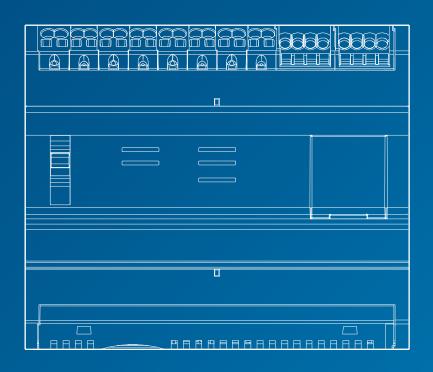
User manual

# agardio. manager

Multi energy data logger & monitoring server HTG410H / HTG411H / HTG411L





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## 1 About the manual

#### **Document scope**

This manual describes how to operate the energy monitoring server during configuration, commissioning and maintenance.

#### **Applicability note**

This manual is intended for technicians, system integrators and operators (owners, facility managers). Skills and knowledge regarding construction, operation and installation of electrical equipment are required.

#### Revisions

Revision No.	Date
1.10	06/2023

#### Copyright

This manual is a constituent of the energy monitoring server. Unauthorized duplication, even in parts, is not allowed.

#### Liability

Hager Group disclaims any and all liability for personal injury or property damage including incidental and consequential damages which may arise out of the contents of this manual.

#### Further applicable documents

Document no.	Description
6LE002121B	Installation manual - EN
6LE007311B	Quickstart - EN - FR - DE - NL
16DE0118_01	Hager-Tipp - DIN VDE 0100-801

#### Contact

Address:	Hager Electro SAS 132 Boulevard d'Europe 67210 Obernai France
Phone:	+ 33 (0)3 88 49 50 50
Fax:	+ 33 (0)3 88 49 51 44
E-Mail:	info@hager.fr

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## 2 Safety information

#### Introduction

This chapter provides important information regarding safety of the energy monitoring server including the classification of the safety notes, qualification of the personnel, liability and intended use.

#### **Chapter contents**

Classification of the safety information	7
Safety information for the energy monitoring server	8

## 2.1 Classification of the safety information

## **Personal injury**

This manual contains safety instructions that you must observe for your own safety.

The safety instructions are subdivided into three danger categories. These categories differ with regard to the severity of injuries that can result from non-compliance of these instructions.

The following symbols and terms are used for describing the three danger categories:



DANGER indicates an imminently hazardous situation, which, if not avoided, will result in death or serious injury.

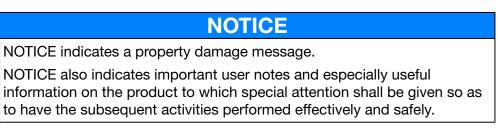
A WARNING

WARNING indicates a potentially hazardous situation, which, if not avoided, could result in death or serious injury.

CAUTION indicates a potentially hazardous situation, which, if not avoided, may result in minor or moderate injury.

## **Property damage**

This manual contains safety instructions that you must observe to avoid equipment damage. Further, it contains useful information. They are indicated as follows:



## 2. 2 Safety information for the energy monitoring server

#### **Qualified personnel**

The energy monitoring server must be mounted, installed and serviced only by qualified personnel.

Qualified personnel has skills and knowledge regarding construction, operation and installation of electrical equipment. A qualified person has furthermore attended a safety training to be able to recognize and avoid the hazards involved.

#### Liability

The manufacturer shall not be held responsible for failure to comply with the instructions in this manual.

#### Intended use

The energy monitoring server

- is an energy and data logger designed as a compact embedded system to support the user to operate small and medium commercial buildings.
- collects and stores information like multi-energy (electricity, water, gas) and electrical power quality (U, I, P, f, THD) of the building distribution network.
- provides access to data as dashboards and graphics displayed with embedded web-pages, commissioning reports, file export.
- generates alarms for the user.

The manufacturer is not liable for any other than the described use.

#### Risk of electrocution, burns or explosion

## A WARNING

- Electrocution, burns or explosion
- Prior to any work on or in the energy monitoring server, isolate the voltage inputs and auxiliary power supplies.
- Prior to any work on or in the energy monitoring server, short-circuit the secondary winding of all current transformers.
- Always use an appropriate voltage detection device to confirm the absence of voltage.
- Put all mechanisms, door and covers back in place before energizing the energy monitoring server.
- Always supply the energy monitoring server with the correct rated voltage.

## Risk of inaccurate data results

## NOTICE

#### Inaccurate data results

- Do not incorrectly configure the software, as this can lead to inaccurate reports and/or data results.
- Do not base your maintenance actions solely on messages and information displayed by the software.
- Do not rely solely on data displayed in the dashboard or reports or file data export to determine if the system is operating correctly or meeting all applicable standards and requirements.
- Do not use data displayed in the software as a substitute for proper workplace practices or equipment maintenance.

## Risk of equipment damage

Check the compliance with the following specifications:

	HTG410H/HTG411H	HTG411L
External safety extra low voltage power supply	24 V DC SELV +/- 10%	
Typical consumptions	7 \	/A
Ethernet network communication	Ethernet - TCP/IP - R 802	
Modus network communication	RS485 Mo	dbus RJ45
Operating temperature	-25 to +70 °C	De -25 à +50 °C
Storage temperature	-25 to +50 °C	De -55 à + 50 °C
Humidity storage	Taux d'humidité ma	x. de 95 % à 55 °C
Binary digital input 1 and 2	De 15 à 27 V	-
Analogue input 4-20 mA 1 and 2	Impédance d'entrée <300 Ω	-
PT 100 input 2-wire probe - EN60751 complia		60751 compliance
Binary digital output	5 to 30 V / ~ 10 mA to 3 A resistive dry contact	
Number of relay cycles	100000	
Analogue output 0-10 V	Min impedance >= - 1kΩ	
Power supply, digital inputs, digital output connection	0.75-2.	5 mm <sup>2</sup>
Analogue input/output connection	0.2-1.5 mm <sup>2</sup> -	
Degree of protection	IP	20
Weight	eight 290 g	
Pollution degree	Class 3 Class 2	
Altitude	Max. 2000 m	
Micro SD card	Class 10 Industrial type	
USB port 1 (front face)	USB 2.0 Type A standard connector	
USB port 2 (on the bottom of the product)	USB 2.0 Type A standard connector	

## **3** General information

#### Introduction

This chapter contains information regarding features and technical aspects of the energy monitoring server. The inputs and outputs of the energy monitoring server, the different types of measuring devices that can communicate with the energy monitoring server and central terms regarding the utilization of the energy monitoring server are explained.

The HTG411H is the HTG410H delivered with a  $\mu$ SD card of 4 Gbyte capacity. The HTG411L is the HTG411H with a slightly different hardware not equipped with any input or an analogue output. It is also less resistant to high temperatures and has only 512 Mo of RAM instead of 2 Go.

#### **Chapter contents**

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Front view	15
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Important terms	20

## 3.1 Main features

These are the main features of the energy monitoring server:

- Multi-energy management
- Power quality visualization
- Alarms and pre-alarms generation

The energy monitoring server enables these features using the following functions:

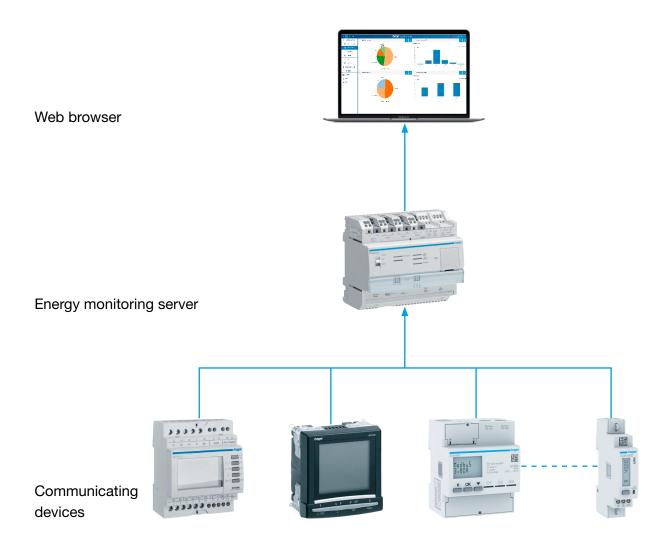
- Fieldbus management, i. e. real-time data is transferred by connected measuring devices
- Data storage (depending on the capacity of the embedded µSD card)
- Exporting data in PNG and CSV file formats
- Two Ethernet ports for local and remote operation
- Four supported protocols: HTTP (Hypertext Transfer Protocol), FTP (File Transfer Protocol), SMTP (Simple Mail Transfer Protocol), NTP (Network Time Protocol)
- Configuration via embedded web pages (system and products)
- Operation via embedded web pages (real-time, dashboard, historic)
- Alarm management
- Commissioning reports
- Maintenance (backup, product update, firmware update)
- user management with different user right levels
- EIEC class simulation tool in regards to IEC60364-8-1 international standard concerning energy efficiency for LV electrical network

The energy monitoring server has 2 operating modes:

- Standalone mode : the server remains in control of the installation and reads the measurements from the communicating products connected to it (Energy meters, PMD, MCCB Energy, etc...).
- **Supervised mode :** the server is used as a gateway to transmit data to the stream energy management software. Several functions in the menus are then not available.

## Standalone mode

The energy monitoring server acts as an autonomous server.

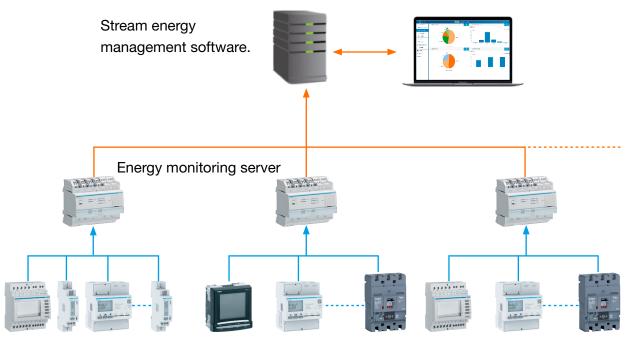


The energy monitoring server is the energy management server incorporated in the cabinet. This device collects data from the various devices (measurements, settings, alarms etc.) over fieldbus protocols

Acting as a server, it provides web services for purposes of administration, configuration of the managed perimeter (zones, usage rights etc.) and the display of collected data.

## Supervised mode

The energy monitoring server is monitored by the stream energy management software.



Communicating devices

In supervised mode, the energy monitoring server can be connected to its supervisor.

The stream EMS software monitors the energy monitoring server to assist the installer responsible for configuring the whole installation. All configuration tasks are centrally monitored by the stream EMS software and the energy monitoring server acts as a gateway.

## 3.2 Front view

The energy monitoring server disposes of the following inputs/outputs, switches and LED elements:



## Inputs and outputs

No.	Description	Application
1	24 V/DC SELV	Power supply
2&3	Digital input 1 & 2*	Read pulse count of a product sub-meter or states (ON/OFF)
4	Normally open relay (24 V/DC, 3A)	Command process
5	0 - 10 V output*	Proportional command
6	PT 100 input	Temperature probe
7 & 8	Analogue input 1 & 2 (4-20 mA)*	Read any analogue measurement
9	USB 2.0	Connection for USB sticks (e.g. Backup), Wi-Fi or Ethernet interface for configuration
10	Ethernet port 2	Ethernet connection to the user interface
11	Ethernet port 1	Ethernet connection to the user interface and connection for setup/first configuration
12	USB 2.0	Connection for USB sticks (e.g. Backup)
13	RS 485 Modbus	Read Modbus RTU products out

## \*Not available on HTG411L

Refer to the installation guide for more detailed information concerning inputs and outputs. **Switches** 

Description	Application	
Setup (a)	ON: After a reboot the energy monitoring server enters setup mode (see p. 23)	
	OFF: After a reboot the energy monitoring server enters standard mode	
Modbus	ON: Activate the Modbus terminating resistor of 120 $\Omega$	
120 Ω (f)	OFF: Deactivate the Modbus terminating resistor of 120 $\Omega$	

Refer to the installation guide for more detailed information concerning the Modbus 120  $\Omega$  switch.

#### **LED** information

Colour & state	Status	Solution		
Modbus (b)				
Green blinking	Connected and functional network.	/		
Red fixed	Communication fault.	Check the Modbus fieldbus connection.		
Red blinking	Communication fault.	Check the parameters of the Modbus link (speed, parity or number of stop bits)		
		Disable devices on the bus that do not communicate (time-out).		
Off	No communication network detected, Modbus is off.	Define a Modbus RTU product that communicates with the energy server.		
Network 1 (c) / 2 (d)				
Green fixed	Network detected and IP address assigned	/		
Green blinking	In connection	/		
Red fixed or blinking	Communication fault.	Check the connection.		

Colour & state	Status	Solution
Power (e)		
Green fixed	Functional product.	/
Green or orange blinking	Product initialisation.	Wait for initialisation.
Red blinking	Product enters into power reserve.	Wait until the shutdown progress.
Red or orange fixed	Software startup problem.	Perform a reset by switching off the power supply.
		Wait for the LED to get off before switching on the power supply again.
Off	Product not powered.	Check the power supply.

## NOTICE

When the product is turned on, the LED flashes only after about 5s.

## 3.3 Architecture

#### Conditions

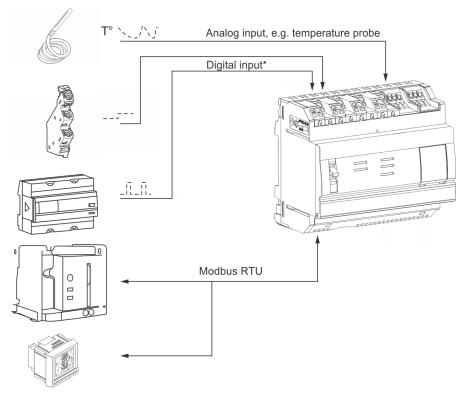
The energy monitoring server is dedicated for small and medium size commercial buildings (e. g. hotels, shops, offices).

To install the energy monitoring server the following is needed:

- the 24 V/DC power supply
- the products to communicate with the energy monitoring server
- an active fieldbus (Modbus RTU + Modbus TCP)

#### **Overview of measuring devices**

The following figure shows the measuring devices that could be present in the architecture:



#### Digital and analogue measuring devices\*

The following sorts of digital and analogue measuring devices are able to communicate with the energy monitoring server:

Type of application	Input
Auxiliary contact of a product (MCB, MCCB, door contact) delivering 24 V/DC	Digital 1 & 2
Analogue sensors (current, voltage, frequence, others)	Analogue 1 & 2



Energy sub-meters (gas, water, pressure) with pulse output are able to communicate via

- digital input\* or
- Modbus RTU if they are linked to an EC700 measuring device (see below).

## Modbus RTU / Modbus TCP devices

The following measuring devices are able to communicate with the energy monitoring server on Modbus RTU / Modbus TCP:

Product	Article no.
Energy meters single phase:	
40 A direct	ECR 140D
80 A direct	ECR180D, ECA180D, ECR181D, ECA181D
Energy meters 3ph:	
5A direct	ECR 300C, ECR301C, ECA300C, ECA301C
80A direct	ECR380D, ECR381D, ECA380D, ECA 381D
100A direct	EC366, EC367M
125A direct	ECR310D, ECR311D, ECA310D, ECA311D
Via current transformer	
80A	ECR180T, ECA180T
100A	EC376, EC377M
Multifunction meters:	
PMD (Power measurement device) with integrated Modbus	SM101C
PMD with associated Modbus module	SM102E + SM210
	SM103E + SM211
ACB (Air Circuit Breaker)	HWTxxxx with release unit AGR21, AGR22 ou AGR31
	HW1xxxxE
ATS Controller	HZI825, HZI855
PFC (Power Factor Correction)	SPC06HM
Pulse concentrators	EC700
NH_Measurement_Adapter	LZMxxx
Energy circuit breaker (MCCB)	HHTxxxxxx

The energy monitoring server is able to communicate with up to 31 measuring devices on Modbus RTU.

\*Not available on HTG411L

## 3.4 Important terms

To enable and maintain the multi-energy and power quality management, data regarding several aspects of the monitored building is needed.

The following terms play an important role within the energy monitoring server:

Term	Meaning
Building	Location of the electrical installation
Zone	Part or area of a building or infrastructure and its equipments considered for energy efficiency.
	Zone represents a surface area in m <sup>2</sup> or a location where the electrical energy is used, e. g. a
	- Floor,
	- Room,
	- Window area or inner area of the building (without windows),
	- Swimming pool (inside or outside the building),
	- Parking (external),
	- Kitchen in a hotel.
Usage	Type of application for which electrical energy is used, e.g. lighting, heating, motor, hot water, hvac (heating, ventilation and air conditioning)
Cabinet	Switch cabinets in the building like low-voltage main distribution board, sub distribution board etc.
Source	The origin of the electrical energy monitored by a product, such as Main Grid, Wind, Solar, Genset, or Biomass

## NOTICE

If you wish to visualise the data collected from a measuring device based on the perimeter it monitors, you need to allocate it to a defined

- zone,
- usage and
- source.

Thus, the energy monitoring server is able to visualize the values of the measuring device.

## 4 Commissioning of the energy monitoring server

#### Introduction

This chapter provides information regarding step-by-step commissioning of the energy monitoring server. This includes the technical equipment to be used (configuration machine and compatible web browsers) and the different ways of connecting the energy monitoring server to the configuration machine. Furthermore, the chapter contains a note about the recycling of the energy monitoring server.

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## :hager

## 4.1 Compatible browsers

## **Configuration machine**

To configure the energy monitoring server use one of the following:

- computer (desktop and laptop)
- tablet

Hager recommends to use a computer.

The energy monitoring server requires a web browser that is compliant with HTML5.

#### **Desktop and laptop computers**

Hager recommends to use Chrome, Firefox and IE from the version 10 and above.

## 4.2 Setup mode

## Connection

The setup mode is used to connect the energy monitoring server with the computer via the

Ethernet port 1

or

- USB to RJ45 Ethernet interface on the front USB port or
- USB to Wi-Fi interface on the front USB port.

## Proceeding

In order to switch the energy monitoring server to setup mode proceed as follows:

Step	Action
1	Set the <b>Setup</b> switch of the energy monitoring server to position <b>ON.</b>
2	Turn off the power supply for more than 10 seconds.
3	Turn on the power again.

## **TCP/IP** configuration

The setup mode allows a special TCP/IP configuration where the energy monitoring server acts as a DHCP server. In this mode, network connectors are configured with following static addresses:

Network connector	IP address
Ethernet port 1	192.168.0.1
USB to RJ45 Ethernet interface	192.168.2.1
USB to Wi-Fi interface	192.168.3.1

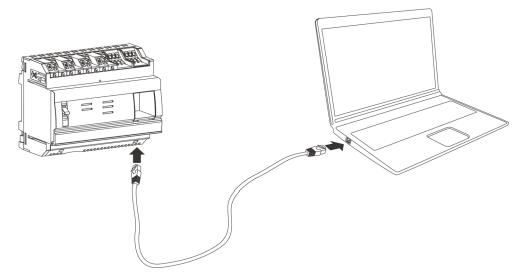
A DHCP server delivers an IP address.

NOTICE

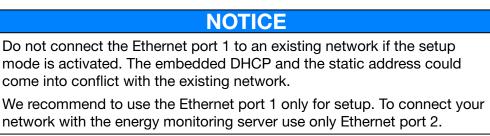
The setup mode is only used temporarily for the first configuration or a special maintenance operation.

## 4.3 Setup connection using Ethernet Port 1/Ethernet cable

An Ethernet cable (direct or crossed one) connects the energy monitoring server (port 1 only) directly to the computer.



The setup mode is activated. The energy monitoring server acts as the DHCP server.



## 4.4 First configuration

During the installation, most of the time the LAN (Local Area Network) connection is down, is not established or the energy monitoring server is not physically linked to it. Wait until the installation is finished, before you try to establish the first connection to the energy monitoring server.

During the setup phase, never connect the energy monitoring server to the LAN but only to a local computer using Ethernet cable.

In accordance with your IT network administrator, connect to the energy monitoring server as follows:



Step	Action
Commi	ssioning in setup mode
1	Set the <b>Setup switch</b> (a) of the energy monitoring server to position <b>ON</b> .
2	Turn off the power supply for more than 10 seconds and wait untill the <b>power LED</b> gets off.
3	Turn on the power supply and wait for the boot phase of the energy monitoring server.
	Result:
	The <b>Power LED</b> starts blinking and then is illuminated permanently. The setup mode is activated.
	Note:
	If the <b>Power LED</b> turns to red, then check if a SD card is inserted into the energy monitoring server and do a reboot (Go back to Step 2).
4	Connect an Ethernet cable to the energy monitoring server (b) and the computer. Hager recommends to use the <b>RJ45 Setup port Ethernet port 1</b> (see p. 24).

Step	Action
;	Configure the IP address of the computer (Exp. for Windows 7 / 10):
	• Open the <b>Control panel</b> .
	<ul> <li>Choose Network and Sharing Center.</li> </ul>
	Click Change Adapter Settings.
	<ul> <li>Right-click the activated Ethernet connection.</li> </ul>
	G Choose <b>Properties</b> from the context menu.
	Ouble-click Internet Protocol Version 4 (TCP/IPv4).
	<ul> <li>Configure DHCP = ON (Obtain an IP address automatically and Obtain DNS server address automatically).</li> </ul>
	Internet Protocol Version 4 (TCP/IPv4) Properties
	General Alternate Configuration
	for the appropriate IP settings.            • Qbtain an IP address automatically             • Uge the following IP address:             IP address:             IP address:             IP address:             Qbtain mask:             Qefault gateway:             O Dbtain DNS server address automatically
	O Use the following DNS server addresses:
	Preferred DNS server:
	Alternate DNS server:
	Validate settings upon exit
	OK Cancel
	Note:
	In this phase, the energy monitoring server acts as a DHCP server.
	Open a web browser.

Step	Action
7	Enter the IP address of the energy monitoring server into the address bar of the browser ( <i>https://192.168.0.1/</i> if you are using Ethernet port 1) and open the Web application delivered by the energy monitoring server.
	Result:
	The Login screen of the user interface is displayed:
	¢\$ SETUP MODE
	<b>Login to Hager Agardio Manager</b>
	Login: Password:
	Reset super admin password Login Version 11.10

Step	Action		
8	Enter the login name (default: <i>admin</i> ) and password (default: <i>admin</i> ).		
	Note:		
	Login name and password are case-sensitive, i. e. you have to differentiate between upper and lower case letters.		
	Click <b>Login</b> to start the user interface of the energy monitoring server.		
	Result:		
	The license screen is displayed:		
	© SETUP-MODUS		
	<b>:hager</b> agardio.manager		
	English		
	Software licensing agreement and Information		
	1. Software licensing agreement		
	IMPORTANT:		
	Please read the following carefully before using this software as any use constitutes acceptance of the following terms.		
	This software is designed and reserved for professional use. Hager will not in any way be held responsible in case of use of the software by a private individual.		
	This licensing agreement (the « Agreement ») is between the company receiving the HTG410H or I agree		
	Continue		
	For the complete licence text (see p. 153).		
9	Click <b>I agree</b> and <b>Continue</b> to accept the license agreement of the energy monitoring server.		
	Result:		
	The start screen of the user interface is displayed:		
	c% SETUP MODE ★ □ ∞ ≅ :hager agardio.manager		
	Personal Setting Cologues in stand Abde © State English I Franch German Potab		
	Exploitation  Configuration  Freferences  Spatial  Spatia		
	Click the generic functions and choose <b>Personal settings.</b>		
10	Click the generic functions and choose <b>Personal settings.</b>		

Step	Action		
12	Enter the <b>Old password</b> ( <i>admin</i> ), a new <b>Password</b> and <b>Retype</b> <b>new password</b> for the super <i>admin</i> user, e. g. <i>Hager2016.1</i> .		
	Personal Settings X		
	Login: admin		
	Name: admin Notification: 🖉 E-mail: admin@hes.com		
	Phone number: 0387505050 Profile: administrator		
	Exploitation		
	Old password:		
	New password: Retype new password:		
	🗶 Canzal 🛃 Saw		
	Afterwards click <b>Save</b> .		
	Note:		
	<ul> <li>The new password has to contain at least one digit, one</li> </ul>		
	upper case letter, one lower case letter and one non-		
	alphanumeric character (e. g. !, ?,, _, \$, &). The password needs to consist of at least 8 characters and may not contain		
	the login name.		
	Exp. for a correct password: Hager2016.1 or _Hager2017		
	<ul> <li>Make sure to remember the new password of the super</li> </ul>		
	admin user.		
13	To configure the energy monitoring server for your LAN, click the <b>Preferences</b> menu.		
14	Click Network. Afterwards choose Ethernet 2.		
15	Enter the <b>IP address</b> , the <b>Netmask</b> and the <b>Gateway</b> of the energy monitoring server manually ( <b>Method</b> : <i>Manual</i> ) within the IP range of your LAN, e. g. <i>10.33.71.15</i> .		
	Afterwards click <b>Save</b> .		
	the set of		
	Languages A Vetwork Settings IPvi MAC		
	O Date & Time Ethernet 1 Ethernet 2 Method: Manual		
	Netmask:         255.255.0           Gateway:         10.33.0.10		
	E Servers >> DNS Server:		
	S Notification		
	v°s Backup v x Cancel ≧Save		
	Note:		
	Make sure to remember the new IP address of the energy		
	monitoring server.		

Step	Action	
16	Set the <b>Setup switch</b> (a) of the energy monitoring server to position <b>OFF</b> .	
	Result:	
	The following message is displayed:	
	Notification *	
	Setup Mode will be disabled after next reboot	
17	Turn off the power supply for more than 10 seconds.	
18	Turn on the power supply and wait for the boot phase of the energy monitoring server.	
	Result:	
	The <b>Power LED</b> starts blinking and then is illuminated permanently.	
	The setup mode is deactivated.	
Migrat	ion into your LAN	
19	Disconnect the Ethernet cable from <b>Ethernet port 1</b> between computer and energy monitoring server. Connect the computer and the energy monitoring server via <b>Ethernet port 2</b> to your LAN.	
20	Enter the IP address of the computer manually within the IP range of your LAN, e. g. 10.33.71.15:	
	Open the Control panel.	
	Ohoose Network and Sharing Center.	
	Olick Change Adapter Settings.	
	Right-click the activated Ethernet connection.	
	• Choose <b>Properties</b> from the context menu.	
	Double-click Internet Protocol Version 4 (TCP/IPv4).	
	<ul> <li>Configure DHCP as follows:</li> <li>Use the following IP address: for example: 10.33.71.50</li> <li>Obtain DNS server address automatically</li> </ul>	

Step	Ac	tion				
21	ser	ver and	e IP communication between the energy monitoring d the computer within your LAN as follows (Exp. for 7 / 10):			
	Û	Open	a <b>Command Prompt</b> (Enter <i>cmd</i> ).			
		📨 Ru	in X			
		<u>O</u> pen	Type the name of a program, folder, document or Internet resource, and Windows will open it for you.			
			OK Cancel <u>B</u> rowse			
	0		m a ping command to 10.33.71.15 (ping 10.33.71.15).			
		Microsof Copyrigh C:\Users Pinging Reply fr Reply fr Reply fr Ping sta Pack Approxim C:\Users	<pre>dows/system32(cmd.exe</pre>			
	Note:					
		ntact y pondir	our IT network administrator if the ping is not not			
22	0 0	into th press	the new IP address of the energy monitoring server the address bar of the browser ( <i>https://10.33.71.15/</i> ) and <b>Enter</b> . Inding on your browser a security message appears:			
		~	There is a problem with this website's security certificate.			
			The security certificate presented by this website was issued for a different website's address.			
			Security certificate problems may indicate an attempt to trick you or intercept any data you send to the server.			
			We recommend that you close this webpage and do not continue to this website.			
			Click here to close this webpage.			
			<ul> <li>Continue to this website (not recommended).</li> <li>More information</li> </ul>			
	6	Click '	Continue to this website (not recommended)			
		UICK				

Step	Action
23	Login to Hager Energy Server         Login:         Password:         Login
	Enter the login name <i>admin</i> and the new super <i>admin</i> password.
24	Click <b>Login</b> to start the user interface of the energy monitoring server.
	Result:
	The start screen of the user interface is displayed. The energy monitoring server is able to work in your personal surrounding with the new settings.
25	Configure the energy monitoring server. The easiest way is to let the Configuration wizard (see p. 44) guide you.

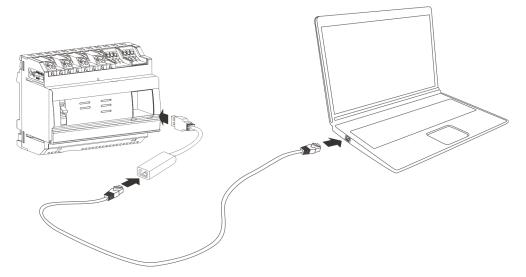
## NOTICE

During the setup phase, never connect the energy monitoring server to the LAN but only to a local computer using Ethernet cable.

Store the new password of the super *admin* user in a secure location. If you lose the password of the super *admin* user, the only way to reconnect to the energy monitoring server is to

- switch the energy monitoring server to setup mode (see above: Step 1 - 3)
- reset the super admin password (see above: Step 7;
   Enter the login name (admin) and click Reset super admin password to set the password of the super admin user back to the default value admin, whatever it was before.)
- restart the energy monitoring server (see above: Step 16 18)

## 4. 5 Alternative setup connection using USB to RJ45 Ethernet interface



The HTG457H is a USB to RJ45 Ethernet interface, especially suitable for local connection with the energy monitoring server using a computer. The HTG457H allows direct connection on the front panel, avoiding any removing of a cover.

The USB port acts as an *Ethernet over USB*. This configuration is used when the access to the RJ45 Setup port - Ethernet port 1 is not possible.

Step	Action
1	Set the <b>Setup</b> switch of the energy monitoring server to position <b>ON</b> .
2	Reset the energy monitoring server by switching off /on the power supply.
3	Wait until the <b>Power</b> LED is fixed green.
4	Connect the USB port of the HTG457H to the front USB port of the energy monitoring server.
5	Connect the Ethernet port of the HTG457H to the Ethernet port of the computer with an Ethernet cable (twisted or not).
6	Configure the IP address of the computer so that the IP address is assigned automatically.
7	Open a web browser.
8	Enter <i>https://192.168.2.1/ into the address bar of the browser</i> and open the Web application delivered by the energy monitoring server.

For more detailed information (see p. 25).

## 4. 6 Alternative setup connection using USB to Wi-Fi interface



The HTG460H WLAN dongle is a USB to Wi-Fi interface, especially suitable for the connection without wire with the HTG410H. It allows direct connection on the front panel. This is the easiest mean to connect a computer or a tablet.

Step	Action
1	Set the <b>Setup switch</b> of the energy monitoring server to position <b>ON</b> .
2	Reset the energy monitoring server by switching off /on the power supply.
3	Wait until the <b>Power LED</b> is fixed green.
4	Connect the USB port of the HTG460H to the front USB port of the energy monitoring server.
5	Configure the IP address of the computer so that the IP address is assigned automatically (DHCP).
6	Use the following WIFI code to connect your computer with the energy monitoring server: HagerHTG410H
7	Open a web browser.
8	Enter <i>https://192.168.3.1/</i> into the address bar of the browser and open the Web application delivered by the energy monitoring server.

For more detailed information (see p. 25).

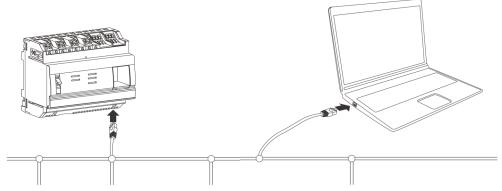
## NOTICE

Ensure that the **RJ45 Setup port -Ethernet 1** (see p. 24) is not used simultaneously to one of the alternative setup connections. In setup mode the energy monitoring server activates its DHCP server on RJ45 Setup port - Ethernet 1.

## 4.7 Connection with Ethernet backbone

The connection with Ethernet backbone is the appropriate installation as soon as the energy monitoring server is working properly. The energy monitoring server is then linked to the LAN of the site by Ethernet 2.

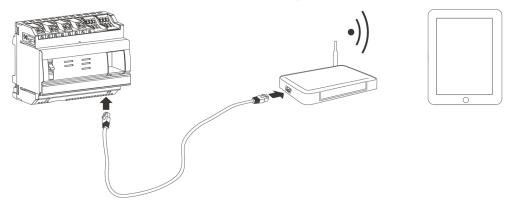
Configuration is still possible even during standard mode.



The setup mode is deactivated. DHCP service is delivered by the site infrastructure.

## 4.8 Connection with Ethernet Wi-Fi access point

A Wi-Fi access point is installed near the energy monitoring server and an Ethernet cable is connected to the access point and the energy monitoring server. The Wi-Fi access point can be configured as a DHCP server.



The setup mode is deactivated. The energy monitoring server can be configured with static address or with dynamic address.

## 4.9 Recycling

For protecting the environment, dispose of the energy monitoring server according to the legal requirements.

Disposal has to be carried out by qualified personnel.

## 5 General information about the user interface

#### Introduction

This chapter contains overall information regarding the user interface of the energy monitoring server. On the one hand, the screen elements, generic functions and symbols are explained. On the other hand, the chapter gives an overview of all menu items including a short explanation. In addition a brief instruction explains how to use the configuration wizard and how to perform typical tasks.

#### **Chapter contents**

Structure	37
Overview of all menu items	40
Quick start access	44

#### 5.1 **Structure**

#### Start screen

If you log in into the user interface of the energy monitoring server, the start screen is displayed:





Depending on the rights the administrator has given to your user, one or several menus are displayed.

If your user profile is	then the following menu(s) are displayed:
Viewer,	Exploitation.
Configurator,	Exploitation and Configuration.
Administrator,	Exploitation, Configuration and Preferences.

Select a menu by clicking the corresponding

- small icon in the status bar \_
- or
- big icon in the middle of the screen. \_

#### **Screen elements**

*	므 ≪ ≆	:hager.agardio.manager	📥 admin 🗸 🗸
	Languages ^	(3)	Personal Settings Configuration wizard About
0	Date & Time		C English
¢\$	Communication		French German
4	Network (2)		Polish Portuguese
	System		Spanish
	Servers >		Dutch Logout
$\geq$	Notification		
	Users		
O\$	Backup	Preferences	
<u>±</u>	Publisher	Use left menu to set your preferences	
1	Status b	ar	
2	Menu ba	r	
3	Generic	functions	
	any alarm is	active, a warning icon A is displayed left to the g	generic

functions.

Depending on your profile, the status bar shows the following icons:

Icon	Description
	Click to display the start screen.
	Click to display the menu bar of the Exploitation menu.
<b>O</b> o	Click to display the menu bar of the <b>Configuration</b> menu.
ļţ	Click to display the menu bar of the <b>Preferences</b> menu.
	Click the warning icon to display messages and alarms at the <b>Events</b> menu item (see p. 143).
	Information: No backup available.
<b>土</b>	Information: A new version of software will be installed at the next start.

The menu bar contains the menu items of the corresponding menu. Click a menu item to open it.

Function	Description
Personal settings	Modify the user account information:
	- Last name,
	- Choice of sending notifications,
	- The e-mail address,
	- Telephone number,
	- The user password.
Configuration wizard	Navigate through the menu items that need to be filled with data to use the energy monitoring server
About	Show the current software version of the energy monitoring server and legal declarations about used open source programming tools.
All available languages	Choose your working language
Logout	Log out of the user interface

The status bar enables you to use the following generic functions:

## NOTICE

For data security and data safety, log out of the user interface when you have finished working with the energy monitoring server. It is necessary to prevent other users from using your profile.



#### Information missing

If you try to save an action by entering invalid information or without providing the necessary information, a red exclamation point or red border indicates where to add the missing information.

Name:	1
Description:	Bati ① This field is required
Installation date:	07/(

#### Additional functions

Within the menu screens this icons may be displayed:

$\bigcirc$	<b>Reload data</b> Click this icon to reload the measurement values.
	<b>Download as image</b> Click this icon to download a graphic as *.png graphic.
or	Save as spreadsheet Click this icons to download a spreadsheet with the displayed data as a *.csv file.

## 5.2 Overview of all menu items

#### Menu(s) for certain users

The user interface of the energy monitoring server is divided into three menus:

- Exploitation
- Configuration



- Use **Exploitation** if you are a facility manager or a member of the maintenance team.
- Use **Preferences** if you are a system integrator.
- Use **Configuration** if you are an electrician or system integrator.

#### **Exploitation menu**

The **Exploitation** menu includes the following menu items:

Menu item	Description
Energy management	Visualize indicators for energy management and efficiency graphically
	<ul> <li>Dashboard: Charts of energy distribution and energy trends by energy sources and consumption.</li> </ul>
	Charts of non-electric energy distribution, total pricing, relative consumption and download function.
	<ul> <li>Consumption: Charts of the energy consumption and energy trend per usage / zone, download function</li> </ul>
	<ul> <li>Sources: Charts of the energy sources (i.e. Solar panels) and energy trend per source type, download function</li> </ul>
	<ul> <li>Products: Complete list of energy indexes and relative consumptions of all measuring devices.</li> </ul>
	<ul> <li>Pricing: Graphical representation of estimated cost per energy source and cost trends per week and month.</li> </ul>
	<ul> <li>W.A.G.E.S*: Functionality showing the varying measures related to different non energetic services used for measuring various consumptions *(Water, Air, Gas, Electricity, Steam)</li> </ul>

Menu item	Description
Power quality	<ul> <li>Visualization of power quality indicators</li> <li>Regular: Tables of Phase to Phase / Neutral Voltage, Current per Phase and Frequency</li> <li>Advanced: Tables of Power factor and THD (V, U &amp; I) in percentage of the nominal value. Charts of the different harmonics (V, U &amp; I)</li> </ul>
Protection	<ul> <li>Visualization of information on protection products.</li> <li>Dashboard: Overview of the protection products on the dashboard.</li> <li>Products: Visualization of the settings for the selected protection products.</li> <li>Maintenance: Overview of the maintenance information for protection products.</li> </ul>
Measurements	<ul> <li>Displays measurement data by product</li> <li>Trends History: Graphical representation of saved measured values from the different measuring devices</li> <li>Real-time: Table or figure of current measured values from a chosen measuring device.</li> <li>Real-time multi-product: Table or figure of current measured values from several selected measuring devices.</li> <li>Compare: Graphical comparison of a service for a measuring device between two different time periods</li> <li>Energy: Graphical display of energy values measured and recorded from different measuring devices.</li> </ul>
Events	View of active events or all events occurring on the system (alarms, tests, logins/logouts, creation of new users)
EIEC	Visualize the electrical energy efficiency class EIEC (chart or grid view)

### Configuration menu

The **Configuration** menu includes the following menu items:

Menu item	Description
Building	Update the location of the installation.
(see p. 20)	Create, update and delete entries for
	- <b>Zones</b> : Parts/areas of the building
	<ul> <li>Usages: Type of application for which electrical energy is used (lighting, heating,)</li> </ul>
	- Cabinets: Switch cabinets in the building

Menu item	Description
Products	Create, update and delete entries for the measuring devices that are communicating with the energy monitoring server
Events	Create, update and delete definitions for alarms; occurring events are listed at the <b>Exploitation</b> menu.
EIEC	Set the EIEC parameters for the building
Data management	Update refresh frequencies for saving the current values of the measuring devices.
BACnet	Configure BACnet objects.
Publisher	Choosing the configurated products and their associated services to be published (sent to the server). This publication can be done periodically regardless of the mode or immediately in configuration mode only.
Pricing	Set tariffs for different services according to relative consumption during the day

#### **Preferences menu**

The **Preferences** menu includes the following menu items:

Menu item	Description
Languages	Set the language for: - the application - alarm notifications - publication exports
Date & Time	Change date and time of the energy monitoring server.
Communication	Set parameters of the fieldbuses (Baud rate, parity).
Network	Configure LAN settings.
System	Set the language for: - the application - alarm notifications - publication exports
Servers	Configure server settings.
Notification	Configure the way to inform users about certain events occurring on the system.
Users	Create, update and delete users; set passwords.
Backup	Configure the backup time and FTP settings; export the backup data using USB, FTP or HTTP.
Publisher	Configure server settings for data export.
Pricing	Activation / deactivation and setting currency for pricing. Configure the export settings for prices.

Menu item	Description
Catalogue	Upload or update product plugins for measuring devices or fieldbuses which need to be configured on the energy monitoring server.
I/O	Set the 0 - 10 V output and view the relay status.
Analyzer	<ul> <li>View status:</li> <li>Diagnosis: Status of the energy monitoring server.</li> <li>Fieldbus: Status of the products connected to fieldbus.</li> <li>Network: Status of IP connection.</li> <li>BACnet: BACnet object status.</li> </ul>
Maintenance*	<b>Software update</b> : Upload new software versions of the energy monitoring server.
Factory reset*	Return to factory settings <b>Note</b> : All your configuration settings and data are deleted irrevocably.
About	Show the current software version of the energy monitoring server and legal declarations about used open source programming tools.

\*: This menu item is only available for the super *admin* user.

## 5.3 Quick start access

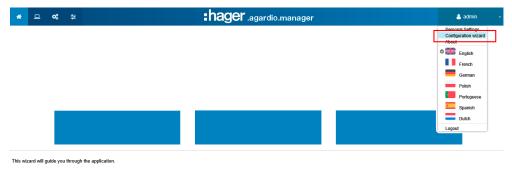
#### **Typical tasks**

You can use the quick start access to:

- configure the energy monitoring server
- define a new measuring device
- open a:
  - Dashboard,
  - Real-time view,
  - Historic view

#### Configure the energy monitoring server

Choose the generic function **Configuration wizard** and let it guide you through the menu items to be filled with data:



The following menu items will be displayed one after another:

Step	Menu item	Description
1	Building Link to Building (see p. 83)	Enter data regarding the location of the installation
2	Date & Time Link to Date and Time (see p. 51)	Set date and time of the energy monitoring server
3	Communication Link to Communication (see p. 52)	Set parameters of the fieldbuses (speed, parity) to fit with the parameters of the connected measuring devices
4	Network Link to Network (see p. 55)	Configure LAN settings
5	Notification Link to Notification (see p. 59)	Configure the way to inform users about events
6	Zones Link to Zones (see p. 85)	Define areas of the building

Step	Menu item	Description
7	Usages Link to Usages (see p. 87)	Define a special usage if needed
8	Cabinets Link to Cabinets (see p. 89)	Define the cabinets that are installed in the building
9	Products (see below: <b>Define a</b> <b>new measuring device</b> )	Define the measuring devices that are communicating with the energy monitoring server

At the end, remember to generate the commissioning report:

You have rea	ched the end of the wizard. Please click on the "End" button to display the commission	oning report.
Close	Previous	End

If you are	and want to
a system integrator	set the global system parameters (see p. 48)
an electrician or a system integrator	set / modify product or building parameters (see p. 84)
a facility manager or member of a maintenance team	visualize energy monitoring data (see p. 117)

#### Define a new measuring device

$\frown$	- 1		
		U	

To define an new EC700 modular multifunction meter (see p. 89).

Step	Action
1	Click the <b>Configuration</b> menu 🥰.
2	Click Products.
3	Click • to define a new measuring device that is communicating with the energy monitoring server.
4	Select the measuring device that you want to define.
5	Tick the corresponding check boxes <b>Storage</b> to select the services that you want to be logged and visualized in the menu items of the <b>Exploitation</b> menu.
	Note:
	The capacity of the database depends on the number of stored services. If the storage is full the oldest values will be overwritten.
6	Click Next.
7	Enter the name of the new measuring device.
8	Allocate the measuring device to a zone, usage and cabinet.
9	Set the connection parameters of the product according to its fieldbus.
10	If the product type allows it, click <b>Identification</b> to test the communication between the measuring device and the energy monitoring server.
	Note:
	If the identification is not successful, check the fieldbus connection and the fieldbus parameters.
11	Click Save.
	Result:
	After a short moment, the new measuring device is displayed in the list of all available products.

For more detailed information (see p. 89).

#### Open a dashboard

Step	Action
1	Click the <b>Exploitation</b> menu .
2	Click Energy management.
3	Click Dashboard/Consumption/Sources.

For more detailed information (see p. 120).

### Open a real-time view

Step	Action	
1	Click the Exploitation menu 🛄.	
2	Click Measurements.	
3	Click Instantaneous.	
4	Click Product and choose a <b>Product</b> .	
5	Choose the Services that you want to visualize.	
6	Click Apply.	

For more detailed information (see p. 139).

### Open a historic view

Step	Action
1	Click the <b>Exploitation</b> menu .
2	Click Measurements.
3	Click Trends/History.
4	Click Product v and choose a <b>Product</b> .
5	Click services and choose a service ( <b>Services</b> ).
6	Click <b>Additional products</b> if you want the same service of another product to be added in the figure.
7	Click to choose a <b>Start</b> and <b>End date</b> . Note:
	Always set an end date greater than the start date.
8	Click <b>Apply</b> .

For more detailed information (see p. 134).

## 6 PREFERENCES menu

#### Introduction

This chapter provides detailed information regarding all menu items of the **Preferences** menu.

The **Preferences** menu allows managing global system settings of the energy monitoring server.

## NOTICE

The **Preferences** menu may only be used by the system integrator or administrator.

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## 6.1 Overview of the menu items

The **Preferences** menu includes the following menu items:

Menu item	Description
Languages	Set the language for: - the application - alarm notifications - publication exports
Date & Time	Change date and time of the energy monitoring server.
Communication	Set parameters of the fieldbuses (Baud rate, parity).
Network	Configure LAN settings.
System	Set the language for: - the application - alarm notifications - publication exports
Servers	Configure server settings.
Notification	Configure the way to inform users about certain events occurring on the system.
Users	Create, update and delete users; set passwords.
Backup	Configure the backup time and FTP settings; export the backup data using USB, FTP or HTTP.
Publisher	Configure server settings for data export.
Pricing	Activation / deactivation and setting currency for pricing. Configure the export settings for prices.
Catalog	Upload or update product plugins for measuring devices or fieldbuses which need to be configured on the energy monitoring server.
I/O	Set the 0 - 10 V output and view the relay status.
Analyzer	<ul> <li>View status:</li> <li>Diagnosis: Status of the energy monitoring server.</li> <li>Fieldbus: Status of the products connected to fieldbus.</li> <li>Network: Status of IP connection.</li> <li>BACnet: BACnet object status.</li> </ul>
Maintenance*	<b>Software update</b> : Upload new software versions of the energy monitoring server.
Factory reset*	Return to factory settings <b>Note</b> : All your configuration settings and data are deleted irrevocably.
About	Show the current software version of the energy monitoring server and legal declarations about used open source programming tools.

\*: This menu item is only available for the super *admin* user.

## 6.2 Languages

#### Steps to open the menu item

Step	Action	
1	Click the <b>Preferences</b> menu 🎛.	
2	Click the Languages menu.	
3	<ul> <li>Select a default languages for:</li> <li>The application</li> <li>The alarm notifications</li> <li>The Publisher export</li> </ul>	
4	Click <b>Save</b> to save the settings.	

#### Screen to be displayed

*	□ 📽 👙 🚺	:hager.agardio.manager	💄 admin 🔍 🗸
-	Languages	Languages	
٥	Date & Time	Default application language: English (United Kingdom) 2	
¢\$	Communication	Alarm notification language: English (United Kingdo 🗸 ) Publisher export language: German (Germany)	
4	Network	3 English (United Kingdom) Spanish (Spain)	
	System	Utch (Netherlands)	
	Servers >	Portuguese (Portugal) Polish (Poland)	
$\geq$	Notification		(4)
Jet	lleare		🗙 Cancel 🔡 Save

#### **Further information**

At the next login the login screen will appear in the selected language.

To change the language of the user interface, please select the language in the **Generic Functions** menu.



## 6.3 Date & Time

#### Steps to open the menu item

Step	Action
1	Click the <b>Preferences</b> menu 🗮.
2	Click Date & Time.
3	Choose a method to set date and time.
4	Click <b>Save</b> to save the changes.

#### Screen to be displayed

*	□ 📽 😫 🚺	:hager .agardio.manager	💄 admin 🔍 🗸
	Languages	Date & Time Settings	
0	Date & Time 2	Current Time (UTC): Mon, 4 Sep 2017 13:43:16 UTC	
¢\$	Communication	Current local time: Mon, 4 Sep 2017 15:43:16 Time zone: (UTC+01:00) Brussels, Copenhagen, Madrid, Paris 2	
4	Network	Method: Automatic Time Configuration 2	
	System	Automatic Time Configuration	
	Servers >	UTC: Mon, 4 Sep 2017 13:52:33 UTC Estimated local time: Mon, 4 Sep 2017 15:52:33	
$\geq$	Notification	Estimated local time: won, 4 Sep 2017 15:52:33	
	Users		(4)
¢\$	Backup >		🗶 Cancel 🖺 Save

#### **Further information**

There are three ways to set the date and time of the energy monitoring server:

- **Automatic Time configuration**, i. e. time setting by synchronizing the energy monitoring server with time and date of the PC or tablet that hosts the Web browser.
- **NTP server configuration** enables the synchronizing with a NTP time server.

In this case, please set the NTP server name (the server port is set to 123).

- **Manual configuration**, i. e. manual time setting (UTC and local). For a correct system time stamp, set the correct time zone in the menu.

## NOTICE

The time synchronization is sent periodically by the energy server to all the slaves present on the bus.

## 

#### Function available

Exception : Date and time setting is not possible.

## 6.4 Communication

#### - ModbusRTU:

Steps to open the menu item

Step	Action
1	Click the <b>Preferences</b> menu 🎛.
2	Click Communication.
3	Click <b>MODBUSRTU</b> to display the corresponding settings.
4	Control, change or add communication settings.
5	Click <b>Save</b> to save changes.

#### Screen to be displayed

*	_ « ≢ <mark>1</mark>	) :	hager	agardio.manager	📤 admin 🗸 🗸
	Languages	✓ Communication Settings	Baud rate (Bd):	19200	
0	Date & Time	MODBUSRTU MODBUSTCP	Parity:	Even	
<b>c</b> 2	Communication 2	MODBUSTCP 3	Stop bits:	1 (4)	
~0			Timeout (s):	0.5	
4	Network		Retry number:	3	_
	System		Data length:	8	(5)
	Servers >				U
	Servers /				🗶 Cancel 🛛 🖹 Save

#### **Further information**

- **Baud rate** (default: *19200 Baud*) is the speed of the bus.
- **Parity** must be set (Even, odd or none). In case *none* is set, a second stop bit is added.
- **Number of stop** bits depends on the parity setting.
- **Time out** (default: *0,25 seconds*) refers to the maximum waiting time between the interrogation of the master (energy monitoring server) and the reply of the slaves (measuring devices connected to the bus / communicating with the energy monitoring server).
- **Retry number** is the maximum number of trials after the first attempt to obtain responses from the slaves.
- **Data length** is 8 for Modbus RTU.

## NOTICE

All measuring devices (master and slaves) must have the same settings regarding baud rate and parity in order to ensure the communication. Refer to the installation guide for more detailed information.

Hager recommends to use the following settings:

Baud rate:19200 BaudParity:EvenStop bit:1

#### - ModbusTCP:

Steps to open the menu item

Step	Action
1	Click the <b>Preferences</b> menu <b>E</b> .
2	Click Communication.
3	Click <b>MODBUSRTU</b> to display the corresponding settings.
4	Use client certificate and upload certificate and key if required.
5	Click <b>Save</b> to save changes.

#### Screen to be displayed

# ⊑ ≪ ≆	1)	hager agardio.manager							🔒 admii	n v
🝽 Languages	Communication Settings	Use client certificate:	Yes 🜌							
O Date & Time	MODBUSRTU MODBUSTCP 3	Certificate:	Select a file t	_	(4)					
✿ Communication	2)	Private key: Connections	Select a file t	Browse	Ċ					
< Network		Address 10.33.174	Port 5022	Timeout (s) 1.25	Retry num 2	Security Encrypted	Preferred Any	Check cer Yes	Accept sel Yes	<i>.</i>
🗁 System		10.33.174 10.33.174	5022 502	1.25 10	2 2	Encrypted Encrypted	Any Any	Yes No	No Yes	# #
Servers		10.33.174.4	502	1.25	2	Clear text		5	X Cancel	Save

#### **Further information**

In this menu, a Certificate and Key can be uploaded, as long as the use of a client certificate has been activated (only for Authenticated connections).

- Use client certificate (Yes/No)
- Certificate: Click Select file and choose the file that contains the certificate
- **Product key:** Click Select file and choose the file that contains the product key

#### **Configure the connection**

Every MODBUSTCP connection (identified by its hostname and port) can be configured

Click to configure the connection.

Edit connection		×
Address:	10.33.174.240	
Port:	5022	
Timeout (s):	1.25	+
Retry number:	2	+ _
Security mode:	Encrypted	$\sim$
Certificate:	Select a file to	
Preferred security protocol:	Any	~
Check certificate date:	Yes	$\sim$
Accept self-signed certificate:	Yes	~
	🗙 Can	cel 💾 Save

#### **Further information**

- **Time out** (between 0.25 and 10 seconds) refers to the maximum waiting time between the interrogation of the master (energy monitoring server) and the reply of the slaves (measuring devices connected to the bus / communicating with the energy monitoring server).
- **Retry number** is the maximum number of trials after the first attempt to obtain responses from the slaves.
- **Security mode** (Clear text, Encrypted, or Authenticated).
- **Certificate**: the certificate used to authenticate the connection (for authenticated connections only)
- **Preferred security protocol** (Any, TLS1.1, or TLS1.2, and only for Encrypted and Authenticated connections)
- Check Certificate date (Yes or No, only for Encrypted connections)
- Accept Self-signed certificate (Yes or No, only for Encrypted connections)



Function available

# :hager

## 6.5 Network

#### Steps to open the menu item

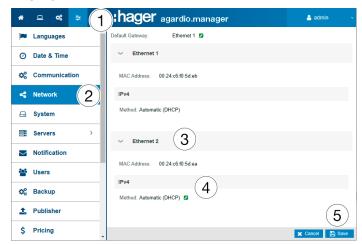
Step	Action
1	Click the <b>Preferences</b> menu <b>E</b> .
2	Click Network.
3	Choose <b>Ethernet 1 or Ethernet 2</b> to control/change the corresponding network settings. Find the valid settings at
	<ul> <li>Ethernet 1, if the physical cable is connected to Ethernet port 1,</li> <li>Ethernet 2, if the physical cable is connected to Ethernet</li> </ul>
	port 2
4	Choose a <b>Method</b> to set the IP address.
5	Click <b>Save</b> to save changes.

## NOTICE

The energy monitoring server has to be integrated into your LAN. Contact the IT network administrator to

- organize the IT settings or
- authorize you to connect the energy monitoring server to the LAN. You need the following information:
  - a) IP address
  - b) Subnet mask
  - c) Gateway adress
  - d) DNS server adress

#### Screen to be displayed



#### **Further information**

To set the IP address (address, Subnet mask and gateway), there are two methods:

- Automatic means that the energy monitoring server gets the IP address automatically from a DHCP server.
- *Manual* means that address, Subnet mask, gateway and DNS server have to be set manually.

Hager recommends the manual method.

If you use the manual method, then the following parameters must be set:

Address is the IP-address of the energy monitoring server within the LAN.

Netmask represents the settings which part of the IP address

- is the same for every device in the network (network part).
- is used for addressing (device part).

In the netmask 255.255.255.0 the first 24 bits are set to 1 and represent the network part. The remaining 8 bits represent the device part and enable you to connect up to 254 devices to the network.

**Gateway** is the IP-address of the router of the LAN. If you do not assign an IP address to the gateway, then no communication outside the LAN is possible (neither e-mail, nor HTTP or FTP processes).

**DNS Server** is the IP address of the domain name server. A name is easier to remember than an IP address.

C) LINKBYB*	Satur Passa	vord Status	PHCP	Log	Halp	Advanced	
DHCP	You can configure the router to act as a DHCP (Dynamic Host Configuration Protocol) server for your network. Consult the user guide for instructions on how to setup your PCs to work with this feature.						
DHCP Server: Starting IP Address: Number of DHCP Users: Client Lease Time: DNS 1: 2: 3: WINS:	192.168.1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	minutes (0		one day	n		

Example of a router configuration

Hager recommends to use a static configuration of the energy monitoring server (**Method**: *Manual*). In consequence the LAN gateway (router or firewall) must use the same configuration (i. e. DHCP Server has to be disabled).

Take care to assign different IP addresses for router and energy monitoring server.



## 6.6 System

#### Steps to open the menu item

Step	Action
1	Click the <b>Preferences</b> menu 📴.
2	Click System.
3	Change the WLAN SSID and/or the password.
4	Click Save to save changes.

#### Screen to be displayed

* = « <u>=</u> (1	:hager agardio.manager	🛔 admin 🔍 🗸
🝽 Languages	System	
O Date & Time	Georgia	
Op Communication	Device name: TJA665-FV5DB0	
< Network	SSID: HTG110H	
□ System (2)		
Servers >	Servers	
Notification	BACast Server Yes	
嶜 Users	- Superinter Mode Activitied: No	
Ø <sub>6</sub> <sup>6</sup> Backup		
1 Publisher		
\$ Pricing		
🚯 Catalogue		
≓ 1/0		
Analyzer >		
[췹] Maintenance >		~
🗲 Factory reset		(4)
About		$\bigcirc$
		🗙 Cancel 🔛 Save

#### NOTICE

Hager recommends **not** to change the SSID and the password. If you have to alter these setting, don't forget to document the changes. Otherwise you will have no further access to the WLAN.

#### **Fields to enter**

Switching to **supervised mode** (Activated: Yes/No) enables you to set the link with the Energy Management Software stream.

For more detailed information (see p. 148).

#### **Further information**

Agardio manager is a multiprotocol server: these are not all enabled by default. A special login is required to enable the BACnet server.

The user connects to the IHM with the special login "integrator". By default, the password is "integrator".

In the "Preferences" application, the System page presents the activation status of the BACnet server. After activating the server and saving the changes, the integrator can see a new page: Preferences | Servers | BACnet Server.

By activating this status, the protocol becomes visible but is not yet running. More configuration is required (such as the Ethernet interface, UDP port, etc.) before having an executable configuration.

Note: the BACnet server is disabled in setup mode.



**Function available** 

### 6.7 Server

#### Steps to open the menu item

Step	Action
1	Click the <b>Preferences</b> menu 🗮.
2	Click Server.
3	Click Bacnet Server.

#### Screen to be displayed

# - at 🕫 ( -	:hager agardio.manager	<b>A</b> 2(1)	🛔 Laurent 💡
🗯 Languages	Web Server		
② Date & Time	A Warning!		
Ø <sub>6</sub> <sup>o</sup> Communication	Each modification on this page could lead to a connection problem		
Network	Modifications will be applied after a system restart		
🔒 System	Port 8888		
■ Servers (2)-	Centificat type: Higher Centificate		
E Web Server			
BACnet Server	3)		
Notification			
🖀 Users			
<b>Ø</b> <sup>0</sup> <sub>0</sub> Backup			
1 Publisher			
\$ Pricing			
Catalog			
≓ 1/0			
Analyzer >			
About			
			🗶 Cancel 🛛 📳 Save

#### **Further information**

The **port** number is used by the WEB server for HTTPS connections. By default, the HTTPS port number is 8888.

The certificate, always active, is used to secure data transfers and connection information. There are 2 possible choices:

- the native Hager certificate in the server
- the user certificate to load the Key File and the Certificate File.

Certificat type:	User Certificate	1
Key File:		Browse
Cert File:		Browse

Note: Do not load erroneous files, otherwise you will lose access to the server.



## Contract Con

#### **Function available**

## 6.8 Notification

#### Steps to open the menu item

Step	Action	
1	Click the <b>Preferences</b> menu 💳.	
2	Click Notification.	
NOTICE		

Ask your IT network administrator to know the SMTP server address.

#### Screen to be displayed

	□ <b>¤</b> ⇒ (	:hager agardio.manager	<b>A</b> 2(1)	🛔 Laurent 💡 🗸
-	Languages	Notification Server Settings		
Ø	Date & Time	SMP		
o;	Communication	Hostmane: 10.48.192.10		
<	Network	From: Sabrics Keinigthagegroup com Test receiver email: Sabrics Keinigthagegroup com		
	System	Pot number: 25 Authentication type: No Authentication		
=	Servers )	Daily notification: Yee		
	Notification $(2)$	Notification hour: 06:00		
쓭	Users			
¢8	Backup			
1	Publisher			
\$	Pricing			
4	Catalog			
₽	I/O			
۲	Analyzer >			
0	About			
				🗶 Cancel 🛛 🖹 Save

#### **Functions to choose**

- Click **Test server configuration** to send an e-mail to the address entered as **Test receiver email**.

#### **Further information**

An SMTP client is configured in order to send Email notifications to users.

The SMTP **Hostname** can be an IP address or the name of the server such as *smtp.gmail.com*. The host name is necessary to send e-mails.

From is the e-mail address that is displayed as sender address.

**Test receiver email** is the e-mail address to which test e-mail will be sent using **Test connection's configuration** when receiving an alert e-mail.

Port number is set to 25 (TCP port for SMTP).

**Authentication type** is *No Authentication* or *Password* (if a password must be set for e-mail sending).

**Daily notification** means that the report is sent every day when events are present.

Hour is the time to send the daily report of active events by e-mail.

The energy monitoring server informs users for whom **Notification** is activated at the **Users** (see p. 61) menu item about occurring events and critical alarms.

Alarms are indicated through:

- the Events (see p. 143) menu item of the Exploitation menu or
- Email if **Notification** is activated and **Email** (address) is specified for the user.

Critical alarms are indicated as soon as they are detected. Other alarms with lower priority and messages are indicated only once daily.

## **\$** SUPERVISED MODE

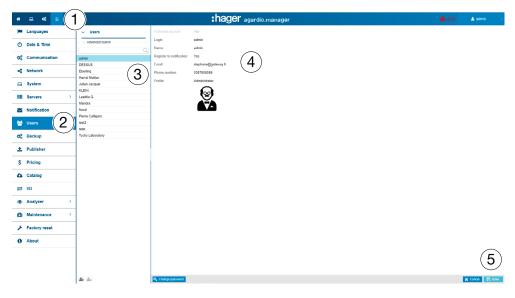
Function not available

## 6.9 Users (User management)

#### Steps to open the menu item

Step	Action
1	Click the <b>Preferences</b> menu 🛅.
2	Click <b>Users</b> .
3	Choose the user whose data you want to control/change.
4	Control, change or add user settings.
5	Click <b>Save</b> to save the changes.

#### Screen to be displayed



#### **Fields to enter**

A user is characterized by its:

- Status: **Activated** (Yes/No); Disabling a user temporarily suspends access to the server.
- Login (necessary, see below: Security requirements about login ...),
- Name (necessary),
- Notification (not necessary),
- Email address (necessary),
- Phone number (text field, 15 digit maximum length, not necessary),
- Profile (necessary),
- Icon (figure depending on the profile, set automatically),
- Password (necessary, see below: Security requirements about ... password).

The **Login** must be unique and cannot be changed.

The energy monitoring server informs users for whom **Notification** is activated about occurring events and alarms. For users to be informed, **Email** (address) has to be specified.

#### **Profiles**

The following profiles are available:

Profile	has access to the following menu(s):
Viewer,	Exploitation.
Configurator,	Exploitation and Configuration.
Administrator,	Exploitation, Configuration and Preferences.

Every user can only be assigned to one profile.

Only administrators are allowed to manage users and change passwords. Administrators are able to create new users with Viewer or Configurator profile.

Only the super *admin* user (see below) is able to create new administrators.

#### Functions to choose

- Click <sup>to</sup> to add a new user.
- Click k to delete a user that is not working with the energy monitoring server any more.
- Click Change password to change your password, if you are an administrator and know your old password.
   If you need to change your password without knowing the old password, the super *admin* user has to be involved. He might have to change the password without knowing the old one.

#### Admin user

A default user with Administrator profile is defined originally in factory settings as follows:

- Login: admin
- Password: admin

The *admin* login cannot be changed. Only the password of the super *admin* user can be changed.

The super *admin* user has full authorization within the user interface and is seen as a super administrator.

The super *admin* is the only user able to

- create new administrators,
- delete administrators,
- update data about any user,
- update passwords of other administrators,
- update the firmware of the energy monitoring server and
- restore the factory settings.

#### Hager recommends to

- change the password of the super *admin* user immediately at the first connection to the energy monitoring server (see p. 25).
- create a new administrator to do the main settings for the energy monitoring server.

### NOTICE

Store the password of the super *admin* user in a secure location.

If you lose the password of the super *admin* user, the only way to reconnect to the energy monitoring server is to

- switch to setup mode,
- reset the administrator password and
- restart the energy monitoring server.

For more detailed information (see p. 25).

#### Security requirements about login and password

The following rules must be obeyed:

Login	Password
minimum length: 3 characters	minimum length: 8 characters
movimum longth: 20 obstractors	Must not contain the login
maximum length: 20 characters	Maximum length: 20 characters
Must not contain any space	needs to contain at least one <ul> <li>special character</li> <li>upper case letter</li> <li>lower case letter</li> <li>digit</li> </ul>

The following special characters might be used:

!, \$, ', \* ,- ,: ,= ,@ ,] ,` ,} ," ,% ,( ,+ ,. ,; ,> ,[ ,^,{ ,~ ,# ,& ,) ,/ ,< ,? ,\ ,\_ ,| and , (the comma as a character)

Exp. for a correct password: *Hager2016.1* or \_*Hager2017* 

#### **Personal settings**

If you need to change the e-mail address, phone number or password for your own user and you are not an administrator, then choose the generic function **Personal Settings**:



## **CALCENTING SUPERVISED MODE**

#### **Function available**

## 6.10 Backup

#### Steps to open the menu item

Step	Action
1	Click the <b>Preferences</b> menu 🛅.
2	Click <b>Backup</b> .
3	Modify settings if necessary.
4	Click <b>Test</b> to check the server configuration.
5	Click <b>Save</b> to save the changes.

#### Screen to be displayed

*	- « = 1	:hager .agardio.manager	🐣 admin 🔍 🗸
	Languages	Backup	
0	Date & Time	✓ Backup settings	^
o\$	Communication	Backup time: 06:00	_
4	Network	✓ FTP settings	
	System	FTP backup active: Yes	_
	Servers >	ServerURL: ftp.hes.com Userlogin: administrator@hesxx g	
$\geq$	Notification	Password:	
	Users	Port: 21	
¢\$	Backup 2	Path:	
£	Publisher	Test server configuration 4	
\$	Pricing	<ul> <li>Last backup information</li> </ul>	
۵	Catalog	Last backup time: Mon, 4 Sep 2017 11:40 25 File name: hesDump_2017-09-04, 11:40-22 izo	
#	I/O	Size: 15.0MB	
۲	Analyzer >	🛓 Upload backup on FTP 😫 Copy backup on USB 📥 Direct download of last backup 😝 Force backup	generation 5
1	Maintenance >		X Cancel

#### **Fields to enter**

Configuring the backup service consists in setting:

- The time at which the backup creation starts (**Backup time**).
- The indication if backup has to be transferred to an FTP server (**FTP backup active**).

If the backup has to be transferred by FTP the following settings are needed in addition:

- Address (Server URL) and Port (default: 21) and Path of the FTP server.
- The FTP **User login** and **password** if the FTP server is configured to reject anonymous.
- The information if **Encryption** is used by the server (FTP over TLS).

If you change any FTP settings, then click **Save FTP settings** afterwards to save the changes.

## NOTICE

You can validate your FTP server configuration by clicking the **Test server** configuration button.

#### **Further information**

The backup service stores process and configuration data of the energy monitoring server to the embedded  $\mu$ SD card. The backup is performed automatically every day at the preset **Backup time** (file format '\*.lzo').

Backup data is automatically exported to FTP and manually to USB or DDL. The export does not create a new backup.

#### **Functions to choose**

There are three ways to export backup data:

Click,	if you want to export the data
Upload backup on FTP,	on an FTP server.
	You need to control or complete the FTP settings before you start the export.
Copy backup on USB,	to a USB stick.
	You need to plug in the USB stick to the front face USB connector of the energy monitoring server before you start the export.
Direct download of last backup,	to an HTTP client, e.g. your connected computer.

If you download a backup from HTTP, a similar message is displayed:

Do you want to open or save hesDump\_2018-05-07\_21-00-07.1zo from agardiomanager-lab.hager.fr? Open Save 🔻 Cancel 🗴

You can start a data backup by clicking on:

- **Force backup generation:** The energy server will generate a backup and store it in its memory.

## NOTICE

The backup data is needed

- in case of problems or damaging of the energy monitoring server.
- to integrate all settings and logged data into a new energy monitoring server.

#### Steps to restore a backup

Step	Action	
1	Switch the energy monitoring server to setup mode (see p. 23).	
2	Click the <b>Preferences</b> menu 🗮	
3	Click <b>Backup</b> .	
4	Click <b>Select file</b> and choose the <b>'LZO'</b> file that contains the backup.	
5	Click <b>Restore backup</b> to integrate all settings and logged data of the backup into the energy monitoring server.	
6	Deactivate the setup mode. (Set the <b>Setup switch</b> to position <b>OFF</b> and restart the energy monitoring server.)	

## NOTICE

Restoring the backup may take several seconds. It is necessary to allow the energy server time to restart automatically.

				🕫 SETUP MODE		
*	므 ≪ ≆			:hager agardio.m	anager	🐣 admin
0	Date & Time	Backup				
¢\$	Communication	Backup settings				
<	Network	Backup time:	9:00 PM			
	Notification	FTP settings				
~		FTP backup activ	ftp.hes.com			
_		User login:	administrator@hes			
¢\$	Backup	Password:	******			
1	Publisher	Port: Encryption:	21 No			
\$	Pricing	Encryphon.	NU			
0	Catalog					🗙 Cancel 🔛 Save
₽	I/O		🛃 Upload backup on FTP	Copy backup on USB	📩 Direct download of last backup	E Force backup generation
۲	Analyzer >	Restore				
(	Maintenance >	Backup File:	Select file Resto	re backup		

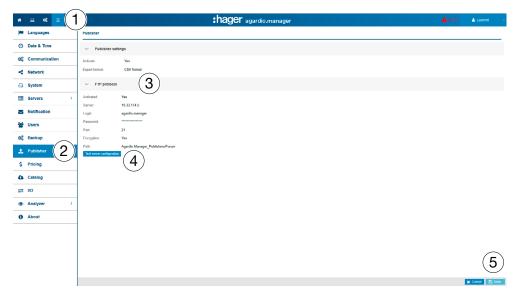
Contract Con	
Function not available	

### 6.11 Publisher

#### Steps to open the menu item

Step	Action
1	Click the <b>Preferences</b> menu <b>Ξ</b> .
2	Click <b>Publisher</b> .
3	Modify settings.
4	Click <b>Test server configuration</b> to check the connection.
5	Click <b>Save</b> to save the changes.

#### Screen to be displayed



#### **Fields to enter**

Configuring the Publisher service consists in setting:

- Setting the Publisher service active (Activate).
- Choosing the Export platform

If Ftp protocol is defined above the following settings are needed in addition:

- Server URL and Port (default: 21) of the FTP server
- The export Path
- The information if Encryption is used by the server
- The FTP **Login** and **Password** if the FTP server is configured to reject anonymous

## **\$\$** SUPERVISED MODE

#### Function not available

# :hager

## 6.12 Pricing

#### Steps to open the menu item

Step	Action
1	Click the <b>Preferences</b> menu 🗮.
2	Click <b>Pricing</b> .
3	Modify settings.
4	Click <b>Save</b> to save the changes.

#### Screen to be displayed

# 🗆 🕫 🗉	1 <b>:hager</b> agardio.manager	<b>A</b> 2(1)	👗 Laurent	
Languages	Pricing			
O Date & Time	✓ Pricing settings			
© Communication	Activited. Yes			
< Network	Tariff currency: Euro (3)			
🖨 System	V FTP protocol			
Servers >	Activisted: Yes 2			
Notification	- Server: 10.125.45.89 Login: hager			
🚰 Users	Password: """ Port 21			
Q <sub>6</sub> <sup>0</sup> Backup	Encrypton: Yes			
1 Publisher	Path: Text server configuration			
\$ Pricing (2)				
Catalog				
≓ 1/0				
Analyzer >				
6 About				
			G	
			4	<del>1</del>
			🗶 Cancel 🛛 🖹 S	Savo

#### **Fields to enter**

Definition of pricing and units of the energy sources:

- Enable or disable the price settings.
- Choosing the Tariff currency (pull down menu).

If Ftp protocol is defined above the following settings are needed in addition:

- Server and Port (default: 21) of the FTP server
- The export Path
- The information if **Encryption** is used by the server
- The FTP **Login** and **Password** if the FTP server is configured to reject anonymous



Function not available

## 6.13 Catalogue

#### Steps to open the menu item

Step	Action
1	Click the <b>Preferences</b> menu <b>=</b> .
2	Click Catalogue.
3	Click Products management or Fieldbus management.

#### Screen to be displayed - Products management

The following list is displayed at the **Products management**:

*	요 📽 😫 🤇	1)		Å admin					
	Languages		alog management	Fieldbus management 3					
9	Date & Time								
¢\$	Communication	Uploa	d catalog:	Select file	lpload				
	Network		Name 个	Description	Version	Manufacturer	Date		
•		$\sim$	ANALOGINPUT	Analog input device.	1.3.4	Hager	13/05/2015	1	1
3	System		ARXXX	TemPower 2 air Circuit Breakers - From 800A to	63 1.3.4	Hager	18/11/2015	1	
-	Servers >	п	BINARYINPUT	Binary input device.	1.3.4	Hager	13/05/2015	1	1
~	Notification		EC36X	Modular active electrical energy meter for direct of	co 1.3.4	Hager	17/11/2015	1	1
4	Users		EC37X	Modular active electrical energy meter up to 600	0 A 1.3.4	Hager	17/11/2015	1	1
£	Backup		EC700	Multi-utility pulse concentrator with 7 logical input	ts 1.3.4	Hager	12/11/2015	1	1
			H3	Smart LSI breaker.	1.2.3	Hager	19/11/2015	1	1
L	Publisher	1430	HIC4xxE	Energy source commutation manager.	1.3.4	Hager	13/06/2016	1	1
\$	Pricing		PULSECOUNTER	Pulse counter device.	1.3.4	Hager	08/04/2015	1	1
î.	Catalog (2)		SM101C	Modular multifunction meter displays + kWh, + kv	var 1.3.4	Hager	12/11/2015	/	1
•	1/0		SM102E	Panel mounted measurement unit displays + kW	h, 1.3.4	Hager	12/11/2015	1	1
۲	Analyzer >		SM103E	Panel mounted measurement unit displays +/- kw	Wh 1.3.4	Hager	12/11/2015	1	1
		i	SPC06HM	Controller for Power Factor Correction.	1.3.4	Hager	13/06/2016		

#### Functions to choose

- Click to remove a measuring device (product) from the catalog (Only if no instance of this product is being created).
- Click rot to modify a measuring device (product) in the catalog.

# NOTICE

Hager recommends to keep all measuring devices in the catalog.

#### Adding a new measuring device

To add a new measuring device to the catalogue or update available services:

Step	Action
1	Click <b>Select file</b> and choose the HES file that contains the new measuring device.
2	Click <b>Upload</b> to add the measuring devices to the catalogue.

#### Screen to be displayed - Fieldbus management

#### The following list is displayed at the Fieldbus management:

*	▣	¢\$	÷		:	hager	agardio.manager		🐣 admin 🔍 🗸
00	Comr	nunica	tion	^	Cata	alogue managem	ent		
4	Netwo	ork			Prod	ucts management	Fieldbus management		
	Syste	m				Name 个	Description	Version	Date
	Serve	ers		>	(O	LOCALIO	Agardio system extension for local IO management.	2.1.2	01/04/2015
	Notifi	cation			<b>j</b> entus	MODBUSRTU	Agardio System for the Modbus protocol.	2.1.2	17/03/2015
	Houn	cation		-	-	MODBUSTCP	Agardio System for the Modbus TCP protocol.	2.1.0	17/06/2021
<u> </u>	Users	•							
00	Back	up		•					

#### **Further information**

The energy monitoring server is delivered with a catalog of measuring devices. This catalog embeds a list of products with their signature (product identification), their available services, settings and alarms. A piece of the catalogue managing a smart product is called a *plugin*.

In case Hager adds a new product to the catalogue, a download of the corresponding plugin will be available on the Hager website of your country or on *https://hgr.io/r/htg411h*. The plugin has to be uploaded into the energy monitoring server (**Upload**).

#### **Potential error messages**

The following list explains the error messages that might be displayed at **Preferences/Catalog**:

Error message	Explanation/solution		
Product can't be added to catalog due to bad format.	You selected the wrong file type at the upload o new products. Use the correct HES file.		
Unable to delete a used product.	It is only possible to delete products which are not in use. If you still want to remove a product you must ensure that it is not in use.		

#### Steps for adding a non Hager product

Step	Action
1	Click the <b>Preferences</b> menu 📴.
2	Click <b>Catalogue</b> .
3	Click Configure custom product.

### Screen to be displayed

ñ	- ≪ ≢(1)	)		<b>:hager</b> agardio.manager			🐣 admin		
	Languages	Cata	alog management						
0	Date & Time	Prode	uots management Fieldbus manager	ment				6	
o;	Communication		dvanced search	Select file Upload			Configure custo	ં	)
4	Network	Upload	i catalog: Name ↑	Description	Version	Features	Date	n prod	JCI
a	System	🗆 Stan	dard product			r outuros			
=	Servers >	$\sim$		Analog input device.	1.7.0		13/05/2015	1	Û
$\searrow$	Notification		ARXXX	TemPower 2 air Circuit Breakers - From 800A to 6300A.	1.7.0	<ul><li>powerQuality.regular</li><li>protection</li></ul>	18/11/2015		Û
***	Users	п	BINARYINPUT	Binary input device.	1.7.0		13/05/2015	ø	Û
o°,	Backup	47	CUSTOM_MODBUSRTU	Custom MODBUS RTU product	1.7.0	Extendable	14/03/2016	1	Û
1	Publisher		EC36X	Modular active electrical energy meter for direct conne	1.7.0	<ul><li>powerQuality.regular</li><li>commands</li></ul>	17/11/2015	<b>S</b>	Û
\$	Pricing		EC37X	Modular active electrical energy meter up to 6000 A vi	1.7.0	<ul> <li>powerQuality.regular</li> <li>commands</li> </ul>	17/11/2015		Û
۵	Catalog (2)		EC700	Multi-utility pulse concentrator with 7 logical inputs + 2 $\ldots$	1.7.0		12/11/2015		Û

# SUPERVISED MODE

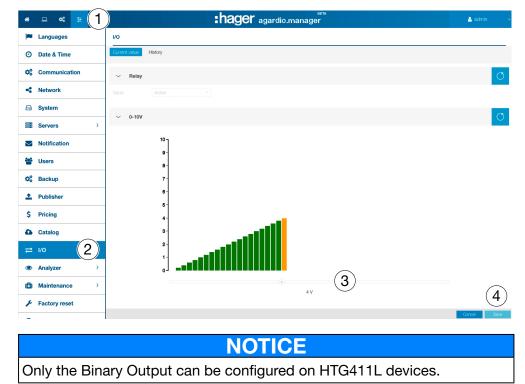
### **Function available**

## 6. 14 I/O (Input Output)

#### Steps to open the menu item

Step	Action
1	Click the <b>Preferences</b> menu 🗮.
2	Click I/O.
3	Adjust the settings.
4	Click <b>Save</b> to save the settings.

#### Screen to be displayed



#### **Further information**

The I/O menu item is a test function to drive the 0 - 10 V output.

If you set the graph to a value (e.g. 8.8 V) and Save it, the output voltage at the 0 - 10 V output is 8.8 volts.



### 6.15 Analyzer - Diagnosis

#### Steps to open the menu item

Step	Action
1	Click the <b>Preferences</b> menu <b>E</b> .
2	Click Analyzer.
3	Click Diagnosis.

#### Screen to be displayed

# □ ∞ Ξ (*	1)	:hager	igardio.manager		💄 admin
O Communication	Diagnosis				O
< Network	A Download server logs				
🖴 System	✓ CPU temperature	✓ Internal temperature	<ul> <li>CPU usage (%)</li> </ul>	✓ RAM usage (%)	<ul> <li>Exploitation database size</li> </ul>
Servers >	annul line		NUMBER OF STREET		
Motification	STIT 40 80 80	20 50 E	40 50 60 30 70	30 70	
🖀 Users		10 60 H	20 80	20 80 WI WI WI	9
O <sup>o</sup> Backup	64° C 120	20 50 10 52° C 70		20 20 90 90 90 90 90 90 90 90 90 9	1.25GB
1 Publisher					
\$ Pricing	<ul> <li>Event database size</li> </ul>	<ul> <li>Configuration database size</li> </ul>	✓ Disk usage	<ul> <li>Version</li> </ul>	V Processes
Catalogue			Internal disk space	Agerdio: 2.1.3	Process n %CPU RAM
			Internal disk space		unionfs 0% 0% : 20.15M _
≓ 1/0			2.99GB used / 5.47GB total (54.56%)	Back-end: 2.1.2	unionfs 0% 0% : 19.15M
(2)				Middle-end: 2.1.3	unionfo 0% 0% : 62.02M
Analyzer ( 2 )	<u> </u>		SD card disk space	Historian: 210	HesBackE 6% 0% 85.68M
😯 Diagnosis	З) з2.29МВ	1.15MB	3.77GB used / 7.51GB total (50.28%)		mongod 2% 5% . 367.941
Unagricono	0)			Controller: 2.1.2	HesContr 2% 0% : 32.45M
🛔 Fieldbus	Ĭ			Catalogue: 2.1.2	Historian.py 2% 1% :97.52M unionfo 0% 0% : 53.85M
< Network	<ul> <li>Device information</li> </ul>				
BACnet	Serial number: SHKX3F26AWY8F3NRGELU1296				
(C) Maintenance					
· · · · · · · · · · ·					

#### NOTE:

To expand the views click >, to collapse the views click  $\checkmark$ .

The Diagnosis screen displays the following status:

- CPU temperature of the measuring device (round display)
- Internal temperature of the measuring device (round display)
- CPU usage of the measuring device (round display)
- RAM usage of the measuring device (round display)
- Exploitation database size (disk size symbol)
- Event Database size (disk size symbol)
- Configuration Database size (disk size symbol)
- Disk usage (bare graphs):
  - Percentage of use of Internal disk space
  - Percentage of use of the SD card disk space
- Version of the different programs of the measuring device (table)
- List of processes in progress (table)

## **A** SUPERVISED MODE

#### Function available

## 6. 16 Analyzer - Fieldbus

#### Steps to open the menu item

Step	Action
1	Click the <b>Preferences</b> menu 😇.
2	Click Analyzer.
3	Click Fieldbus.

#### Screen to be displayed

# □ ≪ ≡ 1	:hager agardio.manager	
Nanguages	Fieldbus	
O Date & Time	~ Local IO	
Communication	Number of products: 4 1 5	
Network	Number of services: 5 5	
금 System	✓ Modbus RTU	
Servers >	Number of products: 18 14 32	
Notification	Communicating products:         18         18           Number of services:         1060         214         1274	
🐮 Users	Number of settings: 228	
Ø <mark>8</mark> Backup	Modbus statistics: Total frames: 11319984	
1 Publisher	Number of active frames: 74	
\$ Pricing	Communication failed by error: 0.0	
▲ Catalogue	Communication failed by timeout: 0.0	
₩ 1/0	Communication failed by checksum error: 0.0	
Analyzer (2) *	Communication failed by protocol error: 0.0	
💔 Diagnosis	Communication failed by exception: 0.0	
🚠 Fieldbus 3	Timeout frames: 0 >	
< Network	Checksum error frames: 0 >	
🚟 BACnet		
(C) Maintenance	Protocol error frames: 0	
Factory reset	Exception frames: 0 >	
1 About	~ Modbus TCP	
	Number of products: 2 8 10	
	Communicating products: 1 1 2	
	Number of services:         13         382         395           Number of settings:         268	

The Fieldbus screen displays the following information:

- Local I/O
  - Number of products connected to the energy monitoring server.
  - Number of external elements configured.
  - Number of Services (Measurements).

**:hage**r

#### - ModbusRTU:

- Number of products connected to the energy monitoring server via ModbusRTU.
- Number of products communicating with the energy monitoring server via ModbusRTU.
- Number of Services (Measurements) via ModbusRTU.
- Number of settings: (configuration of products)
- Modbus statistic (table view).
- ModbusTCP:
  - Number of products connected to the energy monitoring server via ModbusTCP.
  - Number of products communicating with the energy monitoring server via ModbusTCP.
  - Number of Services (Measurements) via ModbusTCP.
  - Number of settings: (configuration of products)
  - Modbus statistic (table view).

To refresh the information for a fieldbus click  $\bigcirc$  (Refresh).

Function available

## 6.17 Analyzer - Network

#### Steps to open the menu item

Step	Action
1	Click the <b>Preferences</b> menu 🗮.
2	Click Analyzer.
3	Click Network.

#### Screen to be displayed

*	므 ≪ ≆	1		:hag	<b>JC</b> .agardio.m	nanager	🋔 admin
$\geq$	Notification	Network					
	Users	IP configura	tion				
o\$	Backup	Ethernet 1: Ethernet 2:	Not configured Address:	10.33.138.62			
t	Publisher		Broadcast	10.33.138.62			
\$	Pricing	-	Netmask:	255.255.255.0			
0	Catalog	Sent bytes:	34.2MB				
≓	1/0	Received bytes Number of error					
۲	Analyzer 2 ~	Current con					
9	Diagnosis	From 10.33.138.62	8888			To 10.33.161.47:59783	
d	Fieldbus	10.33.138.62	8888			10.33.161.47:59796	
•	Retwork 3	10.33.138.62	0000			134.33.40.37.44717	
(Ô)	Maintenance >						
æ	Factory reset						
0	About	~					

The Network screen displays the following information:

- IP configuration (Ethernet 1 & Ethernet 2)
  - Address
  - Broadcast
  - Netmask

\_

- I/O (Inputs/outputs)
  - Sent bytes
  - Received bytes
  - Number of errors
- Current connections
  - Number of connected users
  - Number of sessions in progresss

### NOTICE

The administrator Super *admin* has access at this level to the setting of the **BACnet Server**. For configuration of BACnet parameters, please refer to the **hG-ES-Rxx-BACnet Configuration Guide F.pdf** 

## **\$** SUPERVISED MODE

#### **Function available**

Technical changes reserved

### 6. 18 Maintenance - Software update

### NOTICE

The menu item **Software update** is only available for the super *admin* user.

To save the energy monitoring server from loss of data and configuration, never switch off the 24 V/DC supply of the energy monitoring server during the update phase.

#### Steps to open the menu item

Step	Action
1	Click the <b>Preferences</b> menu <b>E</b> .
2	Click Maintenance.
3	Click Software update.
4	Click <b>Select file</b> and choose the BZ2 file that contains the update.
5	Click <b>Upload</b> to activate the update.
6	Click Reboot.
	Result:
	- The energy monitoring server switches off and reboots.
7	Wait untill the energy monitoring server switches on again:
	Result:
	- The <b>Power LED</b> lights green.

#### Screen to be displayed

*	- ≪ ≢ 1	• <b>hager</b> agardio.manager 🔹 admin 🗸
Φ5	Васкир	Software update
1	Publisher	
\$	Pricing	Warning! New firmware will be applied after a system restart
۵	Catalogue	
₽	1/0	Running release information Board Support Package: 2.4.28
۲	Analyzer >	Agardio.manager. 2.1.3
(	Maintenance 2	Update file: ① Select file: ①
	🛓 Software upd	Release: No release file available 🗵 4 5
"c	Factory reset	
0	About	6

#### **Further information**

If Hager provides a new software version of the energy monitoring server, there are two methods to install it:

- With a remote connection to the user interface. You will find a download on the Hager website to upload into the energy monitoring server (see above: Step 1 - 5).
- Using a USB stick containing the update if you are in front of the energy monitoring server.

#### Software update via USB

Step	Action
1	Plug the USB stick containing the file <i>files HBoxFirmware-*</i> into the front face USB connector.
	Result:
	The <b>Power LED</b> starts blinking with orange colour during a few minutes.
	Note:
	During this phase never
	- remove the USB key nor
	- switch off the 24 V/DC supply.
2	Wait until the <b>Power LED</b> is illuminated permanently with orange colour.
3	Remove the USB stick.
	Result:
	- The energy monitoring server will reboot automatically within a few seconds.



### 6. 19 Factory reset

**NOTICE** The menu item **Factory reset** is only available for the super *admin* user. All your configuration settings and data are deleted irrevocably.

#### Steps to open the menu item

Step	Action
1	Click the <b>Preferences</b> menu 🛅.
2	Click Factory reset.

#### Screen to be displayed

*	- ≪ = 1	:hager .agardio.manager	📤 admin 🔍 🗸
4	Network		
	System		
	Servers >		
$\geq$	Notification		
	Users		
¢\$	Backup		
1	Publisher	Factory reset	
\$	Pricing		
4	Catalog		
₽	VO		
۲	Analyzer >		
(Ē)	Maintenance >		
æ	Factory reset 2		
0	About 🗸		

#### **Further information**

The Factory reset enables you to return to factory settings. All configuration and data will be definitely lost after a confirmation.



## 6. 20 About (Software version and legal declarations)

Steps to open the menu item

Step	Action
1	Click the <b>Preferences</b> menu 📴.
2	Click About.

#### Screen to be displayed

*	- ≪ ≢ 1	hager .agardio.manager	🐣 admin	~
4	Network	About		
	System	HTG410H/HTG411H		^
	Servers >	✓ Version		
$\geq$	Notification	13.4		
	Users	> Copyright Expand panel		I.
O\$	Backup	Open Source Components / Libraries		
1	Publisher	> Python © 2001-2016 (PFS License)		
\$	Pricing	> Tornado © 2009-2015 (Apache License, version 2.0)		I.
•	Catalog	> Libmodbus © 2001-2011 Stéphane Raimbault (LGPL v2.1+)		I.
₽	I/O	> Boost © Joe Coder 2004 - 2006 (Boost Software License)		
۲	Analyzer >	> MongoDB © MongoDB, Inc 2008-2016 (GNU AGPL v3.0)		
0	Maintenance >	> PyMongo © 2008 - 2015, MongoDB, Inc. (Apache License, Version 2.0)		I.
×	Factory reset	> mongo-cxx-driver © 2008 - 2015, MongoDB, Inc. (Apache License, Version 2.0)		r.
ø	About 2	> ZeroMQ (LGPLv3)		~

The current software version of the energy monitoring server and further information about included programming tools are displayed.

Click > to show detailed information about a programming tool.

Click  $\checkmark$  to close detailed information.

	NOTICE			
This part is also accessible by the <b>About</b> icon on the home screen.				
	🚢 admin 🗸 🗸			
	Personal Settings Configuration wizard About			
	C English			
	French			
	German			
	Polish			
	Portuguese			
	Spanish			
	Dutch			
	Chinese			
	Logout			
- *				
	PERVISED MODE			

**Function available** 

## 7 CONFIGURATION menu

#### Introduction

This chapter provides detailed information regarding all menu items of the **Configuration** menu.

The **Configuration** menu allows managing settings about the installation and the commissioning of the energy monitoring server.

NOTICE

The **Configuration menu** may only be used by the electrician or system integrator.

#### **Chapter contents**

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Building - Cabinets	89
Products	90
Events	102
EIEC	107
Data management	109
Publisher	111
Pricing	114
Pricing report	116

## 7.1 Overview of the menu items

The **Configuration** menu includes the following menu items:

Menu item	Description		
Building	Update the location of the installation		
(see p. 20)	Create, update and delete entries for		
	- <b>Zones</b> : Parts/areas of the building		
	<ul> <li>Usages: Type of application for which electrical energy is used (lighting, heating,)</li> </ul>		
	- <b>Cabinets</b> : Switch cabinets in the building.		
Products	Create, update and delete entries for the measuring devices that are communicating with the energy monitoring server.		
Events	Create, update and delete definitions for alarms; occurring events are listed at the <b>Exploitation</b> menu.		
EIEC	Set the EIEC parameters for the building.		
Data management	Update refresh frequencies for saving the current values of the measuring devices.		
BACnet	Configure BACnet objects.		
Publisher	Choosing the configurated products and their associated services to be published (sent to the server). This publication can be done periodically regardless of the mode or immediately in configuration mode only.		
Pricing	Set tariffs for different services according to relative consumption during the day.		

## 7.2 Building

#### Steps to open the menu item

Step	Action	
1	Click the <b>Configuration</b> menu 🕵.	
2	Click Building.	

#### Screen to be displayed

* - ≪ ≑ 1		:hager agardio.manager	📤 admin	~
🖋 Building 👻	2)ilding			
Zones	Name:	New Forum		
4 Usages	Description:	Hager Forum		
Vsages	Installation date:	03/10/2015		
🔁 Cabinets	Address:	Europa Blvd		
	Country:	France		
Products	City:	Obernai		
	GPS Coordinates:	48.471700, 7.500387		
2, 210mb		O The accepted format for GPS coordinates is in decimal degrees		
OS EIEC				
< Data management	Generate a commi	siloning report.	🗶 Cancel 🔡 Sa	ive

#### **Fields to enter**

A building is characterized by its:

- Name
- Description
- Installation date
- Address
- Country
- City
- GPS position coordinates

The building is initially defined at the installation.

## **CALCENTING SUPERVISED MODE**

Function not available

## 7.3 Building - Zones

#### Steps to open the menu item

Step	Action	
1	Click the <b>Configuration</b> menu 🕰.	
2	Click Building.	
3	Click <b>Zones</b> .	
4	Double-click an existing zone/floor.	
5	<ul> <li>Click to define a new (sub-)zone within the zone.</li> <li>Click to delete the zone from the building.</li> </ul>	
6	Click <b>Save</b> to save the settings.	

#### Screen to be displayed

* - * 1		:hag	Jer .ag	gardio.m	anager	📤 admin 🗸 🗸
✓ Building	~ Zones 4	)		C2QD10		
Zones 3		Batiment Direction C1QD03	000			
4 Usages	-E9 -E9	C2QD10 C3QD09	00	(5)		
閲 Cabinets	- E9 - E9	C4QD05-06-07-08 C5QD17	00			
Products	- LE - <b>A</b>	mmm C7QD33 C6QD18	00 00 00			
↓ Events	- wu	000010	•••	Name:	C2QD10	
¢\$ EIEC				Description: Area:	Lampe Bureau Face baie 15	
Cata management				Area unit:	m2	
1 Publisher				Type: Icon:	Floor	_
\$ Pricing				Image:	<u>*</u>	6
	Expand all Collapse all					🗶 Cancel 🔛 Save

#### **Fields to enter**

A building is characterized by its:

- Name (necessary)
- Description (not necessary)
- Area (value, necessary)
- Area unit (in m<sup>2</sup> or square ft)
- Type
- Building type (Commercial, Industrial or Infrastructure)
- Icon (necessary)
- Image (download)

A floor or room within a building is characterized by its:

- Name
- Description
- Area (value)
- Area unit (in m<sup>2</sup> or square ft)
- Type (Floor or Room)
- Icon
- Image (download)

#### **Further information**

Zones must be defined within the building in order to calculate the energy consumption and to achieve effective energy management by modelling a clear building and zone structure.

Configuration of zones follows a tree structure

- starting by buildings for first level,
- continuing with floors for second level and
- rooms for third level.

It is possible to update name, description, icon and image of any zone, floor or room without any consequence.

## NOTICE

As measuring devices (Products) need to be allocated to a zone, define

- zones (and cabinets (see p. 90)) first,
- measuring devices (Products) thereafter.

It is impossible to delete a zone that any measuring device is allocated to.

Depending on the selected **Building type** the right EIEC criterions (see p. 107) will be selected automatically.

## **\$\$** SUPERVISED MODE

Function not available

## 7.4 Building - Usages

#### Steps to open the menu item

Step	Action
1	Click the <b>Configuration</b> menu 🕵.
2	Click Building.
3	Click <b>Usages</b> .

#### Screen to be displayed

* <u>•</u> • 1		:hager .agardio.manager	🐣 admin 🔍 🗸
Building	) 🗸 Usages	Name: Ventilation	
Jones	Heating	Description: Ventilation	
4 Usages 3	✤ Lighting ★ Socket	leon: De	
🔁 Cabinets	A Hvac		
	C Process		
Products	notor Motor		
	o Appliance		
	💧 Hot Water		
¢\$ EIEC	Ventilation		
data management	Air Cooling		
	7 Custom 1		
1 Publisher	Custom 2		
Č Delaina	Custom 3		
\$ Pricing	7 Custom 4		

#### **Fields to enter**

A usage is characterized by its:

- Name (necessary)
- Description
- Icon

#### **Further Information**

The following usages are initially delivered by the energy monitoring server:

- Heating
- Lighting
- Socket
- Hvac

(Heating, ventilation and air cooling)

- Motor
- Appliance
- Hot water
- Ventilation
- ling) Air cooling

- Process

- customizable 1 to 5 (you have up to 5 free uses)

For every measuring device that is communicating with the energy monitoring server, a usage should be allocated if possible.

It is possible to set and update name, description and icon of the modifiable-usage.

\_

## NOTICE

#### You can not:

- modify the usages that are provided originally by the energy server.
- delete a usage.

## SUPERVISED MODE

Function not available

## 7.5 Building - Cabinets

#### Steps to open the menu item

Step	Action		
1	Click the <b>Configuration</b> menu 🕵		
2	Click Building.		
3	Click <b>Cabinets</b> .		
4	<ul> <li>Click + to define a new cabinet.</li> <li>Click * to delete a cabinet that is not allocated to any measuring device within the energy monitoring server any more.</li> </ul>		
5	Click Save to save the settings.		

#### Screen to be displayed

* - * 1	:hagei	.agardio	.manager	📤 admin 🔍 🗸
Building	<ul> <li>✓ Cabinets</li> </ul>			
Zones	main cabinet			
5 Usages				
🖾 Cabinets 3				
Products		Name:	main cabinet	
🗘 Events		Description:	the main building cabinet	
		Location:	Batiment Direction	
¢¢ EIEC		Icon:	n <u>t</u> an	
Data management		Image:	<u>ځ</u>	
1 Publisher	(4)			(5)
\$ Pricing	+ *		E	Cancel 🔛 Save

#### Fields to enter

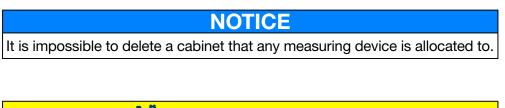
A cabinet is characterized by its:

- Name (text field, necessary)
- Description (text field, not necessary)
- Location (selection field, necessary)
- Icon (selection field, necessary)
- Image (upload function for files, not necessary)

#### **Further information**

A cabinet has to be defined in the energy monitoring server, if the cabinet hosts at least one measuring device.

It is possible to update name, description, location, icon or image of any cabinet without any consequence.



## Contract Con

#### Function not available

### 7.6 Products

#### Steps to open the menu item

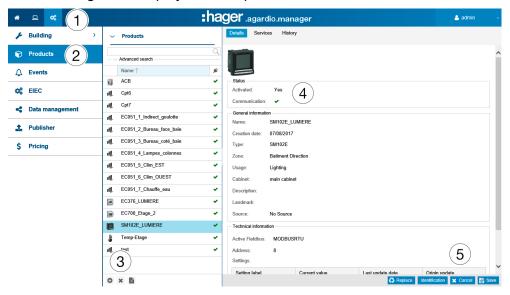
Step	Action
1	Click the <b>Configuration</b> menu 🕰.
2	Click <b>Products</b> . <b>NOTE</b> : The <b>Details</b> window will be displayed.
3	<ul> <li>Click to declare a new measuring device (see below) you wish the energy monitoring server to collect data from.</li> <li>Click to delete a measuring device (see below) whose collected data is no longer relevant to you.</li> <li>Click to generate a commissioning report (see below).</li> </ul>
4	Set the status of the measuring device (Activated: Yes or No)
5	Click Save to save the settings.

#### Screen to be displayed

#### NOTE:

The displayed windows are depending on the selected product.

The following list is displayed for all products in the Details window:



#### **Fields to enter**

A measuring device (Product) is characterized by its:

- Unique name (text field, necessary)
- Creation date
- Type
- Zone (selection field, necessary)
- Usage (selection field, necessary)

- Cabinet (selection field, not necessary)
- Description (text field, not necessary)
- Landmark (text field, not necessary)
- Source (selection field, necessary)
- Active Fieldbus (selection field, necessary)
- Connection settings (necessary)
- Settings (depending on product: Table of settings)

#### More about Bus address

#### - ModbusRTU :

Address is the Modbus address on the fieldbus between 1 and 247, that has to be set uniquely for each Modbus product (i. e. only for one measuring device within the energy monitoring server).

A smart scrolling function displays the Modbus addresses that are already used and proposes the first available address.

#### - ModbusTCP :

The connection settings are defined by :

- address is an IP or hostname
- port is between 1 and 65535
- bus address is between 0 and 255

#### LOCALIO :

If you define a new measuring device of the following type, the energy monitoring server checks the suitable inputs and suggests one of the following addresses:

Туре	Address
Analogueinput	Analogue Input 1 or Analogue Input 2
Binaryinput	Binary Input 1 or Binary Input 2
Temperaturesensor	External Temperature
Pulsecounter	Pulse Input 1 or Pulse Input 2

#### Utilities

#### Identification

Click **Identification** (for product which have this functionality) to test the communication between the device and the energy monitoring server. It is possible to test device communication at any time during configuration. Testing communication detects that the device is on the line and that it is really the device that is declared. A message indicates a measuring device that does not match the declared one.

#### Search

To search for certain measuring devices, type a characterizing part of their name, e. g.:

A	₽	<b>0</b> 0	ŧ			:hag	<b>er</b> .a
"E	Build	ing		>	✓ Products		Details
Ø	Produ	ıcts			EC	Q	Activated: Communi
¢	Event	s			Activated: Type:	×	– General in Name:
O\$	EIEC				Fieldbus:	~	Creation of
4	Data	manag	ement		Usage:	~	Type: Zone:
1	Publi	sher			Cabinet: Source:	~	Usage: Cabinet:
\$	Pricin	g			Name ↑ ACB	<u>%</u>	Descriptio
						~	Landmark

An **advanced search** allows you to find a product using filters according to the following criteria:

- Actived (yes / no): product active or not
- Type: type of product
- Field bus: on which bus the product is connected
- Zone: Area of use of the product
- Usage: Product usage
- Cabinet : Product location
- Source: Energy source of the product

#### **Further information**

The measuring devices communicating with the energy monitoring server are listed with the symbol  $\checkmark$ .

The measuring devices not communicating with the energy monitoring server

are listed with the symbol  $\bigotimes$ . Check the Modbus connection between the energy monitoring server and the measuring device. Refer to the installation guide for more detailed explanation.

#### NOTICE

Products need to be allocated to a zone, usage and cabinet in order to follow-up the energy consumption by usage and zone over the time.

Therefore you need to define

- zone,
- e usage and
- cabinet first,
- 9 measuring devices (Products) thereafter.

#### Add a new measuring device (Product)

Only measuring devices listed in the catalog (see p. 70) are able to communicate with the energy monitoring server. The catalog includes information about the measuring devices. Defining a measuring device creates automatically a list of services that are read from fieldbus.

Before you define a new measuring device at the energy monitoring server

- search for it in the list of all communicating measuring devices.

Catalog Products									
Name 🕆	No. of Lot of Lo	h3+ Energy Moulded Case Circuit Breaker from 40 to 25	0 A						
Standard product									
ANALOGINPUT									
ARXXXX									
BINARYINPUT									
EC36X	Services MODBUSE	BTU							
						Acquisition	Storage		
EC37X	Name	Description	Unit	Resolution	Offset	Acquisition	Coorage	Periodicity	
EC700	Channel Id: 0 (72)								
ECR140D	U12	Phase to phase voltage: U12	V	0.001	0	R		10 min	
ECX180T	U23	Phase to phase voltage: U12 Phase to phase voltage: U23	v	0.001	0	R		10 min	
	U31	Phase to phase voltage: 023 Phase to phase voltage: U31	v	0.001	0	R		10 min	
ECX18XD	V1	Simple voltage: V1	v	0.001	0	2		5 min	
ECX30XC	V2	Simple voltage: V2	v	0.001	0	R	-	5 min	
ECX31XD	V3	Simple voltage: V3	v	0.001	0	2		5 min	
	F	Frequency: F	Hz	0.001	0		(2)	5 min	
E ECX38XD	11	Current: 11	A	0.001	0	2	(4)	5 min	
H3+	12	Current 12	A	0.001	0	2		6 min	
HIC4xxE	13	Current: 13	A	0.001	0	2		6 min	
NH Measurement A	IN	Neutral current: IN	A	0.001	0	2		5 mln	
,	lg	Ground current: Ig	A	0.001	0	2		5 mln	
PULSECOUNTER	P1	Active Power phase 1 +/-: P1	W	1	0			5 mln	
SM101C	P2	Active Power phase 2 +/-: P2	W	1	0	2		5 min	
SM102E	P3	Active Power phase 3 +/-: P3	W	1	0	2		5 min	
SM103E	P	∑ Active Power +/-: P	W	1	0	2		5 min	
	Q1	Reactive Power phase 1 +/-: Q1	var	1	0	2		5 min	
ill SPC05HM	02	Reactive Power phase 2 +/-: Q2	var	1	0	2		5 min	
TEMPERATURESEN	Q3	Reactive Power phase 3 */ Q3	var	1	0			5 min	
CUSTOM_MODBUSRTU	Q	∑ Reactive Power +/- Q	var	1	0	Ø		5 min	
	S1	Apparent Power phase 1: S1	VA	1	0			5 min	
ENTES	S2	Apparent Power phase 2: S2	VA	1	0	2		5 min	
be 🕼	\$3	Apparent Power phase 3: S3	VA	1	0	2		5 min	
custom_test	S	∑ Apparent Power: S	VA	1	0	2		5 min	
•	PF1	Power factor phase 1: PF1	NU	0.0001	0	2		5 min	
	PF2	Power factor phase 2: PF2	NU	0.0001	0			5 min	
	PF3	Power factor phase 3: PF3	N/U	0.0001	0			5 min	
	PF	∑ Power factor: PF	N/U	0.0001	0	2		5 min	

Step	Action
1	Select the measuring device that you want to add.
2	Tick the corresponding check boxes <b>Storage</b> to select the services that you want to be logged and visualized in the menu items of the <b>Exploitation</b> menu.
	Note:
	The capacity of the database depends on the number of stored services. If the storage is full the oldest values will be overwritten.
3	Click Next.

Catalog Products

	General infor	mation	
	Name:	нз (1)	
	Activated:		
	Zone:	Etage 1 (2)	$\sim$
	Usage:	No Usage	$\sim$
	Cabinet:	Armoire étage 1	$\sim$
	Landmark:		
	Source:	No Source	$\sim$
	- Technical info	ormation	
	Address:	9	$\sim$
$\bigcirc$	— 🖂 Multi crea	ation	
9	Number of	products: 2	+



 $\times$ 

Action
Enter the name of the new measuring device.
Allocate the measuring device to a zone, usage and cabinet. Set the connection parameters of the product according to its fieldbus.
When MODBUSRTU is selected, you may tick the check box Multi creation and select the number of identical products to connect with the measuring device.
If the product type allows it, click <b>Identification</b> to test the communication between the measuring device and the energy monitoring server.
Note:
If the identification is not successful, check the fieldbus connection and the fieldbus parameters.
Click <b>Save</b> .

General info	General information						
Name:	H3 SM						
Activated:							
Zone:	New Forum						
Usage:	Lighting						
Cabinet:	MDB						
Landmark:							
Source:	No Source						
Technical in	formation						
Address:	2						
Multi creation							
Number	्रै Communication with product in progress	× +					

After a short moment the new measuring device is displayed in the list of all available products.

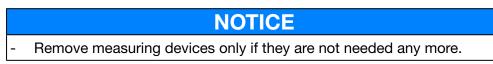
# :hager

#### Delete a measuring device (Product)

	General information	
A	re you sure ?	×
	? Are you sure you want to delete product F	ulsecounter 1?
-	Remove	Cancel
0	Cabinet: Main	

Click **Remove** to delete the measuring device (Product).

Click **Cancel** to abort the deletion.



#### Define a new energy sub-meter\*

Energy sub-meters (e. g. water pulse sub-meters) can communicate with the energy monitoring server.

They are connected to the digital input 1 or 2 of the energy monitoring server.

Catal	log Products									×	
	Name ↑	_ Puls	e counter device.								
$\sim$	ANALOGINPUT										
	ARXXX	٨٨									
п	BINARYINPUT	<b></b> γγ⊶									
	EC36X										
	EC37X	Services LOCALIO									
	EC700	Name	Description	Unit	Resolution	Offset	Stora	Periodicity			
	H3	Channel Id: 0 (1)							_		
	HIC4xxE	Ea+NotReset	Total Positive Active Energy (not resetable): Ea+	kWh	1.00	2.00		10 min	1.		
瞧	PULSECOUNTER							L			
D	SM101C										
	SM102E										
į,	SM103E										
ģÚ	SPC06HM										
J	TEMPERATURESEN										
		1								Next	
										100% 👻 🧋	

\*Not available on HTG411L

Step	Action
1	Select the PULSECOUNTER measuring device and click
	<b>Configure a service</b> to choose a Service, Resolution (e.g. 10 means that one pulse is equivalent to 10 units) and if necessary an Offset.
2	Click <b>Update</b> to save the settings.
3	Click <b>Storage</b> if you want the service to be logged and visualized in the menu items of the <b>Exploitation</b> menu.
	Note:
	The capacity of the database depends on the number of stored services. If the storage is full the oldest values will be overwritten.
4	Click Next.
5	Enter the name of the new energy sub-meter and allocate it to a zone, usage and cabinet.

If you use a digital input of the energy monitoring server, then go on as follows:

Step	Action
6	Select the Pulse Input address of the energy sub-meter that is connected to the energy monitoring server ( <i>Pulse input 1</i> or 2).
	Bus address: Pulse Input 1 V
	Multi creation     Pulse Input 1     Pulse Input 2     (Linked to Pulse Counter #2)
7	Click <b>Save</b> .
	Result:
	After a short moment the new energy sub-meter is displayed in the list of all available products.

# :hager

#### **EC700 Installation**

If you use the multifunction meter EC700 for connecting the energy sub-meter with the product, do the following:

Step	Action
1	Select the EC700 measuring device and "for each channel" click
	on $\checkmark$ , in order to choose a service, resolution and if necessary an offset.
	Click <b>Storage</b> if you want the service to be logged and visualized in the menu items of the EXPLOITATION menu.
2	Click Next.
3	Enter the name of the new EC700 and allocate each of its channels to a defined zone and usage.
	Click <b>Save</b> .
4	Click identification and then on Save.
	Result:
	After a short moment, the new energy sub-meter is displayed in the list of all available products.

#### Services

The following list is displayed for all products in the Services window:

	묘 🤏 🛱		:h	nac	<b>Jer</b> agardio.mana	ger		🐣 admin
x	Standort	> V Produkte		D	etails Messwert Befehle	Historie		
Ø	Produkte	Erweiterte Suche	Q	٥	Aktualisierungsdienste Messwert		Beschreibung	Gespeicher
Δ	Ereignisse	Name 个	ý	ы	anal Id: 0 (33)		beschleibung	Gespeichen
02	EIEC Auswertung	ACB	0	4	U12		Phase-Phase-Spannung: U12	Ja
-	LIEC Additionally	ıll, Cpt6	~	4	U23		Phase-Phase-Spannung: U23	Ja
4	Datenmanagement	비L Cpt7	~		U31 V1		Phase-Phase-Spannung: U31 Phase-Neutralleiterspannung: V1	Ja Ja
		EC051_1_Indirect_goulotte	~	Δ	V2		Phase-Neutralleiterspannung: V2	Ja
1	Datenexport	IL EC051_2_Bureau_face_baie	~	4	V3		Phase-Neutralleiterspannung: V3	Ja
		IL EC051_3_Bureau_coté_baie	~	4	11		Strom: I1	Ja
\$	Energiekosten	EC051_4_Lampes_colonnes	~	4	12		Strom: I2	Ja
				4	13		Strom: 13	Ja
		IЩ_ EC051_5_Clim_EST	× 1	4	In		Neutralleiterstrom: In	Ja
		I EC051_6_Clim_OUEST	~	4	Р		∑ Wirkleistung +/- : P	Ja
		EC051_7_Chauffe_eau	~	4	Q		∑ Blindleistung +/- : Q	Ja
			~	4	S		∑ Scheinleistung : S	Ja
		Box.	×	4	PF		Σ Leistungsfaktor: cosφ	Ja
		EC700_Etage_2	×	4	P1		Wirkleistung Phase 1 +/- : P1	Ja
		Modular active electrical ener	0	4	P2 P3		Wirkleistung Phase 2 +/- : P2 Wirkleistung Phase 3 +/- : P3	Ja Ja
		SM102E_LUMIERE	~		P3 Q1		Blindleistung Phase 1 +/- : Q1	Ja
				4	Q2		Blindleistung Phase 2 +/- : Q2	Ja
		🔓 Temp-Etage	~	Δ Δ	Q3		Blindleistung Phase 3 +/- : Q3	Ja
		베_ Tester	× .	- Â	\$1		Scheinleistung Phase 1 : S1	Ja
		all toot		Ā	S2		Scheinleistung Phase 2 : S2	Ja
		O × E		Ā	S3		Scheinleistung Phase 3 : S3	Ja

Click  $\clubsuit$  to add a new alarm for the corresponding service of the selected measuring device. The alarm will be listed at the **Events** menu item of the **Configuration** menu.

## **\$** SUPERVISED MODE

Adding alarms is not available

:hager

#### Commands

The **Commands** button and associated screen are only displayed for modular active electrical energy meters with the control function:

*	묘 🧠 🛱			:ha	<b>GE</b> .agardio.manager			💄 admin	~
×	Building >	~	Products		Details Services Commands Histo	ory			
¢	Products		Advanced search	Q	Reset all Partial Energies.			0	Run
4	Events		Name 1	ý	All Partial Energies index are resetted to d	lefault value.			
08	EIEC	Щ. 	Cpt6	~	Service label	Value	Unit	Date	
		4	Cpt7	~	Total Positive Active Energy (resetable):	99	kWh	04/09/2017 16:29:02	ø
	Data management	4	EC051_1_Indirect_goulotte	~	Total Negative Active Energy (resetable) Total Positive Reactive Energy (resetabl	6	kWh kvarh	04/09/2017 16:29:02 04/09/2017 16:29:02	0
-		4	EC051_2_Bureau_face_bale	~	Total Positive Reactive Energy (resetabl	0	Kvalli	04/03/2017 10:23:02	~
1	Publisher	цĻ	EC051_3_Bureau_coté_baie	~					
Ś	Pricing	嗩	EC051_4_Lampes_colonnes	~					
		<u>ц</u> ,	EC051_5_Clim_EST	~					
		嗅	EC051_6_Clim_OUEST	~					
		瞧	EC051_7_Chauffe_eau	~					
		13	EC376_LUMIERE	~					
		۲	EC700_Etage_2	~					
			SM102E_LUMIERE	~					
		8	Temp-Etage	~					
		ıų.	test	~					
		0	×						
Cli	ick on 📿 to	o re	eload the curr	ent	measure.				
Cli	ick on 🍄 F	łūn	to execute	the	e order.				

#### History

The History window is displayed for all the products:

*	묘 ≪ ≇	:t	ager .agardio.manager	💄 admin 🚽
×	Building >	✓ Products	Details Services Commands History	
Ŷ	Products	Advanced search	Commands(1)	
Δ	Events	Name ↑ III Cpt6		
¢\$	EIEC	ių Cpt7	✓ C ∧ Settings(3)	
4	Data management	IL EC051_1_Indirect_goulotte	✓ 30/08/2017 10:38:18	
£	Publisher	네트 EC051_2_Bureau_face_baie 네트 EC051_3_Bureau_coté_baie	Expand panel         Last value         Value         Date           Primary current ra         100 A         50 A         30/08/2017 10:38:18	Origin update
\$	Pricing	IL EC051_4_Lampes_colonnes	×	244
		EC051_5_Clim_EST ↓↓ EC051_6_Clim_OUEST	<ul> <li>OB/OB/2017 10:41:48</li> </ul>	
		וון EC051_7_Chauffe_eau	<ul> <li>O7/08/2017 14:28:48</li> </ul>	
		EC376_LUMIERE EC700_Etage_2	v v	
		SM102E_LUMIERE	•	
		Fremp-Etage	v v	
		<b>n</b> ş		
		O × B		

To expand the views click >, to collaps the views click  $\checkmark$ .

#### **ECX180T Installation**

	- «( <b>1</b> )		:hager agardio.manager	A 2(1) A Laurent
۶	Building >	- Products	Ditch Services History	
۲	Products 2	Advanced search		
۵	Events	Name↑ 🖋		
o°	EIEC	M Compteur cau	Activated: Yes	
	Data management	🝙 Concent. NF10 CBD 🖌	Communication. 🗸	
		Concent. PV L1 MDB1 🗸	Oreneral Internation     Name: Analogue sensor	
=	BACnet	Concent. PV L1 MDB2 🗸	Croation date: 06/05/2016	
±	Publisher	Concent. PV L2 MDB1 🗸	Type: ANALOGINPUT	
		Concent. PV L2 MDB2 🗸	Zone: New Forum	
\$	Pricing >	Concent. PV L3 MDB1 🗸	Usage: Ventilation	
		Concent. PV L3 MDB2 🗸	Cablinet: MDB	
		□ Entrée bin_2 ✓	Description:	
		H3+ Inverter MDB1 8 🗸	Landmark:	
		H3+ NF 10 CBD 🖌	Source: No Source	
		H3+ NF5 West Side 🖌	Technical information	
		H3+ NF8 Caleteria 🖌	Active Fieldsus: LOCALIO	
		Incomer PV1 🗸	Address: Analog Input 1	
		📗 Incomer PV2 🖌		
		📄 Invertor 15 kWAH 🗸		
		🗊 Inverter IT 15kVA 🖌		
		Inverter MDB1 80kVA 🗸		
		🗊 Inverter MDB2 80kVA 🖌		
		💼 NF1 Underground 🗸		
		NF10 CBD 🖌		
		NF11 Garden socket 🗸		
		NF2 Workshop 🗸		
		19 Air-Cooli *		
		.0	0 P	aplace Identification 🗶 Cancel 🖺 Sa

If you use the ECX180T, do the following:

Step	Action
1	Click the <b>Configuration</b> menu
2	Click Products.
3	Click ① to define a new measuring device (see below) that is communicating with the energy monitoring server.

ARX ARX BIN/ EC3 EC3 EC3 EC3 EC3 EC3 EC3 EC3	4 product ALOGINPUT XXX XXX XXX 36X 37X 700 R1400 R1400 R1400 R1400 R1400	Services MODBUSRTU Name First channel V1	Pi kWhmeter for direct connections of up to 3x804.4M Description Simple voltage: V1	Unit	Resolution						
ANA ANA ARX EC3 EC3 EC3 EC3 EC3 EC3 EC3 EC3 EC3 EC3	LLGGINPUT XXX AARYINPUT 36X 37X 700 R140D R300C X180T	Services MODBUSRTU Name	Desciption	Unit	Resolution						
ARX ARX BIN/ EC3 EC3 EC3 EC3 EC3 EC3 EC3 EC3	XXX INRYINPUT 36X 37X 700 R140D R140D R300C X180T	Services MODBUSRTU Name	Description	Unit	Resolution						
EC31	IARYINPUT 36X 37X 700 R140D R140D R140D R140D	Services MODBUSRTU Name	Description	Unit	Resolution						
EC31	IARYINPUT 36X 37X 700 R140D R140D R140D R140D	Name	Description	Unit	Resolution						
EC3 EC3 EC7 EC7 ECR ECR ECR ECX	36X 377X 700 R160D R300C X180T	Name	Description	Unit	Resolution						
EC3 EC7 ECR ECR ECR ECX ECX	37X 700 R140D R300C X180T	Name	Description	Unit	Resolution						
EC7I ECR ECR ECR ECX	700 R140D R300C X180T	First channel		Unit	Resolution			Characan			
ECR ECR ECX ECX	R140D R300C X180T		Cimela college: 1/1			Offset	Acquisition		Perio		
ECX	R300C	V1	Cincels								
E ECX	x180T			v	0.01	0			10 min		
E ECX	x180T		Frequency: F	Hz	0.01	0	2		10 min		
ECX			Current: I1	mA	1	0	2		10 min		
		)	Active Power phase 1 +/-: P1	kW	0.01	0	2		10 min		
III ECY	X18XD	1	Reactive Power phase 1 #/-: Q1	kvar	0.01	0	2		10 min		
	X30XC	81	Apparent Power phase 1: S1	kVA	0.01	0			10 min		
-	X31XD	PF1	Power factor phase 1: PF1	NU	0.001	0		Π.	10 min		
		Ea+NotReset	Total Positive Active Energy (not resetable): Ea+	kWh	1	0	0 /	$\sim$	10 min	1	
ECX	X38XD	Ea-NotReset	Total Negative Active Energy (not resetable): Ea-	kWh	1	0		2	10 min	1	
H3+		Ea+Reset	Total Positive Active Energy (resetable): Ea+	kWh	1	0		5	10 min	1	
HIC4	-tootE	Ea-Reset	Total Negative Active Energy (resetable): Ea-	kWh	1	0		2	10 min	1	
ii NH I	Management A	Ea+T1	Total Positive Active Energy (Tarilf 1). Ea+	kWh	1	0			10 min		
7 -	_Measurement_A	Ea+T2	Total Positive Active Energy (Tarilf 2). Ea+	kWh	1	0			10 min		
AL PUL	LSECOUNTER	Ea+T3	Total Positive Active Energy (TarilT 3). Ea+	kWh	1	0			10 min		
5M1	101C	Ea+T4	Total Positive Active Energy (Tarill 4). Ea+	kWh	1	0			10 min		
SM1	1020	ActiveTariff	Active tariff	NU	1	0					
		Second channel									
SM1	103E	V1	Simple voltage: V1	v	0.01	0			10 min		
a spc	COGHM	F	Frequency: F	Hz	0.01	0			10 min		
B TEM	MPERATURESEN	11	Current: I1	mA	1	0			10 min		
•		P1	Active Power phase 1 +/-: P1	kW	0.01	0			10 min		
		Q1	Reactive Power phase 1 +/ : Q1	kvar	0.01	0			10 min		
		\$1	Apparent Power phase 1: \$1	kWA	0.01	0			10 min		
		PF1	Power factor phase 1: PF1	NU	0.001	0			10 min		
		Ea+NotReast	Total Positive Active Energy (not resotable): Ea+	kWh	1	0			10 min	/	
		Ea-NotReset	Total Negative Active Energy (not resotable): Ea-	kWh	1	0			10 min	/	
		Ea+Rosot Ea-Reset	Total Positive Active Energy (resetable): Ea+ Total Negative Active Energy (resetable): Ea-	kWh	1	0			10 min	/	

Step	Action
1	Select the measuring device.
2	Click <b>Storage</b> if you want the service to be logged and visualized in the menu items of the <b>Exploitation</b> menu. <b>Note:</b> The capacity of the database depends on the number of stored services. If the storage is full the oldest values will be overwritten.
3	Click Next.

Catalog Products	×
General information Name: Activated: Zone: New Forum Cabinet: MDB	
First channel Usage: No Usage 3  Source: No Source  Second channel	
Usage: No Usage 3 ~ Source: No Source ~ Third channel Usage: No Usage 3 ~	
Source: No Source   Technical information  Address: 1   Multi creation  4	
Previous Identification	Save

Step	Action
1	Enter the name of the new measuring device.
2	Allocate the measuring device to a zone, usage and cabinet. Select the address that has been set in the measuring device itself.
3	Allocate the measuring device usage and energy source <b>Note:</b> If you want to use a tariff management with an ECX180T product, it is important to use the same energy source for each channel of the product.
4	Click <b>Identification</b> to test the communication between the measuring device and the energy monitoring server. <b>Note:</b> If the identification is not successful, check the fieldbus connection and the fieldbus parameters.

Create a commissioning report: Click 📗 to start generating the report.

•h	<b>a</b>	ger		
Report general		admin 2017/03/24 09:55:53		
Report general	ion date :	2017/03/24 09:55:53		
Report general	ion date : figurat	2017/03/24 09:55:53		 
Report general	ion date : figurat	2017/03/24 09:55:53		 
Report general Site con Name Installation Date	ion date : figurat	2017/03/24 09:55:53		 

The commissioning report is the list of all defined measuring devices, used to

- prove the configuration and functionality of the measuring device,
- check addresses that are already used,
- investigate causes for measuring devices not communicating with the energy monitoring server (

Click **Download the report** to save the commissioning report for printing or archiving.

Click **Go back to Configuration** to close the report-window.

#### **Potential error messages**

The following list explains the error messages that might be displayed at **Configuration/Products**:

Error message	Explanation/solution
Impossible to create the product, no more available address.	All appropriate in-/outputs are in use. If you still want to use an appropriate in-/output, then you have to delete an existing product.
Identification failed, a ['Timeout'] replied.	Connection or communication error with the connected measuring device. Check the Modbus connection and the appropriate communication settings (if necessary refer to the settings in the installation manual).

## **\$\$** SUPERVISED MODE

#### Function available

### 7.7 Events

#### Steps to open the menu item

Step	Action
1	Click the <b>Configuration</b> menu 🥰.
2	Click <b>Events</b> .
3	<ul> <li>Click Add Alarm to add a new alarm for a measuring device that is communicating with the energy monitoring server.</li> <li>Click Add hierarchical alarm to add a new alarm at an superordinate level of other alarms.</li> <li>Click to control or change a certain alarm.</li> <li>Click to delete an alarm that is not needed any more.</li> </ul>

To add new alarms, there is an alternative way described at the Products menu item (see p. 90).

#### Screen to be displayed

ñ	- • 1		:hager.ag	gardio.manager			🔒 admin	
¢	Building >	Alarms 3						
3	Products	Add Alarm Add hierarchi	cal alarm					
		Name	Description	Priority	Product	Service		
	Events (2)	seuil bas 23°C	Attention seuil bas atteint	Warning	Temp-Etage	Temperature	/	۵
		Seuil haut 23.4°C	Seuil haut atteint	Warning	Temp-Etage	Temperature	/	1
	EIEC	seuil	test	Warning	Temp-Etage	Temperature	/	1
4	Data management	qwe	qwe	Major			/	1
Ŀ	Publisher							
\$	Pricing							
		<pre>&lt; &lt; Page 1</pre>	of1   > ≫   C				Displaying 1 -	4 of 4

#### **Fields to enter**

An alarm is characterized by its:

- Product (selection field, necessary)
- Service (selection field, necessary)
- Activated
- Type (selection field, necessary)
- Text (column Name, text field, necessary)
- Description (text field, not necessary)
- Priority (selection field, necessary)
- Trip threshold, Warning threshold and Hysteresis (selection fields, necessary for all types except Binary)
- Delay (selection field, necessary)

A hierarchical alarm is characterized by its:

- Text (column Name, text field, necessary)
- Description
- Priority (selection field, necessary)
- subordinated alarms that are assigned to it

# :hager

#### **Further information**

Priority (critical, major, minor or warning) indicates the importance of alarms.

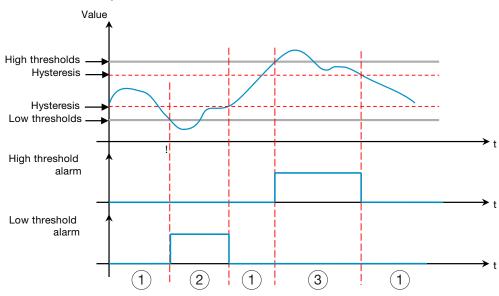
Warnings, major and minor alarms are mentioned in the daily report of Users (User management) (see p. 61).

If critical alarms are triggered, then

- an e-mail (see p. 61) is sent to the End user (User management)
- the Normally open relay (see p. 15) output is activated.

Low/High Threshold is the value below/above which the alarm is triggered.

The low / high thresholds have a **hysteresis** to avoid repeated appearances and disappearances of alarms.



Here is an example:

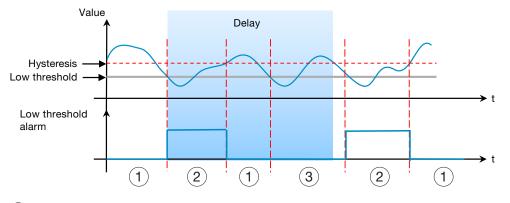
### 1 No Alarm

(2) The low threshold alarm is active only if the level goes below the low threshold. It becomes inactive when the level goes back above the low threshold plus hysteresis.

(3) The high threshold alarm is active only if the level goes above the high threshold. It becomes inactive when the level goes below the high threshold minus the hysteresis.

The low / high thresholds also have a **delay** corresponding to the time interval (in minutes) between two alarm triggers (if the values oscillate).

#### Here is an example:



#### 1 No Alarm

(2) The low threshold alarm is active only if the level goes below the low threshold. It becomes inactive when the level goes back above the low threshold plus hysteresis.

(3) Although the value goes below the low threshold, the alarm is not activated because the delay has not elapsed.

Alarms are structured following a hierarchy. Upper/hierarchical alarms generalize and summarize lower ones. A low level specialized alarm is generated when a problem appears. If the specialized alarm is subordinated to a hierarchical alarm, the hierarchical alarm is displayed first and user can drill down to see the causing subordinated alarm(s).

#### Add a new alarm for a measuring device

Alarms can be added only for services of measuring devices that are listed in the catalog (see p. 70).

Depending on the product and the service you choose different types of alarms and further characterizations are available and needed: **Configuration-Products-Services** or **Events-Add Alarm:** 

New alarm on MT	300: In						×
Product:	MT300		~	451			
Service:	In						
Activated:				40			
Туре:	High and Low Threshol	d	-(2	2)			
Text:	HiLo			35			
Description:	Test		(3	3) 30			
Priority:	Major		- (2	2 25			
High threshold							
Threshold:	44		A	20			
Warning threshold:	42	$\hat{}$	A				
Hysteresis:	2	$\hat{}$	A	15			
Low threshold			( Z	L)			
Threshold:	14	$\hat{}$		10			
Warning threshold:	20	\$	A	5			
Hysteresis:	23	$\hat{}$	A				
Delay:	60	¢	min	Ţ	60	) min	5
							Cancel Save alarm

New alarm on Bin (	001: BinaryInput	×
Product: Service: Activated: Type: Text: Description:	Bin 001 Binary Binary C Bin 01 Test	
Priority: Energy: Delay:	Major 2 true	
	60 min	5
		Cancel Save alarm

Step	Action
1	Choose measuring device ( <b>Product</b> ) and service to be monitored by the new alarm.
2	Choose type and priority of the new alarm.
3	Enter the name ( <b>Text</b> ) and description of the new alarm.
4	Enter or choose values for threshold, warning threshold, hysteresis and delay.
	For binary alarms only:
	Priority: Major ~
	Status: Delay: 60 + min
	Clear the <b>Energy</b> check box if you want the alarm to be triggered at the value <i>false</i> .
	Otherwise the alarm will be triggered at the value <i>true</i> .
5	Click Save alarm.

The new alarm is active at once. Click **Activated** before saving the alarm, if you want to activate the alarm later.

#### Add a new hierarchical alarm

Fext:	IA			×
Description: (1)				
<b>2</b>	4-1			
Priority: 2	Major			~
] Name	Description	Priority	Product	Service
seuil bas 23°C	Attention seuil bas atteint	Warning	Temp-Etage	Temperature
Seuil haut 23.4°C	Seuil haut atteint	Warning	Temp-Etage	Temperature
seuil	test	Warning	Temp-Etage	Temperature
( )	qwe	Major		
qwe(3)				-

Step	Action
1	Enter the name (Text) and description of the new hierarchical alarm.
2	Choose the priority of the new hierarchical alarm.
3	Check the box 🔲 at the top of the table to select all alarms or Check the boxes 🔲 in each row of the table to select the alarms one by one to subordinate them to the new hierarchical alarm.
4	Click <b>Save alarm</b> .

#### Potential error messages

The following list explains the error messages that might be displayed at **Configuration/Events**:

Error message	Explanation/solution		
Event involved in a hierarchical link, cannot be deleted.	Events which are part of an hierarchical alarm cannot be deleted. If you still want to delete the event, you first have to remove it from the hierarchical alarm.		
Event has already parent, only one is allowed.	You tried to link an alarm that is already part of an existing hierarchical alarm to another new hierarchical alarm.		

SUPERVISED MODE
Function not available

## 7.8 EIEC

#### Steps to open the menu item

Step	Action
1	Click the <b>Configuration</b> menu 🕰.
2	Click EIEC.
3	Choose one of several alternatives for the efficiency measure or efficiency performance level.
4	Click Next.

#### Screens to be displayed

*	<u> </u>	:hager agardio.manager	🐣 admin 🔍 🗸
"c	Building >	EIEC Settings	
Ø	Products	1/16	
4	Events	Determination of load O No consideration profile in kVM: O Load profile consumption of the installation for a day	
¢\$	EIEC 2	2 O O O O O O O O O O O O O O O O O O O	
4	Data management	Permanent data logging of the load profile consumption of the installation	
	BACnet		
<b>1</b>	Publisher		
\$	Pricing >		(4)
			Previous Next

There are fifteen more screens displayed asking for the different efficiency measures or efficiency performance levels to be entered in the same way.

The default value is Load profile consumption of the installation for each day of a year.

#### About the EIEC classification

The DIN VDE 0100-801 (international standard IEC 60364-8-1) entered into force in Germany in October 2015.

The standard prescribes that every electrical installation (new electrical installations and modification of existing electrical installations) has to be classified into a so called Electrical Installation Efficiency Classes (EIEC).

The aim is to provide the best possible energy supply with the lowest energy consumption.

The classification depends on 16 defined criteria (13 Efficiency measures EM and 3 Performance Levels PL). Within each criterion 0-4 Points could be reached (EM0-EM4 or PL0-PL4). No consideration of the respective criterion means 0 points.

Depending on the total point score, the system will then be classified as follows:

No. of points	Class
< 58 points	EIEC4
< 48 points	EIEC3
< 36 points	EIEC2
< 26 points	EIEC1
< 16 points	EIEC0

## NOTICE

The 16 criteria of the EIEC depend on the type of building that is entered at the Zone (see p. 85) menu item.

## **CALCENTING SUPERVISED MODE**

Function not available

### 7.9 Data management

#### Steps to open the menu item

Step	Action
1	Click the <b>Configuration</b> menu 🕰.
2	Click Data management.
3	Control or change frequencies for logging a type of service.
4	Click Save to save changes.

#### Screen to be displayed

므 📽	1)	:hager agardio.manage	Br 🔒 admin
Building	> Metrology		
_	Phase to phase voltag	e : U 60 minutes	
Products	Simple voltage : V	60 minutes	
Evente	Current : I	60 minutes	
Events	Frequency : F	5 minutes	
EIEC	Power : P,Q,S	60 minutes	
	Power factor : PF	60 minutes	
Data managem	ent (2)		
BACnet	Total energy	60 minutes 3	
	Resettable energy	60 minutes 3	
Publisher	Harmonics		
Pricing	Total harmonic distorti	on : U 60 minutes	
Fricing	Total harmonic distorti	on : V 60 minutes	
	Total harmonic distorti	on : I 60 minutes	
	Harmonic : U	60 minutes	
	Harmonic : V	60 minutes	
	Harmonic : I	60 minutes	
	Environment		
	Temperature	5 minutes	
	Humidity	60 minutes	
	Statistics		
	Phase to phase voltag		
	Simple voltage : V	60 minutes	
	Current : I	60 minutes	
	Frequency : F	60 minutes	
	Power : P,Q,S	60 minutes	
	Power factor : PF	60 minutes	
	Total harmonic distorti	on : THD 30 minutes	
	Temperature	5 minutes	
	Harmonic : V	10 minutes	
	Digital		
	Pulse	60 minutes	
	State	10 minutes	
			X Cancel

#### **Further information**

For each type of service a list box allows selecting among frequencies (50 min, 30 min, 20 min, 15 min, 10 min and 5 min).

According to the selected frequencies, the energy monitoring server stores the current values of all measuring devices that are communicating with the energy monitoring server.

#### Note:

The capacity of the database depends on the number of stored services. If the storage is full the oldest values will be overwritten.

NOTICE

The administrator Super admin has access at this level to the setting of the **BACnet Server**. For configuration of BACnet parameters, please refer to the **hG-ES-Rxx-BACnet Configuration Guide F.pdf** 

## **\$\$** SUPERVISED MODE

**Function available** Exception : Frequency adjustment is not possible.

### 7.10 Publisher

#### Steps to open the menu item

Step	Action
1	Click the <b>Configuration</b> menu 🕵.
2	Click <b>Publisher</b> .
3	Click (expand) Settings and modify Parameters.
4	Save changes.

#### Screen to be displayed

*	- (1)		:hager agardio.manager	🐣 admin 🛛 🗸
×	Building >	Publisher		
Ø	Products	↓ ∽ Settings		^
4	Events	Services		_
Q\$	EIEC	Relative consumption:	Yes	
~	Data management	Normalized values:	No	
		Services:	Ea+Reset	
<b>2</b> .	Publisher 2	Products:	Incomer PV1, Incomer PV2	
\$	Pricing	Frequency		
		Frequency:	Daily	
		Granularity:	All	
		Time:	17.00	
		Day:		
		Day of month:		
		Template		
		Use custom file name:	No	
		Custom name template:	Hostname 1 Free text 1 Start date 1 Free text 1 End date 1	
		Report formula:	Last value	(4) v Y Cancel P Save

#### Settings menu

#### **Fields to enter**

The publisher file is characterized by:

#### Services

- Relative consumption for the selected period (Yes/No) NOTE:

If the relative consumption is selected, you have only energy services available.

- Services (Multiple selection possible)
- **Products** (Multiple selection possible)

#### Frequency

- Frequency: Daily, weekly or monthly transmission of the publisher file
- Granularity: Interval of measured value recording
- **Time:** Date of transmission of the publisher file (if **Frequency** / **Daily** is selected)
- Day: Weekday of transmission of the publisher file (if Frequency / Weekly is selected)
- **Day of the month:** Monthday of transmission of the publisher file (if Frequency / Monthly is selected)

**Hager** 

#### Template

- Use custom file name (yes / no): Customizing the file name for the publication
- Custom name template: option to set the file name
- **Custom name example:** Example showing the result of the custom name template
- Template description (fixed value)
- Include headers: (Yes/No)
- Separator: Separator to delimit the fields of the table
- **Template:** Template of the generated file.
  - Default: basic model
  - One product per line: (yes / no).
  - Customizable 1: Custom template used
- One line per product (Yes/No)
- **Custom template**: Used custom template of the publisher file NOTE: If the custom template is selected, you can select and arrange the columns of the table by drag and drop the individual lines to define the \*.csv file.

#### Last report information menu

	-	1 08	÷				:hager agardio.mana	gər			🛓 admin	
×	Bui	ilding		>	Publisher							
	Pro	oducts				Pulse_112-6, Pulse_112-5, Pulse_112-7, Pulse_12-1, F	ulse_12-2, Pulse_12-3, Pulse_12-4, Pulse_12-5, P	Pulse_12-6, Pulse_12-7, Pulse_test, SILAS_247, SM1010	C_13, SM102E_11, SM103E_10, PT100			^
-				_	Frequency							
Ą	Eve	ents			Frequency:	Daily						
o°	EIE	с			Granularity: Time:	All 07:00						
	_											
~	Dat	ta manag	ement		Day: Day of month:							
≣	BA	Cnet										
	-			(5	Template							. 1
- 24	Put	blisher		J	Use custom file name	No						. 1
\$	Prie	cing		$\rightarrow$ $\top$	templete:	Start date 🖬					•	. 1
												. 1
						Last value						. 1
					Include headers:	Yes						. 1
					Separator:							. 1
					Template:	Default						. 1
					One line per product:	No						. 1
												. 1
												. 1
					<ul> <li>Last report info</li> </ul>	rmation						18
					- Last report inte							18
					Last publish time. Mon,	· ( <b>a</b> )						
						TP_19091 6 xicReport.csv	(1)	(8)	(9)			
					Size. 102.0		$\bigcirc$		$\bigcirc$			
							1					
						2. Force upload file	L Copy reports on USB	Download last generated file	🛓 Download publisher a	clive		
				- 1							W Carool D St	

#### Upload/Download publisher file

Step	Action					
5	Click on (expand) Last report information:					
	The following information is displayed:					
	- <b>Last publish time</b> : Time the last publisher file was sent to the server.					
	- <b>File name</b> : Name of the publisher *.csv-file.					
	- Size: Size of publisher *.csv-file					
6	Click on Force upload file:					
	- The publisher file is immediately sent to the server.					

7	<ul> <li>Click Copy reports on USB:</li> <li>The last generated file is copied to the USB stick connected to the server.</li> <li>If the publication has failed, a warning message will appear on the screen.</li> </ul>
8	<ul> <li>Click on <b>Download last generated file</b>:</li> <li>The last, generated publisher file is downloaded from the server.</li> </ul>
9	<ul> <li>Click on Download last publisher archive:</li> <li>The Publisher.zip archive is downloaded from the server. This file contains the last 7 reports.</li> </ul>

	$\frown$	
	$\mathbf{O}$	
		<u> </u>

If the publication has failed, a warning message will appear on the screen.

#### Generate publisher file in Setup Mode

#### Notice:

The button **Generate** (to generate the publisher file immediately) is only shown in Setup-Mode.

							SETUP MODE			
*	묘	o:	ŧ			:ha	ager agardio.manage	r		🐣 admin 🔍 🗸
"c	Build	ing		>	Publisher					
Ø	Produ	ucts			Report formula:	Last value				*
¢	Even	ts			Template: One line per product:	One product per line Yes				
00	EIEC				Custom template:					
<	Data	manag	ement		template.	2000/12/31 12:00:00	Agardio.manager	Product 1		
1	Publi	sher			✓ Last report	tinformation				
\$	Pricir	ng			Last publish time: V	Ved, 15 Nov 2017 17:04:30				
					File name: T	JA665-F05DB0_171115-170000	_HistoricReport.csv			
					Size: 1	3.0kB			(10	)
						▲ Force upload file	Download last generated file	🛓 Download publis		) ate
										🗙 Cancel 🔛 Save

Step	Action
10	Click on <b>Generate</b> to produce (generate) the current publisher file.



### 7.11 Pricing

#### Steps to open the menu item

Step	Action
1	Click the <b>Configuration</b> menu 🕵
2	Click <b>Pricing</b> .
3	Select a <b>Source.</b>
4	Modify Parameters.
5	Save changes.

#### Screen to be displayed

*	- (1)		:	hager agardio.manager		🛔 Fabi 🗸 v
p	Building	~ Sources	Main Grid			
Ø	Products	Biomass Gerset	Tariff #1	Tariff #2	Tariff #3	Tariff #4
Δ	Events	Main Grid Solar	Name: Réseau électrique		Name: tariff 3	Name: tariff 4
¢°	EIEC	Wind	Activated: Yes	Activated: Yes	Activated: Yes	Activated: No
<	Data management		Tariff value. 0.080000 EUR	Tariff value: 0.120000 EUR	Tariff value: 0.200000 EUR	Tariff value: 0.000000 EUR
8	BACnet		Monday Tuesday Wednesday Thursda	ty Friday Saturday Sunday		
±	Publisher		Hour Tariff#1	Tarlff #2 Tarlff #3 Tarlff #4		
\$	Pricing (2)		000-1100         0           100-2200         0           100-2200         0           100-2200         0           100-1200         0			
			22:00 - 23:00 23:00 - 00:00			(5)
						🗶 Cancel 🛛 🖹 Sarre

For every energy source 4 electricity tariffs can be set.

#### Fields to enter

- Name
- Activated (Yes/No)
- Unit: Unit of the value of the energy source (kW/h, MW/h)
- Tariff value: Tariff of the energy unit

#### Setting a tariff active or inactive

Step	Action
1	Doubleclick on a <b>Tariff #</b> field at the time table.
2	The unselected tariffs can be set <b>active</b> or <b>inactive</b> . They stay <b>shaded</b> if inactive.

# :hager

### **CONFIGURATION** menu

iomass								
enset	Tariff #1	т	Tariff #2		Tariff #3		Tariff #4	
Main Grid	Name: ta	ariff 1 Na	lame: t	ariff 2	Name:	tariff 3	Name:	tariff 4
Solar				,				
Wind	Activated: Y	ies Ad	ctivated: Y	res	Activated:	Yes	Activated:	Yes
	Unit: K	Wh U	nit: k	<wh< td=""><td>Unit:</td><td>kWh</td><td>Unit:</td><td>kWh</td></wh<>	Unit:	kWh	Unit:	kWh
	Tariff value: 0 E	.156400 Ta SUR 🖉	ariff value: C E	0.100000 EUR 🖉	Tariff value:	0.250000 EUR 🖉	Tariff value:	0.50
	Monday	Tuesday Wed	dnesday	Thursday	Friday S	aturday S	Sunday	
	Hour		Tariff		ariff #2	Tariff #3	Tariff #4	
	00:00 - 01:00							
	01:00 - 02:00	)						
✓ Sources	ດ2-ດດ - ດຊ-ດດ Main Grid	1					🗙 Cano	el 🖪 S
Biomass	Main Grid		Fariff #2		Tariff #3			el 🖺 S
Biomass Genset	Main Grid Tariff #1	1	Tariff #2		Tariff #3		Tariff #4	
Biornass Genset Main Grid	Main Grid Tariff #1	1		ariff 2	Tariff #3 Name:	tariff 3		el 🖪 S tariff 4
Biomass Genset Main Grid Solar	Main Grid Tariff #1	ariff 1 Na	lame: t	Yes 2			Tariff #4	tariff 4
Biomass Genset Main Grid Solar	Main Grid Tariff #1 Name: ta Activated: Y	ariff 1 Na Tes Ad	lame: t	$\overline{\mathbf{O}}$	Name:		Tariff #4 Name:	tariff 4
Sources Biomass Genset Main Grid Solar Wind	Main Grid Tariff #1 Name: ta Activated: Yi Unit: k Tariff value: 0	ariff 1 Na les Ac Wh Ur	lame: t ctivated: Init:	Yes 2	Name:	Yes kWh	Tariff #4 Name: Activated:	tariff 4 Yes kWh
Biomass Genset Main Grid Solar	Main Grid Tariff #1 Name: ta Activated: Yi Unit: k Tariff value: 0	ariff 1 Na les Aa Wh Ua 1.156400 Ta 3UR 2	lame: t ctivated: Init:	Yes 2 Yes No	Name: Activated: Tariff value:	Yes kWh 0.250000 EUR	Tariff #4 Name: Activated: Unit:	tariff 4 Yes kWh 0.500000
Biomass Genset Main Grid Solar	Main Grid Tariff #1 Name: ta Activated: Y Unit: k Tariff value: 0 E	ariff 1 Na les Aa Wh Ua 1.156400 Ta 3UR 2	lame: t ctivated: nit: ariff value: C	Yes 2 Yes No 0.100000 EUR Thursday	Name: Activated: Tariff value:	Yes kWh 0.250000 EUR	Tariff #4 Name: Activated: Unit: Tariff value:	tariff 4 Yes kWh 0.500000
Biomass Genset Aain Grid Solar	Main Grid Tariff #1 Name: ta Activated: Y Unit: k Tariff value: 0 E	ariff 1 Ni Tuesday Wed	lame: t ctivated: [ Init: C dinesday Tariff	Yes 2 Yes No 0.100000 EUR Thursday	Name: Activated: Tariff value: Friday S ariff #2	Yes kWh 0.250000 EUR 2 aturday S	Tariff #4 Name: Activated: Unit: Tariff value: Sunday Tariff #4	tariff 4 Yes kWh 0.500000

#### Assign a tariff to a daily period

A tariff can be assigned per hour. The tariff stays shaded if inactive.

Step	Action
1	Click on the (hour-) bar of a tariff in the time table.
2	Click at the position for the new assigned tariff for the period.
3	<ul> <li>The (hour-) bar will move and change its colour.</li> <li>The tariff is assigned to the new period.</li> </ul>



### NOTICE

If the tariff is not activated, the column of it will appear in gray in the table.

## SUPERVISED MODE

#### Function available

Exception : The configuration of the pricing programs is not possible.

### 7.12 Pricing report

#### Steps to open the menu item

Step	Action
1	Click the <b>Configuration</b> menu 🕰.
2	Click Pricing.
3	Click Pricing report.

#### Screen to be displayed

• • • <b>(1</b> )		hager agardio.manager		🛕 2(1) 🔷	Laurent
F Building	Pricing report				
Products	<ul> <li>Configuration</li> </ul>				
	Period of publication: By Day				
¢° EIEC	Separator: ;				
Data management	✓ Last report information				
BACnet	Last generation time: Mon, 16 Sep 2019 01:11:41				
1 Publisher	File name: TJA665-F05D00_Tariff_2019-09-15 csv Size: 0.10kB				
\$ Pricing 2 +		± Force upload of last report	🛓 Download bet report	2 Download report archive	
	-				

#### Configuration

The file to be generated is defined by the following parameters:

- Period of publication: Daily, weekly or monthly publication of the output file.
- Separator: Separator to delimit the fields of the table.

#### Latest report information

Step	Action
4	Click Copy Reports on USB:
	The last generated report is copied to the USB stick connected to the server.
5	Click Force upload of the last report:
	The report is generated again and copied to the server.
6	Click Download Last Report:
	The last generated report is downloaded from the server.
7	Click Download Report Archive:
	The Tariff.zip output file is downloaded from the server.
	This file contains the last 7 reports.

## 

#### Function not available

### 8 **EXPLOITATION** menu

#### Introduction

This chapter provides detailed information regarding all menu items of the **Exploitation** menu.

The **Exploitation** menu allows data visualizations and event control of the measuring devices that are communicating with the energy monitoring server.

**NOTICE** The **Exploitation** menu is useful for the facility manager or technical maintenance team.

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### 8.1 Overview of the menu items

The **Exploitation** menu includes the following menu items:

Menu item	Description
Energy management	Visualize indicators for energy management and efficiency graphically
	<ul> <li>Dashboard: Charts of energy distribution and energy trends by energy sources and consumption.</li> <li>Charts of non-electric energy distribution, total pricing, relative consumption and download</li> </ul>
	<ul> <li>function.</li> <li>Consumption: Charts of the energy consumption and energy trend per usage / zone, download function</li> </ul>
	<ul> <li>Sources: Charts of the energy sources (i.e. Solar panels) and energy trend per source type, download function</li> </ul>
	- <b>Products</b> : Complete list of energy indexes and relative consumptions of all measuring devices.
	- <b>Pricing:</b> Graphical representation of estimated cost per energy source and cost trends per week and month.
	<ul> <li>W.A.G.E.S*: Functionality showing the varying measures related to different non energetic services used for measuring various consumptions</li> <li>*(Water, Air, Gas, Electricity, Steam)</li> </ul>
Power quality	<ul> <li>Visualization of power quality indicators</li> <li>Regular: Tables of Phase to Phase / Neutral Voltage, Current per Phase and Frequency</li> <li>Advanced: Tables of Power factor and THD (V, U &amp; I) in percentage of the nominal value. Charts of</li> </ul>
Protection	the different harmonics (V, U & I)
FIOLECLION	<ul> <li>Visualization of information on protection products.</li> <li>Dashboard: Overview of the protection products on the dashboard.</li> </ul>
	<ul> <li>Products: Visualization of the settings for the selected protection products.</li> </ul>
	<ul> <li>Maintenance: Overview of the maintenance information for protection products.</li> </ul>

Menu item	Description
Measurements	<ul> <li>Displays measurement data by product</li> <li>Trends History: Graphical representation of saved measured values from the different measuring devices</li> <li>Real-time: Table or figure of current measured values from a chosen measuring device.</li> <li>Real-time multi-product: Table or figure of current measured values from several selected measuring devices.</li> <li>Compare: Graphical comparison of a service for a measuring device between two different time periods</li> <li>Energy: Graphical display of energy values measured and recorded from different measuring devices.</li> </ul>
Events	View of active events or all events occurring on the system (alarms, tests, logins/logouts, creation of new users)
EIEC	Visualize the electrical energy efficiency class EIEC (chart or grid view)

### 8.2 Energy management - Dashboard

#### Steps to open the menu item

Step	Action
1	Click the <b>Exploitation</b> menu .
2	Click Energy management.
3	Click Dashboard.

#### Screen to be displayed

The following dynamic figures are displayed:

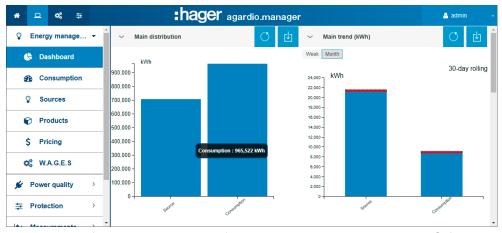
- Main distribution (pie chart)
- Main trend (bar chart)
- Pricing (bar graph)
- W.A.G.E.S (bar graph)
- Relative energy (table)



#### Further information for all bar charts

The whole kWh-values of the charts are updated depending on the capabilities of the measuring devices to refresh data.

If you move the mouse over any piece (Consumption and sources) of the chart, the corresponding kWh-value will be displayed:



A download-function is available for every chart to generate a PNG file. The dashboard (energy distribution for consumption and for sources) is updated every day.

The energy consumption and production trends are calculated over 7 rolling days. So, for example, on Thursday 26th, the calculation is done using the information 7 days before Wednesday 25th compared to that of the 7 days before Wednesday 18th.

The blue part of the bar corresponds to the minimum energy measured between the 2 periods.

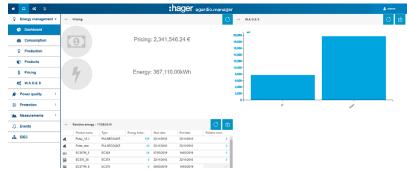
The other part (green or red) zone is the difference of energy measured between the 2 periods:

- 7 current days (Wednesday 18th to (Wednesday 25th)
- 7 previous days (Wednesday 11th to Wednesday 18th)

In case the bar top of a usage or zone is,	the energy mesured between the two periods has
green	decreased.
red	increased.

In case the bar top of a source is,	the energy mesured between the two periods has
red	decreased.
green	increased.

The dashboard also displays the following information:



- Energy and the price of energy consumed since commissioning.
- Non-electric energies such as the consumption of water, gas, steam and air (W.A.G.E.S.).
- Relative energy, shown in tabular form, for each product.

### SUPERVISED MODE Function not available

### 8.3 Energy management - Consumption

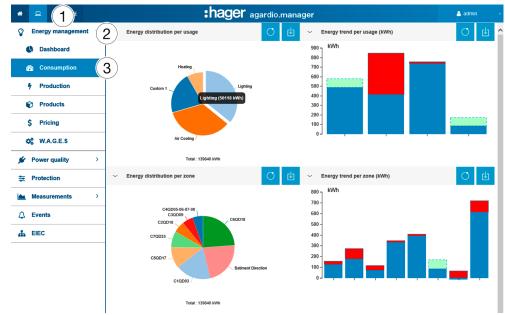
#### Steps to open the menu item

Step	Action
1	Click the <b>Exploitation</b> menu .
2	Click Energy management.
3	Click Consumption.

#### Screen to be displayed

The following dynamic figures are displayed:

- Energy consumption per usage (pie chart)
- Energy consumption per zone (pie chart)
- Energy consumption trend per usage (bar chart)
- Energy consumption trend per zone (bar chart)



#### Additional information for all pie charts and bar charts

- For the graphs representing the distributions by usage or by zone, it is possible to consult the details of a distribution by clicking on the graphic part concerned. The displayed graph then represents the distribution by product associated with this usage or the distribution by usage of this zone. To return to the original chart, click **Reload Data** 

- For the bars representing trends by usage or by zone, it is possible to consult the details of a trend by clicking on the graphic part concerned. The displayed graph then represents the product trend by product of this usage, or by usage of this zone. To return to the original chart, click **Reload Data** 

## **\$** SUPERVISED MODE

#### Function not available

### 8.4 Energy management - Sources

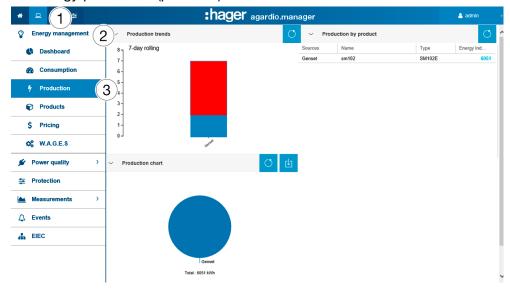
#### Steps to open the menu item

Step	Action
1	Click the <b>Exploitation</b> menu .
2	Click Energy management.
3	Click Sources.

#### Screen to be displayed

The following dynamic figures are displayed:

- Energy trends by source, the second level is a breakdown by product (bar chart)
- Energy per product (Table)
- Energy per source (pie chart)



#### Additional information for all pie charts and bar charts

- For bars representing the trends, it is possible to consult the details of a trend by clicking on the graphical part concerned. The displayed graph then represents the product-specific trend of the selected energy source. To return to the original chart, click **Reload Data** 

- For the graphs representing the distribution of source energy, it is possible to consult the details of a distribution by clicking on the graphic part concerned. The displayed graph then represents the product breakdown of the energy source. To return to the original chart, click **Reload Data** 



### 8.5 Energy management - Products

#### Steps to open the menu item

Step	Action
1	Click the <b>Exploitation</b> menu .
2	Click Energy management.
3	Click Products.
4	Click Product distribution.

#### Screen to be displayed

The following dynamic figure is displayed:

* <u>- (1)</u> = (	2		:h	ager agar	dio.mana	Jer				🚔 admin	
C Energy management	t - P		sumption								
Cashboard	Pr	roduct distribution								O	
Consumption		Name ↑	Energy index (	Date	Туре	Sources	Creation date	Zone	Usage	Cabinet	
Production	BP	Product(s) without source									
Products		C1	1321505	07/09/2018 11:49:11	EC37X	No Source	02/11/2017	U2	No Usage	main cabinet	
Products (		C2Q10 (General measures)	89219	07/09/2018 11:48:24	SM103E	No Source	02/11/2017	U2	No Usage	main cabinet	
\$ Pricing	-	C3	32871	07/09/2018 11:48:11	EC36X	No Source	02/11/2017	U2	No Usage	main cabinet	
¢¢ W.A.G.E.S		C4	25733	07/09/2018 11:48:34	EC36X	No Source	02/11/2017	U2	No Usage	main cabinet	
Q <sub>6</sub> W.A.G.E.S		Q10	92030	07/09/2018 11:48:57	H3+	No Source	14/09/2017	U2	Process	main cabinet	
🖋 Power quality	>	Q11	39243	07/09/2018 11:49:08	H3+	No Source	14/09/2017	U2	Process	main cabinet	
		Q12	41400	07/09/2018 11:47:48	H3+	No Source	15/09/2017	U2	No Usage	main cabinet	
Protection	· I	Q13	42470	07/09/2018 11:47:20	H3+	No Source	15/09/2017	U2	No Usage	main cabinet	
Measurements	>	Q14	66023	07/09/2018 11:48:14	H3+	No Source	15/09/2017	U2	No Usage	main cabinet	
		Q15	3477	07/09/2018 11:47:38	H3+	No Source	15/09/2017	U2	No Usage	main cabinet	
Events		Q16	85641	07/09/2018 11:47:15	H3+	No Source	15/09/2017	U2	No Usage	main cabinet	
AL EIEC		Q17	47598	07/09/2018 11:47:32	H3+	No Source	15/09/2017	U2	No Usage	main cabinet	
		Q18	0	07/09/2018 11:47:32	H3+	No Source	15/09/2017	U2	No Usage	main cabinet	

#### **Further information**

The **Product distribution** gives information about all products communicating with the energy monitoring server. It is useful for a facility manager to get the energy indices (Total Positive Active Energy Ea+) of all measuring devices in one click.

The **Product distribution** is updated at the storage frequency configured for energies in Configuration - Data management. Therefore the value is the last stored value for **Total Positive Active Energy: Ea+** that you can find in the **Measurements - History** menu item.

#### Steps to open the menu Relative consumption

Step	Action
1	Click the <b>Exploitation</b> menu .
2	Click Energy management.
3	Click Products.
4	Click Relative consumption

#### Screen to be displayed

The following dynamic figure is displayed:

* - 1)=			:ha	ager agardio.mana	ger		🔒 admin
Energy managemen	(2) <sup>ootu</sup>	ct distribution Relative	consumption (4)				
C Dashboard	Ť	Product name	Type	Energy index (kWh)	Start date	End date	Relative consumption
•		Q3	H3+	35694	07/09/2018	07/09/2018	1
Consumption		Q4	H3+	99554	07/09/2018	07/09/2018	🛍
Production		Q5	H3+	118503	07/09/2018	07/09/2018	🛍
Floduction		Q6	H3+	38684	07/09/2018	07/09/2018	1
😚 Products	3) 🗉	Q7	H3+	42425	07/09/2018	07/09/2018	1
\$ Pricing		Q8	H3+	89378	07/09/2018	07/09/2018	1
Ş Pricing		Q9	H3+	28269	07/09/2018	07/09/2018	1
Ø W.A.G.E.S		Q10	H3+	92033	07/09/2018	07/09/2018	1
,		Q11	H3+	39246	07/09/2018	07/09/2018	🛍
Power quality	· 🔳	Q12	H3+	41402	07/09/2018	07/09/2018	🛍
Protection	>	Q13	H3+	42472	07/09/2018	07/09/2018	1
		Q14	H3+	66026	07/09/2018	07/09/2018	1
Measurements	· 🔳	Q15	H3+	3477	07/09/2018	07/09/2018	1
Events		Q16	H3+	85645	07/09/2018	07/09/2018	💼

#### **Further information**

In this menu, you can choose **the periods of consumption by products**, which you will validate and register, and which will display during the disconnection as the welcome screen.

## **\$** SUPERVISED MODE

Function not available

### 8.6 Energy management - Pricing

#### Steps to open the menu item

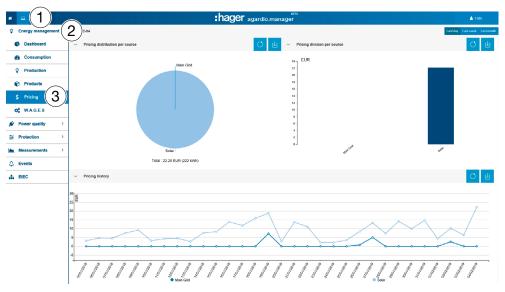
Step	Action
1	Click the <b>Exploitation</b> menu .
2	Click Energy management.
3	Click <b>Pricing</b> .

#### Screen to be displayed

This screen displays the graphical representation of the distribution and the history regarding the cost related to different positive active energy services.

The following dynamic figures are displayed:

- Pricing distribution per source (pie chart)
- Pricing division per source (bar chart)
- Pricing history (line diagram)



#### **Functions to choose**

- Click Last day to see the representation for the last day.
- Click **Last week** to see the representation for the last week.
- Click Last month to see the representation for the last month.

#### Additional information for all pie charts and bar charts

- For the graphs representing the tariff distribution by source, it is possible to consult the details of a distribution by clicking on the graphic part concerned. The displayed graph then represents the tariff breakdown by product, for the selected energy source. To return to the original chart, click **Reload Data** 

- For the bars representing the division of prices by source, it is possible to consult the details of a division by clicking on the graphic part concerned. The displayed graph then represents the price division for the source by product. To return to the original chart, click **Reload Data** 



### 8.7 Energy management - W.A.G.E.S

#### Steps to open the menu item

Step	Action
1	Click the <b>Exploitation</b> menu .
2	Click Energy management.
3	Click W.A.G.E.S.

#### Screen to be displayed

This screen shows representations of the non-electric energies detected by the connected measuring devices.

Energy m	anagement 2	W.A.G.E.S											
🕓 Dashb	oard	~ Wat	er					~ s	team				
🚯 Consu	mption		Name	Туре	Value	Unit	Date		Name	Туре	Value	Unit	Date
		- el.	EZN W1	PULSECOUNTER	10388.6	m3	27/09/2017 09:	嘲.	EZN W2	PULSECOUNTER	15532.4	m3	27/09/2017 09:
🕈 Produ	tion	- alj.	SVS W1	PULSECOUNTER	4.5	m3	27/09/2017 09:	el).	SVS W3	PULSECOUNTER	1.1	m3	27/09/2017 09:
🗑 Produ	cts												
\$ Pricing	1												
\$ Pricing		)											
<b>Ø</b> ₿ W.A.G	e.s <b>3</b>	)											
¢\$W.A.G ∲Powerqu	E.S 3 ality >	→ Steam						~ Air					
¢¢å W.A.G	E.S 3 ality >	→ Steam		Time	Value	162	Date	∼ Air	Name	Time	Value	11-2	Data
Ø\$ W.A.G ✓ Power qu Ξ Protectio	E.S 3 ality >		Name	Type PULSECOUNTER	Value 12017.8	Unit	Date 27/09/2017 09		Name EZN W4	Type PULSECOUNTER	Value 9487.7	Unit	Date 2709/2017 09:
¢\$W.A.G ∲Powerqu	E.S 3 ality >	〜 Steam 		Type PULSECOUNTER PULSECOUNTER	12017.8		Date 27/09/2017 09 27/09/2017 09	→ Air 1년.	Name EZN W4 SVS W5	Type PULSECOUNTER PULSECOUNTER	9487.7		Date 27/09/2017 09: 27/09/2017 09:

#### **Further information**

In this menu, the values of the following non-electrical energies are displayed:

- Water (in m3)
- Gas (in m3)
- Steam (in Joules)
- Air (in m3)

## **\$** SUPERVISED MODE

#### Function not available

### 8.8 Power quality - Regular

#### Steps to open the menu item

Step	Action
1	Click the <b>Exploitation</b> menu .
2	Click <b>Power quality</b> .
3	Click <b>Regular</b> .
4	Select a measuring device ( <b>Product</b> ).

#### Screen to be displayed

The following dynamic tables are displayed:

- Phase to Phase Voltage
- Current Per Phase
- Phase to Neutral Voltage
- Frequency :hager agardio.manager \* - 1 ≆ 🔒 admin nagement M102E LUMIERE Energy m ~ Regular 2 Power quality SM102E\_LUMIERE (4) MS) (V) 🚯 Regular 3 1112 1123 🔑 Advanced 411.21 412.05 Max Protection Ava Measurements I: Current Pe s RMS, Average of RI um of RMS) (A 11 12 13 △ Events 9.76 6.04 Inst Max 84 79 53.37 31.54 EIEC Avg ous RMS, Ave V: Phase to N oltage (Inst ge of RMS, Maximum of RMS) (V) Inst 237.04 237.77 237.05 Max. Avg F: Frequency (Instantaneous, Average) (Hz) Inst. 50.01 Max

The tables contain the instantaneous, the maximum and the average values for all displayed services of the measuring device.

#### **Further information**

The whole values of the tables are updated depending on the capabilities of the measuring devices to refresh data.

The display of the maximum and average values depends on the selected device. They are calculated by the device itself from the recorded values.

### **\$** SUPERVISED MODE

Function not available

### 8.9 Power quality - Advanced

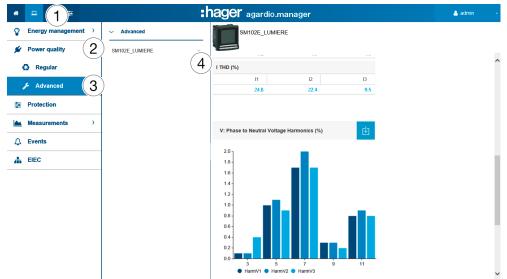
#### Steps to open the menu item

Step	Action
1	Click the Exploitation menu .
2	Click <b>Power quality</b> .
3	Click Advanced.
4	Select a measuring device (Product).

#### Screen to be displayed

The following dynamic tables and bar charts are displayed:

- Power factor (table)
- Total Harmonic Distortion (THD) of Voltage (V and U) as well as current (I) (table)
- Single Voltage Harmonics (%, bar chart)
- Harmonic Tensions Composed (%, bar chart)
- Phase Harmonic (%, bar chart)



All bar charts are displayed with harmonic ranks 3, 5, 7, 9 and 11.

#### **Further information**

The whole values displayed in the tables and bar charts are updated depending on the capabilities of the measuring devices to refresh data.

Power factor is the ratio between kW (active power) and kVA (apparent power).

THD is the summation of all harmonic components to the power of voltage or the current compared against the fundamental component of the voltage or current wave. A high THD means distortions due to nonlinear loads (electronics ballast, computer power supplies for examples).

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#### **Harmonic Ranks**

For analysis of the power quality it is important to monitor the odd-numbered harmonic ranks 3, 5, 7, 9 and 11. Harmonic ranks lead to distortion of voltage and current. This can impair the proper functioning or destroy the equipment.

Harmonic ranks are caused by equipment with non-linear characteristics and generate additional frequencies which are integer multiples of the fundamental frequency (e.g. 50 Hz). Number 3 represents 3 times the fundamental frequency 50 Hz, i. e. 150 Hz.

The diagrams show the harmonics of the voltages/currents in percentage of the nominal voltages/currents.

NOTICE

#### **Harmonic Ranks**

This function is only available in the list for Advanced Power Quality features.

## Contract Con

Function not available

### 8.10 Protection - Dashboard

#### Steps to open the menu item

Step	Action
1	Click the Exploitation menu .
2	Click Protection.
3	Click Dashboard.

#### Screen to be displayed

This screen displays the existing protection devices on the dashboard and their status.

<u>-(1)</u>			:hager	agardio.manager			<b>A</b> 20	1) 🕹 Laurent
Energy management >	Protection dashboard							
Power quality >								0
Protection (2).	Name 1	Туре	Frame size	Product's communication stat	Pre-trip status	Pre-trip time	Trip status	Trip time
	H3+ Invertor MDB1 80kVA	H3+	P250	*	×		*	
Dashboard 3	H3+ NF 10 CBD	H3+	P160	×	~		~	
Products	H3+ NF5 West Side	H3+	P250	×	×		×	
- Houses	H3+ NF8 Cafeteria	H3+	P160	×	~		~	
Events								

SUPERVISED MODE
Function not available

### 8.11 Protection - Products

#### Steps to open the menu item

Step	Action
1	Click the Exploitation menu .
2	Click Protection.
3	Click Products.
4	Select a protection device.

#### Screen to be displayed

This screen displays only the related parameters to selected protection products.

* - (1)≆	:h	🐣 admin		
Senergy management	✓ Protection	ACB		
✓ Power quality >	ACB			
₽ Protection (2)	(4)	Long time delay		<u>U</u>
<u> </u>	<b>_</b>	Label	Current value	Last update date
Dashboard		Long time delay, Ir high threshold	0 A	05/10/2017 10:33:05
		Long time delay, Ir low threshold	425 A	05/10/2017 10:33:05
Products (3)		Long time delay, Tr time delay	10 s	05/10/2017 10:33:05
		Long time delay protection, start mode	cold start	05/10/2017 10:33:05
Measurements >		Short time delay		e de la constante de la consta
🗘 Events		Label	Current value	Last update date
		Short time delay, Isd threshold	3000 A	05/10/2017 10:33:05
EIEC		Short time delay, Tsd time delay	0.4 s	05/10/2017 10:33:05
	-	Short time delay, I2t setting	12t disabled	05/10/2017 10:33:04
		Instantaneous		d
		Label	Current value	Last update date
		Instantaneous li threshold	800 A	05/10/2017 10:33:05
		Ground fault		e de la constante de la consta
		Label	Current value	Last update date
		Ground fault Ig threshold	Protection disabled	05/10/2017 10:33:05
		Ground fault tg time delay	-0.1 s	05/10/2017 10:33:05
		Ground fault I2t setting	800 A	05/10/2017 10:33:04
		Noutral		-the



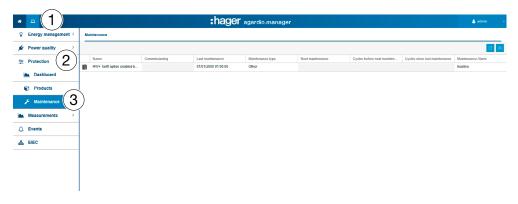
### 8.12 Protection - Maintenance

#### Steps to open the menu item

Step	Action
1	Click the <b>Exploitation</b> menu .
2	Click Protection.
3	Click Maintenance.

#### Screen to be displayed

This screen displays the maintenance status of existing protection devices.





### 8. 13 Measurements - Trends / History

#### Steps to open the menu item

Step	Action
1	Click the <b>Exploitation</b> menu .
2	Click Measurements.
3	Click <b>History</b> .
4	Choose a measuring device ( <b>Product</b> ).
5	Choose a <b>Service</b> .
6	Click <b>Additional products</b> if you want the same Service of another product to be added in the figure and select the products (optional).
7	Choose a <b>Start</b> and <b>End date</b> .
	Note:
	Always set an end date greater than the start date. The maximum duration of the history is 1 month.
8	Select the Average or last value
9	Select <b>Show temperature</b> to display the measures along with corresponding temperatures.
10	Click <b>Events</b> if you want to show all events to the selected product.
11	Click Apply.

#### Screen to be displayed

The following chart is displayed:

* - 1 ≆			💄 admin 🗸 🗸
C Energy management >	~ History	Relative scale Full scale Straight lines Markers only	📩 Export data 🔿 📋
✓ Power quality >		- 27 août 2018 - 3 septembre 2018	
		1.305,000]	
Measurements (2)	Ea+NotReset		
ා History 3	Additional products	1,300,000	
Real-time	EC1 (Channel 1)	1,295,000	
Real-time multi	27/08/18	1,295,000	
Compare	03/09/18	1,290,000	
🗘 Events	Average	1,285,000	
🚠 EIEC	Show temperatures	) ,200,000	
	Show events	1,280,000	
			Caller Color
		δ <sup>2</sup> δ <sup>2</sup> δ <sup>2</sup> δ <sup>2</sup> − C1 δ <sup>2</sup> δ <sup>2</sup>	8 8
	Clear fitters Q Apply	(11)	

The figure shows values within the selected time period.

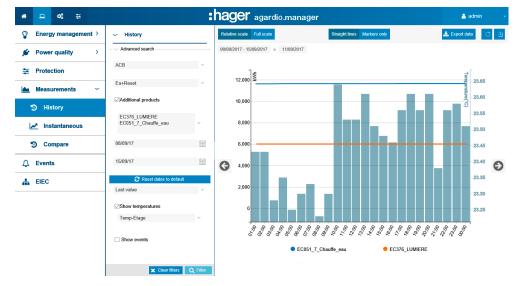
#### **Further information**

Optionally, it is possible to display the temperature measurement and the events related to the product and the period by checking the **Show Temperatures** and / or **Show Events** checkboxes.

Click the marker to display the average values per hour and minute in the course of the corresponding day:



#### Daily average value:



#### **Functions to choose**

- Click Reset dates to default, to reset the observation period to the last 7 days.
- Select **Average** (default selection) or **Last Value** in the drop down list below the date selection to display the corresponding values.
- Click **Relative scale** (default selection) to display the service values in a dynamic scale of the vertical coordinate axis.
- Click **Full scale** to display the service values in the coordinate system with fix initial value 0 of the vertical coordinate axis.
- Click **Straight lines** if you want the values to be connected by a straight line.

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- Click **Markers only** if you want the values to be displayed without a connecting straight line. Clicking on the dot changes from daily value to hourly value. Clicking again will change from hourly to minute (depending on the setting in service management).
- Click **Download as image** to download the figure as PNG file.
- Click **Export data** to download the values as \*.csv file.

#### **Further information**

The whole values of the figure are updated depending on the capabilities of the measuring devices to refresh data.



### 8.14 Measurements - Instantaneous

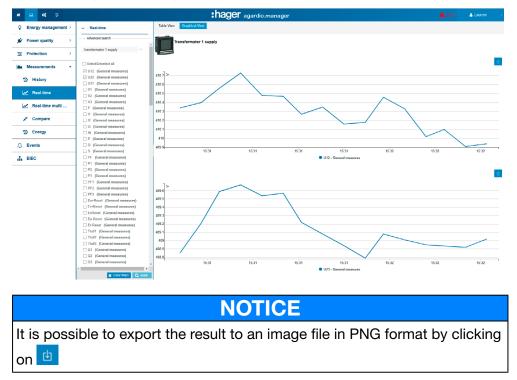
#### Steps to open the menu item

Step	Action
1	Click the <b>Exploitation</b> menu .
2	Click Measurements.
3	Click <b>Real-time</b> .
4	Choose a measuring device ( <b>Product</b> ).
5	Choose the <b>Services</b> that you want to visualize.
6	Click Apply.

### Screens to be displayed

The following dynamic figure is displayed at the **Table View**:

* □ 1)=		:ha	<b>Ger</b> agardio.manage	ieta r			📥 admin 🗸 🗸
Senergy management >	✓ Real-time	Table View	Graphical View				
	- V Advanced search		2Q10				ė
∓ Protection >	C2Q10 4						
	Select/Deselect all	Name	Channel ↑	Label	Date	Value	Unit
Measurements (2)	U12 (General measures)	U12 U23	General measures	Phase to phase vol	07/09/2018 12:47:26	407.64	
D History	U23 (General measures)	U23	General measures	Phase to phase vol	07/09/2018 12:47:26	408.13	v
3 History	U31 (General measures)		General measures	Phase to phase vol	07/09/2018 12:47:26	407	
Real-time	✓ V1 (General measures)	V1	General measures	Simple voltage: V1	07/09/2018 12:47:26		V
Real-time 🛛 🕹	✓ V2 (General measures)	V2	General measures	Simple voltage: V2	07/09/2018 12:47:26		V
	✓ V3 (General measures)	V3	General measures	Simple voltage: V3	07/09/2018 12:47:26		V
Real-time multi	F (General measures)	F	General measures	Frequency: F	07/09/2018 12:47:02	49.98	
	I1 (General measures)	11	General measures	Current: I1	07/09/2018 12:47:26	46.94	
Compare	I2 (General measures)	12	General measures	Current: I2	07/09/2018 12:47:26	35.42	
	☑ I3 (General measures)	13	General measures	Current: 13	07/09/2018 12:47:26	50.91	A
Events	IN (General measures)	IN	General measures	Neutral current: IN	07/09/2018 12:47:26	0	
	─ ─ ─ ○ P (General measures)	P	General measures	∑ Active Power +/-: P	07/09/2018 12:47:26	27.79	KW
🚓 EIEC	General measures)	Q	General measures	∑ Reactive Power	07/09/2018 12:47:26	2.29	kvar
	S (General measures)	S	General measures	∑ Apparent Power: S	07/09/2018 12:47:26	27.89	kVA
	PF (General measures)	PF	General measures	∑ Power factor: PF	07/09/2018 12:47:26	1	
	P1 (General measures)	P1	General measures	Active Power phas	07/09/2018 12:47:26	0	
	P2 (General measures)	P2	General measures	Active Power phas	07/09/2018 12:47:26	0	
	P3 (General measures)	P3	General measures	Active Power phas	07/09/2018 12:47:26	0	kW
	General measures)	Q1	General measures	Reactive Power ph	07/09/2018 12:47:26	0	kvar
	Q2 (General measures)	Q2	General measures	Reactive Power ph	07/09/2018 12:47:26	0	kvar
	Ciècer filters Q Ap	6	Page 1 of 7   > >   C				Displaying 1 - 20 of 128
		ľ	OTICE				
It is possible	e to export the	result	in a spreads	heet file	in CSV	format	by
clicking on	С Ц						



The following dynamic figure is displayed at the Graphical View:

#### **Functions to choose**

- Click **Select/deselect all** (if needed) to check/uncheck the boxes of all services of the selected measuring device.
- Click Clear filters to delete all display settings regarding product and services.

#### **Further information**

The whole values of the table view and the graphical view are updated depending on the capabilities of the measuring devices to refresh data.



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### 8.15 Real-time multi product measurements

#### Steps to open the menu item

Step	Action
1	Click the <b>Exploitation</b> menu .
2	Click Measurements.
3	Click Real-time multi product.
4	Choose the measuring devices ( <b>Products</b> ).
5	Choose the Services that you want to visualize.
6	Click <b>Additionnal products</b> to add measuring devices (only products with selected services will be proposed).
7	Click Apply.

#### Screen to be displayed

The following figure is displayed:

_ (1)≆		:hage	agardio.manager	TA		🔒 admin
Energy management >	✓ Real-time multi product					
Power quality		Product	Channel ↑	Date	Value	Unit
Protection >	C2Q10 4	I3 - Current: I3				
Measurements (2)	Additional products	6	General measures	07/09/2018 13:02:22	49.31	A
$\bigcirc$	Products	S - ∑ Apparent	Power: S			
D History	Services:	C2Q10	General measures	07/09/2018 13:02:22	21.92	kVA
✓ Real-time		5)J23 - Phase to	phase voltage: U23			
✓ Real-time multi	(General measures)	C2Q10	General measures	07/09/2018 13:02:22	405.57	V
ීා Compare	√1     (General measures)       ✓ V2     (General measures)       ✓ V3     (General measures)	V2 - Simple volt				
Events	General measures)     I1 (General measures)	C2Q10 V3 - Simple volt	General measures	07/09/2018 13:00:47	0	V
EIEC	I2 (General measures)     I3 (General measures)	C2Q10	General measures	07/09/2018 13:00:47	0	v
	<ul> <li>□ N (General measures)</li> <li>□ P (General measures)</li> <li>□ Q (General measures)</li> <li>☑ S (General measures)</li> </ul>					
	PF (General measures) P1 (General measures)					
	P2 (General measures) P3 (General measures)					
	Q1 (General measures) Q2 (General measures)					
	Q3 (General measures)					
	S1 (General measures)					
	S3 (General measures)	$\square$				

#### **Further information**

We can visualize the most 5 measuring devices and 10 services.



### 8.16 Measurements - Compare

#### Steps to open the menu item

Step	Action
1	Click the <b>Exploitation</b> menu .
2	Click Measurements.
3	Click <b>Compare</b> .
4	Choose a measuring device ( <b>Product</b> ).
5	Choose a <b>Service</b> .
6	Choose Last value or Average value.
7	Set Period 1.
8	Set <b>Period 2.</b> This period will have the same duration as the first period.
9	Click <b>Events</b> if you want to show all events to the selected product.
10	Click Apply.

#### Screen to be displayed

The following chart is displayed:

* □ 1) =	:hage		📤 admin	
Senergy management	✓ Compare	Relative scale Full scale	Straight lines Markers only	📩 Export data 🔿
✓ Power quality >		1 août 2018 - 15 août 2018 16 août 2018 - 30 août 2018		
	c1 (4) ~		**************************************	and
🔺 Measurements (2) 🗸	Ea+NotReset 5			and the second s
<ul><li>History</li></ul>	Average 6	1,320,000	<b>4° 4</b>	
Real-time	Period 1	1,300,000		
Real-time multi product	01/08/18	1,280,000		
ා Compare 3	15/08/18	1,260,000		
↓ Events	C Reset dates to default	1,250,000		
🚠 EIEC	Period 2	1,230,000		
	30/08/2018	1,210,000		
	Show events		d 1	energy and
	X Clear filters Q, Apply	(10)		

#### **Functions to choose**

- Click **Reset dates to default**, to reset the period setting to default values.
- Select **Average** (default selection) or **Last Value** in the drop down list below the date selection to display the corresponding values.
- Click **Relative scale** (default selection) to display the service values in a dynamic scale of the vertical coordinate axis.
- Click **Full scale** to display the service values in the coordinate system with fix initial value 0 of the vertical coordinate axis.

- Click **Straight lines** if you want the values to be connected by a straight line.
- Click **Markers only** if you want the values to be displayed without a connecting straight line.
- Click **Download as image** to download the figure as PNG file.
- Click **Export data** to download the values as CSV file.

#### **Further information**

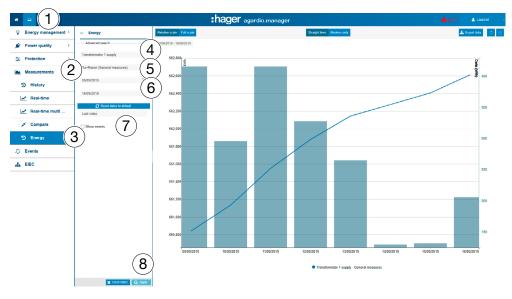
The whole values of the figure are updated depending on the capabilities of the measuring devices to refresh data.



### 8.17 Measurements - Energy

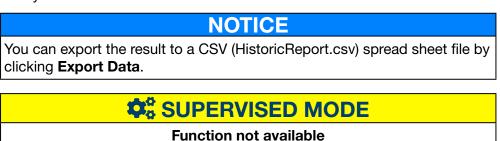
#### Steps to open the menu item

Step	Action				
1	Click the <b>Exploitation</b> menu .				
2	Click Measurements.				
3	Click <b>Energy</b> .				
4	Choose a measuring device (Product).				
5	Choose a <b>Service</b> .				
6	Choose a <b>Start</b> and <b>End date</b> .				
	Note:				
	Always set an end date greater than the start date. The maximum duration of the history is 1 month.				
7	Click <b>Events</b> if you want to show all events to the selected product.				
8	Click Apply.				



#### Functions to choose

- Click **Reset dates to default**, to reset the observation period to the last 7 days.
- Click **Relative scale** (default selection) to display the service values in a dynamic scale of the vertical coordinate axis.



### 8.18 Events

#### Steps to open the menu item

Step	Action
1	Click the <b>Exploitation</b> menu 😐
2	Click <b>Events</b> .

#### Screens to be displayed

The following dynamic table is displayed at Active Events:

ŵ	- 1 ≆	:hag	💄 admin 🗸 🗸			
Ŷ	Energy management >	Active events All events				
#	Power quality >				也	
+	Bart Mar	Caption	Occurrence time	Scope	Description	
₽	Protection	8 The service backend is unreachable, will b	04/09/2017 12:00:53	Internal	If a service is not available, then part of the system can not wor	
14.4	Measurements >	<ol> <li>Communication timeout with product rerere</li> </ol>	20/07/2017 09:50:22	Internal	The Gateway cannot receive any data from the remote product	
		<ol> <li>Power-fail of the Gateway.</li> </ol>	20/07/2017 09:39:25	Internal	Gateway had rebooted to a power fail.	
Δ	Events 2	<ol> <li>Publication to server 10.125.45.89 failed.</li> </ol>	18/07/2017 22:02:55	Internal	The server is not available.	
4		<ol> <li>FTP server ftp.hes.com is not available.</li> </ol>	18/07/2017 16:00:07	Internal	If Gateway is configured to save periodically its backup to a re	
#	EIEC					
		≪ <   Page 1 of 1   > ≫   C			Displaying 1 - 5 of 5	

The following dynamic table is displayed at **All Events**:

# □ ≪ ≆		:hag	jei	agardio.manage	r		🔒 admin	
Energy management >	Active events All events							
Fower quality	Filter							t
E Protection	Period	-	•	Caption	Occurrence ti	Scope	Description	
Frotection	From:		<b>A</b>	FTP server ftp.hes.com is	05/09/2017 0	Internal	If Gateway is configured to save periodi	
Measurements	To:		⊠	User 'dplacek' has logged i	04/09/2017 2	Internal	User has logged in the web application.	
Measurements /	Event type			User 'dplacek' has logged i	04/09/2017 2	Internal	User has logged in the web application.	
🗅 Events	Alarm		⊠	User 'admin' has logged out.	04/09/2017 1	Internal	User has logged out of the web applicati	
	C Error		⊠	User 'admin' has logged in	04/09/2017 1	Internal	User has logged in the web application.	
L EIEC	○ Warning		<b>A</b>	Communication timeout wit	04/09/2017 1	Internal	The Gateway cannot receive any data fr	
	Information		⊠	User 'admin' has logged in	04/09/2017 1	Internal	User has logged in the web application.	
			<b>A</b>	FTP server ftp.hes.com is	04/09/2017 1	Internal	If Gateway is configured to save periodi	
	Status		⊠	SMTP server mail.gmx.net	04/09/2017 1	Internal	If Gateway is configured to send email n	
	New		⊠	User 'admin' has logged in	04/09/2017 1	Internal	User has logged in the web application.	
	Read		1	Power on of the Gateway.	04/09/2017 1	Internal	Gateway had started.	
	<ul> <li>Acknowledged</li> </ul>		<b>A</b>	Power-fail of the Gateway.	04/09/2017 1	Internal	Gateway had rebooted to a power fail.	
	Scope		<b>A</b>	Power-fail of the Gateway.	04/09/2017 1	Internal	Gateway had rebooted to a power fail.	
	Hierarchical		⊠	Switch activating the setup	04/09/2017 1	Internal	Setup mode has been selected. Gatewa	
	O Process		1	Power on of the Gateway.	04/09/2017 1	Internal	Gateway had started.	
	<ul> <li>Internal</li> </ul>		<b>A</b>	Power-fail of the Gateway.	04/09/2017 1	Internal	Gateway had rebooted to a power fail.	
	O Product		<b>A</b>	Power-fail of the Gateway.	04/09/2017 1	Internal	Gateway had rebooted to a power fail.	
	Alarm type		⊠	Switch activating the setup	04/09/2017 1	Internal	Setup mode has been selected. Gatewa	
	<i>,</i> ,		M.	User 'admin' has looged in	04/09/2017 1	Internal	User has logged in the web application.	
	Alarm status     Clear filters	Q Filter	$\ll$	< Page 1 of 111	> » C		Displaying 1 - 50 of 55	j(

Click an event to display more detailed information about the event.

# :hager

### **Further information**

#### Click All Events, if you want to

- have a look at the list of all events or
- filter for a certain
  - (time) period,
  - event type (alarm, error, warning or information),
  - status (new, read or acknowledged),
  - scope (hierarchical, process, internal or product) and/or
  - alarm type (binary, high threshold, low threshold, high and low threshold)
  - alarm status (on, warning, down)

#### Event symbols and their meaning

Symbol	Meaning
	Information message
	Active alarm (that needs to be acknowledged)
⊗	Alarm that has been acknowledged
✦	Event disappeared
	Warning
0	Error requiring no acknowledgment
!	Message requiring no acknowledgment

#### Alarms and messages

There are two major sorts of events: Alarms and messages.

Alarms	Messages				
report an abnormal status of a measuring device	report a status with no effect				
have to be acknowledged	do not need to be acknowledged				
require a corrective action	do not require any action				
Typical example:	Typical example:				
Communication timeout with product	User 'itl' has logged in as viewer.				



# Acknowledgment of alarms

Active alarms have to be acknowledged manually by entering a comment as follows:

1       Click the alarm that you want to acknowledge.         2       Enter a comment (Message).         3       Click Acknowledge Alarm. Result: The acknowledged alarm is displayed at All events. Acknowledging user and acknowledgment time have been saved.         Image:	St	ер	Actio	on					
3       Click Acknowledge Alarm. Result: The acknowledged alarm is displayed at All events. Acknowledging user and acknowledgment time have been saved.	1	1 Click the alarm that you want to acknowledge.				ledge.			
Result:     The acknowledged alarm is displayed at All events.     Acknowledging user and acknowledgment time have been saved.     Acknowledger and the events     Acknowledger and the save been saved.     Acknowledger and the save been save been saved.     Acknowledger and the save been save been save been saved.     Acknowledger and the save been save been save been save been save been saved.     Acknowledger and the save been s	2		Ente	r a comment ( <b>Message</b> ).					
The acknowledged alarm is displayed at All events. Acknowledging user and acknowledgment time have been saved.  Acknowledging user and acknowledgment time have been saved.  Acknowledged alarm is displayed at All events  Acknowledge user and acknowledgment time have been saved.  Acknowledge user and acknowledgment time have been saved.  Acknowledge user and acknowledge user and acknowledge user and acknowledge user acknow	3		Click	Acknowledge Ala	arm.				
Acknowledging user and acknowledgment time have been saved.            • • • • • • • • • • • • • • •			Resu	ult:					
Fnergy management                Active events             All events                 Power quality               Caption             Occurrence time             Scope             Description               Caption             Occurrence time             Scope             Description               Caption             Occurrence time             Scope             Description                 Protection               Caption             Occurrence time             Scope             Description               Caption             Occurrence time             Scope             Internal             If a service is not available, then part of the system can not wor.             Occurrence time             Occurrence time             Scope             Internal             The Gateway cannot receive any data from the remote product             O             Powerfail of the Gateway             2007/2017 09:39:25             Internal             The Gateway cannot receive any data from the remote product                 Events             Events             Events             Events             Events             Internal             If Gateway is configured to save periodically its backup to are             Sc				-		•			
Y       Ellergy intelligement       Image: Second S	*	□ ≪	ŧ	:hag	<b>er</b> .agardio.ma	inager	💄 admin 🔍 🗸		
Image: control in the service backend is unreachable, will b       Occurrence time       Scope       Description         Image: control in the service backend is unreachable, will b       0.4/03/2017 12:00:53       Internal       If a service is not available, then part of the system can not wor         Image: control intercent with product refere       20/07/2017 09:39:25       Internal       The Gateway cannot receive any data from the remote product         Image: control intercent with product refere       20/07/2017 09:39:25       Internal       The Gateway cannot receive any data from the remote product         Image: control intercent with product refere       20/07/2017 09:39:25       Internal       The Gateway is configured to a power fail.         Image: control intercent with product refere       20/07/2017 09:39:25       Internal       The service is not available.         Image: control intercent with product refere       20/07/2017 09:39:25       Internal       The service is not available.         Image: control intercent with product refere       20/07/2017 09:39:25       Internal       The service is not available.         Image: control intercent with product refere       20/07/2017 09:39:25       Internal       If Gateway is configured to save periodically its backup to a re         Image: control intercent with product refere       Image: control intercent with product refere       Displaying 1 - 5 of 5	4	Energy manag	gement >	Active events All events					
Protection <ul> <li>The service backend is unreachable, will b</li> <li>0.4/09/2017 12:00:53</li> <li>internal</li> <li>internal</li> <li>the service is not available, then part of the system can not wor</li> <li>0. Communication timeout with product rerere</li> <li>20/07/2017 09:39:25</li> <li>internal</li> <li>The Service is not available.</li> <li>0. Power-fail of the Gateway.</li> <li>20/07/2017 09:39:25</li> <li>internal</li> <li>internal</li> <li>The Service is not available.</li> <li>0. Power-fail of the Gateway.</li> <li></li></ul>	*	Power quality	>				Ŀ.		
<ul> <li>C. The service backend is unreachable, will b 04/03/2017 12:00.5 internal if a service is not available, then part of the system can not wor</li> <li>Communication timeout with product rerer 2007/2017 09:50:22 internal The Gateway canon receive any data from the remote product</li> <li>Power-fail of the Gateway.</li> <li>Power-fail of the Gateway.</li> <li>FTP server ftp.hes.com is not available.</li> <li>NOT/2017 15:00:07 internal</li> <li>The server is not available.</li> <li>FTP server ftp.hes.com is not available.</li> <li>NOT/2017 15:00:07 internal</li> <li>Gateway is configured to save periodically its backup to a re</li> <li>C Page 1 of 1 &gt; &gt;&gt; C</li> <li>Carrier fail.</li> </ul>				Caption	Occurrence time	Scope	Description		
Measurements       >       0.       Power-fail of the Gateway.       20/07/2017 09:39:25       Internal       Gateway had rebooted to a power fail.         O       Publication to server 10:125:45:89 failed.       18/07/2017 22:02:55       Internal       The server is not available.         O       Publication to server 10:125:45:89 failed.       18/07/2017 16:00:07       Internal       The server is not available.         Image:       Image:       Image:       Image:       Image:       Image:         Image:       Image:       Image:       Image:       Image:       Image:	Protection								
Constraints     Constrain	Measurements >		s >						
Events      O. FTP server the less com is not available.     18/07/2017 16:00.07     Internal     If Gateway is configured to save periodically its backup to a re      EIEC      Aiam Id: 2003     Scope: Internal     Occurrence time: 20/07/2017 09:39:25     Caption: Power-fail of the Gateway.     Description: Gateway had rebooled to a power fail.      Acknowledgement     Message:									
Image: Control of the state s	Δ.	Events		-					
Caption: Power-fail of the Gateway. Description: Gateway had rebooted to a power fail. Acknowledgement Message:	<b>"</b> h	EIEC		≪ <   Page 1 of 1   > ≫   C			Displaying 1 - 5 of 5		
				Caption: Power-fail of the Gateway. Description: Gateway had rebooted to a power fa		Occurrence time:	20/07/2017 09/39/25		
Acknowledge alarm				<			Acknowledge alarm		

At the **Occurrence time** the alarm was first triggered.

#### List of main alarms

Туре	Text		
Critical Alarm	Free available memory is too low ( <i>{n}</i> %).		
	Free available space on $\mu$ SD is too low ({ <i>n</i> }%).		
	Free available space on eMMC is too low ( $\{n\}$ %).		
	Impossible to get µSD card.		
	CPU temperature is too high ( $\{n\}^\circ C$ ).		
	The service $\{0\}$ is unreachable, will be restarted.		
	Communication error with product {0}, Modbus address {1}.		
	Communication timeout with product {0}, Modbus address {1}.		
	Communication timeout with product {0}, IP {1}.		
	FTP server {0} is not available.		
	FTP server doesn't know login <i>{0}</i> .		
	FTP server doesn't allow writing file in the specified directory.		
Major Alarm	CPU too high ({ <i>n</i> }%).		
	Administrator password has been restored to default value.		
	Energy server has been restored in factory configuration.		
Minor Error	NTP server {0} is not available.		
Minor Info	User has logged in as {1}.		
	User has logged out.		
	A new user {0} is added with {1} right.		
	The user <i>{0}</i> is deleted.		
	The user {0} is updated with {1} right.		
	Switch activating the setup mode has been turned on.		
	SMTP server {0} is not available.		
	SMTP server {0} reject the authentication '{1}'.		
	SMTP server reject the message to send.		

The following dummy variables are used:

	is corresponding to a	
{n}	numerical value that will be filled in by the energy monitoring server.	
{0}, {1}	name or designation that will be filled in by the energy monitoring server.	



#### Potential error messages

The following list explains the error messages that might be displayed at **Exploitation/Events**:

Error message	Explanation/solution
Hierarchical event cannot be acknowledged before child issue.	Before the hierarchical alarm can be acknowledged, you have to acknowledge the alarm which led to the activation.

SUPERVISED MODE
<b>Function available</b> Exception : Hierarchical alarms are no longer used.

### 8.19 EIEC

#### About the EIEC classification

The DIN VDE 0100-801 (international standard IEC 60364-8-1) entered into force in Germany in October 2015.

The standard prescribes that every electrical installation (new electrical installations and modification of existing electrical installations) has to be classified into a so called Electrical Installation Efficiency Classes (EIEC).

The aim is to provide the best possible energy supply with the lowest energy consumption.

The classification depends on 16 defined criteria (13 Efficiency measures EM and 3 Performance Levels PL). Within each criterion 0-4 Points could be reached (EM0-EM4 or PL0-PL4). No consideration of the respective criterion means 0 points.

Depending on the total point score, the system will then be classified as follows:

No. of points	Class
< 58 points	EIEC4
< 48 points	EIEC3
< 36 points	EIEC2
< 26 points	EIEC1
< 16 points	EIEC0

For detailed information about the IEC 60364-8-1 (DIN VDE 0100-801) refer to the Hager-Tipp **16DE0118\_01**.

#### Preparations to do

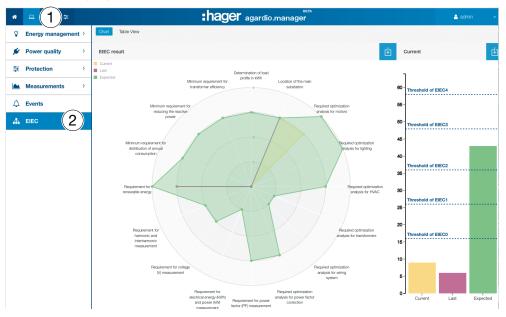
Before you start the EIEC chart, you need to give information regarding the energy efficiency at the **EIEC** menu (see p. 107) item of the **Configuration** menu.

#### Steps to open the menu item

Step	Action
1	Click the <b>Exploitation</b> menu 😐.
2	Click <b>EIEC</b> .

#### Screens to be displayed

The following figure is displayed at the Chart:



On bars graphs appear:

The expected level, that is at first (Depending on the type of building defined in the zone configuration),

The last level (precedent) before modification,

And finally the current level.

The following figure is displayed in the Table view:

*	□ ≪ ≆	:ha	<b>IGE</b> agard	io.manager			💄 admin
Ŷ	Energy management	, Chart Table View					
ø	Power quality	•					C4
\$	Protection	Parameter	0	1	2	3	4
-	Measurements	Determination of load profile in kWh	No consideration	Load profile consumption of the installation for a day	Load profile consumption of the installation for each day of a week	Load profile consumption of the installation for each day of a year	Permanent data logging of the load profile consumption of the installation
¢	Events	Location of the main substation	No consideration	Position of the main substation is within 60 % of the distance from the optimum	Position of the main substation is within 40 % of the distance from the optimum	Position of the main substation is within 25 % of the distance from the optimum	Position of the main substation is within 10 % of the distance from the optimum
<b>.</b>	EIEC			position to the most distant load	position to the most distant load	position to the most distant load	position to the most distant load
		Required optimization analysis for motors	No consideration	To analyse and optimize motors efficiency class or drives for less than 50 % of installed power	To analyse and optimize motors efficiency class or drives for 50 % of installed power	To analyse and optimize motors efficiency class or drives for 70 % of installed power	To analyse and optimize motors efficiency class or drives for 90 % of installed power
		Required optimization analysis for lighting	No consideration	To consider lamp type and position	To consider lamp type and position with natural lighting	Control according to natural lighting source or building use or lamp type	Control according to natural lighting source and building use and to consider lamp type
		Required optimization analysis for HVAC	No consideration	Temperature control	Temperature control at zone level	Time and temperature control at zone	Time and full sensor control per zone
		Required optimization analysis for transformers	No consideration	No consideration	Selection of all transformers	Selection of all transformers	Selection of all transformers

The EIEC **Table** shows the 5 EIEC levels and the corresponding criteria. The blue values have been entered at the **EIEC** menu item of the **Configuration** menu (see p. 107).

#### **Further information**

The EIEC Chart and Table

- are used as a checklist for the 16 criteria of the IEC 60364-8-1.
- help the building owner and facility manager to improve the energy efficiency of the building.



# 9 Operation in supervised mode

### 9.1 Introduction

The energy monitoring server can be monitored by the stream energy management software.

The stream EMS monitors a group of energy monitoring servers to:

- Structure an installation comprising several geographic sites
- Centralize the configuration of the whole installation
- Collect and store data for periods longer than the energy monitoring server is capable of.

In supervised mode, the energy monitoring server acts as a gateway

The energy monitoring server configuration interface is limited to the configuration of IT (administration) and functionality-related parameters for the configuration of metering and protection devices connected to the fieldbus. Once all cables are in place, the installation is configured at the high level via the stream EMS software.

To switch to supervised mode, go to server settings in the Preferences menu (see section 9.2)

A "supervised mode" ribbon appears on the web application to inform users that this mode is active.

The user is also informed why certain configurations are not available or cannot be changed.

Exploitation menu	Configuration menu	Preferences menu
Measurements Real-time (see p. 139)	Products (see p. 89)	Date & Time (see p. 51)
Events (see p. 143)	Data management (see p. 109)	Communication (see p. 52)
	Pricing (see p. 114)	Network (see p. 55)
		System (see p. 57)
		Server (see p. 58)
		Users (User management) (see p. 61)
		Catalog (see p. 70)
		I/O (Input Output) (see p. 73)
		Analyzer/Diagnosis (see p. 74)
		Analyzer / Fieldbus (see p. 75)
		Analyzer / Network (see p. 77)
		Maintenance / Software update (see p. 78)
		Factory reset (see p. 80)
		About (see p. 81)

The available functions are listed in the table below:

# 9.2 Switching to supervised mode

To switch to supervised mode, go to server settings in the Preferences menu

#### Steps to open the menu item

Step	Action
1	Click on the <b>Preferences</b> menu 🛅.
2	Click on <b>System</b> .
3	Select " <b>Yes</b> " in the " <b>supervised mode</b> " option to enable supervised mode
4	Click <b>Save</b> to save your changes.

*	□ « ≡ 1	hager agardio.manager	📤 admin 🔍 🗸
0	Date & Time	System	
00	Communication	General	
4	Network	Device name: TJA665-F05DB0	
a	System 2	SSID: HTG410H	
	Servers >	WiFi password:	
***	Users	Verbals Yes	
4	Catalogue	BACnet Server: Yes	
₽	I/O	Supervised Mode Activated. Yes	
۲	Analyzer >	Activities Tes Yes No	
0	About		
			4
			X Cancel 🔡 Save

#### Functions to choose

- Enable supervised mode: Activated (yes/no)

You must re-start the energy monitoring server for the change to take effect.

When enabling supervised mode, the user is warned that this mode cannot be disabled while the server is monitored by the stream energy management software.

# **10 Error messages**

The following list explains the error messages displayed by the energy monitoring server:

Error message	Explanation/solution	
Transaction aborted.	You switched too fast between different functionalities.	
at Preferences/Catalog	j:	
Product can't be added to catalog due to bad format.	You selected the wrong file type at the upload of new products. Use the correct HES file.	
Unable to delete a used product.	It is only possible to delete products which are not in use. If you still want to remove a product you must guarantee that it is not in use.	
at Configuration/Produ	icts:	
Impossible to create the product, no more available address.	All appropriate in-/outputs are in use. If you still want to use an appropriate in-/output you have to delete an existing product.	
Communication timeout with the product {0}, Modbus address {1}	Connection or communication error with the connected measuring device. Check the Modbus connection and the appropriate communication settings (if necessary refer to the settings in the installation manual).	
at Exploitation/Events:		
Hierarchical event cannot be acknowledged before child issue.	Before the hierarchical alarm can be acknowledged, you have to acknowledge the alarm which led to the activation.	
at Configuration/Event	s:	
Event involved in a hierarchical link, cannot be deleted.	Events which are part of an hierarchical alarm cannot be deleted. If you still want to delete the event you first have to remove it from the hierarchical alarm.	
Event has already parent, only one is allowed.	You tried to link an alarm that is already part of an existing hierarchical alarm to another new hierarchical alarm.	

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#### Hager Electro SAS

132 Boulevard d'Europe BP3 67210 OBERNAI CEDEX

hager.com