LoWi3 manual v1. 7

P1 port LOGGER to WiFi and MQTT

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

LoWi3 manual v1.7

P1 port LOGGER to WiFi and MQTT

1.Function:

The LOWI is a P1dongle 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 alreadypreset. 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
- Consumption of gas (if measuring device is present)
- Consumption of water (if measuring device is present)
- Consumption import high + low rate
- Consumption export high + low rate
- Consumption import – export (positive or negative)
- Rate (high or low rate)

By default, these 10 measurement 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 measurement channel has a storage of the last 10 days for the hourly consumption, with a resolution of 5 minutes, and the daily consumptions have 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 needs 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 supply is provided by the digital meter)
- Average consumption: 5V/ 100mA

3. Preparation for commissioning:

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

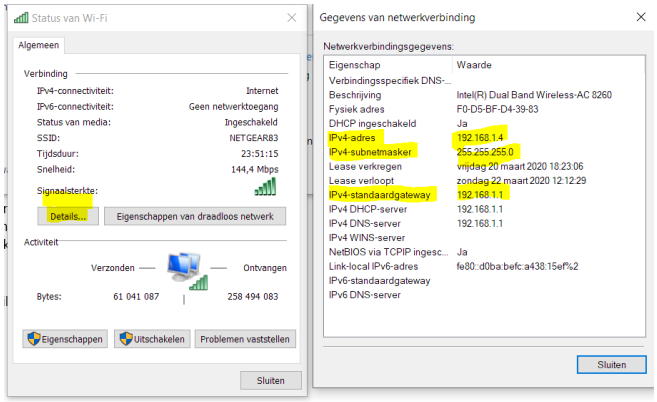
LoWi must also get a **FREE and FIXED** IP address because you enter this address in the web browser to get to the LoWi website. During the connection you also need to enter a **subnet mask,**a **gateway IP address** of your WiFi network and a port **number.**

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 methods below to determine the network settings of your PC and thus the settings for LoWi in **advance:**

To determine network settings:

Method 1:

Connect your PC to your WiFi homenetwork. Go to 'networkand internetsettings', 'network and sharing centre', 'WiFi','details' and you will get the networkaddresses of your PC.

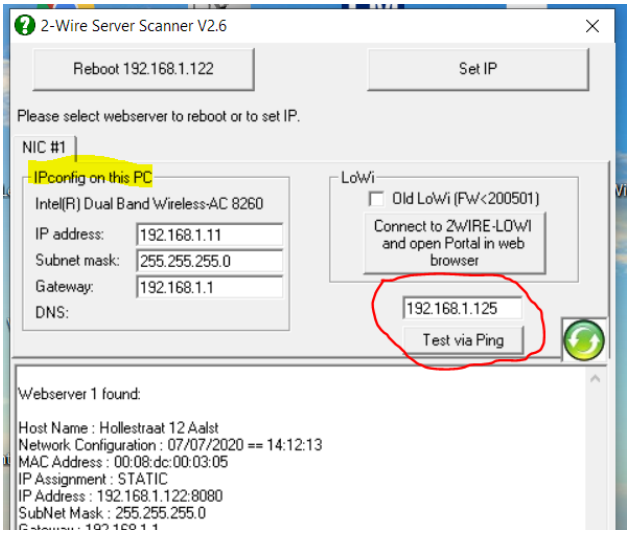


You can also largely take over these addresses for LoWi:

- IPv4 address PC: eg. **192.168.0**.209word e.g. **192.168.0.**124 for LoWi
- IPv4 SUBNETmask: 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 up, it gives you the network settings of your PC and from this you get the network settings for this WiFi network and thus a proposal from the LoWi: https://www.2-wire.net/product/ip-serverscanner/



With the server scanner you can possibly test (test via pin) 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.

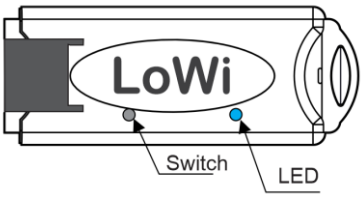
Once LoWi has received an address via DHCP, we can then read the network settings via the IP server scanner and then re-enter them via the REDIRECT as a fixed IP address. (see below)

4.Connecting to WiFi:

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

> *NOTE Preferably ga metal objects* in *the vicinity of the LOWI. (metal cabinets weaken the RF signal) .* ***Make sure that router, LoWi and smartphone or tablet are close to each other.***

Connect the LOWI to the P1 port of your digital meter via the supplied RJ12cable.



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

Linking with WiFi is possible by assigning a fixed IP address via REDIRECT page

4.1 Linking via the re-direct web page:

The LED is still permanently flashing. Dnow pull about 5 secondsn on the switch until the LED remains continuously lit.

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

NOTE If LoWi is already connected to a *reachable WiFi network and you still want to change the settings, press* the switch *for 5 seconds within 3 seconds* after startup (or immediately after *the* first *LED flash) until the LED is continuously lit* to get *to the "access point" status.*

Choose 'networks' on your laptop or tablet and if it works well, the list should now say: '2-WIRE-LOWI'. Select this network. When asked for a key (password): 'adminLOWI'.

Automatically, you are redirected to a login screen (REDIRECT screen) in your web browser for a maximum of 1-2min uten.

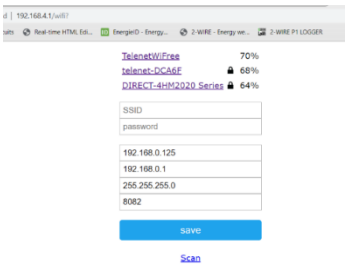
REDIRECT PAGE:

NOTE If the redirect does not happen automatically, surf to *8.8.8.8 yourself*

NOTE Lukt the re-direct not immediately try again with smartphone or *tablet. If it still does not work, the Wi-Fi signal may be too weak.*

4.2.Entering IP data on the REDIRECT page.

You can now fill in the network data from point 3:



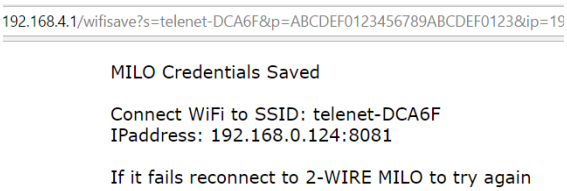
Click on '**Configure *WiFi*'** and a list of networks in your perimeter will appear. You can now select your WiFi network from the list (SSID), and also enter the password of this network.

There are already default IP addresses 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 !)
- Subnet mask: 255.255.255.0
- PortNr: 8082 (also needed for port forwarding for remote control)

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



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

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

Switching networks can sometimes take about 10 seconds.

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

4.3 To determine a fixed IP address via DHCP:

If you want your router to assign an IP address itself, you must set the first IP address (LoWi) to 0.0.0.0 **And supplement with gateway, subnet mask of your own WiFi network** determined via method 1 or 2.

After you have pressed SAVE, a FREE and FIXED IP address will be assigned.

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

1. Restart and from the moment the LED lights up, press the key for approx. 5 seconds until the LED is constantly lit and re-enter the REDIRECT using the methods described in point 4.2. a. On the REDIRECT page the new IP address will now be entered. (at least your gateway -address was in order)

Unfortunately, with now you have to **fill in your SSID and password again 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 note the

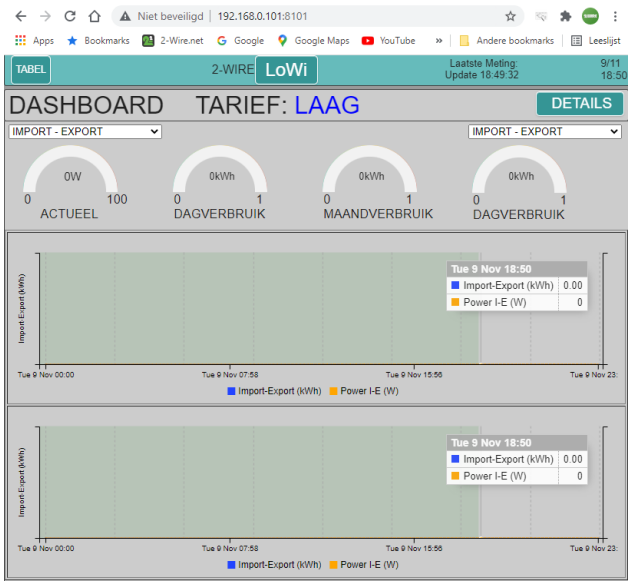
found IP address and port number and you now have to reset this as a fixed IP address via the method described under 4.1 and 4.2.

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 IPaddress !

> *NOTE In your browser you may have to check whether 'SETTINGS - JAVASCRIPT' is enabled!*

A screen should appear as below:



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

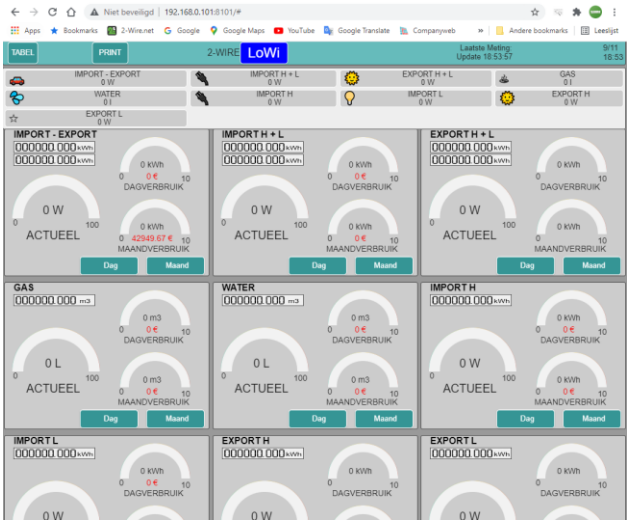
The current power, the daily consumption and the monthly consumption. If there is export (PV cells), these measurements can be either positive or negative (energy surplus).

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

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

> *NOTE The moving* graphs on the dashboard are updated *every 10 seconds.*

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



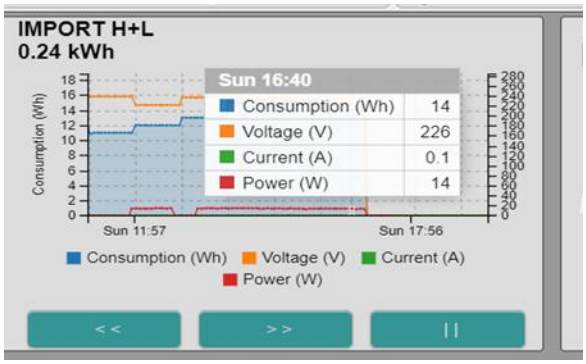
Here you can see the 10 pre-configured log channels. You can scroll the page or press the shortcut buttons to go directly to the desired channel.

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

By clicking on 'Month' you can read out 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 hourly chart and after a day you can see the first daily chart.



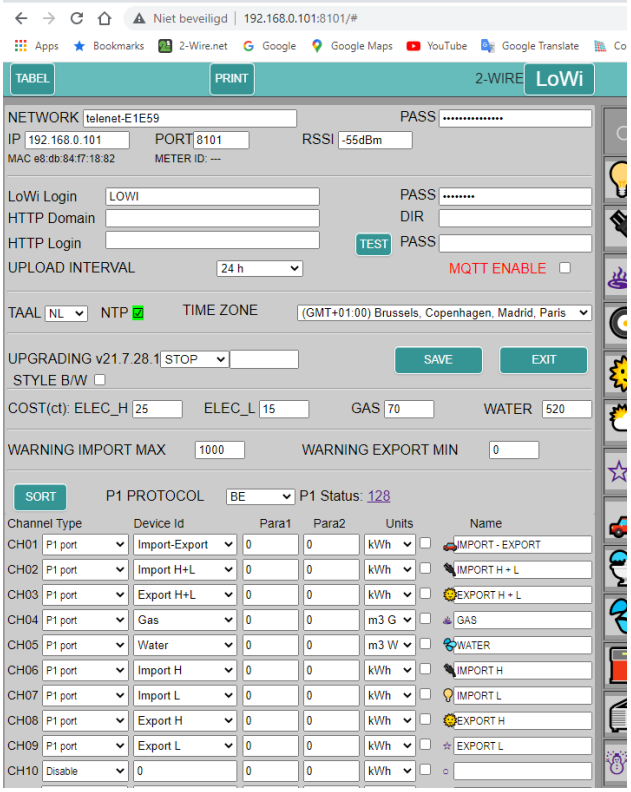
The daily graphs have a resolution of 5 minutes ! You can 'zoom in-out' with the "scroll-wheel" of the mouse.

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 changedhere. 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)

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

> *NOTE For each change you must always click on 'SAVE' and give a confirmation to*

undo any changes. The login is always 'adminLOWI' and cannot be changed.

HTTP Domain and DIR: see attachment at the back

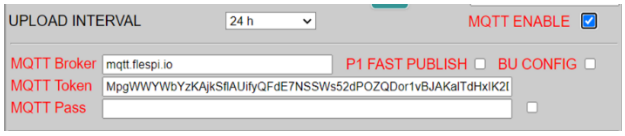
MQTT broker en Token:

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

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

On the 2-wire website you can subscribe to an MQTT account(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 time 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 istested whether there is new firmware 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.

N.B. 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!*

NOTE If the upgrade fails, check if a firewall is on and temporarily disable it. Also check in the setting of your modem whether 'block fragmented packets' is not set to ON.

NOTE Manually you can wire by pressing the switch for about*5 seconds from LoWi (with internet connection)* until the LED is *continuously lit. After 1-2 minutes of upgrade, LoWi restarts on its own.*

SAVE: any change must be confirmed with 'SAVE' + login (adminLOWI). If you don't want to make a change, choose 'CANCEL'

EXIT: back to the home page.

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

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

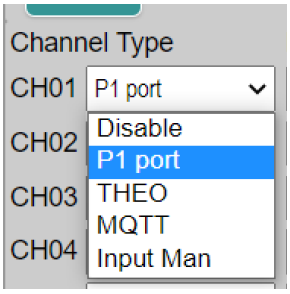
CHANNELS: up to 16 channels can be logged for 2 years.

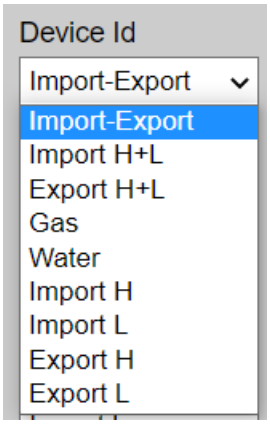
Each channel can be a different type:

- 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 dates with 'Device Id':





Para1 and Para2 remain at 0. The 'Units' in function of the data: kWh, m3 gas or m3 of water.

THEO (via HTTP): see module 'THEO'

MQTT: If an 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 double points. (always 12, only lowercase letters allowed)

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

CH10	MQTT	cc50e3e3b5a6	7	0	kWh			MOBI A7
CH11	MQTT	f4cfa259ec4a	1	0	IAQ			THEO LIVING

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, with MEMOv3 from 0)

Para2 always remains 0. Units in function of the log channel.

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

Under 'Para1' 1 must always be entered, and 'Para2' always 0.

Channel Type	Device Id	Para1	Para2	Units		Name
CH01	P1 port	Import-Export	0	0	kWh	IMPORT - EXPORT
CH02	P1 port	Import H+L	0	0	kWh	IMPORT H + L
CH03	P1 port	Export H+L	0	0	kWh	EXPORT H + L
CH04	MQTT	98f4ab275424	4	0	kWh	MEMO SOLAR Nr12
CH05	MQTT	f008d1d98b20	1	0	kWh	WiFi PLUG heater
CH06	MQTT	f4cfa259ee0e	1	0	IAQ	THEO Nr 18
CH07	Input Man	0	0	0	m3 W	Watermeter
CH08	Disable	0	0	0	m3 W	
CH10	Disable	0	0	0	kWh	

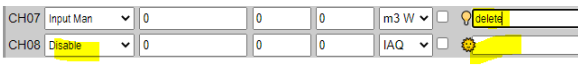
MANUAL COUNTERS: With 'Input Man' you can add an external manual meter along with a name for that meter. Here you can freely choose the units between kWh, m3 gas or m3 water.

DISABLE: A channel that does **not measure**

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

NOTE 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 will clear the logs.*

Then 'Channel Type on 'disable' and empty 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 by channel.
BUT note: *Both graphs of this measurement and channel will be erased. Once confirmd by pressing SAVE you can not undo this action !*

NOTE With the manual counters you can enter one counter reading per day and automatically the input date is then completed by LoWi. If you do it more like once a day, the latter always overwrites the previous counter reading.
Counter readings do not have to be entered daily, but the more entries the greater the resolution.

EPC – HEATING ENERGY

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 at the bottom the total annual energy for heating in KWh. Only after 12 months of logging you get a 100% measured value.

There is also a monthly moving calculated EPC value in KWh/m². Again, only after 1 year of logging a 100% measured value.

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)

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

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

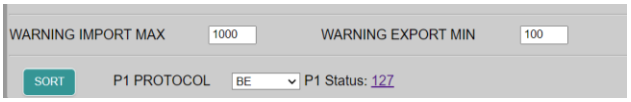
When all channels are customized according to your wishes, press 'SAVE' + login.

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 file's small icon which stands for the name. It lights up red.
- Then click on an icon of your choice from the right table. Continue with other channels.
- This completes the configuration; Press 'SAVE' to save everything!

THRESHOLDS



At **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" buttonat the top also follows this threshold.

With **WARNING IMPORT MAX** you can then 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" buttonat the top also follows this threshold.

Press 'EXIT' to switch to the 'dashboard' (measurement panel).

7.OVERVIEW DETAIL MEASUREMENTS:

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

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

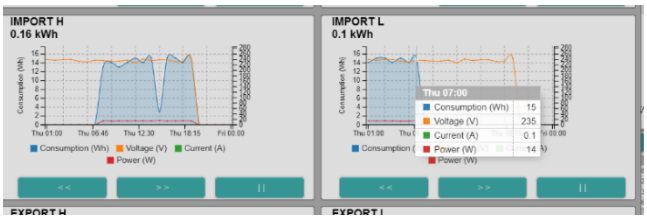
Pressing a name will scroll the screen to the desired place. Among the shortcuts

each channel is listed with a number of measurements and keys:

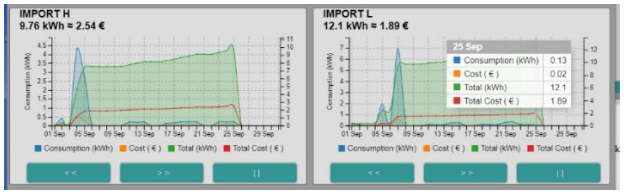
The '7 segment displays' give the current status of the measurements. Below this is the current capacity, depending on the rate (high or low rate). This measurement is adjusted every 10 seconds. On the right is the daily consumption and the monthly consumption,

with the approximate cost price.

CHARTS:



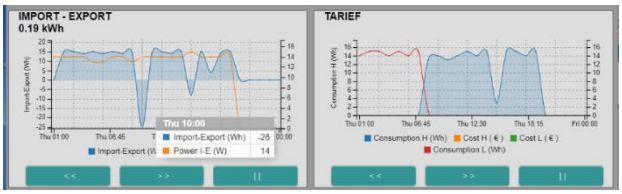
- Day: graphical overview per hour up to 10 days ago
- Month: graphical overview per day up to 1year ago
- DAY: up to 10 days back with keys '<<' and '>>', end of graph = '||'
- Hovering over a graph shows a table showing the measurements at that time (V-A-W-Wh)
- MONTH: up to 12 months ago with tests '<<' and '>>', end of graph = '||'



- Hovering over a graph 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 graphs.

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

> *NOTE In manual meters you could* enter *an additional heating in g which contributes to the EPC calculation*

TABLE: At the top left is the 'TABLE' button. Click on this button and the 2-year overview will appear

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

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

Clicking on 'HOME' returns to the dashboard.

REMARKS:

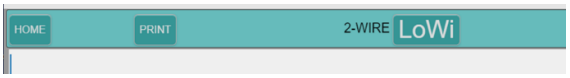
Internet is NECESSARY for proper functioning (time clock,upgrading, graphs)

If the WiFi network should fail and then restart, 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 required (SSID and pass must be re-entered)

PRINT CONFIGURATION / JAAR OVERVIEW:

When you are in the 'CONFIGURATION' or 'ANNUAL OVERVIEW' menu, 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 'DETAILS' page you can easily export data to Excel. The data can be day logs or monthly 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 with an FTP client or http client upload.

8.PROBLEM-SOLUTION

MANUAL UPGRADE:

Exceptionally, it may happen that an error has occurred in the javascriptof LOWI. If you load the webpage, but no *'key'* responds, an error may have occurred during startup. Reloading the firmware can offer a solution: **Without interrupting the power supply,** you pull on 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 upgrade of the LOWI firmware.

After about 1-2 minutes and flashing a number of times, the LED should go out. As soon as the LoWi shows a heartbeat again, you can reload the page and everything has to work normally again.

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

LED MEANING:

By following the status of the LED you can know when something is 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 blink slowly a number of times until the set network is found.
- When the LOWI is connected to this network, the LED will flash and turn off 5 times quickly.
- The LOWI will then synchronize the internal time clock with an NTP server. (this can take up to 5 seconds) When the timer 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

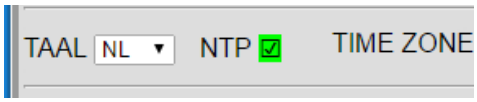
Wrong start-up:

1. At the start-up, the LED lights up for 3 seconds andafterwardsthe LED continues to flash constantly slowly (every second),then no network is set up or found!

If you have previously configured a network, check whether the WiFi router is indeed on. If the LOWI is unable to connect, it may be out of WiFi range.

Also, make sure that your chosen network is 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 the start-up, the LED lights up for 3 seconds and then follows a repeating rhythm "10 seconds off and then briefly fast flickering", "10 seconds off and then briefly fast flickering" ,... then there may be WiFi but NO communication with the digital meter.

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

SUMMARY OF 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** (can be retrieved 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 solidly 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 for the port number. It must be greater than 1024 and less than 60000 (default 8082)
- Send this information : SEND
- Write down IP address and port number
- Change your WiFi network back to your existing network.
- Surf in your browser to the noted IP address + port number (e.g. 192.168.0.125:8082)

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

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

ATTACHMENT 'CLEAR 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 the 'NAME' is then filled in again.

If you want to delete 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 must be performed **in turn** for each channel.

ATTACHMENT 'CLEAR ALL LOGS:255

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, you can do this in a simple way:

1. Go to the control panel, and set the **consumption cost of GAS AND WATER to 255.**
2. Confirm with the password 'adminLOWI'.
3. Go to the dashboard, and within 10 seconds all measured values and graphs will be set to zero. (The meter readings 7-segment of course not!)
4. **Once all values are set to zero, you must reset the consumption costs of GAS AND WATER to the previous set values. (confirm back !)**
5. Normally, the network settings (SSID, password, IP address and port number) will be retained

ATTENTION: YOU CANNOT UNDO THIS ACTION AFTERWARDS!

ANNEX FACTORY RESET:253

TO FACTORY RESET LOWI:
use only
If you want to restore the configuration to the original settings **AND** delete all existing logs as above, you can do this in the following way:

1. Go to the control panel, and set the consumption cost of GAS AND WATER to 253.
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 performed and all settings will be restored as fixed by 2-WIRE. During this process, the website will not be accessible.
4. After this process, the web page will be accessible again and the LOWI will be ready for commissioning. (led will flash 2x)
5. The IP address and port number are back by default 192.168.0.125:8082

With the'ServerScanner'toolyou can view the network settings or you can go to the portal to reset.(see 'SETTINGS' on page 3)
When this procedure is successful, you will have to change your login and password (see page 8)

ATTENTION: YOU CANNOT UNDO THIS ACTION AFTERWARDS!

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 happen overnight between 00:00 and 01:00 (ifv Mac address).

> *NOTE Help with setting up your own http server is NOT intended for laymen or is also 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, whether or not for a fee, use their LoWi integration. You can also export data 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 start with http://**
- **No login or password must be entered for HTTP, since a different type of security has been set up here (see later)**
- Optionally, the folder**(DIR Name)**canbe filled in where the file must 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', incorrect 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. (one can also use this 'TEST' to send the daily file directly to the server)

FILENAME:

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 post's, the MAC address in the url is sent legibly. The remote server can do a first 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 thedecryptioncan 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 this can easily be converted into a readable format.

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.
- Then the MAC address and the ID number of the digital meter.

- The resolution of the logs is fix 5 minutes, so there are 12 log data 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 the data should be read is explained in the following 4 lines (FORMAT – UNITS).
- Each line includes the name of the channel, 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' you **will see** the difference between the current and the previous measurement.
- With the PRINT button at details you get a preview of the file.

- Unlike MiLo, the serial numbers in this file are displayed as "0."

NOTE The 'units' are determined according to the type of measurement. Withmanual counters, the units can be *kWh, m3 gas or m3 water.*

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