energomonitor

Measure, monitor and maintain data from your household or business to optimize energy consumption and maximize safety.

Optimize your home or business with Energomonitor:

- A comprehensive overview of energy consumption and air quality data
- Real-time monitoring
- Alerts, notifications and customized e-mail reports

We provide a fully integrated hardware and software solution:

- Vertically integrated seamless operation
- Secure data processing and storage
- Best in class hardware solutions with long life and high reliability

About Energomonitor

Our goal is to provide a seamless and effortless way to better understand consumption with real-time data to monitor and control energy use and ultimately save money.

Based in the Czech Republic in the heart of Europe, we can keep our development costs low by hiring local developers while still maintaining the highest possible quality. As all of our development is done in-house, we can maintain a very high standard and ensure perfect compatibility.

Our products are currently being distributed throughout Europe via a network of partners and utilities.

Why choose Energomonitor

- **Vertically integrated** in-house development produces better quality products at lower costs.
- User-centric **energy management** system for **all utilities** (electricity, gas, water) and **air quality** (temperature, humidity, CO_2 concentration).
- **Highly secure, cloud-based** solution, accessible anytime from any computer, tablet or mobile phone.
- **Easy to install**, Energomonitor **uses existing hardware** and is compatible with the majority of metering equipment.
- A plug'n'play system for **easy installation and use**.
- **Data received every 5 seconds** and stored every 90 seconds.
- **Unlimited data storage** allowing infinite comparison and analysis of historical data.
- **White labelling and customization** is our speciality: we can help you build custom solutions from our broad range of products.
- Powered by **modern technologies** (MQTT, Docker, InfluxDB, Amazon Web Services…).
- Continuous delivery of **new application features and new hardware devices**.
- **Great** ratio of **price** to performance, we keep our development costs low and pass the savings on to you.

What do we monitor and why?

Electricity

Help people understand their consumption, reduce inefficiency and waste. Ultimately to reduce reliance on fossil fuels, leading to cost savings and a cleaner environment.

Gas

Monitor and remotely control heating costs and never worry about leaving the gas on again.

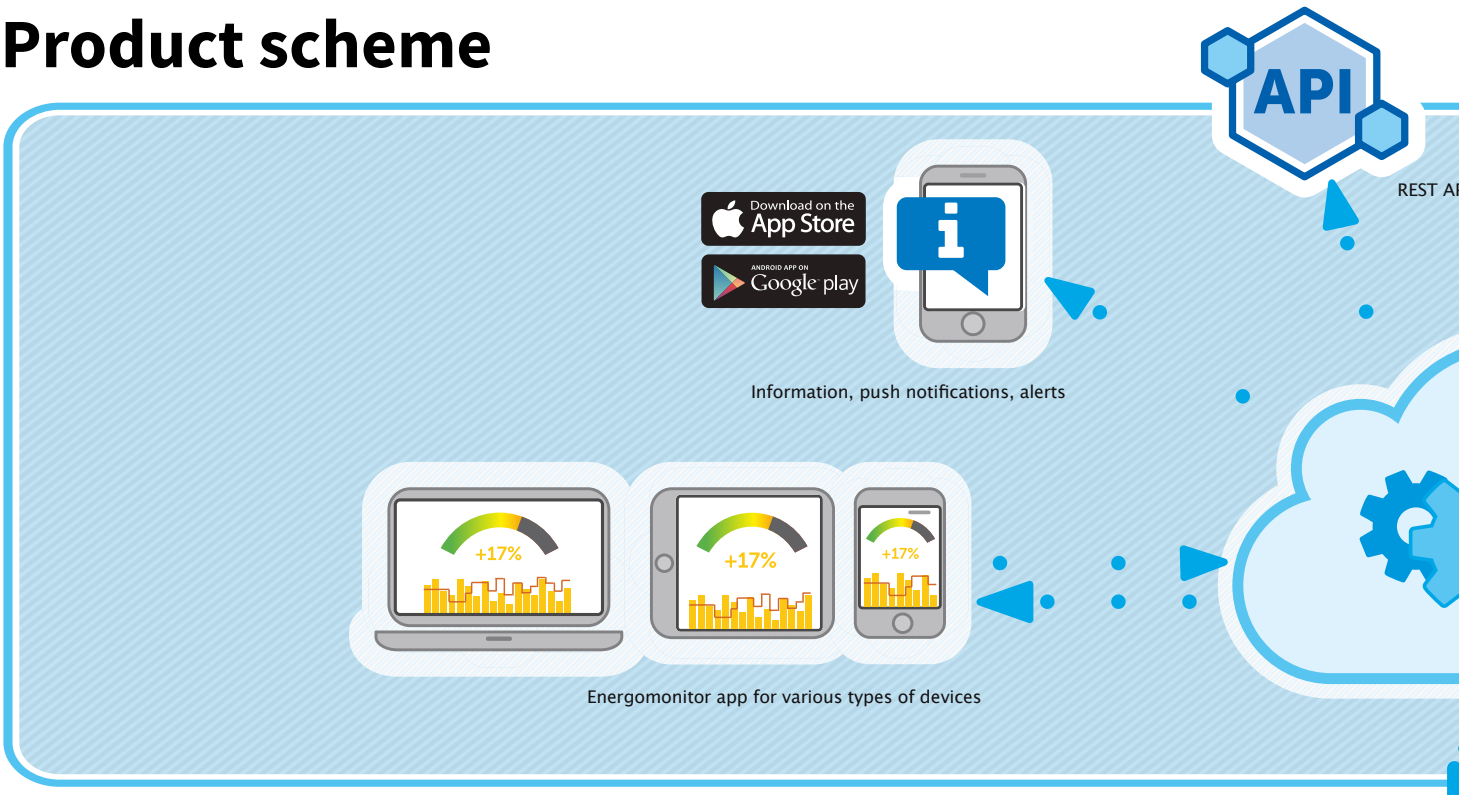
Water

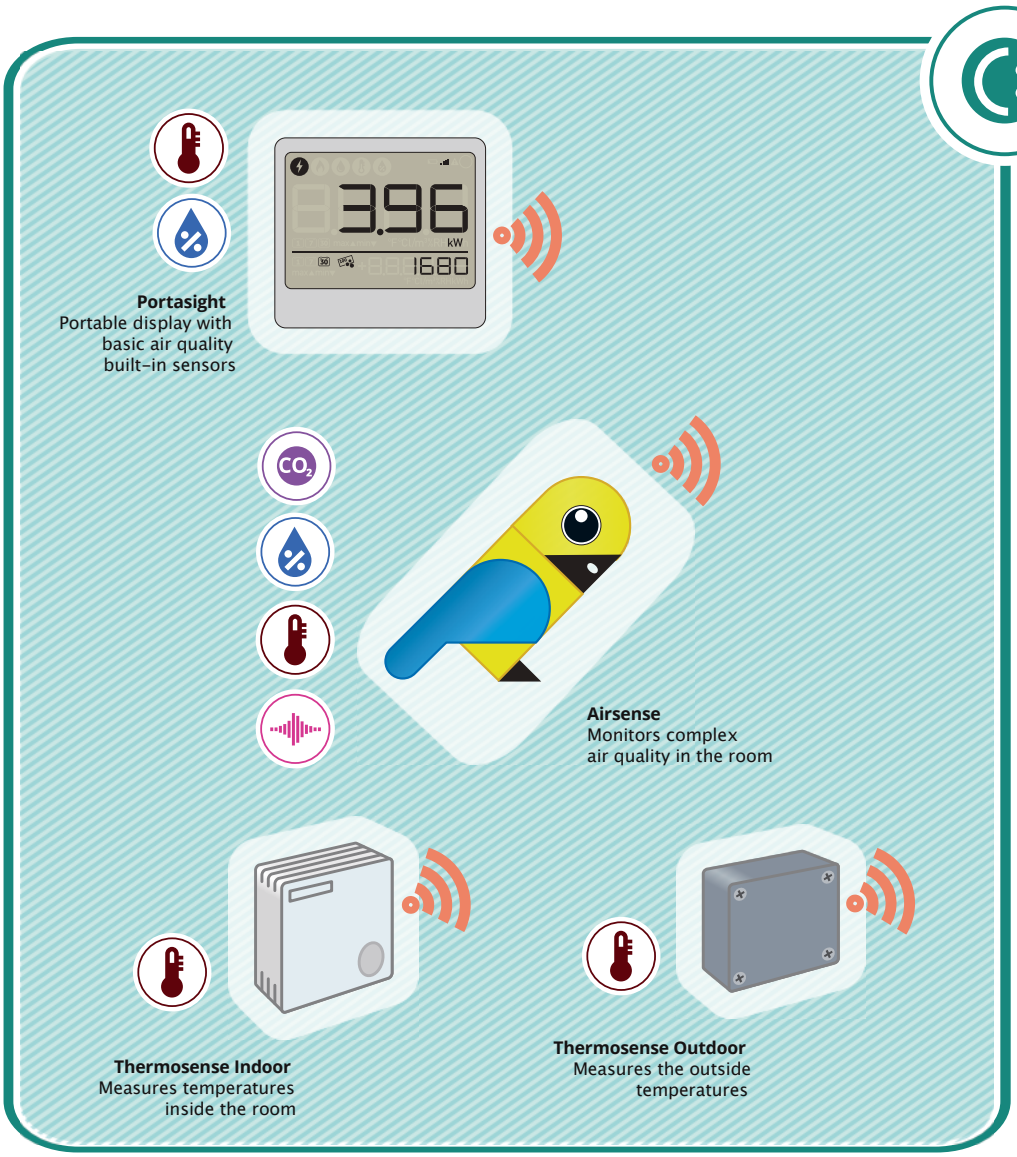
Make flood damage from water leakage impossible. Stay safe and calm with real-time alerts and the ability to manage the costs for water consumption.

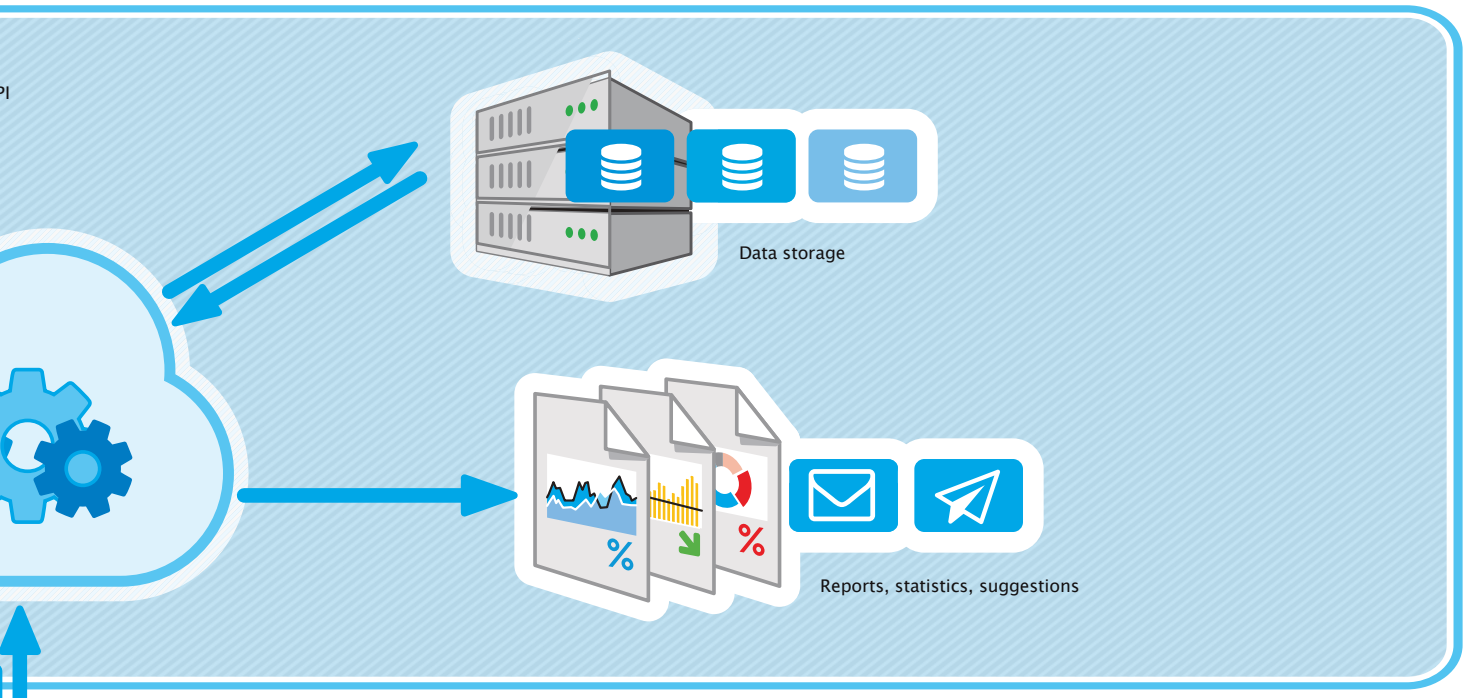
Air quality

Because you can't put a price on health, but you can quantify the inputs to a healthy environment indoors.

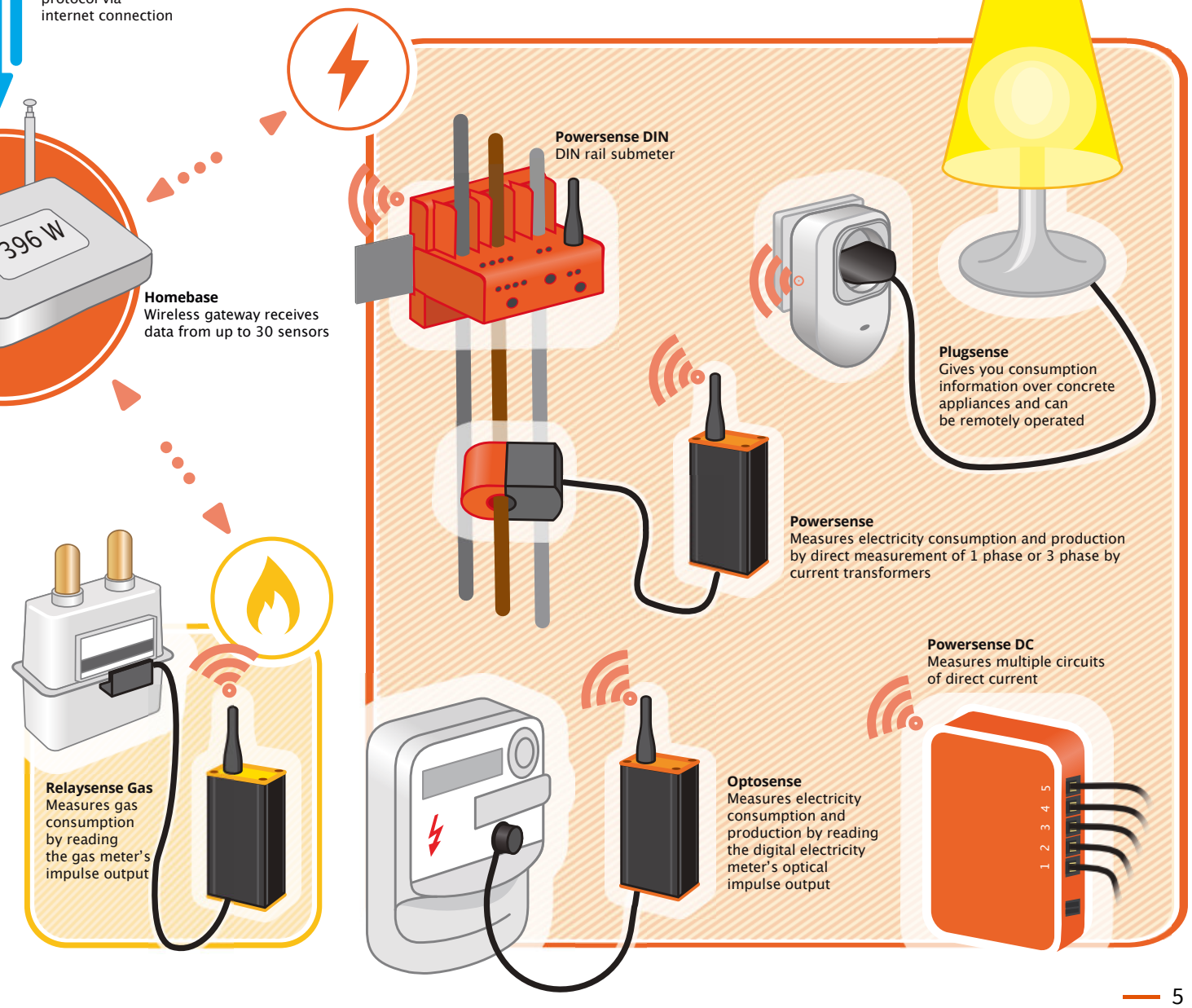
Product scheme







MQTT messaging
protocol via
internet connection

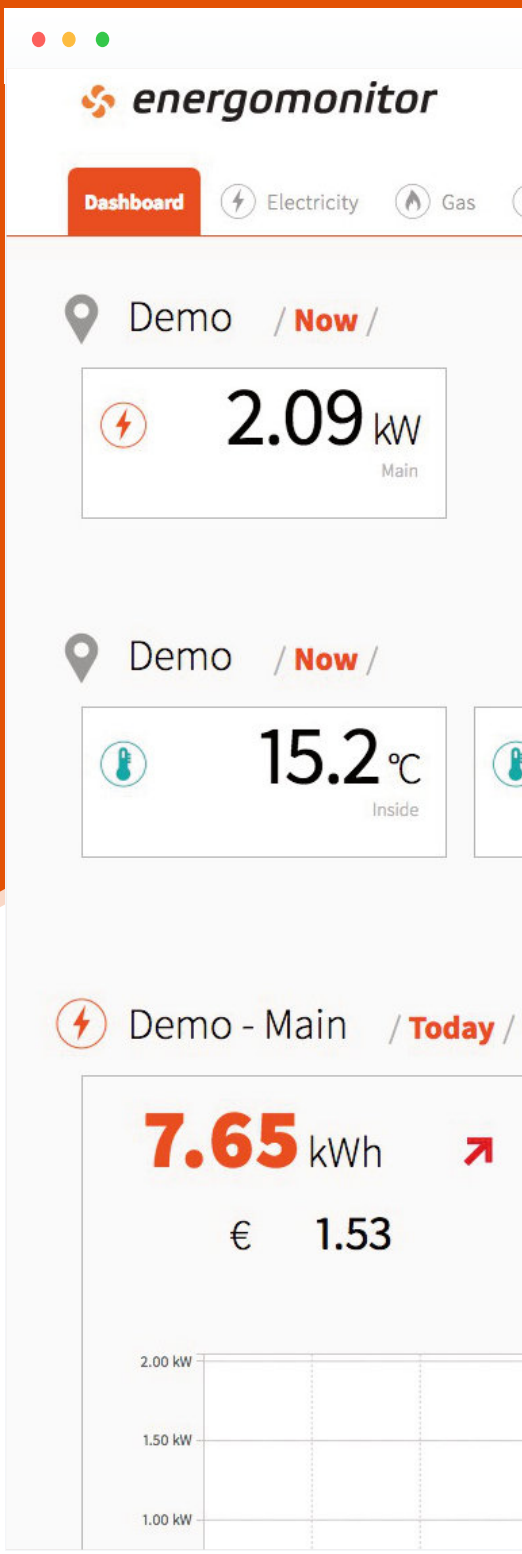


Energomonitor app features

- Consumption and production information not only in KWh, but in **real cost** as well.
- **Real-time data** every 5 seconds.
- **Adjustable dashboard** with 4 types of widgets.
- **Remote control** of connected devices.
- **Unlimited history** of snapshots **taken every 90 seconds**. An easy to understand overview visualized through graphs and charts.
- **Comparison** of individualized time periods.
- **Custom notifications** for unexpected events or unusually high/low consumption, shown in the app or sent via e-mail.
- Weekly and monthly **e-mail reports**.
- Data accessible through the **REST API**.
- **Easy export of all saved data** to XLS or CSV.
- **Up to 30 connected devices** under one location.
- **Multiple locations** possible under one account.
- Available as a **browser app**, native Android app and native **iOS app**.

ANDROID APP ON Google play

Download on the App Store



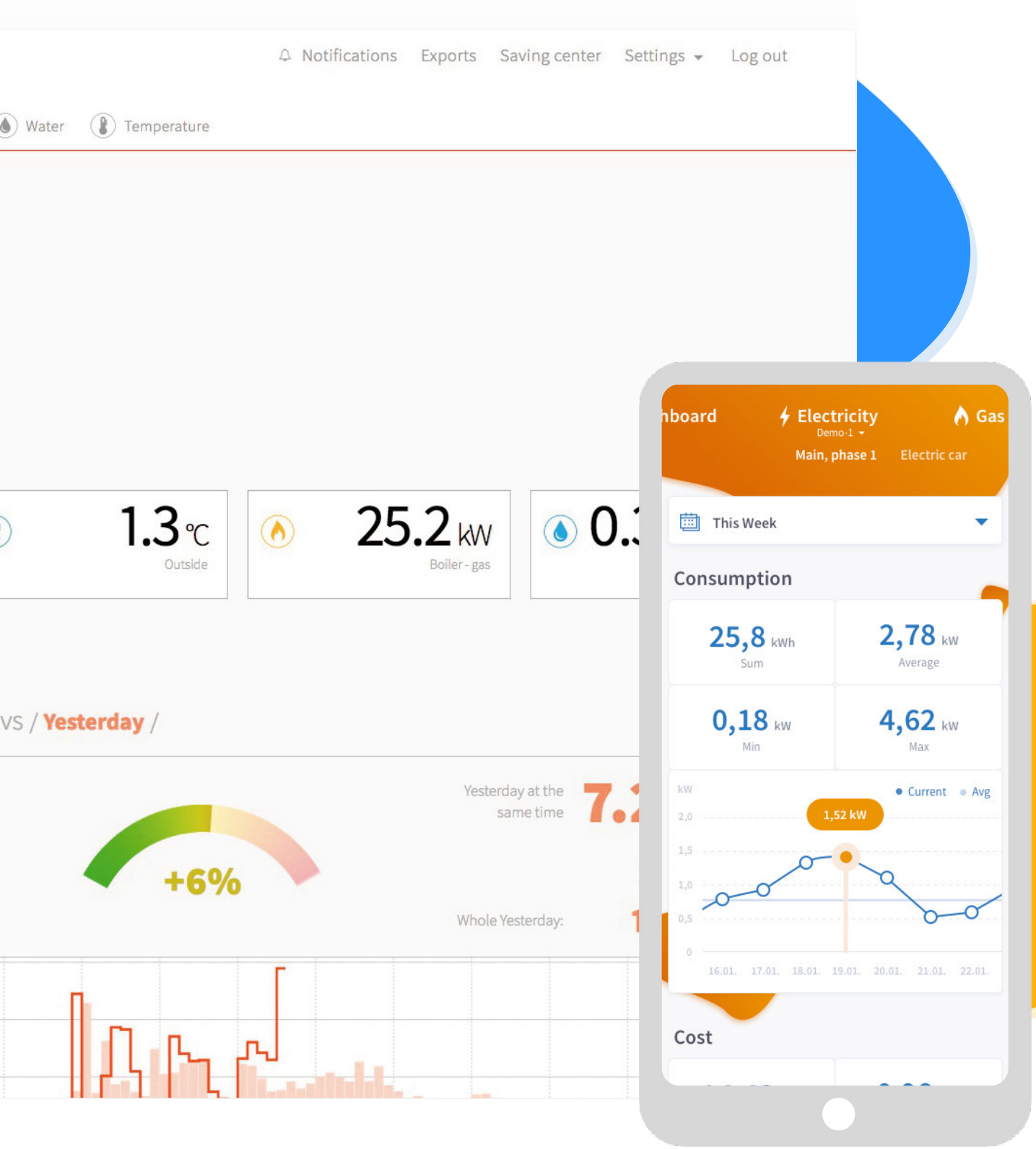
There are unlimited uses for Energomonitor:

- **Keep calm and check online** if you switched off the gas when you left home.
- **Inspect** your fridge or other home devices remotely to ensure they are working properly.
- **Know** when your family arrives home, or what time your employees arrive to work.

- **How much does it cost** when all the office computers are left running uselessly through the night?
- **Have a comprehensive overview** of the production and consumption of power from your solar installation and be able to optimize effectively.
- **Know** when the air quality at home is not keeping you healthy.

Demo

Take a look at a demo of our application at
energomonitor.com/demo



Energomonitor business cases

Solar monitoring

Get the most out of your solar with real-time monitoring from Energomonitor

- See how much your solar panels produce
- See real-time energy use in your home
- Remotely control appliances
- Suitable for single-, two- and three-phase connections

  combine data from temperature, gas and water
- Identify power hogs and find ways to be more efficient

Energomonitor sensors measures both solar production and household consumption and uploads data to the cloud. Add it to your existing solar system or a new installation.

How does it work?

1

Energomonitor sensors are installed by an electrician or by yourself

2

They connect wirelessly to the Energomonitor gateway, then to the cloud and your phone

3

Check your solar production and energy consumption from anywhere and see exactly how much you are saving

Industrial

The Energomonitor system is also designed to monitor equipment in an industrial setting.

Energomonitor helps you track consumption of your equipment to ensure that it is operating at peak efficiency and individual costs are being accounted for.

Our Powersense can monitor phases directly to show how much power is being used by individual machines.

The Energomonitor Plugsense measures consumption of individual devices up to 14A max load and can be remotely controlled.

The Thermosense Tripoint is an industrial thermometer designed to measure heatflows for optimum efficiency.








Small Business

Energomonitor was designed with business in mind. Our devices are installed in hotels, restaurants and many other businesses worldwide, helping owners track costs and maintain efficiency.

With Energomonitor for business, costs are under your control.

Homebase

The heart of every Energomonitor installation. The Homebase collects data via a wireless connection to all sensors in a particular location.

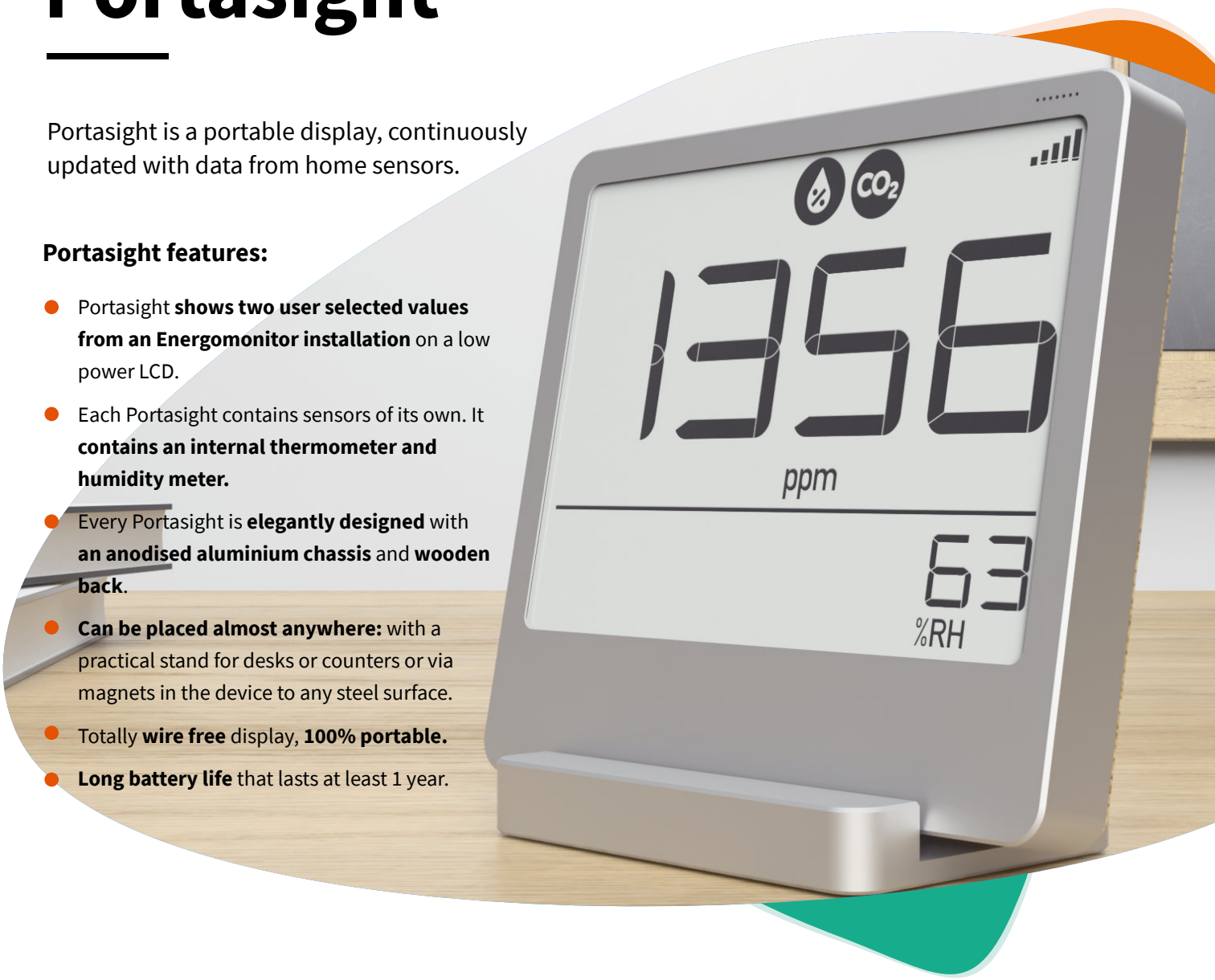
Every Homebase sends the received data to cloud servers for further processing via a wired internet connection. One Homebase can collect data from up to 30 sensors.

Part	gateway
Model	EWG6
Dimensions	110 x 80 x 26 mm (without antenna)
Weight	128 g
Material	plastic or metal*
Protection	IP20
Temperature	0 to 60 °C
Humidity	< 80 %RH non-condensing band (868
Interface	1x LAN 10/100 Mb/s (RJ-45), 1x TTL RS-232 (RJ-12), 1x power (USB-B)
Antenna	unremovable telescopic
Power supply	5 VDC (USB-B)
Consumption	< 2 W
Radio protocol	proprietary protocol Chirp 433 MHz (868 MHz optionally)

* photos contain the metallic version or the chassis

Portasight

Portasight is a portable display, continuously updated with data from home sensors.



Portasight features:

- Portasight **shows two user selected values from an Energomonitor installation** on a low power LCD.
- Each Portasight contains sensors of its own. It **contains an internal thermometer and humidity meter.**
- Every Portasight is **elegantly designed** with **an anodised aluminium chassis** and **wooden back**.
- **Can be placed almost anywhere:** with a practical stand for desks or counters or via magnets in the device to any steel surface.
- Totally **wire free** display, **100% portable.**
- **Long battery life** that lasts at least 1 year.

Part	transmitter
Model	EDI1
Dimensions	device: 103 x 92 x 14 mm, active display: 90 x 65 mm
Weight	135 g
Material	metal and wood
Protection	IP40
Temperature	0 to 60 °C
Humidity	< 80 %RH non-condensing
Antenna	internal
Power supply	2× exchangeable AAA alkaline battery 1,5 V
Consumption	battery life > 1 year
Radio protocol	proprietary protocol Chirp 433 MHz (868 MHz optionally)
Built-in sensors	temperature, humidity
Resolution of metering	temperature: 0,1 °C, humidity: 1 %RH
Accuracy of metering	temperature: ± 0,5 °C, humidity: ± 4 %RH
Range of metering	temperature: 5 to 50 °C, humidity: 0 to 80 %RH

Electricity monitoring

Powersense

The Energomonitor Powersense sensor measures electricity consumption and production by direct measurement of 1 phase or 3 phase by current transformers.

For current up to 80 A

Part	transmitter without probe	removable probe	removable probe
Model	EOS6-PS_80	ECT1-CLIP_80	ECT1-CLAMP_80
Dimensions	45 × 92 × 29 mm (without antenna)	26 x 40 x 23 mm, Ø 10 mm, clip	55 x 60 x 30 mm, Ø 12 mm, clamp
Weight	150 g	60 g	78 g
Material	metal and plastic	plastic	plastic
Protection	IP20	IP40	IP40
Temperature	-20 to 60 °C	-20 to 60 °C	-20 to 60 °C
Humidity	< 80 %RH non-condensing	< 80 %RH non-condensing	< 80 %RH non-condensing
Interface	3x probe port (DC connector 3.5/1.3 mm), 1x antenna (SMA female)	1x port (DC connector 3.5/1.3 mm)	1x port (DC connector 3.5/1.3 mm)
Antenna	removable (SMA male)	–	–
Power supply	2x exchangeable AA alkaline battery 1,5 V	–	–
Consumption	battery life > 2 years	–	–
Radio protocol	proprietary protocol Chirp 433 MHz (868 MHz optionally)	–	–
Built-in sensors	–	current	current
Resolution of metering	1 W	–	–
Accuracy of metering	10 %	–	–
Range of metering	3x < 80 A	< 80 A, 20 W to 20 kW	< 80 A, 20 W to 20 kW
Conversion constant	190, 195, 200, 205, 210, 215, 220, 225, 230, 235, 240, 245, 250 [V]	–	–

For current up to 300 A

Part	transmitter without probe	removable probes
Model	EOS6-PS_300	ECT1-CLIP_300
Dimensions	45 × 92 × 29 mm (without antenna)	60 x 85 x 45 mm, Ø 36 mm, clip
Weight	150 g	390 g
Material	metal and plastic	plastic
Protection	IP20	IP40
Temperature	-20 to 60 °C	-20 to 60 °C
Humidity	< 80 %RH non-condensing	< 80 %RH non-condensing
Interface	3x probe port (DC connector 3.5/1.3 mm), 1x antenna (SMA female)	1x port (DC connector 3.5/1.3 mm)
Antenna	removable (SMA male)	–
Power supply	2x exchangeable AA alkaline battery 1,5 V	–
Consumption	battery life > 2 years	–
Radio protocol	proprietary protocol Chirp 433 MHz (868 MHz optionally)	–
Built-in sensors	–	current
Resolution of metering	1 W	–
Accuracy of metering	10 %	–
Range of metering	3x < 300 A	< 300 A, 200 W to 72 kW
Conversion constant	190, 195, 200, 205, 210, 215, 220, 225, 230, 235, 240, 245, 250 [V]	–

Optosense

The Energomonitor Optosense sensor measures electricity consumption and production by reading a digital electricity meter's optical impulse output.

Part	transmitter without probe	removable probe
Model	EOS6-OS	EOC2
Dimensions	45 × 92 × 29 mm (without antenna)	1 m cable
Weight	150 g	25 g
Material	metal and plastic	plastic
Protection	IP20	IP20
Temperature	-20 to 60 °C	-20 to 60 °C
Humidity	< 80 %RH non-condensing	< 80 %RH non-condensing
Interface	1x probe port (RJ-9), 1x antenna (SMA female)	1x port (RJ-9)
Antenna	removable (SMA male)	–
Power supply	2x exchangeable AA alkaline battery 1,5 V	from transmitter
Consumption	battery life > 2 years	–
Radio protocol	proprietary protocol Chirp 433 MHz (868 MHz optionally)	–
Built-in sensors	–	pulse
Resolution of metering	depends on electrometer conversion constant [imp/kWh]	1 imp
Accuracy of metering	1 imp	1 imp
Range of metering	2^32 impulse counter; > 1 ms pulse width	–
Conversion constant	100, 400, 500, 600, 800, 1000, 1250, 1600, 3200, 4000, 5000, 10000 [imp/kWh]	–

Plugsense

The Energomonitor Plugsense device measures the consumption of specific appliances which can then be remotely operated.

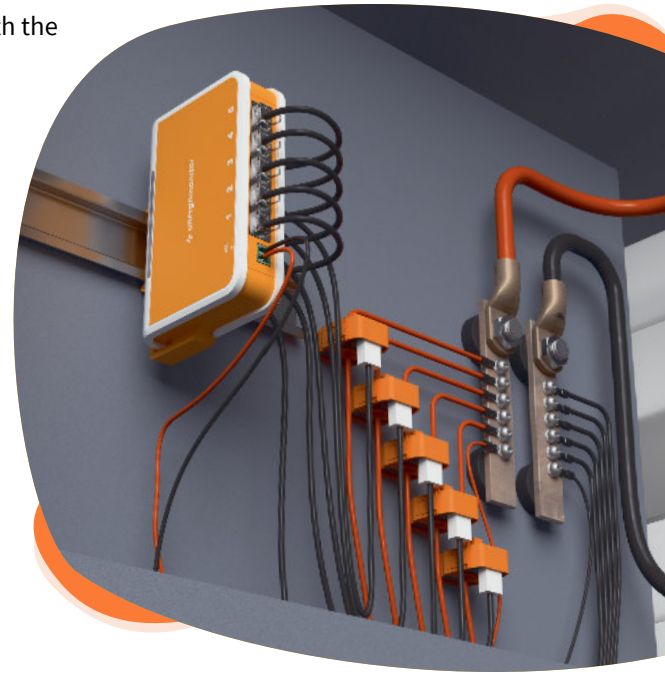
Part	transmitter
Model	ESO5
Dimensions	103 x 86 x 62 mm
Weight	138 g
Material	plastic
Protection	IP20
Temperature	-20 to 60 °C
Humidity	< 80 %RH non-condensing
Interface	socket type E CEE 7/5-6 (French) or F CEE 7/3-4 (Schukostecker)
Antenna	internal
Power supply	100 to 240 VAC / 50Hz
Consumption	1,5 W (on state) / 0.5 W (off state)
Radio protocol	proprietary protocol Chirp 433 MHz (868 MHz optionally)
Built-in sensors	current, voltage
Resolution of metering	1 W
Accuracy of metering	± 2%
Range of metering	< 13 A, 0 to 3 kW (240 V)

Powersense DC

The Energomonitor Powersense DC sensor monitors power consumption of DC powered equipment using up to 5 direct current transducers.

The clamps are available separately and are compatible with cables with the following diameters:

small - 8.5mm **medium - 21mm** **large - 40mm**



Examples of usage:

- Photovoltaics - monitoring of DC output, individual circuits
- Telecom System power usage monitoring (for ex. BTS tower power usage monitoring)
- Data Centers - UPS system battery health and power usage monitoring
- Battery installations - monitoring of charging and discharging
- Base Transceiver Station (BTS) - monitoring of radio equipment

Key characteristics:

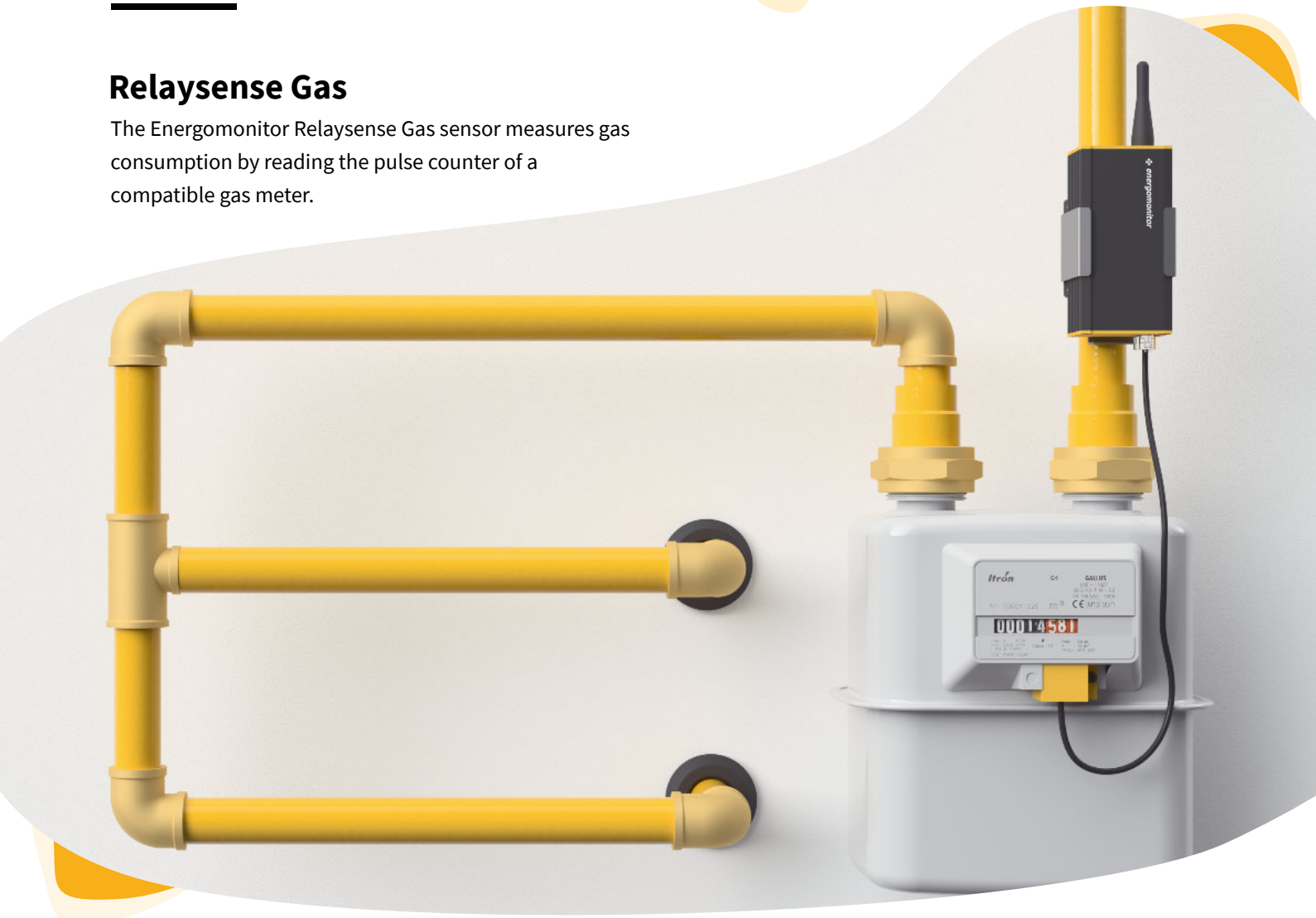
- Power is calculated as a product of measured current and voltage. The measured voltage is common for all of the five current transducer sensors (same rail supply).
- Space efficient and simple installation without the need to disrupt the monitored circuits.
- The Power supply is protected from incorrect installation. If installed at the wrong polarity, the unit will be protected from shorting out.
- Values measured every 5s (other frequencies are possible as depending on requirements.
- Possibility of manual calibration of DC transducers for better precision.
- The range of the radio link is up to 100m, depending on the shielding of walls and electromagnetic interference.

Part	transmitter without probes	removable probe	removable probe	removable probe
Model	EHT1	EHT1-CLIP_50	EHT1-CLIP_100	EHT1-CLIP_400
Dimensions	110 x 80 x 26 mm	37 x 33 x 20 mm (without cable)	61 x 60 x 16 mm (without cable)	100 x 100 x 25 mm (without cable)
Weight	140 g	21 g	65 g	300 g
Material	plastic	plastic	plastic	plastic
Protection	IP20	IP20	IP20	IP20
Temperature	-20 to 60 °C	-20 to 60 °C	-20 to 60 °C	-20 to 60 °C
Humidity	< 80 %RH non-condensing	< 80 %RH non-condensing	< 80 %RH non-condensing	< 80 %RH non-condensing
Interface	5x probe port (RJ-12)	1x port (RJ-12)	1x port (RJ-12)	1x port (RJ-12)
Antenna	internal	–	–	–
Power supply	24 to 55 VDC from monitored rail	from transmitter	from transmitter	from transmitter
Consumption	< 2 W	–	–	–
Radio protocol	proprietary protocol Chirp 433 MHz (868 MHz optionally)	–	–	–
Built-in sensors	voltage	DC current	DC current	DC current
Resolution of metering	1 W	–	–	–
Accuracy of metering	± 2%	–	–	–
Range of metering	5x < 400 A	< 50 A	< 100 A	< 400 A

Gas monitoring

Relaysense Gas

The Energomonitor Relaysense Gas sensor measures gas consumption by reading the pulse counter of a compatible gas meter.



Part	transmitter without probe	removable probe
Model	EOS6-GS	ESC2
Dimensions	45 × 92 × 29 mm (without antenna)	1 m cable
Weight	150 g	18 g
Material	metal and plastic	plastic
Protection	IP20	IP40
Temperature	-20 to 60 °C	-20 to 60 °C
Humidity	< 80 %RH non-condensing	< 80 %RH non-condensing
Interface	1x probe port (RJ-9), 1x antenna (SMA female)	1x port (RJ-9)
Antenna	removable (SMA male)	–
Power supply	2x exchangeable AA alkaline battery 1,5 V	from transmitter
Consumption	battery life > 2 years	–
Radio protocol	proprietary protocol Chirp 433 MHz (868 MHz optionally)	–
Built-in sensors	–	pulse
Resolution of metering	depends on gas meter conversion constant [imp/m³]	1 imp
Accuracy of metering	1 imp	1 imp
Range of metering	2^32 impulse counter; > 1 ms pulse width	–
Conversion constant	10, 100, 1000, 10000 [imp/m³]	–

Water monitoring

Relaysense Water

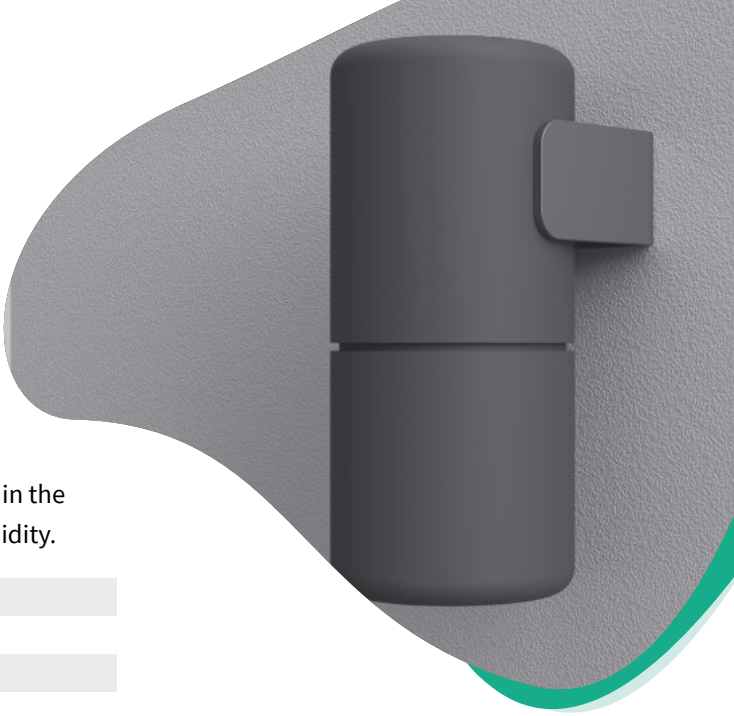
The Energomonitor Relaysense Water sensor measures water consumption by connecting to the impulse counter of a compatible water meter.

Part	transmitter without probe	removable probe
Model	EOS6-WM	EWC1
Dimensions	45 × 92 × 29 mm (without antenna)	0,5 m cable
Weight	150 g	10 g
Material	metal and plastic	plastic
Protection	IP20	IP20
Temperature	-20 to 60 °C	-20 to 60 °C
Humidity	< 80 %RH non-condensing	< 80 %RH non-condensing
Interface	1x probe port (RJ-9), 1x antenna (SMA female)	1x port (RJ-9)
Antenna	removable (SMA male)	–
Power supply	2x exchangeable AA alkaline battery 1,5 V	–
Consumption	battery life > 2 years	–
Radio protocol	proprietary protocol Chirp 433 MHz (868 MHz optionally)	–
Built-in sensors	–	pulse
Resolution of metering	0,5 L	1 imp
Accuracy of metering	1 imp	1 imp
Range of metering	2^32 impulse counter; > 45 ms pulse width	–

Relaysense Water Sealed

Part	transmitter without probe
Model	EWM3-P
Dimensions	65 × 60 × 40 mm (without antenna)
Weight	92 g
Material	plastic
Protection	IP66
Temperature	-20 to 60 °C
Humidity	< 100 %RH
Interface	1x non potential pulse input (via the terminals), 1x antenna (SMA female)
Antenna	removable (SMA male)
Power supply	2× exchangeable AAA alkaline battery 1,5 V
Consumption	battery life > 2 years
Radio protocol	proprietary protocol Chirp 433 MHz (868 MHz optionally)
Resolution of metering	depends on water meter conversion constant [imp/m³]
Accuracy of metering	1 imp
Range of metering	2^32 impulse counter; > 1 ms pulse width
Conversion constant	1, 2, 4, 10, 20, 40, 100, 200, 400, 1000 [imp/m³]

Air quality monitoring



Airsense Canary / Airsense Industrial

The Energomonitor Airsense sensor monitors complex air quality in the room - carbon dioxide (CO_2) concentration, temperature and humidity.

Part	transmitter
Model	EAS1
Dimensions	140 x 66 x 50 mm
Weight	150 g
Material	plastic
Protection	IP20
Temperature	from +5 to +50 °C
Humidity	< 80 %RH non-condensing
Antenna	internal
Power supply	3x exchangeable AA alkaline battery 1,5 V
Consumption	battery life > 1 year
Radio protocol	proprietary protocol Chirp 433 MHz (868 MHz optionally)
Built-in sensors	CO_2, temperature, humidity
Resolution of metering	CO_2: 1 ppm, temperature: 0,1 °C, humidity: 1 %RH
Accuracy of metering	CO_2: ±50 ppm ±3 % of reading, temperature: ±0,5 °C, humidity: ± 4 %RH
Range of metering	CO_2: 5000 ppm, temperature: 5 to 50 °C, humidity: 0 to 80 %RH

Thermosense

The Energomonitor Thermosense sensor measures indoor or outdoor temperature.

	Thermosense Indoor	Thermosense Outdoor	Thermosense Tripoint
Part	transmitter	transmitter	transmitter with fixed probes
Model	ETM3-IN	ETM3	ETM3-3
Dimensions	75 × 75 × 20 mm	65 × 60 × 40 mm (without antenna)	65 × 60 × 40 mm (without antenna), 1.5m length of probes
Weight	66 g	92 g	130 g
Material	plastic	plastic	plastic
Protection	IP20	IP66	IP66
Temperature	-20 to 60 °C	-20 to 60 °C	-20 to 60 °C, -40 to 120 °C for probes
Humidity	< 80 %RH non-condensing	< 100 %RH	< 100 %RH
Interface	–	1x antenna (SMA female)	1x antenna (SMA female)
Antenna	internal	removable (SMA male)	removable (SMA male)
Power supply	2x exchangeable AAA alkaline battery 1,5 V	2x exchangeable AAA alkaline battery 1,5 V	2x exchangeable AAA alkaline battery 1,5 V
Consumption	battery life > 2 years	battery life > 2 years	battery life > 2 years
Radio protocol	proprietary protocol Chirp 433 MHz (868 MHz optionally)	proprietary protocol Chirp 433 MHz (868 MHz optionally)	proprietary protocol Chirp 433 MHz (868 MHz optionally)
Built-in sensors	temperature	temperature	3x external temperature
Resolution of metering	0.1 °C	0.1 °C	0.1 °C
Accuracy of metering	±1 °C	±1 °C	±1 °C
Range of metering	-20 to 60 °C	-20 to 60 °C	-40 to 120 °C

Upcoming

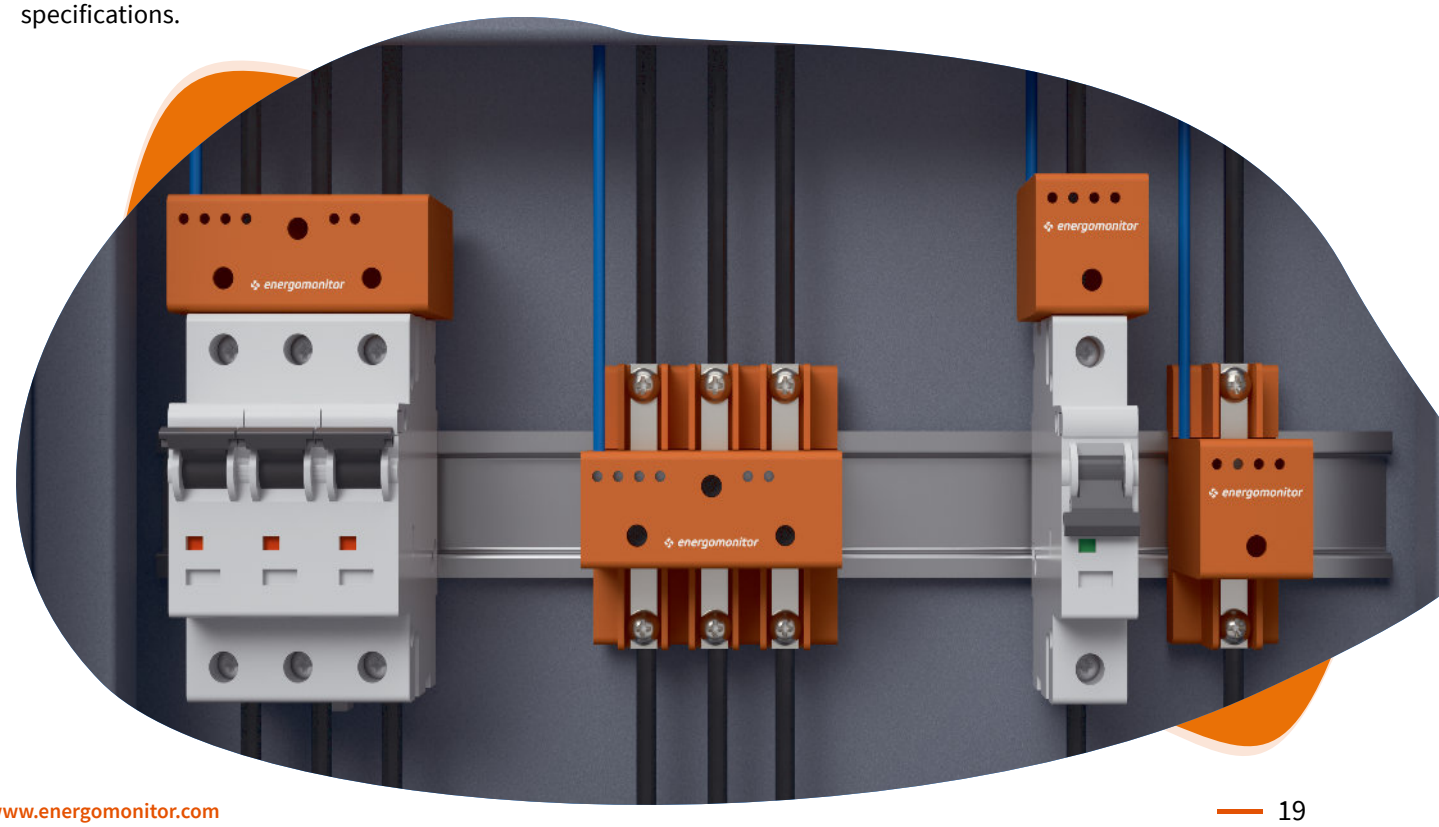
Powersense DIN Rail

The Powersense DIN Rail sensor measures AC electricity consumption or production in 1- or 3-phase installations.

- Billing accurate - The most accurate monitoring of electricity consumption, including exact values of current, voltage, power factor and energy flow direction.
- Capable of measuring production and consumption in grid connected solar installations where power flows in both directions according to demand.
- Capable of remote switching connected circuits.
- Values measured every 5s.
- Plug-and-play connectivity - works wherever mobile networks do - minimal network configuration required.
- Compatible with the Energomonitor system, expandable by other Energomonitor sensors.
- Different radio configurations available: proprietary Chirp protocol, NB-IoT and others according to customer specifications.

Part	transmitter	transmitter
Model	EDM2-1	EDM2-3
Dimensions	40 x 27 x 30 mm (without antenna)	40 x 85 x 30 mm (without antenna)
Material	plastic	plastic
Protection	IP20	IP20
Temperature	-20 to 60 °C	-20 to 60 °C
Humidity	< 80 %RH non-condensing	< 80 %RH non-condensing
Power supply	100-240 VAC / 50Hz	100-240 VAC / 50Hz
Consumption	< 2 W	< 2 W
Radio protocol	proprietary protocol Chirp 433 MHz, (868 MHz, NB-IoT optionally)	proprietary protocol Chirp 433 MHz, (868 MHz, NB-IoT optionally)
Built-in sensors	1x current, 1x voltage	3x current, 3x voltage
Resolution of metering	1 W	1 W
Accuracy of metering	± 2%	± 2%
Range of metering	< 63 A, 0 to 15 kW	3x < 63 A, 3x 0 to 15 kW

* All parameters are preliminary for information purposes only and can differ in the final product.



energomonitor

Energomonitor, s.r.o.
Hlubinská 917/20. 702 00 Ostrava
Czech Republic
Reg. No: 25854631
EU VAT: CZ25854631

Mail and shipping address
Energomonitor HQ
Zašovská 262, 757 01 Valašské Meziříčí
Czech Republic

Sales and partner requests
sales@energomonitor.cz

www.energomonitor.com
info@energomonitor.com

stack7

www.stack7.io
info@stack7.io