agardio.manager

Simply see more.

Intelligent energy monitoring for functional and commercial buildings

hager

agardio.manager: enhance energy efficiency

In today's world of growing populations and industrializing economies, electrical energy is more essential than ever – and so is energy efficiency. International norms such as IEC 60364-8 have laid the foundation to utilising electrical energy in the best-possible and most efficient manner. And this is exactly where our energy monitoring system comes in. It displays and clarifies. It provides information. It helps to interpret this data. And it helps you make better decisions when it comes to the planning, installation and day-to-day operation of low-voltage installations.

Read on to find out how simple the system is to use and what benefits it offers.

One system: all-encompassing effect

Energy meters

Multifunction measuring device for DIN rail

Multifunction measuring device for door installation

Air Circuit Breaker

H3+ MCCB

Third party modbus devices

Modbus

01

Measure & collect

Linked to Hager Smart meters, the agardio.manager server functions as the brain of our energy monitoring solution. It measures the consumption of your electrical installations by recording and querying the activities of connected devices.

- **Ideal for Hager devices and any other modbus devices, thanks to the plug-in communication module**
- **Plug-and-play installation**
- **Easy configuration**
- **Integration of third-party devices such as gas, water or energy meters**
- **E-mail alerts if limits exceeded.**

02

Monitor & analyse

Configure your system on a laptop or tablet – directly in a web browser, without the need for extra software.

- **Different visualisation methods (complete application or individual consumer) for all applications**
- **All values can be exported in CSV format for further processing (e.g.: in Microsoft Excel).**

24 V
Voltage supply

Internet browser

Wi-fi

Energy monitoring server (Modbus Master)

Data Logger

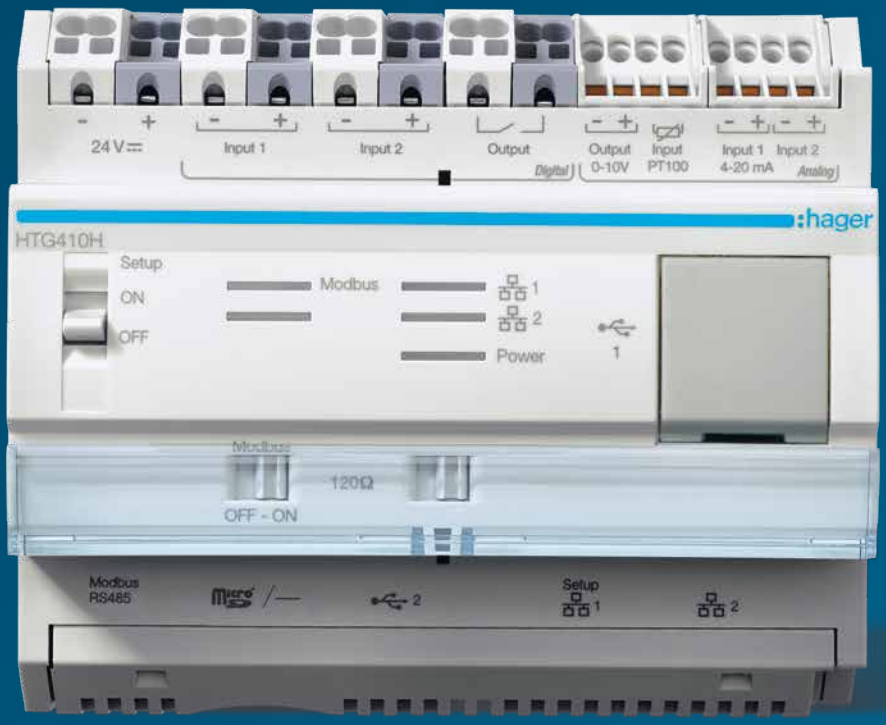
BACnet/IP

Through the BACnet/IP protocol, agardio also communicates with Building Management Systems.

03

Act

Make graphical comparisons and set alerts so you can intervene when energy consumption is too high.



Small, intelligent – and always up to date with the current activity of up to 31 Modbus devices: our new energy monitoring server **agardio.manager.**

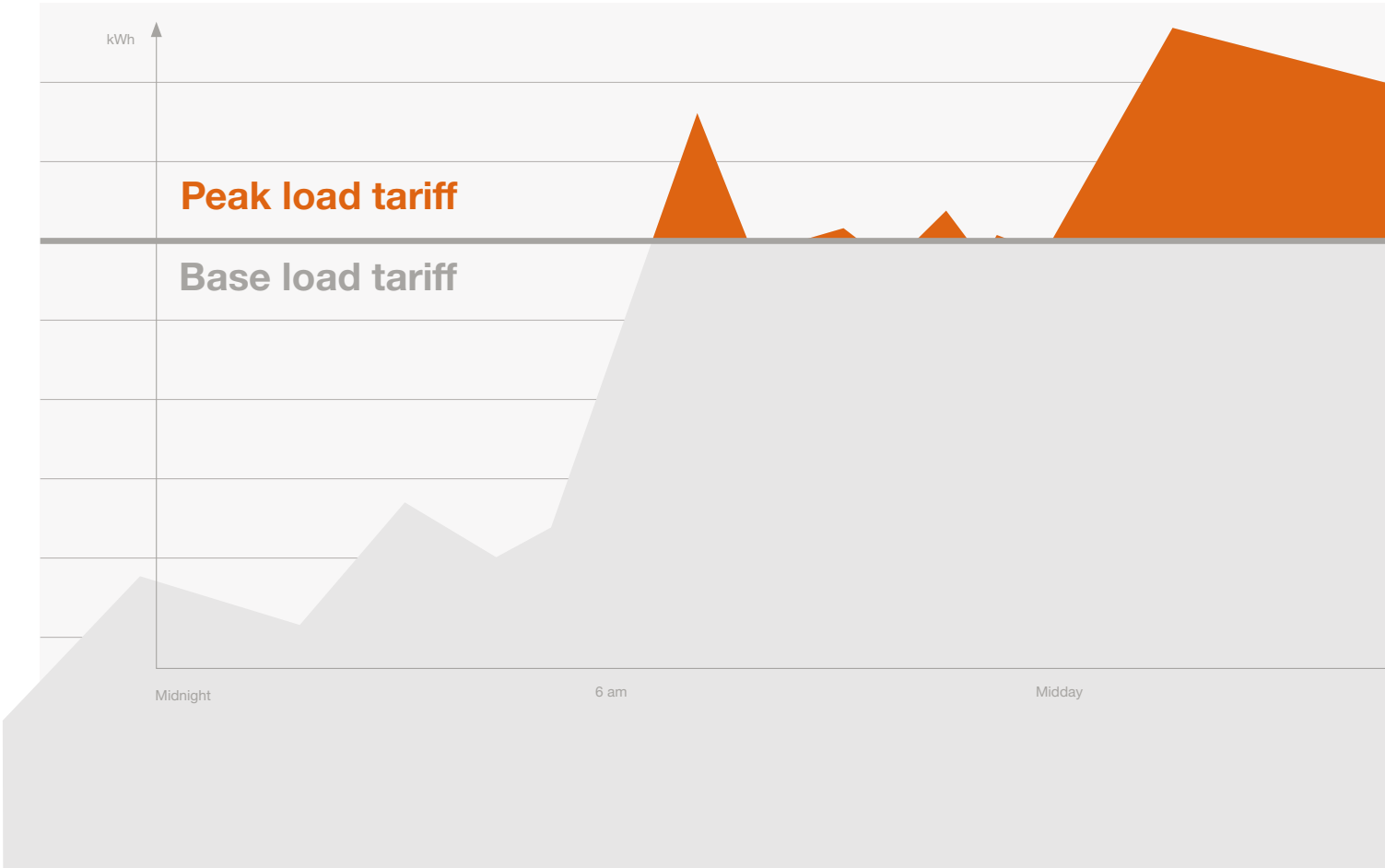
The difference between guesswork and knowledge.

The real heart of the system – the **agardio.manager** – is rather unassuming. This tiny piece of highly intelligent technology is just six modules wide. But it packs a real punch: it records and queries the current activities of up to 31 Modbus-connected devices – and tells you precisely where there is potential for optimisation. And you? You can see instantly where efficiency gains are possible.

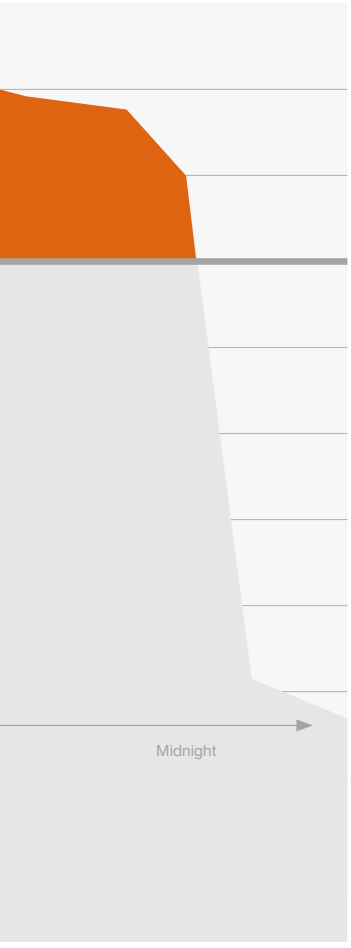
Work efficiently, cut operating costs – replace guesswork with knowledge.

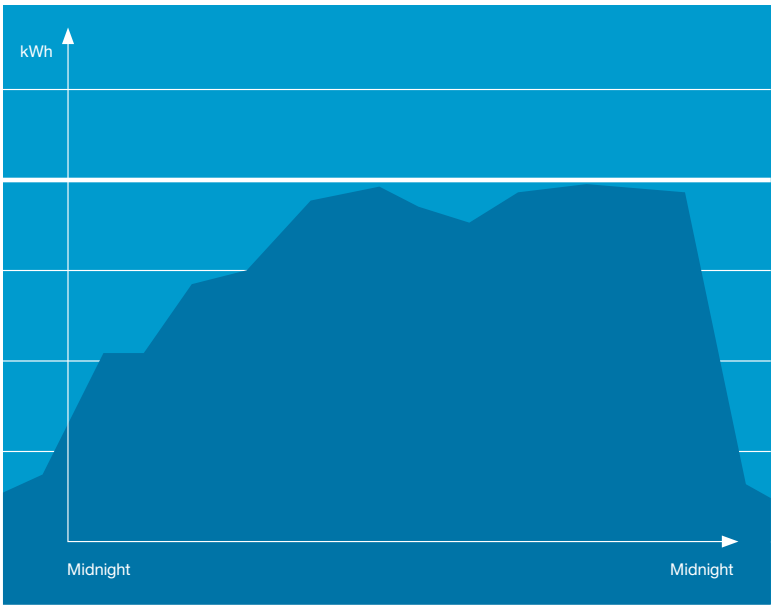
Expanding intelligence.

Hidden money-wasters, limits being exceeded without your knowledge, sub-optimal operating conditions – in functional buildings, it's worth taking a closer look. We show you where potential problems lie by measuring current and output in order to localise expensive consumption peaks. Or by showing the power factor cos φ in order to introduce targeted reactive power compensation measures. And what about the network quality? A detailed look at the voltage and frequency provides valuable information – permanently.



We ensure energy transparency and safeguard network quality by supplying relevant data from up to 31 connected Modbus devices.





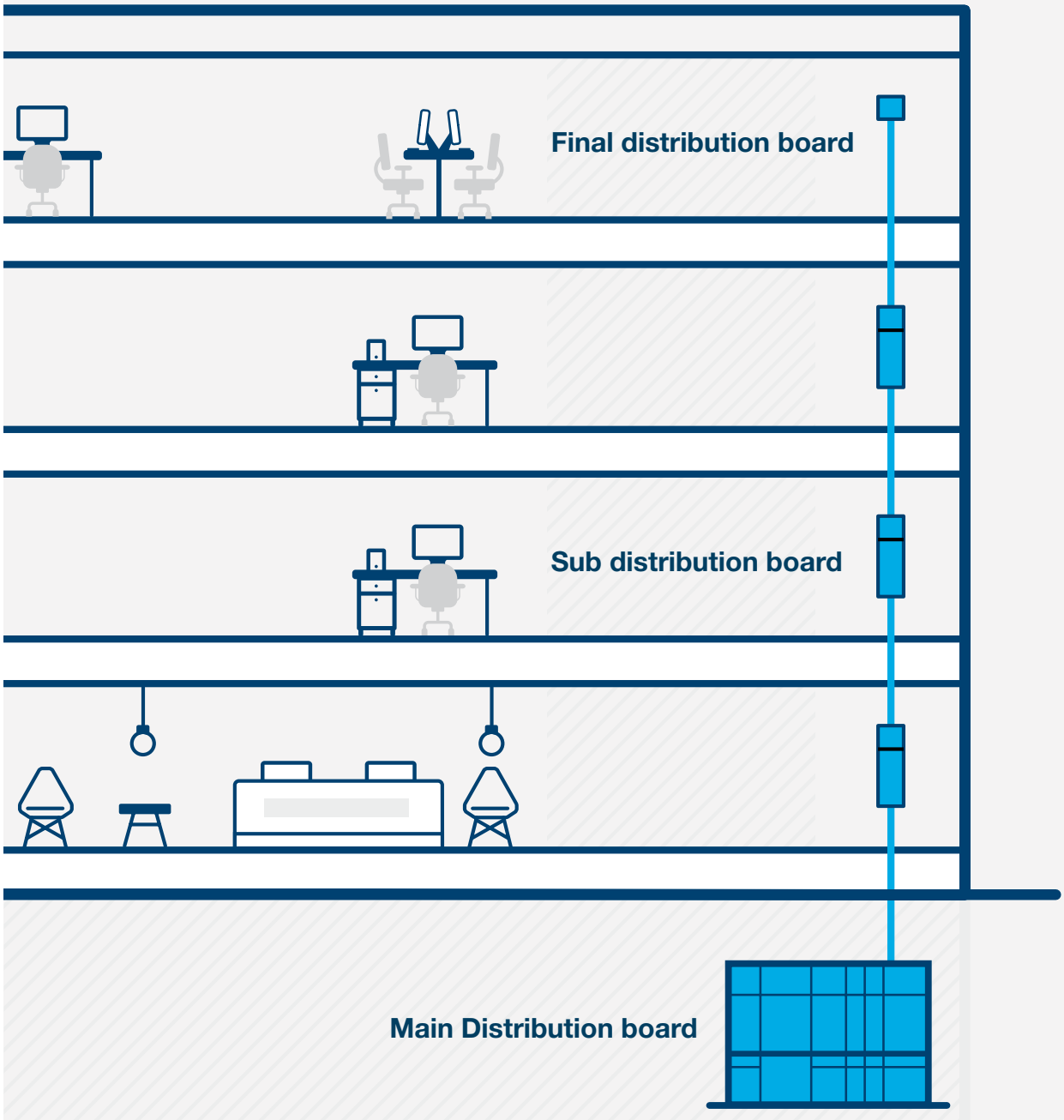
Clearly presented consumption diagrams reveal expensive consumption peaks. You can see at a glance how you can save money by simply changing your usage habits without reducing overall energy consumption.

Measuring where it's worth it.

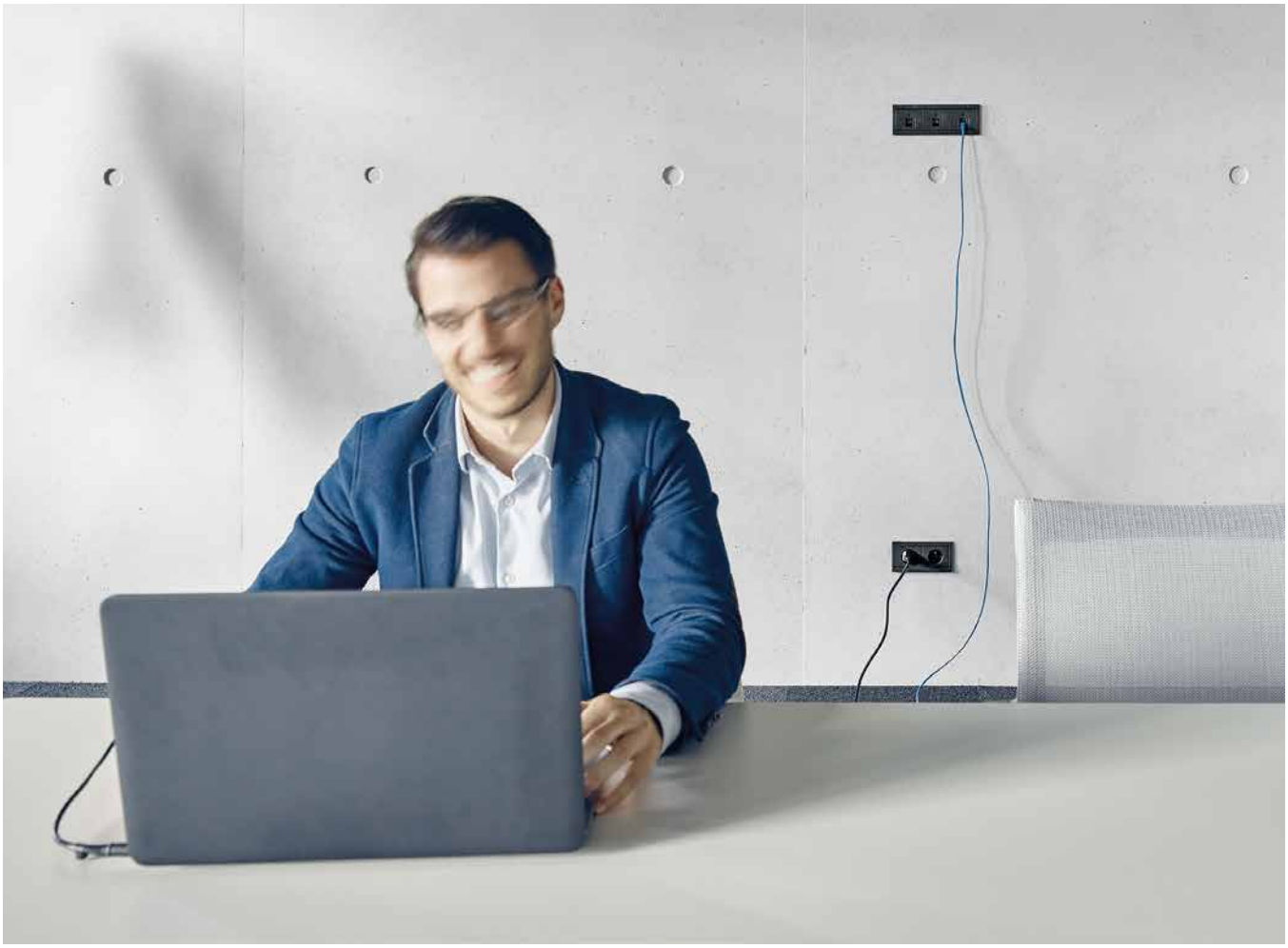
Our energy monitoring system keeps a close eye on the status of all the connected devices: in the main distributors, the floor distributors and the small distributors. This means that you are always in a position to make informed decisions. And you can respond more quickly. For example, you can set the system to send you e-mail notifications when limits are exceeded. You have a range of options to help you when, for example, grouping applications according to energy efficiency classes (EIEC) as per IEC 60364-8.

Simply "plug and play" to integrate the appropriate Hager measurement devices.

See where potential exists.
Or the sources of problems.

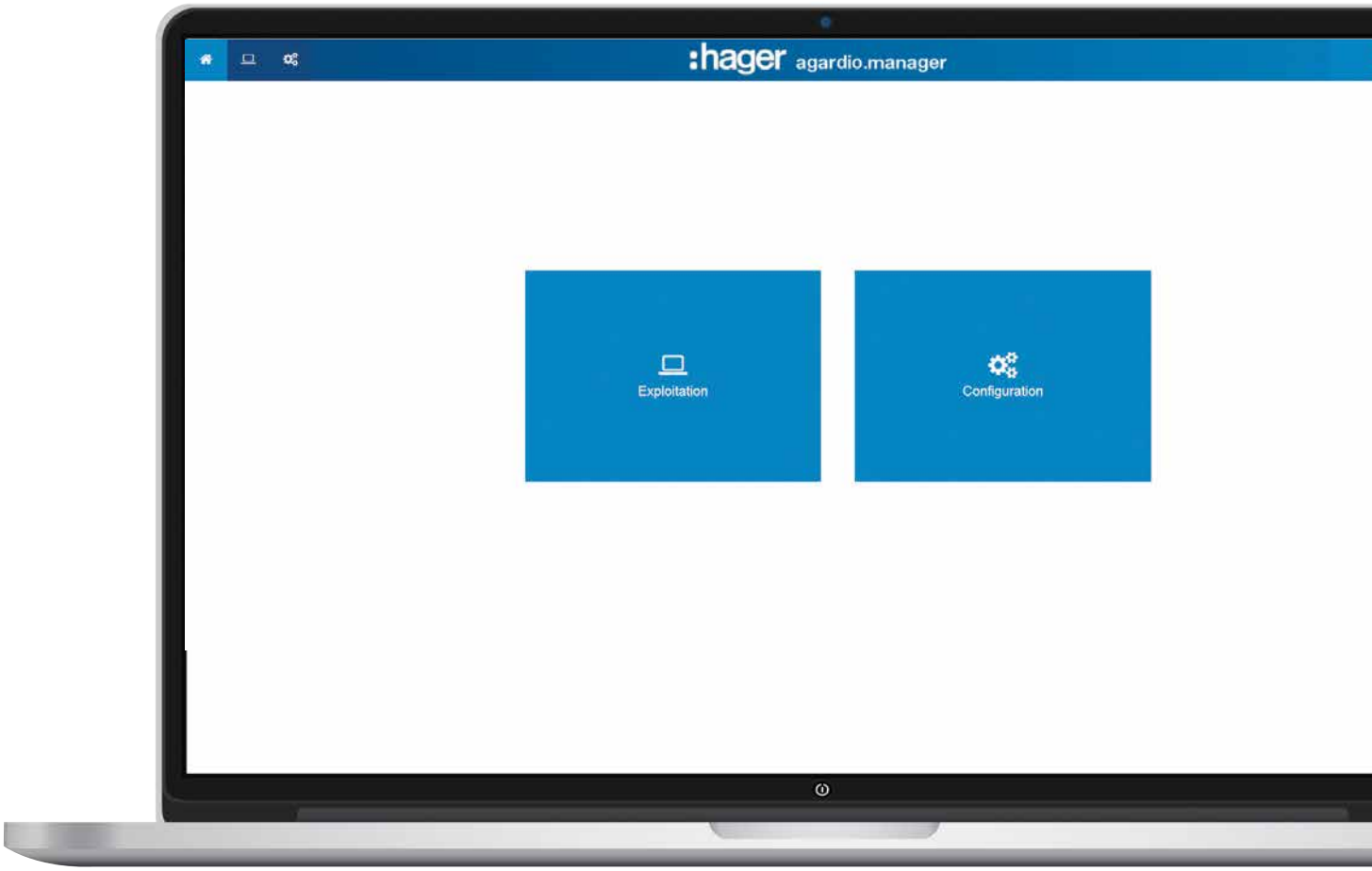


Click
and go.



**Unpack, connect,
start your browser, go.**

Energy monitoring is simple. Instead of spending entire days programming your system, you can carry out configuration on a laptop or tablet – directly in a web browser, without the need for extra software or Modbus mapping tables. In other words, you don't need any programming skills or expensive third-party providers. All compatible measurement devices can be found in the product catalogue of the energy monitoring server and can be easily added to the project. All you have to do is enter the Modbus address in the server, configure it in the measurement device – and you're ready to go!.



One, two, three – Hager delivers results faster than you can count.

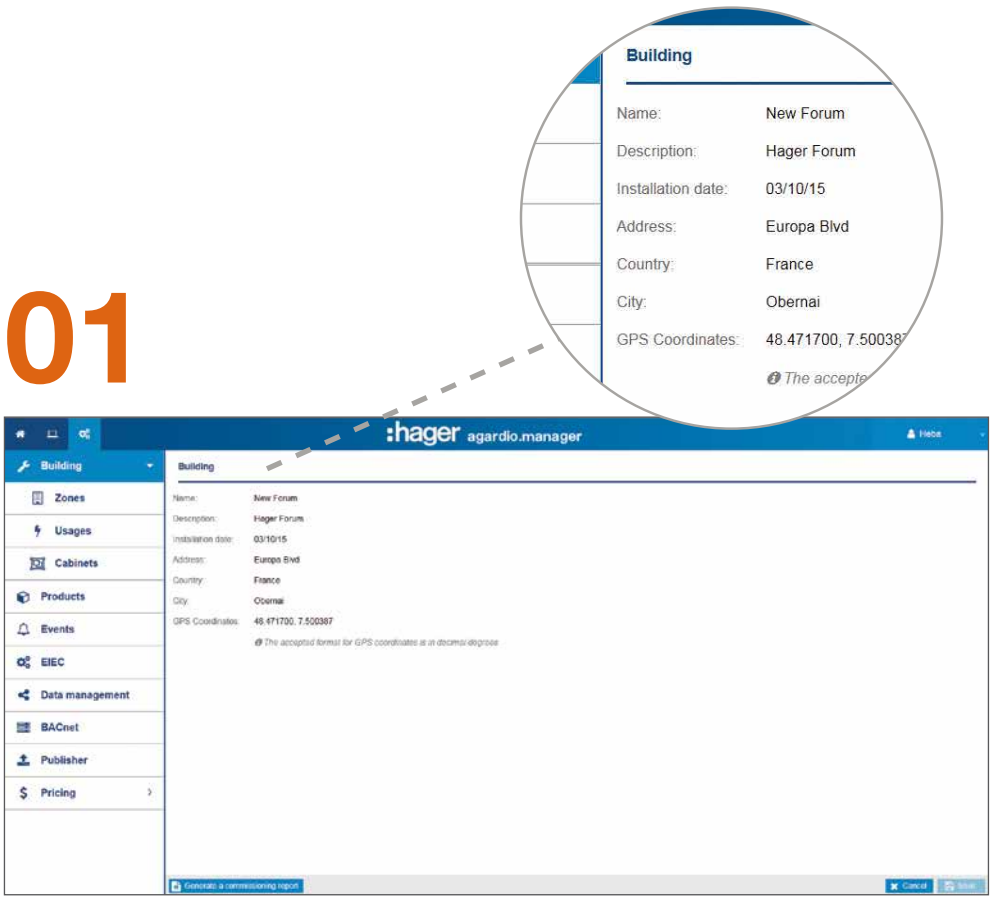
It’s all about making the right settings.

A few steps and your energy monitoring system is ready to go: first define your logical structure – building, floor, room and application. Group your applications. And you can manage all the connected measurement devices with just a few clicks.

01

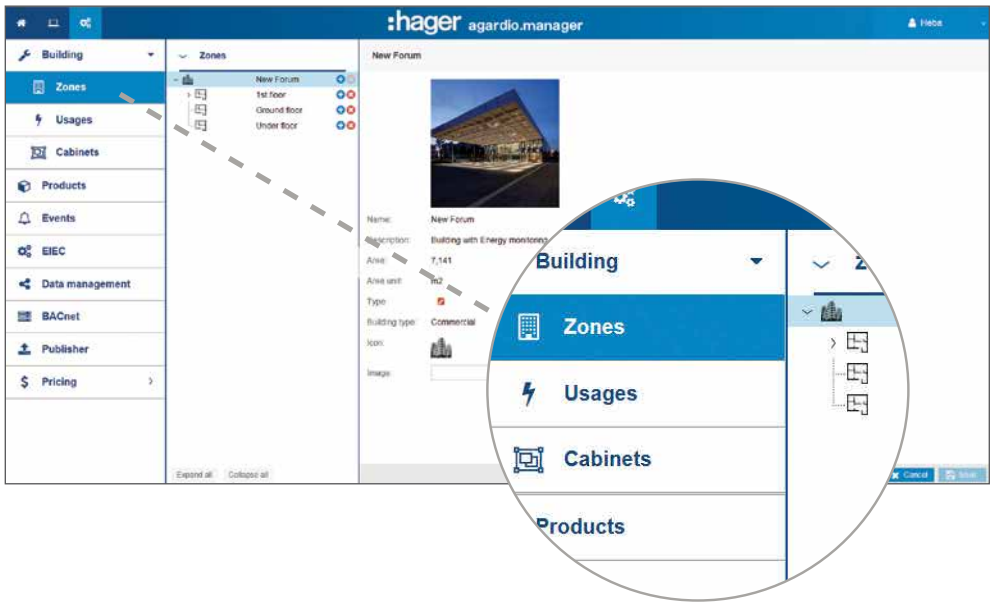
Create your project

Specify the required location/building details.



Select zones

02

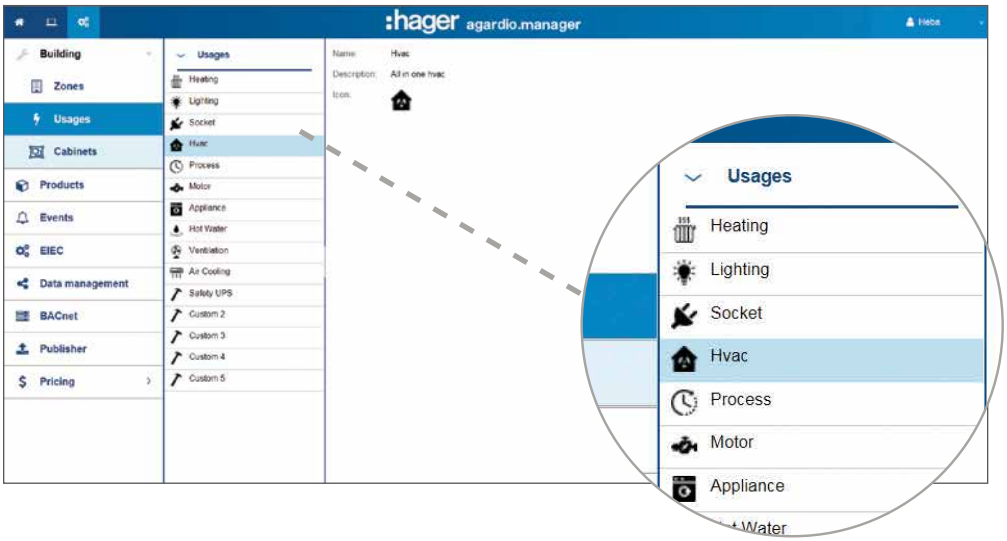


The building structure and its different areas can be represented in the form of zones.

Manage your applications

03

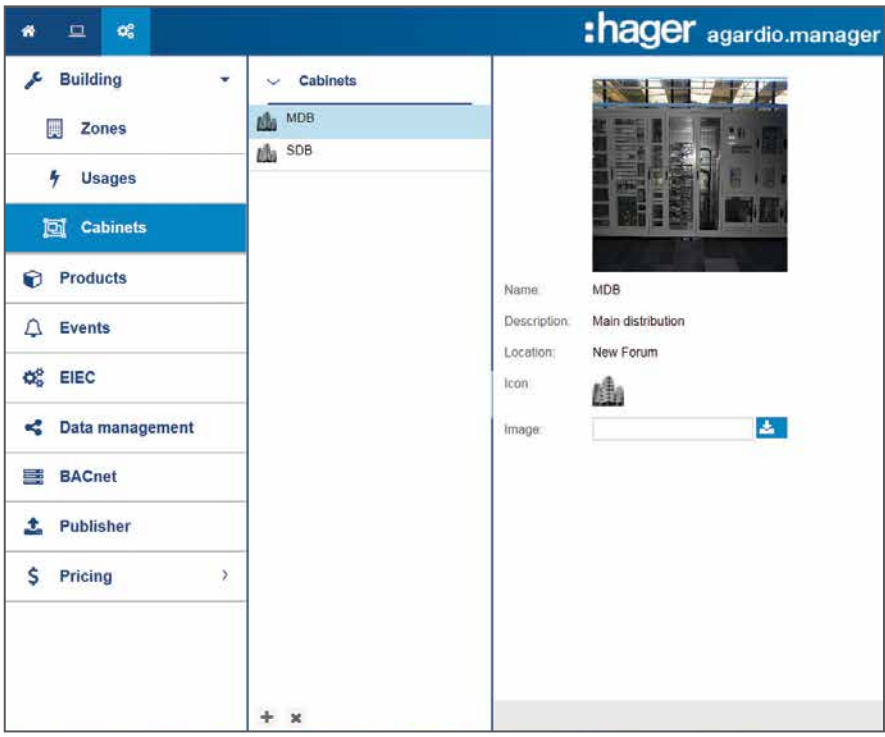
What do you want to measure? Whatever you set up here can be later assigned to the measurement device.



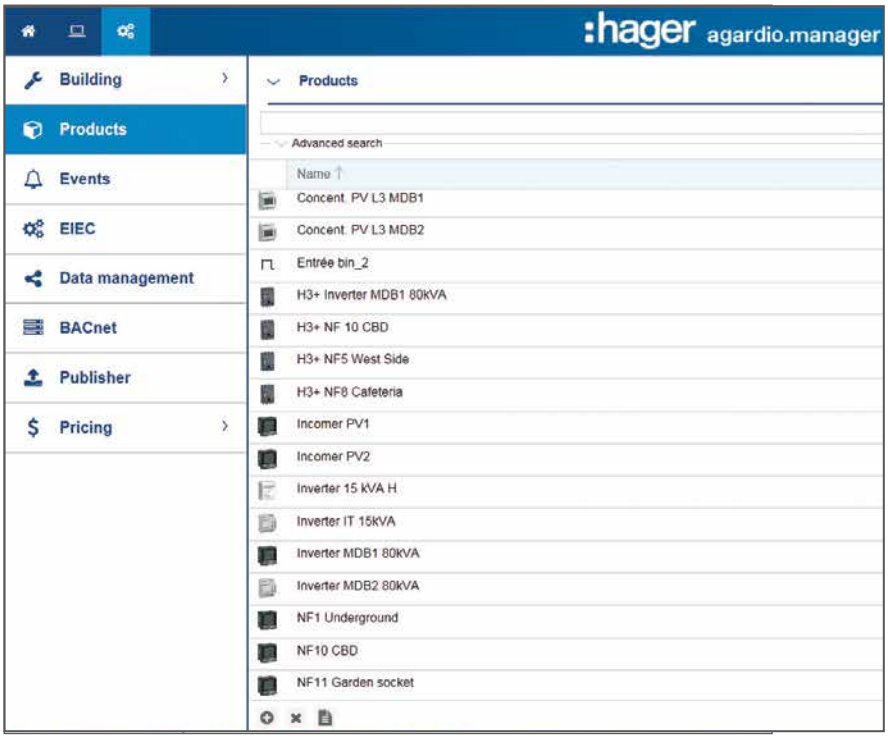
04

Manage your low-voltage distribution systems

Here you can create the different distribution systems and assign them to a zone.



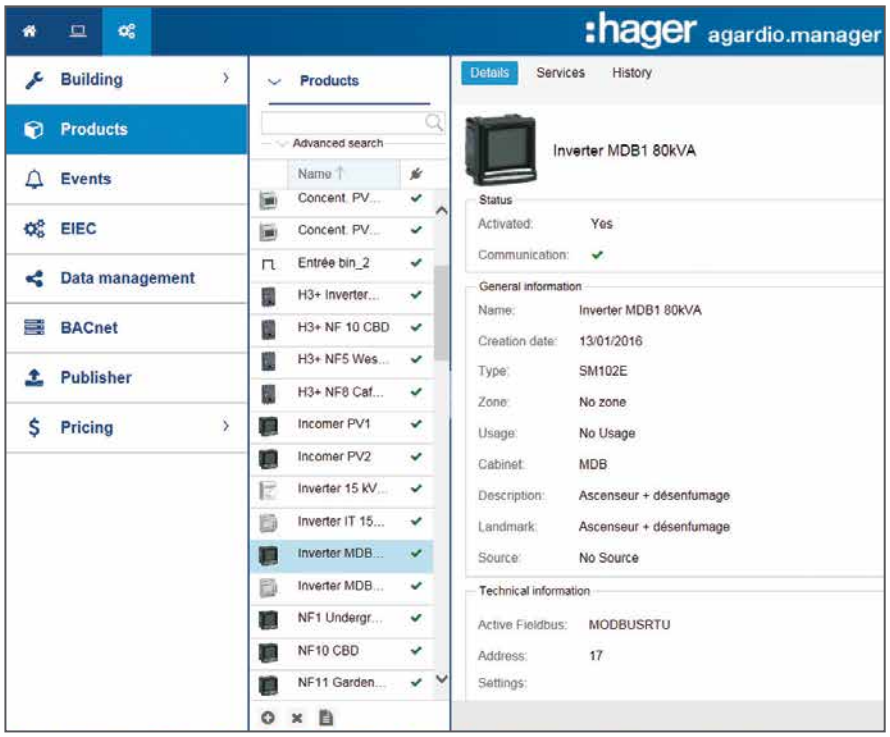
05



Add measurement devices to the project

Choose the devices from the integrated product catalogue. Zone management allows you to integrate every added measurement device into the building structure.

06



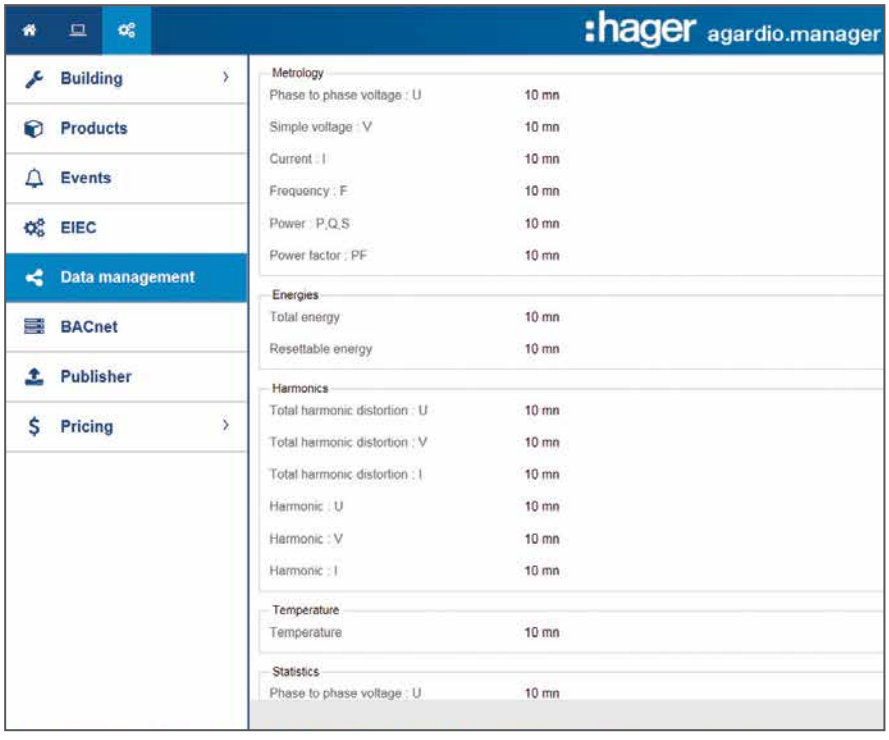
Carry out Modbus addressing

This just has to be set in the device.

07

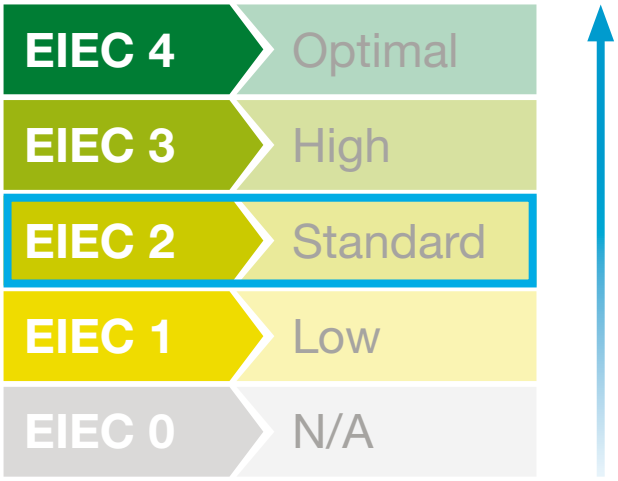
Start energy monitoring

Finally, define the measurement interval – and you're ready to go.



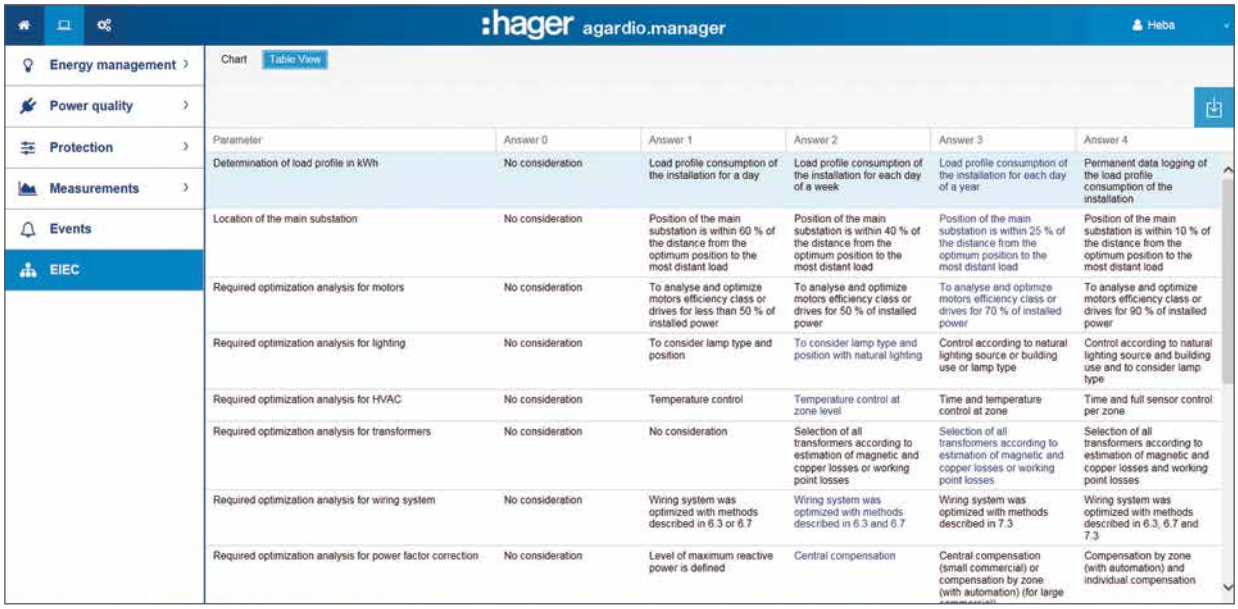
Shows you what counts.

How exactly is energy consumption distributed within the building? What are the current measured values? Where are there harmonics? When are the consumption peaks? What differences are there with respect to the measurements taken over the previous weeks? How does my building perform in terms of the selected energy efficiency class (EIEC)?



Since October 2015, the energy efficiency of electrical installations has to be evaluated according to the classification procedure laid down in IEC 60364-8. This yields an energy efficiency class for the entire electrical installation – EIEC 0 to 4.

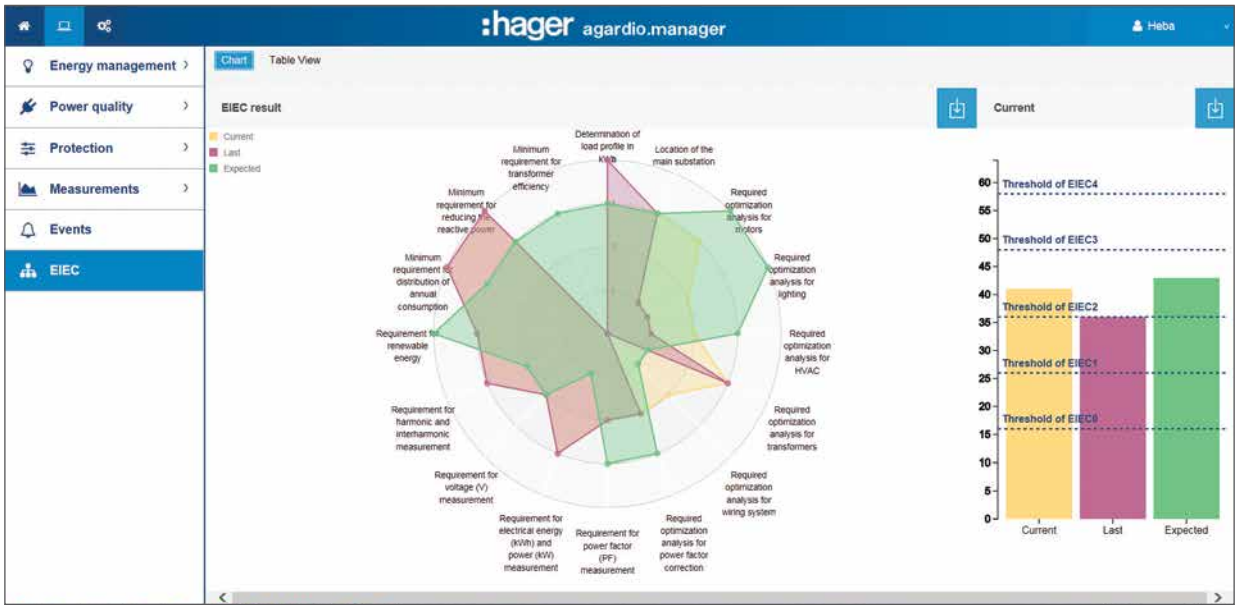
We'll show you what's important. Clear and understandable.



Parameter	Answer 0	Answer 1	Answer 2	Answer 3	Answer 4
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
Location of the main substation	No consideration	Position of the main substation is within 60 % of the distance from the optimum position to the most distant load	Position of the main substation is within 40 % of the distance from the optimum position to the most distant load	Position of the main substation is within 25 % of the distance from the optimum position to the most distant load	Position of the main substation is within 10 % of the distance from the optimum 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 according to estimation of magnetic and copper losses or working point losses	Selection of all transformers according to estimation of magnetic and copper losses or working point losses	Selection of all transformers according to estimation of magnetic and copper losses and working point losses
Required optimization analysis for wiring system	No consideration	Wiring system was optimized with methods described in 6.3 or 6.7	Wiring system was optimized with methods described in 6.3 and 6.7	Wiring system was optimized with methods described in 7.3	Wiring system was optimized with methods described in 6.3, 6.7 and 7.3
Required optimization analysis for power factor correction	No consideration	Level of maximum reactive power is defined	Central compensation	Central compensation (small commercial) or compensation by zone (with automation) (for large	Compensation by zone (with automation) and individual compensation

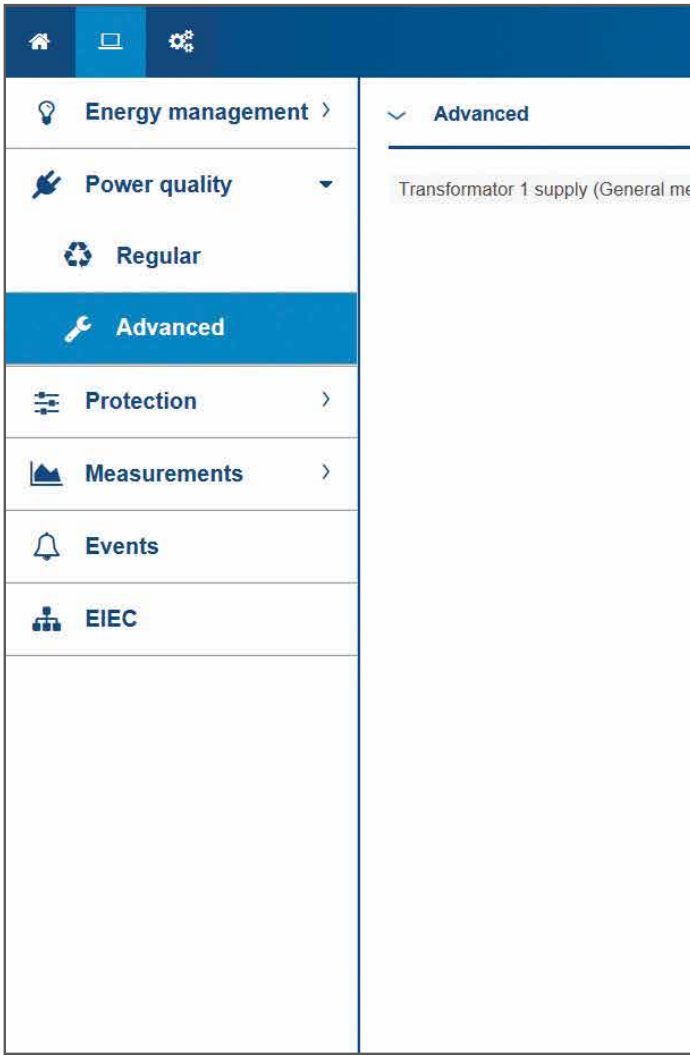
You can define and display this classification in agardio. manager, either in the form of spider web diagrams or in tables, like in IEC 60364-8.

Score points: Hager helps you achieve the right efficiency class.

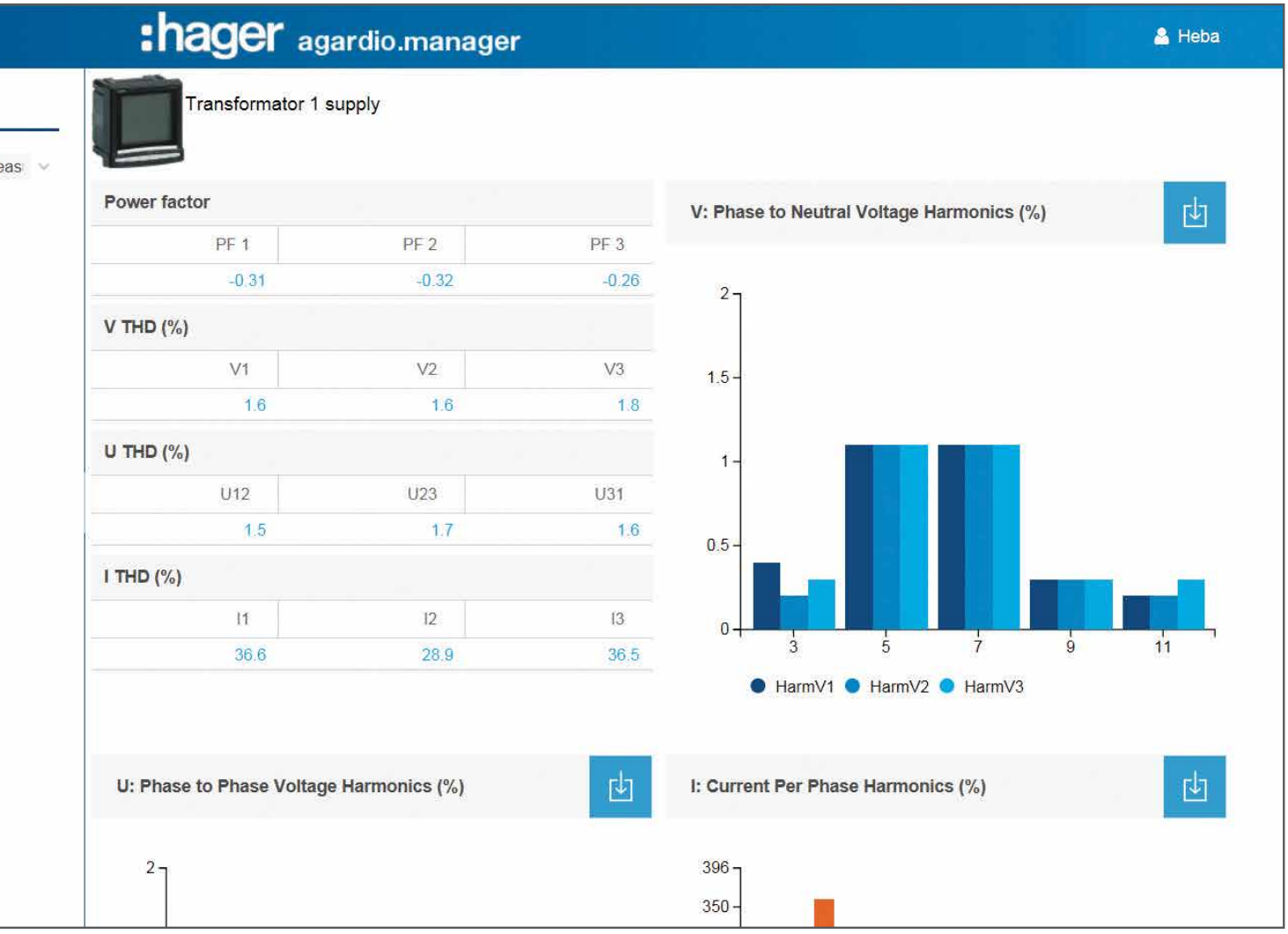


Seeing more leads to better decisions.

This is what it's like to be in the know: Visualisations by practitioners for practitioners. Clear, straightforward, informative. Regardless of where you are, you obtain valuable information about energy development and network quality. Compare current trends with your history – and only ever rely on data that is reliable and up to date. All values can be exported in CSV format for further processing in, for example, Microsoft Excel.

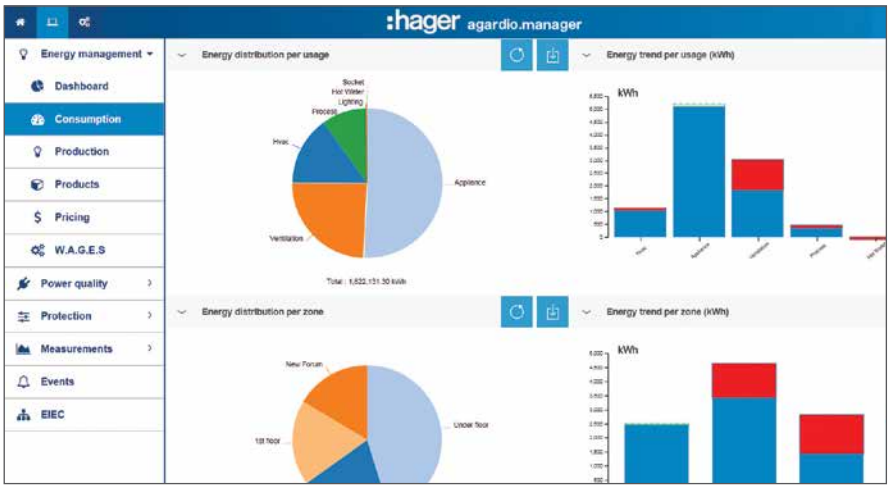


Now you'll always be in the picture: thanks to different visualisation methods for all the different applications.



What used to be hidden, is now visible: through analysis of the network quality, you can increase system security and availability. And you can localise the source of increased harmonic distortion quickly and easily.

Seeing more leads to better decisions.

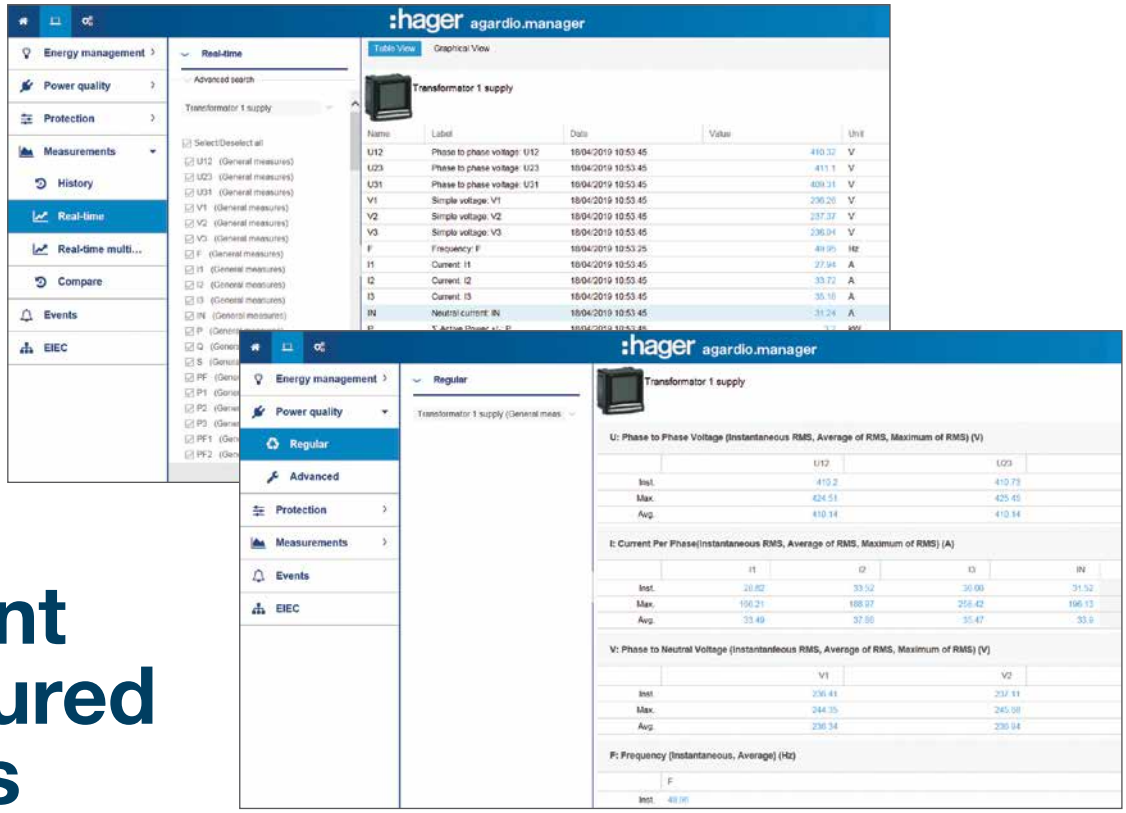


01

Overview

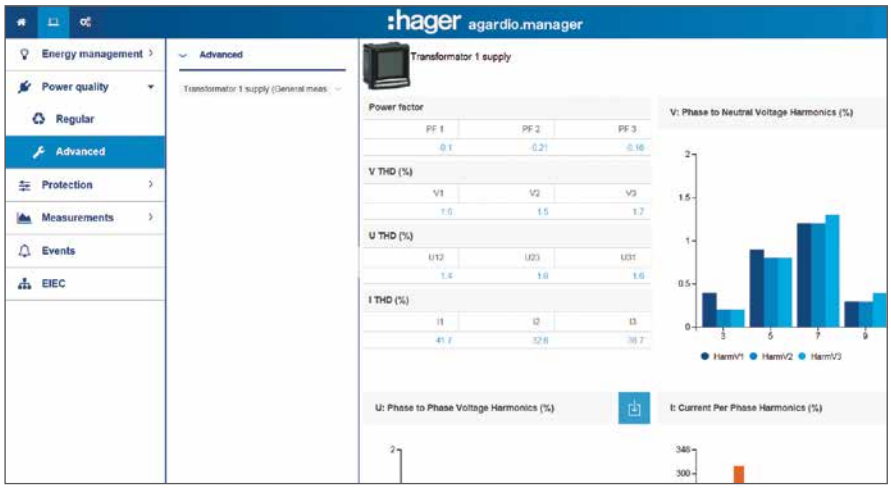
You can see at a glance how energy is being used within a building.

02



Current measured values

The network quality can be presented as an overview or in a table containing all the measured values.



03

Advanced graphical overview

Measured values and harmonics can be displayed any way you wish.

04

Historic measured values

Visualisation of historic measured values.

Advantages everywhere.

- Plug-and-play installation

- Clear, detailed presentation of current and past measured values

- Highlighting of expensive consumption peaks

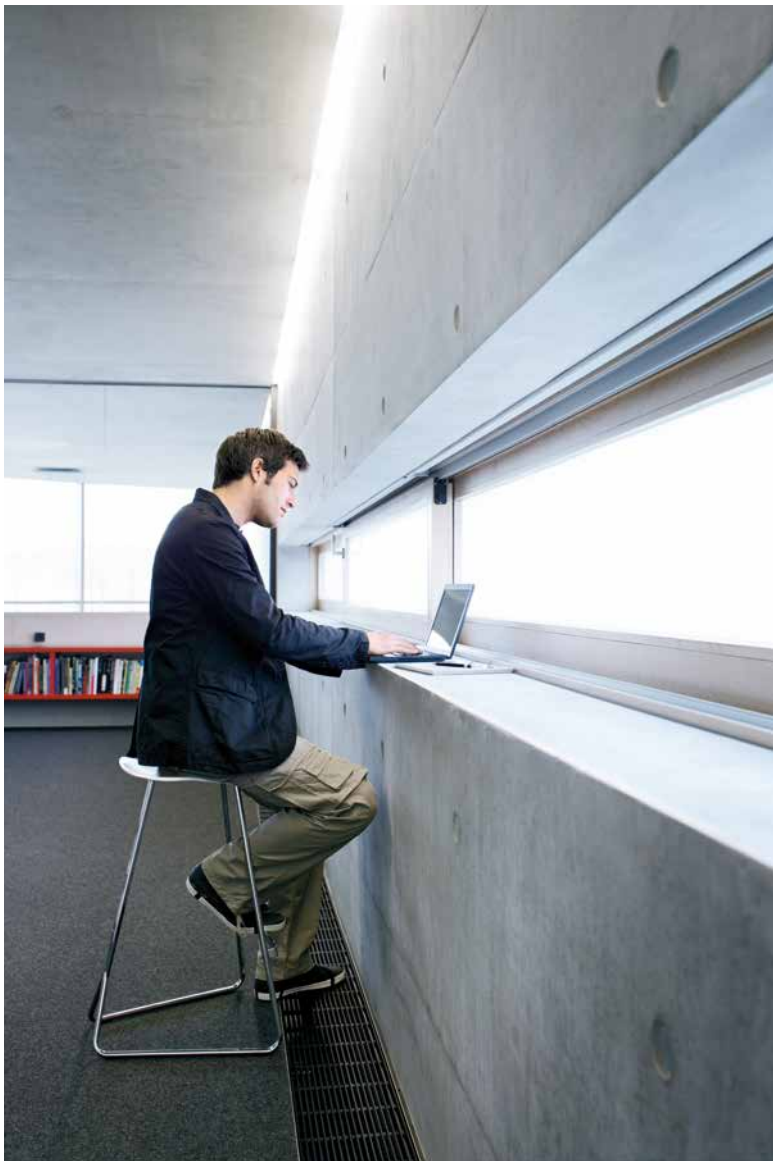
- Assistance with EIEC grouping

- Improved network quality

The difference between clear and unclear, guesswork and precision, waste and efficiency, somehow and precisely - they now have a name: **agardio.manager.** It displays facts that might once have remained undetected.

And anyone who works with functional building applications benefits from this: current standards can be fulfilled right from the outset, customers can be given more targeted ‘support – and buildings can be managed more cost-effectively.

More information, more efficiency, more building value: our energy monitoring solution bundles all the benefits into one system.



Hager Electro SAS
132 Boulevard d'Europe
BP 3
67215 Obernai cedex
France

Tel: +33 (0)3 88 49 50 50
hager.com

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