LoWi3 manual v1. 9

P1 port LOGGER to WiFi and MQTT

LoWi3 is connected with an RJ12 cable directly to the P1 port of the digital meter and linked to the local WiFi network. This makes it possible to view the total consumption of the house via web browser on smartphone, tablet or PC up to 2 years ago.

LoWi3 manual v1.9

P1 port LOGGER to WiFi and MQTT

1.Function:

The LOWI is a P1 dongle that is plugged into the P1 port of the digital meter, and which can show all consumption data on a tablet, smartphone or laptop via your existing WiFi network. Theconfiguration is very user-friendly and already set up foraf. And make the connection with the WiFi network. The available dates are:

- Consumption import high rate
- Consumption import low rate
- Consumption export high rate
- Consumption export low rate
- Gas consumption (if measuring device is present)
- Water consumption (if measuring device is available)
- Consumption import high + low rate
- Consumption export high + low rate
- Consumption import – export (positive or negative)
- Rate (high or low rate)
- Quarter power

By default, these 10 measuring positions of the digital meter are already pre-configured.

It is always possible to change the order of the measurements, or to make them visible or invisible.

Up to a maximum of 16 measuring channels are provided in the LOWI. Each measuring channel has a storage of the last 10 days for the hourly consumption, with a resolution on measured values of 5 minutes, and the daily consumption has a storage of 12 months. The monthly consumptions have a storage of 2 years.

2.Technical characteristics:

- WiFi network 802.11 b/g/n/e/i (2.4 GHz) , which requires internet access.
- Tx power: 802.11 b: +20 dBm 802.11 g: +17 dBm 802.11 n: +14 dBm
- Rx Sensitivity: 802.11 b: -91 dbm (11 Mbps) 802.11 g: -75 dbm (54 Mbps) 802.11 n: -72 dbm (MCS7)
- Security: WPA/WPA2
- Encryption: WEP/TKIP/AES
- Network Protocols: IPv4, TCP/UDP/HTTP/FTP
- Built-in antenna.
- Built-in time clock which is synchronized daily with an extremely precise NTP clock.
- Included: RJ12-6p6 cable (power is provided by the digital meter)
- Average consumption: 5V/ 100mA

3.Pre-preparation for placing in service:

To be able to use LoWi, you must first connect it once to your WiFi home network. For this you need to know the name (**SSID**) and password of that WiFi network.

LoWi must also get a **FREE and FIXED** IP address because you enter this address in the web browser to get to the LoWi website. During the connection you also need to enter a **subnet mask**, a **gateway IP address** of your WiFi network and a **port number**.

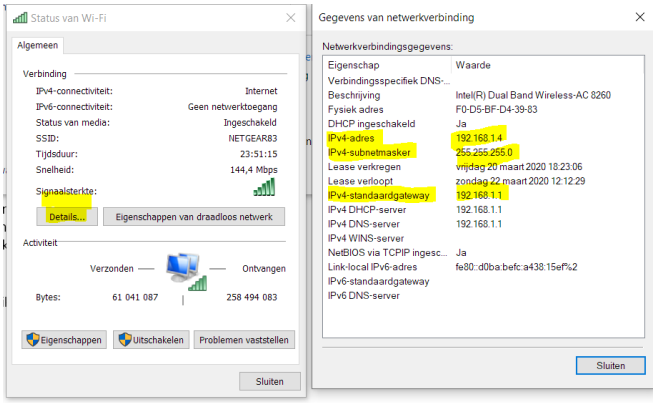
For someone who is not familiar with networking, this is a threshold, so either you call in the help of a specialist now or you use one of the following methods to determine the

network settings for your PC and thus the settings for LoWi **in advance**:

To determine network settings:

Method 1:

Connect your PC to your WiFi home network. Go to 'network and internet settings', 'network centre', 'WiFi', 'details' and you will get the networkaddresses of your PC.

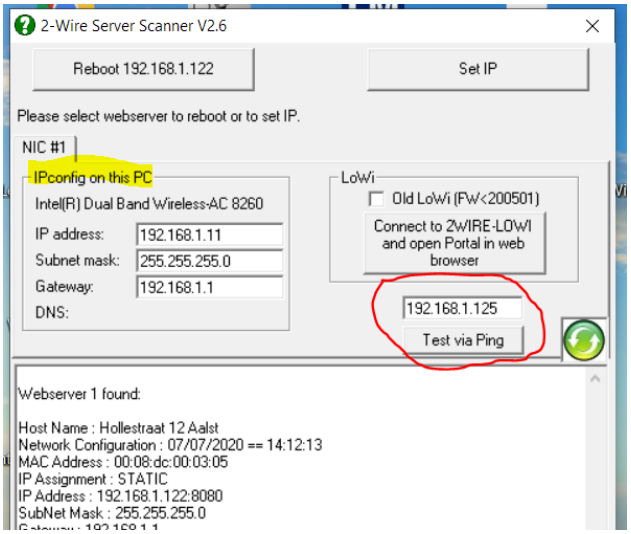


You can also largely copy these addresses for LoWi : Largely because you cannot use the exact same IP address for LoWi, adjust the '209' as below, and test via ping whether the chosen address is free.

- IPv4 address PC: eg. **192.168.0.209** becomes e.g. **192.168.0.12** 4 for LoWi
- IPv4 SUBNET mask: vb. 255.255.255.0
- IPv4 Gateway: vb. 192.168.0.1

Method 2:

Connect your PC to your home network and download and install the IP server scanner tool from 2-WIRE. When you start it, it gives you the network settings of your PC and from this you get the network settings for this WiFi network and therefore a proposal from the LoWi: https://www.2-wire.net/product/ip-serverscanner/



With the server scanner you can possibly test (test via ping) whether a self-chosen IP address for LoWi from method 1 or 2 is still available so that you can enter it via the REDIRECT method.

Method 3:

We can put the LoWi module in DHCP mode when commissioning. The router will then enter the IP settings itself.

Once LoWi has received an address via DHCP, we can then read the network settings via the IP server scanner and then re-enter them as a fixed IP address via the REDIRECT. (see below)

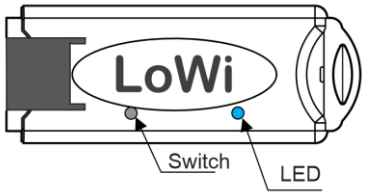
4.Pairing with WiFi:

The LOWI module MUST be within range of the WiFi network and this network **MUST** be connected to the internet.

NB Preferably ga metal objects in the vicinity of the LOWI. (metal cabinets attenuate the RF signal) .

NB Make sure that router, LoWi and smartphone or tablet are close to each other, especially during the pairing.

Connect the LOWI to the P1 port of your digital meter via the supplied RJ12 cable.



The LED will first light up constantly, and after 3 seconds will flash permanently. This means that the LOWI is not yet linked to your WiFi network.

Linking with WiFi can be done by assigning a fixed IP address via REDIRECT page

4.1 Linking via the re-direct web page:

The LED is still flashing permanently. Dnow yank on the switch for about 5 seconds until the LED stays on continuously.

The LOWI is now an '*access point*', with the name '2-WIRE-LOWI'.

NB If LoWi is already connected to an accessible WiFi network and you still want to change the settings, press the switch *within 3 seconds after startup (or immediately after the first* LED flash*) for 5 seconds until the LED is continuously lit* to get *to the "access point" status. Possibly on your PC in network settings first choose "LoWi WiFi network do not remember" from your previous link.*

Choose 'networking' on your laptop or tablet and if it works properly, the list should now say: '2-WIRE-LOWI'. Select this network. If you are asked for a key: '**adminLOWI**'.

Automatically you will be redirected n a maximum of 1-2minuten to a login screen (REDIRECT screen) in your web browser.

REDIRECT page:

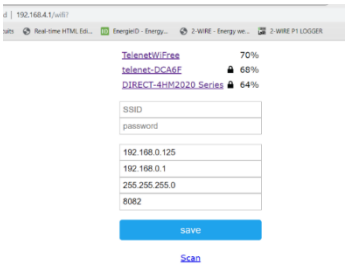
NB If the redirect is not done automatically surf to 8.8.8.8

NB If the web page *is only partially loaded, please wait or reload page.*

NB Ldoes not immediately try the re-direct then with again with smartphone or tablet. If it still does not work, the WiFi signal may be too weak.

4.2.Enter IP data on the REDIRECT page.

You can now enter the network data from point 3:



Click **on** '***Configure WiFi***' and a list of networks will appear in your area. You can now select your WiFi network from the list (SSID), and also enter the password of this network.

Default IP addresses have already been entered and you now have to adjust them **according to the settings of your own WiFi network**.

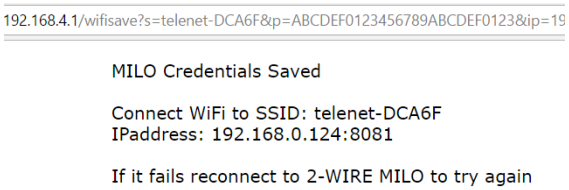
Default settings

- IP address: 192.168.0. **125** (your LOWI webpage)
- Gateway: 192.168.0.1 (required for internet access !)
- Mask subnet: 255.255.255.0
- Port No: 8082 (also required for port forwarding in remote control)

After entering **SSID**, **password**, **fixed IP address, SUBNET mask, Gateway** and **portummer**, which you have determined via method 1 or 2, press SAVE. And a few moments after that, this screen appears.

Your laptop must now be brought back to the existing WiFi network.

On your laptop or tablet, go back to 'networks' and select back your normal network if this has not happened automatically.

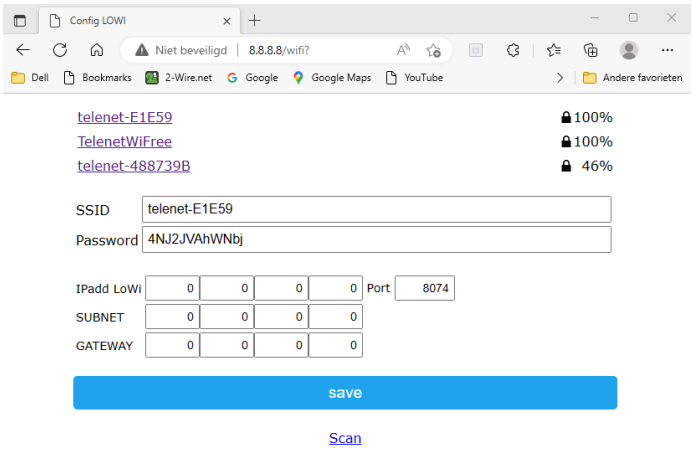


Network switching can sometimes take up to 10 seconds.

Now surf to the set IP address and port number: enter in address bar of your browser, eg. 192.168.0.124:8081 and you end up on the LoWi website.

4.3 To determine a fixed IP address using DHCP:

If you want your router to assign an IP address itself, you must set the IP address LoWi, Subnet and gateway to 0.0.0.0 AND enter a port number **yourself** e.g. 8082;



After you press SAVE, a FREE and FIXED IP address will be assigned **.**

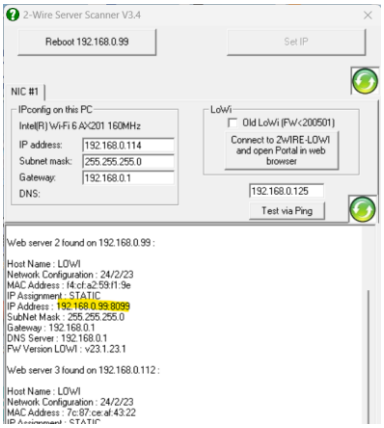
To find out the new IP address there are 2 methods:

1. Restart and press the button for approx. 5 seconds until the LED is constantly lit and go

to the REDIRECT again using the methods described in point 4.2. a. On the REDIRECT page the new IP address will now be entered. (if at least your gateway address was ok)

Unfortunately, you now have to **fill in your SSID and password and press SAVE.**

2. Download the server scanner on our website. Press the round green button a few times. If the LOWI appears in the list, you can write down the IP address and port number found.

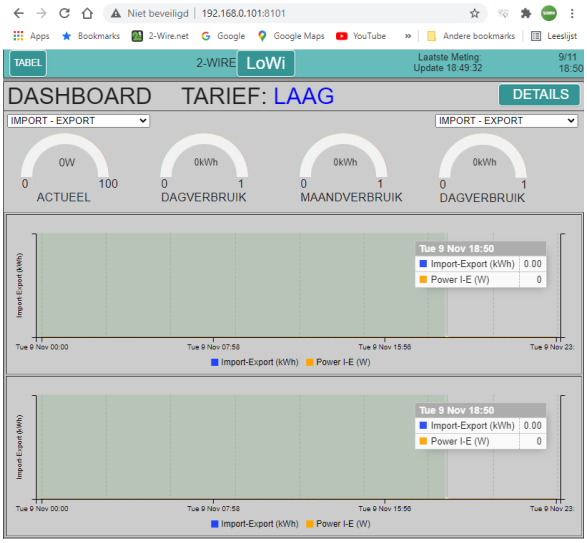


5. LOWI DASHBOARD:

Now surf to the set IP address and port number (enter in address bar of your browser, eg. **192.168.0.226:8082**)
The port number must follow with a '**:**' decimal point after the IP address !

NB In your browser you may have to check if 'SETTINGS - JAVASCRIPT' is turned on !

A screen should appear as below:



This is the 'DASHBOARD'. Here you can see at a glance the main measurements:

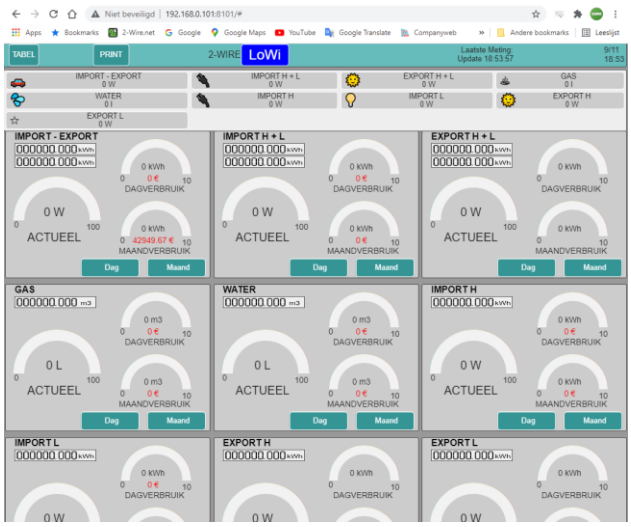
The current power, the daily consumption and the monthly consumption. If there is export (PV cells), these measurements can be either positive or negative (energy surplus).

If a gas meter is connected to your digital meter, the gas consumption of the current day will also be shown.

Below these measurements, 1 or 2 graphs will be shown with the daily course of consumption. The resolution is 5 minutes. You can 'hove' over the graph to see the measurements in detail.

NB The rolling graphs on the dashboard and current capabilities are continuously updated.

You can see even more details when you click on the 'DETAILS' button.



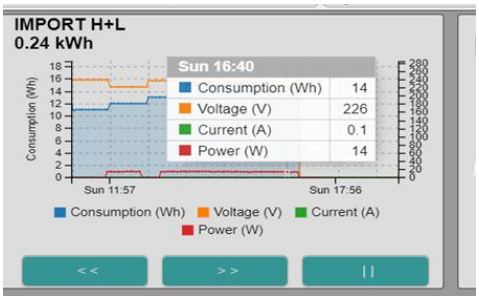
Here you can see the 10 pre-configured log channels. You can scroll the page or press the 'shortcut-buttons' to go directly to the desired channel.

Each measurement is easy to understand: There is an up-to-date power to read, the daily consumption and the monthly consumption. By clicking on 'Day' you can see all consumptions per hour up to 10 days ago.

By clicking on 'Month' you can read the daily consumption and the cost price up to 12 months ago.

Under the name you will also see the current meter reading(s), just like on your digital meter.

After an hour you can see the first hour graph and after a day you can see the first daily graph.



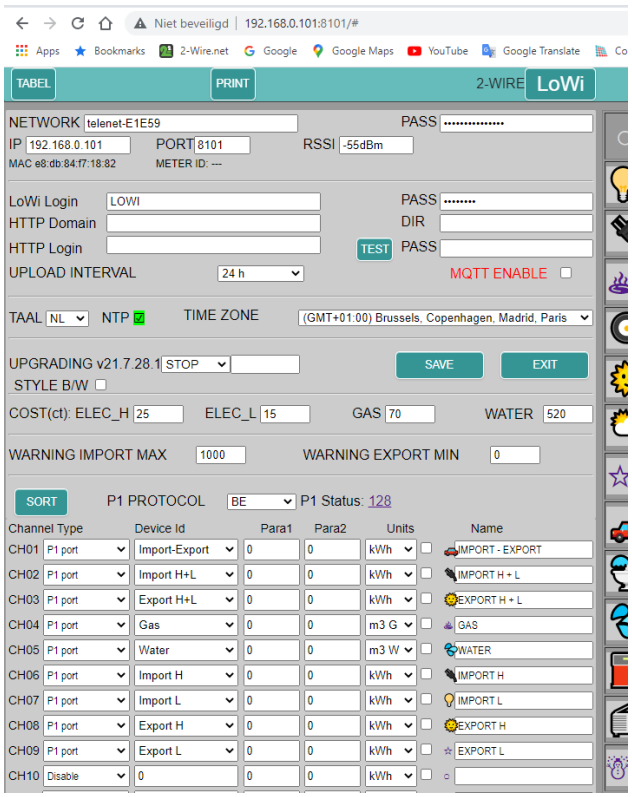
The daily graphs have a resolution of 5 minutes ! You can 'zoom in' with the "scroll-wheel" of the mouse.

Clicking on 'LOWI' will take you back to the 'DASHBOARD'.

6.CONFIGURATION:

Press 'LOWI' at the top and now you will see the control panel.

NETWORK ,PASS, IP, PORT: cannot be changed here. This can only be done through the methods mentioned under point 4. Pairing with WiFi.



RSSI: reception strength of WiFi signal (the lower, the stronger) From -75dBM the reception is very weak, at -80dBm there is no connection anymore, see if you can improve this.

LoWi Login and PASS: this is the login when you want to log in outside the house. By default this is 'LOWI' and '17.1.1.1 ', but can be changed by you (max 26 characters)

NB If you only want to work in the local WiFi network, you do not need to enter a password to access your web server. However, if you want to use the *LOWI* 'remotely', *you have to, but first set up a 'portforwarding' in the modem with the port number used. (if no knowledge: ask a specialist , see also FAQ on our website)*

NB For each change, you must always click on 'SAVE' and provide a confirmation to undo any changes. The login is always 'adminLOWI' and cannot be changed.

HTTP Domain and DIR: see annex at the back

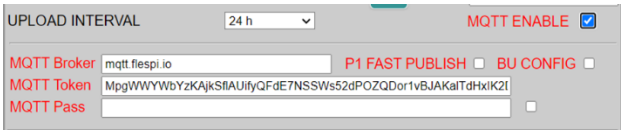
MQTT broker en Token:

if data needs to be sent to/from external modules (REMI-LOWIv3-MEMOv3-WiFi Plug-THEO), this can be done via an 'MQTT-BROKER'.

This is a server that can receive data and pass it directly to 'subscribers'

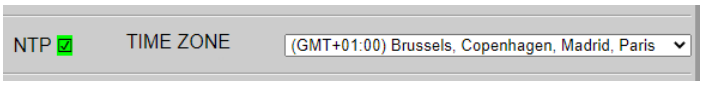
On the 2-wire website you can buy a Token (url+ token) or you can set up your own broker.

Further explanation will be given later.



LANGUAGE: choice of NL,FR,EN,DU (for control panel the language always remains English)

TIME ZONE: for the time clock (NTP) to work properly, the time zone must be selected so that the correct hour is displayed. (standard Brussels)
If the check mark turns green, you are connected to the internet.



UPGRADING: get the LOWI kan new firmware (improvements, bugs, new applications). At 'START' (and confirmation with 'adminLOWI') it is tested whether new

firmware is present on the 2-WIRE server. If so, the LOWI will upgrade and restart after about 1-2 minutes. If no new firmware is available, the timeline stops immediately.

*NB During an upgrade you may not interrupt this process ! Also make sure you have a **stable and good** WiFi connection if you want to upgrade!*

NB If the upgrade fails, check if a firewall is turned on and temporarily disable it. Also check your modem's setting to make sure that "block fragmented packets" is not set to ON.

NB Manual youcan pgraden by pressing the switch from LoWi (with internet connection) for approx. 5 seconds *until the LED is continuously lit. After 1-2 minutes of upgrade, LoWi restarts on its own.*

BETA: If you check BETA and then upgrade, you can try out the latest test version. Once in the BETA version, you can always return to the public version by unchecking BETA and upgrading it again.

After reload page, the status of the check mark indicates whether you are in BETA or PUBLIC version.

STYLE B/W: switches between light and dark layout mode

SAVE: every change must be confirmed with 'SAVE' + login (adminLOWI). If you do not want to make a change, choose 'CANCEL'

EXIT: back to the home page.

COST: energy prices for electricity High and Low Rate (euro cent/kWh), gas and water (euro cents per m3), to be adjusted yourself according to your rates.

*NB **Do NOT** use commas in the number fields!!*

PROTOCOL: here you enter the type of digital meter to which the LoWi module is connected. Clicking after 'P1 Status' displays the P1 datastring and you can then paste it into a word document.

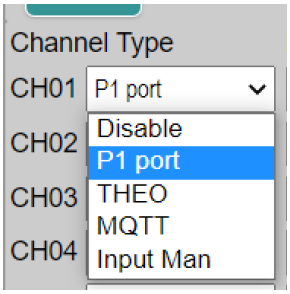
CHANNELS: up to 16 channels can be logged for 2 years.

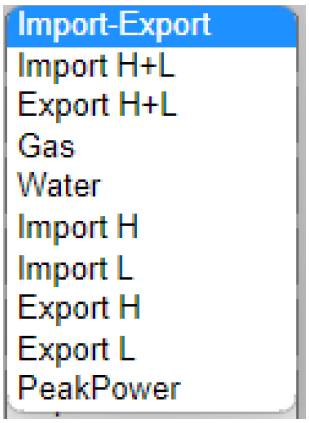
Each channel can be a different type:

- P1 port
- THEO (via http)
- MQTT (REMI-LOWIv3-MEMOv3-PLUG-THEO)
- Input Man

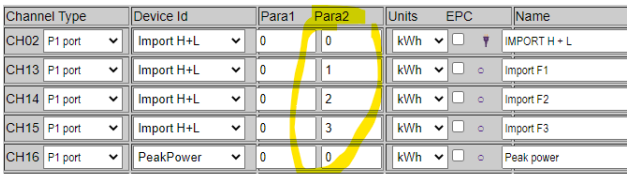
Afterwards you can enter the 'Device-Id'. This is in function of the Channel Type':

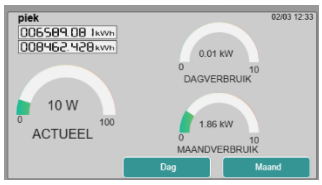
P1 port: selection according to desired data with 'Device Id':





Para1 and Para2 remain at 0 for total consumption + power and power over the 3 phases, or Para2 at 1, 2, 3 for total consumption + power and current of the respective phase. The 'Units' in function of the data: kWh, m3 gas or m3 water.





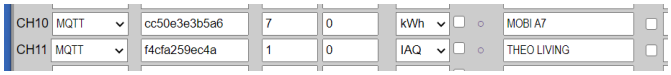
Peakpower from the Belgian digital meter displays current quarter power and the moondpiek.

THEO (via HTTP): see module 'THEO'

MQTT: Ifan MQTT broker is set up, one can receive data from a REMI, LOWIv3, MEMOv3, PLUG, THEo.

Under 'Device Id' the 'MAC address' of this module must be entered, without colons. (always 12, only lowercase allowed)

Under 'Para1' the channel number of this module must be filled in:



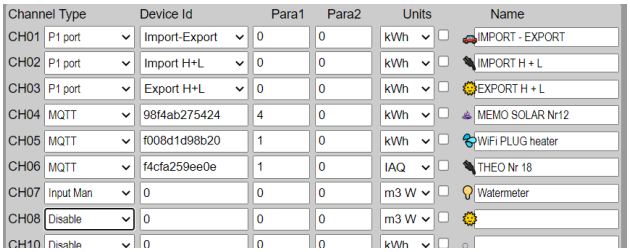
With '**THEO**' 'Para 1' is always 1 and units = IAQ, With a **LOWIv3, ReMI or MEMOv3,** this must be the desired log channel according to the configuration of this module.

(Log channels LOWI-REMI starts from 1, at MEMOv3 from 0)

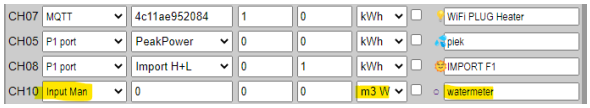
Para2 always remains 0. Units depending on the log channel.

MQTT Plug: Under 'Device Id' the 'MAC address' of this module must be entered, without colons. (always 12, only lowercase allowed)

Under 'Para1' you always have to enter 1, and 'Para2' always 0.
In LoWi you can only read the plug **DO NOT switch** off. You can switch gears with ReMI or MEMo3.



MANUAL COUNTERS: With 'Input Man' you can add an external manual meter along with a name for that meter. Here you can freely choose the units between kWh, m3 gas or m3 of water.



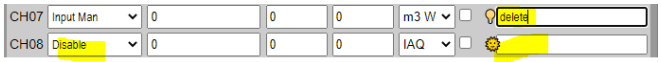
NB With the manual counters you can enter one counter reading per day and the input date will then be automatically supplemented by LoWi. If you do it more than once a day, the last one always overwrites the previous counter reading. Counter readings do not have to be entered daily, but the more inputs, the greater the resolution.

DISABLE: A channel that is not measured

NAME: this is the name you give to each log channel (max 16 characters)

NB If you no longer want to use the external log channel, you can enter the word '***delete***' *in the name field, then press 'save'. This allows you to clear the logs.*

Then 'Channel Type on 'disable' and the 'NAME' and *press 'SAVE' again and this will also clear the channel after you have cleared all the logs.*



Perform this action only channel per channel.
BUT please note: *Both graphs of this measurement and channel are erased. Once confirmedby pressing SAVE you cannot undo this action!*

EPC - VERWARMINGSENERGIE

Channel 17 calculates the EPC value of a building. To do this, enter a name in channel 17 in the 'Name' field and a heated floor area in the 'Surface' field. Then tick all the energy channels that contribute to the heating of the building because these are added together. (check mark to the right of 'UNITS' field)

In the overview table under 'TABLE' you will find the total annual energy for heating in KWh at the bottom. Only after 12 months of logging do you get a 100% measured value.

There is also a monthly rolling calculated EPC value in Qh/m². Again, only after 1 year do a 100% measured value log.

SORT:

If you want the order to be changed, you can do this by clicking on the 'SORT' button. (this button will now turn red)

Hover over the channel you want to move, now click the left mousebutton, and drag it up or down to the desired position. Repeat for any other channels.

When you have done it, press 'SORT' again, and press 'SAVE'.

When all channels are adjusted according to your wishes, press 'SAVE' + login.

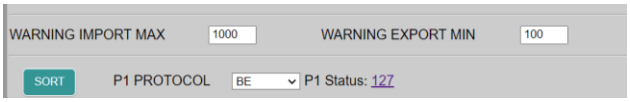
All data is now saved and you can test everything:

ICONS: each channel can also be made more recognizable in the 'shortcuts' by adding an 'icon' to the name.

- Click on the filed small icon that represents the name. It lights up red.

- Then click on an icon of your choice from the right table. Keep up the good work with other channels.
- This completes the configuration; Do press 'SAVE' to save everything!

THRESHOLDS



With **WARNING EXPORT MIN** you can enter the minimum injection power from when the LED on the LeON or THEO module flickers green. Only at 0 Watt injection does the green LED switch back to red or blue. The "LoWi" button at the top also follows this threshold.

At **WARNING IMPORT MAX** you can enter the threshold for maximum consumption. Above the threshold, the LED on the LeON or THEo module will flash red or blue. This way you know exactly when you have a peak consumption. The "LoWi" button at the top also follows this threshold.

Press 'EXIT' to proceed to the 'dashboard' (measurements panel).

7.OVERVIEW DETAIL MEASUREMENTS:

Press the 'DETAILS' button in the DASHBOARD' page.

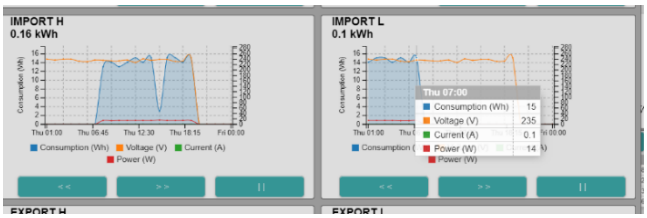
The DETAIL page will now load according to the configuration done. At the top you will see 'shortcuts'. This gives you a quick overview of all channels, with icon, name, and current consumption (these names are red)

Pressing a name will scroll the screen to the desired place. Among the shortcuts

each channel stands with a number of measurements and keys:

The '7 segment displays' give the current state of the measurements. This includes the current capital, depending on the rate (high or low rate). This measurement is adjusted every 10 seconds. On the right is the daily consumption and the monthly consumption, with the approximate cost price.

CHARTS:

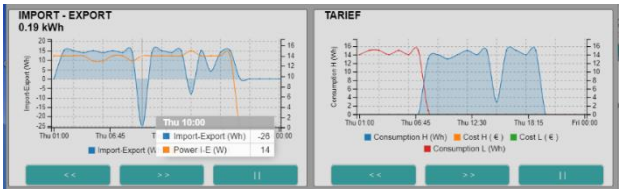


- Day: graphic overview per hour up to 10 days ago
- Month: graphical overview per day up to 1year ago
- DAY: up to 10 days back with keys '< <' and '> >', end graph = '| |'
- Over a graph 'hoveren' shows a table with the measurements at that moment (V-A-W-Wh)

- MONTH: up to 12 months back with keys '<<' and '>>', end of graph = '| |'
- Over a graph 'hovering' shows a table with the measurements at that moment (kWh and cost)

SPECIAL MEASUREMENTS:

IMPORT-EXPORT, TARIFF



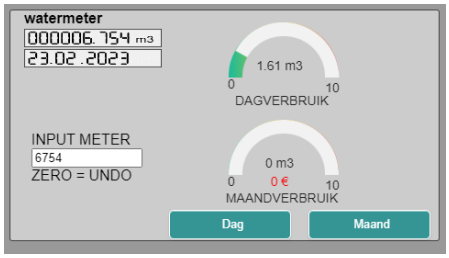
Note that with 'IMPORT-EXPORT' all measurements can go negative. (negative = more exports than imports)

MANUAL COUNTERS:

With this type of counters you can enter a meter reading of, for example, rainwater, every day or every week or occasionally manually. LoWi then pastes a date on the input itself and then processes these values in the day and monthly charts.

Example:

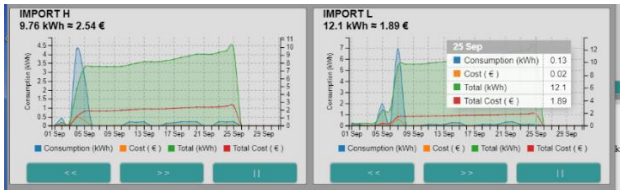
Water counter : enter consumption in liters because LoWi **does not allow commas**. (For energy meters fill in Watts).



For example, enter 151.12 m³ as a number WITHOUT decimal point so: **153120** liters

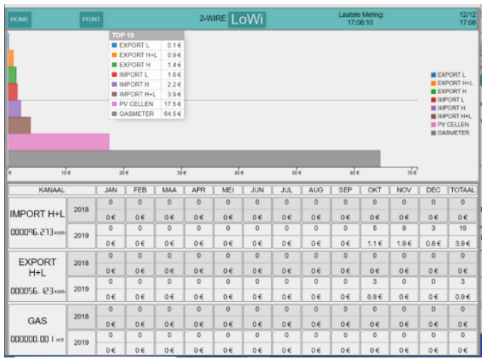
NB In manual meters you could enter *a co-heating* g *which contributesagt to the EPC calculation*

TABLE: at the top left is the 'TABLE' key. Click



on this button and then the 2-year overview will appear

Graphically, the consumers are shown and arranged according to the energy cost. About 'hovering' shows the cost from New Year.



Below the graph you can see per channel and per month the consumption and cost of the current and previous year. This way you can compare your consumption with last year.

Clicking on 'HOME' returns to the dashboard.

OPMERKINGIN:

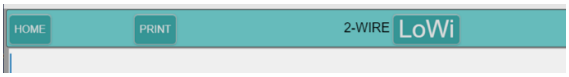
Internet is **NECESSARY** for proper functioning (time clock, upgrading, graphs)

If the WiFi network should fail and then start up again, you may also have to restart the LOWI if there is no longer a connection on the web page: either connect power off and back, or see if it is not shown on the WiFi networks (2-WIRE LOWI)

Re-login may then be necessary (SSID and pass must be re-entered)

PRINT CONFIGURATION / AROVERVIEW:

When you are in the menu 'CONFIGURATION' or 'ANNUAL OVERVIEW', there is a 'PRINT' button at the top of the menu bar.



You can print out the **annual overview** or the complete **configuration** or save it on your PC. The format is PDF.

EXPORT DATA

With the 'PRINT' button on the page 'DETAILS' you can easily export data to Excel. The data can be day logs or month logs just like in the data used in the daily and monthly graphs' . The format and structure of this file is identical to the file created in an http client upload.

8.PROBLEM SOLVING

MANUAL UPGRADE:

Exceptionally, it can happen that an error has occurred in the JavaScriptof LOWI. When you load the webpage, but do not respond to any '*key'*, an error may have occurred during startup. Reloading the firmware can offer a solution: **Without interrupting the power supply**, you yank the reset button and keep pressing for about 3 to 5seconds until the LED stops flashing and is constantly lit. Now release the key.

The LOWI will now connect to the 2WIRE upgrade server and perform an upgradee of the LOWI firmware.

After about 1-2 minutes and a number of flashes , the LED should turn off. As soon as the LoWi shows a heart-beat again, you can reload the page and everything should work normally again.

> *NB If there is no response yet with the 'buttons'* in *the web page, check in your browser whether 'JAVASCRIPT' is turned on!*

LED MEANING:

By following the status of the LED you can know when something goes right or wrong:

Normal start-up :

When connecting RJ12 cable:

- LED lights up for 3 seconds (during this time you can change the existing network by pressing Reset),
- 1 second off, then flash slowly several times until the set network is found.
- When the LOWI is connected to this network , the LED will flash 5 times quickly and go out.
- The LOWI will then synchronize the internal timer with an NTP server. (this can take up to 5 seconds) When the time clock is in order, the LED will flash 5 times quickly.
- Now the LOWI is ready and you can reload the page.
- Heartbeat: Depending on the rate (high/low), the LED will light up briefly every 3 seconds at high rate, or every 10 seconds at low rate

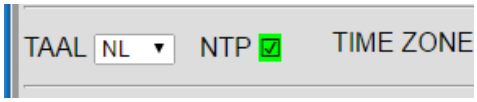
Wrong boot:

1. At start-up, the LED lights up for 3 seconds and afterwards the LED keeps flashing continuously slowly (every

second), then no network is set up or found!

If you had previously configured a network, check whether the WiFi router is actually on. If the LOWI cannot connect, it may be outside the WiFi range.

Also, check that your chosen network is indeed connected to the Internet.
When configuring, you can check the NTP: in addition to the language version, NTP must light up green and that also means that LoWi is connected to the Internet.



2. At start-up, the LED lights up for 3 seconds and then follows a repeating rhythm "10 seconds off and then briefly quick flicker", "10 seconds off and then briefly quick flicker",... then there may be WiFi but NO communication with the digital meter.

In this case, possibly test the RJ12 cable, perhaps error in the protocol of the meter,...

SUMMARY COMMISSIONING VIA REDIRECT:

- Must be known: your **WiFi SSID** and **password** (e.g. telenet-DCA6F, pass abcdef....)
- The **IP range** that your router is set to and the subnet **mask** (you can request it via your modem) (default gateway 192.168.0.1, subnet 255.255.255.0)
- Connect the LOWI to the P1 port of the digital meter.
- At the first commissioning, the LED will continue to flash. This means that no WiFi network is known yet.
- Press the button until the LED is constantly lit.
- Go to your WiFi network settings on laptop or tablet.
- Choose '2-WIRE LOWI' network
- Wait for the setup page to appear in your browser or surf to (IP 192.168.4.1 or 8.8.8.8)
- Click on 'Configure WiFi'
- Select your network (= SSID)
- Enter your password
- When the IP address is in the same range as your router: do not change anything except the port number. It must be greater than 1024 and less than 60000 (default 8082)
- Send this information : SEND
- Note IP address and port number
- Change back your WiFi network to your existing network.
- Surf in your browser to theknown IP address + port number (e.g. 192.168.0.125:8082)

(creating shortcut on your worksheet is very useful!). God bless you!

PS. ALSO TESTS THE 'LeON' and 'THEO' module, which displays the status of the tariff on a USB stick, via an RGB LED.

PS Via MQTT you can connect LoWi to smartplugs to measure the consumption of household appliances.

ATTACHMENT 'ERASE 1 CHANNEL

In the configuration replace the chosen name in the 'Name' field with the word '**delete**' and then 'SAVE' with password '**adminLOWI**' and the logs of that channel are deleted and then the 'NAME' is filled in again.

If you want to clear not only the logs but also the channel, select 'disable' at CHANNEL TYPE, then clear the name and press "SAVE".

If multiple channels need to be cleared, the above procedure for each channel must be **performed in turn** .

ATTACHMENT 'CLEAR ALL LOGS:253

Only do it when you want to use the LOWI at a new location (with a **different digital meter), or want to (re)start with a 'clean slate'.**

If you want to delete all existing logs, this can be done in a simple way:

1. Go to the control panel, and set the **consumption cost of GAS AND WATER to 253.** (Use the TAB key to go to WATER.)
2. Confirm with the password 'adminLOWI'.
3. The LED on the LOWI will now light up for about 40 seconds and during this process **DO NOT INTERRUPT LoWi.** Now a 'FORMAT' will be executed and all settings will be reset as fixed by 2-WIRE. During this process, the website will not be accessible.
4. Normally, the network settings (SSID, password, IP address and port number) will be preserved
5. Afterwards, LoWi will restart itself.

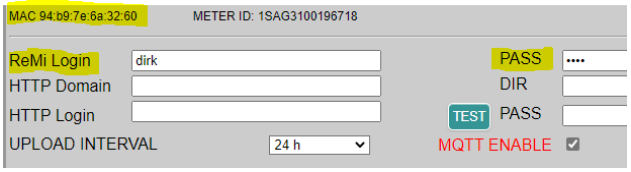
ATTENTION: YOU CANNOT UNDO THIS ACTION AFTERWARDS!

ATTACHMENT 'REMOTE ACCESS'

Within the local network, one can reach LOWI by entering the IP address + port number in the web browser. (e.g. 192.168.0.123:**8085**). However, if you also want to be able to reach your LoWi module from outside the house, you can set up a port-forwarding in the internet modem. FAQ E2 on our website explains how this can be done in a telenet modem or you can also take an account with a provider of Dynamic DNS address (eg. https://www.noip.com/remote-access).

It comes down to drowsing from the outside to the modem IP address + LoWi port number (e.g. http://78.20.20.19:8085) and the modem then links your port number to the local IP address (e.g. 192.168.0.123:8085) of your LoWi module.

If you surf from outside the house to LoWi, a login and password will be requested. You can set this login and password yourself, but only if you surf locally to the LoWi setup page.



If you also want to change the LoWi configuration remotely, you give 'loginMAC' and 'MAC' as password: eg

- Login: Dirk**94B97E6A3260**
- Pasw: **94b97e6a3260**

HTTP SERVER ATTACHMENT

All log data can also be sent to an HTTP SERVER. This data can then be further processed for analysis of consumption.

In the configuration page you can set the desired interval via UPLOAD INTERVAL. At the setting 24h the sending will be done overnight between 00:00 and 01:00 (ifv Mac address).

NB Help with setting up your own http server is NOT intended for laymen or is not included in the purchase price of LoWi. HTTP integration is intended for providers of cloud platform services such as www.energieID.be. With these people you can then use their LoWi integration, whether or not for a fee. Data can also be exported via the 'PRINT' button.

HTTP:

- Under 'HT**TP Domain**' the IP address or domain name of the server is entered.
- **If it is an HTTP server, the address (URL) MUST begin with http://**
- **No login or password must be entered at HTTP, as a different type of security has been set up here (see later)**
- Optionally, the folder (**DIR Name**) can be filled in where the file should be written.

Once the HTTP upload is created, the data is saved (**SAVE),** and you can press '**TEST**'. If all server data is ok, a response is received: if 'FAIL', wrong settings have been used.

If in order, there will be a file on the HTTP server with the log data of this day, up to the current hour. (so you can also use this 'TEST' to send the daily file directly to the server)

FILENAAM:

The name of the file is 'Daylog' + date and time:

The extension is '.txt', and the data is encoded with 'base64'

E.g. **Daylog2019_13_10_26_42.txt** (date = 13/10/2019, time = 10:26:42)

ENCRYPTION

In case of http posts, the MAC address in the URL is sent legibly. The remote server can do an initial test and see if this MAC address is available in its directory list.

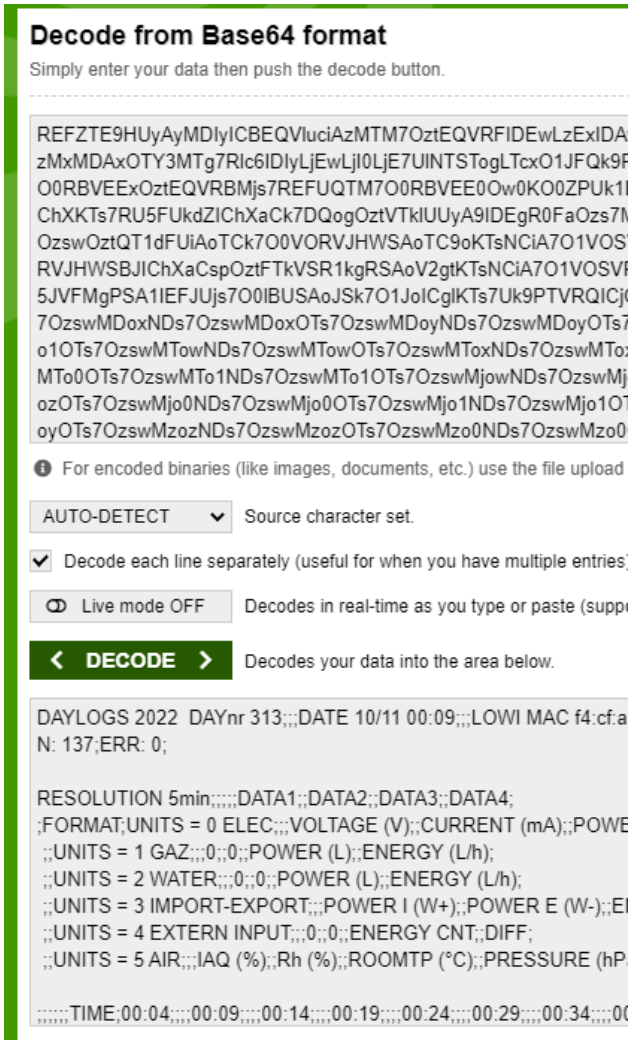
The http file in JSON format consists of a header and a body.

The header is encrypted by LoWi with a 'secret key'. The code key for the de-and cryption can be obtained from 2-WIRE after signing an NDA or 'confidentiality agreement'. This header can be used 'as a certificate' to have extra certainty about the identity of the sender.

The Body contains the measurement data in base64 format and can easily be converted to a readable format.

E.g. with this online decoder:
https://www.base64decode.org/

Open the file with notepad and then paste the body part into the input field after which the readable text appears.



DATA:

- The data can be imported with Excel (separation ';')
- The first line includes the day number 'DAYnr' (0-365), then the date and time of dispatch.
- Next, the MAC address and ID number of the digital meter.
- The resolution of the logs is fix 5 minutes, so there are 12 log dates per hour or 288 logs per day.
- Each log contains 4 data per 5 minutes, so that on a line there are 288 x 4 = 1152 data.
- How to read the data is explained in the following 4 lines (FORMAT – UNITS).
- Each line includes the channel name, the serial number assigned, the log type 0-4, the meter reading at 00:00 and the meter reading at 23:55
- Afterwards it says 288x 'DATA1 – DATA2 – DATA3 – DATA4'. The meaning of this data is explained according to the log type. (e.g. Voltage, Current, Power, Energy)
- Note that under 'ENERGY' is the **difference** between the current and the previous measurement.
- With the PRINT button in details you get a preview of the file.
- Unlike MiLo, the serial numbers in this file are displayed as '0'.

NB The 'units' are determined according to the type of measurement. 'With manual counters, the units can be kWh, m3 gas or m3 of water.

An addition (>22.10.24) to the http file just after the meter ID:

- *FW: 22.10.24.1*
- *RSSI: 68*
- *REBOOT: 24/12:36 (date-hour-minute)*
- *CONN: xx (number of shipments, after 255: 0)*
- *ERR: xx (number of failed connections)*

2-WIRE 2023