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	**The installation takes place in an electric cabinet or junction box, we recommend you to contact an electrician.**

How to install CLEMAP *One*?

Content of the box

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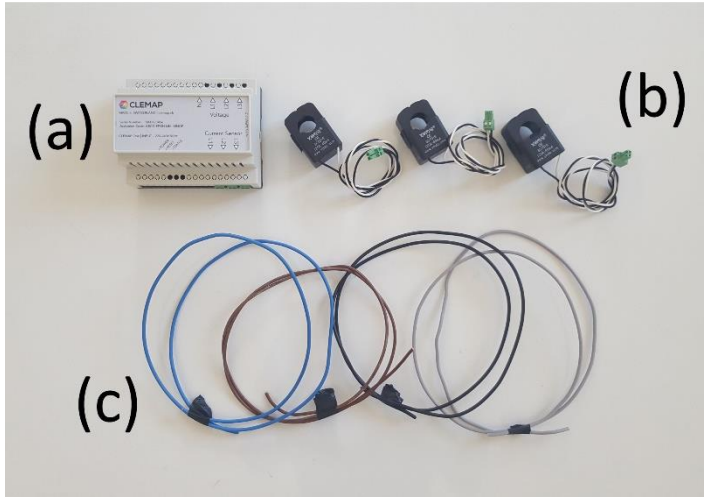


Picture 1 Content of the box

Description

CLEMAP *One* can measure the power consumption of a single apartment or house. With the web application you can discover which device category consumes electricity in your house and how much it costs.

CLEMAP *One* is installed in or next to the junction box or electrical cabinet and must be connected to the power supply cables between the meter and the house.

Usually there are three input cables in an apartment or a house: the phase conductors (L1=brown, L2=black and L3=grey) and as output the neutral conductor (also called N=blue). The three current sensors must be connected to all three incoming cables.

As the installation requires an intervention in the household network, we recommend to contact an electrician for doing the installation.

Installation requirements

Before starting the installation, check that the following points are fulfilled:

1. You have a smartphone or laptop to activate CLEMAP *One*.
2. There is enough space in your junction box or electrical cabinet to install CLEMAP *One*.
    a. Yes → Continue with step 3.
    b. No → Check whether you can install CLEMAP *One* next to the junction box / electrical cabinet. CLEMAP *One* can also be installed in other junction boxes in the house, e.g. in the housing enclosure within an apartment. Continue with point 3.
3. Does your wireless home network reach the CLEMAP *One* installation location? (Checking wireless reception with a smartphone at the CLEMAP *One* installation location)
    a. Yes → Start the installation.
    b. No → Install a Power Line Adapter (e.g. the Netis PL7622 Wireless Powerline Adapter) or a Wireless Repeater and continue with the installation.

Security note

Safety is the main focus of any work with electricity. The cables in the area in which activities are carried out must have **all-pole disconnection** before starting work. The best way to do this is to switch off the appropriate fuse. But attention: **all-pole** means that all conductors, i.e. the phase as well as the neutral conductor, are disconnected. To ensure this, the residual current circuit breaker (RCCB) should also be switched off. **In addition, it is important to check that the cables are without current before touching them.**

Power cable colors and their meaning

The function of each conductor can be recognized by the color of the power cable if the electrical installation has been performed correctly. But attention: Old buildings often have an invalid coloring of the conductors, as the standards have been changed several times over the years.

There are basically three types of cables. First of all there is the live conductor, the outer conductor, which is also called phase (L) or phase conductor. Then there is the neutral conductor (N), which is often colloquially referred to as the neutral conductor, even if technically it is actually understood to mean something else. And finally the earth conductor (PE), which is also called earthing, earth conductor or simply earth.

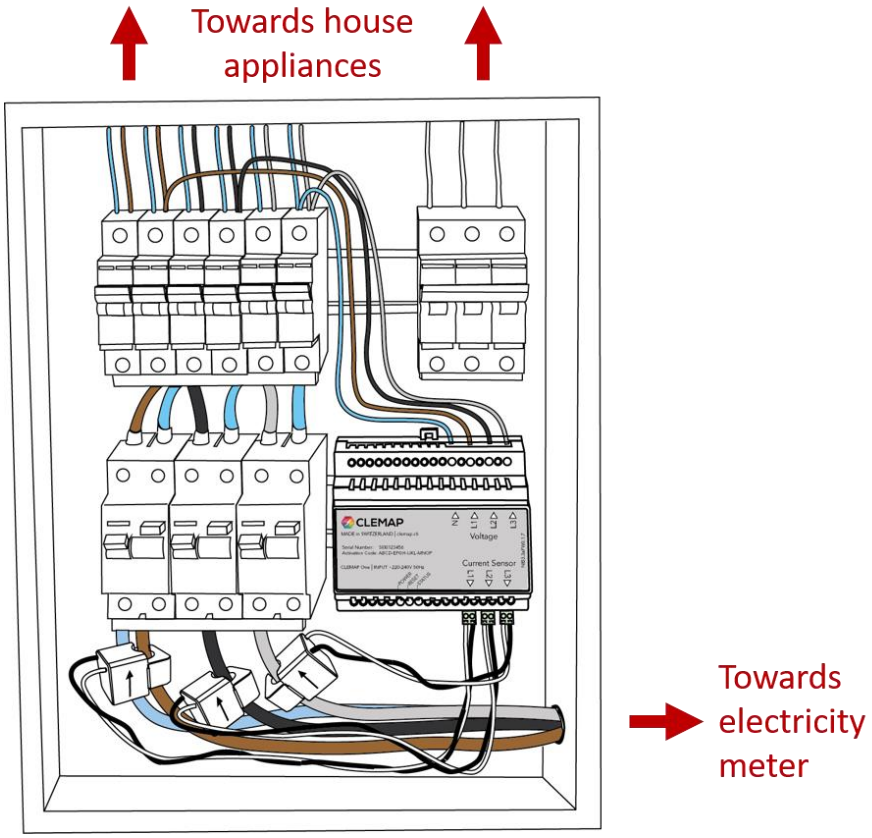
Listed below are the colours of the power cables:

Phase	L1, L2 und L3	brown, black, grey
Neutral	N	blue
Earth	PE	green-yellow

In old houses, however, you cannot expect the colors of the cables to be correct.

Step 1: Electrical installation

⚠	**As installation takes place in an electric cabinet or junction box, we recommend you to contact an electrician.**



Picture 2 Installation diagram in the junction box of an apartment

Picture 3 Current sensor. The arrow must indicate the direction of current (towards the house).

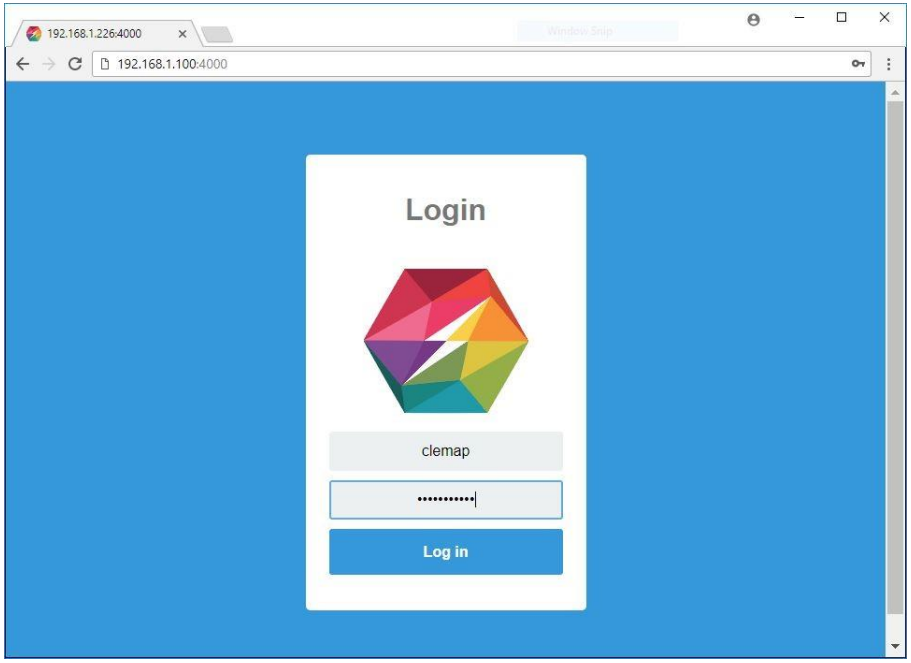
1. Make sure that the power supply in the junction box or electrical cabinet is disconnected.
2. Place CLEMAP *One* (a) so that the current sensors (b) can be easily connected to the main power cables (L1, L2 and L3) (as shown in Picture 2).
3. Install CLEMAP *One* in or next to the junction box / electrical cabinet.
4. Connect the current sensors (b) to the insulated incoming power cables (L1, L2 and L3) and **make sure that the arrow shown in Picture 3 indicates the house direction (and not the meter/power supplier direction).**
5. Connect the current sensors (b) to CLEMAP *One* and make sure that the current sensors of the L1, L2 and L3 cables match the appropriate voltage inputs L1, L2 and L3.

6. Now connect cables (c) after a fuse (maximum 16 A). Connect L1 with color brown to phase 1, L2 with color black to phase 2, L3 with color grey to phase 3. The blue cable has to be connected to the neutral conductor.
7. Turn on the fuses and wait 3 minutes for the sensor to be activated.

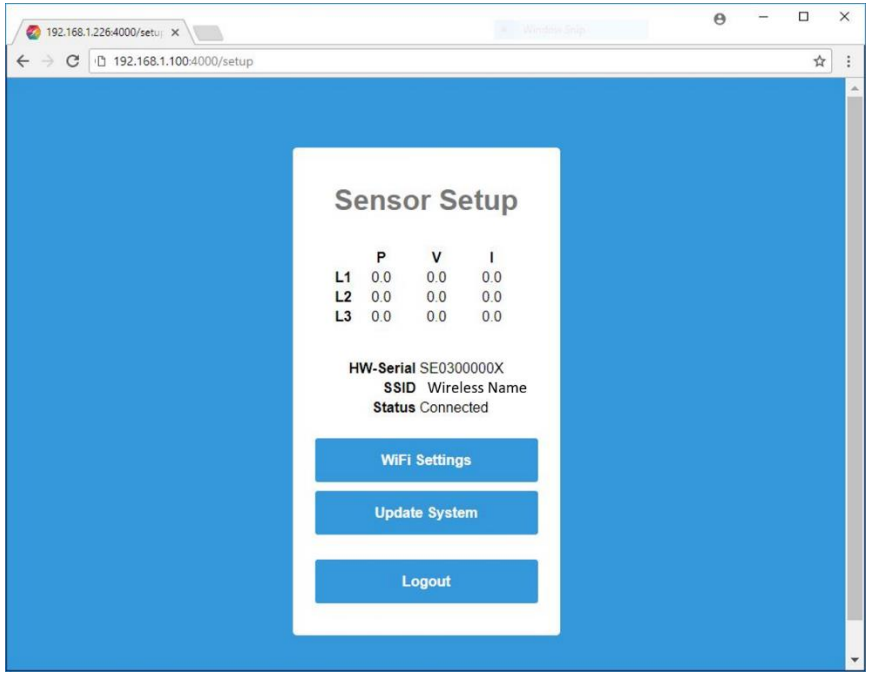
POWER Led feedback signals	
OFF	CLEMAP *One* is without current.
ON	CLEMAP *One* is switched on.
STATUS Led feedback signals	
OFF	CLEMAP *One* has no connection to a wireless network, so it creates its own hotspot (see step 2 on the next page).
Flashing	CLEMAP *One* is connected to a wireless network. It is currently searching for communication with the cloud.
ON	CLEMAP *One* is connected to a wireless network and receives data from the cloud.

Step 2: CLEMAP *One* installation with ethernet cable or connection to a wireless home network

1. Connect your smartphone or laptop to the wireless network created by CLEMAP *One* (**Wireless Network Name: Clemap-Nibble, Password: sensorsetup**). **WARNING:** If an Ethernet cable is connected to CLEMAP One, the Clemap-Nibble wireless hotspot is automatically disabled.
2. With a browser go to http://192.168.1.100:4000

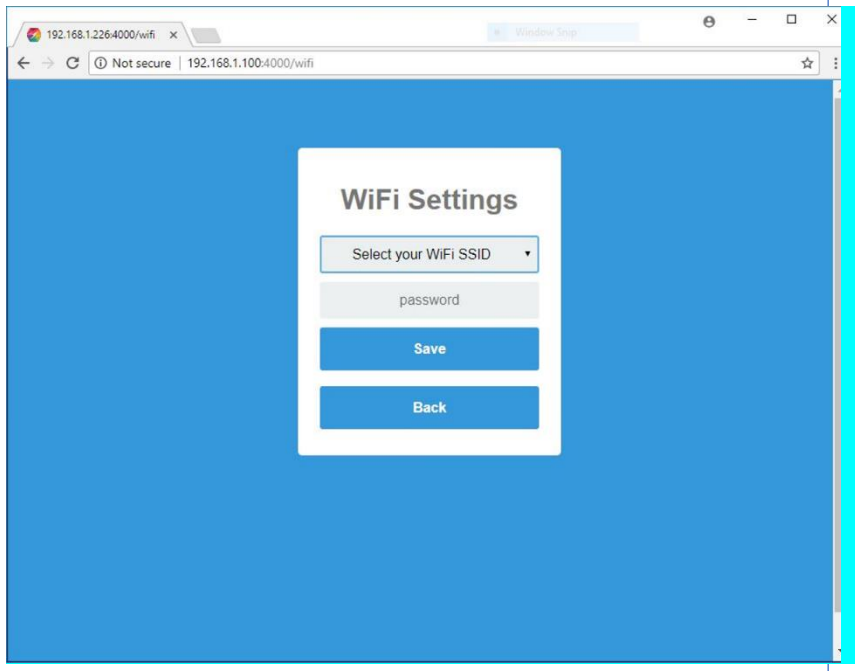


3. Registration with
   - **User: clemap**
   - **Password: Serial number on the cover (for example SE03123456)**



4. Check briefly whether the displayed consumption values (P, V and I) are realistic for the three phases L1, L2 and L3. If any doubt, contact your electrician. If a failure occurs, check the arrow direction of the current sensors, that each current sensor match to the correct voltage phase and that the current sensors are connected to the right incoming power cables.

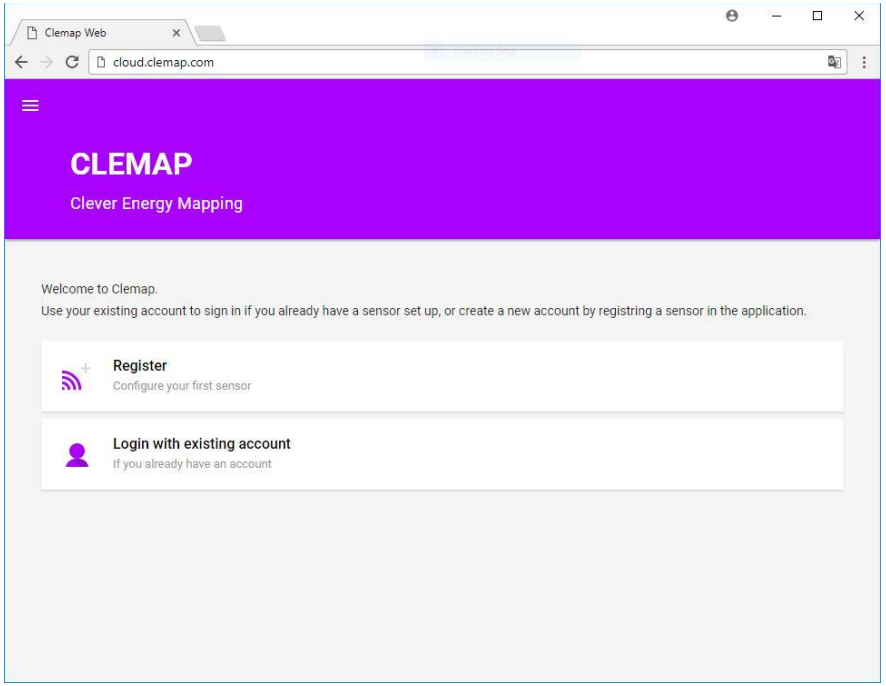
5. Depending on the installation method chosen (Ethernet cable or wireless), connect the **ethernet** cable to your CLEMAP One, or select "Wifi Settings", choose your **wireless** network from the pop-up menu and enter your wireless password. Wait for the status LED to remain on.
   ATTENTION: CLEMAP One only supports Wireless on the 2.4GHz band.

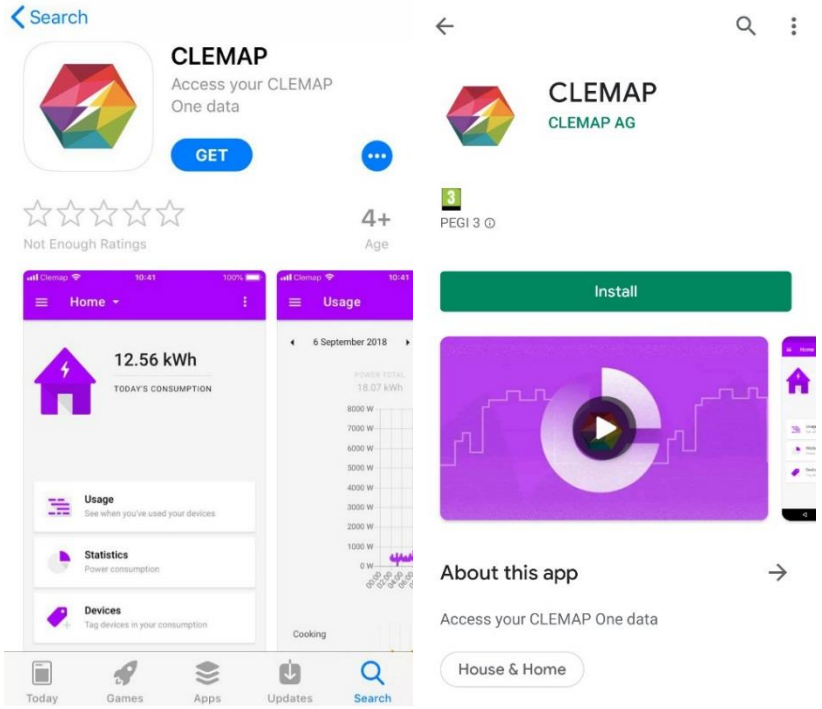


Step 3: Sensor activation on cloud.clemap.com

You will soon have full control over your electricity consumption. Now all you have to do is activate the sensor.

1. Use a browser to go to **https://cloud.clemap.com** or download the CLEMAP app from the App Store or Google Play.





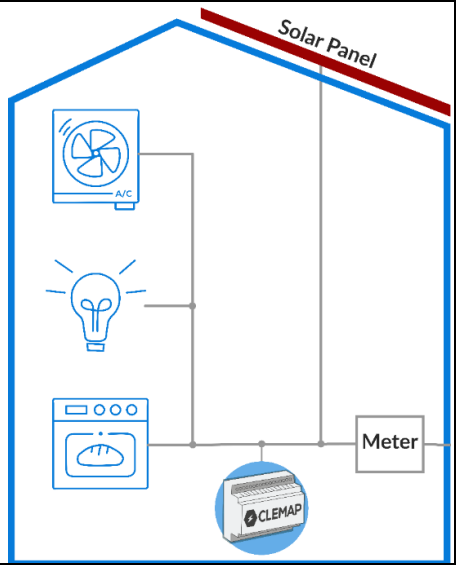
2. Select "Register" (you will need the serial number and activation code delivered with the sensor and/or written on your CLEMAP *One*).
3. During the process you will receive a confirmation email, if you can't find it, please check also your spam folder.
4. Follow the online instruction.

Once the installation is complete, the sensor starts measuring your power consumption and mapping it to the appropriate devices in your household. Over weeks, the algorithm learns to categorize the different appliance categories and automatically displays this on the web application.

FAQ - Frequently Asked Questions

What is the best way to install the sensor on my roof in the case of a photovoltaic system:

CLEMAP One can be installed as a monitoring device in combination with photovoltaic systems, but it is recommended to install it before the PV connection, as shown in the following diagram. This should still ensure correct detection of the devices, otherwise the devices on the power profile may not be detected.



CLEMAP *One* does not create a "Clemap-Nibble" wireless network:

If the sensor does not find a wireless network, it goes into discovery mode and provides its own wireless network (called "Clemap-Nibble"). It may take up to 3 minutes for "Clemap-Nibble" to appear among the available networks.
If an ethernet cable is connected to CLEMAP One, the wireless hotspot Clemap-Nibble is automatically disabled.

The password for "Clemap-Nibble" wireless network is not being accepted:

After entering the Clemap-Nibble Wireless network password "sensorsetup", the password is not accepted. Currently the sensor is busy setting up the network, try again in 30 seconds.

I can't reach cloud.clemap.com from my browser:

Check your network connection. Check that the correct wireless network has been selected and that the Internet is available (e.g. can www.google.com be reached?).
If possible, reboot the network or try again later.

During the installation (step 2) I cannot reach 192.168.1.100:4000 via my browser:

Check if you are connected to the wireless network "Clemap-Nibble".
Do a refresh of the webpage http://192.168.1.100:4000, wait 30 seconds, check again that you are connected to the wireless network "Clemap-Nibble", and try again to reach the webpage. If you still can't access the website, try opening it with another device, such as another mobile phone or computer.
Perform a hard reboot by pressing the RESET button (see picture below) for more than 3 seconds and wait three minutes.

During the installation (step 2) I can't find my home wireless in the list of available networks.

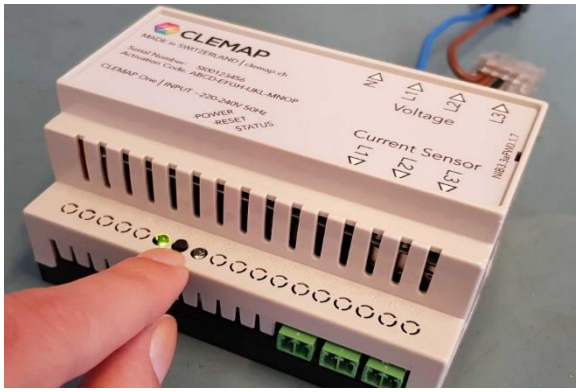
Check whether the WLAN reaches the electrical cabinet where the CLEMAP *One* is installed. If the wireless router is too far away, install a power line adapter (e.g. TP-LINK TL-WPA4220KIT) or a wireless repeater.
The sensor only supports wireless networks at the 2.4 GHz frequency, if the network is at the 5 GHz frequency, enable transmission at 2.4 GHz via the menu of your wireless router or install a repeater.

After connecting the sensor to my junction box, the FI switch jumps out.

The FI switch can compare the level of the current that flows in and out. With an intact sum, the current flowing in has to be the same as the current flowing out, the sum of the currents of the neutral conductor and phases has to be zero. If this is not the case, the FI switch disconnects the circuit, it "jumps out". If L1, L2 and/or L3 are connected after and neutral N is connected before the FI, the FI switch will notice a difference between the current flowing in and out. Check that L1, L2, L3 and the N are all connected after the FI switch.

The sensor cannot connect to the cloud (status LED flashing):

Verify that wireless router TCP ports 443, 3032, 8883 and UDP 123 ports are open. On the sensor setup page, blue webpage (Installation, Step 2), perform a soft reboot by selecting “Reboot System” and wait for 3 minutes.



Reboot System

Perform a Hard Reboot by pressing the RESET button (see picture) for more than 3 seconds and wait for 3 minutes.

Picture 1 Hard reboot

I installed the sensor correctly and registered it on the platform, but the data are not accessible on cloud.clemap.com:

Check if the sensor communicates with https://cloud.clemap.com by looking at the LED status on the sensor. If it flashes or is switched off, check whether the wireless connection is accessible even when the cabinet door is closed (install a repeater if necessary) and whether the router doors are open. → **See question: The sensor cannot connect to the cloud (status LED flashes).**
If the Status LED is permanently lit, check https://cloud.clemap.com to see if the first data has been recorded under "Usage". If this is not the case, please contact the support.

Do you have further questions about the installation? We will be happy to answer your questions through clever@clemap.ch or by support line +41 44 548 20 61.