

Enersis

Centralized remote management software

User guide

Manual version 2.6 (2017-09)

Software version 3.16



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Document revision history

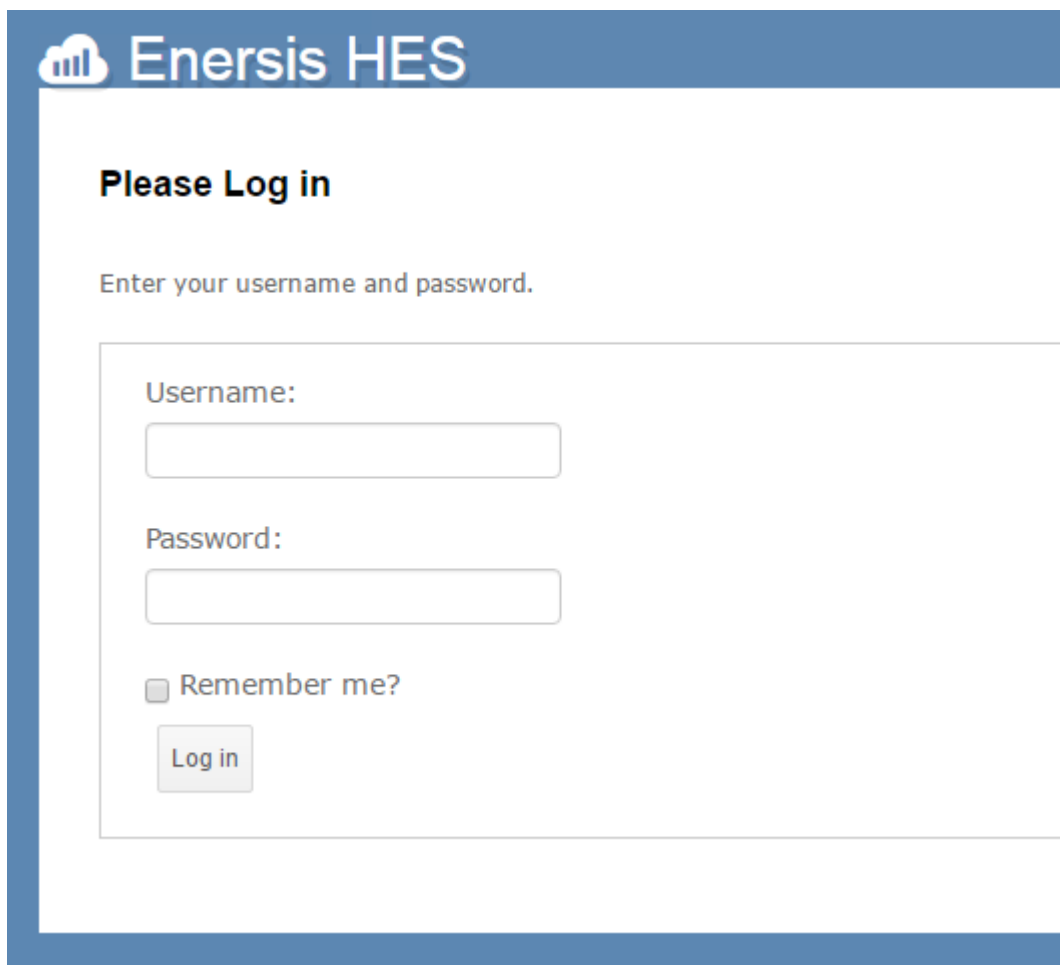
Version	Date	Revision history
2.0	2016-04-01	The second edition
2.1	2016-06-14	Added References to additional meters, modems documents, more detailed guides
2.2	2016-08-31	Added additional functionality: Parameter sets, statistic reports, user activity
2.4	2017-02-01	Added Reports page, repeat timer, user activity, parameter search descriptions
2.5	2017-03-01	Added remote control description, import tab description
2.6	2017-09	Added archive description

1 User Front-End overview

The System Energis HES accessed via open standard graphical Web user interface. In order to start using the system, user should enter URL of the Front-End into the browser.

1.1 Logging in

When the start screen appears in the browser, the user will have to enter the credentials. Then the main application window will show up.



Energis HES

Please Log in

Enter your username and password.

Username:

Password:

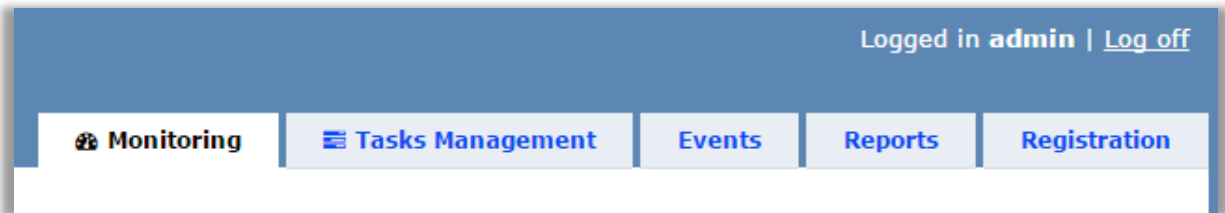
Remember me?

1.2 Main menu

The system accessed via tabs. They are positioned top of the screen. There are following tabs: *Monitoring, Task Management, Events, Reports, Registration, Archive, Reading*. Depending on the roles of the user some tabs might be visible or not: i.e. if the user's account has only one *System monitor* role assigned, the user will only see the *Monitoring* tab. The user with the *Administrator* role assigned will have the ability to access the entire system functionality.

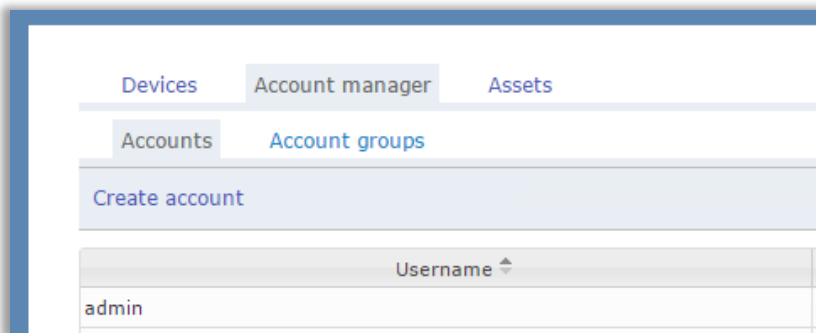
2 Account management

Account management presents a simple and straightforward user interface to create, modify and disable accounts. To manage the accounts, select **Registration** tab from the main group of tabs.



2.1 Accounts

The users displayed in the accounts tab. There you are able to manage available the users or create new ones.

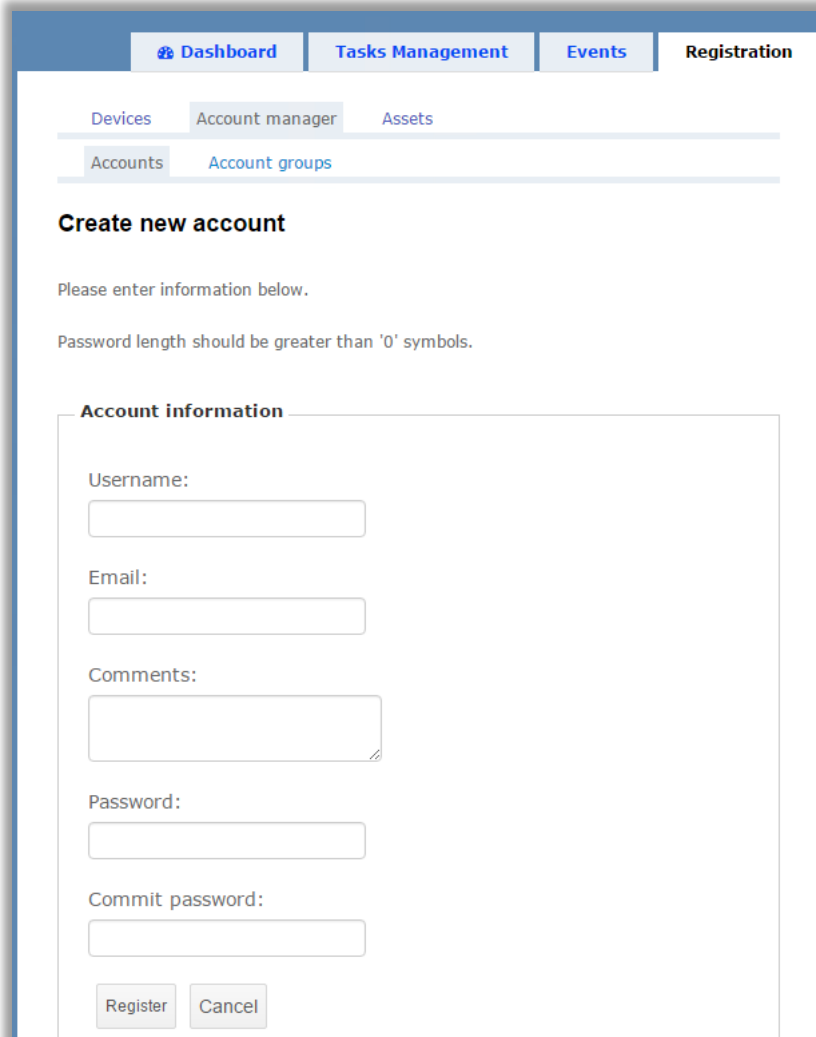


Create Account link on **Accounts** tab opens **Create New Account** form.

The table on the **Accounts** tab contains all the accounts created. To quickly find the user, use the filter functionality in the **Username** column. To modify password, email, add comments, disable or delete an existing account open it with a double-click. This will open an **Update Account** form.

2.2 Creating User Account

To **Create New User Account** just fill in the required information.



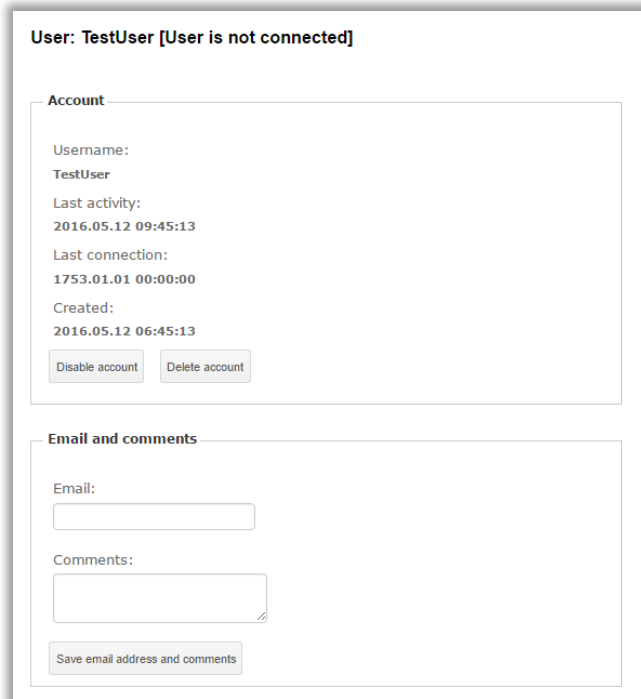
The screenshot shows a web application interface for creating a new user account. At the top, there is a navigation bar with tabs for 'Dashboard', 'Tasks Management', 'Events', and 'Registration'. Below this, there are sub-tabs for 'Devices', 'Account manager', and 'Assets'. Under 'Account manager', there are further sub-tabs for 'Accounts' and 'Account groups'. The main content area is titled 'Create new account' and contains the following elements:

- A heading: **Create new account**
- Instructions: 'Please enter information below.'
- Hint: 'Password length should be greater than '0' symbols.'
- A section titled **Account information** containing:
 - 'Username:' with a text input field.
 - 'Email:' with a text input field.
 - 'Comments:' with a text area.
 - 'Password:' with a text input field.
 - 'Commit password:' with a text input field.
- At the bottom of the form are two buttons: 'Register' and 'Cancel'.

Enter username, email, details and password. Then press **Register** button. Then you will see your newly created account in the **Accounts** tab.

2.3 Edit User Account

To edit user parameters such as an email address, password, comments double click the user or select user and press edit button on the bottom of the table. User's properties are edited as shown below:



The screenshot shows a web form titled "User: TestUser [User is not connected]". It is divided into two main sections: "Account" and "Email and comments".

Account section:

- Username: TestUser
- Last activity: 2016.05.12 09:45:13
- Last connection: 1753.01.01 00:00:00
- Created: 2016.05.12 06:45:13
- Buttons: "Disable account" and "Delete account"

Email and comments section:

- Email: [Text input field]
- Comments: [Text area]
- Button: "Save email address and comments"

This form used to disable, delete an account, change the password, assign or unassign the roles and edit account details.

Press **Save Changes** to save the details.

2.4 User activity

Every user's action is stored permanently in the logs and is available to audit in User activity screen. To see user activity screen, select (double click) the user. There is a list of actions on the bottom of the page with the following information: Time of the action, action type or name. If the action is task, the hyperlink generated to enter task page.

2.5 User Account groups

Not every user should see and control the system. Some users created only for monitoring purposes or just for following events. In order to differentiate user accounts by roles, go to Account groups under Account manager. User roles and properties are custom made to meet the customer needs.



Different roles for different situations might be added to this page by pressing **Create account group**. The default roles are for different system functionality, the administrator role gives the user privileges to all the roles.

Each role has properties that allow specific group parameters to be enabled or disabled depending on the system requirements. For example, role administrator has parameter **Meter RelaySwitching** which allows to enable or disable Meter relay controller for the user role. **Note!** In order to control tasks such as relay switch, the user must have permission to see the meters (meters form) and tasks (tasks management form).

 The image shows a configuration form titled 'Group 'test' parameters'. It is divided into three main sections:

- Features enabled:** This section is currently empty.
- Forms:** This section contains a list of checkboxes for various system features:
 - Dashboard
 - Modem Signal Quality
 - Tasks Management
 - Events
 - Reports
 - Meters
 - Controllers
 - Device groups
 - Parameter sets
 - Import
 - Accounts
 - Account groups
 - Firmware Images
 - Meter Lists
 - Meter Parameter Images
 - Controller Lists
- Miscellaneous:** This section contains one checkbox:
 - Mains Relay. Switch Command Is Allowed

 At the bottom of the form, there are three buttons: 'Save', 'Cancel', and 'Delete'.

If parameter is selected and saved, user will have the privilege to enable and disable meter relay switch through **Registration > Devices > Meters list**.

Additionally, different energy types and default parameter for Archive page selected for user group – checked elements are visible for the user in this group.

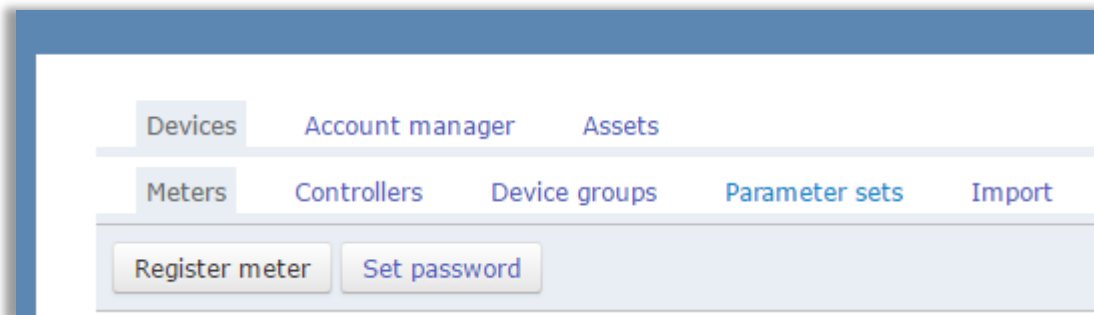
Default parameter

Profiled parameters

<input type="checkbox"/> Parameter	Min5	Min15	Min30	Min60	Day	Month	Total
<input type="checkbox"/> A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> A+	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> A-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> P	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/> P+	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/> P-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/> R+	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> R-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Q+	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/> Q-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/> U1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
<input type="checkbox"/> U2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
<input type="checkbox"/> U3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			

3 Devices management and assets

Devices management gives you an overview of all of the devices and their parameters, firmware and meter list updates and security credentials of the system. To manage the devices, choose **Registration > Devices** tab from the main tabs group.

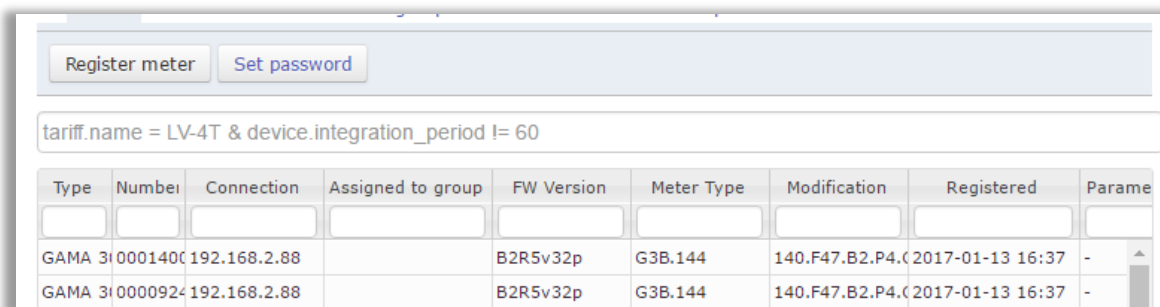


Devices tab gives access to:

- **Meters** tab to manage the metering devices
- **Controllers** tab to manage communication devices
- **Device groups** tab to add devices to groups
- **Parameter sets** tab lists all of the different parameter sets of the devices
- **Import** task allows import the new devices to the system

3.1 Meter management

Meter management tab is displayed below:



The **Meters** tab allows to register, modify or delete a meter and review meter configuration parameters. On the **Meters** tab you can see the table with all the meters and custom properties listed. To quickly find the meter use the **Filter** in the header of the column or parameter search field. **Take a note**, that parameter search field searches in the meters' parameters so prior search the device parameters must be read. The parameter search example is shown in the search field, where values can be equal (parameter = value) or not equal (parameter != value) and couple of parameters can be search by joining with & sign (parameter = A & parameter != B). Full parameter name must always be entered.

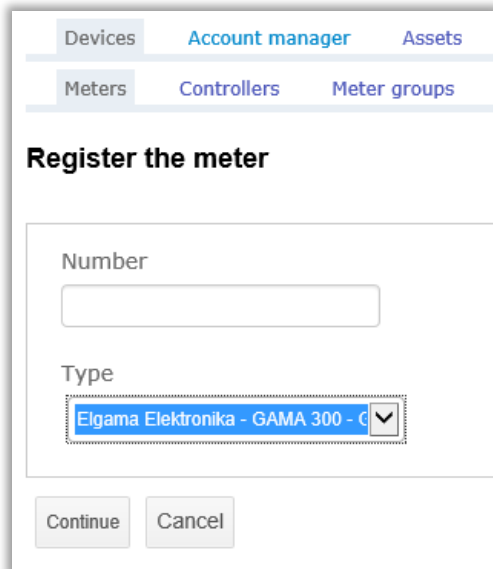
To register a new meter, press the **Register Meter** link.

In order to modify an already existing meter double-click it. This will open **Edit Meter Record** form.

In order to remove the meter from the system, select the meter in a table and press the button on the bottom **Delete**.

3.1.1 Meter registration

To register a new meter, fill in the vital meter details: meter address (number) and meter type. Please note, that these parameters cannot be changed later.



The screenshot shows a web interface for 'Account manager' with a 'Meters' tab selected. The form is titled 'Register the meter' and contains two input fields: 'Number' (a text box) and 'Type' (a dropdown menu). The dropdown menu is open, showing the selected option 'Elgama Elektronika - GAMA 300 - C'. At the bottom of the form are two buttons: 'Continue' and 'Cancel'.

Press continue to next step

Fill in the meter name (you could use the number or location of meter), meter type and energy transform ratios if necessary. Assign a meter to the data point, communication device and security credentials. Then press **Save** button. You will see newly registered meter in the **Meters** tab.

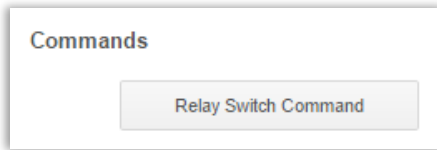
3.1.2 Meter parameters

Meter parameters and the name of the parameter set shown in the meter view. If the meter parameters readout done (using **Task Management**), all parameters available from the meter will be displayed in this tab as a read-only list and can be searched in the meters list of parameters sets. Parameters' properties and description may differ for different meters, the parameters specifications are described in document **Enersis HES Meters parameters**. **Note!** All searchable parameters are shown in **Parameter Set** page and can only be search by them, correct value to enter searching can also be checked in this window. Some parameters, such as passwords, clock and others are not searchable.

3.1.3 Relay Switch Command

If the meter has the possibility to turn on or off relay switch to cut out or return electricity flow, this parameter controlled from the meter's menu in **Registration**. This function is only available, when the user has role with **Meter RelaySwswitching** parameter enabled and forms **Task management** and **Meters** assigned. To ensure mass power disconnection, this

functionality used for one meter at a time: open selected meter from the meters list by double clicking it and pressing button **Relay switch Command**.



This will redirect to **Meter relay switching task** where additional credentials entered to change the relay state.

A form titled "Create Meter Relay Switching Task" with the following fields:

- Task Name: Meter Relay Switching Task
- Command: Off (dropdown menu)
- Username: (empty text box)
- Password: (empty text box)
- Repeat Count: 1 (text box)

 Buttons: Continue, Cancel

3.2 Communication Devices

Controllers tab allows you to review, register, modify or delete communication devices.

Register controller

device-name = MCL 5 IP GR1 & fw-version != 4.1.0.371

Type	Number	Connection	Port	Group	Modem Type	FW Version	Registered	Parameter set
MCL 5.10	DF59003	10.161.56.44	1234		MCL5.10 LV	3.26.19.369	2016-09-20 10:16	Parameters_20170
MCL 5.10	DF58003	10.161.187.188	1234		MCL 5.10 LV	3.26.19.369	2016-09-16 13:29	Parameters_20170

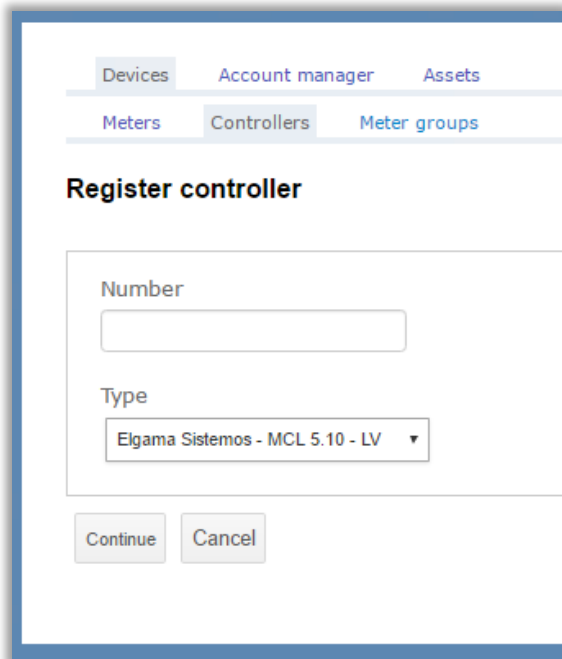
To quickly find the device use the **Filter** in the header of the column or parameter search field. **Take a note**, that parameter search field searches in the device's parameters so prior search the device parameters must be read. Both filters used at the same search. The parameter search example is shown in the search field, where values can be equal (parameter = value) or not equal (parameter != value) and couple of parameters can be

search by joining with & sign (parameter = A & parameter != B). Full parameter name must always be entered. To register **Communication Device** such as a data concentrator or modem, press on **Controllers** tab and **Register controller** form.

To modify already existing device, double-click it. This opens device management form. To remove the device from the system, select the device from the list and press **Delete** button.

3.2.1 Communication device registration

To register a new device, fill in the vital details: controller id (number) and type. Please note, that these parameters cannot be changed later.



The screenshot shows a web application interface with a navigation bar at the top containing 'Devices', 'Account manager', and 'Assets'. Below this is a sub-navigation bar with 'Meters', 'Controllers', and 'Meter groups'. The 'Controllers' tab is active. The main content area is titled 'Register controller' and contains a form with the following elements:

- A text input field labeled 'Number'.
- A dropdown menu labeled 'Type' with the selected value 'Elgama Sistemas - MCL 5.10 - LV'.
- Two buttons at the bottom: 'Continue' and 'Cancel'.

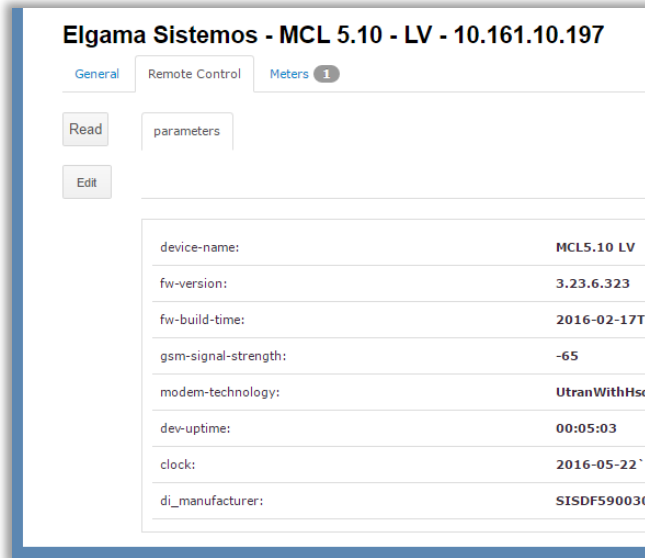
Press continue to the next step.

Fill in the name (you could use the number or location of device), communication type and communication addresses. Then press **Save** button. You will see newly registered modems in the **Controllers** tab.

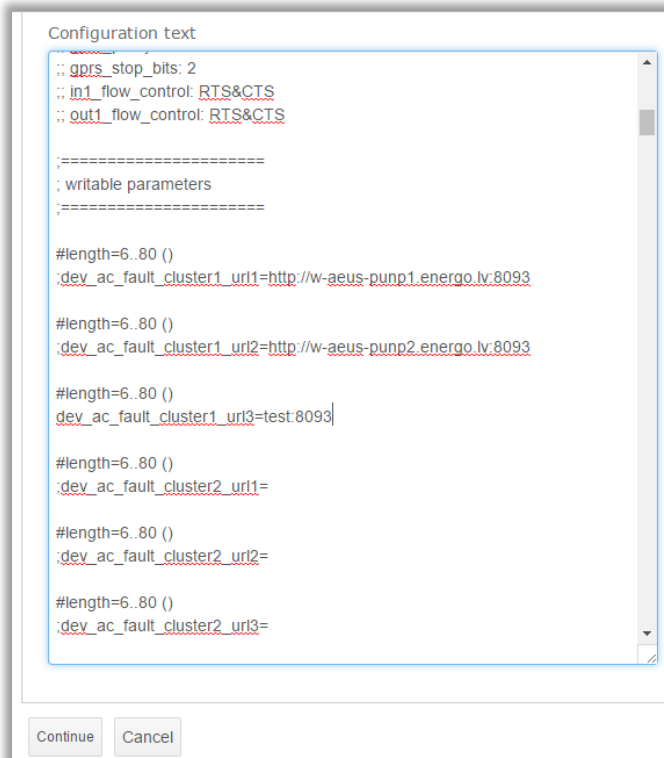
If some of the parameters, such as name, connection information changes in the device, it can also be changed in the system registration form, selecting the controller and pressing **edit** button.

3.2.2 Communication device remote control

Communication device availability, current parameters can be checked without storing the parameter data. Remote control function in Controllers page allows to read the controller's parameters, then edit them using EDIT button.



Pressing edit button, system creates modem configuration task for the current modem only. The list with red parameters provided in the task. Edit the values and remove semicolon from the beginning of the text to send the parameters to the modem. Press continue to finish the task. **Note!** Only the parameters without semicolon sent to the modem. The text that starts with semicolon considered a comment and skipped in the tasks.



3.2.3 Device authentication

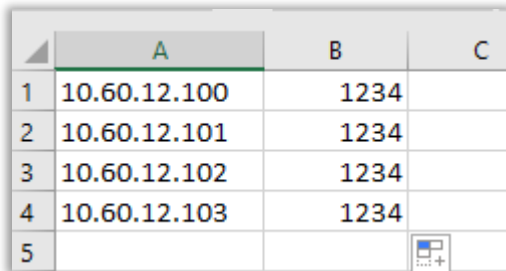
Some devices, like controller MCL 5.10 uses authentication method to allow communication from the server to modem's configuration system. There are two types of communication levels: Low Level Security (LLS) or High Level Security (HLS). By default, the system communicates with the devices using LLS mode so the encryption keys are not required for authentication.

If the modem is set to HLS level, the security level in the modem parameters should be set to HLS as well. Also, HLS authentication encryption keys must be entered. The key is 16 bytes (32 symbols) hexadecimal string. Authentication keys are entered in the modem configuration window.

3.3 Device groups

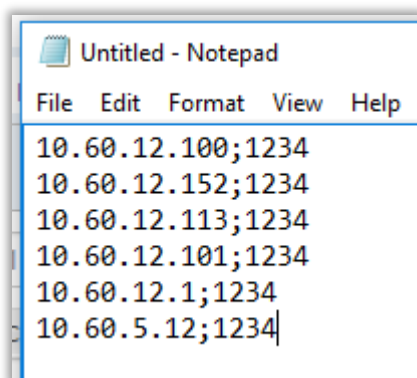
To differentiate devices in the lists, they are divided into groups. To create a group, use **Device groups** link and open **Create group** form. Any device is assigned to the group by editing meter in the **Devices** list, adding devices from the parameter search or adding the file with meter numbers or controllers IP addresses to the system. The file format is csv and devices are separated in column by enter button (new line).

Note! To import modems, please fill the excel file with information as shown bellow (ip address, port number) and save it as csv file format:



	A	B	C
1	10.60.12.100	1234	
2	10.60.12.101	1234	
3	10.60.12.102	1234	
4	10.60.12.103	1234	
5			

Modems CSV file example in excel

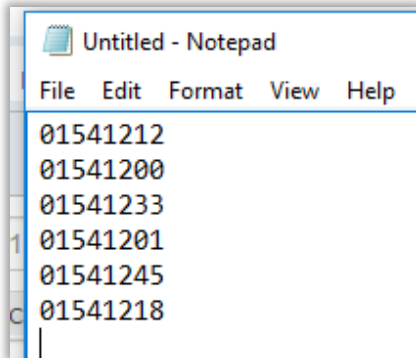


Modems CSV file example in text document notepad

To import meters, enter meter numbers in separate rows the excel file as in the example and save it as csv file format:

A	B	C
	01541212	
	01541213	
	01541214	
	01541215	

Meters CSV file example in excel



Meters CSV file example in text document notepad

Example file is provided with name **Import_Meters.csv**.

Open **Device groups**, select **Create meter group from list**. Window shows up with new group name and uploaded meters' lists.

Devices Account manager Assets
Meters Controllers Meter groups
Enter a group of meters
Name
Do not update these meters
Files List Name
Save Cancel

The meters from that list will be assigned to the new group with the name specified. **Note!** A group name cannot be added with spaces (if left, spaces will be removed). New meters' lists are added through **Assets** link. The device can belong to more than one group at a time.

3.4 Parameters, parameter sets and history

All parameters available for the device, are displayed in the **Parameters** tab as a read-only list. Parameters' properties and description may differ for different devices, the parameters specifications are specific for every firmware version, so the current parameters for the modem can be found in specific firmware file, for example MCL5_10_LV_3.23.18.338.csv, where **tag** is the parameter of the device, **val_list** is the list of the available values for selection and **description** is the explanation of the parameter. More information about parameters can be found in the MCL 5.10 LV user manual.

Note! All searchable parameters are shown in **Parameter Set** page and can only be search by them, correct value to enter searching can also be checked in this window. Some parameters, such as passwords, clock and others are not searchable.

When the parameters' readout done, the set of parameters belonging to the device (meter or modem) is stored to database with unique parameter set name.

When more devices have the same parameter set, they all use the same set name to identify configuration.

Available parameter sets (when at least one device has custom configuration set) are listed in the **Devices > Parameter sets** page along with the parameters values for specific parameter set and a list of devices having those parameters.

When some parameters changes in the device, after next device parameters readout the system check's if the parameter set values assigned to the device in the system are the same as the values in the device. If not, the new parameter set from the device is assigned. Also, the changes are registered to the devices parameter history page with the information of last parameter readout time, changed parameters and new parameter set name. If the same parameters set has been identified for other devices before, the system use that same parameters set name.

The parameter set name can be edited by selecting parameter set and pressing edit button.

3.5 Assets

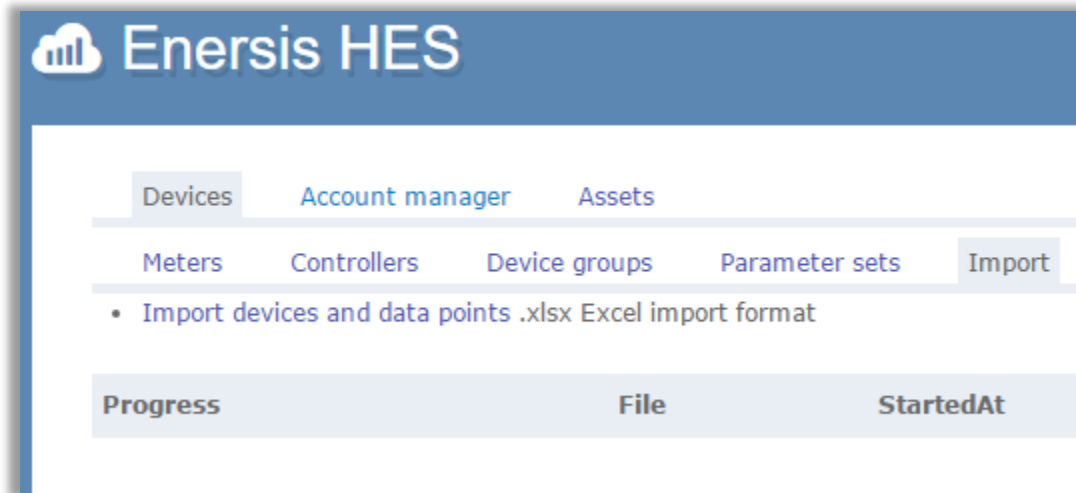
Additional data such as newer firmware versions, parameters templates and lists of devices added to the system. To add an asset to the system, open **Asset** link and select the proper upload function from the tab list.

Every sensitive file, such as update files, configuration templates must be provided with md5 hash check, a string of hex that determines the files integrity. The hash is provided from the manufacturer with the templates and firmware files, also it can be generated using manufacturers provided tool.

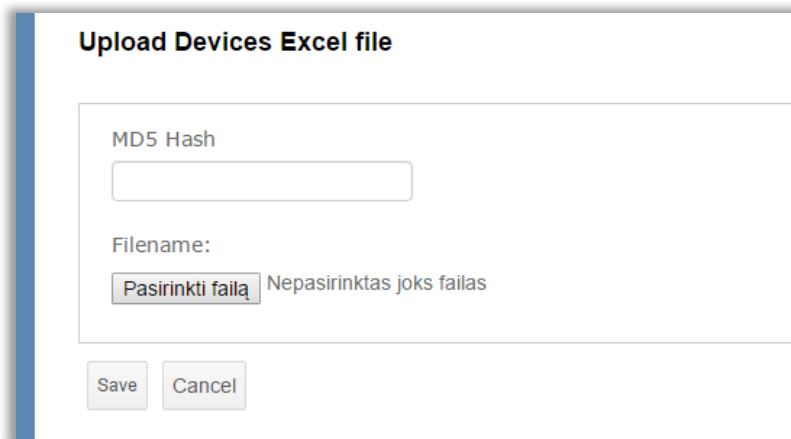
Once the files are uploaded, they are available to use for the users in tasks and registration forms.

3.6 New devices import

New devices import is a complex procedure used only when a device or list of devices are not registered to the Enerasis HES.



To import the list of new devices, use Import devices and data points function in **Registration, Import** page.

The screenshot shows a form titled 'Upload Devices Excel file'. The form has a white background and a blue border. It contains the following elements: a text input field labeled 'MD5 Hash'; a text input field labeled 'Filename:' with a button labeled 'Pasirinkti failą' and the text 'Nepasirinktas joks failas' next to it; and two buttons at the bottom: 'Save' and 'Cancel'.

The excel file must be prepared for the system according to the steps provided bellow. Import the file, add MD5 Hash and save. If the import is successful, the devices are added to the group named in the excel file.

	A	B	C
1	Entity-PointGroup	Id	Name
2		groupid	Grupe
3			

Note! Always use a **Sheet1** of the excel file. You can add only a new device group, or new controllers or new meters. To do so, only describe the correct entity name. If the device does not have a group or controller assigned, you can add 0 to the value. In excel **Sheet1**, create entity information for the new **Entity-PointGroup**.

Column names must be entered even if value is not set:

Entity-PointGroup - identifier of the attributes.

ID – unique group identifier

Name – user friendly group name

	A	B	C	D	E
3					
4	Entity-Controller	Id	Name	Number	Type
5		DF5900309604	DF5900309604	DF5900309604	EGS-MCL 5.10-
6					

	E	F	G	H	I
	Type	Connection Type	Connection String	Connection TimeOut	Connection Port
	EGS-MCL 5.10-LV	TcpIp	10.161.48.56	30000	1234

Create controller entity information **Entity-controller**. Column names must be entered even if value is not set:

Entity-controller - identifier of the entities.

ID – unique controllers identifier

Name – user friendly controller name

Number – existing device number starting with **DF**. **Note!** If the device number is known, use it for all of the identifiers: **ID**, **Name**, **Number**, for example, DF5900309604.

Type – controller type, default is EGS-MCL 5.10-LV.

Connection Type – always TcpIp

Connection String – IP address of the controller.

Connection Timeout – timeout in milliseconds, use 30000 for default.

Connection Port – communication with controller port, use 1234 for default.

	A	B	C	D	E	
6						
7	Entity-Meter	Id	Name	Number	Type	Properties
8		01000001	01000001	01000001	EGM-GAMA 300-G3B	{"transformRatioVc
9		01000002	01000002	01000002	EGM-GAMA 300-G3B	{"transformRatioVc
10		01000003	01000003	01000003	EGM-GAMA 300-G3B	{"transformRatioVc

	F	G	H	I	J	K
8						
9	Properties	Controller	DataPoint	PointGrou	Channels	Security
10	{"transformRatioVoltage":"1","transformRatioCurrent":"1"}	10.161.48.56	0	groupId		
11	{"transformRatioVoltage":"1","transformRatioCurrent":"1"}	10.161.48.56	0	groupId		
12	{"transformRatioVoltage":"1","transformRatioCurrent":"1"}	10.161.37.241	0	groupId		
13	{"transformRatioVoltage":"1","transformRatioCurrent":"1"}	10.161.37.241	0	groupId		
14	{"transformRatioVoltage":"1","transformRatioCurrent":"1"}	10.161.37.241	0	groupId		
15	{"transformRatioVoltage":"1","transformRatioCurrent":"1"}	10.161.62.228	0	groupId		

Create meter entity information **Entity-Meter**. Column names must be entered even if value is not set:

Entity-Meter - identifier of the entities.

ID – unique meter identifier

Name – user friendly meter name

Number – existing device number. **Note!** If the device number is known, use it for all of the identifiers: **ID**, **Name**, **Number**, for example, 0100000001.

Type – meter type, values can be EGM-GAMA 300-G3B, EGM-GAMA 100-G1B.

Properties – Transformation ratio values in specific format

Controller – ID of the controller.

DataPoint – data point name if used. **0** for default.

PointGroup – device group ID.

Channels - *reserved*

Security - *reserved*

4 Archive and data readings

4.1 Archive

Archive lets analyze historical data of devices from the local database. There are several ways to get the data needed. Archive page contains several filters such as data point, data type and time period filters. The filtered data can be exported to another formats (CSV, Excel) and viewed with quick charts.

The default data type parameter and profile period is described for different user group in registration – user group page.

The screenshot shows the 'Archive' page in the Energis NG system. It features a sidebar with 'Data points' filters, a main area for 'Data type and date filter', a data table, and a 'Graphic data' bar chart.

Data points filter:

- Client
 - 979613
 - 979614
- Elgama Sistemas
 - 4a bendra spinta
- Test group
 - EPQM 01110542
 - EPQS 510070
 - EPQS 91814
 - MBA_1

Data type and date filter: Power and Energy. A+ | 60 min. | from 2016.01.22 to 2016.01.22 | Today

Data point	Period	00:00 (kW)	01:00 (kW)	02:00 (kW)	03:00 (kW)	04:00 (kW)	05:00 (kW)	06:00 (kW)	07:00 (kW)
EPQM 01110542	2016.01.22	0.031	0.031	0.031	0.031	0.031	0.030	0.030	
979613	2016.01.22	98.936	104.452	98.936	99.055	101.694	182.881	227.252	20
979614	2016.01.22	116.324	116.444	116.804	115.005	116.564	171.488	248.598	21
EPQS 510070	2016.01.22	0.032	0.030	0.032	0.032	0.030	0.032	0.030	
4a bendra spinta	2016.01.22	0.750	0.852	0.914	0.838	0.780	0.814	0.696	
Sum:		216.073	221.809	216.716	214.962	219.099	355.246	476.606	42

Graphic data: A bar chart showing power consumption in kW over a 24-hour period. The x-axis represents time from 00:00 to 22:00, and the y-axis represents power in kW from 0 to 800. The chart shows a peak around 12:00.

4.1.1 Data points filter

Data points filter lets the user to filter data by data points. In order to add or remove data point to the filter it should be checked or unchecked respectively.

This is a close-up of the 'Data points' filter sidebar. It shows the following options:

- Client
 - 979613
 - 979614

4.1.2 Energy types

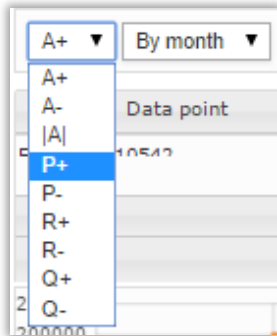
Data is filtered by energy types. There are the common data types:

- A+** consumed active energy
- A-** generated active energy
- U** Voltage profile
- U1** – Voltage profile for phases 1 to 3
- U3**

- P+** consumed active power
 - P-** generated active power
 - R+** consumed reactive energy
 - R-** generated reactive energy
 - Q+** consumed reactive power
 - Q-** generated reactive power
- I** Current profile
 - I1- I3** Current profile for phases 1 to 3
 - Events** Meter events profile

4.1.3 Recordable data period

The data is captured in periods from a few minutes up to several months. There are also aggregated data.



After providing period, specify the data interval.



4.1.4 Data tables and graphs

The data seen in a grid or in a chart (chart does not appear when there is no data or the data is of a total nature).

Data type and date filter Power and Energy

A+ 60 min. from 2016.01.22 to 2016.01.22 Today

Data point	Period	00:00 (kW)	01:00 (kW)	02:00 (kW)	03:00 (kW)	04:00 (kW)	05:00 (kW)	06:00 (kW)	07:00 (kW)
EPQM 01110542	2016.01.22	0.031	0.031	0.031	0.031	0.031	0.030	0.030	
979613	2016.01.22	98.936	104.452	98.936	99.055	101.694	182.881	227.252	20
979614	2016.01.22	Data 116.324	116.444	116.804	115.005	116.564	171.488	248.598	21
EPQS 510070	2016.01.22	0.032	0.030	0.032	0.032	0.030	0.032	0.030	
4a bendra spinta	2016.01.22	0.750	0.852	0.914	0.838	0.780	0.814	0.696	
Sum:		216.073	221.809	216.716	214.962	219.099	355.246	476.606	42

Graphic data

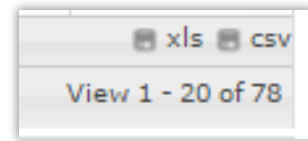
Bar chart showing power consumption (kW) over a 24-hour period. The x-axis represents time from 00:00 to 22:00. The y-axis represents power in kW, ranging from 0 to 800. The chart shows a peak in power consumption around 08:00-10:00.

Data can be shown within a few pages. For the navigation between pages, use the buttons "forward" and "back" in the table. The table may vary depending on the type of data and filtering of the selected period.

4.1.5 Data export

The data in the table can be exported to Excel or CSV formats. For the export there are two buttons at the bottom of the table:

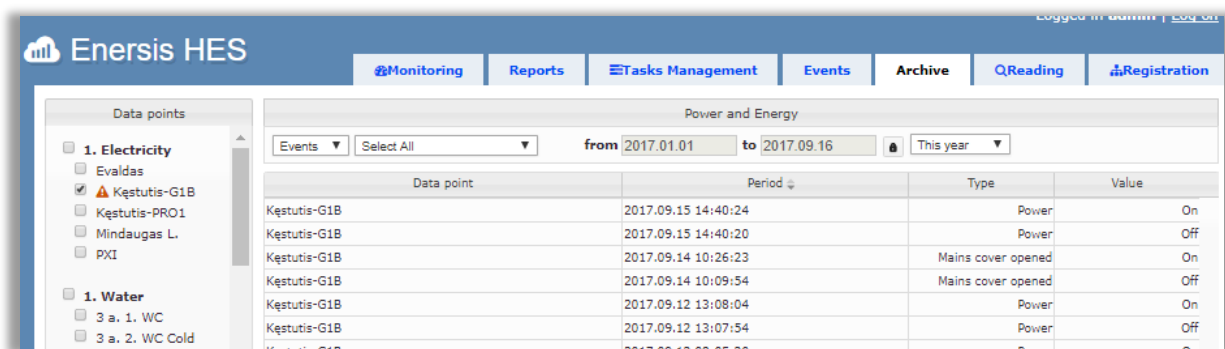
- **xls** – Export to Excel;
- **csv** – Export to CSV.



Clicking the button opens the file preservation dialog (depending on the web browser settings). Select the path to save the file.

4.1.6 Meters events and lost communication

If the meter has registered new events, the red warning sign shows next to the data point name:



The screenshot shows the Enersis HES interface with a table of events. The table has columns for Data point, Period, Type, and Value. The data points listed are Keštutis-G1B, and the events include Power On/Off and Mains cover opened.

Data point	Period	Type	Value
Keštutis-G1B	2017.09.15 14:40:24	Power	On
Keštutis-G1B	2017.09.15 14:40:20	Power	Off
Keštutis-G1B	2017.09.14 10:26:23	Mains cover opened	On
Keštutis-G1B	2017.09.14 10:09:54	Mains cover opened	Off
Keštutis-G1B	2017.09.12 13:08:04	Power	On
Keštutis-G1B	2017.09.12 13:07:54	Power	Off
Keštutis-G1B	2017.09.12 08:05:30	Power	On

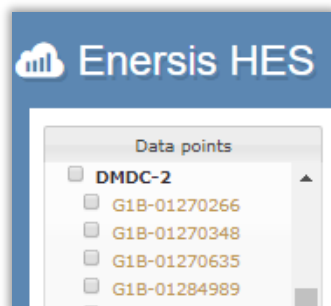
Select the meter with warning sign, list Events for data type and the events information shows in the grid. The duration for a warning sign is configurable through the system configuration file in Enersis.Coat folder, file named: **Web.config** . The configuration line:

```
<appSettings>
```

```
  <add key="user.EventNotificationTime" value="7" /> where value 7 is in days.
```

```
</appSettings>
```

If the system cannot communicate with the meter for some time, the data points are greyed out. Hovering over datapoint shows the timestamp of the last successful communication.



The screenshot shows a list of data points under the heading 'Data points'. The first item is 'DMDC-2' which is expanded to show several sub-items: 'G1B-01270266', 'G1B-01270348', 'G1B-01270635', and 'G1B-01284989'. The sub-items are greyed out, indicating a loss of communication.

The time after which the data point is greyed out is configurable through the system configuration file in Enersis.Coat folder: **Web.config** . The configuration line:

```
<appSettings>
```

```
  <add key="user.LoadProfileNotCollectedTime" value="2" /> where value 2 is in days.
```

```
</appSettings>
```

5 Monitoring and Reports

Monitoring page is for the state of the system and available devices. Working tasks and scheduled tasks, newly added meters and controllers, system resources monitored in **Dashboard**.

5.1 Statistics

This is additional feature and might not be available depending on the system.

Statistics page generates information for custom events. For example, **Modem Signal Quality** page. The **Modem ping** task is run by a stand-alone service and checks the signal quality status of the controllers in the system.

The view is separated in three parts that can be re-arranged, where modems with bad quality are displayed when signal quality is lower than **-90** dBm and good quality is shown when devices shows from **-50** to **-89** dBm quality. Not accessible devices are registered, when the device do not respond to **Modem ping** request.

The screenshot shows a web interface for 'Modem Signal Quality Reports'. It contains three tables:

Signal (RSSI)	Signal (dBm)	Modems	Percent
1	-110	21	0.403 %
7	-100	615	11.8 %
12	-90	1291	24.77 %

Signal (RSSI)	Signal (dBm)	Modems	Percent
17	-80	1294	24.827 %
22	-70	769	14.754 %
27	-60	346	6.639 %
31	-50	145	2.782 %

Modems	Percent
731	14.025 %

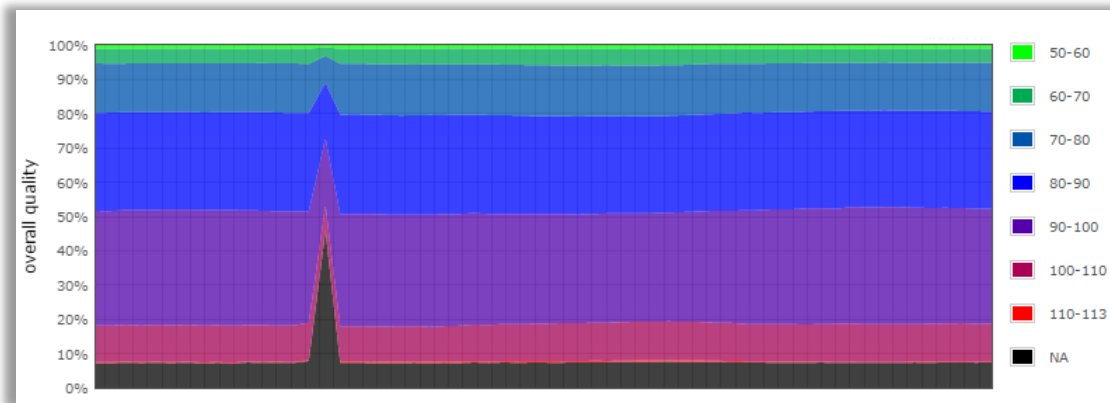
5.1.1 Overall signal quality diagram

This is an additional feature and might not be available depending on the system.

Overall signal quality graph shows the statistics of the signal quality by color and percentages how many devices had that level of signal quality over a period of time. Every color is equal to a signal quality level, for example light green is for 50 – 59 dB signal quality. In the picture the light green color is shown from 95% to 100%, that means that 50 – 59 dB signal quality level was only for 5% (100% – 95%) of devices doing a custom period of time.

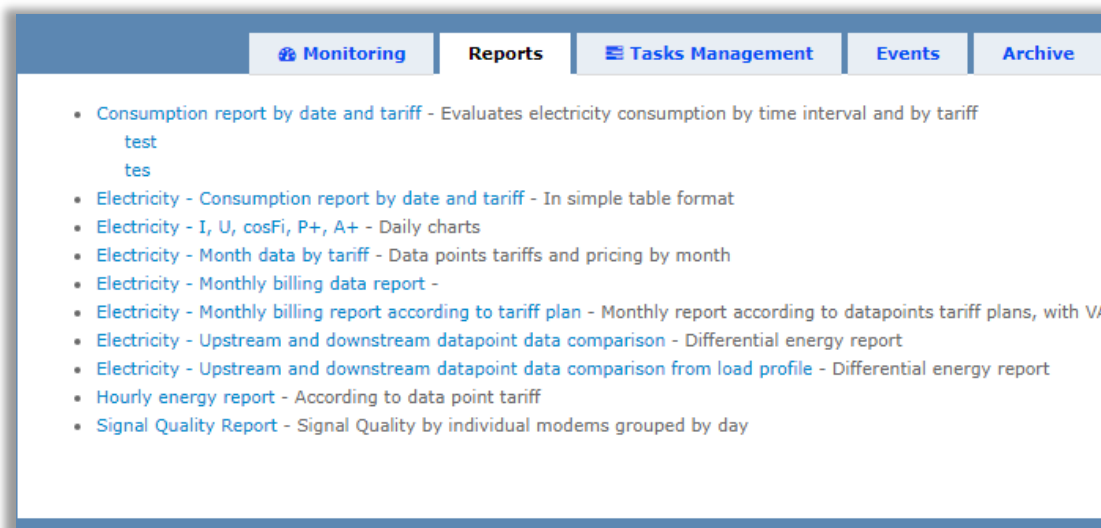


It is possible to see the history of the signal quality levels using **Start, Previous, Play, Forward, End** buttons. Pressing Play button starts showing a record of registered signal quality levels from this period of time to the end of the last record time.



5.2 Reports

For data visualization in different ways open module **Reports**.



To generate the report press on any name. As an example, open the „Hourly power report with charts“.

5.2.1 Report filters

Opening the report shows data filters.



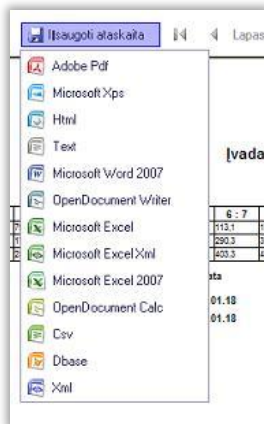
fig. 1

Each report can have different data filters. Shown in the example report has date, time, energy type, data point filters.

Set the parameters and press **Apply** button to generate report data.

5.2.2 Exporting report

To export the report press the **Save** button.

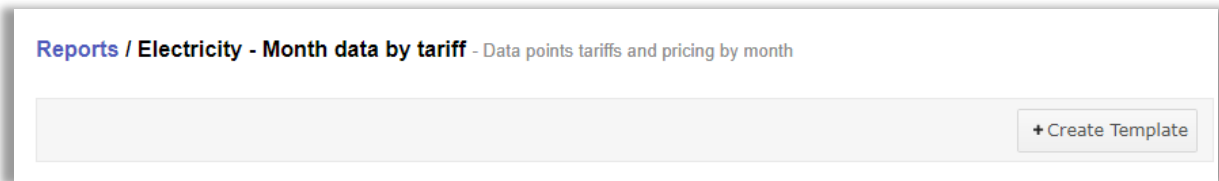


Export types

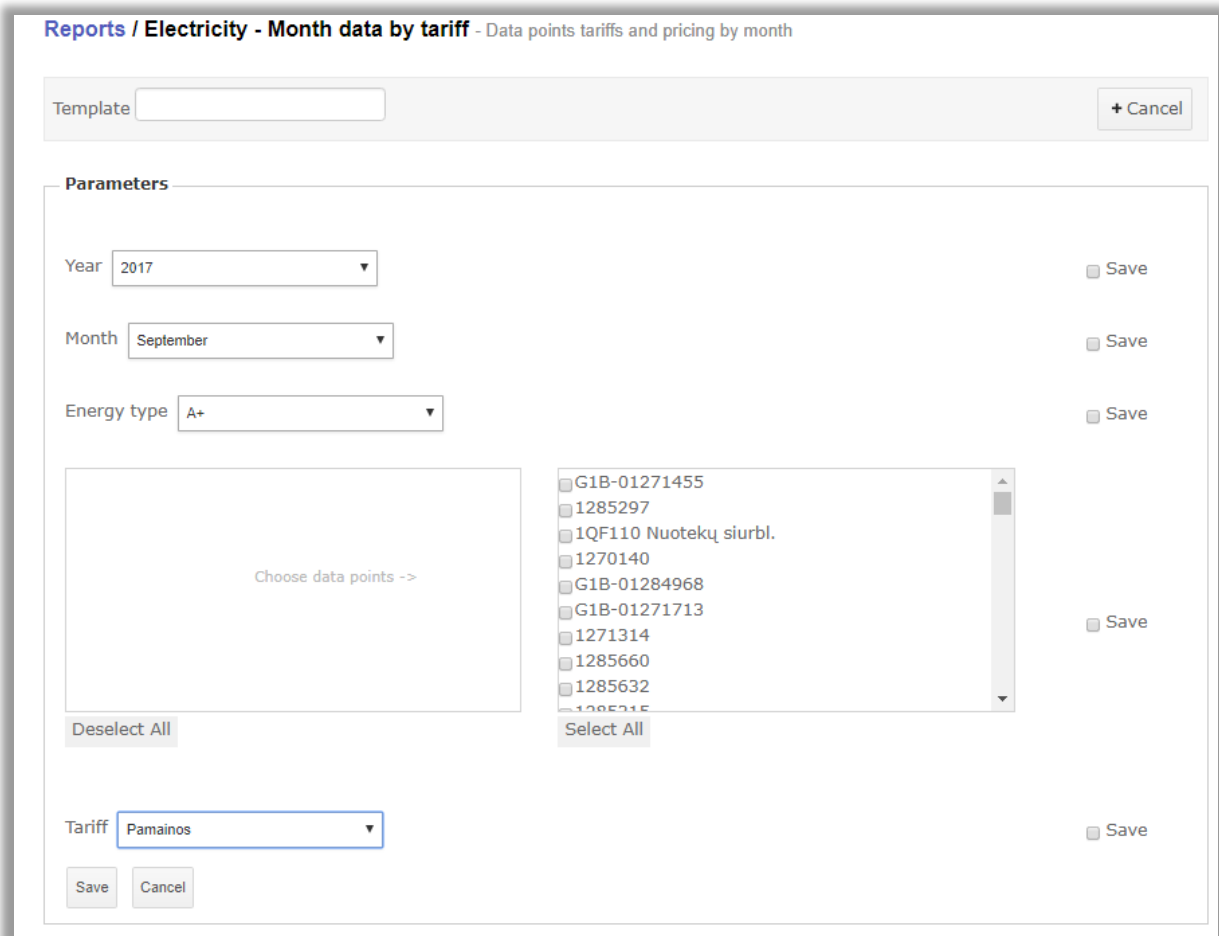
- Adobe Pdf
- Microsoft Xps
- Html
- Text
- Csv
- Xml
- Microsoft Word 2007
- OpenDocument Writer
- Microsoft Excel
- Microsoft Excel Xml
- Microsoft Excel 2007
- OpenDocument Calc

5.2.3 Report templates

Reports can be saved to a template. The created template can then be used when generating a report. Open the report and press **create template**.

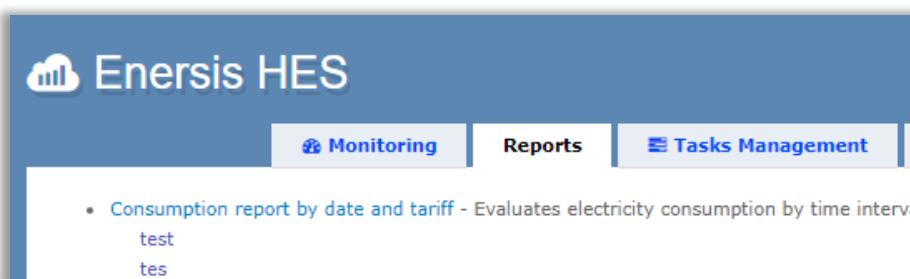


Fill the necessary filters and check **Save** checkbox. To save template, press **Save**.



5.2.4 Load a report

When you save the filter template will be available through the list of reports.



Also, other templates of the same type can be loaded from the template menu.

The screenshot shows a web interface for generating a consumption report. At the top, the title is "Reports / Consumption report by date and tariff - Evaluates electricity consumption by time interval and by tariff". Below the title, there is a header bar with a dropdown menu showing "tes", a "Delete" button, and a "+ Create Template" button. The main area is titled "Parameters" and contains several input fields and lists. The "Date from" field is set to "2017.08.16 12:53" and the "Date to" field is set to "2017.09.16 12:53". There are two lists of checkboxes for selecting parameters. The left list has two checked items: "1270140" and "G1B-01284968". The right list has several unchecked items, including "G1B-01285061", "G1B-01271695", "1285293", "1285501", "2. PRO1 - 837 - DI", "1285887", "G1B-01270349", "AS-1 WH2", "G1B-01271702", and "2. 1. W/C". Below the lists are "Deselect All" and "Select All" buttons. The "Day load interval" is set to "Min60" and the "Tariff" is set to "Elermit pamainos". An "Apply" button is located at the bottom left of the parameter section.

5.2.5 Delete a template

The template deleted from the same template by pressing the Delete button.

6 Task Management

System Task Management are the main components that are responsible for ongoing system tasks. By pressing the **Task Management** page the main **Dashboard** is displayed. This page overviews all done and ongoing tasks.

6.1.1 Creating task

The **Create task** tab shows available tasks to start:

- **Meter Configuration** create meter configuration task
- **Meter Template Configuration** create meter configuration task from templates list
- **Meter Change Password** create meter password change task
- **Meter Parameter Readout** create meter parameter readout task
- **Modem Parameter Readout** create modem parameter readout task
- **Meter Security Elevation** create meter security elevation task
- **Modem Change Credentials** create modem credentials change task
- **Modem Statistics Readout** create modem statistics readout task
- **Modem Configuration** create modem configuration task
- **Modem Firmware Update** create Elgama Sistemas modem firmware update task
- **Meter Firmware Update** create Elgama Elektronika meter firmware update task
- **Meter and Modem Self-Registration** create modem and meter self-registration task
- **Modem Self-Registration** create modem self-registration task

Pressing the **task** opens **create task** form. Each task consists of the main elements:

- Task name – name of the task that will be shown in the task list
- Task expiration date – if the checkbox Repeat on communication fail is set, the task repeated for the devices until date and time expires. The tasks are repeated only when the meter or modem is not responding or other connection issues happens (dropped connection, wrong answer to the request)
- Device filter and parameters search field – filter for devices to use task on

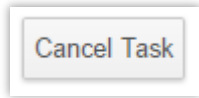
Additional task parameters depend on the task. For example, opening **Create Meter Firmware Update Task** requires to select firmware version for the meters. Only one version updated per task. **Note!** The firmware update file has the list of the meters that updated to that version. Only these meters updated, even though more meters selected. Use a filter to select meters for update.

Type	Number	Connection	Assigned to group	FW Version
------	--------	------------	-------------------	------------

Pressing continue will start the task. The tasks in progress are visible in the **Task management** page.

6.1.2 Canceling task

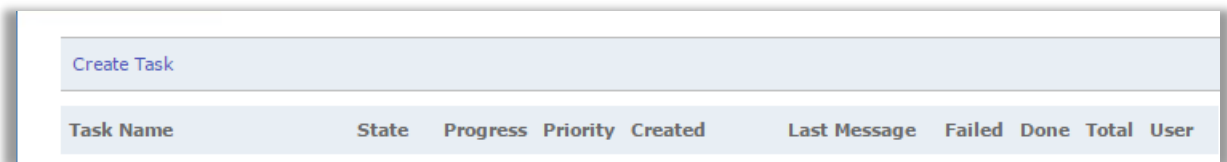
To cancel a working task, open the task. Pressing **cancel** button will start task cancel operation.



When the task cancelled, it shows in the tasks list with the state **cancelled**.

6.1.3 Viewing task

The task information in the main page shows **state** of the task, **progress** by percentage, **priority** level, **created** and last received **message** from task date, task **result statistics** for devices and **user** that started the task.

A screenshot of a web interface showing a task management table. At the top, there is a light blue bar with a "Create Task" link. Below it is a table with a light blue header and a white body. The header row contains the following columns: "Task Name", "State", "Progress", "Priority", "Created", "Last Message", "Failed", "Done", "Total", and "User".

Task Name	State	Progress	Priority	Created	Last Message	Failed	Done	Total	User
-----------	-------	----------	----------	---------	--------------	--------	------	-------	------

Available task states:

- **Created** – task is created and waiting for resources to start the task.
- **Started** – task is started and working.
- **Canceled** – the task canceled by user.
- **Finished** – the task is finished.

Further information shown in the selected task page. The information provided:

- Number of devices for the task
- Devices that are still waiting to be processed (pending devices)
- Parameters used for the task
- Number of the devices completed successfully
- Number of the devices failed

7 Events

This is an additional feature and might not be available depending on the system.

Event Listener service actively listens for incoming events from the remote devices (meters, controllers). Clicking on **Events** label shows **information about events received**.

The log displays selected activity events from different services and devices with additional information such as device id, state, event time, message received time and events occurred. Events properties and description may differ for different devices, the parameters specifications are described in meter manufacturer documentation. The history of the events for device is seen when the specific device is opened in the event list.

The log history is permanent.

7.1 Plug&Play

This is an additional feature and might not be available depending on the system.

Plug and Play requests that came from the meter are registered to the Event Listener. After, the request is forwarded to the **Task Management**, where a task **Self-Registration after PlugAndPlay event** is created. The task collects and stores meters and modems main information (number, firmware versions, modification). This task is monitored in the **Task Management** and cannot be cancelled.