you select the option "Activate data collection", the measurement data of the data source is acquired.
9. When you select the option "Use data point only for pre-processing", the measurement data is only taken into account during pre-processing of the data.
10. When you enable the option "Priority high", you cannot change the values of the data point in a matrix.
11. When you enable the option "Activate versioned data collection" the measurement data is entered versioned in the data point.



6.4.3.2 Configuring interfaces

Under "Interface" select the data channel from which the measured values of the data point are acquired. Also create manual data points via the tab. More information on the data channels is available in the section "Creating data channels".

Procedure

To configure a data channel, proceed as follows:

1. Select the data channel from which you want to create the data point from the "Channel" drop-down list.

   Only the data channels created in the system are available for selection for creating external data points. The entry "manual" is available for creating manual data points. The settings of the tab are adapted accordingly to the selected data channel.

2. Configure the remaining settings in accordance with the selected channel type.

Configuring a Modbus or WinCC channel

To create a Modbus or WinCC channel, configure the settings as follows:

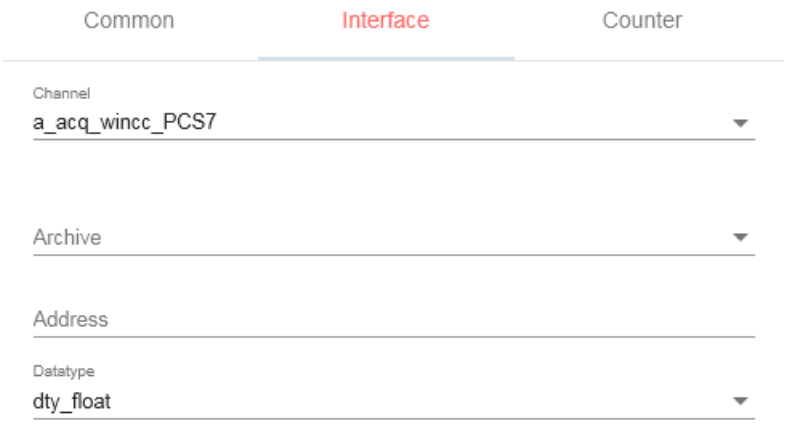
1. Select the device/archive in which the data point is archived from the "Device" or "Archive" drop-down list.

   Only already created devices/archives are available for selection in the drop-down list.

2. Browse the corresponding device/archive.
3. Select the desired data point from the overview list.

   The address of the data point in the device/archive is automatically copied to the text field "Address".

4. Select the type of data point from the "Data type" drop-down list.



Configuring an OPC, Energy Suite, or Desigo CC channel

To create an OPC, Energy Suite or Desigo CC channel, configure the settings as follows:

1. Click the "Browse" button.
2. Select the desired data point from the overview list.

   The address of the data point on the server is copied to the entry field "Address".
3. Select the type of data point from the "Data type" drop-down list.

Configuring an ASCII channel

To create an ASCII channel, configure the settings as follows:

1. In the "address" entry field, enter the address of the data point.
2. Select the type of data point from the "Data type" drop-down list.

Creating a manual data point

To create a manual data point, configure the settings as follows:

1. Select the entry "Manual" from the "Channel" drop-down list.
2. Select the type of data point from the "Data type" drop-down list.

   Only the data types "Number" and "String" are available in the drop-down list. These data types correspond to the data types "Measurement" and "Text" from the Energy Manager PRO Client.

Note

If a different data type is selected in the Energy Manager PRO Client, no entry is shown in the "Data type" drop-down list.

Creating derived data point

To create a derived data point, proceed as follows:

1. Select the entry "Derived" from the "Channel" drop-down list.
2. Select the time from which the data point is automatically recalculated from the calendar "Calculated until".

   If you have not edited this field, the time up to which the data point is calculated is displayed here.

   This field is automatically updated whenever the data point is calculated.
3. Select the category of the data point from the "Category" drop-down list.

   If you select "Future values", the current compression interval of the data point is recalculated for every value.

   If you select "real value", the current compression interval of the data point is calculated after all values are available.
4. Select the compression level of the MEVA/KIP used from the drop-down list "Compression".

5. In the entry field "Offset", enter the numerical value of the duration with which the start of the daily interval deviates from midnight.

   The daily values are calculated taking this deviation into consideration. If an Offset of 6 hours is configured, for example, the daily values from 6 am to 6 am are calculated.

6. Select the time unit of the offset from the "Offset unit" drop-down list.
7. To automatically recalculate the data point for new or updated values, activate the option "Calculate automatically".
8. Select the value MEVA/KPI whose values are saved in the data point from the "KPI element" drop-down list.

   Alternatively, you can use the structure browser.

6.4.3.3 Configuring counters

If you select "Count value" as the acquisition category, you must additionally create a counter. The created counters are displayed in the list with their validity.

Click on the "Expand all" to display the detailed information of all counters, select the "Hide all" icon to hide the detail information again. To create a new counter, click on the "Add new" icon. To delete a counter, click the "Delete" icon and confirm the deletion process by clicking on the icon again.

Procedure

To configure a counter, follow these steps:

1. Click on the "Add new" icon.

   A new counter with the current date or with current validity is created.
2. Enter a counter number for the counter in the text box under validity.
3. From the "Installation date" drop-down list select the date of the commissioning of the counter.

   The validity range of the counter changes accordingly. If the installation date of a newly created counter is reached, the current counter is replaced by the new counter. The installation date of the new counter must be prior to the acquisition of the last measured value of the current counter. Otherwise, the result could be an overflow error.
4. Enter the counter constant in the "Constant" text box.

   The default setting of the counter constant is "1". The counter difference is multiplied by this constant.
5. Enter the start of the counting range in the "Range start" text box.
6. Enter the end of the counting range in the "Range end" text box.
7. If you enable "Cyclic reset", the counter is reset to zero if a value is less than the previous value. In this case, the difference is calculated as follows: 0 + current counter state
8. Enter the start value of the counter on installation in the "Value at installation" text box.

   The start value and end value are of importance for the proper calculation of differences upon overflow.
9. Enter the end value of the counter on replacement in the "Value at replacement" text box.
10. If you select "Only count up" from the "Counter type" drop-down list, all valid counter values are in ascending order. If a negative counter difference is calculated, the situation is treated as a counter overflow.

11. If you select "Count up and down", valid counter values may be greater or less than the previous value. This option is suitable for level measurements, for example.
12. If you enable "Filtering criteria", enter the value in the "Lower limit" text box. Any counter values below this value are treated as invalid.
13. If you enable "Counter difference", enter the value in the "Lower limit" text box. If the most recently calculated difference is less than this value, the current counter value is treated as invalid.
14. If you activate "Counter difference", enter a value in the "Upper limit" text box. If the most recently calculated difference is greater than this value, the current counter value is treated as invalid.

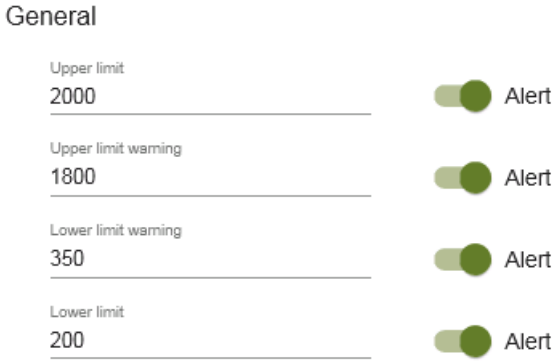
6.4.3.4 Configuring the plausibility settings

Under "Plausibility" you configure, for example, the setting of limits, the monitoring of the data point.

Procedure

To configure plausibility settings, proceed as follows:

1. Enter the limits for the alarm range in the "Upper limit" and "Lower limit" text boxes.
2. Enter the limits for the warning range in the "Upper limit warning" and "Lower limit warning" text boxes.
3. If you select the respective option "Notification", you will be informed of any violations of limits.



4. To determine gaps in measured value series of the data point, enter a numerical value in the "Gap" text box. Select the associated time from the "Unit" drop-down list. The system checks whether there are gaps in the measured value series after the entered time has elapsed. If you select the adjacent option "Notification", you will be informed of any existing gaps.

5. To compare the data point with itself in a different time period, select the "Another time period" check box in the "Compare with" area. Enter the numerical value in the text box and select the associated time period from the "Unit" drop-down list. If you select the value "1" and the unit "1 month", for example, the current month is compared with the previous month.

6. To compare the data point with a different data point, select the "Reference object" check box. Select the data point to be compared from the text box.

7. Enter the upper or lower limits for the comparison in the "Upper limit" and "Lower limit" text boxes. The limits can be exceeded or undershot by the values entered (acquisition value + limit) before a message is generated.
8. Select the type of limit comparison from the "Compare type" drop-down list. You can choose between "Absolute" and "Relative". "Absolute" means a numerical comparison, "Relative" means a percentage comparison of the limits.
9. Select the "Notification" option to receive a violation message on comparison of the limits.

6.4.3.5 Configuring the compression settings

Configure the compression levels of the measured values under "Compression". The defined compression levels are displayed in an overview list.

Click on the "Expand all" to display the detailed information of all compression levels, select the "Hide all" icon to hide the detail information again. To create a new compression level, click the "Add new" icon. To delete a compression level, click on the "Delete" icon and confirm the delete process by clicking on the icon again.

Procedure

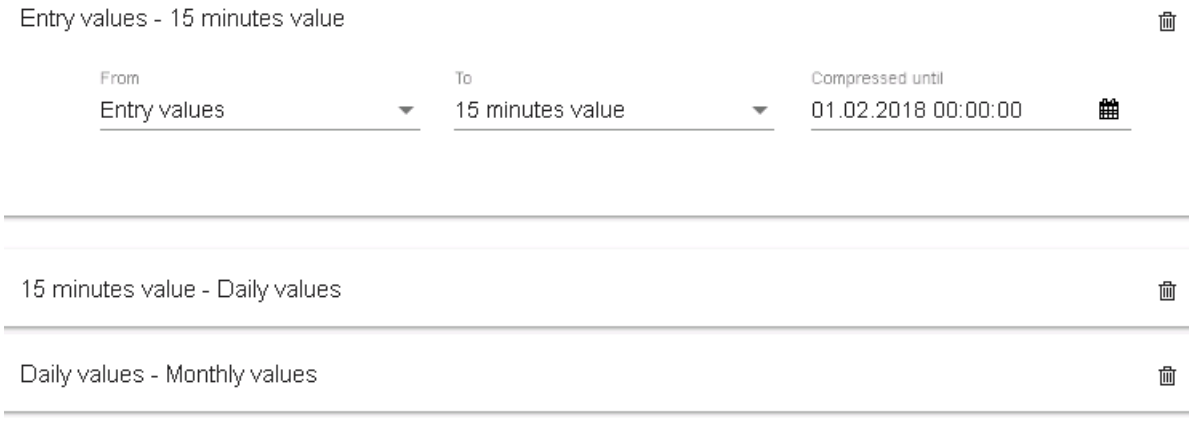
To configure compression levels, proceed as follows:

1. To create a new compression level, click the "Add new" icon.

   A new compression level is created.
2. From the "From" drop-down list select the cycle whose values you want to compress.
3. From the "To" drop-down list select the cycle to which the values are compressed.
4. From the "Compressed until" drop-down list select the time in the past from when the values are compressed.

   The "Compressed until" field shows the time up to which the compression level is calculated. To update this field, reload the page.

   To recalculate the compression level, from the "Compressed until" drop-down list select the time in the past from when the compression value is recalculated.



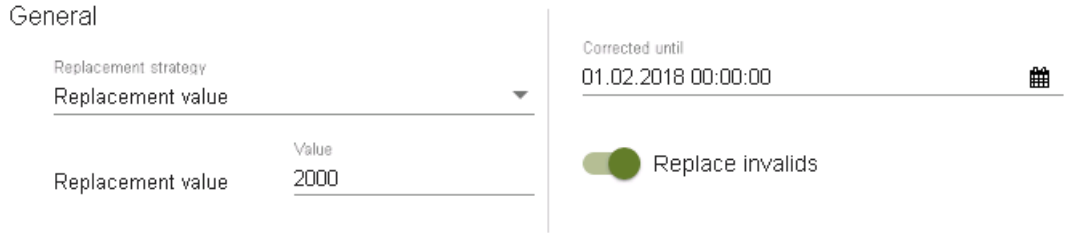
6.4.3.6 Configuring replacement value strategies

Define the substitute value strategies for measured value gaps under "Replacement".

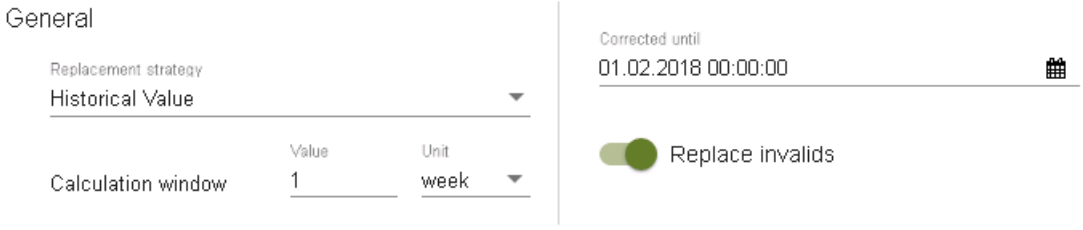
Procedure

To configure substitute value strategies, proceed as follows:

1. Select the replacement value strategy from the "Replacement" drop-down list. You can choose between the following replacement value strategies:
   - NONE
   - LRU (last recently used)
   - FIS
   - Replacement value
   - Historical value
2. If you select the replacement value strategy "NONE", gaps in the measured value series of the data point are not replaced.
3. If you select the replacement value strategy "LRU", gaps are replaced in the measured values series of the data point by the last valid value.
4. If you select the replacement value strategy "AKS", gaps in the measured values series of the data point are replaced by the measured values of a different data point. In the "Source datapoint" text box enter the data point whose values replace the gaps.
5. If you select the replacement value strategy "Replacement value", gaps in the measured values series of the data point are replaced by a constant value. Enter the replacement value used to close the gap in the "Value" text box.



6. If you select the replacement value strategy "Historical value", gaps in the measured values series of the data point are replaced by a comparison value in the past. Enter the numerical value in the "Value" text box and select the associated time period from the "Unit" drop-down list. The system jumps back to the past by the period entered and adopts the value from the past. This strategy can be used if the data point has a recurring pattern.



7. From the "Corrected until" list you select the time in the past up to which the gaps are replaced by the selected replacement value strategy.
8. To enable the selected replacement value strategy, select the option "Replace invalids".

6.4.3.7 Configuring MindSphere settings

Under "MindSphere" you manage the transfer of the data point to MindSphere.

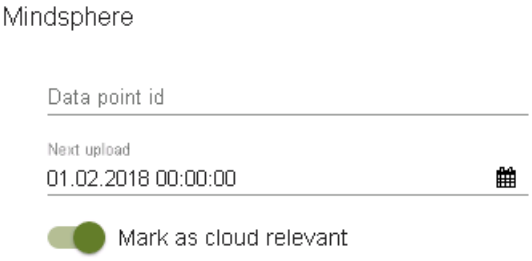
Procedure

To configure MindSphere settings, proceed as follows:

1. As soon as the data point is created in MindSphere, the "Data point ID" text box is automatically filled with the associated ID of the data point in MindSphere.
2. To select the synchronization time of the data point measured values with MindSphere, click on the upload icon. Confirm the process by clicking on the upload icon again.

3. In the "Next upload" text box select the start time of the export to MindSphere. You can also place the start time in the past. The synchronization date only applies to the selected data point.

   From the selected date, the values of the data point are exported with the corresponding timestamps to MindSphere. You can thus also start export of historical values again. During a new export, the data overwrites already existing data.
4. To enable the export of the data points measured values to MindSphere, select the option "Mark as cloud relevant".



See also

Account settings (Page 234)

6.4.4 Editing data points

Requirements

- The data point has been created.
- The user has the functional right "Measurement - create, remove, configure" or the functional right "Measurement - configure".

Procedure

To edit an already existing data point, follow these steps:

1. Click on the data point to be edited in the display table.
2. Click the "Edit" button. As an alternative, you can double-click the data point to be edited.

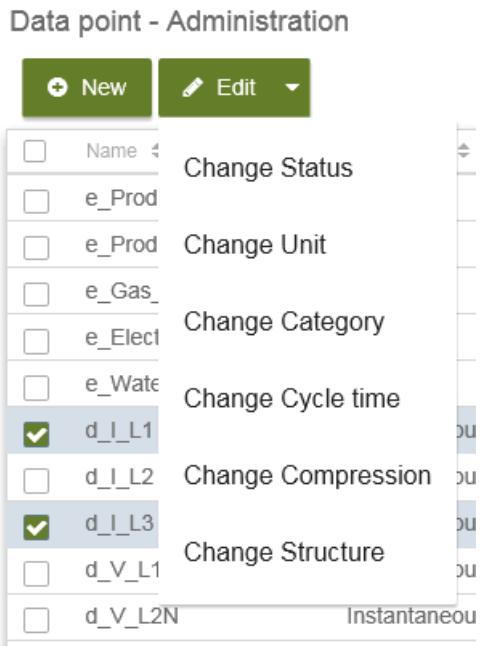
   The configuration dialog "Edit - Data point" opens.
3. You can configure all the settings again in the tabs which you defined on creation of a data point.
4. Click on the "Save" button.

Editing multiple data points

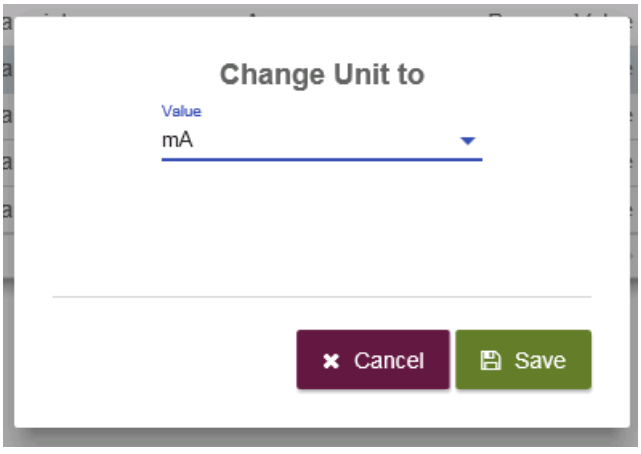
You can edit multiple data points at one time. If you select multiple data points from the display table with the help of the check box, the "Edit" button is extended. If you then click on the "Edit" button, a drop-down list opens from which you can edit the following properties:

- Status
- Unit
- Category
- Cycle time
- Compression
- Structure

The following figure shows the drop-down list with the configurable properties.



If you click on one of the entries, a new dialog window opens. In this dialog window you can change the corresponding property for the selected data points. The following figure shows the window in which the unit is changed for multiple data points.



When you click on the "Save" button, the changes are applied.

Changing the data source

You can change the data source of existing data points. To change the data source, select the new data source under "Interface" from the "Channel" drop-down list. When you select a new data source, the settings are adapted to the new data source. In the event of a change to the data source, the following settings are automatically adopted:

- The data point is deleted from the list of the last data source and created in the list of the new data source.
- The prefix of the data point name is adapted to the new data channel ("e_" to "d_") and vice versa when changing from a manual to an external data point.
- The historical data point values are retained in the new data source.

When you change the data source, check the settings in the other tabs and adapt the settings to the new data source.

Note

Change to the data source

Changing a data source to a different data source is only possible from the "Data point" project folder.

6.4.5 Deleting data points

Requirements

- The data point has been created.
- The user has the functional right "Measurement - create, remove, configure".

Procedure

To delete one or more data points from the system, follow these steps:

1. Click on the data point to be deleted in the display table. You can also select one or more data points to be deleted with the help of the check boxes.
2. Click the "Delete" button.
3. Click the "Delete" button again to confirm the deletion process. As an alternative, you can delete a data point from the system in the "Edit - Data point" configuration dialog by clicking the "Delete" button twice.

Result

The data point is deleted from the system.

See also

Overview (Page 196)

6.4.6 Recalculating derived data point

To recalculate the values of a derived data point, follow these steps:

1. Open the "Interface" tab of the configuration dialog of the derived data point.
2. Select the beginning of the time period to be calculated from the calendar "From".
3. Select the beginning of the time period to be calculated from the calendar "From".
4. To recalculate the values of the selected period, click on the "Start" button and confirm your entry.

Note

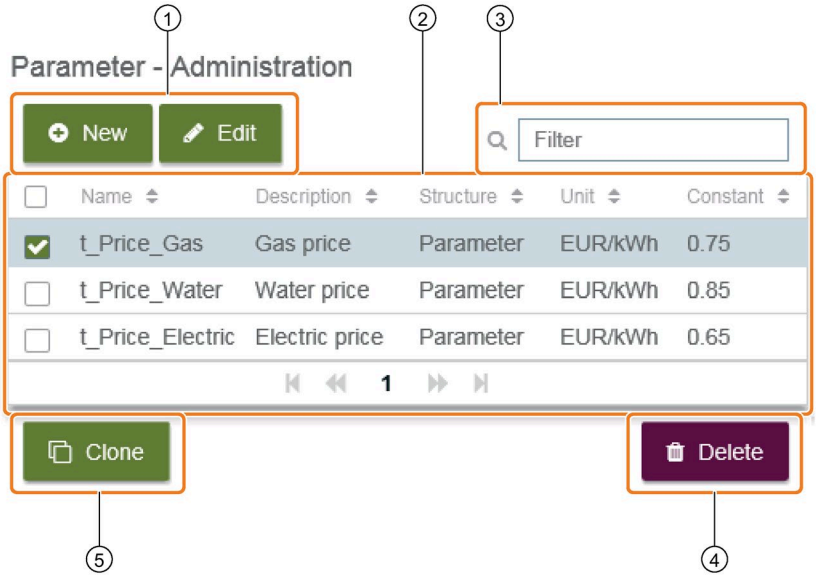
When you have confirmed the entry, the values are recalculated in the background without delay. The existing values are thus lost. The "Save" button has no effect on the recalculation of the derived data point.

6.5 Parameters

6.5.1 Overview

In the configuration of parameters you create new parameters and configure already existing parameters in Energy Manager Web. Newly created parameters and changes to already existing parameters in Energy Manager PRO Web are also adopted in the Energy Manager PRO Client and vice versa.

When you click on the menu item "Parameters" in the navigation area under the "Project configuration" folder, the detail area "Parameter - Administration" opens. The following figure shows the detail area "Parameter - Administration":



① "New" and "Edit" buttons: Creating and editing new parameters.

② Display table of existing parameters.

③ Filter function: When you enter a text in the "Filter" entry field, all columns are searched and displayed accordingly in the display table. Delimitation of parameters is recommended when a large number of parameters exist in the system.

④ "Delete" button: Delete created parameters from the system.

⑤ "Clone" button: When you clone a parameter, an exact copy of the parameter with the name ending in "Copy_0" is created. If you create several copies of a parameter, the number at the end of the name is incremented by one, for example, from "Copy_0" to "Copy_1". You can clone several parameters at the same time with the help of the check boxes.

Note

In the "Parameters" folder not all the parameters in the system are displayed, but only the parameters contained in the folder.

The parameters are displayed in tabular form in Energy Manager Web. The display table consists of the following six columns:

Column	Function
Selection	You can select individual parameters and any number of parameters with the help of the check boxes. Clicking on the check box in the column header selects all parameters. Clicking on the check box again in the column header deselects all parameters again.
Name	Shows the name of the parameter.
Description	Shows the description of the parameter.
Structure	Shows the folder in which the parameter is created.
Unit	Shows the unit of the parameter.
Constant	Shows the replacement value of the parameter.

When you click on the column header of one of the columns, the corresponding column is sorted in alphabetical order. When you click on the same column header again, the column is sorted in the reverse order.

See also

Creating parameters (Page 218)

Editing parameters (Page 220)

Deleting parameters (Page 221)

6.5.2 Creating parameters

Requirement

- The user has the functional right "Parameter - Common - create, remove, configure".
- The user has the functional right "Parameter - Values - create, remove, configure".

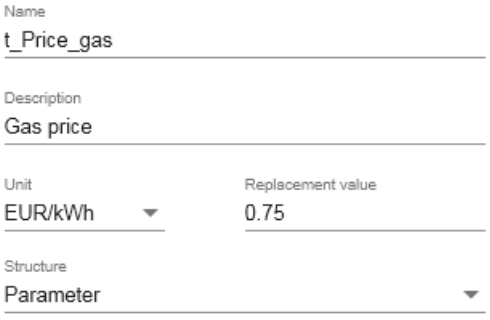
Procedure

To create a new parameter, follow these steps:

1. Click on the "New" button in the detail area "Parameter - Administration".

   The configuration dialog "New - Parameter" opens.
2. Enter a meaningful name for the chart in the "Name" text box.

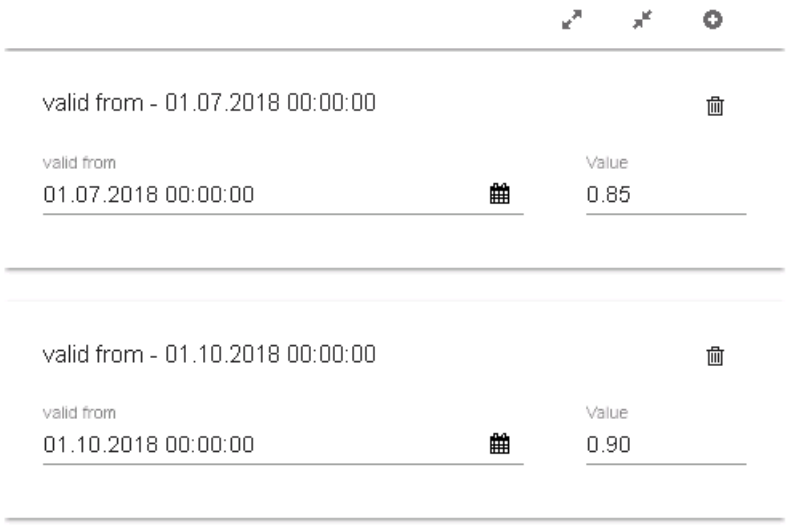
   The input of a name with the prefix "t_" is required.
3. If required, enter a description of the parameter in the "Description" text box.
4. Select the unit of the parameter from the "Unit" drop-down list.
5. Enter the constant replacement value in the "Replacement value" text box.
6. From the "Structure" drop-down list select the folder in which you want to create the parameter.



7. If you want to define a constant value for the parameter from a specific time period, click the "Add new" icon.

   A new validity is created.
8. Select the validity date.

9. Enter the constant parameter value in the "Value" text box.



   The value entered is valid from the selected validity time. When you define a further validity, the parameter value applies from the current validity until the start of the new validity. If the date of the new validity is reached, the parameter value applies from this validity. If you do not define a validity period, the parameter adopts the value at any time from the "Replacement value" text box.

10. Click on the "Save" button.

Result

The parameter is created in the selected folder. If you have defined a validity period including the value, the validity period is activated. You can only deactivate the validity period by deleting the corresponding validity period. You can delete validity periods that are no longer required by clicking the "Delete" icon twice. If you click on the "Expand all" icon, the information of all validity periods is displayed. If you click on the "Collapse all" icon, the information is hidden again.

See also

Parameters (Page 64)

Creating subfolders (Page 160)

Overview (Page 216)

Editing parameters (Page 220)

6.5.3 Editing parameters

Requirements

- The parameter has been created.
- The user has the functional right "Parameter - Common - create, remove, configure" or the functional right "Parameter - Common - configure".
- The user has the functional right "Parameter - Values - create, remove, configure".

Procedure

To edit an already existing parameter, follow these steps:

1. Click on the parameter to be edited in the display table.
2. Click the "Edit" button. As an alternative, you can double-click the parameter to be edited.

   The configuration dialog "Edit - Parameter" opens.
3. You can configure all the settings again which you defined on creation of a parameter.

   The input of a name with the prefix "t_" is required.
4. Click on the "Save" button.

Editing multiple parameters

You can select multiple parameters at one time. If you select multiple parameters from the display table with the help of the check box, the "Edit" button is extended. If you then click on the "Edit" button, a drop-down list opens from which you can edit the following properties:

- Unit
- Structure

If you click on one of the entries, a new dialog window opens. In this dialog window you can change the corresponding property of the selected parameters. When you click on the "Save" button, the changes are applied.

See also

Overview (Page 216)

Creating parameters (Page 218)

Deleting parameters (Page 221)

6.5.4 Deleting parameters

Requirements

- The parameter has been created.
- The user has the functional right "Parameter - Common - create, remove, configure".

Procedure

To delete one or more parameters from the system, follow these steps:

1. Click on the parameter to be deleted in the display table. You can also select one or more parameters to be deleted with the help of the check boxes.
2. Click the "Delete" button.
3. Click the "Delete" button again to confirm the deletion process. As an alternative, you can delete a parameter from the system in the "Edit - Parameter" configuration dialog by clicking the "Delete" button twice.

Result

The parameter is deleted from the system.

See also

Overview (Page 216)

Creating parameters (Page 218)

Editing parameters (Page 220)

6.6 MEVA / KPI

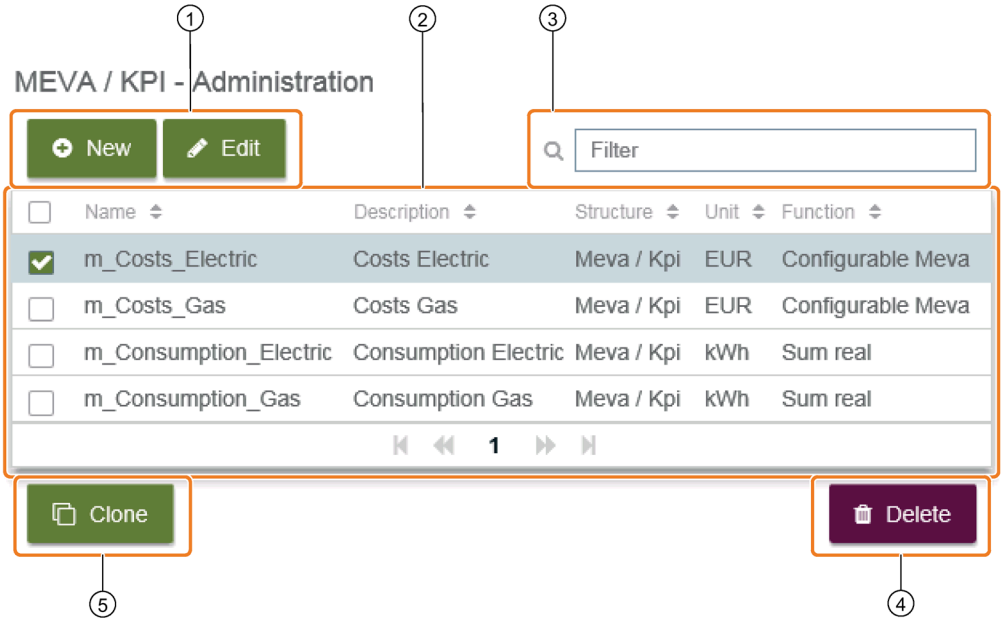
6.6.1 Overview

In the configuration of KPIs (MEVAs / KPIs) you create new KPIs and configure already existing KPIs in Energy Manager Web. Newly created KPIs and changes to already existing KPIs in Energy Manager PRO Web are also adopted in the Energy Manager PRO Client and vice versa.

Note

A KPI object in Energy Manager Web corresponds to a MEVA from the Energy Manager PRO Client. In the following the term "KPI" is used for the expression "MEVA / KPI".

When you click on the menu item "MEVA / KPI" in the navigation area under the "Project configuration" folder, the detail area "MEVA / KPI - Administration" opens. The following figure shows the detail area "MEVA / KPI - Administration":



① "New" and "Edit" buttons: Creating and editing new KPIs.

② Display table of existing KPIs.

③ Filter function: When you enter a text in the "Filter" entry field, all columns are searched and displayed accordingly in the display table. Delimitation of KPIs is recommended when a large number of KPIs exist in the system.

④ "Delete" button: Deleting created KPIs from the system.

⑤ "Clone" button: When you clone a KPI, an exact copy of the KPI with the name ending in "Copy_0" is created. If you create several copies of a KPI, the number at the end of the name is incremented by one, for example, from "Copy_0" to "Copy_1". You can clone several KPIs at the same time with the help of the check boxes.

Note

In the "MEVA / KPI" folder not all the KPIs in the system are displayed, but only the KPIs contained in the folder.

The KPIs are displayed in tabular form in Energy Manager Web. The display table consists of the following six columns:

Column	Function
Selection	You can select individual KPIs and any number of KPIs with the help of the check boxes. Clicking on the check box in the column header selects all KPIs. Clicking on the check box again in the column header deselects all KPIs again.
Name	Shows the name of the KPI.
Description	Shows the description of the KPI.
Structure	Shows the folder in which the KPI is created.
Unit	Shows the unit of the KPI.
Function	Shows the function type of the KPI.

When you click on the column header of one of the columns, the corresponding column is sorted in alphabetical order. When you click on the same column header again, the column is sorted in the reverse order.

See also

Creating MEVAs / KPIs (Page 224)

Editing MEVAs / KPIs (Page 227)

Deleting MEVAs / KPIs (Page 228)

6.6.2 Creating MEVAs / KPIs

Requirement

- The user has the functional right "Measuring Variable - create, remove, configure".

Procedure

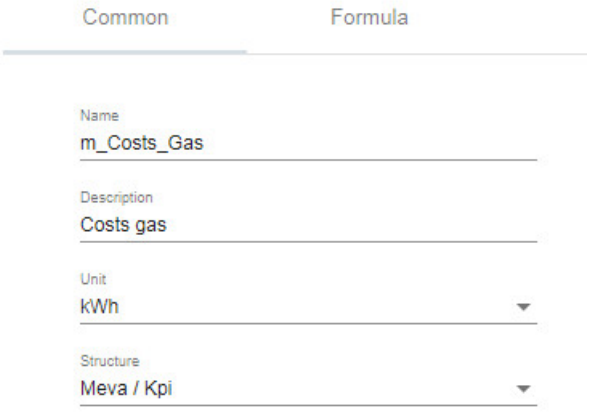
To create a new KPI, follow these steps:

1. Click on the "New" button in the detail area "MEVA / KPI - Administration".
   The configuration dialog "New - MEVA / KPI" opens.

Configuring the "General" tab

To configure the "General" tab, follow these steps:

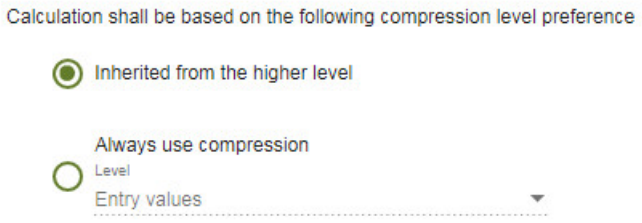
1. Enter a meaningful name for the KPI in the "Name" text box.
   The input of a name with the prefix "m_" is required.
2. If required, enter a description of the KPI in the "Description" text box.
3. Select the unit of the KPI from the "Unit" drop-down list.
4. From the "Structure" drop-down list select the folder in which you want to create the KPI.



5. Select the compression level for the calculation of the KPI. You can choose between two calculation types:
   - Inherit from the higher level
   - Always use a particular type of compression

   If you select the "Inherited from the higher level" check box, the compression level is taken from the higher level.

   If you select the "Always use compression" check box, you can select the desired compression level from the drop-down list. The selected compression level is used for all further calculations.



Configuring the "Formula" tab

To configure the "Formula" tab, follow these steps:

1. Select the function type of the KPI from the "Function" drop-down list.
2. Selecting the "Configurable Meva" function activates the formula editor. In the formula editor you can enter a custom formula for calculating the KPI with the help of the adjacent buttons. The syntax of the formula is automatically checked. In the formula editor, placeholders are used for the selected objects. If you select the option "Show name", the names of the selected objects are displayed in the formula editor instead of the placeholders.
3. From the drop-down list "Select object" select the objects that you want to use for calculating the KPI. You can use data points, parameters and other KPIs when creating a new KPI. By selecting or clearing the "Datapoint", "MEVA / KPI" and "Parameter" check boxes you can refine the search accordingly.

   Alternatively, you can use the structure browser. To open the Structure Browser, click on 🗁.

   Selected objects are displayed with the corresponding position number in the "Currently selected" list.
4. You can change the sequence of the objects in the list using drag and drop. You can also delete objects that are no longer required by clicking the Delete icon.

Note

Observe the sequence of the objects. The correct sequence of the objects is required when calculating the KPIs.

5. If you have selected the function "Configurable Meva", you can insert the corresponding object in the formula editor by double-clicking an object. The position number of the object is copied to the formula editor with the corresponding placeholder.

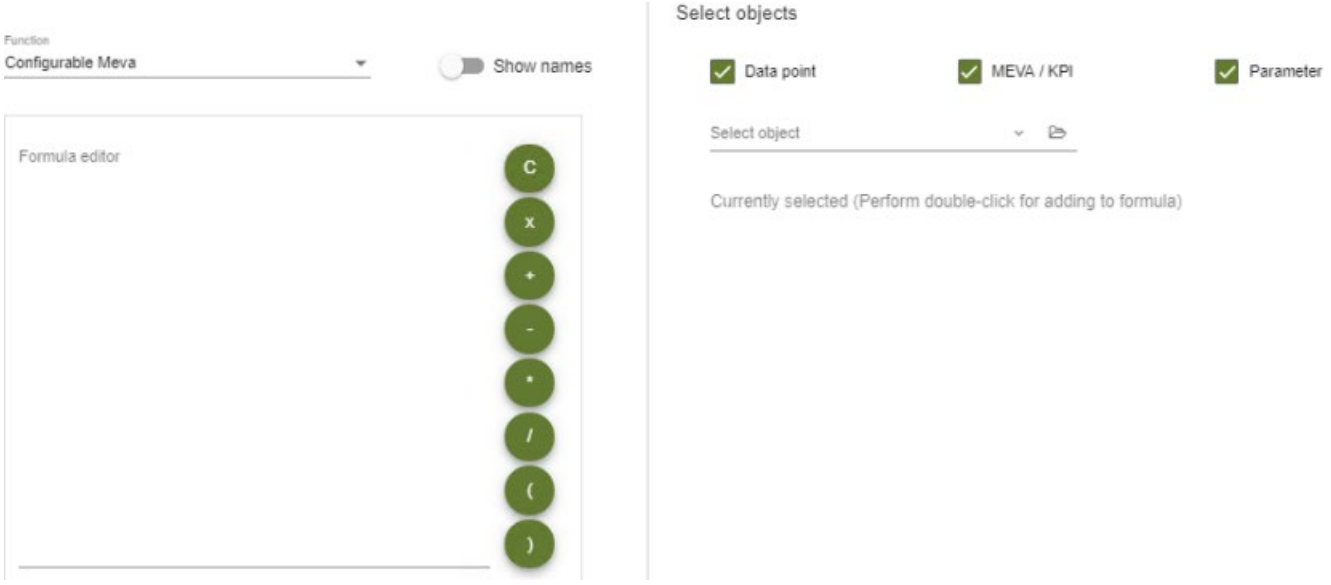


Figure 6-1 KPI formula editor

6. Click on the "Save" button.

Result

The KPI is created in the selected folder.

See also

Creating subfolders (Page 160)

Overview (Page 222)

Editing MEVAs / KPIs (Page 227)

6.6.3 Editing MEVAs / KPIs

Requirements

- The KPI is created.
- The user has the functional right "Measuring Variable - create, remove, configure" or the functional right "Measuring Variable - configure".

Procedure

To edit an already existing KPI, follow these steps:

1. Click on the KPI to be edited in the display table.
2. Click the "Edit" button. As an alternative, you can double-click the KPI to be edited.

   The configuration dialog "Edit - MEVA / KPI" opens.
3. You can configure all the settings again which you defined on creation of a KPI.

   The input of a name with the prefix "m_" is required.
4. Click on the "Save" button.

Editing multiple KPIs

You can select multiple KPIs at one time. If you select multiple KPIs from the display table with the help of the check box, the "Edit" button is extended. If you then click on the "Edit" button, a drop-down list opens from which you can edit the following properties:

- Unit
- Structure

If you click on one of the entries, a new dialog window opens. In this dialog window you can change the corresponding property of the selected KPIs. When you click on the "Save" button, the changes are applied.

See also

Overview (Page 222)

Creating MEVAs / KPIs (Page 224)

Deleting MEVAs / KPIs (Page 228)

6.6.4 Deleting MEVAs / KPIs

Requirements

- The KPI is created.
- The user has the functional right "Measuring Variable - create, remove, configure".

Procedure

To delete one or more KPIs from the system, follow these steps:

1. Click on the KPI to be deleted in the display table. You can also select one or more KPIs to be deleted with the help of check boxes.
2. Click the "Delete" button.
3. Click the "Delete" button again to confirm the deletion process. As an alternative, you can delete a KPI from the system in the "Edit - MEVA / KPI" configuration dialog by clicking the "Delete" button twice.

See also

Overview (Page 222)

Editing MEVAs / KPIs (Page 227)

Settings

7

7.1 Overview of settings

In the "Settings" folder you configure the key settings of your Energy Manager system in Energy Manager Web. Only the administrator can define the settings. Configurations of the settings in Energy Manager PRO Web are also adopted in the Energy Manager PRO Client and vice versa.

You can configure the following settings:

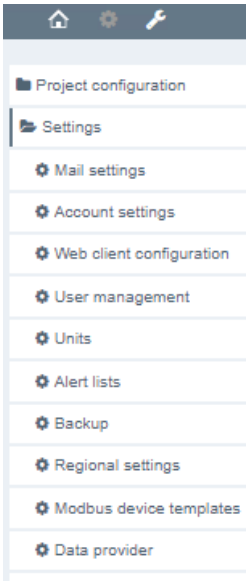
- Mail settings
- Account settings
- Web Client settings
- User management
- Units
- Alarm lists
- Backup
- Regional settings
- Modbus device templates
- Data provider

Opening settings

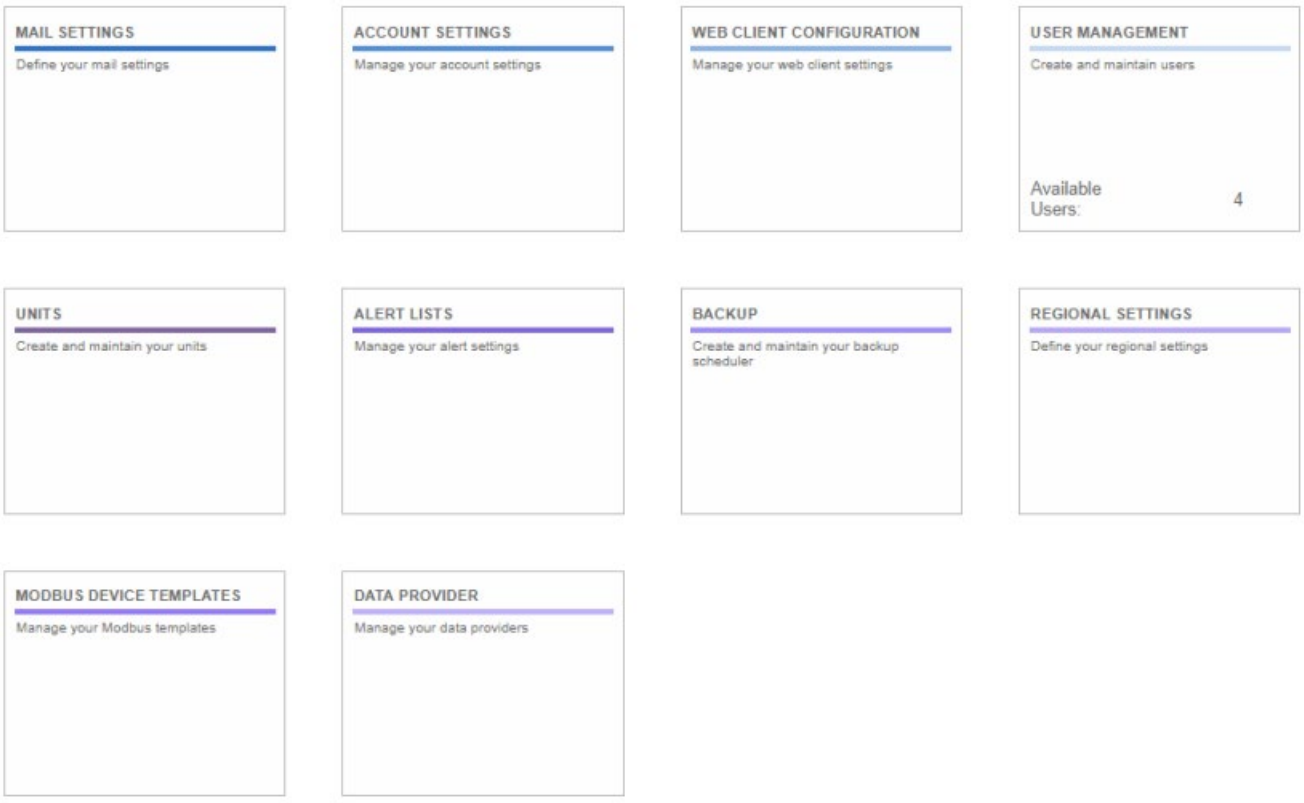
To open the "Settings" folder, follow these steps:

1. Click in the menu bar on "Configuration".

2. Click the menu item "Settings" in the navigation area. As an alternative, you can click the "Settings" tile in the detail area.



In the detail area you see an overview of the configurable settings in tile form.



3. To configure the respective settings, click on the corresponding tile in the detail area. As an alternative, you can click on the corresponding menu item in the navigation area.

Note

The folder structures are automatically created after the installation of Energy Manager and cannot be deleted by the user.

See also

Mail settings (Page 232)

Account settings (Page 234)

Web Client settings (Page 239)

Backup (Page 254)

Regional settings (Page 256)

User management (Page 241)

Units (Page 247)

Alarm lists (Page 252)

7.2 Mail settings

Overview

In the "Mail settings" you manage the notifications in Energy Manager Web which inform the user by e-mail about different situations. You can find the corresponding settings in the Energy Manager PRO Client under the path "File > Options > Appl.". Changes to the settings in Energy Manager PRO Web are also adopted in the Energy Manager PRO Client and vice versa.

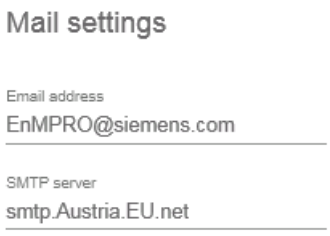
Configuring mail settings

To configure the setting "Mail settings", follow these steps:

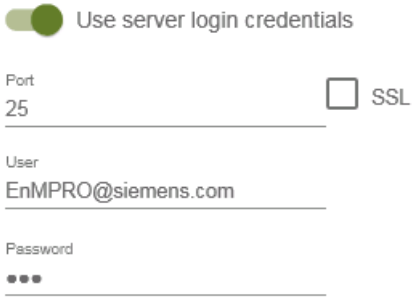
1. In the "Sender e-mail address" text box, enter the sender address which is used by Energy Manager for sending e-mails automatically.

   The specified sender e-mail address is checked for correctness.

2. In the "STMP server" text box enter the address of the STMP server that is used for sending e-mails automatically.

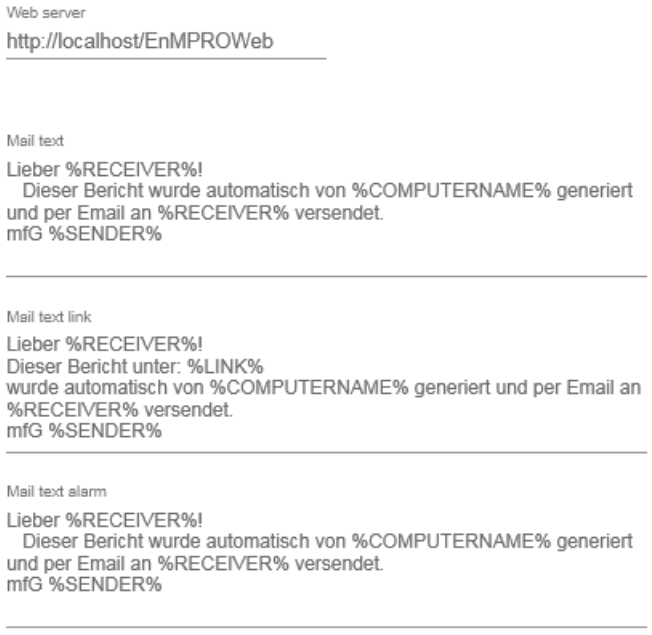


3. If you select the option "Use server login credentials", you have to enter the user name, password and the port number of the SMTP server in the corresponding text boxes. If you select the "SSL" check box, the data is transmitted in encrypted form.



4. Enter the URL of the Energy Manager Web Server in the "Web server" text box.
5. In the "Mail text" text box enter the sample text for automatic sending of e-mails.
6. In the "Mail text link" text box enter the sample text for automatic sending of e-mails with URL link.

7. In the "Mail text alarm" text box enter the sample text of alarm messages for automatic sending of e-mails.



8. Click on a different entry in the navigation area to save the settings.

Note

A maximum of 10 alarm messages are sent in one e-mail. If more than 10 alarm messages are present, Energy Manager send 10 alarm messages in one e-mail. The number of pending alarms is specified in this e-mail. Energy Manager does not send any further e-mail for the other alarm messages.

7.3 Account settings

Overview

In the "Account settings" you configure account settings in Energy Manager Web. You can find the corresponding settings in the Energy Manager PRO Client under the path "File > Account settings". Configurations of the settings in Energy Manager PRO Web are also adopted in the Energy Manager PRO Client and vice versa.

Configure the account settings using the following tabs:

- General
- Password settings
- Data storage
- Delete options
- MindSphere

Note

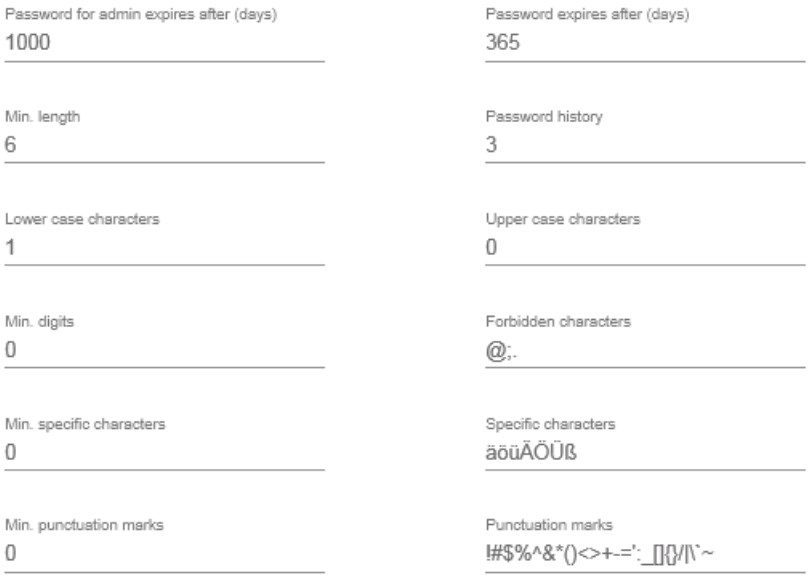
If you change the text boxes of the respective tab and change the tab, for example, from "General" to "Delete options", the changed text boxes are automatically saved. If you change to a different object in the navigation area, the changed text boxes are also saved.

"General" tab

Enter the path in which the Account settings are stored in the "Archive base directory" text box.

"Password settings" tab

Manage your password requirements in the "Password settings" tab. For the text boxes "Admin password expires after (days)"" andPassword expires after (days)", you can enter a one to five-digit number. For all other numeric text boxes you can enter a one to two-digit number.



"Data storage" tab

In the "Data storage" tab you manage the duration with which you save the measured values of the corresponding cycle times in the system. You also set the archiving behavior on expiry of the entered time. The archive directory displays the path under which the measured values of the cycle times are saved. You can only change the archive directory in the "General" tab. To remove the cycle times from the list, click the "Delete" icon. Click on the icon again to confirm the deletion process. If you click on the "Expand all" icon, the details of all cycle times are displayed. If you click on the "Collapse all" icon, the details are hidden again.

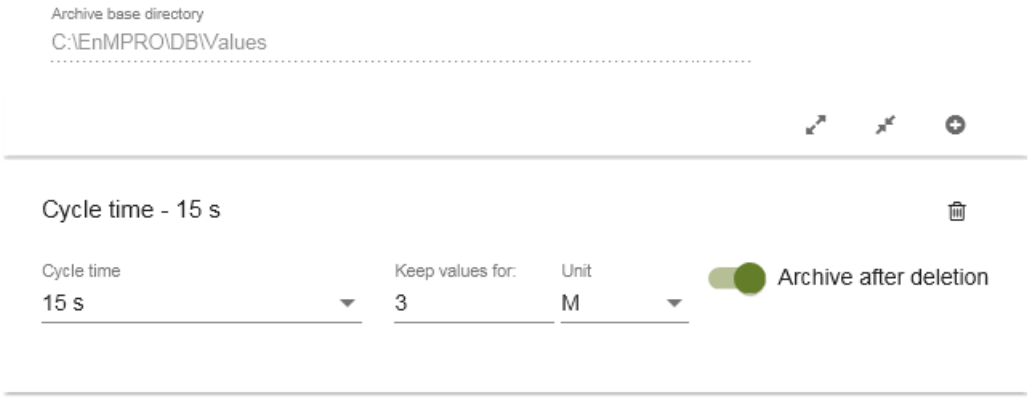
To save measured values of a new cycle time, follow these steps:

1. Click on the "Add new" button.

   A new cycle time is added to the list.
2. From the "Cycle time" drop-down list select the cycle time you want to save.
3. Enter a one to six-digit number in the "Keep values" text box.

   The input of a value is required.
4. Select the associated desired duration from the "Unit" drop-down list.

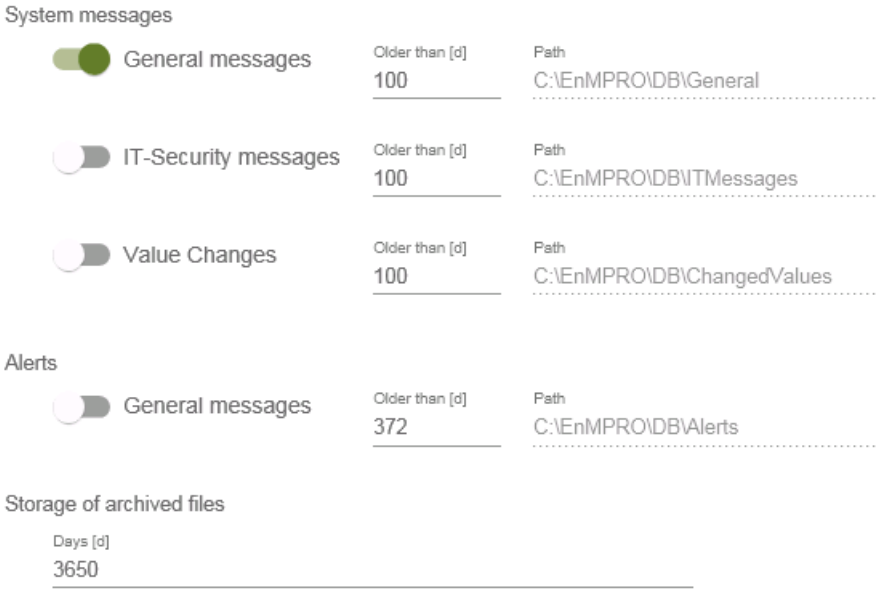
5. In order to archive the measured values of the cycle time after expiry of the entered duration and then delete them, select the option "Archive after deletion".



6. In order to not archive the measured values of the cycle time after expiry of the entered duration, but only to delete them, deselect the option.
7. Click on a different entry in the navigation area or a different tab to save the settings.

"Delete options" tab

In the "Deletion options" tab you manage the duration after the expiry of which messages and alarms are deleted from the system. To enable the deletion process, select the respective option. In the "Older than [days]" text box enter the time in days for the respective message type after the expiry of which the messages are deleted. You can enter a one to six-digit number in the respective text box. The adjacent archive paths show you where the corresponding messages are stored before the messages are deleted.



"MindSphere" tab

You manage your MindSphere connection in the "MindSphere" tab. You can configure the following settings:

- Uuid

  In the "Uuid" text box enter your personal MindSphere login data which you receive on activation of your MindSphere access. To receive your MindSphere login data you have to create a "Mindconnect Lib Asset" with your MindSphere access data on the MindSphere website. You then manually generate a connection key on the Internet for the "Mindconnect Lib Asset". The connection key is used as a replacement for your user name and your password. Enter the generated connection key in the "Uuid" text box.

- Upload configuration

  Use the "Upload configuration" icon to export your MindSphere configuration to MindSphere. Click on the icon to start the export. Confirm the process by clicking the icon again. Existing configurations are overwritten by a new export.

- Server certificate

  In the "Server certificate" text field only the certificate for MindSphere is displayed.

- Proxy settings

  If you select the option "Use proxy", you can configure certain proxy server settings. You have the choice between a manual proxy configuration and a configuration with specific user login information.

  To use a manual proxy configuration, select the option "Manual proxy configuration". Enter the host name and the port of your proxy server in the corresponding text boxes.

  To use specific user login information, select the option "Use specific user credentials". In the "User name" text box enter the user name you want to use. Enter the password of the user name in the adjacent text box "Password".

- Activate export

  To enable the export of the data points to MindSphere, select the option "Export active". The data points marked for MindSphere are only exported to MindSphere if this option is set to active.

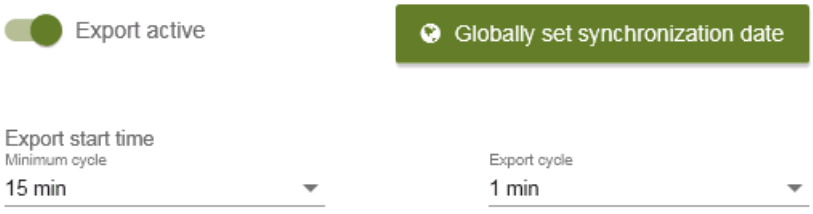
- Set synchronization date

  Select the "Globally set synchronization date" button to set the date for the synchronization of all data points with MindSphere. If you select your own synchronization data when configuring a data point in the "MindSphere" tab, the synchronization data only applies for the corresponding data point. If you click on the "Globally set synchronization date" button, a dialog opens in which you set the synchronization date. If the option "Mark as cloud relevant" is selected, the measured values including timestamps of all data points are exported to MindSphere from this time onwards. If you start a new export of historical data, already existing values are overwritten by new values with the same timestamps.

- Export start time

  From the "Minimum cycle" drop-down list select the measured values of the cycle time you want to export. Only measured values with the selected cycle time are exported. If there are no measured values with appropriately selected cycle time, the values of the next higher cycle time are exported. If you want to export 15-minute values, for example, but the data point is a daily cycle, the daily values are exported.

  Select the cycle time with which the measured values are exported to MindSphere from the "Export cycle" drop-down list.



See also

Configuring MindSphere settings (Page 211)

7.4 Web Client settings

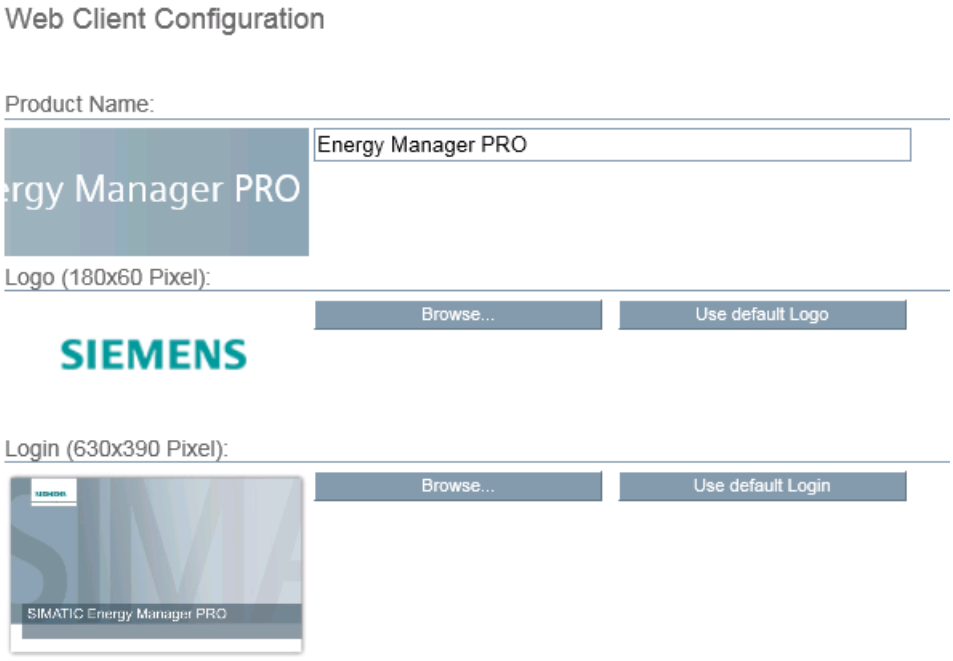
Overview

In the "Web Client settings" you set the display of the Energy Manager Web user interface for specific companies and products. You can configure the following objects:

- Product name: Title of product
- Logo: Custom logo
- Login: Custom background image of the login page of Energy Manager Web

The image for "Logo" and "Login" is adjusted automatically to the size of the user interface during upload.

The following figure shows the detail area "Web client settings":



Configuring Web Client settings

To configure the setting "Web client settings", follow these steps:

1. To use an alternative name for the product, enter the desired title of the product in the "Product Name" text box. The name "Energy Manager PRO" or "Energy Manager Basic" is defined by default.

   The changed product name is adopted throughout the entire Web area and is displayed in the title bar.

2. To use a company-specific logo, click the "Browse..." button under the "Logo" text field.

   A dialog for selection of an image opens.

3. Select a suitable image as the logo.

   The changed logo is adopted throughout the entire Web area and is displayed in the title bar. The SIEMENS logo is set by default and by clicking the "Use default logo" button.

4. To use an alternative background image, click on the "Browse..." button under the "Login" text field.

   A dialog for selection of an image opens.

5. Select a suitable image as the background image on the login page.

   The changed image is adopted as the background image on login. The SIEMENS login screen is set by default and by clicking the "Use default login" button.

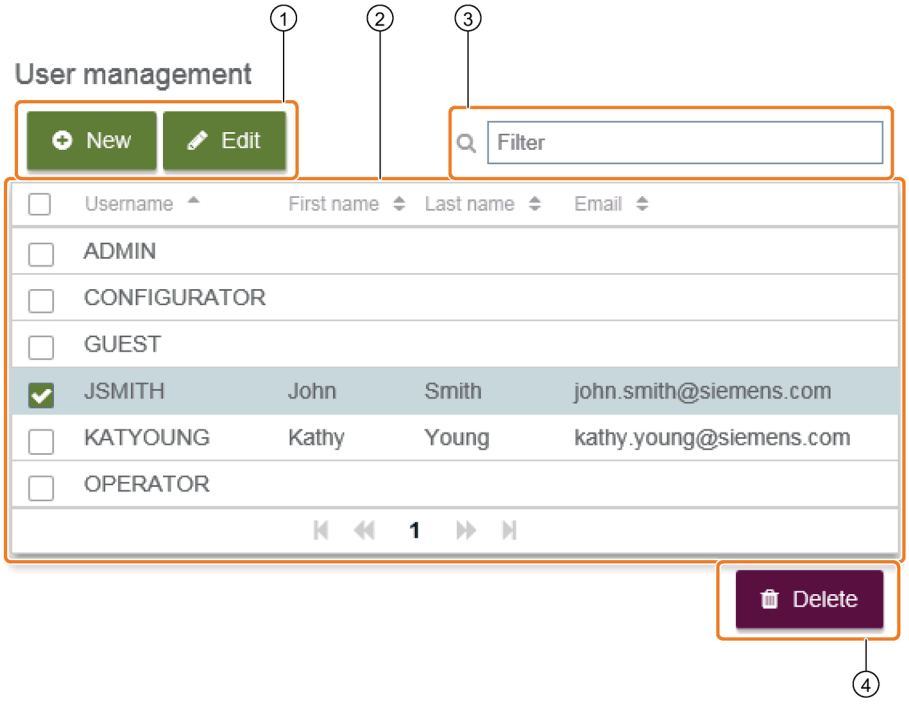
6. Click on a different entry in the navigation area to save the settings.

7.5 User management

7.5.1 Overview

In the setting "User Management" you create new users in Energy Manager Web and configure already existing users. An overview of the existing users in Energy Manager PRO Client can be found under the path "System > Configuration > User, group, rights management > User". The creation of new users can be found in the Energy Manager PRO Client under the path "Master data > Authorization > Insert user". Newly created users and user configurations in Energy Manager PRO Web are also adopted in the Energy Manager PRO Client and vice versa.

The following figure shows the detail area "User management":



① "New" and "Edit" buttons: Creating and editing new users.

② Display table of existing users.

③ Filter function: When you enter a text in the "Filter" entry field, all columns are searched and displayed accordingly in the display table. Delimitation of users is recommended when a large number of users exist in the system.

④ "Delete" button: Delete user from the system.

Newly created and already existing users in the system are displayed in tabular form in Energy Manager Web. The display table consists of the following five columns:

Column	Function
Selection	You can select individual users and any number of users with the help of the check boxes. Clicking on the check box in the column header selects all users. Clicking on the check box again in the column header deselects all users again.
User name	Displays the user name in Energy Manager.
First name	Shows the first name of the user.
Last name	Shows the last name of the user.
Email	Shows the e-mail address of the user.

When you click on the column header of one of the columns, the corresponding column is sorted in alphabetical order. When you click on the same column header again, the column is sorted in the reverse order.

See also

Creating users (Page 243)

Editing users (Page 245)

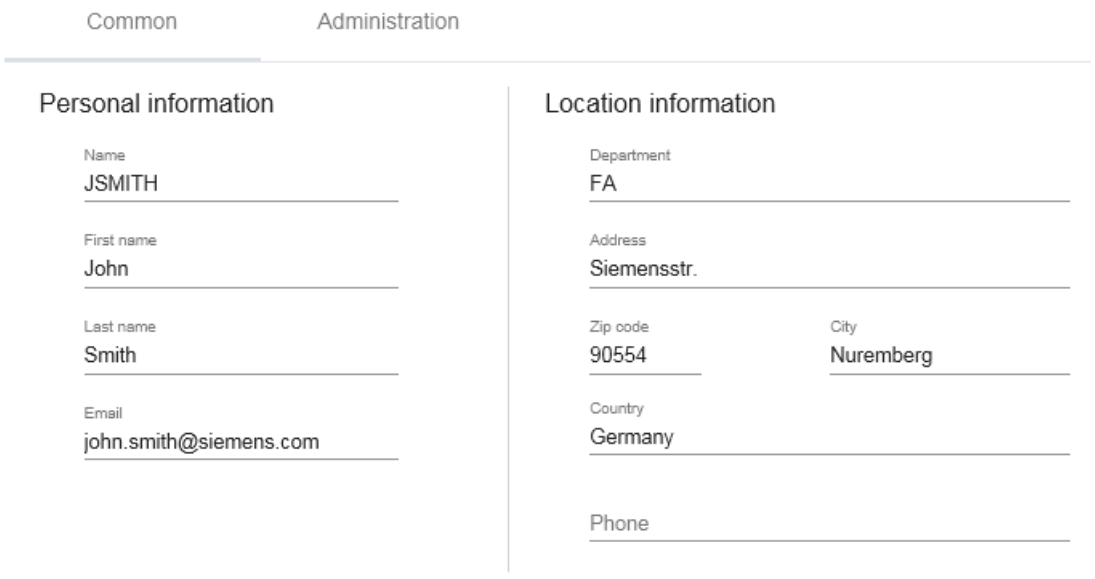
Deleting users (Page 246)

7.5.2 Creating users

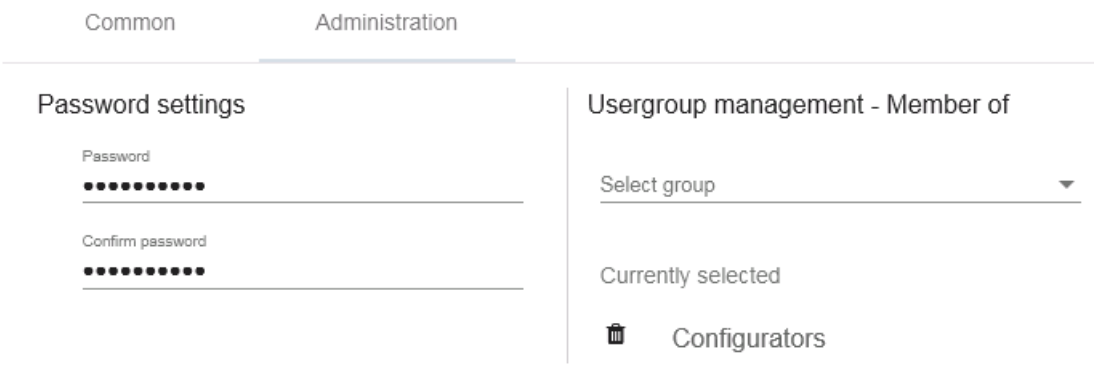
Procedure

To create a new user, follow these steps:

1. Click on the "New" button in the detail area "User management".
   The configuration dialog "New - User" opens.



2. Enter the personal information and location information in the "General" tab.
   The input of a user name is required.
3. Click on the "Administration" tab.



4. Enter the password of the new user in the "Password" text box.
5. Confirm the password in the "Confirm Password" text box.

6. From the "Select group" drop-down list select the user groups to which the user is added.

   The following user groups are available:

   – Administrator: This user group includes comprehensive functional rights for Energy Manager. The user group has the right to delete, add or configure all objects.
   – Configurator: This user group has the right to configure Energy Manager objects but not to delete these objects.
   – Operator: This user group has the right to open and view Energy Manager objects but not to configure or delete these objects.
   – Guest: This user group does not have the right to delete, add or configure objects. The user group also does not have the right to create new reports and to calculate analyses. This grouping is intended to apply simple, temporary restrictions on significant operator actions in the system.

7. The selected user groups are displayed in the "Currently selected" list.
8. To remove the user from a user group again, click the Delete icon.
9. Click on the "Save" button.

Result

The user has been created.

See also

Overview (Page 241)

Editing users (Page 245)

7.5.3 Editing users

Requirement

- The user has been created.

Procedure

To edit a user, follow these steps:

1. Click on the user to be edited in the detail area "User management".
2. Click the "Edit" button. As an alternative, you can double-click the user to be edited.

   The configuration dialog "Edit - User" opens.
3. Configure the personal information and location information.

   The input of a user name is required.
4. You can assign a new password in the password settings.
5. Under user group management you can assign the user to a new user group or remove the user from a user group again.
6. Click on the "Save" button.

Note

You can only edit individually selected users.

See also

Overview (Page 241)
Creating users (Page 243)
Deleting users (Page 246)

7.5.4 Deleting users

Requirement

- The user has been created.

Procedure

To delete one or more users from the system, follow these steps:

1. Click on the user to be deleted in the detail area "User management". As an alternative, you can also select one or more users to be deleted with the help of the check boxes.
2. Click the "Delete" button.
3. Click the "Delete" button again to confirm the deletion process. As an alternative, you can delete a user from the system in the "Edit - User" configuration dialog by clicking the "Delete" button twice.

Result

The user is deleted from the system.

See also

Overview (Page 241)

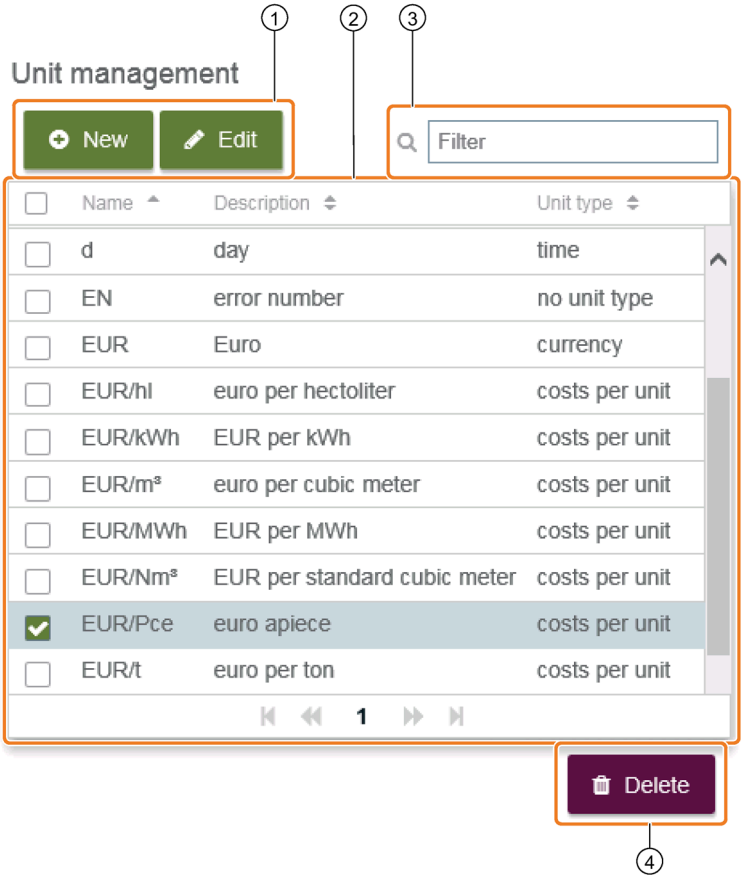
Editing users (Page 245)

7.6 Units

7.6.1 Overview

In the setting "Units" you create new units in Energy Manager Web and configure already existing units. An overview of the existing units can be found in the Energy Manager PRO Client under the path "System > Configuration > Extended configuration > Unit". The creation of new units can be found in the Energy Manager PRO Client under the path "Master data > Configuration > Insert unit". New units and configurations of existing units in Energy Manager PRO Web are also adopted in the Energy Manager PRO Client and vice versa.

The following figure shows the detail area "Unit - Management":



① "New" and "Edit" buttons: Creating and editing new units.

② Display table of existing units.

③ Filter function: When you enter a text in the "Filter" entry field, all columns are searched and displayed accordingly in the display table. Delimitation of units is recommended when a large number of units exist in the system.

④ "Delete" button: Delete units from the system.

Newly created and already existing units in the system are displayed in tabular form in Energy Manager Web. The display table consists of the following four columns:

Column	Function
Selection	You can select individual units and any number of units with the help of the check boxes. Clicking on the check box in the column header selects all units. Clicking on the check box again in the column header deselects all units again.
Name	Shows the name of the unit.
Description	Shows the description of the unit.
Unit type	Shows the type of unit.

When you click on the column header of one of the columns, the corresponding column is sorted in alphabetical order. When you click on the same column header again, the column is sorted in the reverse order.

See also

Creating units (Page 249)

Editing units (Page 250)

Deleting units (Page 251)

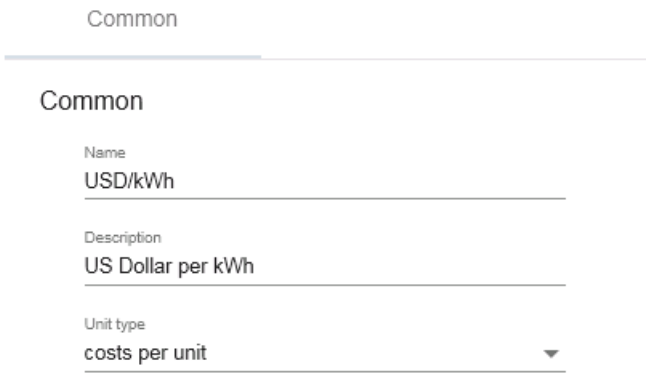
7.6.2 Creating units

Procedure

To create a new unit, follow these steps:

1. Click on the "New" button in the detail area "Unit - Management".

   The configuration dialog "New - Unit" opens.



2. Enter a meaningful name in the "Name" text box.

   The input of a name is required.

3. If required, enter a description of the unit in the "Description" text box.
4. Select the type of unit from the "Unit group" drop-down list.

   The selection of a unit type is required.

5. Click on the "Save" button.

Result

The unit is created. The created unit can be found in the Energy Manager PRO Client under the respective unit group.

See also

Overview (Page 247)

Editing units (Page 250)

7.6.3 Editing units

Requirement

- The unit is created.

Procedure

To edit a unit, follow these steps:

1. Click on the unit to be edited.
2. Click the "Edit" button. As an alternative, you can double-click the unit to be edited.
   The configuration dialog "Edit - Unit" opens.
3. Edit the name, the description, if required, and the unit type.
   The input of a name and selection of a unit type are required.
4. Click on the "Save" button.

Note

You can only edit individually selected units.

See also

Overview (Page 247)
Deleting units (Page 251)
Creating units (Page 249)

7.6.4 Deleting units

Requirement

- The unit is created.

Procedure

To delete one or more units from the system, follow these steps:

1. Click on the unit to be deleted. As an alternative, you can also select one or more units to be deleted with the help of the check boxes.
2. Click the "Delete" button.
3. Click the "Delete" button again to confirm the deletion process. As an alternative, you can delete a unit from the system in the "Edit - Unit" configuration dialog by clicking the "Delete" button twice.

Result

The unit is deleted from the system.

See also

Overview (Page 247)

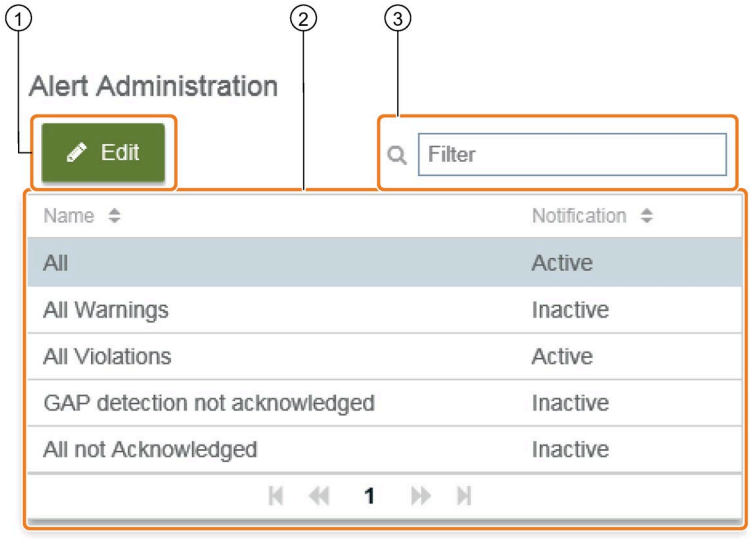
Editing units (Page 250)

7.7 Alarm lists

7.7.1 Overview

In the setting "Alarm lists" you configure existing alarm and message lists in Energy Manager Web. The creation of new alarm lists is only possible in the Energy Manager PRO Client. You also add one or more users to the corresponding alarm lists. The assigned users receive alarm messages of the corresponding alarm lists. An overview of the existing alarm lists in Energy Manager PRO Client can be found under the path "System > Configuration > KPI alert lists". Configurations of alarm lists in Energy Manager PRO Web are also adopted in the Energy Manager PRO Client and vice versa.

The following figure shows the detail area "Alarm - Management":



① "Edit" button Editing alarm lists.
② Display table of existing alarm lists.
③ Filter function: When you enter a text in the "Filter" entry field, all columns are searched and displayed accordingly in the display table. Delimitation of alarm lists is recommended when a large number of alarm lists exist in the system.

Existing alarm lists in the system are displayed in tabular form in Energy Manager Web. The display table consists of the following two columns:

Column	Function
Name	Shows the name of the alarm list.
Notification	Shows the status of the alarm list. If no user is assigned to the corresponding alarm list, the status "Inactive" is shown. If the user is assigned to the alarm list and the option "Activate alert" is selected, alarm notification is activated. The status changes to "Active".

When you click on the column header of one of the columns, the corresponding column is sorted in alphabetical order. When you click on the same column header again, the column is sorted in the reverse order.

See also

Editing alarm lists (Page 253)

7.7.2 Editing alarm lists

Requirement

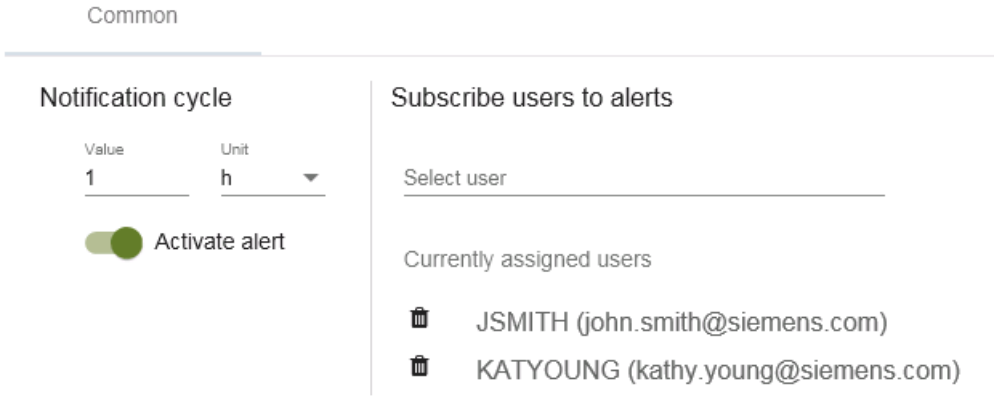
- The alarm list is created.

Procedure

To edit an alarm list, follow these steps:

1. Click on the message list to be edited.
2. Click the "Edit" button. As an alternative, you can double-click the alarm list to be edited.

   The configuration dialog "Alert list" opens.



3. Enter a numerical value in the "Value" text box.
4. Select the associated time from the adjacent "Unit" drop-down list.

   The user will be informed about any existing messages in the time period entered.
5. If you select the option "Activate alert", the assigned user is informed about alarms of the corresponding alarm list.

   The status changes to "Active".
6. From the "Select user" drop-down list select the users who will receive the messages of the corresponding alarm list. Only users with an assigned e-mail address are displayed.

   The selected users are displayed in the "Currently selected users" list.
7. You can remove the assigned users again by clicking the "Delete" icon.
8. Click on the "Save" button.

Note

You can only edit individually selected alarm lists.

See also

Overview (Page 252)

7.8 Backup

Overview

In the setting "Backup" you configure the automatic creation of database backups in Energy Manager Web. You can find the corresponding settings in the Energy Manager PRO Client under the path "Administration > Backup". Configurations of backups in Energy Manager PRO Web are also adopted in the Energy Manager PRO Client and vice versa.

With the help of the individual setting of the weekdays you can create a weekly backup plan. The "Last backup status" text field shows when the last full and incremental backup was created. In addition, a message is displayed as soon as no backup is found. The "Drive status" text field shows the host name and the storage space of the archive drive.

Note

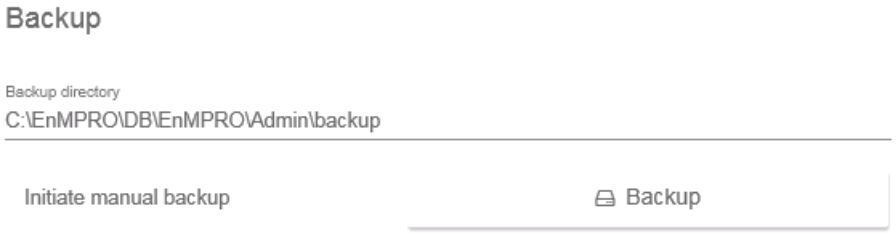
Restoring older versions

Version V7.2 does not support restoring a backup that was created with Version 7.1.

Configuring a backup

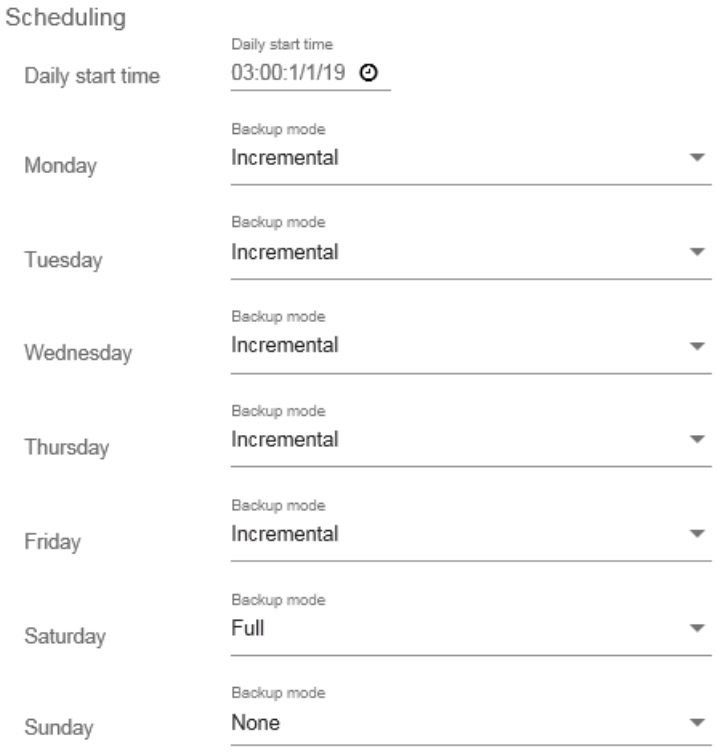
To configure the setting "Backup", follow these steps:

1. Enter the storage location of the backup on your PC in the "Backup directory" text box.
2. If you want to manually create a backup, click on the "Change recovery model" button. To start the manual backup process, click on the "Backup" button.



3. Select the daily start time of the backup from the "Daily start time" text field.

4. Select a backup type for each weekday from the "Backup mode" drop-down list. You can choose an incremental, full or no backup for each weekday.



5. Click on a different entry in the navigation area to save the settings.

7.9 Regional settings

Overview

In the setting "Regional settings" you manage location-specific settings in Energy Manager Web. You can create new countries or delete already created countries from the system. Already created countries with the corresponding configurations can be found in the Energy Manager PRO Client under the path "System > Configuration > Countries". The creation of new locations can be found in the Energy Manager PRO Client under the path "Master data > Localization > Insert location". Changes to the regional settings in Energy Manager PRO Web are also adopted in the Energy Manager PRO Client and vice versa.

The formats for date, decimal separation and currency are automatically taken from your PC Windows settings.

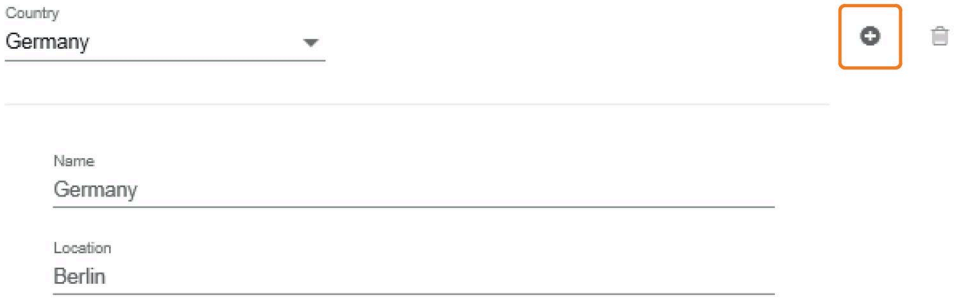
Configuring regional settings

To configure the setting "Regional settings", follow these steps:

1. Select a location from the "Country" drop-down list.

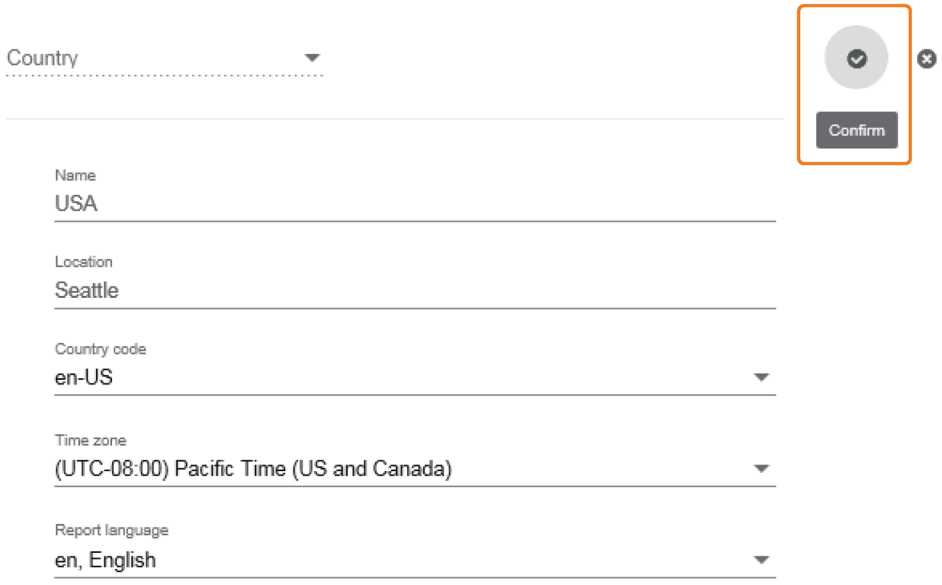
   The corresponding entries of the selected location are displayed in the "Name" and "Location" text fields.

2. If you want to create a new country, click the "Add new country" icon.



3. Enter the name of the country in the "Name" text box and the associated location in the "Location" text box. You can also edit the name and location of already created locations.

4. To create the new country, click the "Confirm" icon. To cancel the action, click on the "Cancel" icon.



5. Select the corresponding country code from the "Country code" drop-down list.
6. Select the corresponding time zone from the "Time zone" drop-down list.
7. Select the language for the report evaluation from the "Report language" drop-down list.
8. To define the selected location as the default country, select the option "Default country".
9. If you want to delete a country from the system, click the "Delete country" icon. Click on the icon again to confirm the process.
10. Click on a different entry in the navigation area to save the settings.

See also

Overview of settings (Page 229)

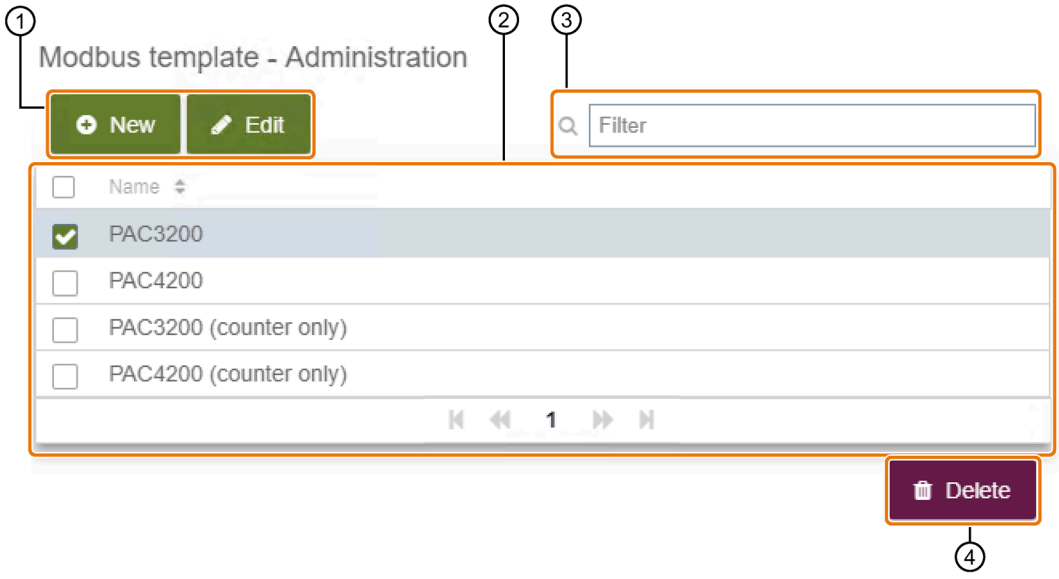
7.10 Modbus device templates

7.10.1 Overview

In the setting "Modbus device templates" you create new Modbus templates in Energy Manager Web and configure already existing Modbus templates. You can create, edit, delete and export Modbus templates only in Energy Manager Web Client. New Modbus templates and configurations of existing Modbus templates in the Energy Manager Web Client are adopted in the Energy Manager PRO Client.

When you create or configure a Modbus channel, you can use the Modbus templates.

The Modbus templates are displayed in tabular form:



① "New" and "Edit" buttons: Creating and editing new Modbus templates.

② Display table of existing Modbus templates.

③ Filter function: When you enter a text in the "Filter" entry field, the column Name" is searched and corresponding templates are displayed in the display table. Delimitation of Modbus templates is recommended when a large number of Modbus templates exist in the system.

④ "Delete" button: Delete selected Modbus templates from the system.

The display table consists of the following two columns:

Column	Function
Selection	You can select individual Modbus templates and any number of Modbus templates with the help of the check boxes. Clicking on the check box in the column header selects all Modbus templates. Clicking on the check box in the column header again deselects all Modbus templates again.
Name	Shows the name of the Modbus template. When you click on the column header of the "Name" column, it is sorted in alphabetical order. When you click on the same column header again, the column is sorted in the reverse order.

7.10.2 Exporting Modbus device templates

Requirement

- The Modbus device template has been created.

Procedure

Follow these steps to export a Modbus device template:

1. Select the desired Modbus device template from the table of the detail area "Modbus templates - Administration".
2. Click the "Edit" button.
3. Click the "Download" button.

Result

The selected Modbus device template has been saved in the storage location for your browser downloads. The saved template has the name in Energy Manager Web as the file name and the data type ".ini".

7.10.3 Creating a Modbus device template

Requirements

- Do you have the functional right "Master Data > create, remove, configure"?
- An exported Modbus device template is saved in its local system.

Procedure

To create a new Modbus device template, follow these steps:

1. Edit the exported template according to your needs.

   At the beginning of the automatically created templates you can find a short description of all configurable contents for editing.

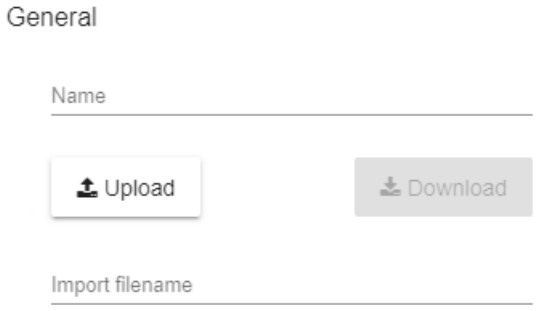
   Note

   The description of the contents of a template is only available in English.

2. Save the edited template in the "*.ini" file format in its local system.
3. Click on the "New" button in the detail area "Modbus device templates - Administration".

   The configuration dialog "New - Modbus template" opens.

4. Enter a meaningful name in the "Name" entry field. If you create a Modbus channel with a template, the name is displayed in the "Template" drop-down list.

5. Click the "Upload" button.

   A dialog window in which you can search the local data system is displayed.

6. Select the desired template from the local data system and click on the "Open" button.

   The folders saved in the template with all data points are displayed in the "Template" field.

7. Click the "Save" button.

Result

The Modbus device template has been created.

7.10.4 Editing a Modbus device template

Requirements

- You have the functional right "Master Data > Configure".
- The Modbus template has been created.

Procedure

To edit a Modbus template, follow these steps:

1. Select the desired Modbus template from the table of the detail area "Modbus device templates - Administration".
2. Click the "Edit" button.

   The dialog window "Edit - Modbus template" opens.
3. Configure the Modbus template as for creating a Modbus template.
4. Click the "Save" button.

7.10.5 Deleting a Modbus device template

Requirements

- You have the functional right "Master Data > create, remove, configure"
- The Modbus template has been created.

Procedure

To delete a Modbus template, follow these steps:

1. Select one or more Modbus templates from the table of the detail area "Modbus device templates - Administration".
2. Click the "Delete" button.

Result

The selected Modbus templates are deleted.

7.11 Data provider

You can make the data in your Energy Manager system accessible to programs and systems via an OPC UA HDA Server. You configure the access in the "Data provider" setting.

OPC UA Server

To configure "OPC UA Server" access, proceed as follows:

1. Under "Start folder", use the structure browser to select the folders whose data is transferred with the OPC server.

   If you select a folder, the data of all nested folders will also be made accessible.

2. Specify the address of the server on which the Energy Manager is installed. Enter the address in the following form:

   `opc.tcp://[IP address]:[Port]`

3. Enable the security profiles used by the OPC UA HDA server.

   If you have activated a security profile, a certificate exchange is performed. To access the data via the OPC server, move the created certificate from the /Siemens/EnMPro/OpcUaServr/pkiserver/rejected/certs folder to the [...]/pkiserver/trusted/certs folder.

4. If you enable "Anonymous user identity", you do not need login data to access the data via the OPC server.

   If you enable "Use name identity", you can specify a user name with password to access the data via the OPC server. The user name and the password must correspond to a user name and the corresponding password of a user of your Energy Manager system.

   If you specify the login data of an Energy Manager user, you can only access the data points that the user can also access in the Energy Manager.

   If you only enable "User name identity", you need to enter a user name with password to access the data via the OPC server.

Note

If you configure the data provider while the server is running, the System service must be restarted via the Service Cockpit. Changes at the OPC server are only applied after the restart of the System service.

Additional information

The following entries are available for each data point that is made accessible by the OPC UA server:

- Unit
- Acquisition category
- Measured values
  If several compression levels are configured for the data point, the lowest compression level is made available.

  The entry on the measured values has the following label: **[Data point name]_[Compression level]**

If a data point is configured as a counter, additional measured values are provided that are compiled as counters. This entry has the following label: **[Data point name]_CNT_[Compression level]**

Service Cockpit

8

8.1 Overview

To open the Service Cockpit, click on the icon .

To open the Service Cockpit in Energy Manager Web, you require the functional rights "Service Cockpit > view" and "Master Data > view".

Setup

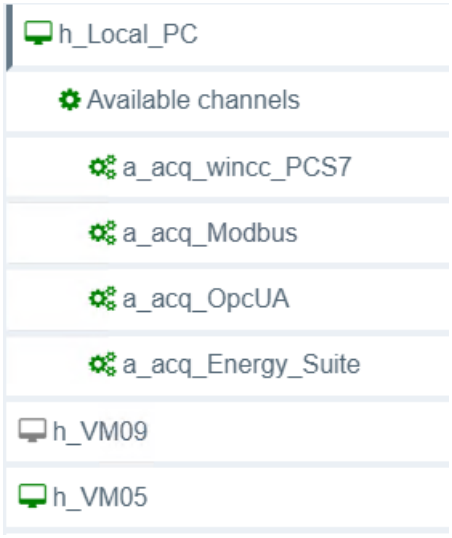
The following figure shows the Service Cockpit:

① Navigation area
② Selection of detailed information
③ Display of services
④ Detailed information

8.2 Navigation area

The navigation area displays all available acquisition components and the application server.

The following figure shows the navigation area:



To display the function dialog of the acquisition component in the detail area, click on the entry of the acquisition component in the navigation area.

To display all acquisition channels of an acquisition component in the navigation area, click on the item of the acquisition component and then on the "Available channels" item.

The status of the acquisition components and channels is displayed via the color of the corresponding icon:

Color	Acquisition component status	Channel status
Green	At least one acquisition component is active. There is no gap in any channel of the acquisition component.	Data acquisition of the channel is active. There is no gap.
Red	At least one acquisition component is active. There is no gap in at least one channel of the acquisition component.	The channel is connected to the system. There is a gap.
Gray	All channels of the acquisition components are not connected or are inactive.	The channel is not connected to the system or is inactive.

The entry "Available channels" has the same status display as the corresponding acquisition component.

If you hold the mouse pointer over the entry of a channel, the ID of the process is displayed via a tooltip.

8.3 Services

Depending on the use of the selected system component, the corresponding services are displayed:

System component	Energy Manager Service
Application server	• Database service (Database) • Report service (Reporting) • Portal service (Portal) • Calculation service (Calculation) • System service (System)
Acquisition component	• Portal service (Portal) • Acquisition service (Acquisition) • Kernel service (Kernel)

If a server is used as the acquisition server and application server, all listed services are displayed.

Status display

The status of the services is indicated by the color of the icon:

Color	Status
	Service is running
	Service is stopped
	Service is stopped

Start, restart and stop of services

To control services, click on the icons in the following table:

Symbol	Function
	Start service
	Restart service
	Stop service

8.4 System

To call up this field, click on system component in the navigation area and the "System" tab in the selection of the detailed information.

Information

This field shows the following general information for the corresponding servers:

Application server	Acquisition component
• The Energy Manager version used by the system	• The Energy Manager version used by the system • The time of the last contact with the acquisition system • The system time

The system field shows the following hardware information for all servers:

- A list of the hard disks and their usage
- The CPU load
- The currently used work memory

8.5 Installed software

To call up this field, click on system component in the navigation area and the "Installed software" tab in the selection of the detailed information.

Setup

This field shows a table with the following information:

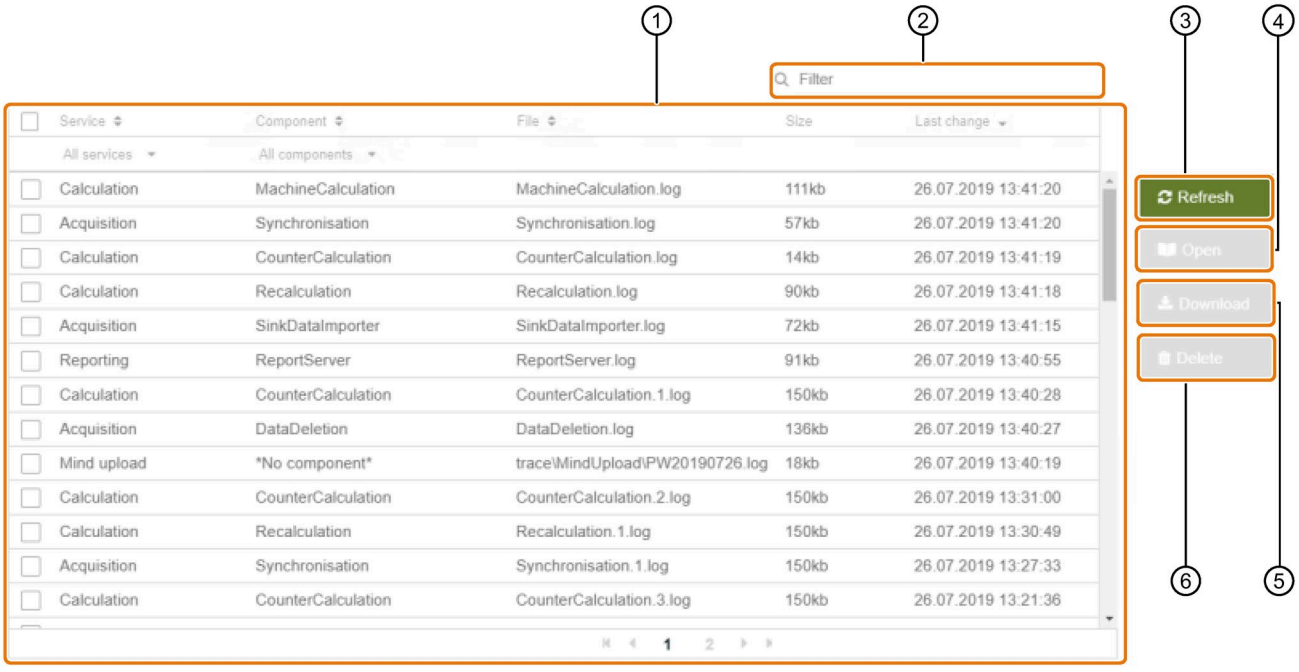
- The programs installed on the server
- The version of these installed programs

Sort the list via the column headers.

8.6 Log files

To call up this field, click on system component in the navigation area and the "Logs" tab in the detailed information selection.

The following figure shows an overview of the "Logs" field:



① Table with log files

② Filter

When you enter a text in the "Filter" text box, all columns are searched and displayed accordingly in the table. Delimitation is recommended when a large number of log files exist in the system. Click on a column header to sort the corresponding column alphabetically.

③ Update

Updates the table with the log files.

④ Open

Opens the log file in the Energy Manager Web Client.

⑤ Download

Downloads the selected log file to your local system via your browser download. If several log files are selected, this button is disabled.

⑥ Delete

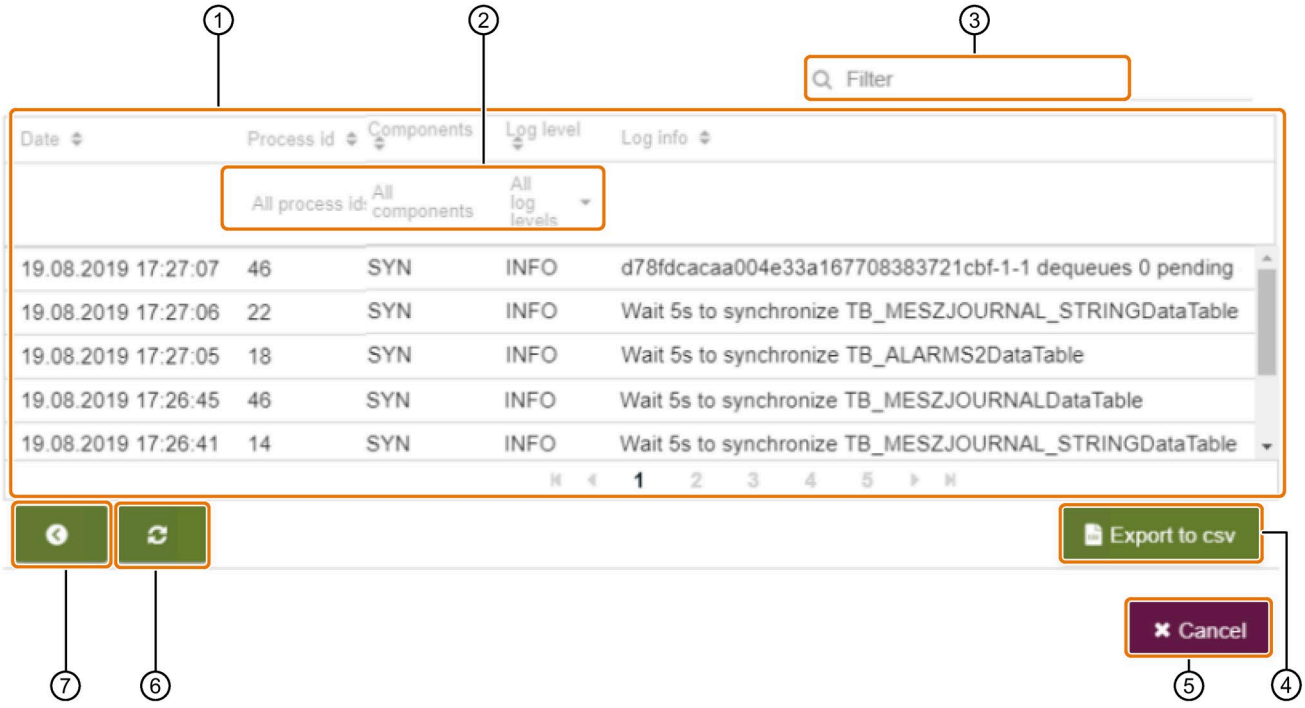
Deletes all selected log files.

The table with the log files contains the following information:

Name of the column	Content of the column
Service	Name of the corresponding Energy Manager service
Component	Name of the associated subcomponent of the service
File	Name of the log file
Size	Size of the log file in kilobytes
Date changed	Time of last change

View of the log file

The following figure shows a log file in the Energy Manager Web Client:



① Table with the messages

② Column filter

To filter a column, click on the corresponding filter. Then select the entries by which the column is to be filtered.

③ Filter

When you enter a text in the "Filter" text box, all columns are searched and displayed accordingly in the table. Delimitation is recommended when a large number of log files exist in the system. Click on a column header to sort the corresponding column alphabetically.

④ Export as CSV

Downloads the selected log file in CSV format to your local system via your browser download.

⑤ Cancel

Closes the view of the log file.

⑥ Update

Updates the log file

Next log file

If the latest log file with this name is not open, this button shows an arrow.

To open the next log file, click on this button.

⑦ Previous log file

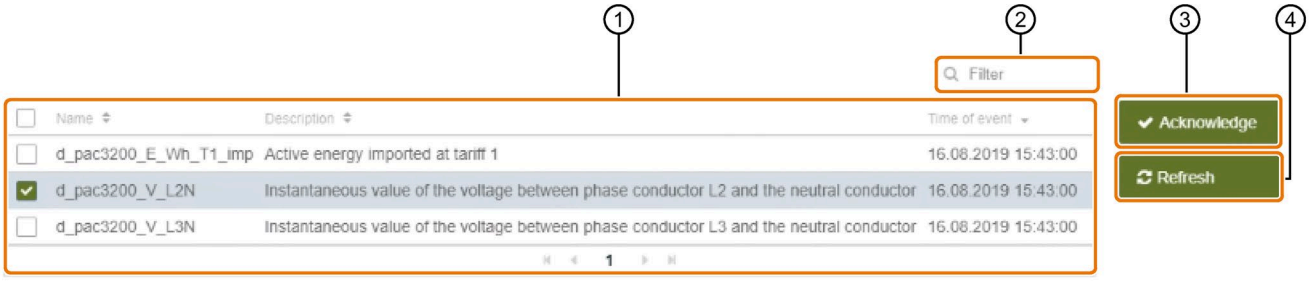
Opens the log file with the same name that was created before this log file.

The log file messages table contains the following information:

Name of the column	**Content of the column**
Date	Time stamp of the message
Process ID	ID of the channel to which the message provides information
Components	Component from which the message originates
Log level	Message type: • INFO = Information • WARNING = Warning • ERROR = error
Log information	Contents of the message

8.7 Gap recognition

To open a list of acquisition gaps of a channel, click on the channel in the navigation area of the service cockpit. When you click on "Available channels" in the navigation area, the list for the top channel is displayed in the navigation area. You can check the functionality of data acquisition with the help of gap recognition.



①	Table with all gaps of the channel
②	Filter function: When you enter a text in the "Filter" entry field, all columns are searched and displayed accordingly in the display table. Delimitation is recommended when there is a large number of gaps.
③	"Acknowledge": To acknowledge a gap, select the corresponding gap from the table and click twice on this button. The gap is deleted from the list. When all gaps are acknowledged, the status of the channel is set to green.
④	"Refresh" Click on this button to update the table with the gaps.

The display table contains three columns:

Column	Function
Data point	Data point of the gap
Description	Description of the data point
Time stamp	Time stamp of the gap

8.8 Troubleshooting with log files

8.8.1 Kernel fault

You can find more information on the log file in the reference under "Kernel".

Requirements

- You have the functional right "Administration > Logging Viewer > View"
- You have the functional right "Administration > Service Cockpit > View"
- The Service Cockpit in the web client is open.

Raw values are missing in the chart with compression level acquisition values

If the acquired measured values of the data source are not visible in the chart, proceed as follows to locate the problem:

1. Check whether the following services are running:
   - Kernel service (Kernel)
   - Acquisition service (Acquisition)
   - Portal service (Portal)

   If the icon of the service is green, the service is running.
2. Open the latest log file of the Kernel Service via the detail information "Log files".

   To facilitate the search, use the "Filter" function and sort the column "Last change"
3. Search the log file for errors.

   Messages of category 3000 are error messages.

   Identify the interface at which the error is present using the process ID.
4. With the help of the log file check whether values arrive in the kernel and are passed on.
5. Check whether the acquired measured values are written to the raw files.

   The raw files can be found in the directory "Installation directory\GUI\mcl\RawFiles".

   You can find additional information on raw files in the following section.

Raw files

Values acquired from the data sources are stored in raw files by default. A folder is created at midnight local time for each day. As soon as the first value is acquired, a raw file is created in this folder for each data point.

The name of the raw file consists of the ID of the data point. You can read the ID of the data point in the configuration dialog of the data point.

8.8.2 Acquisition service error

You can find more information on the "Compression" log file in the reference under "Compression".

Requirements

- You have the functional right "Administration > Logging Viewer > View"
- You have the functional right "Administration > Service Cockpit > View"
- The Service Cockpit in the web client is open.

The acquired measured values are visible, the 15-minute values are not.

If the acquired measured values are visible and values of the "15 minutes" compression level are not visible, proceed as follows to locate the problem:

1. Open the latest log file "Compression".
2. Check whether values were compressed for the corresponding time stamp. Filter the log file by the identifier "CMPR".
3. Filter in the log file by the identifier "RCAL" to display the compressed interval and the number of compressed values.
4. To check whether the compressed values were uploaded to the SQL server, open the log file "Synchronisation" of the acquisition service.

The local database of the acquisition component does not work.

If the local database of the acquisition component does not work, error messages are displayed in the log files "Compression", "Kernel" and "Synchronisation".

Open the log file "SQL Provider". This log file should be empty. If there are error messages in this log file, the local database is corrupt.

Alarms for acquisition values are not generated

If no alarms are generated in the event of limit violations in the values with the compression level "Acquisition values", proceed as follows:

1. Open the latest log file "Compression".
2. Filter the log file by the identifier "PLSI".
3. Check whether limit violations have been detected.

Gaps are not detected

If no gaps are detected in the acquired values, carry out troubleshooting as follows:

1. Open the latest log file "Compression".
2. Filter the log file by the identifier "Gap".
3. Check whether gaps have been detected.

8.8.3 Reporting service error

For more information on the "Recalculation" log file, see the reference under "Recalculation".

For more information on the "MEVA calculation" log file, see the reference under "MEVA calculation".

Requirements

- You have the functional right "Administration > Logging Viewer > View"
- You have the functional right "Administration > Service Cockpit > View"
- The Service Cockpit in the web client is open.

Daily values in matrix but no monthly values calculated

If you entered the daily values in a matrix, yet no monthly values were calculated, carry out troubleshooting as follows:

1. Open the latest log file "Recalculation".
2. Filter the log file by the identifier "ACOP".
3. Check to see whether compression is still pending.
4. Filter the log file by the identifier "RCAL".

Derived data points are not calculated automatically

If derived data points are not calculated automatically even though the data point is configured accordingly, carry out troubleshooting as follows:

1. Open the latest log file "Recalculation".
2. Filter the log file by the identifier "DCAL".
3. Check to see whether recalculation is still pending.
4. Filter the log file by the identifier "RCAL".

MEVA/KPI is not calculated

If a MEVA/KPI is not calculated, carry out troubleshooting as follows:

1. Open the Logging Viewer in the Energy Manager Pro Client.

   For more information on the Logging Viewer, refer to the section "Logging Viewer"
2. Search for error messages of the MEVA/KPI in Logging Viewer.
3. Open the log file "MEVA calculation".

Substitute values are not calculated for manually acquired daily values

If the substitute values are not calculated for gaps of manually acquired daily values, carry out troubleshooting as follows:

1. Open the latest log file "Recalculation".
2. Filter the log file by the identifier "REPV".
3. Check whether gaps have been detected.
4. Filter the log file by the identifier "RCAL".
5. Check whether substitute values were generated.

Interpolation of monthly values does not work

If the interpolation of monthly values does not work, carry out troubleshooting as follows:

1. Open the latest log file "Recalculation".
2. Filter the log file by the identifier "EXPA".
3. Check whether interpolation or extrapolation was performed.
4. Filter the log file by the identifier "RCAL".
5. Check whether an interpolated or extrapolated value was created.

8.8.4 Reporting service error

You can find more information on the "Report Server" log file in the reference under "Report Server".

Requirements

- You have the functional right "Administration > Logging Viewer > View"
- You have the functional right "Administration > Service Cockpit > View"
- The Service Cockpit in the web client is open.

Reports are not generated

If only the first green check mark is displayed after starting a report, or an automatically calculated report is not displayed, carry out troubleshooting as follows:

1. Open the log file "Report Server".
2. Filter the log file by the ID of the report.
3. Search for error messages.

   If macros and Visual Basic were not activated in the EXCEL settings, this error occurs.
4. Check whether a default printer is defined in the operating system.

Reference

9

9.1 Time unit abbreviations

Abbreviation	Time unit
d	Day
h	Hour
Y	Year
M	Month
min	Minute
s	Second
W	Week

9.2 Unit conversion Energy/Power

Energy	Power
J	J/h
kJ	kJ/h
MJ	MJ/h
GJ	GJ/h
Ws	Ws/h
Wh	W
kWh	kW
	GWs/h
GWh	GW
TWh	TW
VArh	VAr
kVArh	KVAr
MVArh	MVAr
GArh	GVAr
VAh	VA
kVAh	kVA
MVAh	MVA
GVAh	GVA
Nm^3	Nm^3/h
m^3	m^3/h

Energy	**Power**
l	l/h
hl	hl/h
kg	kg/h
t	t/h
tCO_2	tCO_2/h
pce	pce/h
pce	pce/h

9.3 Existing functional groups

Overview of functional groups

The following table shows the functional groups available after the installation of Energy Manager. In Energy Manager Basic no functional groups can be created or modified. Which group has which functional rights is described in the following chapter Available functional rights.

Functional group	Function
ADMINISTRATOR	This group includes comprehensive functional rights for Energy Manager. This group has the right to delete, add or configure all objects.
CONFIGURATOR	This group has the right to configure Energy Manager objects.
GUEST	This group is permitted to view all objects in the tree. This group does not have the right to delete, add or configure objects. The group also does not have the right to create new reports and to calculate analyses. This grouping is intended to apply simple, temporary restrictions on significant operator actions in the system. To set up explicit, long-term restrictions on functional rights, you should use a combination of the following functional groups.
OPERATOR	This group has the right to operate Energy Manager objects.

9.4 Available functional rights

In Energy Manager you can restrict functions for unauthorized users. For example, you can assign a user the right to start a report and view the result. You can, however, disallow the user from configuring the report. You can also merge several users to form several user groups. The user Admin or Superadmin sets the user rights for the corresponding users and user groups as well as the functional restrictions in the functional user group. Most functional restrictions in Energy Manager are based on the following basic principle:

1. Configuration
2. Creation, deletion and configuration
3. View

Configuration

The user is authorized to configure objects using the configuration dialog. The user is not authorized to delete objects or create new objects.

Creation, deletion and configuration

The user is authorized to configure and delete objects and create new objects.

View

The user is authorized to open objects and view the contents. The user is not authorized to configure or delete objects or create new objects. Some objects such as a MEVA can only be viewed by the user in the navigation area without opening a dialog. In the corresponding object properties you can find out whether you can open the object and view the contents or only see the object in the navigation area.
The user is also not authorized for the following functions:

- Copy
- Clone
- Delete
- Cut
- Disconnect

Overview

The following table provides an overview of the available functional rights:

The letters in brackets indicate which functional groups have this right after installation of the Energy Manager .

The letters stand for the following functional groups:

- A: Administrator
- C: Configurator
- O: Operator
- G: Guest

Rights area	**Assigned rights**
Account	Configuration: • Create, remove, configure: The user has the right to create, delete and configure accounts. • View (A, C, G, O): The user has the right to open and view accounts.
Administration	Logging Viewer: • View (A, C, O): The user has the right to open and view the Logging Viewer. Service Cockpit: • View (A, C, O): The user has the right to open and view the Service Cockpit.
Alarming	Configuration: • Configure (A, C): The user has the right to open and configure KPI message lists. • Create, remove, configure (A, C): The user has the right to create, delete and configure KPI message lists. • View (A, C, O): The user has the right to open and view KPI message lists. Values: • Acknowledge (A, C, G, O): The user has the right to open and confirm messages. • View (A, C, G, O): The user has the right to open and view messages.

Rights area	Assigned rights
Backup	Configuration: • Configure (A): The user has the right to open and configure the storage location of the backup and the schedule for automatic creation of a backup. • View (A, C, O): The user has the right to open and view the storage location of the backup and the schedule for the automatic creation of a backup. Usage (A): • Start: The user has the right to create a backup.
Chart Object	Configuration: • Configure (A, C, G, O): The user has the right to open and configure charts. • Create (A, C, G): The user has the right to open and create charts. • Delete (A, C, G): The user has the right to open and delete charts.
Client Control	To log onto a component, the "Client Control" right is the minimum right for the user. Acquisition: • Configure(A): The user has the right to configure acquisition components. Client: • Configure (A, C ,G, O): The user has the right to configure the Energy Manager PRO Client. Web: • Configure (A, C, G, O): The user has the right to configure Energy Manager PRO Web.
Domain	Configuration: • Create, remove, configure: The user has the right to create, delete and configure domains. • View (A, C, G, O): The user has the right to open and view domains. Object Assignment: • Modify (A): The user has the right to configure assignments of domains. • Share (A): The user has the right to assign domains. • View (A, C, G, O): The user has the right to open and view assignments of domains.
Energy Efficiency	Configuration: • Configure (A, C, G): The user has the right to open and configure energy efficiency measures. • Create, remove, configure (A, C, G): The user has the right to create, delete and configure energy efficiency measures. • View (A, C, G, O): The user has the right to open and view energy efficiency measures.

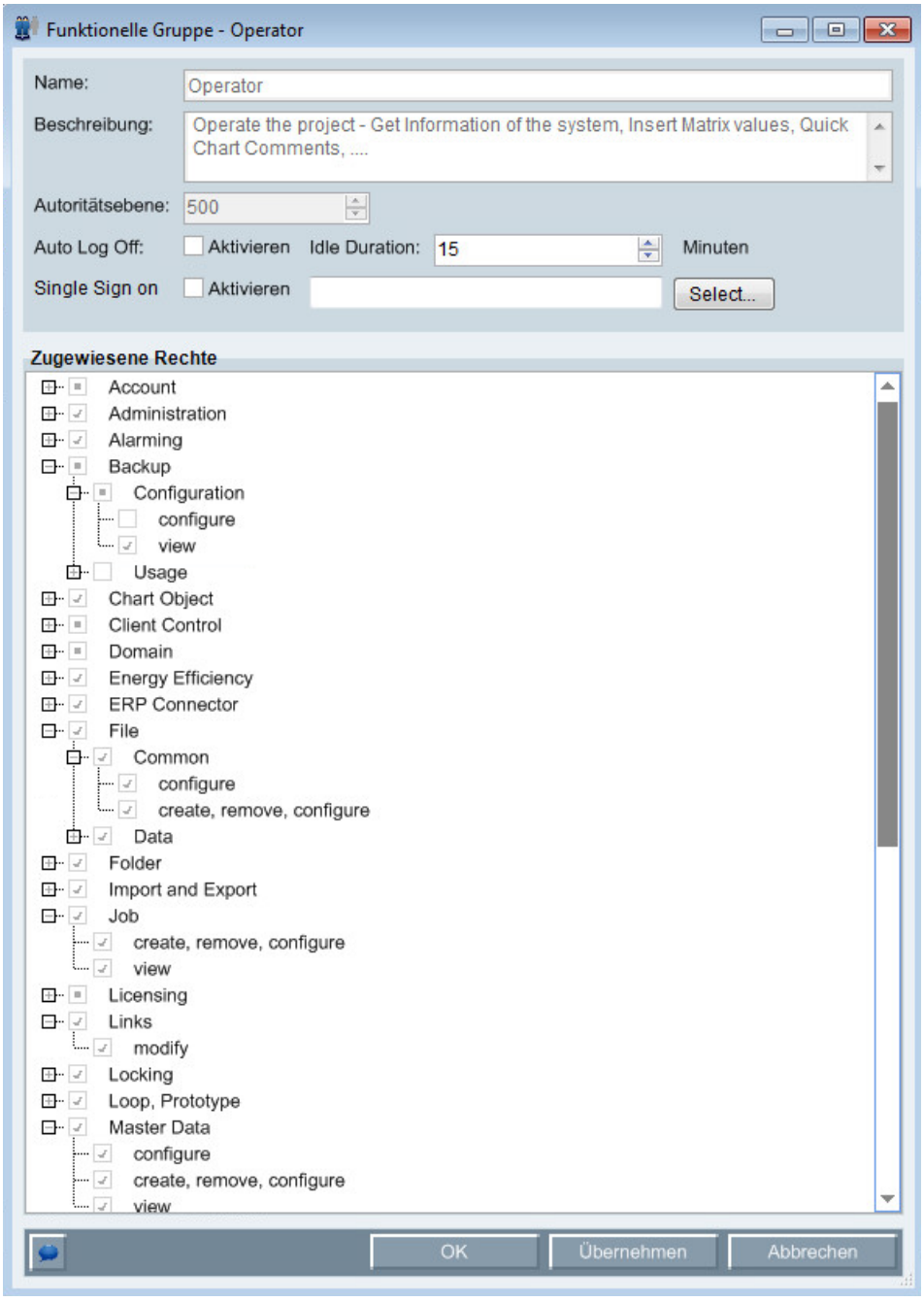
Rights area	Assigned rights
ERP Connector	Business Unit: • Configure (A, C): The user has the right to open and configure Business Units. • Create, remove, configure (A, C): The user has the right to create, delete and configure Business Units. • View (A, O): The user has the right to open and view Business Units. Cost Center: • Configure (A, C): The user has the right to open and configure cost centers. • Create, remove, configure (A, C): The user has the right to create, delete and configure cost centers. • View (A, C, O): The user has the right to open and view cost centers. Cost center relation: • Configure (A, C): The user has the right to open and configure the cost center relation. • Create, remove, configure (A, C): The user has the right to create, delete and configure the cost center relation. • View (A, C, O): The user has the right to open and view the cost center relation. Cost element: • Configure (A, C): The user has the right to open and configure cost elements. • Create, remove, configure (A, C): The user has the right to create, delete and configure cost elements. • View (A, C, O): The user has the right to open and view cost elements.
File	Common: • Configure (A, C, G): The user has the right to open and configure files. • Create, remove, configure (A, C, G, O): The user has the right to create, delete and configure files. Data: • Fetch (A, C, G, O): The user has the right to open documents from a file. • Modify (A, C, G): The user has the right to upload documents or overwrite existing documents.
Folder	• Configure (A, C): The user has the right to open and configure folders. • Create, delete (A, C): The user has the right to create and delete folders. • View (A, C, G, O): The user has the right to open and view folders.
Import and export	Export: • Configure (A, C): The user has the right to export subprojects to an XML file. Import: • Configure (A, C): The user has the right to import subprojects.
Job	• Create, remove, configure (A, C): The user has the right to create, delete and configure job queues. • View (A, C, O): The user has the right to open and view job queues.

Rights area	Assigned rights
Licensing	Config: • Configure (A): Not relevant for Energy Manager PRO V7.2. • Create, remove, configure (A): Not relevant for Energy Manager PRO V7.2. • View (A, C, G, O): The user has the right to open and view the license dialog.
Left	• Modify (A, C, G, O): The user has the right to delete links from data points and documents.
Locking	Configuration: • Configure (A, C): The user has the right to lock objects.
Loop, Prototype	• Configure (A, C): The user has the right to open and configure loops and prototypes. • Create, remove, configure (A, C): The user has the right to create, delete and configure loops and prototypes. • View (A, C, O): The user has the right to open and view loops and prototypes.
Master Data	• Configure (A, C): The user has the right to open and configure cycle times and query types. • Create, remove, configure (A, C): The user has the right to create, delete and configure cycle times and query types. • View (A, C, G, O): The user has the right to open and view cycle times and query types.
Matrix	• Create, remove, modify (A, C): The user has the right to create, delete and configure matrices. • Modify (A, C, O): The user has the right to configure matrices. • View (A, C, G, O): The user has the right to open and view matrices.
Measured Value	• Insert, remove, modify (A, C): The user has the right to enter measured values of a data source in the matrix or measured value editor and delete and configure them. • Modify (A, C): The user has the right to open measured values of a data source and enter them in the matrix or measured value editor. • View (A, C, G, O): The user has the right to open and view measured values of a data source.
Measurement	• Configure (A, C): The user has the right to open and configure data points. • Create, remove, configure (A, C): The user has the right to create, delete and configure data points. • View (A, C, G, O): The user has the right to open and view data points.
Measuring Variable	• Configure (A, C): The user has the right to open and configure MEVAs. • Create, remove, configure (A, C): The user has the right to create, delete and configure MEVAs . • View (A, C, G, O): The user has the right to open and view MEVAs.

Rights area	Assigned rights
ODBC Connector	Configuration: • Configure (A, C): The user has the right to open and configure ODBC data sources. • Create, remove, configure (A, C): The user has the right to create, delete and configure ODBC data sources. • View (A, C, O): The user has the right to open and view ODBC data sources. Import values (A, C): The user has the right to import values from an ODBC data source.
Parameter	Common: • Configure (A, C): The user has the right to open and configure parameters. • Create, remove, configure (A, C): The user has the right to create, delete and configure parameters. • View (A, C, G, O): The user has the right to open and view parameters. Values: • Create, remove, configure (A, C, G): The user has the right to create, delete and configure parameter values.
Permission	• Create, remove, configure (A, C): The user has the right to create, delete and configure functional groups. • View (A, C, O): The user has the right to open and view functional groups.
Printer	• Configure (A, C): The user has the right to open and configure printers. • Create, remove, configure (A, C): The user has the right to create, delete and configure printers. • View (A, C, O): The user has the right to open and view printers.
Production Plan	This rights group is only relevant if the license "Forecast and planning" exists in the ALM. • Configure (A, C): The user has the right to open and configure production plans. • Create, remove, configure (A, C): The user has the right to create, delete and import production plans. • View (A, C, G, O): The user has the right to open and view production plans.
Profiles	• Configure (A, C): The user has the right to open and configure profiles. • Create, remove, configure (A, C): The user has the right to create, delete and configure profiles. • View (A, C, G, O): The user has the right to open and view profiles.
Quick Chart Comments	Configuration: • Configure (A, C, G, O): The user has the right to open and configure comments in charts. • Create (A, C, G, O): The user has the right to open and create comments in charts. • Delete (A, C, G, O): The user has the right to open and delete comments in charts.

Rights area	Assigned rights
Report	Configuration: • Configure (A, C): The user has the right to open and configure reports. • Create, remove, configure (A, C): The user has the right to create, delete and configure reports. • View (A, C, G, O): The user has the right to open and view reports. Report: • Open pdf only (A, C, G, O): The user has the right to open and view created reports only in PDF format. • Open xls/doc/pdf (A, C, G, O): The user has the right to open and view created reports in Excel, Word and PDF format. • Restart, start (A, C, G, O): The user has the right to manually start reports and restart already created reports via task management. • Start, delete (A, C, G, O): The user has the right to manually start reports and delete already created reports.
Task management	Configuration: • Configure (A, C): The user has the right to open and configure tasks. • Create, remove, configure (A, C): The user has the right to create, delete and configure tasks. • View (A, C, O): The user has the right to open and view tasks. Task management: • Start (A, C): The user has the right to start tasks.
Template Manager	You configure reports and machine specifications in the Template Manager. Configuration (A, C): • Configure (A, C): The user has the right to open and configure templates. • Create (A, C): The user has the right to create new templates. • Delete (A, C): The user has the right to delete templates.
Trend	Not relevant for Energy Manager PRO V7.2.
Unique Objects	Not relevant for Energy Manager PRO V7.2.
Unit	• Configure (A, C): The user has the right to open and configure units. • Create, remove, configure (A, C): The user has the right to create, delete and configure units. • View (A, C, O): The user has the right to open and view units.
User	• Configure (A, C): The user has the right to open and configure other users. • Create, remove, configure (A, C): The user has the right to create, delete and configure other users. • View (A, C, O): The user has the right to open and view other users.
Visualization	Not relevant for Energy Manager PRO V7.2.

Rights area	Assigned rights
Web interface	Administration: • Configure (A, C): The user has the right to configure the Siemens logo and start screen in the Energy Manager PRO Web administration area. Menu: • View (A, C, O): The user has the right to view the Energy Manager PRO Web menu and toggle between the tree structure and the administration area. Quicklinks: • Configure (A, C, O): The user has the right to open and configure Quicklinks in Energy Manager PRO Web. • Create (A, C, O): The user has the right to open and create Quicklinks in Energy Manager PRO Web . • Delete (A, C, O): The user has the right to open and delete Quicklinks in Energy Manager PRO Web. • View (A, C, O): The user has the right to open and view Quicklinks in Energy Manager PRO Web.
Widgets/Dashboards	• Configure (A, C): The user has the right to configure dashboards and create, delete and configure widgets in Energy Manager PRO Web. • Create, remove, configure (A, C): The user has the right to create, delete and configure dashboards and widgets in Energy Manager PRO Web . • View (A, C, O): The user has the right to open and view dashboards and widgets in Energy Manager PRO Web.


Funktionelle Gruppe - Operator
Name:
Operator
Beschreibung:
Operate the project - Get Information of the system, Insert Matrix values, Quick Chart Comments, ...
Autoritätsebene:
500
Auto Log Off:
Aktivieren
Idle Duration:
15
Minuten
Single Sign on
Aktivieren
Select...
Zugewiesene Rechte
Account
Administration
Alarming
Backup
Configuration
configure
view
Usage
Chart Object
Client Control
Domain
Energy Efficiency
ERP Connector
File
Common
configure
create, remove, configure
Data
Folder
Import and Export
Job
create, remove, configure
view
Licensing
Links
modify
Locking
Loop, Prototype
Master Data
configure
create, remove, configure
view
OK
Übernehmen
Abbrechen

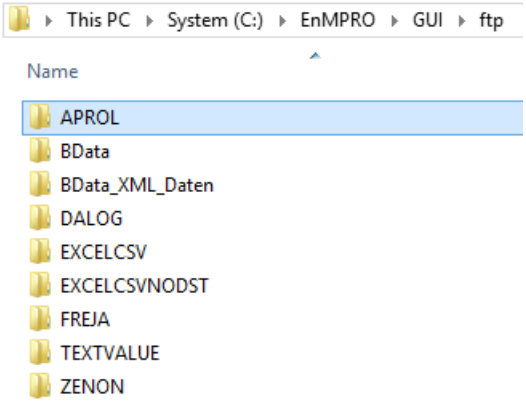
9.5 ASCII FTP formats

9.5.1 ASCII FTP import interface

Using the ASCII FTP import interface, you can import the content of ASCII files of diverse formats to Energy Manager.

The specification for the supported formats is the same in all cases.

During the installation of Energy Manager, a sample file for each supported format in the %Install-DIR%\EnMPRO\GUI\ftp directory is stored on the acquisition system.



File format	**Sample file**
fp_Aprol	ChronoLogDataExport_pfil_H_15_03_2010.txt
fp_bdata	20100627_000000_FribaDP01.txt
fp_xmlparser	d_EL_E_7D_outside_temperature_20100101000000_20100102000000.xml
fp_dalog	Dalog_File.txt
fp_excelcsv	Excel_CSV.csv
fp_excelcsvNODST	Excel_CSV_NODST.csv
fp_freja	AVV_000112200_20100328000000_20100329000000.txt
TextValue	TextValues.txt
fp_Zenon.dll	zenOn.txt

The following chapters contain more information on the various parsers and supplied sample files.

9.5.2 APROL

APROL is a process control system. This system also exports the values as a "*.txt" file with a specific HTML format. The structure will look as follows:

<record date="YYYY-MM-DD" time="hh:mm:ss" id="Addressidentifier">

<field name="val">Value</field>

<field name="mode">0</field>

</record>

To assign values to a data point, enter the address identifier of the values in the entry field "Address" during configuration.

Example

The following figure shows a file with the required structure:

```
1
2  <record date="2018-03-15" time="00:00:00" id="W15:Zlt/ABBMSU8_1O_J1Ab">
3      <field name="val">0.47800001502037O5</field>
4      <field name="mode">0</field>
5  </record>
6
7  <record date="2018-03-15" time="01:00:00" id="W15:Zlt/ABBMSU8_1O_J1Ab">
8      <field name="val">0.57800001502037O5</field>
9      <field name="mode">0</field>
10 </record>
11
12 <record date="2018-03-15" time="02:00:00" id="W15:Zlt/ABBMSU8_1O_J1Ab">
13     <field name="val">0.38000002503395O8</field>
14     <field name="mode">0</field>
15 </record>
16
17 <record date="2018-03-15" time="03:00:00" id="W15:Zlt/ABBMSU8_1O_J1Ab">
18     <field name="val">0.77800001502037O5</field>
19     <field name="mode">0</field>
20 </record>
21
22 <record date="2018-03-15" time="04:00:00" id="W15:Zlt/ABBMSU8_1O_J1Ab">
23         <field name="val">0.47800001502037O5</field>
24     <field name="mode">0</field>
25 </record>
26
27 <record date="2018-03-15" time="05:00:00" id="W15:Zlt/ABBMSU8_1O_J1Ab">
28     <field name="val">0.56800001502037O5</field>
29     <field name="mode">0</field>
30 </record>
31
32 <record date="2018-03-15" time="06:00:00" id="W15:Zlt/ABBMSU8_1O_J1Ab">
33     <field name="val">0.47800001502037O5</field>
34     <field name="mode">0</field>
35 </record>
```

9.5.3 BDATA

You can import "*.txt" files from B.Data with the format BDATA. Do not modify the files of B.Data or else the import will no longer work. The separator is the semicolon sign. Each entry also features quotation marks at the beginning and the end.

To assign values to a data point, enter the ID number of the values in the "Address" entry field when configuring the data point. You can find the ID number under the entry "MESS_ID". The ID number for the first entry in the example below is "00059".

Example

The following figure shows a file with the required structure:

```
"COMP_LEVEL";"MSJO_DATUM";"ZEIT_ID";"MESS_ID";"MSJO_WERT";"MSJO_INTERVALL";"MSJO_DGUELTIG";"STER_FLAG";"STKO_FLAG"
"2100";"26.06.2018 01:00:00";"1002";"00059";"244.89";"3600";"3600";"0";"0"
"2100";"26.06.2018 02:00:00";"1002";"00059";"243.39";"3600";"3600";"0";"0"
"2100";"26.06.2018 03:00:00";"1002";"00059";"244.61";"3600";"3600";"0";"0"
"2100";"26.06.2018 04:00:00";"1002";"00059";"243.53";"3600";"3600";"0";"0"
"2100";"26.06.2018 05:00:00";"1002";"00059";"244.48";"3600";"3600";"0";"0"
"2100";"26.06.2018 06:00:00";"1002";"00059";"243.48";"3600";"3600";"0";"0"
"2100";"26.06.2018 07:00:00";"1002";"00059";"244.24";"3600";"3600";"0";"0"
"2100";"26.06.2018 08:00:00";"1002";"00059";"243.59";"3600";"3600";"0";"0"
"2100";"26.06.2018 09:00:00";"1002";"00059";"244.43";"3600";"3600";"0";"0"
"2100";"26.06.2018 10:00:00";"1002";"00059";"243.52";"3600";"3600";"0";"0"
"2100";"26.06.2018 11:00:00";"1002";"00059";"244.45";"3600";"3600";"0";"0"
"2100";"26.06.2018 12:00:00";"1002";"00059";"243.64";"3600";"3600";"0";"0"
"2100";"26.06.2018 13:00:00";"1002";"00059";"244.65";"3600";"3600";"0";"0"
"2100";"26.06.2018 14:00:00";"1002";"00059";"243.58";"3600";"3600";"0";"0"
"2100";"26.06.2018 15:00:00";"1002";"00059";"245.16";"3600";"3600";"0";"0"
"2100";"26.06.2018 16:00:00";"1002";"00059";"243.44";"3600";"3600";"0";"0"
"2100";"26.06.2018 17:00:00";"1002";"00059";"245.26";"3600";"3600";"0";"0"
"2100";"26.06.2018 18:00:00";"1002";"00059";"243.95";"3600";"3600";"0";"0"
"2100";"26.06.2018 19:00:00";"1002";"00059";"245.08";"3600";"3600";"0";"0"
"2100";"26.06.2018 20:00:00";"1002";"00059";"243.14";"3600";"3600";"0";"0"
"2100";"26.06.2018 21:00:00";"1002";"00059";"243.43";"3600";"3600";"0";"0"
"2100";"26.06.2018 22:00:00";"1002";"00059";"244.48";"3600";"3600";"0";"0"
```

Note

Where applicable, as in Germany, use a comma as the decimal separator for the operating system.

Otherwise use a period as the decimal separator.

The figure above uses a period as the decimal separator. This file is therefore correct for non German-speaking operating systems.

9.5.4 BDATA_XML_Format

In Energy Manager you can export values in an "*.xml" file. You can import these values with the BDATA_XML format. Do not modify the "*.xml" files of Energy Manager Pro or the import will no longer work.

To assign values to a data point, enter the ID number of the values in the "Address" entry field when configuring the data point. The ID number for the first entry in the example below is "110357".

Note

Importing XML files with or without line breaks

If you wish to import an XML file with more than 65533 bytes, the XML file must be formatted with line breaks.

If the XML file does not contain any line breaks, a maximum of 65533 bytes of data is imported.

Example

The following figure shows a file with the required structure:

```
<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<!DOCTYPE bdata-export [
<!ELEMENT bdata-export (measurements, measurevalues) >
<!ATTLIST bdata-export
    id CDATA #REQUIRED
    from CDATA #REQUIRED
    to CDATA #REQUIRED
>
<!ELEMENT measurements (measurement)+ >
<!ELEMENT measurement (description, measurevalues) >
<!ELEMENT description (#PCDATA) >
<!ATTLIST measurement
   id CDATA #REQUIRED
   name CDATA #REQUIRED
   loggen CDATA #IMPLIED
   dapu-adr CDATA #IMPLIED
   ident CDATA #IMPLIED
>
<!ELEMENT measurevalues (val)+>
<!ELEMENT val (#PCDATA)>
<!ATTLIST val
    id CDATA #REQUIRED
    time CDATA #REQUIRED
    norntime CDATA #REQUIRED
    isdst CDATA #REQUIRED
    comp CDATA #IMPLIED
    value CDATA #REQUIRED
    int CDATA #IMPLIED
    dur CDATA #IMPLIED
    flag CDATA #IMPLIED
    korr CDATA #IMPLIED
    maxdate CDATA #IMPLIED
>
]>
<bdata-export id="110357' from='2018-01-01 00:00:00' to='2018-01-02 00:00:00">
<measurements>
<measurement id='110357' name='&#95;EL&#95;E&#95;7D&#95;Wetterstn&#95;Aussentemperatur' loggen='1'  dapu-adr='110357' ident='' >
<description>
EL&#95;E-7D Wetterstation Istwert Aussentemperatur
</description>
<measurevalues>
<val id='110357' time='2018-01-01 00:15:00' norntime='2018-01-01 00:15:00' isdst='false' comp='0' value='11.029' int='900' dur='900' flag='0' korr='0'/>
<val id='110357' time='2018-01-01 00:30:00' norntime='2018-01-01 00:30:00' isdst='false' comp='0' value='11.034' int='900' dur='900' flag='0' korr='0'/>
<val id='110357' time='2018-01-01 00:45:00' norntime='2018-01-01 00:45:00' isdst='false' comp='0' value='10.986' int='900' dur='900' flag='0' korr='0'/>
<val id='110357' time='2018-01-01 01:00:00' norntime='2018-01-01 01:00:00' isdst='false' comp='0' value='10.986' int='900' dur='900' flag='0' korr='0'/>
```

9.5.5 DALOG

The DALOG system is a data storage system which imports values as a "*.txt" file. The structure will look as follows:

The address identifiers of the individual data points are found in the first line:

Address label 1@ Address label 2@ Address label 3@ Address label 4

A "1" stands for each data point in the second line:

1@1@1@1

From the third line, the time stamps are listed with the respective values:

timestamp@Value1@Value2@Value3@Value4

To assign values to a data point, enter the address identifier of the values in the "Address" entry field when configuring the data point.

The separator in this case is "@". The following structure is required for the time stamp: YYYY.MM.DD hh:mm:ss

Example

The following figure shows a file with the required structure:

```
1  DE00722531628HSAOOOOOOOWKLAF01OOO_1-81:1.9.1@datapoint_address_2@datapoint_address_3@datapoint_address_4
2  1@1@1@1
3  2018.02.01 00:00:00@654@@54.2@
4  2018.03.01 00:00:00@123.456@523.6@42@62.5
5  2018.03.31 23:00:00@863@@52.3@41
6  2018.04.30 23:00:00@52@46.8@@84.7
7  2018.05.31 23:00:00@87@17.1@198.78@
8  2018.06.30 23:00:00@25.1@422@56@21.3
9  2018.07.31 23:00:00@89.6@422@56@21.3
10 2018.08.31 23:00:00@32.4@523.6@42@62.5
11 2018.09.30 23:00:00@213@@52.3@41
12 2018.11.01 00:00:00@52@152@@84.7
13 2018.12.01 00:00:00@87@3@198.78@
14 2019.01.01 00:00:00@211@51@56@2
```

9.5.6 EXCELCSV

You can import CSV files from Excel with the EXCELCSV format.

In the EXCEL file, the time stamps of the values are listed in the first column (column A). The format of the time stamp is the German time and date format: DD.MM.YYYY hh:mm

You can choose any header of the column with the time stamps.

From the second column, the values for a time stamp are entered. Every column represents a data point. The address label for the values is the column header in the first line.

To assign values of a column to a data point, enter the address label of the values in the "Address" entry field when configuring the data point.

The separator is the semicolon. However, the separator is only visible outside of Excel.

Example

The following figure shows a file with the required structure:

	A	B
1	Zeitstempel	EXCELCSV_01
2	28.03.2018 00:15	25
3	28.03.2018 00:30	26
4	28.03.2018 00:45	27
5	28.03.2018 01:00	28
6	28.03.2018 01:15	29
7	28.03.2018 01:30	30
8	28.03.2018 01:45	31
9	28.03.2018 03:00	32
10	28.03.2018 03:15	33
11	28.03.2018 03:30	34
12	28.03.2018 03:45	35

9.5.7 EXCELCSVNODST

The difference between the formats EXELCSV and EXCELCSVNODST is the time basis. The time stamps in this format are consistently requested in UTC+1 (standard time).

Energy Manager adds an hour with this format for representation in daylight saving time.

The structure of the file is identical to that of a file in the EXCELCSV format.

Example

The following figure shows a file with the required structure:

	A	B
1	Zeitstempel	EXCELCSV_01
2	28.03.2018 00:15	25
3	28.03.2018 00:30	26
4	28.03.2018 00:45	27
5	28.03.2018 01:00	28
6	28.03.2018 01:15	29
7	28.03.2018 01:30	30
8	28.03.2018 01:45	31
9	28.03.2018 03:00	32
10	28.03.2018 03:15	33
11	28.03.2018 03:30	34
12	28.03.2018 03:45	35

9.5.8 FREJA

The FREJA system is an energy accounting system. The system uses the data format "*.txt". The required structure of the file is described in the following table:

Column	Column header	Contents	Example
1	Year	Year value of the timestamp	2018
2	Month	Month value of the timestamp	03
3	Day	Daily value of the timestamp	28
4	Hour	Hour value of the time stamp	09
5	Minute	Minute value of the timestamp	45
6	TAGname	Address label	HQK_FJV_ATOF_LEV_EGI_1M
7	Unit	Unit of the value	MWh
8	Value	Value of the entry	200

Columns 9 and 10 with the column headers "Quality" and "Remark" are not used by Energy Manager.

The separator field between the columns is a tabulator. Import is only possible with correct column headers.

To assign values to a data point, enter the address label of the values in the "Address" entry field when configuring the data point.

Example

The following figure shows a file with the required structure:

```
1  Year    Month   Day Hour    Minute  TAGname Unit    Value   Quality Remark
2  2018    03  28  00  15  HQK_FJV_ATOF_LEV_EGI_1M MWh 200
3  2018    03  28  00  30  HQK_FJV_ATOF_LEV_EGI_1M MWh 200
4  2018    03  28  00  45  HQK_FJV_ATOF_LEV_EGI_1M MWh 200
5  2018    03  28  01  00  HQK_FJV_ATOF_LEV_EGI_1M MWh 200
6  2018    03  28  01  15  HQK_FJV_ATOF_LEV_EGI_1M MWh 200
7  2018    03  28  01  30  HQK_FJV_ATOF_LEV_EGI_1M MWh 200
8  2018    03  28  01  45  HQK_FJV_ATOF_LEV_EGI_1M MWh 200
9  2018    03  28  03  00  HQK_FJV_ATOF_LEV_EGI_1M MWh 200
10 2018    03  28  03  15  HQK_FJV_ATOF_LEV_EGI_1M MWh 200
11 2018    03  28  03  30  HQK_FJV_ATOF_LEV_EGI_1M MWh 200
12 2018    03  28  03  45  HQK_FJV_ATOF_LEV_EGI_1M MWh 200
13 2018    03  28  04  00  HQK_FJV_ATOF_LEV_EGI_1M MWh 200
```

9.5.9 TextValue

You can import texts with this format.

The TextValue format has the following structure:

Time stamp;address label;text

The German time and date format is requested for the time stamp: DD.MM.YYYY hh:mm

The semicolon sign is the separator.

Example

The following figure shows a file with the required structure:

```
1  01.02.2018 00:15;ENG2;engine 2 failure
2  03.02.2018 00:00;ENG2;hotwater failure
3  05.03.2018 01:00;engine_1;plant 2 OK again
```

9.5.10 ZenOn

The ZenOn system is a system which saves values in a "*txt" file in CSV format. The required structure of the "*.txt" file is described in the following table:

Column	Contents	Example
1	Address label	H2_UYC01_CT001
2	Value of the entry	8.6
3	Standard or daylight saving time	SPONT WINTER
4	Date of the timestamp	27 January 2018
5	Time of the timestamp	01:00:00

Example

The following figure shows a file with the required structure:

```
1  H2_UYC01_CT001_YQ01;8.6;SPONT WINTER ;27.01.18;01:00:00
2  H2_UYC01_CT001_YQ01;8.6;SPONT WINTER ;27.01.18;02:00:00
3  H2_UYC01_CT001_YQ01;8.5;SPONT WINTER ;27.01.18;03:00:00
4  H2_UYC01_CT001_YQ01;8.7;SPONT WINTER ;27.01.18;04:00:00
5  H2_UYC01_CT001_YQ01;8.5;SPONT WINTER ;27.01.18;05:00:00
6  H2_UYC01_CT001_YQ01;8.6;SPONT WINTER ;27.01.18;06:00:00
7  H2_UYC01_CT001_YQ01;8.5;SPONT WINTER ;27.01.18;07:00:00
```

9.6 Log files

The log files for all components except the tasks are stored in the "Installation directory\EnMPRO\GUI\mcl\trace".

The log files for the tasks are stored in the "Installation directory\EnMPRO\GUI\Logdateien".

9.6.1 Kernel

Structure of the messages

All messages in the kernel log file are structured as follows: **Date|Time|Number: Alarm**

The type of message is expressed by the number:

Number	Message type
1000	Information
2000	Warning
3000	Error

Starting the kernel

When the kernel is started, the following informational message is written to the log file when booting starts:

```
20190211|10:26:02:455|1000: ----------------------------------------

20190211|10:26:02:455|1000: Email Error Reporter started with user
defined warning level 'Severe'. Sending all messages >= 'Severe' to
operator.

20190211|10:26:02:455|1000: MessageReporter Settings

20190211|10:26:02:455|1000: MaxSize = 50000

20190211|10:26:02:455|1000: Files = 1000

20190211|10:26:02:455|1000: LastUsed = 85

20190211|10:26:02:455|1000: BaseName =
C:\EnMPRO\GUI\mcl\trace\Kernel\tr

20190211|10:26:02:455|1000: ----------------------------------------

20190211|10:26:02:471|1000: B.Data Kernel v702.00.500.53, Feb 1 2019
(23:14:25)...

20190211|10:26:02:486|1000: © Siemens AG, 2016. All rights reserved.

20190211|10:26:02:486|1000: Start Update-Subscription Worker

20190211|10:26:02:486|1000: no external startup processes configured
```

```
20190211|10:26:02:486|1000: Update-Subscription: poll interval 10000

20190211|10:26:02:486|1000: Please note: Daylight saving is on.

We are in time zone "W. Europe Standard Time"/"W. Europe Daylight
Time", this means 3600 offset of GMT.

Please don't forget to get up on last Sun of Mar at 02:00:00 and
advance your clock 3600 secs.

Never mind, you can sleep longer on last Sun of Oct.

On that day at 03:00:00 time changes back.
```

The kernel is then configured. At each data point, the kernel checks whether "Log to DB" is active.

The following message is written to the log file:

```
20190211|10:26:04:049|1000: create dblog d_PAC2200_E_Wh_T1_imp
"5151" mode 1
```

The meaning of the important sections of the message can be found in the following table:

Message section	Meaning
create dblog	Check where "Log to DB" is enabled
d_PAC2200_e_Wh_T1_imp	Data point name
mode	Test result: • mode 0 = "Log to DB" not active • mode 1 = "Log to DB" active

The acquired values are only forwarded to the Acquisition service when "Log to DB" is enabled.

Once the kernel is ready to acquire values, the following message is written to the log file:

```
20181212|20:34:48:132|1000: sending all constants...
```

Kernel update event

When the configuration of a data point or interface changes, a kernel update event occurs.

The following events cause a kernel update event:

- Changing the cycle time of a data point or interface
- Changing the data point name
- Changing the data point address

When a kernel update event occurs, the following message is written to the log file:

```
20190205|10:34:38:755|1000: Kernel: Update Event received!
```

The kernel then checks at each data point, as described above, whether "Log to DB" is active.

After the check, the changed data point and the corresponding interface are re-configured. The following message is written to the log file:

```
20190205|10:34:41:220|1000: Begin - Reconfiguration ----------------
----------------

20190205|10:34:41:226|1000: Update Tags in Buffer (11026)

20190205|10:34:41:232|1000: changes -> Update-Tag (11027)

20190205|10:34:41:243|1000: Linkin 11027->11027 : Parameter 0
already linked. Replacing it.

20190205|10:34:41:248|1000: Create Tag: Id= 11027 (BufferId= 11026)

20190205|10:34:41:254|1000: OPC-UA: Configured cycle time for Opc-Ua
buffer 'EnergySuite_IO' is 60 seconds

20190205|10:34:41:299|1000: Lastio of '11027' at 12.12.2018 20:29:00

20190205|10:34:41:344|1000: OPC-UA: Last IO for buffer was at
12.12.2018 20:29:00

20190205|10:34:41:391|1000: OPC-UA: WARNING: Creation of address
'ns=1;s=v|EnS_EnergyArchive\Ventilation_power' for 11027 was not
successful

20190205|10:34:41:437|1000: End - Reconfiguration------------------
---------------
```

Information on acquisition components

If values are transferred from an acquisition component, the following message is written to the log file:

```
20190206|10:04:25:170|1000: 2019-02-06 10:04:25 0-02:13:55 7296600
908.102/s (0s) 82
```

The meaning of the important sections of the message can be found in the following table:

Message section	Meaning
2019-02-06 10:04:25	Time stamp of acquisition
0-02:13:55	Time since the acquisition runs in the following format: Days-Hours:Minutes:Seconds
7296600	Number of measured values acquired since the acquisition component has been running.
908.102/s	Number of acquired values per second
(0s)	Time elapsed since the last measured value acquisition.
82	Number of measured values in the cache

Number of inserted values

If values are forwarded to the acquisition service, the following message is written to the log file:

```
20190205|13:34:41:437|1000: 500 numeric records inserted (32000
bytes)
```

In this example, "500" is the number of transmitted values and "32000 bytes" is the amount of data.

Process ID

Each channel has a unique process ID. Each message about a channel starts with the process ID of the channel in square brackets, as in the following example:

```
20190708|13:40:51:237|1000: [12508] ModBusDevice: OpenDevice: TCP/IP
connection error
```

In this example, 12508 is the process ID.

If you filter the log file by the process ID in square brackets, only the messages of the corresponding channel are displayed.

Shutting down the kernel

When the kernel is stopped or restarted, the following message is written to the log file:

```
20190211|10:21:04:189|1000: Sending answer 'OK|Shutdown in progress'
to client ''

20190211|10:21:04:194|1000: exit DELTAMANAGER

20190211|10:21:04:198|1000: Final Service Shutdown entered...

20190211|10:21:04:199|1000: Kernel: Update - Termination Event
receive!

20190211|10:21:04:199|1000: Kernel: Update Thread stopped!

20190211|10:21:04:199|1000: Stop Requester (4632) (bfs_modbus) ...

20190211|10:21:04:204|1000: Requester (4632) (bfs_modbus) -
stopped...

20190211|10:21:04:222|1000: Shut down database logger...

20190211|10:21:04:222|1000: Total Number of records stored: 82628

20190211|10:21:04:253|1000: Database Insertion thread stopped.

20190211|10:21:04:675|1000: shutdown ORA listener

20190211|10:21:04:768|1000: InsertionThread done.

20190211|10:21:04:768|1000: Wait for shutdown of database inserter
succeeded

20190211|10:21:04:768|1000: flush
C:\EnMPRO\GUI\mcl\sink\Kernel\sink00000n.bfs ...

20190211|10:21:04:768|1000: Wrote 128 records (8192 bytes) to file
C:\EnMPRO\GUI\mcl\sink\Kernel\sink00000n.bfs

20190211|10:21:04:768|1000: File Flush thread stopped.

20190211|10:21:05:284|1000: Wait for file flush thread succeeded

20190211|10:21:05:284|1000: Shut down command listener...

20190211|10:21:05:284|1000: SubscriptionWorkerThread stopped!
```

9.6.2 Acquisition service

The acquisition service is part of the acquisition component. There are several log files for the acquisition service. The acquisition service consists of several components, for each of which there is a log file.

The following table shows the various log files of the acquisition service and the tasks of the corresponding components.

Log file	Tasks
Compression	Compression, plausibility, gap detection
Synchronization	Synchronization of the local database of acquisition with the SQL server on the application server.
Raw File Provider	"Raw" files
Sink Data Importer	Imported "SINK" files
Data Deletion	Utilization of the local database, deletion of synchronized data
Acquisition Component Host	Management of acquisition service components
SQL Provider	Access to the local database of the acquisition

9.6.2.1 Compression

The "Compression" log file has a maximum size of 150 KB. The maximum number of log files is 100.

Startup of the component

The compression component is initialized after the acquisition service is started. The number of compression levels for each data point is logged as follows in the "Compression" log file:

```
2019-02-11 11:13:05,412 [ 5] [COP] - INFO - Initialize Compression
Component

2019-02-11 11:13:05,450 [ 5] [COP] - INFO - Load registry
settings...

2019-02-11 11:13:05,482 [ 5] [COP] - INFO - Load BData DB
settings...

2019-02-11 11:13:05,714 [21] [(null)] - INFO - LoginAccepted:
UserInfo= User ADMIN (505)

2019-02-11 11:13:06,969 [ 5] [COP] - INFO - Component Initialization
finished...

2019-02-11 11:13:06,971 [14] [COP] - INFO - Waiting until initial
configuration synchronisation is finished...

2019-02-11 11:13:11,973 [14] [COP] - INFO - Starting initialization
of compression configuration...

2019-02-11 11:13:12,173 [38] [(null)] - INFO - (PLSI) -
PlausibilityResult worker process started.

2019-02-11 11:13:12,178 [14] [COP] - INFO - Build Measurement list
```

```
2019-02-11 11:13:13,333 [14] [COP] - INFO - (SINK) - Cycle for open
sink data recalculation : 30000 [msec]

2019-02-11 11:13:13,480 [14] [COP] - INFO - [5621] - Compression
configuration ended. Measurement contains 3 compression levels to
calculate.

2019-02-11 11:13:13,491 [14] [COP] - INFO - [5623] - Compression
configuration ended. Measurement contains 3 compression levels to
calculate.

2019-02-11 11:13:13,507 [14] [COP] - INFO - [5624] - Compression
configuration ended. Measurement contains 3 compression levels to
calculate.
```

Reception of the acquired measured values

When measured values are acquired, the reception of the values from the kernel is confirmed with the following entry in the "Compression" log file:

```
2019-02-06 11:21:58,231 [13] [(null)] - INFO - Handle MemoryStream
time : 06.02.2019 10:21:58 length : 32000 starting
```

Calculation of the compression (RCAL)

If a compressed interval is calculated, the interval and the number of compressed values are specified:

```
2019-02-14 10:30:14,031 [34] [(null)] - INFO - (RCAL) - [13230]* -
tCLevel:2105 ENDTIME:14.02.2019 09:30:00 in recalculation...

2019-02-14 10:30:14,048 [34] [(null)] - INFO - (RCAL) - [13230] 1
recalculation orders found

2019-02-14 10:30:14,059 [34] [(null)] - INFO - (RCAL) - [13230]
fCLevel:2100 tCLevel:2105 fDT:14.02.2019 09:15:00 tDT:14.02.2019
09:30:00 in recalculation...

2019-02-14 10:30:14,138 [34] [(null)] - INFO - (RCAL) - [13230] -
467 msjoValues for fCLevel:2100 and range: fDT:14.02.2019 09:15:00
tDT:14.02.2019 09:30:00 found

2019-02-14 10:30:14,183 [34] [(null)] - INFO - (RCAL) - [13230]** -
tCLevel:2105 ENDTIME:14.02.2019 09:30:00 (fDT:14.02.2019 09:15:00)
recalculation finished...
```

Calculation for the defined compression levels (CMPR)

If compressions calculated by the acquisition service were written to the local database, the write operation is logged in the log file as follows with the following message:

```
2019-02-14 10:30:06,210 [35] [(null)] - INFO - (CMPR) - 1 open items
to handle

2019-02-14 10:30:06,267 [35] [(null)] - INFO - 1 measurement numeric
values inserted successfully
```

The acquisition service calculates all compressions up to the "Daily values" compression level.

Checking the plausibility limits (PLSI)

If limits of a data point are active, the acquired measured values are checked. If a limit is violated, an alarm is generated. In this case, the following message is written to the log file:

```
2019-02-14 10:36:42,157 [37] [(null)] - INFO - (PLSI) [13230] -
Alarm Upper Limit violation: PlausiResult: ID:13230 DT:1550136970
DV:0,866025403852806 ST:1 ME:17 CL:2
```

Gap detection (PLSI)

If a gap occurs and an alarm is generated, this generation is logged in the log file as follows:

```
2019-02-14 12:17:00,196 [32] [(null)] - INFO - (PLSI) GAP violation:
PlausiResult: ID:13230 DT:1550142952 DV:0 ST:1 ME:12 CL:2
```

Changes in the tables of the local database (SYNC)

If one of the tables in the local database is changed, the following entry is written to the log file:

```
2019-02-14 10:12:05,175 [ 6] [(null)] - INFO - (SYNC) - TB_MESSUNG
changed: 1 items to Insert

2019-02-14 10:12:05,240 [ 6] [(null)] - INFO - [13230] - Compression
configuration ended. Measurement contains 3 compression levels to
calculate.

2019-02-14 10:12:05,255 [ 6] [(null)] - INFO - (SYNC) - [13230]
measurement Insert

2019-02-14 10:12:05,265 [ 6] [(null)] - INFO - (SYNC) -
TB_COMPRESSION changed: 2 items to Insert2019-02-14 10:22:08,387
[31] [(null)] - INFO - (SYNC) - TB_MESSUNG changed: 1 items to
Update2019-02-14 10:22:08,398 [31] [(null)] - INFO - (SYNC) -
[13230] measurement Update

2019-02-14 10:36:12,795 [17] [(null)] - INFO - (SYNC) - TB_MESSUNG
changed: 1 items to Update

2019-02-14 10:36:12,802 [17] [(null)] - INFO - (SYNC) - [13230]
measurement Update

2019-02-14 10:36:12,809 [17] [(null)] - INFO - (SYNC) -
TB_MESS_PLAUSI_LIMIT changed: 1 items to Insert
```

Shutting down the component

When the component is stopped, the following message is written to the log file:

```
2019-02-11 11:12:28,397 [12] [(null)] - INFO - Shutdown compression
component.

2019-02-11 11:12:28,398 [12] [(null)] - INFO - Stop initialization
process

2019-02-11 11:12:28,574 [48] [(null)] - INFO - (MSTR) - Exit
MeasurementStringData worker process.

2019-02-11 11:12:28,576 [47] [(null)] - INFO - (CMPR) - Exit
CompressionResult worker process.

2019-02-11 11:12:28,604 [41] [(null)] - INFO - (PLSI) - Exit
PlausibilityResult worker process.

2019-02-11 11:12:28,604 [46] [(null)] - INFO - (RCAL) - Exit
Recalculation worker process.
```

9.6.2.2 Raw file provider

This log file is usually empty.

A "Raw" file with the acquired measured values is created for each day and each data point.

If an error occurs while creating or writing the values, this is logged in this log file.

9.6.2.3 SinkDataImporter

If the kernel cannot forward the acquired values to the Acquisition service, the values are written to "SINK" files. SinkDataImporter checks if new "SINK" files are available once every minute.

If there are no new "SINK" files, the following message is written to the log file:

```
2019-02-06 11:11:17,507 [28] [(null)] - INFO - (DATASINNK) -
Datasink Importer SearchFolders -> C:\EnMPRO\mcl\sink\Kernel |
C:\EnMPRO\mcl\sink\FTP
2019-02-06 11:11:17,508 [28] [(null)] - INFO - (DATASINNK) - Watch
for new sink files -> C:\EnMPRO\mcl\sink\Kernel
2019-02-06 11:11:17,509 [28] [(null)] - INFO - (DATASINNK) - Watch
for new sink files -> C:\EnMPRO\mcl\sink\FTP
```

When there are new "SINK" files, the SinkDataImporter tries to import the new files.

In this case, the following message is written to the log file:

```
2019-02-06 11:12:17,972 [28] [(null)] - INFO - (DATASINNK) - Import
-> sink00024n.bfs succeeded
2019-02-06 11:12:17,974 [28] [(null)] - INFO - (DATASINNK) - Move
File from C:\EnMPRO\mcl\sink\Kernel\sink00024n.bfs to
C:\EnMPRO\mcl\sink\Kernel\Imported\20190206_111217973_sink00024n.bfs
```

The imported values are written to the "Raw" files.

9.6.2.4 Data deletion

An overview is written to the "Data deletion" log file once every minute. The overview shows the size of the local database and information about the deleted values of the local database. The following figure shows the overview:

(DATA_DEL) Database Name: | Size | Free | Used in MB | Usage in %

(DATA_DEL) BDataLocalDB | 2050.00 MB | 2045.40 MB | 4.60 | 10 GB max: 0.22

9.6.2.5 Acquisition component Host

This log file is empty by default.

If an error occurs when initializing components of the acquisition service, this error is logged in the log file.

9.6.2.6 SQL provider

This log file is empty by default.

If it is not possible to access to the local database, a corresponding error message is written to the log file.

9.6.3 Calculation service

9.6.3.1 Calculation service

The calculation service is part of the application server. There are several log files for the calculation service. The calculation service consists of several components, for each of which there is a log file.

The following table shows the various log files of the acquisition service and the tasks of the corresponding components.

Log file	Tasks
Recalculation	Calculation and recalculation of compressions and data points
MEVA calculation	Calculation of MEVAs/KPIs
Counter calculation	Calculation of counter differences of acquired values
Machine calculation	Calculation of the consumers
Calculation component host	Management of calculation service components

9.6.3.2 Recalculation

The "Recalculation" log file is for messages related to the compression of the acquired measured values. The log file has a maximum size of 151 KB. The maximum number of log files is 100.

Calculation of compressions (RCAL)

If a compressed interval is calculated by the Acquisition service, the interval and the number of compressed values are specified:

```
2019-02-14 12:31:34,348 [31] [(null)] - INFO - (RCAL) - [9887] 1
recalculation orders found
```

```
2019-02-14 12:31:34,352 [31] [(null)] - INFO - (RCAL) - [9887]
fCLevel:2105 tCLevel:2110 fDT:23.11.2019 02:00:00 tDT:23.11.2019
03:00:00 in recalculation...
```

```
2019-02-14 12:31:34,367 [31] [(null)] - INFO - (RCAL) - [9887] - 4
msjoValues for fCLevel:2105 and range: fDT:23.11.2019 02:00:00
tDT:23.11.2019 03:00:00 found
```

```
2019-02-14 12:31:34,378 [31] [(null)] - INFO - (RCAL) - [9887]** -
tCLevel:2110 ENDTIME:23.11.2019 03:00:00 (fDT:23.11.2019 02:00:00)
recalculation finished...
```

Retroactive billing of derived data points (DCAL)

When a derived data point is re-calculated, the interval and the number of compressed values is specified:

```
2019-03-12 12:17:00,582 [39] [(null)] - INFO - (DCAL) - ## Begin
automatic recalculation of derived recalculation entrys...

2019-03-12 12:17:00,587 [39] [(null)] - INFO - (DCAL) - Search for
open derived datapoints to (re)calculate

2019-03-12 12:17:00,623 [39] [(null)] - INFO - (DCAL) - 140 open
derived datapoints to (re)calculate

2019-03-12 12:17:00,629 [39] [(null)] - INFO - (DCAL) - [13732] -
Autom. Calculate f:12/31/2018 11:00:00 PM t:3/11/2019 11:00:00 PM

2019-03-12 12:17:01,016 [39] [(null)] - INFO - (DCAL) - [13733] -
Autom. Calculate f:12/31/2018 11:00:00 PM t:3/11/2019 11:00:00 PM

2019-03-12 12:17:01,549 [39] [(null)] - INFO - (DCAL) - 140 open
derived measurement orders recalculated

2019-03-12 12:17:01,554 [39] [(null)] - INFO - (DCAL) - ## End
automatic recalculation of derived recalculation entrys...
```

Substitute values (REPV)

The Calculation service cyclically checks whether new gaps must be filled and fills these gaps if necessary. For each cyclic check for missing replacement values, an entry is written to the log file:

```
2019-02-14 13:52:31,762 [35] [(null)] - INFO - (REPV) - Missing Gaps
filled for 13235; set last corr timestamp to 14.02.2019 12:51:00
```

Extrapolation and interpolation (EXPA)

The Calculation service cyclically checks whether new interpolations or extrapolations must be calculated and calculates these interpolations and extrapolations. For each cyclic check for missing interpolations and extrapolations, an entry is written to the log file:

```
2019-02-14 14:03:23,110 [37] [(null)] - INFO - (EXPA) - ** Begin
search of complevel configuration for expansion...

2019-02-14 14:03:23,129 [37] [(null)] - INFO - (EXPA) - Found 0 rows
to check for expansion

2019-02-14 14:03:23,135 [37] [(null)] - INFO - (EXPA) - ** End
search for expansion values...

2019-02-14 14:03:23,140 [37] [(null)] - INFO - (EXPA) - ** Begin
search of complevel configuration for interpolation...

2019-02-14 14:03:23,158 [37] [(null)] - INFO - (EXPA) - Found 0 rows
to check for interpolation

2019-02-14 14:03:23,164 [37] [(null)] - INFO - (EXPA) - ** End
search for interpolation values
```

Calculation of compressions on the application server (NLCO)

With the following exceptions, the Acquisition service calculates all compressions up to daily values. If values are entered in a matrix or values are transferred directly to the SQL server (compression of acquisition values to acquisition values), the Calculation service calculates the corresponding compressions. The Calculation service cyclically checks whether a calculation of such compressions is available:

```
2019-02-14 13:52:39,485 [36] [(null)] - INFO - (NLCO) - Check
compression level: 2120

2019-02-14 13:52:39,505 [36] [(null)] - INFO - (NLCO) - Check
compression level: 2105

2019-02-14 13:52:39,538 [36] [(null)] - INFO - (NLCO) - Check
compression level: 2110

2019-02-14 13:52:39,561 [36] [(null)] - INFO - (NLCO) - Check
compression level: 2101
```

In the same interval, the Calculation service checks the counter value filter:

```
2019-02-14 13:47:52,365 [36] [(null)] - INFO - (NLCO) - Start
Counter filter check...

2019-02-14 13:47:52,624 [36] [(null)] - INFO - (NLCO) - Update 14
compression until dates

2019-02-14 13:47:52,691 [36] [(null)] - INFO - (NLCO) - End of
Counter filter check...
```

Automatic compression

ACOP messages indicate the number of compression intervals for which a recalculation is due. When the recalculation of a compression interval is pending, a RCAL message is written to the log file.

```
2019-02-14 14:03:32,912 [32] [(null)] - INFO - (ACOP) - Search for
pending compression calculation...

2019-02-14 14:03:32,949 [32] [(null)] - INFO - (ACOP) - No pending
automatic compressions found

2019-02-14 14:03:32,956 [32] [(null)] - INFO - (ACOP) - Search for
past changes to recalculate compression calculation...

2019-02-14 14:03:33,901 [32] [(null)] - INFO - (ACOP) - No pending
past changes recalculations found
```

9.6.3.3 MEVA calculation

If the calculation of a MEVA/KPI is triggered, a message is written to this log file.

The following objects can trigger the calculation of a MEVA/KPI :

- Report
- Chart
- Dashboard
- Derived data point

9.6.3.4 Counter calculation

If values of a counter are entered directly via the matrix, the Calculation service calculates the counter differences. The Calculation service cyclically checks whether calculation counter differences are available. The number of counter differences the Calculation service calculates is written to this log file:

```
2019-02-11 11:43:36,458 [35] [(null)] - INFO - (CRCL) - ** Begin
search for open counter recalculation...

2019-02-11 11:43:36,473 [35] [(null)] - INFO - (CRCL) - Cleanup of
closed counter recalculation items performed successfully

2019-02-11 11:43:36,475 [35] [(null)] - INFO - (CRCL) - Read counter
recalculation rows to handle

2019-02-11 11:43:36,506 [35] [(null)] - INFO - (CRCL) - Calcuation
ended; no values for DB saving calculated

2019-02-11 11:43:36,516 [35] [(null)] - INFO - (CRCL) - Counter
recalc ended; Update 0 recalc items in DB

2019-02-11 11:43:36,517 [35] [(null)] - INFO - (CRCL) -
intMainObjektReaderCnt: 0

2019-02-11 11:43:36,518 [35] [(null)] - INFO - (CRCL) - 0 open
counter recalculation items merged

2019-02-11 11:43:36,519 [35] [(null)] - INFO - (CRCL) - ** End
search for open counter recalculation...
```

9.6.3.5 Machine calculation

The calculation of consumers is recorded in the "Machine calculation" log file.

9.6.3.6 Calculation component host

The Calculation component host component manages the components of the Report service.

If an error occurs when initializing components of the Acquisition service, this error is recorded in the log file.

Otherwise this log file is empty.

9.6.4 Report Server

The server of the Report service is on the same system as the SQL server.

The reporting service performs the following tasks:

- Report generation
- Conversion of EXEL files into PDF files
- Sending reports
- Saving reports
- Printing reports

The "Report Server" log file has a maximum size of 200 KB. The maximum number of log files is 1000.

Starting a report

When a report is started manually or automatically, the actions are logged during report generation.

The main actions are as follows:

- Loading the template
- Filling the template
- Executing macros

Report automation

The following automated actions are logged:

- Sending the report
- Saving the report
- Print the report

9.6.5 MindUpload

The "MindUpload" log file has a maximum size of 121 KB.

A new log file is created for each day.

The following events are logged in this log file:

- Onboarding

  The onboarding of the Energy Manager in the MindSphere is recorded in this log file.

  If onboarding does not work, an error message is written to the log file.

- Data transfer

  The number of uploaded values is written to the log file for each data transfer cycle to MindSphere.

9.6.6 Tasks

When a task is executed, a "Tasks" log file is created. The log file consists of the following three entries:

```
2019-01-16 10:19:04,892 - INFO - Start Task "Export measurement
values" for Node "Export values as xml_h_Local_PC" (NodeID: 4737).
```

This entry enables you to find which task is executed.

```
2019-01-16 10:19:05,683 - INFO - Export file
"Export_000004737_20190114000000_20190116000000.xml" written.
```

This entry contains the name of the file with the exported values.

```
2019-01-16 10:19:05,740 - INFO - End Task after runtime of
00:00:02.100: 3 entries have been exported.
```

This entry enables you to find the time in which the task was executed and the number of exported values.

9.7 Cipher Suites

If you are hosting the web server yourself, do not configure insecure connections.

Configure the connection with a Cipher Suite from the following list. Prioritize a Cipher Suite with a security rating of 5 over a Cipher Suite with a security rating of 4.

List of recommended Cipher Suites

Cipher Suites are registered in TLS up to version 1.2 for the Internet Assigned Numbers Authority (IANA). The following table is based on the Cipher Suites registered with IANA and has been extended with a Siemens security rating. The following table lists only Cipher Suites that have a security rating of at least 4.

Cipher Suite	Value for IANA	Siemens security assessment
TLS_RSA_WITH_AES_128_CBC_SHA256	0x00, 0x3C	4
TLS_RSA_WITH_AES_256_CBC_SHA256	0x00, 0x3D	4
TLS_DH_DSS_WITH_AES_128_CBC_SHA256	0x00, 0x3E	4
TLS_DH_RSA_WITH_AES_128_CBC_SHA256	0x00, 0x3F	4
TLS_DHE_DSS_WITH_AES_128_CBC_SHA256	0x00, 0x40	5
TLS_DHE_RSA_WITH_AES_128_CBC_SHA256	0x00, 0x67	5
TLS_DH_DSS_WITH_AES_256_CBC_SHA256	0x00, 0x68	4
TLS_DH_RSA_WITH_AES_256_CBC_SHA256	0x00, 0x69	4
TLS_DHE_DSS_WITH_AES_256_CBC_SHA256	0x00, 0x6A	5
TLS_DHE_RSA_WITH_AES_256_CBC_SHA256	0x00, 0x6B	5
TLS_RSA_WITH_AES_128_GCM_SHA256	0x00, 0x9C	4
TLS_RSA_WITH_AES_256_GCM_SHA384	0x00, 0x9D	4
TLS_DHE_RSA_WITH_AES_128_GCM_SHA256	0x00, 0x9E	5
TLS_DHE_RSA_WITH_AES_256_GCM_SHA384	0x00, 0x9F	5
TLS_DH_RSA_WITH_AES_128_GCM_SHA256	0x00, 0xA0	4
TLS_DH_RSA_WITH_AES_256_GCM_SHA384	0x00, 0xA1	4
TLS_DHE_DSS_WITH_AES_128_GCM_SHA256	0x00, 0xA2	5
TLS_DHE_DSS_WITH_AES_256_GCM_SHA384	0x00, 0xA3	5
TLS_DH_DSS_WITH_AES_128_GCM_SHA256	0x00, 0xA4	4
TLS_DH_DSS_WITH_AES_256_GCM_SHA384	0x00, 0xA5	4
TLS_RSA_WITH_CAMELLIA_128_CBC_SHA256	0x00, 0xBA	4
TLS_DH_DSS_WITH_CAMELLIA_128_CBC_SHA256	0x00, 0xBB	4
TLS_DH_RSA_WITH_CAMELLIA_128_CBC_SHA256	0x00, 0xBC	4
TLS_DHE_DSS_WITH_CAMELLIA_128_CBC_SHA256	0x00, 0xBD	4
TLS_DHE_RSA_WITH_CAMELLIA_128_CBC_SHA256	0x00, 0xBE	4
TLS_RSA_WITH_CAMELLIA_256_CBC_SHA256	0x00, 0xC0	4
TLS_DH_DSS_WITH_CAMELLIA_256_CBC_SHA256	0x00, 0xC1	4
TLS_DH_RSA_WITH_CAMELLIA_256_CBC_SHA256	0x00, 0xC2	4

TLS_DHE_DSS_WITH_CAMELLIA_256_CBC_SHA256	0x00, 0xC3	5
TLS_DHE_RSA_WITH_CAMELLIA_256_CBC_SHA256	0x00, 0xC4	5
TLS_ECDHE_ECDSA_WITH_AES_128_CBC_SHA256	0xC0, 0x23	5
TLS_ECDHE_ECDSA_WITH_AES_256_CBC_SHA384	0xC0, 0x24	5
TLS_ECDH_ECDSA_WITH_AES_128_CBC_SHA256	0xC0, 0x25	4
TLS_ECDH_ECDSA_WITH_AES_256_CBC_SHA384	0xC0, 0x26	4
TLS_ECDHE_RSA_WITH_AES_128_CBC_SHA256	0xC0, 0x27	5
TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA384	0xC0, 0x28	5
TLS_ECDH_RSA_WITH_AES_128_CBC_SHA256	0xC0, 0x29	4
TLS_ECDH_RSA_WITH_AES_256_CBC_SHA384	0xC0, 0x2A	4
TLS_ECDHE_ECDSA_WITH_AES_128_GCM_SHA256	0xC0, 0x2B	5
TLS_ECDHE_ECDSA_WITH_AES_256_GCM_SHA384	0xC0, 0x2C	5
TLS_ECDH_ECDSA_WITH_AES_128_GCM_SHA256	0xC0, 0x2D	4
TLS_ECDH_ECDSA_WITH_AES_256_GCM_SHA384	0xC0, 0x2E	4
TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256	0xC0, 0x2F	5
TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384	0xC0, 0x30	5
TLS_ECDH_RSA_WITH_AES_128_GCM_SHA256	0xC0, 0x31	4
TLS_ECDH_RSA_WITH_AES_256_GCM_SHA384	0xC0, 0x32	4
TLS_ECDHE_ECDSA_WITH_CAMELLIA_128_CBC_SHA256	0xC0, 0x72	5
TLS_ECDHE_ECDSA_WITH_CAMELLIA_256_CBC_SHA384	0xC0, 0x73	5
TLS_ECDH_ECDSA_WITH_CAMELLIA_128_CBC_SHA256	0xC0, 0x74	4
TLS_ECDH_ECDSA_WITH_CAMELLIA_256_CBC_SHA384	0xC0, 0x75	4
TLS_ECDHE_RSA_WITH_CAMELLIA_128_CBC_SHA256	0xC0, 0x76	5
TLS_ECDHE_RSA_WITH_CAMELLIA_256_CBC_SHA384	0xC0, 0x77	5
TLS_ECDH_RSA_WITH_CAMELLIA_128_CBC_SHA256	0xC0, 0x78	4
TLS_ECDH_RSA_WITH_CAMELLIA_256_CBC_SHA384	0xC0, 0x79	4
TLS_RSA_WITH_AES_128_CCM	0xC0, 0x9C	4
TLS_RSA_WITH_AES_256_CCM	0xC0, 0x9D	4
TLS_DHE_RSA_WITH_AES_128_CCM	0xC0, 0x9E	5
TLS_DHE_RSA_WITH_AES_256_CCM	0xC0, 0x9F	5
TLS_ECDHE_ECDSA_WITH_AES_128_CCM	0xC0, 0xAC	5
TLS_ECDHE_ECDSA_WITH_AES_256_CCM	0xC0, 0xAD	5
TLS_ECDHE_RSA_WITH_CHACHA20_POLY1305_	0xCC, 0xA8	5
TLS_ECDHE_ECDSA_WITH_CHACHA20_POLY1305_	0xCC, 0xA9	5
TLS_DHE_RSA_WITH_CHACHA20_POLY1305_SHA256	0xCC, 0xAA	5

Key length

Use a recommended Cipher Suite with a recommended key length for the encryption algorithm.
The following table lists the recommended key lengths:

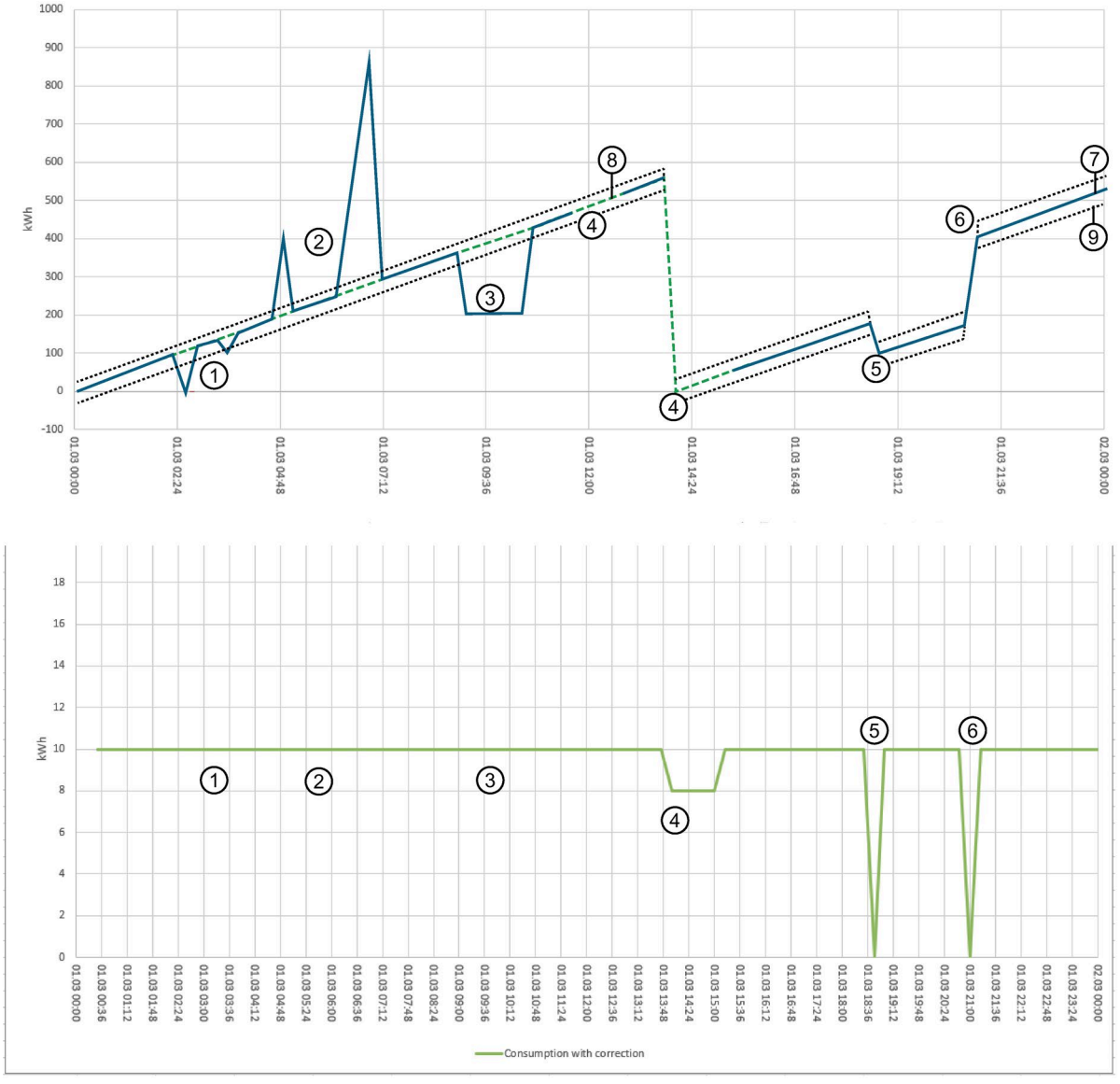
Algorithm	Minimum key length
Key length for signature key for certificates and key agreement	
ECDSA	250 bit
DSS	2000 - 3000 bit*
RSA	2000 - 3000 bit*
Key length for Diffe-Hellmann	
ECDH/ECDHE	250 bit
DHE	2000 - 3000 bit*

*Starting in 2023, use a key length of at least 3000 bits.

9.8 Counter value filtering

Energy Manager filters values of data points for which a counter is configured differently to values of other data points. You configure this filter at the configuration of the counter.

The following representation shows the possible error cases that are detected by the counter value filter and how they are corrected. A constant consumption of 10 kWh is used in this example.



① One to three negative deviations
② One to three positive deviations
③ Offset downwards with subsequent constant values
④ Gaps
⑤ Offset downwards
⑥ Offset upwards
⑦ Blue line: Counter values before counter value correction
⑧ Green, dashed line: Counter values after counter value correction
⑨ Black, dashed line: Upper and lower limit of the counter value that results from the consumption limits

Figure 9-1 Diagram of counter value filtering

Filtering options

- Counter value filtering

  Invalid counter values are deleted.

- Counter value difference filtering

  Consumption values that are outside of the valid range are corrected.

- Gap recognition

  Missing counter values filled in automatically and subsequent calculation of consumption.

The following table specifies through which criteria the different error cases are detected and how the error cases are corrected:

Error case	Detection of the error case	Correction of the error case
One to three negative deviations	Through counter value filtering or through the low limit of counter value difference filtering	With invalid counter values, the counter value is deleted and the resulting gap is filled in through linear interpolation. With invalid consumption values, the consumption value is deleted and the resulting gap is filled in through linear interpolation.
One to three positive deviations	Through the high limit of the counter value difference filtering	With invalid counter values, the counter value is deleted and the resulting gap is filled in through linear interpolation. With invalid consumption values, the consumption value is deleted and the resulting gap is filled in through linear interpolation.
Offset downwards with subsequent constant values	Counter value difference - lower limit and constant values	Correction of the constant values through linear interpolation. The number of constant values after the offset is not limited.
Gaps in the counter values	Gap recognition	If the counter value after the gap ≥ the counter value before the gap, the gap is filled in through linear interpolation. If the counter value after the gap < the counter value before the gap, a counter overflow is assumed. There are the two following overflow options: • With a cyclic (triggered) reset, interpolation takes place between the start value of the counter and the counter value after the gap. • With a normal overflow, interpolation takes place between the last value before the gap and the first value after the gap.
Offset of the counter values downwards	Counter value difference - lower limit and as a result increasing values	Correction of negative consumption to zero.
Offset of the counter values upwards	Counter value difference - upper limit and as a result increasing values	Correction of excessive consumption to zero.

Linear interpolation

Linear interpolation is used to fill in gaps. The duration of the gap is not limited.

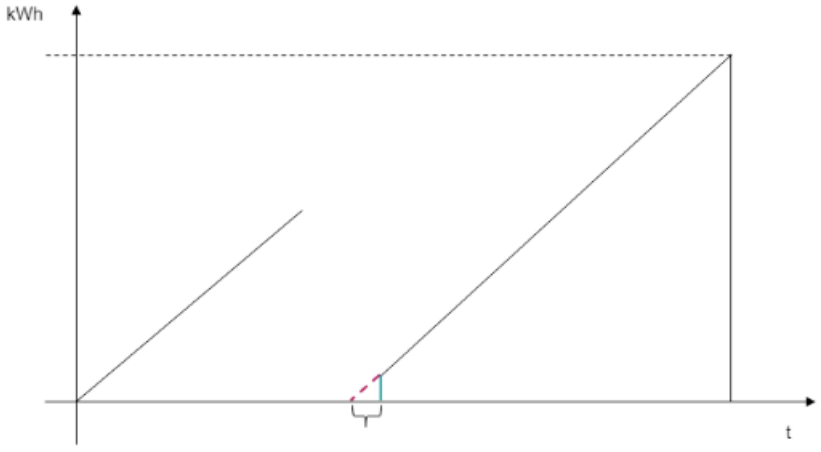
With linear interpolation, the counter value difference between the last valid counter value and the current counter value is calculated. This counter value difference is then divided by the number of intervals between the two values.

In the Energy Manager, a distinction is made between the following cases:

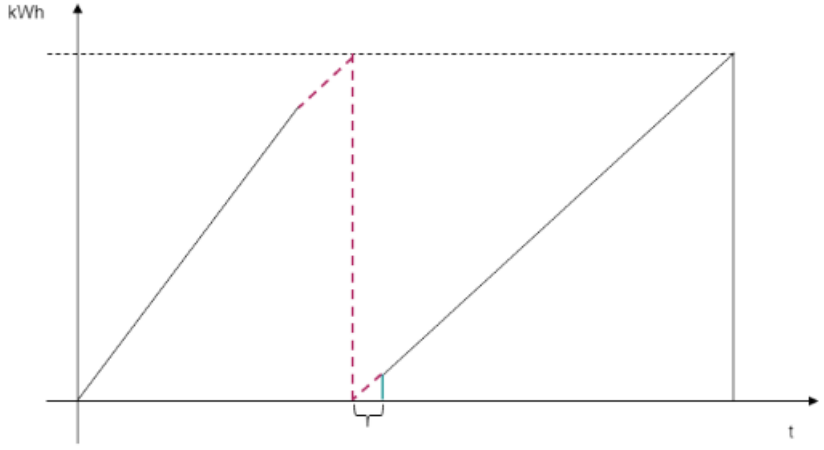
- Current counter value ≥ last valid counter value

  No overflow of the counter is assumed.
- Current counter value < last valid counter value

  An overflow of the counter is assumed. There are the two following overflow options:
  - Cyclic reset activated



  - Normal overflow



Note

Entry of counter values via the matrix

If you enter an invalid counter value in the matrix and the filters are activated, the entered value is removed and is not visible. Linear interpolation is applied with the input of the next value.

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