OLM-03-EU USER MANUAL

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SMART ENERGY SOLUTIONS

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1. Preface

The OLM-03-EU is a "smart" device for optimum energy use with control functions.

It supports the on-site use of locally generated electricity in solar systems. It supports automatic monitoring of existing electricity, natural gas or heat and water (main) meters.

The data measured by your device can be accessed remotely at any time after registration at www.onlinemonitoring.cloud without installing a separate application.

It is compatible with smart "home control" systems (e.g. OpenHub) and can be easily integrated with them.

Control your energy consumption / production with a smart device, reduce your costs. Use the energy you generate locally, save the environment!

	The OLM-03-EU can be installed in a 4-wire (3 phase + neutral) TN-C electrical network with a nominal voltage of 230V and a periodicity of 50 or 60 Hz.

2. Glossary

AVC:

An electrical switching device that disconnects the network behind it if it detects a (relatively small) leakage current.

De-energising:

A process carried out in a defined sequence during which the electrical equipment

1) all possible sources of energy are disconnected, and
2) its energisation is prevented.

Steps:

1. Disconnection,
2. protection against reconnection,
3. checking the de-energised state of the electrical equipment,
4. earthing and short-circuiting,
5. isolation of nearby active parts.

No-voltage condition:

The electrical equipment, or parts of it, is disconnected from all possible energy sources and the de-energising steps have been fully completed in the correct sequence.

Energized equipment:

If it is not de-energized, i.e., it has been placed in service once and the de-energizing process has not been performed or has not been performed correctly.

De-energized work:

Work performed on electrical equipment after de-energizing.

Low voltage electrical system:

An electrical network with a TN-C contact protection system with three phase conductors and a common neutral conductor and a rated phase voltage of 230V, periodicity 50Hz (line voltage: 400V).

Useful power:

In an alternating circuit, the instantaneous voltage is the product of the instantaneous current , and the cosine of the phase angle they subtend. The unit of measurement is Watt.

Reactive power:

In an alternating circuit, the instantaneous voltage is the product of the instantaneous current , and the sine of the phase angle they subtend. Unit of measurement VAr.

Apparent power:

In an alternating circuit, the instantaneous voltage times the instantaneous current. Its unit of measurement is VA.

Harmonic:

Any non-sinusoidal signal can be written as a sum of sinusoidal signals. This means that if the electrical network contains harmonics, its signal shape is non-sinusoidal. This can cause an unfavourable operating condition. The reason why it is necessary to measure these components is that it can be used to infer the quality of the electrical network.

THD:

The percentage value of the total (all harmonics) semi-harmonic component of the signal projected onto the fundamental signal. For an ideal sinusoidal signal, this is 0%. If the electrical network contains harmonics, the serving transformer is likely to be overloaded.

3. General information

Below you will find the necessary information for the installation and commissioning of the OLM-03-EU. Before starting the installation, please read this document carefully to avoid any risk of accident and damage to property.

During the installation and commissioning of the appliance, it is essential to intervene in the existing building electrical system. For these reasons, the installation in Hungary must comply with the national standard MSZ 1585:2012 - Operation of electrical equipment. In other countries, the requirements of the equivalent standard shall be applied.

The requirements of the MSZ 1585:2012 standard apply to the safe operation of electrical equipment and to work carried out on or near electrical equipment.

Compliance with the personnel and material conditions specified in the standard is mandatory.

The installation may be carried out by persons qualified in the field of high voltage current for which they are qualified (hereinafter referred to as "qualified person").

OLM-03-EU must not be installed in an environment or on a site requiring explosion-proof (Ex, RB) installation!

Before starting the installation of OLM-03-EU, the de-energised state of the relevant low voltage electrical network must be checked.

The device can be mounted on a standard "DIN" rail (EN 50022) i n a standard outdoor or indoor distribution cabinet (outdoor distribution box). The device requires a 7-unit wide area on the DIN rail.

The device does not include surge and overcurrent protection in its low-voltage circuit. These protection steps require the installation of other external devices (circuit breakers, surge arresters) and a UPS to improve their sensitivity. If these protection devices are already installed, the installation of OLM-03-EU does not affect the autonomous operation of the existing protection steps.

Provide a 2.4GHz band WiFi network coverage, internet connection at the installation site of the OLM-03-EU equipment. Use only the WiFI antenna recommended by the manufacturer and supplied with your device.

Do NOT install a mechanically damaged, broken or cracked OLM-03-EU device.

Protect your OLM-03-EU device:

- from direct sunlight,
- Direct sunlight, dust,
- moisture,
- from direct sunlight, moisture, humidity, moisture, heat,
- mechanical impact,
- overcurrent,
- and overvoltage.

The apparatus draws its operating voltage from the low-voltage mains. At least one phase conductor must be energised for the equipment to operate.

The apparatus does not contain a battery.

4. Maintenance

The apparatus does not require any specific care or maintenance.

Checking and, if necessary, retightening the wiring of the distribution box is part of the normal maintenance of the electrical network.

It does not contain any user-repairable, replaceable parts. In the event of a fault, only Gelka Ltd's specialist service technicians are authorised to repair the equipment.

5. Risks

Risk of electric shock

Before starting work on the electrical network and its equipment, the voltage must be disconnected. Work may only be carried out in a de-energised state.

In the case of a network with inverters, generators (other electricity generating equipment), particular care must be taken to avoid back-feeding. The disconnector on the DC side of the solar inverter must be switched off.

Material damage

Improperly connected equipment may cause damage. Observe the requirements of the standard, legislation, professional and technical specifications and the requirements of this installation manual.

Fire hazard

Wiring with incorrect cross-sections, poor quality or inadequate power connections may overheat, causing an electrical fire. In all cases, ensure that the building electrical system is designed to meet the load and standard.

The manufacturer of the OLM-03-EU cannot be held liable for any direct or indirect damage.

6. General description of the equipment

The device is designed for data acquisition, measurement of electrical parameters and circuit control. It is not a measuring instrument for accounting purposes.

Quantities are measured at a rate of one minute and transmitted via the communication interface to the configured server, or a part of the data is displayed on the device's own web page.

7. Measured quantities

Measured quantities of the low voltage electrical network:

Bidirectional (give/ take) measurement on all three phase lines:

- Voltage [V],
- Current [A],
- Useful power [kW],
- Reactive power [kVAr],
- Apparent power [kVAr],
- Power factor (cos φ)[int16],
- Useful electricity (work) [kW],
- Reactive electricity (work) [kVArh],
- Phase angle [degrees],
- Frequency [Hz],
- Voltage harmonic content (2nd,3rd,4th,5th harmonic) [%],
- Current harmonic content (2nd,3rd,4th,5th harmonic) [%],
- Voltage total harmonic distortion (THD) [%],
- Current total harmonic distortion (THD) [%],
- Scaled value of the set initial main meter reading [kWh],
- Direction of energy flow (ad/rev) [char]

Tracking of gas meter / heat meter current reading, measured quantity:

Natural gas meters / heat meters with contact type pulse transmitter can be connected can be connected to OLM-03-EU transmitters OL-03-03 with a contact type or heat output. On this by given by pulses
By "counting" the signals, your device is able to display the measurement status.

- Gas meter reading [m3] or Heat reading [GJ]

Tracking the current water meter reading, measured volume:

Drinking water meters with a contact type pulse transmitter can be connected to the OLM-03-EU. Based on these transmitters, the meter can display the meter reading.

- Water meter reading [m3]

Communication quantities, parameters:

- Current reception signal level of the Wifi network [dBm],
- IPv4 local area network ip address [char],
- Wifi interface MAC address [char],
- Wifi server (Access Point) name (SSID) [char]

Quantities, parameters for correct, operational operation of the device:

- Temperature of the SoIC chip measuring electrical network parameters [°C],
- Communication SoIC chip free "heap" memory capacity [kByte],
- Time since last power-up (uptime), in minutes [int32],
- Error codes [int16]

Status of controlled outputs:

- Integrated three-phase solenoid status [bool],
- integrated contact 1 output status [bool],
- integrated contact 2 output status [bool]

Status of digital inputs (gas/heat, water pulse transmitters):

- integrated contact 1 input status [bool],
- integrated contact 2 input status [bool]

8. Technical data

occupant dimensions:	126 mm x 97 mm x 76 mm
Weight (without antenna):	0.6 kg
Radio interface:	IEEE802.11 /a/b/g/n, 2.4 GHz wireless (WiFi), equipped with SMA nut connector.
Low power interfaces:	
DC voltage switchable on inputs:	5...12V.
Inputs are galvanically isolated (opto-isolated).	
Maximum voltage switched by contact output:	12V, load current less than 1A.
Supply voltage output voltage:	11.4 +- 0.3V load current less than 80 mA.

The supply voltage output is galvanically isolated from the low voltage power supply, inputs and outputs.

High current, electrical parameters:

Rated power consumption during operation:	Pn< 10W,
Rated voltage:	3 x 230V AC, (+-10%)
Minimum current:	0.05A
Rated current:	3 x 5A AC current,
Maximum current:	3 x 60 A AC current,
Rated frequency:	50 Hz or 60 Hz (+-10%)
Immunity:	IP40,
Operating temperature:	-20....+50°C

For OLM-03-EU to operate correctly, the mains voltage must be within the range 180 ... 260V.

9. Measurement accuracy

Quantity:	Measurement error:
Low voltage mains voltage:	Error less than +- 1%
Low voltage mains rated current:	error less than +- 2%
Low voltage network power:	error less than +- 3%
Low voltage network energy(work):	error less than +- 3% Low
voltage grid power factor:	error less than +- 0.05 value
Low voltage grid phase angle:	error less than +- 2 degrees Low
voltage grid harmonics,	
Above 10 % harmonic content:	error less than +- 3%
Below 10 % harmonic content:	error less than +- 5%

Communication parameters:

Quantity:	Measurement error:
Wifi network current reception signal level:	+-2 dBm

For other quantities, the measurement error is not interpretable.

Quantities, parameters for correct operation of the device: Quantity:

Measureme

nt error:

Temperature of the SoIC chip measuring the electrical network parameters: +-1 °C

For the other quantities, the measurement error is not interpretable.

Status of controlled outputs:

Measurement error not interpretable.

Status of digital inputs (gas, water pulse transmitters):

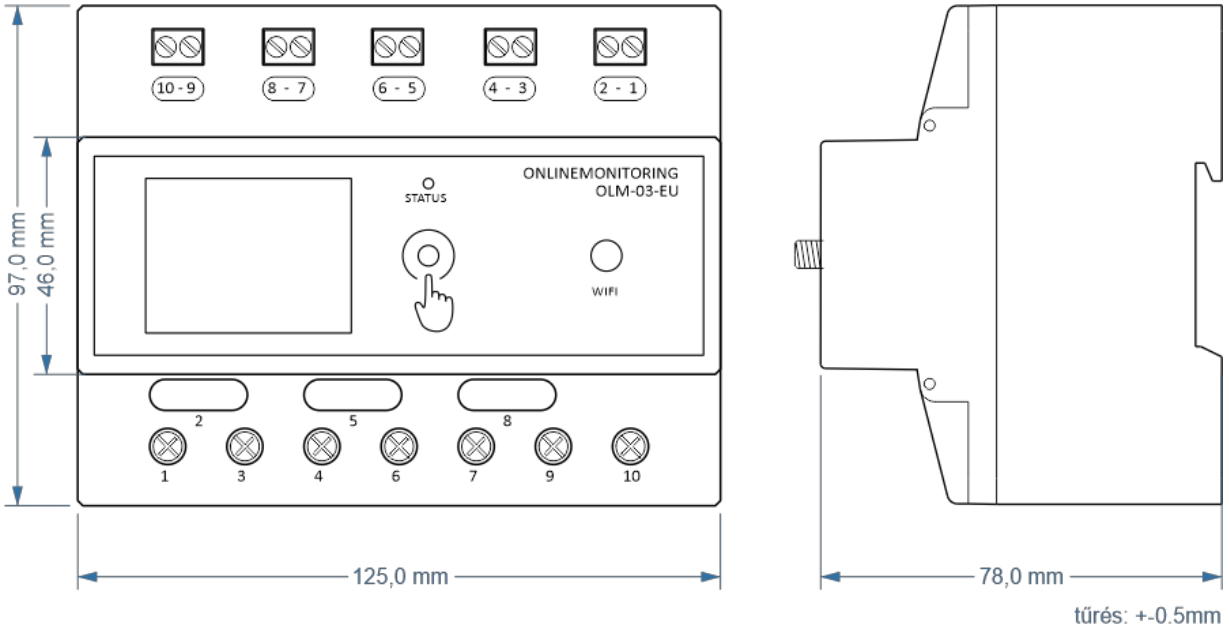
Measurement error not interpretable.

The measurement error is not interpretable in terms of gas/heat and water meter reading.

10. Mechanical design

Photograph of the appliance

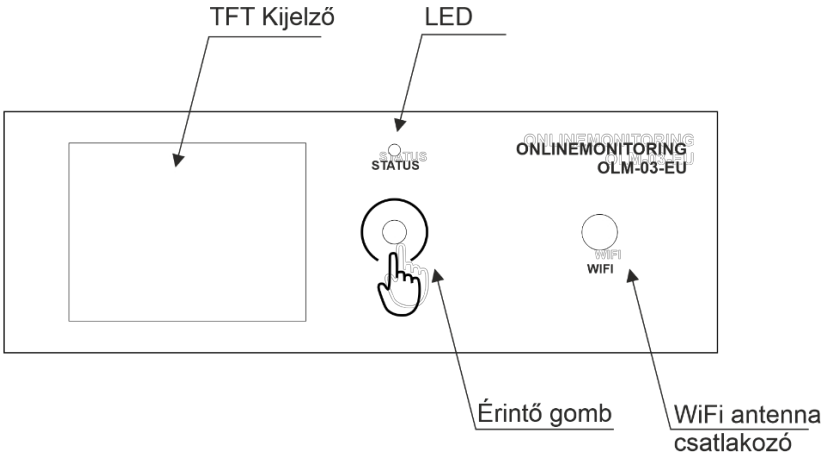
Occupant dimensions:



The unit can be installed in both indoor and outdoor distribution cabinets, and can be mounted on standard terminal rails.

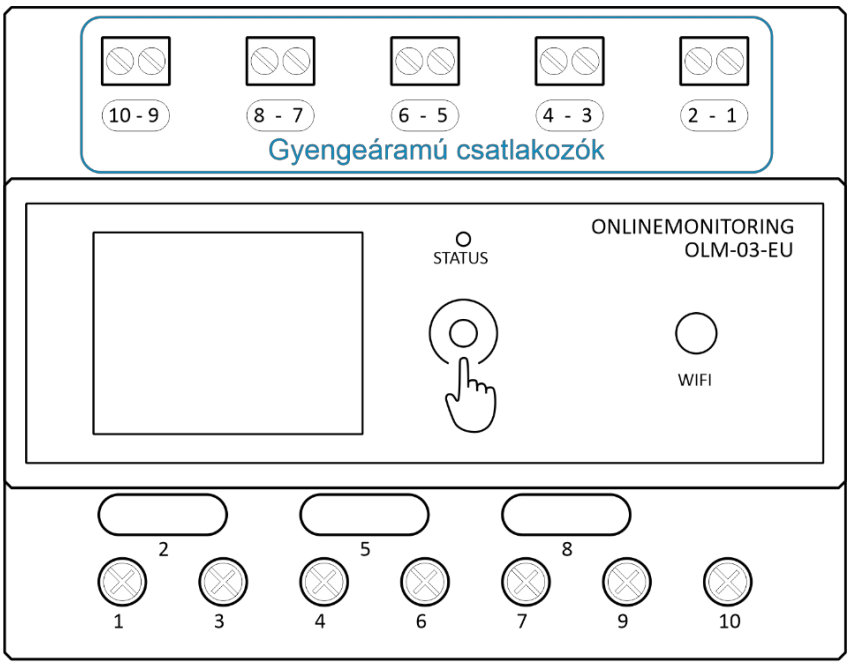
Control unit:

- The device is equipped with a 160x128 pixel colour TFT display, which displays information in a continuous sequential order.
- It has a single touch button, which is only required for the first setup.



Low current connections

On the **top of the** instrument are the low-current screw terminals, as shown in the figure below:



Allocation of low-current connections:

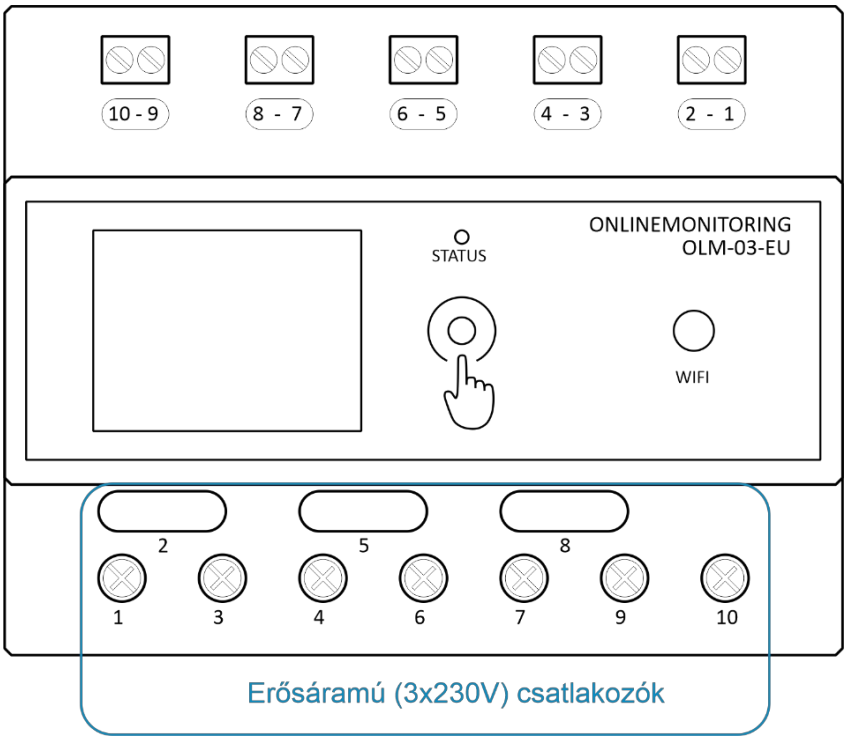
10-9 Digital input for Gas meter / Heat meter pulse transmitter (10 "-", 9 "+") 8-7
Digital input for water meter pulse transmitter (8 "-", 7 "+")
6-5 Controlled output 1 (contact, closed by default)
4-3 controlled output 2 (contact, open by default) 2-1
supply voltage output (2 +11.4V, 1 Test)

The low-current terminal block is suitable for receiving wires with a cross-section of 0.5...0.75mm2. It is equipped with 2 pre-programmed contact outputs as changeover contacts.

1 Controlled output: closed when power is being supplied (import), open when power is being fed back in excess of 1kW useful power on any phase.
2 controlled output: open when receiving power (import), closed when regenerative power greater than 1 kW net power is applied on any phase.

High current terminals

On the underside of the device are the power connections with screw terminals, as shown in the figure below:



Assignment of power connectors:

1	Phase 1 input (from main meter)
3	Phase 1 output (to consumers / inverter)
4	Phase 2 input (from main meter)
6	Phase output 2 (to consumers / inverter)
7	Phase input 3 (from main meter)
9	3rd phase output (to consumers / inverter)
10	Zero conductor input

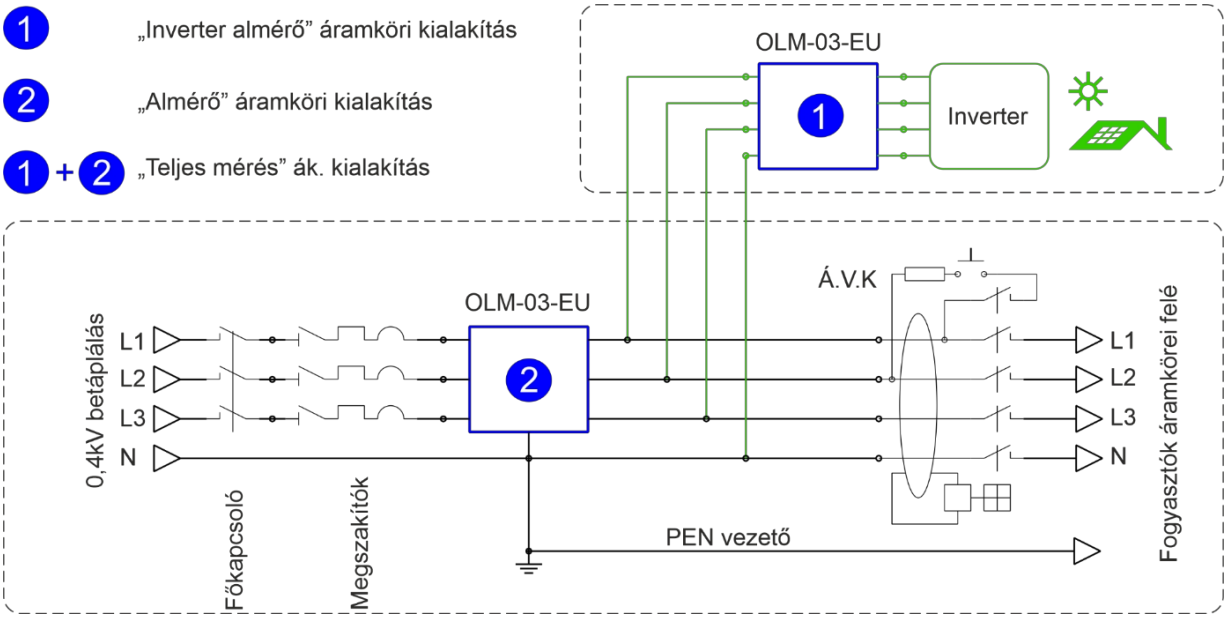
Note:Removing the bypass plates of the terminals marked 2,5,8 is forbidden, it may cause equipment failure!

The power screw terminals of your device (current connection) are suitable for 1...25mm² wire.

For larger cross-sections, choose our product type OLM-03-ECT with an external openable current transformer.

11. Installation, circuit design

The OLM-03-EU shall be installed within the property boundary, downstream of the electricity meter of the electricity supply company and the existing main switch, circuit breakers, and connected to the three-phase 0,4 kV nominal line voltage electrical network.



Inverter sub-metering circuit design

Requires the installation of a single OLM-03-EU device in the inverter circuit.

With this installation method, the use of the communication interface of your inverter can be triggered independently of the type. You can eliminate the data traffic of your inverter to an external network. The production data of your inverter is provided by the OLM-03-EU. The inverter can be switched off/on as required.

Sub-metering circuit design

It requires the installation of a single OLM-03-EU in the main metering circuit of the electricity supply company, connected in series with it.

With this installation, you can measure the amount of energy taken from and fed back to the property's electricity supply network. If necessary, the electricity supply to the property can be switched on/off.

Full metering circuit design

Requires the installation of two OLM-03-EU devices, one in series with the main electricity metering circuit of the electricity supply company. The other device shall be integrated in the circuit of its inverter.

With this installation method, the total energy balance of the property can be measured and calculated.

As a device manufacturer, we recommend this installation solution for local energy management systems. Advantages of this circuit design:

- the total instantaneous consumption of all consumer circuits in the property can be determined,
- inverter external network communication can be eliminated,
- metering of energy purchased from / fed back to the electricity supplier,
- inverter on/off switching,
- electricity supply to the property can be switched on/off,
- Technical design meeting the requirements of the online reporting obligation for solar PV systems in Hungary.

12. Internal construction

Hardware:

When designing the OLM-03-EU, care has been taken to use components from companies that are market leaders in terms of quality and lifetime.

Our component suppliers are, without being exhaustive: MICROCHIP, ESPRESSIF, FUJITSU, MURATA

Your OLM-03-EU is built with selected components. Our product is ROHS compliant, helping to reduce our environmental impact.

The device is built around an ESP32 Dual Core SoIC. This chip is responsible for communication and interfacing with peripherals. The electrical parameters are measured by a MICROCHIP chip of type AT90E36. These data are read out in a scheduled manner via SPI bus.

The scrolled measurement data and special other variables are stored in FRAM via I2C bus.

The information is displayed on a colour 160x128 pixel TFT display.

software:

The instrument uses RTOS "operating system". Four "threads" performing different tasks have been implemented, which are event-driven and run separately on dedicated cores. They are responsible for a number of their own "processes" as required.

13. Design of the local IT network for the site

Recommended IT network structure, policies, security considerations:

The firewall (WAN/LAN router) of the network is essentially responsible for handling and responding to incidents from the external WAN. The firewall should only allow traffic on ports that are essential to the operation of your IT infrastructure.

A common method of attack today is to gain unauthorised access to network traffic from the inside (LAN side) and interfere with the traffic flowing on the network. In order to reduce the success rate of these attacks and to preserve transmission capacity, segment your network.

If possible, form logical units (e.g. Marketing, Planning, Production) and exchange data between these units via a separate network interface on your router. You can also increase the security of your network by creating VLANs.

Only install a network device that guarantees the definition of network communication used for its operation *(We have seen a Far East camera system that continuously transmitted the complete image data to the country of manufacture in compressed form)*

Serve wifi clients with higher data traffic in the 5GHz band if possible. The 2.4GHz band can be used for IoT solutions, sensors data collection.

Wifi network:

Provide a WiFi network operating in the 2.4GHz band with sufficient coverage to ensure operational continuity. The network should be segmented to increase data security and transmission capacity.

The device also includes an integrated web server. It shall be connected to the access point specified by the user at the initial setup, which shall have WPA2 security and AES encryption algorithm.

IP address assignment:

The IPv4 local area network address of the device shall be assigned by a DHCP server.

If you want to reserve a static Ip address for your device, please set it on your DHCP server.

NTP time (UDP123 port):

The equipment identifies the data sent with a time stamp and synchronises with it at 15-minute intervals based on time information from the network time server. It starts measurements at 0...5 seconds of every minute, which takes 60 seconds. This solution ensures synchronisation between several devices installed at the same site. For this technical reason, it is necessary to access the NTP time server, which is provided as standard via UDP on port 123.

Enable traffic on this NTP port on your firewall.

HTTP (TCP80 port):

Part of the data measured by your device is displayed using the integrated web server. This solution makes it easy to visually monitor and control the operation of the device. In normal operation, data is read-only via Http. No control command can be given for security reasons. The integrated web server can serve up to four clients at a time.

MQTT (TCP1883, or 8883 port for TLS):

As the manufacturer, the device is configured with the availability of the MQTT broker of the ONLINEMONITORING data collection system. If you install your own local energy management platform that supports MQTT data exchange, use the settings recommended by the platform. The device can only be given a control command via MQTT protocol. If required, the channel can be encrypted using TLS encryption to increase data security.

14. User interface:

Setup and data display via web page

Your device has a built-in web server that allows you to configure the device and to check the correct operation of the configured device.

15. First setup, "Setup" mode:

Make sure that the wifi antenna supplied by the manufacturer is properly connected.

After the appliance has been correctly installed, the low-voltage circuit of the appliance must be energised.

The display will show the Gelka Ltd. and ONLINEMONITORING logos.

Then, place your index finger on the touch sensor  sensor on the front of your device.

Keep your index finger on the touch sensor.

The device will then enter the setting mode, you can remove your index finger from the touch sensor.

In set-up mode, your device will start its own integrated WiFi access point, which you can connect to with your IT device.

The access point is called **OLM03-xxxxxxxxxx** with **xxxxxxxx** is the factory number of your device. In this

example the factory number is SAMPLE01

Password required to connect to wifi**: Administrator**

Once you have connected your IT device to your device, please enter the following URL in your browser:

http://192.168.1.10

You will be able to set up your device from this web interface.

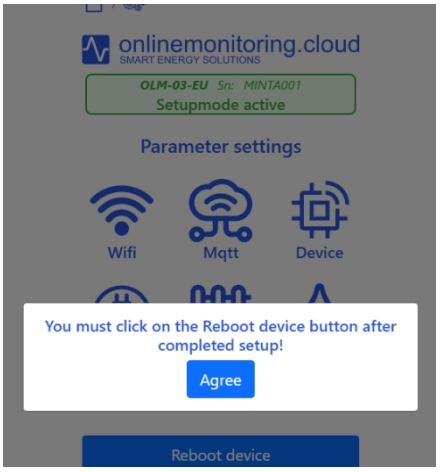
Please note: If no wifi client is connected to the device within 5 minutes after the device has been switched on, it will automatically reboot and switch to "Normal" mode. In "Normal" mode you will not be able to change the settings of your device.

Setup" mode can only be activated by restarting the device as described above.

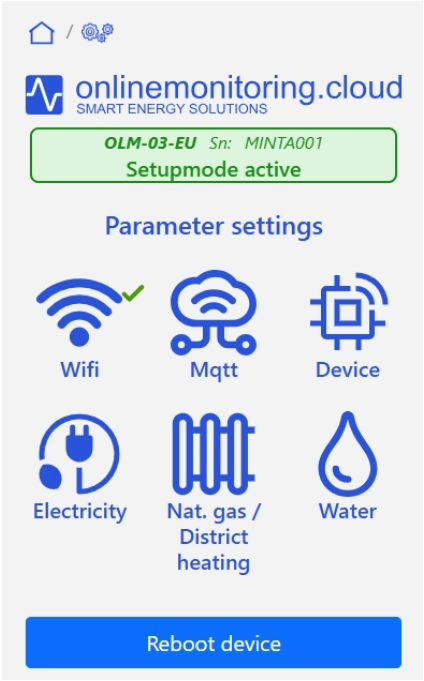
setting on the website in "setup" mode:

The url http://192.168.1.10 will open the web page of your device.

Click on the English flag.



From "Argee" button button to receive accept it a warning that after completing the settings, the "Reboot device" button to save the data and reboot the device.



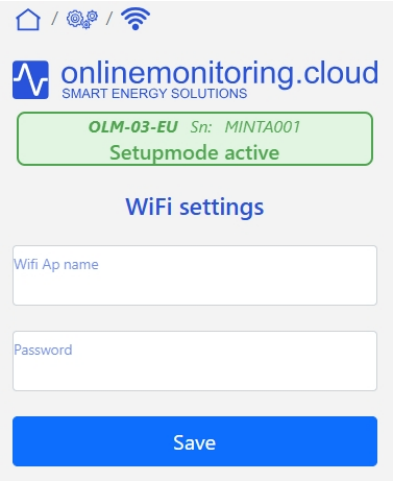
You can enter the operational settings as shown in the figure:

- Wifi: Wifi setting,
- MQTT: MQTT broker used for communication,
- Device: other parameters of the device,
- Electricity: A villamos hálózat (fő) mérőjének állásai,
- Nat. gas/Distr.heating:
  Natural Gas Meter / Heat Setting,
- Water: Water meter setting

Reboot button:Save data and reboot.

Once you have made the settings in the list, a green tick will appear next to the icons to help you find your way around.

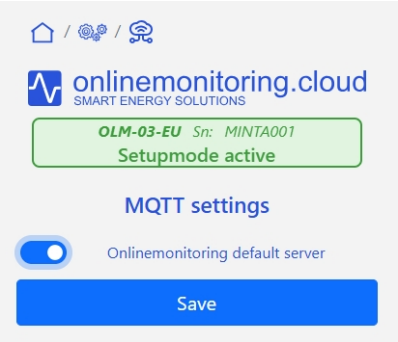
WiFi setup:



Enter the name and Password of the 2.4GHz wifi network server you want to use on your local network.

Click Save.

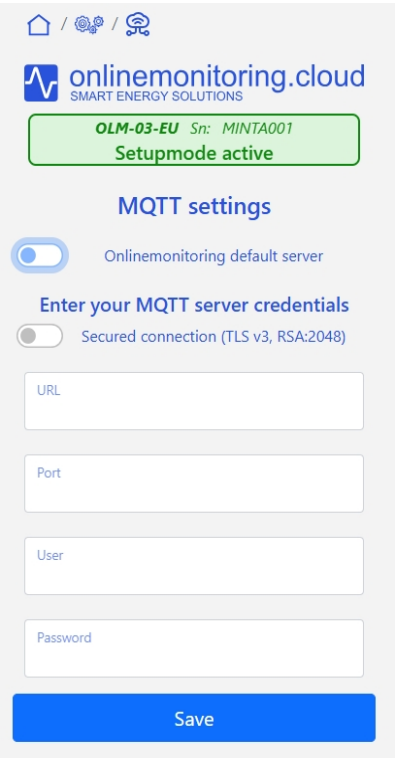
MQTT setting:



If you want to use the ONLINEMONITORING measurement system, you do not need to do anything. Click on Save.

If you want to use your own MQTT broker, disable the

"ONLINEMONITORING default server" option. In the drop-down menu that appears, you must then enter the contact details of the MQTT broker you wish to use, as shown below:



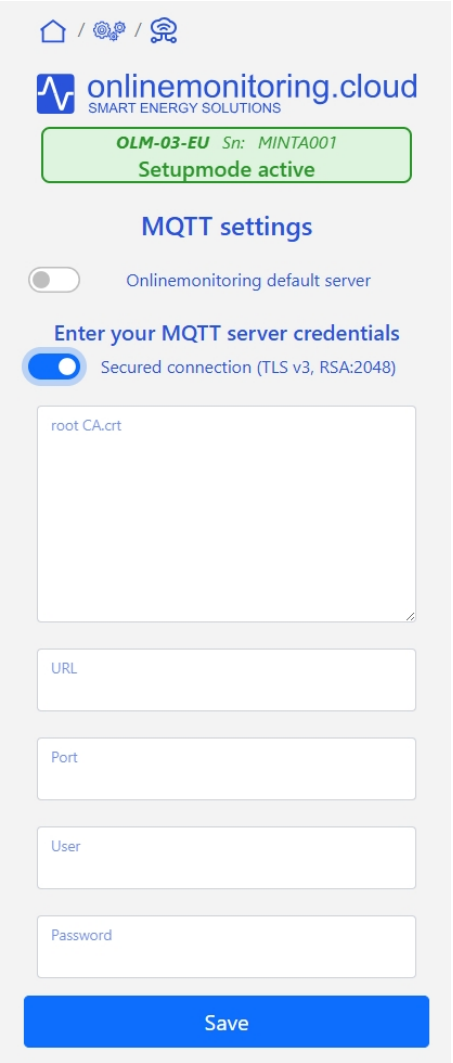
URL: ip address or domain name of the MQTT Broker (MDNS name resolution for local network is not supported)

Port: port of the MQTT broker

User: Username to connect to your MQTT broker

Passwd: Password required to connect to your MQTT broker.

After entering the data, click on Save.

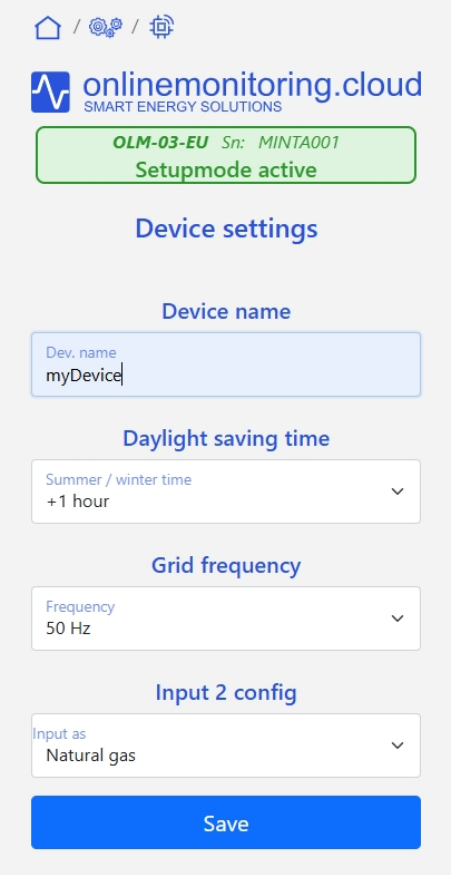


Use your own MQTT broker with TLS encryption for enhanced data security:

Turn on the "secured connection" option and copy the root CA key of your server into the field.

Set the contents of the other fields as described above.

"Device" setting:



Device name: Name your device by whatever name you wish to identify it with in the future.

Daylight saving time.

Grid frequency: The period number of the electrical grid.

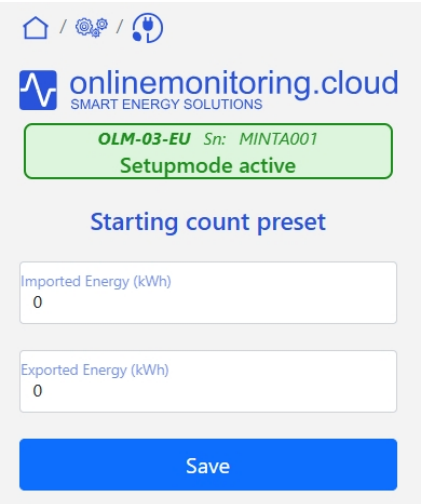
Input 2 config: From the drop-down menu, select how you want to use the pulse counter input of your device.

Natural gas,

In the case of district heating, the equipment processes heat meter pulses.

From the drop-down menu that appears, select the data that is relevant to you and click Save.

"Electricity" setting:



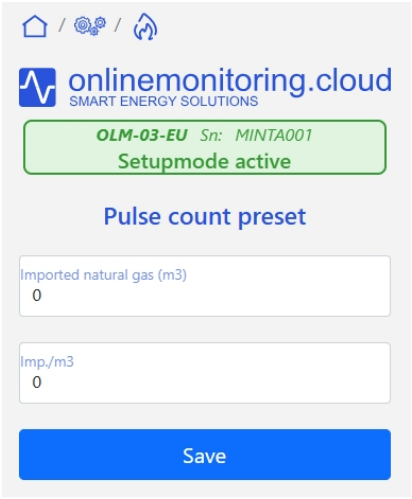
If you want to track the clock status of your main meter (installed as a sub-meter), you can enter its current clock status in the fields (Imported= purchased, Exported= recycled electricity)

In the case of an inverter sub-meter, you can enter the total energy produced by your inverter in the Exported Energy field, which can be accessed from the application provided by your inverter manufacturer.

If the fields are not filled in, the device will track your electricity consumption/production from the current state.

In this case, counters will start from 0.

"nat. gas / District heating" setting:



In this menu you can set the initial value of the gas meter / district heat meter. Read the gas meter of your gas meter. / calorimeter and enter it in the Imported natural gas / Calorimeter field.

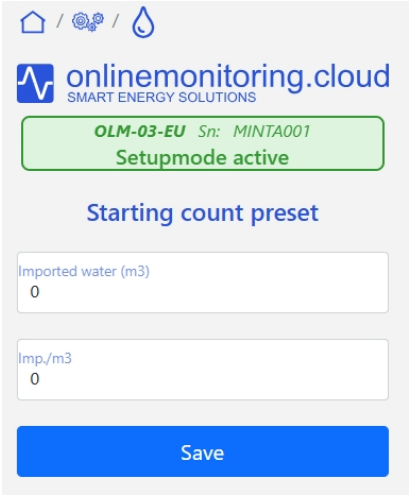
Indicate the number of pulses per cubic meter of natural gas consumed by the installed pulse transmitter (usually 10 or 100 pulses per m3)

or:

Please indicate the number of pulses per m3 of heat per 1 GJoule of consumption (usually 10 or 100 pulses per m3)

Note: installation of a gas meter with pulse transmitter or pulse output is required! If not, leave the fields blank.

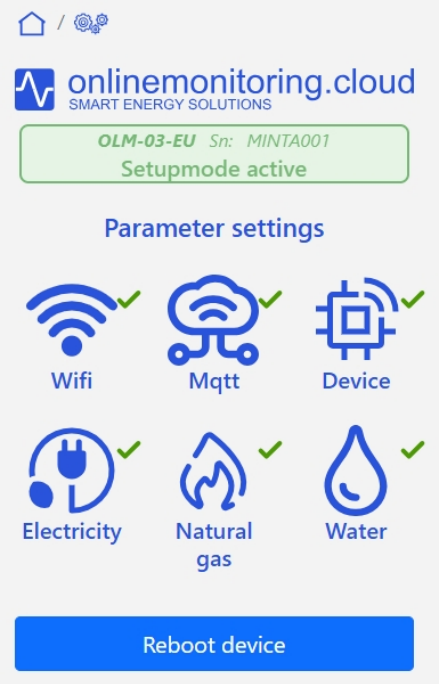
"Water" setting:



In this menu you can set the initial value of your water meter counter. Read the reading of your water meter and enter it in the Imported water field.

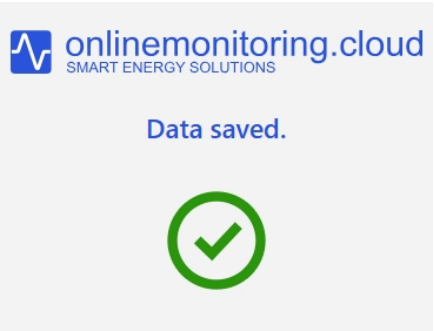
Enter the number of pulses the installed pulse transmitter sends per cubic meter of consumption (usually 10 or 100 pulses per m3).

Note: installation of a water meter pulse transmitter is required! If you do not have one, leave the fields blank.



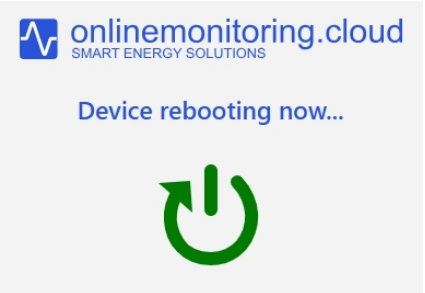
A green tick will appear after the menus have been successfully completed.

To save the data and restart the device, press the Reboot device button.



Your device will indicate on the web page that it

has been saved. There is nothing to do.



The device will reboot based on the saved settings.

Nothing to do.

Your browser will be redirected to onlinemonitoring.cloud (if you have internet access)

16. "Normal" mode:

Your device monitors the touch sensor signal after a restart (e.g.: initial setup or power failure).

After the first 15 seconds or so of the start-up process, your device will start in normal mode if no touch is detected.

1. It starts the measurement of the electrical network and other parameters,
2. connects to the wifi server set in setup mode,
3. synchronizes with the network time server,
4. connects to the MQTT server set in setup mode.

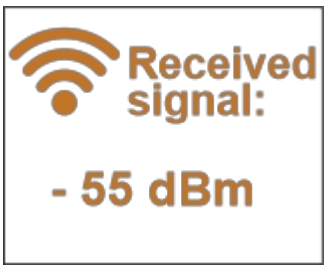
If any connection is lost or other communication errors occur, they are handled automatically. It reestablishes the failed connection or synchronisation and simultaneously displays an error code on its display.

If the electrical network value deviates from the specified parameters (voltage level or phase error), an error code will also appear on the display.

The error codes are also displayed on the device's website, on the display and in the MQTT data. The following messages are repeated on the display of your device, with a 5-second interval:

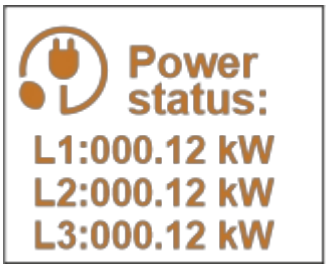
The device name you have set.

The unique serial number of your device, as provided by the manufacturer.



The signal level of the radio frequency signal received from the configured WiFi server. Recommended value: between -50.....-80 dBm

The IP address of your device's local network.
The web site of your device can be accessed at this address.



The useful power per phase measured from the last 1 minute of the electrical network.

Status measured from the last 1 minute of the last measurement of the electrical network. If it is reconnected to the public grid, the circuit is displayed in green.

In case of sub-metering circuit design, the value of the useful electricity consumed. If you have entered your master meter in setup mode, the energy consumption of your device is scrolled to the value entered there.
In this calculated way, the amount of electricity measured by the main meter is "tracked".

In the case of an inverter sub-meter circuit design, the value of the energy drawn by its inverter from the electricity grid.

In case of sub-metering circuit design, the value of the useful electricity fed back. If you have entered your master meter setting in setup mode, the value of the energy production measured by your device is added to the value entered there in a scrolling manner.

The amount of electricity measured by the main meter will be 'tracked' in this calculated way.

In the case of an inverter sub-meter circuit design, the total useful electricity produced by the solar panel system.

If you have entered your gas meter setting in setup mode, the gas consumption measured by your device is added to the value entered there in a scrolling manner.

or:

in the setup mode, input 2 is set as a pulse input for the heat meter and you have entered the setting of your heat meter, the value entered there will be scrolled to the value of the consumption measured by your appliance.

If you have set your water meter in the setup mode, the value entered there will be scrolled to the water consumption measured by your device.

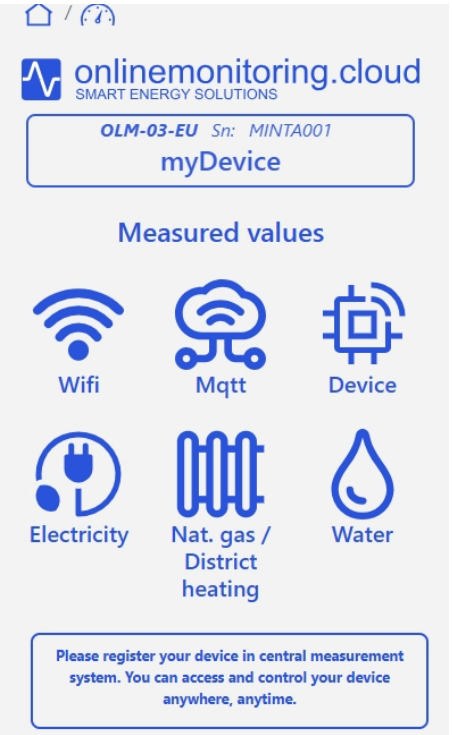
"Normal" mode, data display on a web page:

The parameters set cannot be changed on the device's website. The data is read-only.

Connect your IT device to the same network where you have installed your device. Enter the Ip address shown on the device display in the url field of your browser.

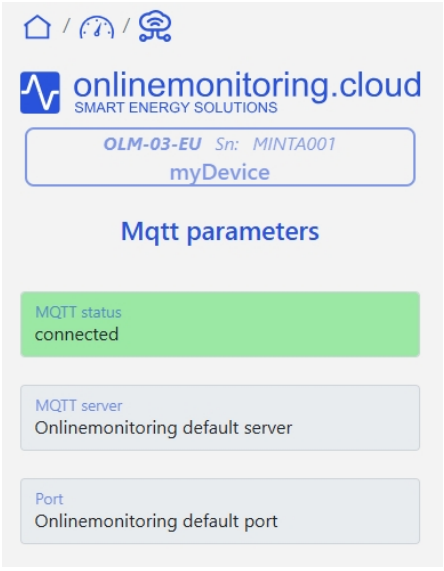
The displayed data will be updated automatically.

Click on the English flag.

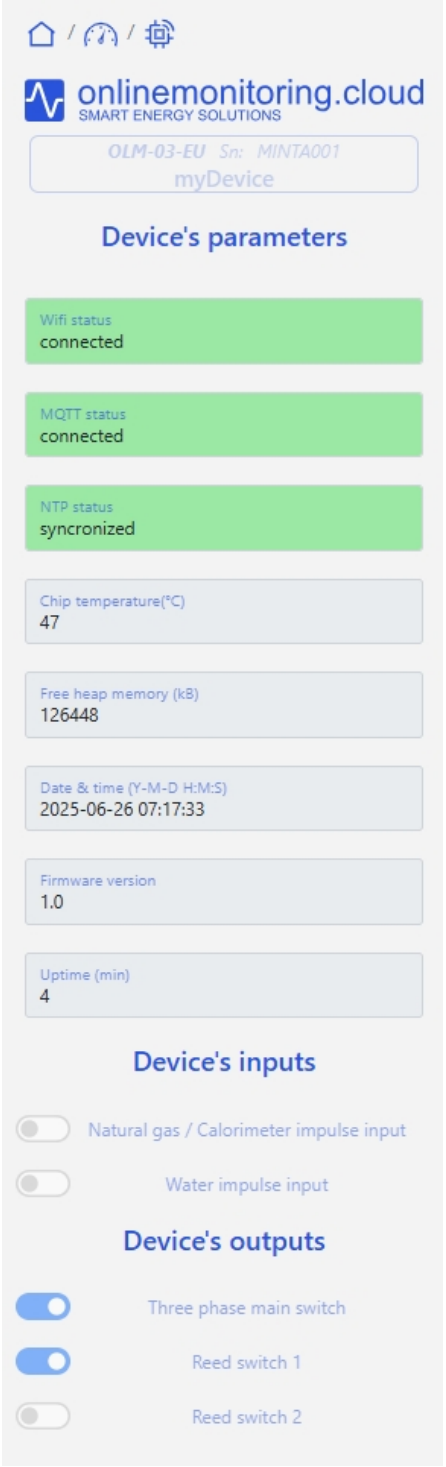


On the web page that appears, click on the icons to select the data to display.

Click on the Wifi icon to retrieve the wireless network parameters of your device.

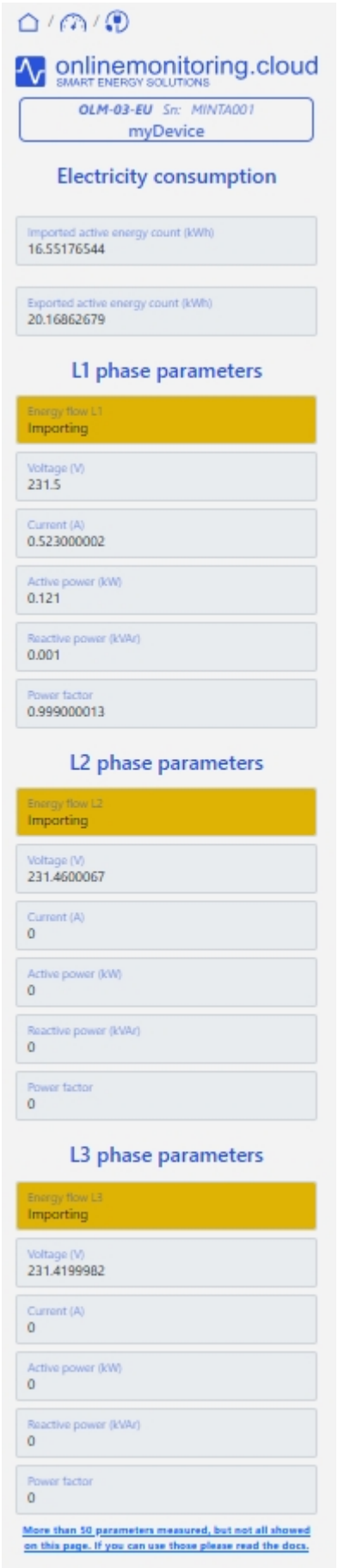


In the MQTT menu, the MQTT settings and client status are displayed.



In the device menu, you can see the parameters, inputs and outputs status of your device.

The displayed data is automatically updated every second.

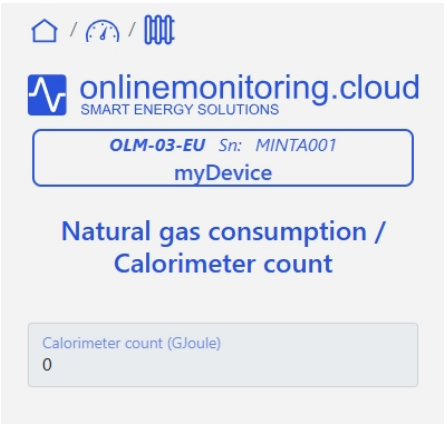


The electricity icon shows the electrical network parameters measured by your device.

The data displayed will be updated automatically.

Gas consumption value.
(If you have a pulse transmitter and it is set.)

or:



Value of the amount of heat consumed.
(If your heat meter has a pulse output connected.)

Value of water consumption.

(If you have a pulse transmitter and it has been set.)

17. Data communication with IT applications

Two interfaces for applications are provided:

- http protocol for basic information, read-only for security reasons.
- Via MQTT protocol all data is available and the device can be remotely controlled.

Access via Http protocol:

This protocol has been implemented for okosotthon, and other mainly some typical data-oriented applications. It aims to provide easy data access to key features and a simple data structure to process. Data sent over http is not encrypted (in addition to the WPA2 / AES encryption algorithm used by wifi.)

This data is in standard JSON format.

Access and read via the MQTT protocol:

Data sent over the MQTT protocol is encrypted using the TLS algorithm, and username and password authentication is required for data connection to the MQTT broker.

Data received by the MQTT broker also follows a standard JSON structure. A

description of the interface is available on our website.

18. Password

The detailed operation of the device is subject to change without notice by the manufacturer and distributor (Gelka Ltd.).

If you have any questions, we welcome your comments at info@gelkakft.hu .