



User manual



enelion.com/en/help



LUMINA

3in1 modular structure – build and upgrade your dreamed solution using the same base module.
Quick installation – get your EV charger ready to work online in no more than 15 minutes of the installation process.

Dear user

Congratulations on your purchase of the Enelion charger
and thank you for your trust.

Please read this manual before installation
or prior to the station being commissioned.

The manual may change as the product develops.

The information provided may not be correct. All rights reserved.

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Up-to-date manuals for users
and installers always available at:
enelion.com/en/help

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Frequently Asked Questions

Important information

Please read this manual before attempting to install or commission the charger.

Safety instructions for installation

- Do not carry out outdoor installation during precipitation or strong winds if there is a risk that water or debris may enter the device.
- Carry out all operations described in this manual after ensuring that there is no voltage in the power cord.
- This product may only be installed, repaired or serviced by an authorised electrician.
- All local, regional and national electrical installation regulations must be observed.
- Installation must not be carried out near explosive atmospheres or in areas where there is a risk of running water.
- Risk to life from high electrical voltages.
- The product must be permanently installed in its final location.
- The product must be installed on a wall or structure with sufficient load bearing capacity.
- The clamps on the rear panel are live when the power circuit is closed and must never come into direct contact with anything other than the Lumina plug-in electronics.
- Lumina's network SSID and password are required for installation and configuration; they can be found on the back of the charging head.

Safety instructions for use

- Never use or touch the device if it is damaged or not functioning properly.
- Always perform the recommended maintenance, installation and any repair work by an authorised service centre and in accordance with local requirements.
- Do not use water to extinguish a fire.
- Never clean the station with high pressure or running water.
- Do not immerse the station in water or other liquids.
- If the light bar on the device lights up red, there is an error.
- Never touch the contacts of the type 2 socket/plug and never insert foreign objects into it.
- Never use the charging cable if it is damaged or if the connector is wet or dirty.
- Do not use extension cables or adapters in connection with the station.
- The charging cable can only be disconnected from the station by pulling on the plug handle, not on the cable.
- Make sure that the charging cable does not cause a tripping or running over hazard.
- Even though the station is designed to withstand normal weather conditions, it is recommended to protect it from direct sunlight or exposure to extreme weather conditions.
- Do not use the station near strong electromagnetic fields or in the immediate vicinity of radio transmitters.

Use of the charging station

01

Preparation for use

Before the first use of the charger, make sure that the charger has been correctly installed and poses no danger to the user. More information may be found in the assembly manual available at



enelion.com/en/help

02

Charging

By default the charger is configured as Freecharge configuration, which means it starts charging as soon as a car is connected. To start charging:

1. Connect the cable to the charger¹,
2. Connect the cable to the car,
3. Make sure the lock is closed properly² and charging process has started.

When RFID tag authorization is enabled, place the user tag on the RFID reader located in the top cover of the charger to perform RFID tag

¹Applicable to devices with a socket.

²Not applicable to devices with Freecharge configuration or devices with cable.

authorization. The use of a correct tag shall be signaled with the diodes of the light bar. After the card has been accepted perform steps described above.

After performing these steps, the charger switches to charging status, communicating the fact with the light bar and showing the status on the display. While charging, the light bar flashes from the center towards the edge. See chapter **LED interface** for more information. When configuring the station as Freecharge, it is possible to disable the locking of the plug in the station before charging. This solution is used at times in public chargers and it allows one to stop charging without the need to use an RFID card or to unplug the vehicle. The plug design ensures that the communication contacts are disconnected first, interrupting the charging process. Next, the power contacts are disconnected, with the voltage already disconnected, and finally the protective conductor contact is disconnected. With such configuration of the station, checking the correct operation of the mechanical interlock should be skipped.

03 Completion of charging

To complete the charging process, disconnect the charging cable from the car. This unlocks the cable lock on the charger and brings the charger to standby. In the case of RFID configuration, placing the appropriate card on the reader again also terminates charging and unlocks the lock. See chapter **3 Device configuration** for more information.



For online chargers, you may need to use the appropriate card to unlock the cable lock on the charger.

04 Emergency stop

The charging process can be interrupted by using the RFID card again or removing the plug from the vehicle. While charging, when the lock in the station is closed, it is not possible to pull out the plug from the socket. When configuring the station in Freecharge mode with the lock disabled, it is possible to interrupt the charging process by removing the plug from the charging station.

05 Procedure in the event of irregularities, faults and fire.

When a defect, damage or irregularity occurs, the use of the station should be stopped immediately and the situation should be reported to the station operator. In the event of a fire on the charging station, disconnect the charging station's power supply as soon as possible, then disconnect and, if possible, move the vehicle to a safe distance. Call the relevant services. Fire extinguishing should be carried out with tools intended for electrical

devices up to 1000V – a carbon dioxide (CO₂) or powder extinguisher or sand.

06 General rules for safe operation

The device should be used in accordance with the recommendations included in the manufacturer's documentation and the principles of common sense. Electric vehicles may be charged only with the use of properly operating stations, charging cables and the vehicle.



It is forbidden to use extension cords, adapters or branch-joints.

After charging is complete, the charging cables must be put back to its designated storage location. Avoid driving over any cables or plugs while maneuvering the vehicle at all cost.

Do not use plugs that are clearly dirty or wet.

The vehicle must be parked so that the charging cable is not stretched excessively, since this may cause the user or a bystander to trip over and fall.



It is forbidden to open the station (especially when live), to place any objects in plugs and sockets.



The device meets the IP 54 standard.

Due to the IP 54 class of the device, it is forbidden to wash the charger with pressure washers, garden hoses, a shower or any other stream of water.



Incorrect use may result in damage to property, fire, and in extreme cases, loss of health or life as a result of an electric shock.

07 Health and Safety

The device must be used in accordance with the health and safety requirements related to electrical devices. The device installation manual requires the installation of a residual current device (RCD) in the switchgear. The device is a form of anti-shock and fire protection.

Servicing may be performed only by authorized persons.

08 Disposal and environmental protection

Electrical and electronic waste must not be disposed of together with normal household waste. According to the WEEE directive in force in the EU, separate methods of disposal must be used for electrical and electronic waste.

In accordance with the provisions on waste electrical and electronic equipment, it is forbidden to put waste equipment (marked with the symbol of a crossed out bin) with other waste. The user who intends to get rid of such product is obliged to return the above-mentioned waste to the equipment waste collection point.

The collection points are run by wholesalers and retailers of such equipment and by communal organizational units operating in the field of waste collection, to name a few.

Device configuration

01 Available variants

The system of configuring the settings of Enelion Lumina charger is done in the configuration panel.

Available variants resulting from the configuration of the device are presented below:

► Type of power system

- **One-phase power system** – only the first phase connected to the device will be used for charging. The power range may be set between 1,4 kW to 7,4 kW.
- **Three-phase power system** – three phases will be used for charging. The power range may be set between 4,1 kW to 22 kW.

► The charger power – Available power capacity: 1,4 kW to 22 kW.

This is set depending on the type of power system of the user. Allows the power used for charging the car to be limited in order to protect the mains against overload.

► Authorizing methods

- **Freecharge** – User authorization is not required: connecting the car will initiate the charging process
- **RFID** – The charging process will initiate only after applying the correct RFID card. In case of offline chargers only the card dedicated to a specific charger will be accepted. Authorization in online chargers requires the user to be

accepted by the administrating system.

► Deauthorizing methods

The above options are applicable only with offline chargers. Deauthorizing the user in an online charger must be processed by the administrating system.

- **Only with an initiating card** – Ending the charging process is possible only after applying the same card which was used to initiate the charging
- **With each card issued for the charger** – This configuration is used in offline chargers. It allows to finish the charging process with the use of any card which was issued for a specific charger.

► Current limits

Given in amps. Limits current available for a single phase in the power connection. It is the border value of power which will not be exceeded by the total power of all chargers operating at the same time.

► Phase interlacing

The sequence of connecting phases to the charger. There are three possible connection sequences: L1, L2, L3, L2, L3, L1 and L3, L1, L2. It allows for the power of the connection in a network of chargers to be used more effectively.

02 Initiating the device

Once the charger is switched on for the first time it will use the default configuration in which it only accepts offline cards that can be added manually in the Charger -> Authorization section in the configuration panel.

To configure the charger you need to:

1. Install the charger according to the fitting instruction available on enelion.com/en/help
2. Turn power supply on
3. Connect with secured AP of the station
4. Log in to the configuration panel on the Admin account
5. Set required parameters

Above should be performed only by authorized personnel. configuration panel.

03 Changing the configuration

When needed it is possible to change the configuration of the charge which was already initialized.

In order to change the configuration just perform the same procedure as the first configuration using configuration panel. This should be done only by authorised personnel on the Admin account.

04

LED bar

The Lumina charging station has an LED interface that provides the user with basic information:



Status	Light type
Availability	Green flashing
Charging (energy transfer in progress)	Blue flashing from inside towards the edge
Charging (no energy transfer)	Blue flashing
Warning/minor error (the charger will attempt to return to its previous state)	Yellow flashing
Error	Red flashing
Fatal error	Steady red
Authorisation	
User acceptance	Running from left to right in green
User rejection	Running from left to right in red
Authorisation pending	White dot moving from left to right

The interface provides only basic operational information, detailed information can be read from the configuration panel.

Configuration panel



Enelion Lumina App available on



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Google Play



DOWNLOAD ON THE
App Store

01

Features

Enelion charger is equipped with connectivity features that enable:

Preview and basic management of charging point:

- Reading the status of the charging point, including its meter, charging power, available power
- Socket lock management
- Starting, stopping and scheduling charging

Internet connectivity:

- WiFi
- GSM LTE

Connectivity with Management Systems compliant with OCPP 1.6 (JSON)

- User authorization and billing
- Monitoring the status of chargers and charging power
- Reservations
- Charging power profiles
- Management of access to the charging point
- Remote diagnostics and software update

02

Communication

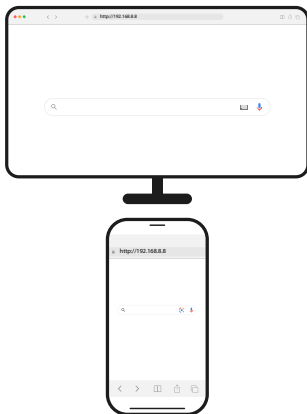
Lumina charger allows you to connect to the configuration panel using its WiFi hotspot.

In order to connect to the WiFi hotspot, use

a computer or your smartphone to scan the available WiFi networks. The broadcast network is named "Enelion-XXXX-XXXX" where X signs stand for the charger's serial number. Password for this network can be found on the identification sticker placed on the charger's head.

02.1 Access to the configuration panel

After connecting to the device's network, it is possible to access the configuration panel via a web browser. Enter the address **http://192.168.8.8** in the address bar and log in.



There are accounts for the **user** (user) and **administrator** (admin) in the configuration panel. The default password for each of these users is the same as the username and can be changed in the settings.

In case a password to the configuration panel is lost it is possible to reset the device to factory settings. To do so please choose **Forgot password?** link and confirm the choice.



Log in page of the configuration panel.

03 Navigation in the configuration panel

The interface of the configuration panel consists of an upper bar with the Enelion logo, common to all subpages, a side menu with the name of the logged in user and access to individual subpages, and the proper content of a given subpage.



Dashboard site of the configuration panel.

The interface is responsive, which means it adapts to the different screen sizes of the devices on which it is used. On small screens, the side menu is hidden, and to eject it, touch the dedicated button.



Mobile version of the Dashboard site.

04 Dashboard

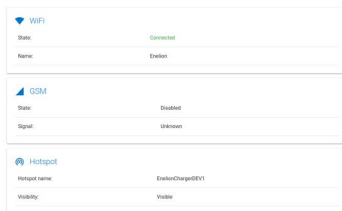
The Dashboard tab contains basic information about the overall status of the Bridge and the charging network and presents them in the form of tiles. Depending on the situation, not all tiles will be visible. The available tiles are:

- WiFi connection status
- GSM connection status
- Mesh communication status
- Device operation time from startup (uptime)
- Active alerts

05 Network

05.1 Overview

View the status of all available network interfaces. Clicking on any of them will take you to the corresponding subpage.



Overview section of the Network tab.

05.2

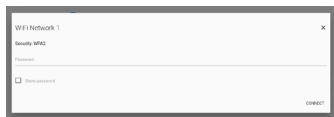
WiFi

Enelion Bridge enables WiFi connectivity in the 802.11 b / g / n, 2.4 GHz standard. The WiFi subpage allows you to manage the Bridge's connection to the WiFi network. The switch on the right side of the subpage header can disable the WiFi interface, and the Status section shows detailed information about the WiFi connection.



WiFi section of the Network tab.

The **Available WiFi networks** section presents a list of WiFi networks detected by the Bridge module in its vicinity, along with information about the signal level and type of security. Clicking the button with the refresh icon on the right side of the section header will rescan the surroundings for WiFi networks. Clicking on any of them will open a window that allows you to enter the password (in the case of secured networks) and save the settings in order to connect to the network.



View of connecting to the WiFi network.

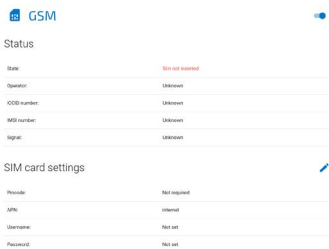
05.3

GSM

Enelion Bridge is equipped with LTE cat 4 module. To connect the module with GSM internet please, before powering the charging station on, make sure that the SIM card is properly inserted in the SIM slot.

After powering the station on please go to the GSM section in the configuration and turn the GSM module on with the switch found in top-right corner. After a short moment you will see the SIM card state. If the PIN code is not necessary and the SIM card is activated and in GSM network coverage, then the GSM section will be filled with SIM card and network details, and State field will show the **Ready** text.

To type a PIN code in and configure a GSM connection please click a pencil icon found in the right side of **SIM card settings** section. The configuration window will open. After typing the configuration in please save the changes using a **Save** button.



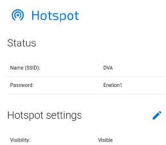
GSM section of the Network tab

To change configuration please choose a pencil icon. A configuration window will open. After typing in the chosen configuration please click a **Save** button.



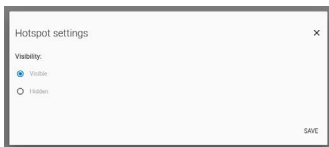
05.4 Hotspot

The **hostpot** section shows the status of the emitted WiFi network and its settings.



Hotspot section of the Network tab.

Since Hotspot is the only method to access the charger's configuration, its settings only include the possibility to hide the network, not to disable it.



Hotspot settings.

The **Charger** section allows for configuring charging related settings.

06 Charger

The **Charger** section allows for configuring charging related settings.

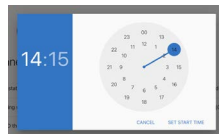
06.1 Overview

In the Overview section, we can check information about the connector status, schedule, start or stop charging.



Overview section of the Charger tab.

To Schedule charging click "Schedule" icon on the right of "Connector" header. A modal will be opened in which we can set the time after which charging should start. After clicking "Set start time" next modal will allow to set stop time or choose "Don't stop" option.



Overview section of the Charger tab.

06.2

Mains

In the Mains section, we can check Mains status and settings like power limit or phase sequence.

Mains

Status

Power limit:	11 kW (2 phases, 16 A)
L1 voltage:	230.7 V
L2 voltage:	198 V
L3 voltage:	198.2 V
Phase sequence:	U,V,-

Settings

Number of phases:	3
Current limit:	16 A
Phases connected to first terminal block:	1

Mains section of the Charger tab.

To change power limit click an Edit icon. A settings modal will show up in which we can choose predefined power limit options or choose our own depending on number of phases and chosen maximum current limit.

Mains

Power options:

22 kW (2 phases, 32 A)

7.4 kW (1 phase, 32 A)

Custom

Number of phases

3 phases

Charger limit (A)

16

Phases connected to first terminal block:

L1

SAVE

Mains settings.

06.3

Authorization

Authorization section allows us to configure charger's lock, enable Freecharge feature and set tags that should be accepted offline.

Authorization

Lock

Mode:	Automatic
Status:	Open

Freecharge

CCP1 wiring	Not set
-------------	---------

Offline accepted tags

# wiring	Delete
----------	--------

Recently used tags

wiring	Last used	Add
--------	-----------	-----

Authorization section of the Charger tab.

To open or close the lock simply click the Lock icon. To set specific lock mode click the Edit icon and choose preferred lock mode.

Possible lock modes are explained in the table below:

Lock state	Description
Unlocked	Lock is open
Locked	Lock is closed
Unsupported	The charger does not have or does not allow the use of a socket lock

Possible lock status.

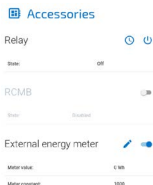
Enabling Freecharge option results in charger not requiring any RFID tag to start charging. Just connect a car and charging will start immediately. If we want to use Freecharge mode with OCPP charging management systems, we can choose what idTag is to be used for authorization. To change it click Edit icon and choose preferred idTag.

To see a list of recently used tags scroll to the bottom of the webpage. We will see tags numbers, date of last usage and an ability to add the tag to Offline accepted tags list. If we want to use specified tags for offline authorization, we can fill in this list according to our preferences. The list is limited to 5 tags. More advanced authorization and task management is available with OCPP charger management systems.

06.4 Accessories

Accessories section allows us to manage accessories supported by the station, which include: Schuko socket relay, RCMB and External Energy Meter (MID).

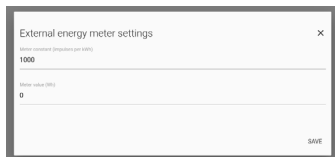
We can turn Schuko socket relay on or off, as well as delay switching it off until a specific time.



Accessories section of the Charger tab.

If RCMB module is installed in the charger, we can enable it by a switch on the right. We can also check RCMB status under it.

To use an external energy meter, we need to enable it. If we use different than default meter constant or change displayed meter value, we can set it up in settings, by clicking an Edit icon.



External energy meter settings.

07 Charging network

The **Charging network** section allows for managing the network of Enelion devices connected locally to exchange charging, ocpp and maintenance related data.

07.1 Overview

In the Overview section, we can check network status and connection details, as well as the network topology.

Charging network

Status	
Connection status:	Network host
Number of connected devices:	1
Signal:	This device is not
Level:	1

Overview section of the Charging network tab.

07.2

Settings

In charging network settings we can set and change wireless mesh settings. All chargers in a network must use the same mesh ID and mesh password. Bear in mind that there must be one and only one root device in the network.

[Connection settings](#)

Wireless mesh settings  

Mesh ID:	abcd123
Mesh password:	Enelian1
Device type:	Root

Mesh connection settings section

To change Wireless mesh settings click Edit icon and fill in fields with preferred configuration. Finally click Save and wait for the devices to connect with each other. You can see the network topology in an Overview section.

Mesh settings ×

Mesh ID:
abcd123

Mesh password:
Enelian1

Device type:

☒ Root

☐ Node

SAVE

Mesh connection settings section



08

System

The **System** section allows for managing the Bridge module settings.



08.1

Overview



In the Overview section, we can check information about the Lumina head and Backplate hardware details.

System overview

Charger

Serial number:	D1K
Model number:	EnelianCharger3.0
Production date:	2023-03-03
Connector type:	Socket
Built-in lock:	Yes
Software version:	1
Uptime:	14 min

Backplate

Serial number:	BackplateV15
Model number:	EnelianBackplate
Production date:	2023-10-15

Overview section of the System tab.

08.2

Update

The **Update** section allows you to update the charging station software using an update file. To update, after selecting the file with the gray button, click the Submit button. The Bridge module will start the update process, and the configuration panel will count down for about 3 minutes and then restart with the new software version.

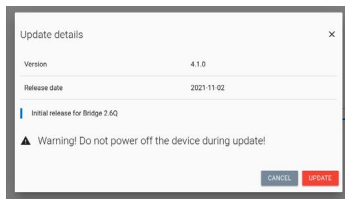
Update

Update from a file

Submit

Update section of the System tab.

After file upload and verification the Bridge module will present a window with update details to confirm the choice.



An example of update details

The Bridge module will start an update. The process should not last longer than 3 minutes. After the update the configuration panel will reload with a new firmware. In case the update is performed through the device's WiFi hotspot, you might need to connect to it again.

08.3

Users

The configuration panel has two user accounts: **user** and **admin**.

The tabs that the user does not have access to are: OCPP and Update. Other functions to which the user has limited rights are: viewing logs and changing the administrator password.

Users

User

old password new password repeat new password **updated password**

Admin

old password new password repeat new password **updated password**

Users section of the System tab.

The **Users** subpage allows you to change the users' password. In order to change the password of a given user, enter his previous password in the corresponding fields and enter the new password twice, and then confirm the change with the Change password button.

08.4

Time

The Bridge module uses both the appropriate OCPP and NTP time server commands for time synchronization.

The **Time** tab allows you to check the current time used by the Bridge module and synchronize it with the time of the device from which you access the configuration panel.