INSTRUCTION
MANUAL

WALLBOX DUO PRO

enelion

Dear Reader

Congratulations on acquiring ENELION WALLBOX DUO PRO charging station and thank you for your confidence in us.

Kindly review this manual prior to installation or usage.

TECHNICAL SUPPORT

Most up-to-date device manuals always available at:

https://enelion.com/support-wallboxduo-pro/

If you have any questions or require assistance

regarding your Wallbox Duo Pro EVSE,

please contact your distributor or our

Enelion Customer Service team.

Useful documentation and video
guides are available at:
https://enelion.com/support

Factory Service:
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Mialki Szlak 52,
80-717 Gdansk

support@enelion.com

*This document includes information that may be modified without prior notice.

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WALLBOX DUO PRO

WALLBOX DUO PRO
SOCKET
WITH A PAYMENT TERMINAL

1.1 Key Features

WALLBOX DUO PRO

- A colour touch screen that displays dynamic QR codes for payments and advertising content.
- The modular aluminium frame can accommodate two charging modules equipped with colour LCD touch screens for dynamic QR code payments.
- Possibility of installing a Payter Apollo payment terminal.
- Wallbox Duo Pro significantly facilitates station diagnostics through the use of a diagnostic panel in service mode.
- Wallbox Duo Pro charging station 100% compliant with AFIR requirements.
- Purchase a station with a personalised configuration ready to work in your network.

WALLBOX DUO PRO
SOCKET

WALLBOX DUO PRO
CABLE

WALLBOX DUO PRO

2.1 GENERAL INFORMATION

WALLBOX DUO PRO SOCKET

WALLBOX DUO PRO CABLE

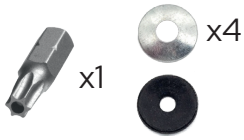
Charging power*	2 × 1.4 kW – 22 kW	2 × 1.4 kW – 22 kW
Socket / plug	2 × socket (Type 2) with lock	2 × plug (Type 2)
Straight cable (max. length)	–	5 m working length
Minimum signal quality requirements	WiFi: -60 dBm; LTE: -85 dBm	
LCD display	4.3", touch, color	
Available protections**	RCMB / RCDA / RCDB / RCBO / MCB B32	
Charging authorization	RFID / OCPP / FreeCharge	
Communication (OCPP 1.6j)	offline / WiFi / LTE	
Energy meter	3-phase energy meter > compatible with MID certified meter	
IK protection rating	IK10	
IP protection rating	IP54	
Operating temperature	-25°C/+55°C	
Dimensions: width x height x depth	710mm x 250mm x 145mm	
Weight (2x modules + frame)	Socket 12,4kg, Cable 16,6kg	
Finish	Silver and black anodized finish imitation RAL color palette available on request (powder coating)	
Payment Terminals**	Payter Apollo	

*available as an accessory

2.2 ACCESSORIES

Accessories included

RFID cards	one RFID card is added per charging module
Bit safe Torx Security T25	1pcs
Sealing washers	4pcs



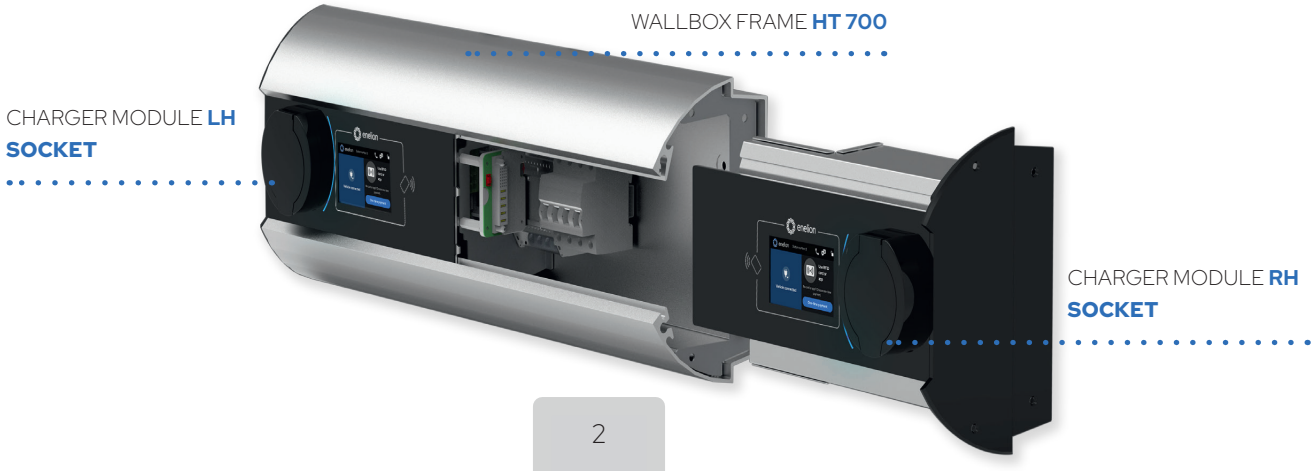
GENERAL INFORMATION – PRODUCT VARIANTS CHAPTER II

GENERAL INFORMATION AND OPTIONS

2.3 General Information Wallbox Duo Pro

WALLBOX DUO PRO is a modular charging station.

For electric cars, consisting of a **WALLBOX FRAME HT 700** frame housing and **CHARGER MODULE LH** (left) and **CHARGER MODULE RH** (right) modules responsible for the charging process, as well as optional extras and accessories. The modular design allows you to easily change the device's functions by replacing or adding charging modules and accessories to best suit your needs. Preparation for use varies depending on the selected device functions.



2.4 Charger Module LH and RH - Variants

Before purchasing the WALLBOX DUO PRO device, it is worth considering which variant to choose. You can also discuss the choice with the manufacturer or distributor.
The manufacturer offers two versions: with a **Type 2 socket or with a 5 m straight cable and a Type 2 plug**.

Modules may also be equipped with the following optional accessories:

- *With **BRIDGE LTE** communication modem - WiFi for advanced settings. (The Bridge LTE modem is installed only in the left Charger Module LH)*
- ***RCM-B** differential current sensor – enables enhanced protection by detecting direct current leakage, in accordance with IEC 62752*
- *Patent lock*

The most optimal solution is the Wallbox Duo Pro device with two modules, where the first LH module has a communication modem and the second RH module communicates with the first via a CAN bus. This gives us full control over the Charger Module RH without a modem.

CHARGER MODULE **LH SOCKET**

CHARGER MODULE **RH SOCKET**

CHARGER MODULE **LH CABLE**

CHARGER MODULE **RH CABLE**

2.5 Wallbox Frame HT 700 - Variants

The WALLBOX FRAME HT700 is a required part of the device. The Charger Module LH and RH modules mounted in it are an integral part of the charging process..
Before purchasing the Wallbox Duo Pro device, you should: take into account the power supply installation diagram, security specifications, the method of communication with the station, and authorization. This will determine which variant is optimal.

An important factor is the selection of the number of modules that will operate within the station frame:

For powering 2 modules, with 2 power cables

a. with 1 charging module and an additional top masking panel, which can be replaced with the damaged module in the event of a module failure. There are two types of masking panels available: Wallbox Masking Panel ML (left) and MR (right).

b. with 2 modules installed on both sides, fully utilizing the capabilities of the charging station

The Wallbox Duo Pro is designed for the installation of a **payment terminal**:

c. Payter Apollo payment terminal

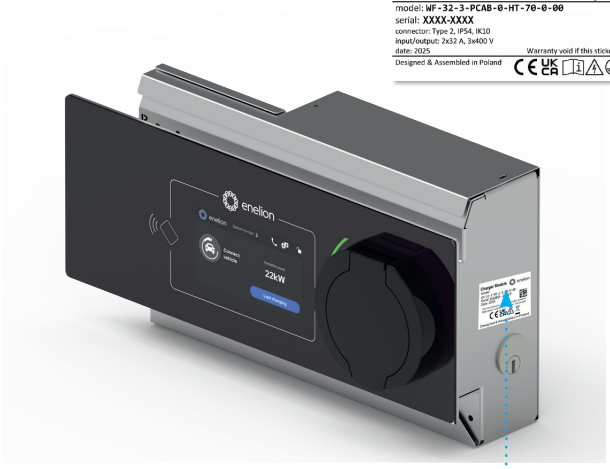
The basic version of the Wallbox Frame HT 700 is equipped with :

- *Power cable diameter from 9 to 17mm, with a maximum cross-section of 5 x 6mm²*
- *3-track quick connector for CAN bus*
- *2 connectors for PE cable*
- *2x rail connectors for phase cables*
- *2x connectors for neutral cables*

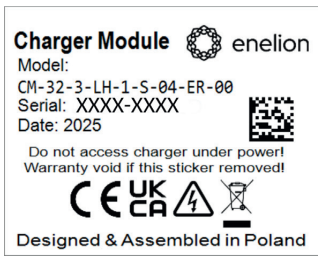
2.6 Wallbox Duo Pro serial numbers

The WALLBOX DUO PRO charging station consists of three basic components:
Frame: Wallbox Frame HT 700
Left charging module: Charger Module LH
Right charging module: Charger Module RH

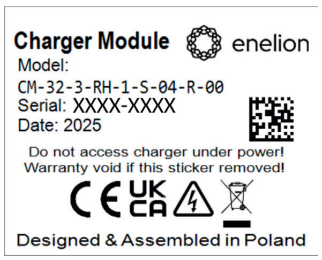
The serial numbers of the individual components can be found in the following locations:



CHARGER MODULE **LH**
SOCKET



CHARGER MODULE **RH**
SOCKET



INFO

The serial number plate on the device is an integral part of it and must not be removed or damaged, otherwise the manufacturer's warranty will be void.

ADDITIONAL EQUIPMENT FOR WALLBOX DUO PRO

When placing an order with a distributor or manufacturer, you can determine the necessary safety devices and accessories. They are divided into 3 groups according to their application. Before purchasing the WALLBOX DUO PRO device, you should consider the power supply installation diagram for the charging station. The method of powering the modules will be a very important factor.

3.1 Power Supply Terminal Blocks

When using a **single-cable** power supply configuration for the station, the following connectors are recommended based on the conductor cross-section:

- *4-pole terminal strip*

The maximum power of a single module when powered by a single cable should not exceed 11kW 16A (applies only to stations powered by a single cable).

In other versions, a 2-wire power supply to the charging station is required in 2-module versions. The location of the power supply connection depends on the variant.

3.2 Electrical Protection

Types of Electrical Protection

The power supply for the Enelion charging terminal must be provided from an electrical switchboard. The switchboard must be equipped with the required protection in the form of a type B or C overcurrent circuit breaker, current class 32A or less, depending on the device configuration.
In accordance with PN-EN IEC 61851-1 and EN IEC 61851 1:2019 10, each charging point must be protected by type A+B overcurrent and residual current circuit breakers. The use of a type B residual current monitor inside the station allows this requirement to be met by adding only overcurrent protection and a type A residual current circuit breaker. This reduces installation costs and allows safe use of the charging device with a plug-in car.
RCMB – residual current monitoring device, designed to detect residual current in electric vehicle charging systems and generate a shutdown signal or control a circuit breaker, but without the function of automatically disconnecting the power supply circuit (it is not a circuit breaker). Definition according to PN-EN 62955:2020-07 (“Residual current monitoring devices used in vehicle alternating current charging systems”),
The PN-EN 61851-1 standard requires that AC charging stations use:
protection against AC residual currents ≥ 30 mA (type A or B), and additionally detection of DC currents ≥ 6 mA.
This is what RCMB (e.g., built into EVSE) does, often in combination with type A RCB O in the switchgear.
RCBO - combines the functions of a miniature circuit breaker (MCB) and a residual current device (RCD), designed to interrupt the circuit in the event of: overload, short circuit, residual current (leakage current) exceeding the set trip value.
In accordance with PN-EN 61009-1.
The final selection of the protective device should be made by a licensed designer or qualified electrician.
Thanks to the use of DIN rails, the following protections can be used:

- *Overcurrent fuses*
- *RCD A certified residual current devices*
- *RCD B certified residual current devices*
- *RCB O certified residual current devices*
- *RCD B residual current devices with lift (AutoRecloser RCDB)*

3.3 Additional Accessories

Add-ons

The Wallbox Frame HT 700 can be equipped with:

- *MID-certified energy meters*

4.1 General provisions

Important information

The ENELION charger (hereinafter referred to as the device, charger, or charging terminal) is an electric vehicle charging station designed in accordance with international standards, including IEC 61851-1 and IEC 62196-2, for charging electric vehicles equipped with compatible connectors.

Any unauthorized interference with the device's mechanical, electrical, electronic components, or software is strictly prohibited and will void the warranty. Exceptions include operations specifically described in this manual or those agreed upon in writing with the manufacturer. The manufacturer assumes no liability for damage to property resulting from such prohibited modifications.

The electrical installation to which the device is connected must meet the requirements outlined in the installation instructions. The manufacturer is not responsible for improperly executed or insufficiently protected electrical infrastructure. Furthermore, the electrical installation must comply with the applicable legal and safety standards of the country in which the device is installed and operated. The manufacturer assumes no liability for damage resulting from non-compliant or faulty installations.

The device is not equipped with a built-in power switch. It powers on automatically when supply voltage is present. Disconnection from the power source must be provided via external protective devices as specified in the installation documentation. Except in emergency situations, the device must not be powered down during an active charging session.

It is strictly forbidden to energize the device while the housing is open, or to operate a unit that is mechanically damaged or indicates a critical fault status on the display or LED indicators.

Only charging cables and plugs intended for EV charging may be inserted into the socket. The only approved connection is a functional Type 2 charging cable, suitable for the device's power rating and the vehicle's requirements, in compliance with IEC 62196-2. The use of extension cords, adapters, or conversion plugs is strictly prohibited.

Due to its IP54-rated enclosure, the device must not be cleaned with pressure washers, garden hoses, showers, or any other source of high-pressure water spray.

The manufacturer allows the purchase of support packages—including extended warranty and service options—during the warranty period, provided a qualifying inspection is completed beforehand. For details, please contact the ENELION Sales Department.

A service inspection must be performed annually. Mechanical components such as the socket, charging cable, plug lock, plug, plug holder, and other fixed components require only surface-level visual inspection. These elements are not considered wear parts and are not expected to require replacement under normal operating conditions during the station's service life.

During inspection, attention should be paid to:
Signs of corrosion, Water ingress, Salt crystallization, or any other indicators of deterioration in the condition of the unit.

If any damage is observed to components such as the socket, cable, plug, plug holder, or any other fixed part of the charger, this must be reported to the station operator. The replacement of these components must be carried out by an authorized ENELION service center.

All service work must be performed with the power supply disconnected.

Fault diagnostics are performed using the device's display, which presents error codes along with descriptive messages identifying the issue.

The electrical diagram and internal construction details for the charger are available in the installation manual specific to each WALLBOX DUO PRO model.

Note: The charging station does not support active ventilation.

4.2 Planning

All local, regional, and national regulations regarding electrical installations and the location of the station must be observed. Electrical installation design guidelines can be found on the next page. Before starting installation work, consider connecting payment terminals that support Ethernet networks with an RJ45 CAT 5e CU network cable or better during the design phase.

When creating the **Enelion Chain** network (CAN bus), it is also necessary to use at least RJ45 CAT 5e network cables or better, with copper cores, not CCA (Copper Clad Aluminum), which will be necessary for communication between modules. This enables advanced settings and monitoring. A single twisted pair of wires is used for communication. The total length of the cable must not exceed 500 m. Cables laid in the ground must be installed in accordance with applicable building regulations.
It is recommended that future charging and communication needs with charging stations be considered prior to installation.

4.3 Site Selection and Accessibility Remarks

The WALLBOX DUO PRO charging station is suitable for both indoor and outdoor installation. It is intended to be installed near designated electric vehicle parking areas, in accordance with national regulations and site-specific constraints. When installed in vehicle collision zones, the station must be protected by physical barriers or bollards. These should be painted with yellow and black warning stripes in compliance with applicable safety marking standards.
Note: Always refer to national or local regulations for minimum clearance requirements and installation zoning.
Regulatory bodies may specify distances from roads, pedestrian paths, or other infrastructure.
Environmental and Spatial Considerations: Avoid installing the device in areas with prolonged direct sunlight, as excessive heat may affect performance or lead to overheating. Do not install the charger near heat sources or inside confined or unventilated enclosures (e.g., electrical boxes or cabinets). Installation is strictly prohibited in hazardous environments, such as explosive atmospheres, or in areas where falling objects could damage the device.
Clearance for Service Access:
Before installation, ensure there is a minimum of 1 meter of Wallboxl clearance above the charger.
After installation, maintain this clearance zone free of any fixed structures (e.g., signage, billboards, awnings), as it is required for safe maintenance and servicing. The Wallbox Duo Pro charging station complies with PAS 1899:2022 regulations

4.4 Security

Outdoor installation must not be carried out during precipitation or strong wind, particularly if there is any risk of moisture or debris entering the device enclosure. All operations described in this manual must only be performed after ensuring that the power supply is disconnected and there is no voltage present in the power cable. The operation, installation, and maintenance of the device must comply with all applicable occupational health and safety (OHS) regulations for electrical equipment.
According to the installation requirements, a residual current protection device (RCD) must be installed in the switchgear. This serves both as a protection against leakage current imbalance and as a fire prevention measure.
If any visible damage is observed to components such as the charging socket, cable, plug, plug handle, or other fixed or permanent parts of the device, this must be reported immediately to the station operator. The station must not be used until the damage has been assessed and resolved.
Installation and servicing of the device must be carried out exclusively by qualified and authorized personnel. Repairs are only permitted to be performed by the manufacturer or by entities officially authorized by the manufacturer.

Abnormal Conditions, Safety Risks, and Fire Response

If a fault, damage, or any abnormal behavior is detected, immediately discontinue use of the charging station and report the issue to the station operator. In the event of a fire, disconnect the station from the power supply as quickly as possible. If it is safe to do so, disconnect the charging cable from the vehicle and move the vehicle to a safe distance. Then contact emergency services. Within the European Union, the general emergency number is 112.
Fire suppression must be performed using extinguishing agents suitable for electrical equipment rated up to 1000 V. Approved extinguishers include CO_2 (carbon dioxide), dry powder, or sand.
After charging is completed, the charging cable must be placed in its designated holder. It is essential to avoid leaving cables or plugs in areas where they may be run over or pose a tripping hazard. Do not use plugs that are visibly dirty or wet. The vehicle should be parked in such a way that the charging cable is not overstretched, as this could cause damage to the equipment or create a fall hazard for users and bystanders.

ATTENTION

The manufacturer is not responsible for damage resulting from failure to comply with the above recommendations.

5.1 Preparing for frame assembly

Place the packaged WALLBOX DUO PRO in a horizontal position, as indicated on the packaging. Remove the device from the box, remove the foam protectors, and place it in the correct position.

The package contains useful accessories. Please collect them before disposing of the packaging:

- RFID card
- Quick start guide
- Warranty card
- Torx Security T25 bit
- 2 patent keys for each module (if you have the version with a patent key)
- 4 washers with M6 seal

5.2 Opening and closing the device

Access to the interior of the device is secured by the Wallbox Frame HT 700 design. Before performing any operations on the device, open the WALLBOX DUO PRO station in accordance with the instructions.

Using the enclosed **Torx Security T25 bit**, unscrew the cover screws. They are located on both sides of the device. Set the covers aside in a place where they will not be damaged.

The left cover with the WIFI network range label should be on the left side. This will indicate the presence of an LTE Bridge communication modem in the left charging module.

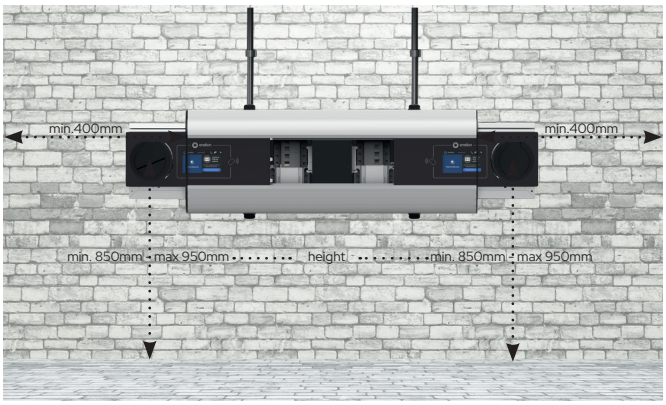
Loosen the screw securing the bracket slightly and set it to the horizontal position. Use a special key to unlock the module (if there is a special lock). The keys can be found in the package.

Remove the modules and store them in a safe place.

5.3 Choosing the installation location

An important part of the installation is choosing the location. The WALLBOX DUO PRO has modules that slide out to the sides. The distance on each side should be no less than 400 mm.

The installation height should be adapted for people with disabilities. In accordance with PAS 1899:2022 regulations, charging stations must be adapted to the requirements of people with special needs.



5.4 Additional tools and accessories required for installation

The following tools and accessories will be required for installation:

- Mounting pins x4 sets with screws and washers (adapted to the mounting location)
- drill
- appropriate drill bit
- spirit level
- pencil
- measuring tape
- 30 mm wrench for glands

*Tools and accessories for installation are not included in the set.

1. BIT PZ2 lub PH2 - for mounting pins

2. BIT HEX4 - for unlocking the module and 3x16A rail connector

Select the appropriate tool for drilling and tightening the mounting screws.

5.5 Selection of screws and wall plugs

ENELION wall-mounted devices can be installed both outdoors and indoors.
The WALLBOX FRAME HT 700 frame is mounted horizontally to the wall using 4 dowels. Remember to use the appropriate dowels for the substrate, as the diameter of the washer with seal is 6 mm. The installation must ensure the stability of the device when significant forces are exerted on it when connecting and disconnecting the charging cable plug in the device socket.

5.6 Adapting the Wallbox Frame HT 700 to the electrical installation

The WALLBOX FRAME HT 700 frame is powered from above by default, together with communication cables.

It is possible to insert power cables from the bottom of the device by moving the cable glands yourself.
When the power supply is routed from below, swap the cable glands and sealing plugs so that it meets IP54 requirements.
The Wallbox Frame HT 700 has 3 upper and lower holes for M25 cable glands or sealing plugs.
Incorrect installation may result in damage to the device or loss of health and life resulting from failure to follow the above recommendations.
Remember to install the glands and sealing plugs correctly so that no water can enter during precipitation.
atmospheric.

ATTENTION

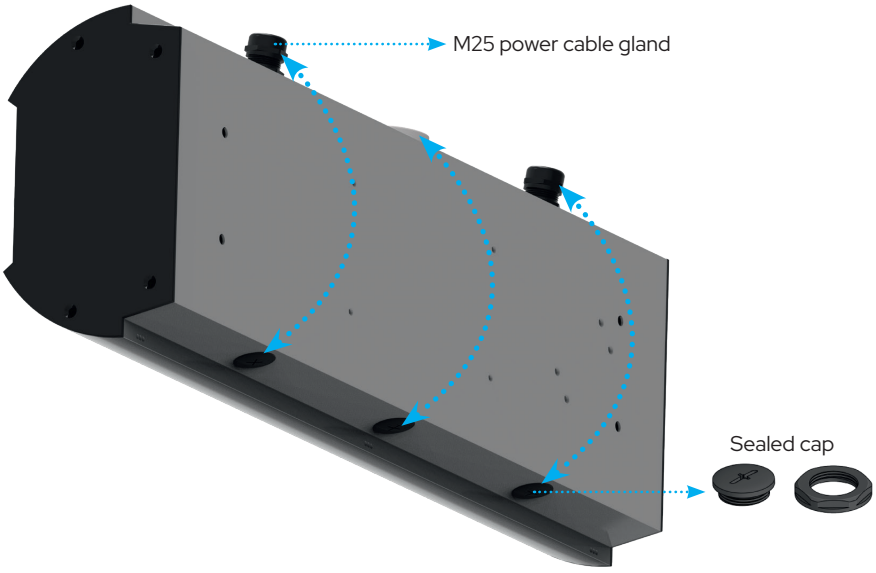
The manufacturer shall not be liable for any damage resulting from failure to comply with the above recommendations.

Illustrative images for the Wallbox Frame HT 700 frame for mounting cable glands and plugs from:

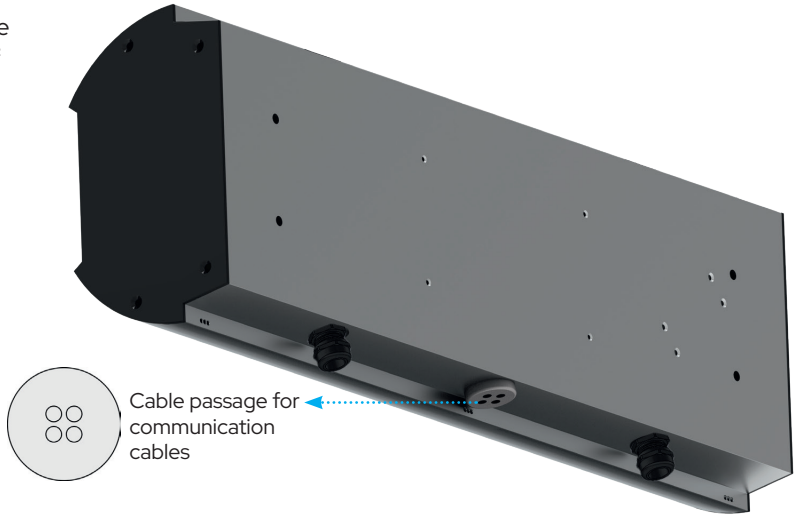
- top
- bottom
- power supply with 1 cable

ATTENTION

Before proceeding with installation, disconnect the power supply from the power cables.



Swap the cable glands and communication cable gland with sealing plugs to match the electrical installation.



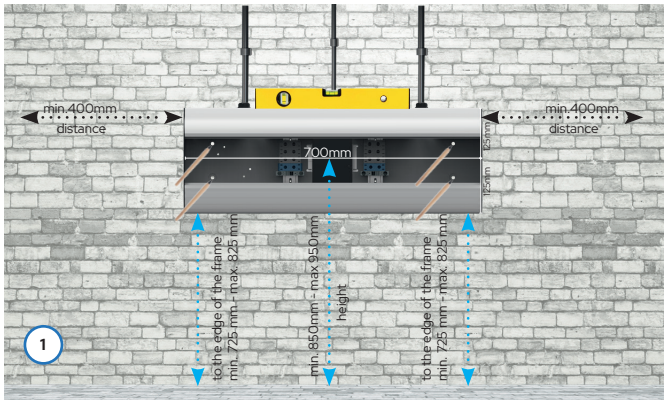
If the station is powered from below with a single cable, proceed in the same way as for installing cables from above.

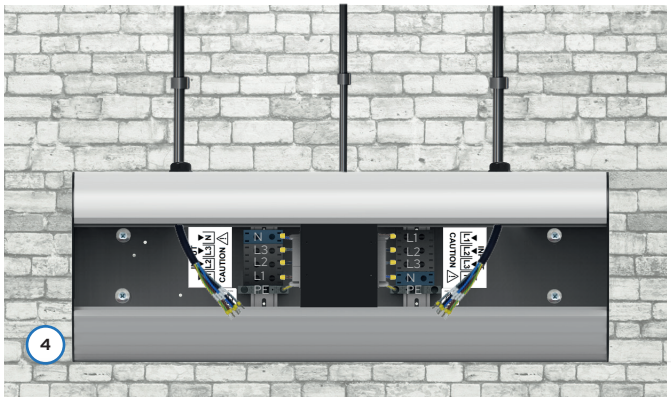
5.7 Installation of the Wallbox Frame HT 700

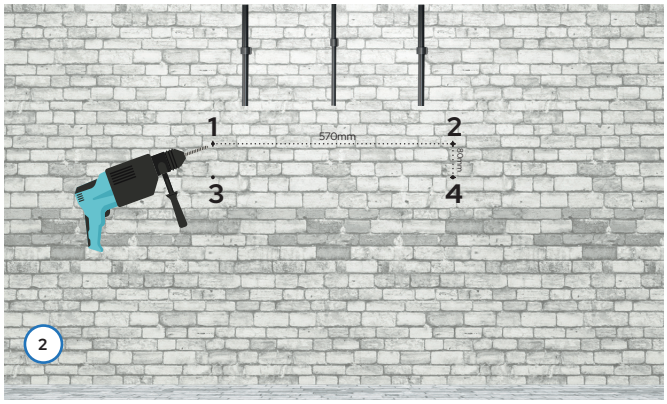
The WALLBOX FRAME HT 700 frame is mounted to the wall using 4 sets of mounting plugs with screws no thicker than 6 mm, adapted to the type of facade. Washers ensuring the tightness of the device can be found in the set of accessories included with the charging station. The dimensions of the mounting holes are: 570 mm x 80 mm.

Follow the instructions and perform the following steps, starting with:

- set the height between the ground and the center of the socket between 850 mm and 950 mm
- leave a minimum distance of 400 mm on each side (for more information, see section 5.3 on choosing the installation location)
- adjust the length of the power and communication cables
- level the Wallbox Frame HT700 using a manual or laser level
- mark the mounting holes
- drill the holes and install the dowels
- insert the sealing washers through the screws screw the Wallbox Frame to the wall
- install the power and communication cables

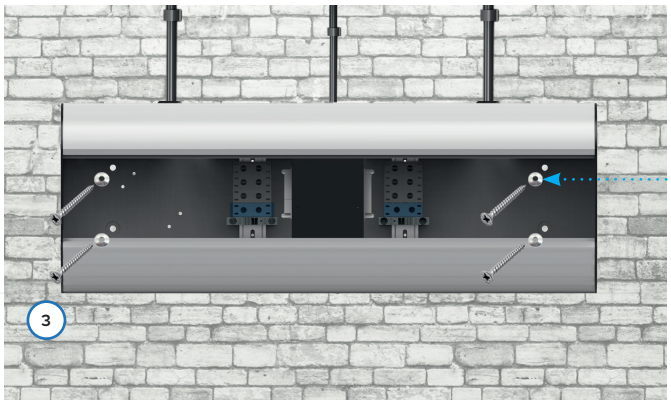


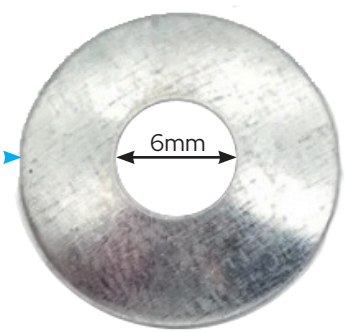




INFO

If, at the planning stage, a decision was made to use wired Ethernet communication for the payment terminal and the Enelion Chain system, place additional network cables in the cable conduit, securing them in accordance with building regulations, with a minimum length of 200 mm.





6.1 Recommendations for electical and communication connections

Wallbox Duo Pro charging stations are designed for five-wire power supply in a TN-S network.
In the standard installation variant, each CHARGER MODULE LH and RH should be powered by a separate cable from the switchboard. The switchboard should be equipped with the required protection in the form of a B or C type overcurrent circuit breaker with a rated current of 32 A or less, appropriate for the device configuration. To declare compliance with the PN-EN IEC 61851-1:2019-10 standard, each charging point must also be individually protected against type A and B residual current. This requirement can be met by installing a type B residual current device (RCD B 30 mA/40 A) or RCD EV (30 mA/40 A) circuit breaker in the switchboard on your own.
Another recommended and more economical solution is to install an RCD B circuit breaker purchased together with the device from Enelion. It is also possible to use the Enelion RCM B accessory - Residual Current Monitor type B. Enelion RCM B secures the station and, together with the RCD A used in the switchgear, meets all safety requirements. Another new and very practical solution is the use of RCB O – a protective circuit breaker with overcurrent protection and an additional RCM B in the module. In accordance with EN 61009-1 ("Residual current circuit breakers with overcurrent protection RCBO"), they combine the function of an overcurrent circuit breaker (MCB) and a residual current device (RCD). The RCB O is designed to interrupt the circuit in the event of: overload, short circuit, differential (leakage) current exceeding the set trip value.

The selection of a safety device should be made by a licensed designer or qualified electrician.

6.2 Cable Specifications, Connection Methods, and Accessories

Due to the modular design of the WALLBOX DUO PRO charging station, the electrical connection depends on the accessories used. In addition, some functions of the device require a connection with a specific phase sequence.

Remember to protect each Charger Module LH and RH with a residual current device with the characteristics described above or an RCB O with an RCMB monitor. The cross-section of the power cables must be selected by a qualified electrician based on the distance from the switchboard and other location conditions. For convenient installation, flexible power cables, such as stranded cables, terminated with crimp sleeves are recommended. The power cable or cables should protrude approximately 20 to 30 cm from the cable gland and be matched to the electrical connectors.

To connect payment terminals via an Ethernet network, use RJ45 CAT 5e CU network cables or better.

When creating an Enelion Chain network (CAN bus), it is also necessary to use at least RJ45 CAT 5e network cables or better, with copper wires, not CCA (Copper Clad Aluminum). These will be necessary for communication between modules and will enable advanced settings and monitoring. A single twisted pair of wires is used for communication. The total length of the cable must not exceed 500 m. The cables must be installed in accordance with applicable building regulations.

ATTENTION

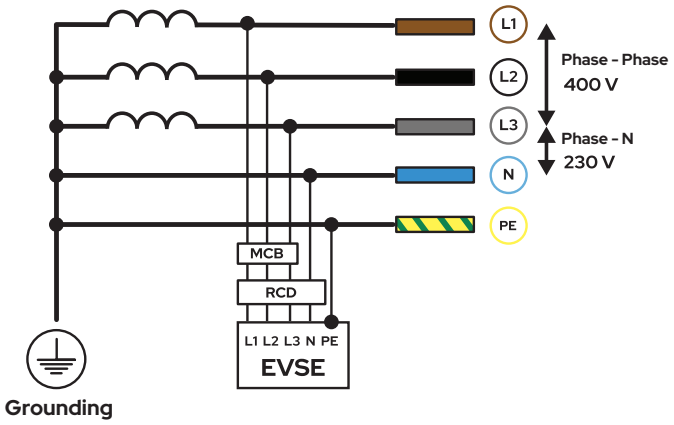
The manufacturer shall not be liable for any damage resulting from failure to comply with the above recommendations.

6.3 Installation design guidelines

Station Power Supply Network Systems

ENELION charging stations are designed for connection to a five-conductor power supply system. The standard supported configuration is the TN-S network type, operating at 230/400 V. This setup ensures safe and efficient operation in compliance with widely adopted electrical standards across Europe and other regions.

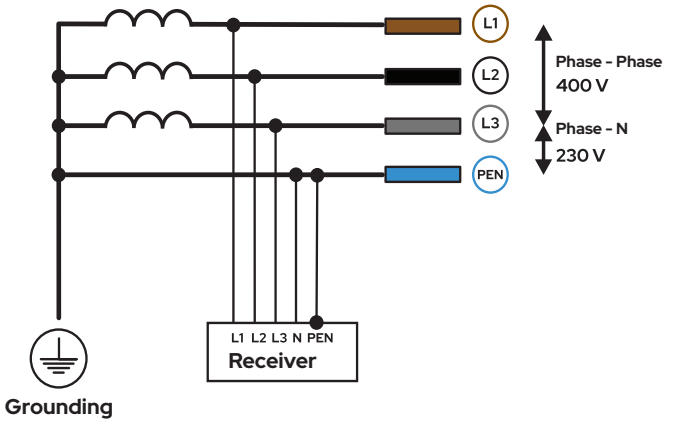
TN-S 230/400 V
Generator or transformer



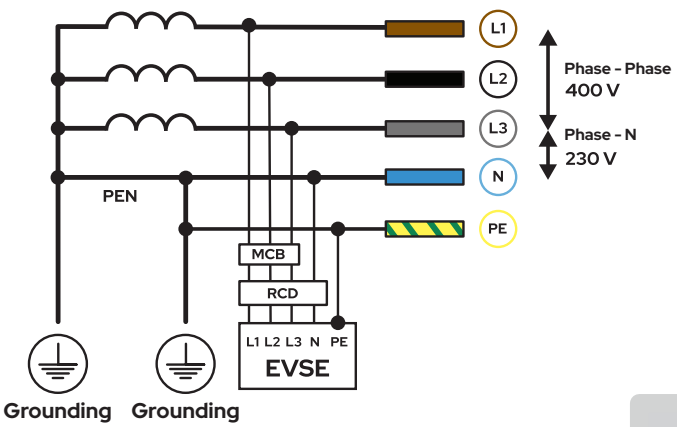
Powering the station from alternative network systems is possible under specific conditions:

In a TN-C network, the PEN conductor must be split into separate N (neutral) and PE (protective earth) conductors, in accordance with applicable standards and as illustrated in the diagram below.

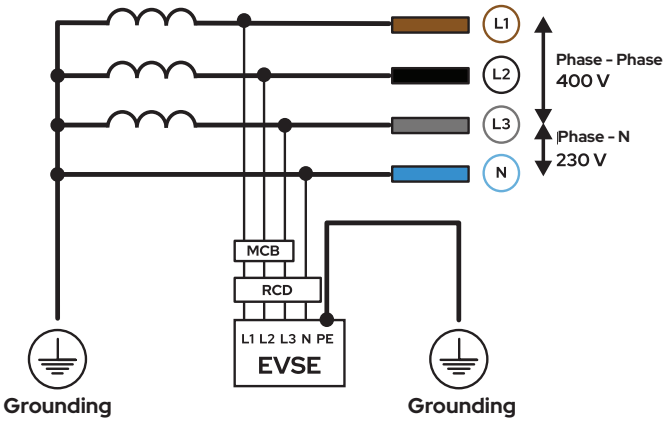
TN-C
Generator or transformer



TN-C-S 230/400 V
Generator or transformer

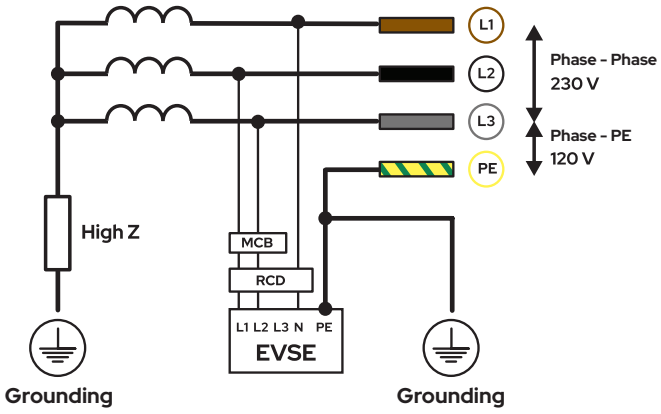


TT 230/400 V
Generator or transformer

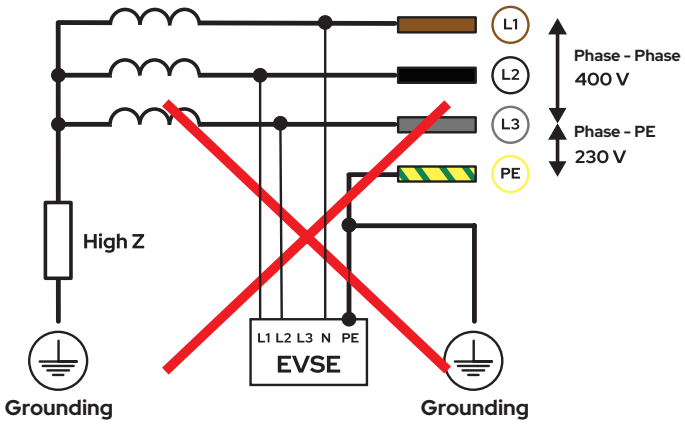


In 120/230 V IT networks, such as those commonly used in Norway, the connection must follow specific guidelines. One of the phase conductors is used as a neutral equivalent, which is a critical consideration when installing residual current devices (RCDs). Due to the network's characteristics, three-phase charging is not supported. Only certain vehicles that support two-phase charging will be compatible in this configuration.

IT 120/230V
Generator or transformer



IT 230/400 V - Not allowed !!!
Generator or transformer

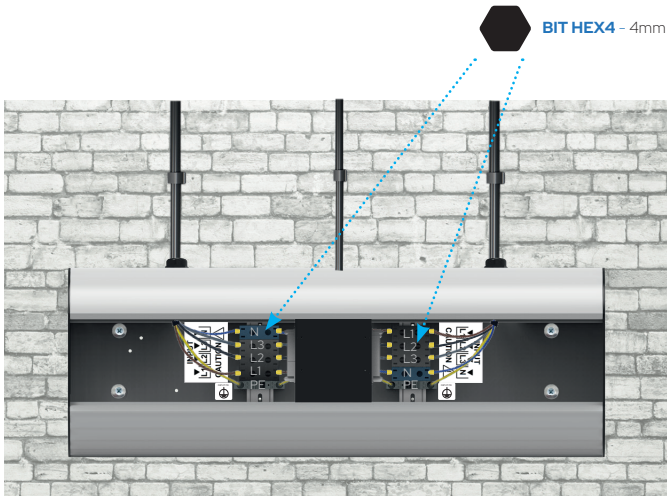


For other, more complex power supply configurations, technical consultation with the manufacturer or authorized distributor is recommended prior to purchase to ensure compatibility and safe operation.

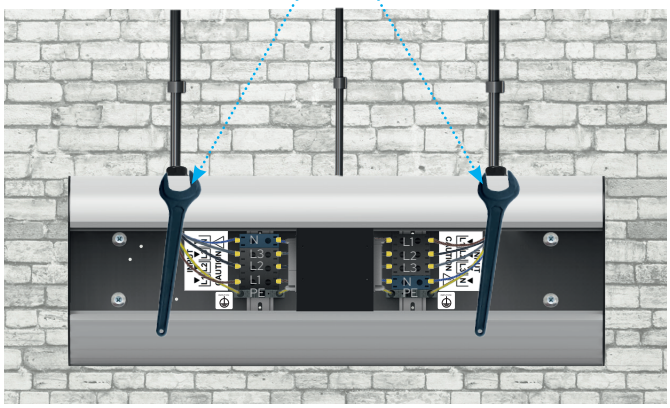
6.4 Standard Electrical Connection

Wallbox Duo Pro charging stations are designed for five-wire power supply in a TN-S network.
In the illustrations below, in the standard installation variant, each CHARGER MODULE LH and RH should be powered by a separate cable from the switchboard. The switchboard should be equipped with the required protection in the form of a B or C type overcurrent circuit breaker with a rated current of 32 A or less, appropriate for the device configuration.
Adjust the appropriate cables to the power of the modules.
The basis for correct connection is the cable marking in the Wallbox Frame HT 700.
An example marking specifying the connection of phases in the default order (L1, L2, L3, N) and PE to the Degson ZUG connector.
The electrical connection to the Wallbox DUO PRO station is normally supplied by two separate 5 x 6 mm² cables. These cables are screwed to the rail connector using a 4 mm HEX Allen key. The PE grounding cable is plugged into the Degson ZUG PE connector.
Inside the Vertican connectors there is a 3-channel quick connector, pass-through to the CAN bus.
Wire-type cables must be terminated with an insulated crimp sleeve of the appropriate size.
A crimping tool for insulated sleeves must be used.
Connect the cables according to the markings.

- Prepare cables terminated with appropriate crimp sleeves.
- Install the PE cable in the ZUG connector terminated with an appropriate crimp sleeve.
- Place them in the appropriate connectors (cables L1, L2, L3, N) and tighten them with a 4 mm hex key on both sides (key not included).
- Tighten the glands with a 30mm wrench (wrench not included).



tighten the gland with a 30 mm wrench



INFO

Installation, configuration, and connection must only be performed by qualified electricians who are licensed and have read this user manual. The device should be installed and connected after the power has been turned off.

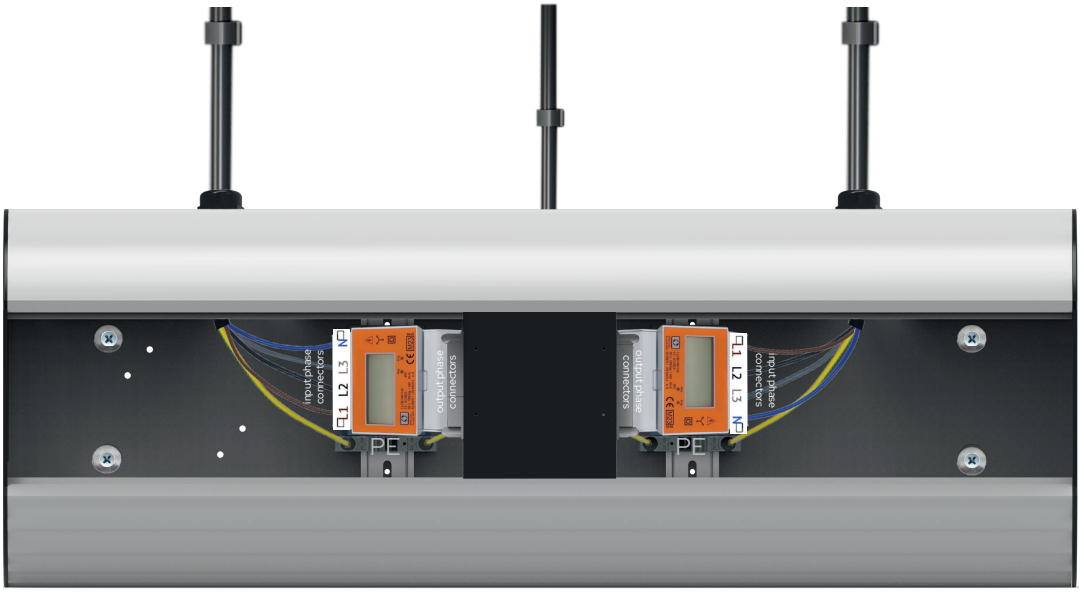
INFO

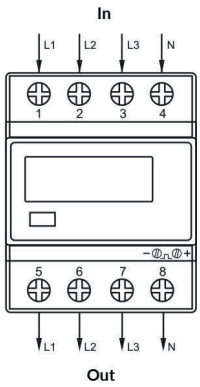
Remember to install glands and sealing caps correctly so that water cannot get in during rainfall.

6.5 Connection scheme - MID energy meter

ENELION MID is an additional certified electricity meter, installed individually on both sides of the WALLBOX FRAME HT 700 on DIN rails. The phase supply cables should be connected from the top of the meter. Due to the design of the Wallbox Duo Pro station, the MID meters **will be rotated horizontally in opposite directions**. Follow the connection method shown in the diagram very carefully. Always connect the PE cable to the Degson ZUG connector connected to the DIN rail and the Wallbox Frame HT 700 frame.

IN THE SOLUTIONS BELOW, THE STATION SHOULD BE POWERED BY TWO SEPARATE CABLES.



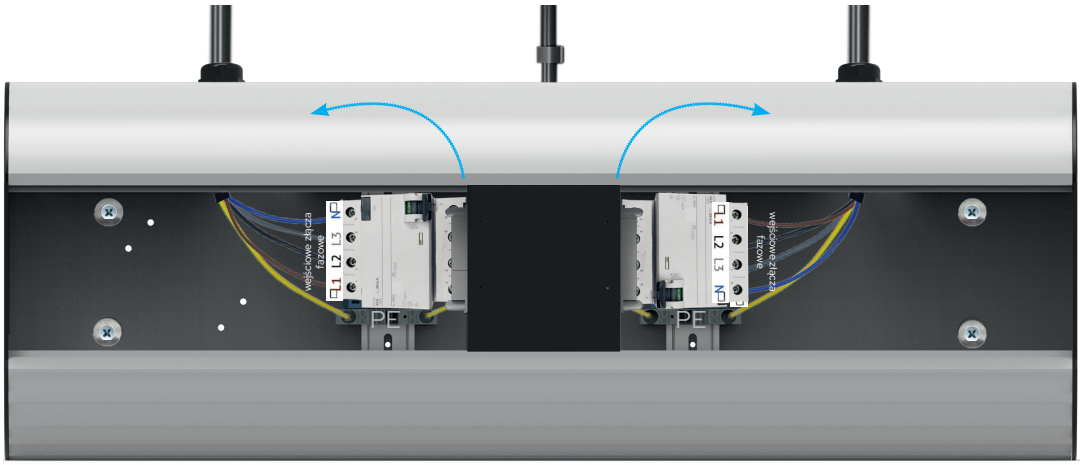


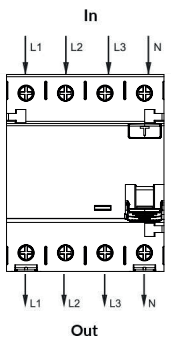
6.6 Connection scheme- RCD A

RCD A - protection against alternating current leakage

RCD A complements **RCM B** (direct current leakage monitor).
RCD A and RCM B provide complete residual current protection for type B electric vehicle charging stations, complying with, among other things, the regulations for public charging stations. To this end, a module equipped with an RCM B DC leakage monitor must be ordered from the distributor or manufacturer.

Important: Remember to connect the phase wires correctly, as the safety devices are rotated horizontally in opposite directions, as is the case with MID energy meters.





6.7 Connection scheme - RCB O

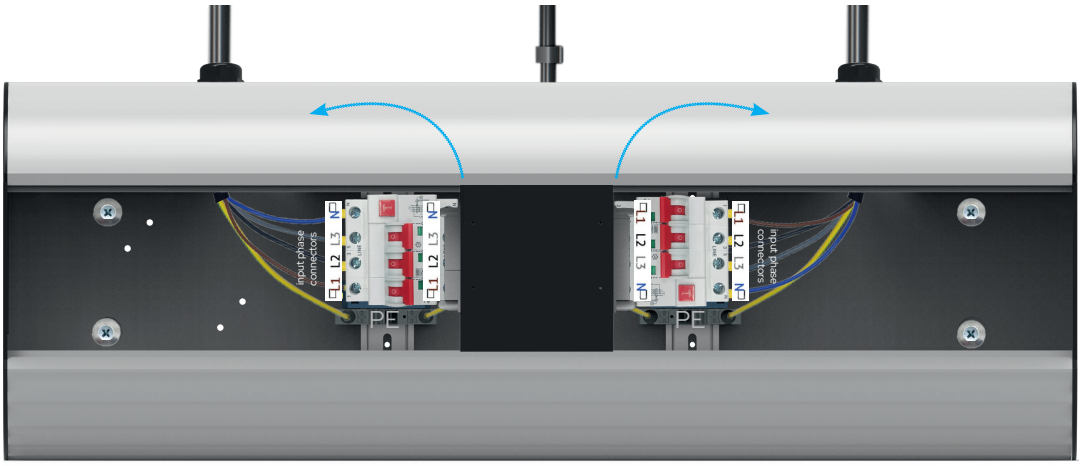
RCB O - Residual current device with overcurrent protection

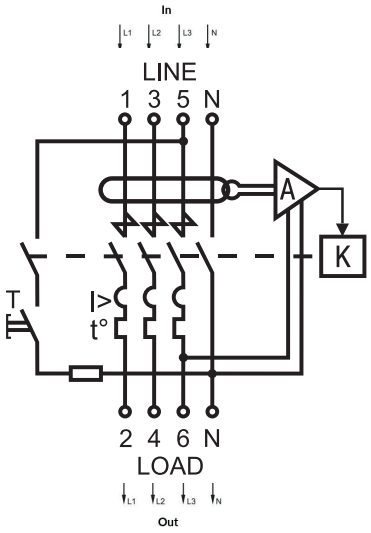
RCBO residual current circuit breakers with overcurrent protection are designed to protect people from direct or indirect contact with conductive parts of electrical equipment connected to the grounding system in buildings, as well as to protect cables and wires in low--voltage circuits against overload and short-circuit protection, as well as against infrequent switching operations of electrical cables. The circuit breakers meet the requirements of IEC/EN 61009-1.

An RCBO combines the functions of a miniature circuit breaker (MCB) and a residual current device (RCD). It is designed to interrupt the circuit in the event of: overload, short circuit, or residual current (leakage current) exceeding the set trip value.

RCBO and RCM B provide complete residual current protection with overcurrent protection for electric vehicle charging stations, meeting, among others, the requirements of the Technical Inspection Authority (UDT) for the acceptance of publicly accessible charging stations. For this purpose, a module equipped with an RCM B DC leakage monitor should be ordered from the distributor or manufacturer.

Important: Remember to connect the phase wires correctly, as the safety devices are rotated horizontally in opposite directions, as is the case with MID energy meters.



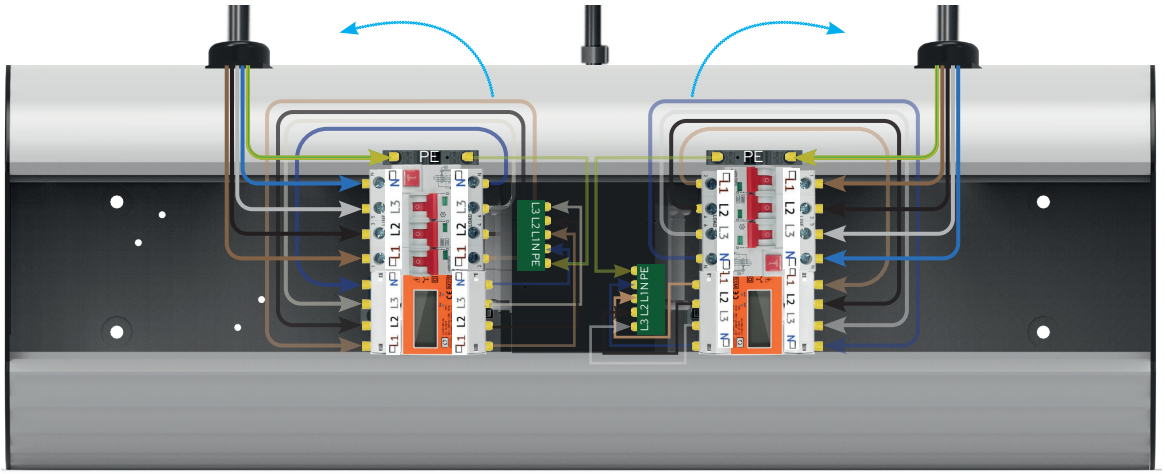


6.8 Connection scheme - RCB O + MID energy meter

RCBO - Residual current circuit breaker with overcurrent protection + MID-certified energy meter
RCBO residual current circuit breakers with overcurrent protection + MID energy meters

Important: Remember to connect the phase wires correctly, as the safety devices are rotated horizontally in opposite directions, as is the case with MID energy meters.

VERSION WITH TWO SEPARATE POWER CABLES FOR THE STATION

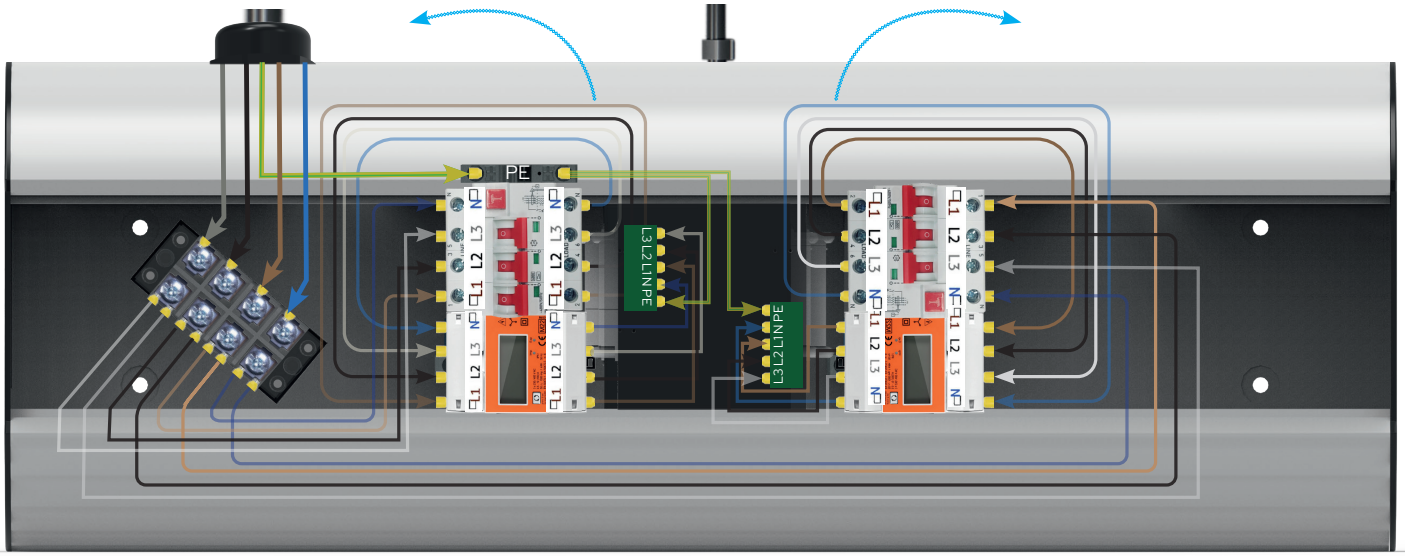


6.9 Connection method WALLBOX DUO PRO powered by a SINGLE CABLE, RCB O + MID energy meter

POWER SUPPLY VERSION WITH A SINGLE CABLE

If you need to power the Wallbox Duo Pro with two charging modules using a single cable, this specific version comes with a splitter already installed, allowing you to safely split the power supply between two charging panels inside the Wallbox Frame HT 700. For the Wallbox Duo Pro Splitter, the standard Cu wire cross-section is 6 mm². It includes overcurrent protection or residual current protection in the form of an RCB O. The following instructions apply to situations where an ENELION MID has also been installed. Follow the illustrative diagram. **The maximum power of the Charger Module LH and RH when powered by a single cable should not exceed 11kW**.

Important: Remember to correctly connect the phase wires to the 4-pole terminal strip and the grounding wire to the ZUG PE connector. Pay attention to the markings on the output wires from the Splitter terminal strip.



ATTENTION

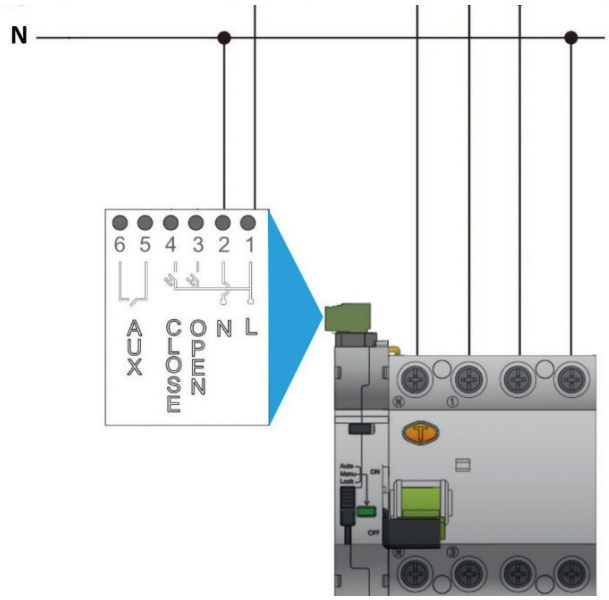
The connections shown are examples. Before installation, check the markings on the meter being installed. The method of connecting the Enelion Splitter may vary depending on the variant. Other, more complex power supply systems require technical consultation before purchase.

INFO

You will find the connection diagram for the branch rail block further on in the manual.

6.10 Connection scheme - RCD B with automatic restart

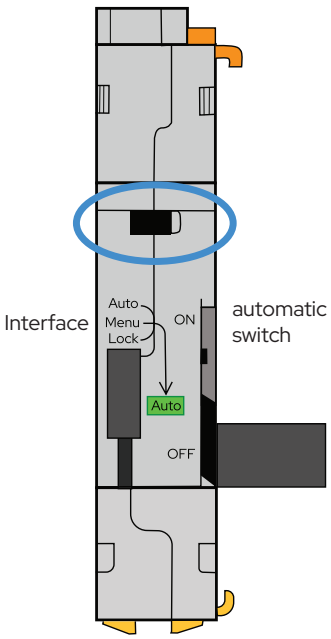
An RCD B circuit breaker can be equipped with an automatic reclosing device (lifter). The lifter is a separate physical unit that must be installed adjacent to the RCD on the DIN rail. Depending on the number of phases in the system, the combined circuit breaker and lifter assembly will occupy 4 to 5 slots (DIN rail bays).



Wiring diagram of RCD B with lifter for power supply

Lifter Status Indication – LED Interface

The automatic lifter is equipped with an LED interface that provides visual feedback on its operating status:
Solid green – The device is operational and ready for use.
Solid red – The device is locked after three unsuccessful reclosing attempts. Manual intervention at the station is required to reset the lifter.
Flashing red – The lifter is actively attempting to reclose the residual current circuit breaker (RCD).



The lifter can operate in three modes

Auto Mode
In this mode, the lifter attempts to automatically reclose the RCD B up to three times following a trip event:

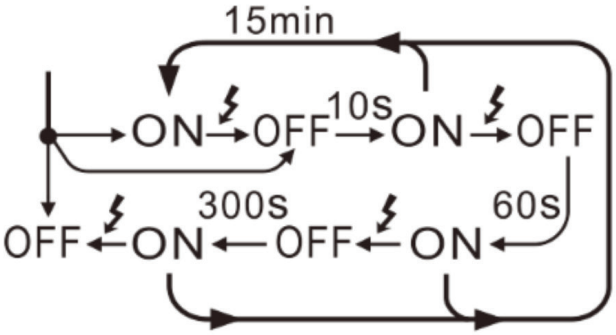
First attempt – Initiated 10 seconds after the circuit breaker trips.

Second attempt – If the RCD trips again within 15 minutes, the lifter will retry after a 1-minute delay.

Third attempt – If the RCD trips a third time within 15 minutes, the final reclose attempt will be made after a 5-minute delay.

Fourth trip – Automatic operation is disabled. Manual reset of the RCD is required at this point.

A schematic representation of this logic can be found in the following section of the manual.



Manual Mode
In this standard configuration, the lifter does not attempt to reclose the circuit breaker. After tripping, the RCD B must be reset manually.

Lock Mode
This setting disables access to mode switching and allows for physical sealing of the mode selector to prevent unauthorized changes. It is intended for installations requiring tamper protection.

If the Enelion charging station is purchased with a residual current circuit breaker (RCD B) equipped with an automatic lifter, the device will be factory-configured to operate in Auto mode by default. This ensures automatic reclosing functionality in accordance with the defined lifting logic, enhancing operational continuity and reducing the need for on-site intervention after fault events.

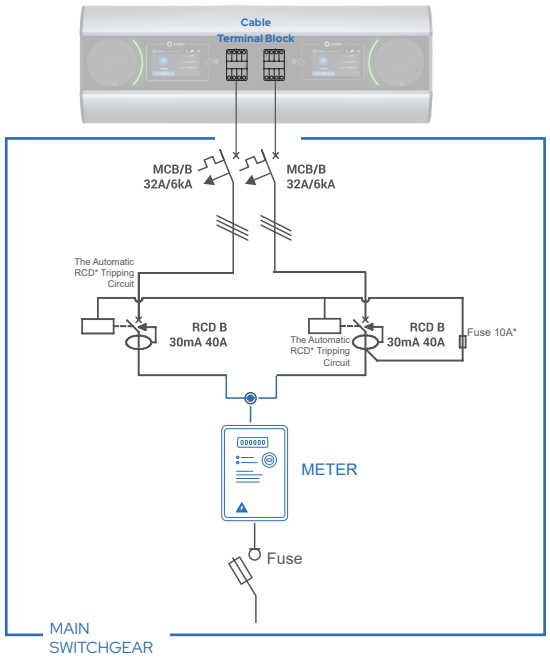
6.11 Connection method – diagrams – variants

The type of electrical protection will be determined based on the purchased Wallbox Frame HT 700 variant. Protective devices and apparatus may be located in the switchboard or in the Wallbox Frame HT 700 itself.

VERSIONS WITH TWO SEPARATE POWER CABLES FOR THE STATION

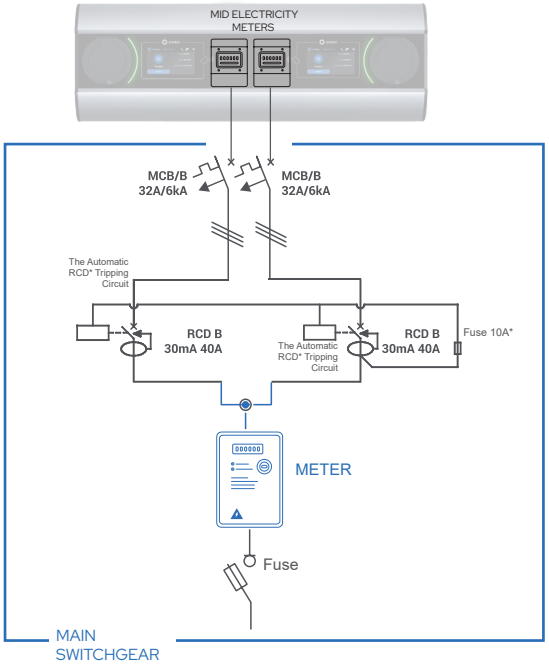
Devices in the switchgear	Other accessories in the switchgear	Electrical safety devices in WF HT700	Other accessories, connectors in WF
Main energy meter, 2 x RCDB 40A + MCB/32A	Main energy meter	-	connectors for phase cables + 2 x PE

RCD B + MCB/B



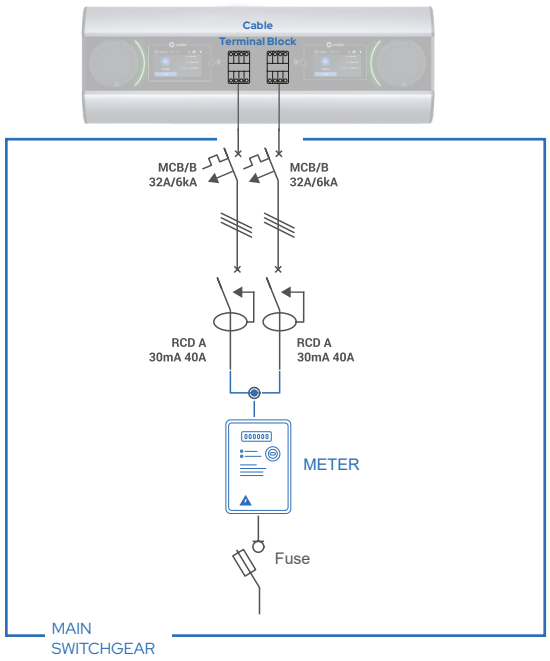
Devices in the switchgear	Other accessories in the switchgear	Electrical safety devices	Other accessories, connectors in WF
Main energy meter, 2xRCDB 40A + MCB/32A	Main energy meter	-	2 x energy submeters MID, 2 x PE

RCD B + MCB/B + MID



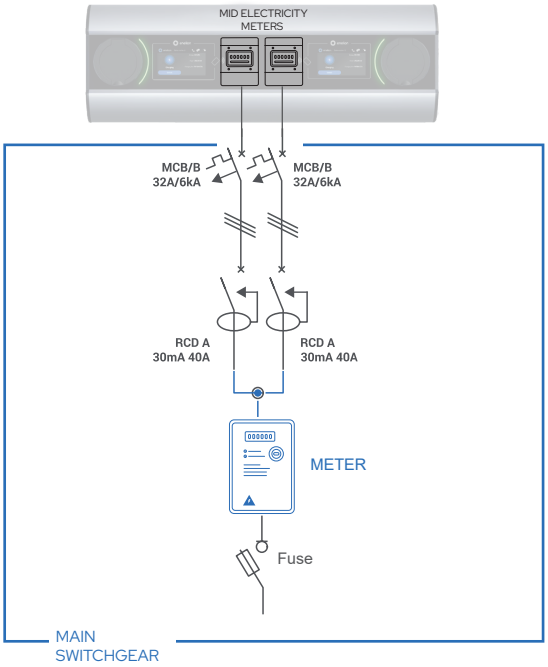
Devices in the switchgear	Other accessories in the switchgear	Electrical safety devices in WF HT700	Other accessories, connectors in WF
Main energy meter, 2xRCDA 40A + MCB/32A	Main energy meter	-	connectors for phase cables + 2 x PE

RCD A + MCB/B



Devices in the switchgear	Other accessories in the switchgear	Electrical safety devices in WF HT700	Other accessories, connectors in WF
Main energy meter, 2xRCDA 40A + MCB/32A	Main energy meter	-	2 x energy submeters MID, 2 x PE

RCD A + MCB/B + MID

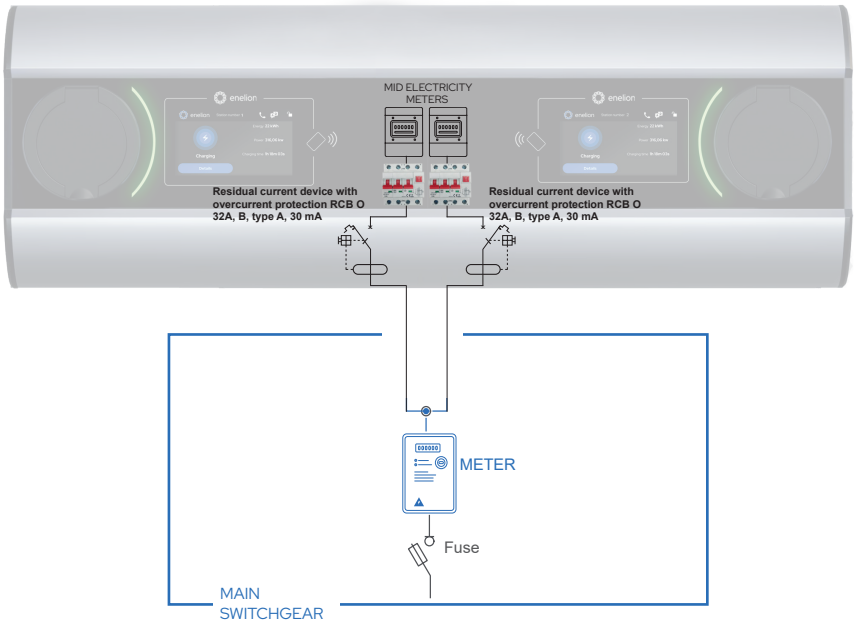


6.11 Connection method – diagrams – variants

VERSION WITH TWO SEPARATE POWER CABLES FOR THE STATION

Devices in the switchgear	Other accessories in the switchgear	Electrical safety devices in WF HT700	Other accessories, connectors in WF
-	Main energy meter	2xRCB O 32A	2 x energy submeters MID, 2 x PE

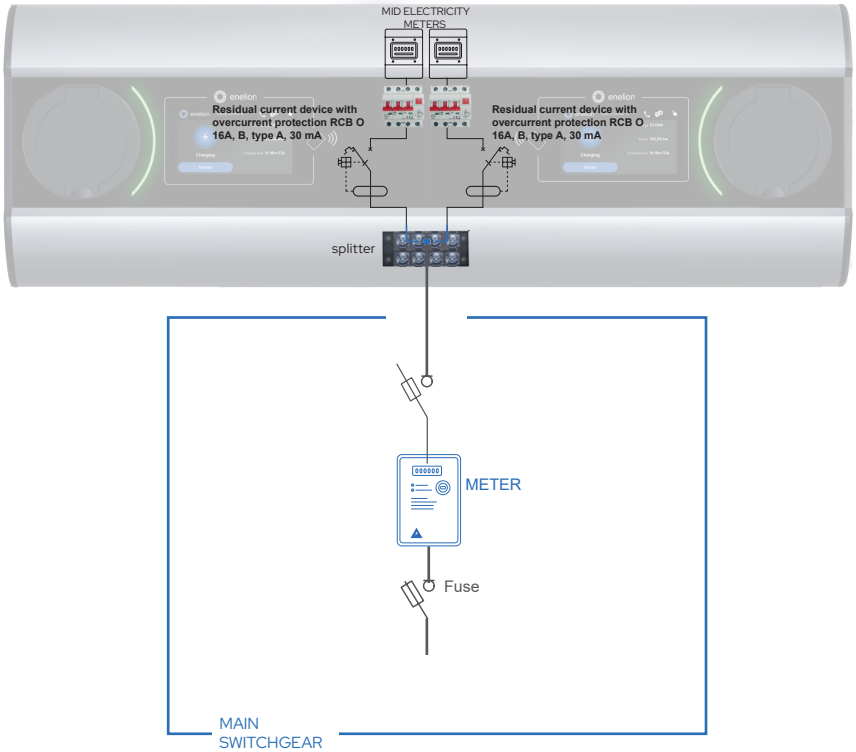
RCB O + MID meters installed at the station



Devices in the switchgear	Other accessories in the switchgear	Electrical safety devices in WF HT700	Other accessories, connectors in WF
-	Main energy meter	2xRCB O 16A	Branch connector, 2 x energy submeters MID, 1 x PE

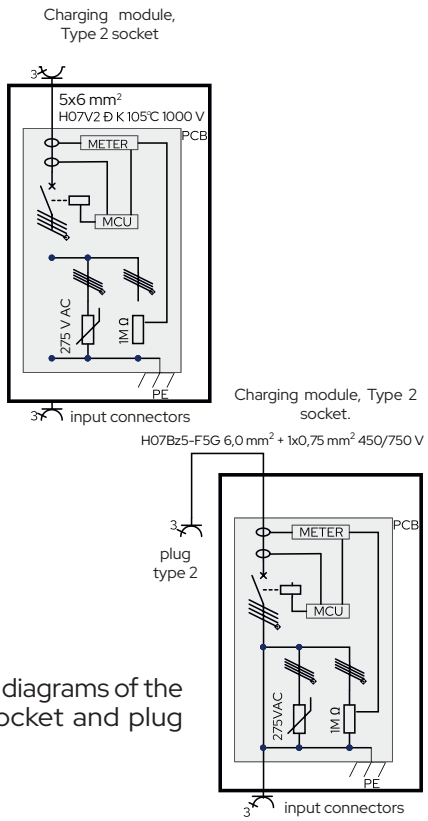
SINGLE-WIRE POWER SUPPLY VERSION

SPITTER + RCB O + MID meters installed at the station

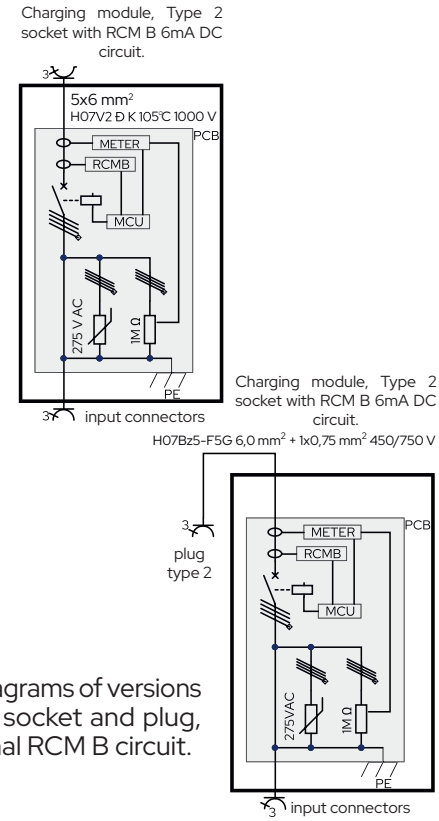


6.12 Diagrams - overview of CHARGER MODULE LH and RH modules

Illustrative schematics for socket and tethered Type 2 variants:



Overview diagrams of the Type 2 socket and plug version



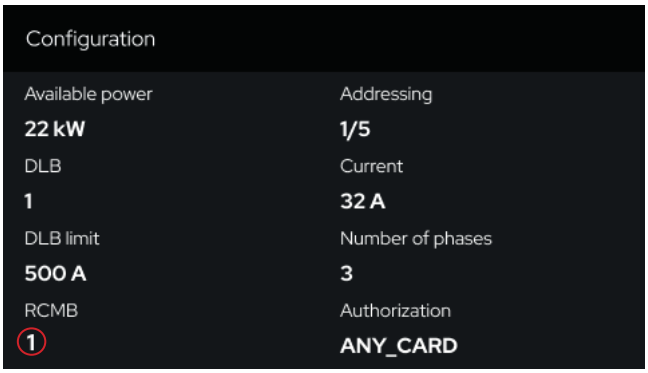
Overview diagrams of versions with Type 2 socket and plug, and additional RCM B circuit.

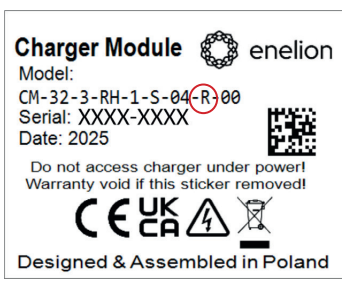
6.13 Enelion RCM B residual current monitor for charging stations in charging module

This is a DC leakage monitor, type B protection in an incomplete version. Installed during production in the Charger Module LH and RH. According to EN IEC 61851-1, each charging point must be protected by overcurrent and type A+B residual current circuit breakers. The use of a type B residual current monitor inside the station allows this requirement to be met by adding only overcurrent protection and a type A residual current circuit breaker. This reduces installation costs and allows safe use of the charging device with a plug-in car. The RCM B and RCD A set provides complete residual current protection for type B electric vehicle charging stations, meeting, among other things, the requirements and regulations for the acceptance of a public charging station. One set of protections is required for each charging point. A double charger must be equipped with two sets of protections, one for each point.

INFO

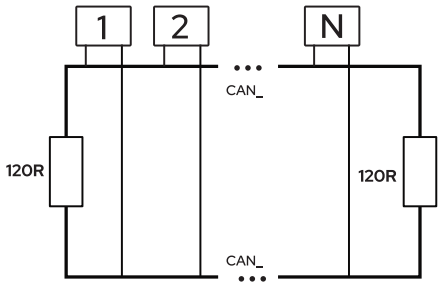
You can find information about which module you have on the label with the model number - serial number on the back of the module. A module with a DC leakage monitor has the letter R in its model number, or the Configuration screen will appear for 2 seconds on the screen immediately after turning on the power to the modules. **The number 1 indicates that an RCM B monitor is installed**. You can also check for the presence of an RCMB monitor by clicking on the start screen / handset / then the diagnostics subpage. The RCMB module is installed in the same way as the RCM B module.





6.14 Enelion Chain

The ENELION CHAIN network is based on a serial, wired CAN bus. Charger Modules communicate with each other via this bus. It is also possible to connect one Master module to a BRIDGE LTE modem with 98 Slave modules without a Bridge. This solution saves costs and allows for the monitoring and configuration of multiple stations in a single modem. This gives us full control over the modules without a modem.
A popular and frequently encountered configuration is the Wallbox frame HT 700 equipped with one Charger Module LH with Bridge LTE and a second Charger Module RH without Bridge LTE. In this case, termination is enabled by default and no change in the position of the CAN TERM switch is required. In any other case, when you intend to connect multiple devices within a single CAN chain network to the protocol, you must switch the termination jumper in the Wallbox Frame HT 700 under number 1 and in the last frame, e.g., under number 10. Before starting the station, check that the other jumpers are set to OFF.
A larger number of jumpers switched to **ON** may result in a lack of communication. **Only 2 jumpers** in the entire chain can be switched to **ON**. At the beginning, i.e., in **the first module**, and at the end, **in the last Enelion Chain module**.

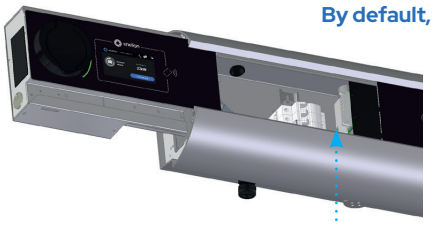


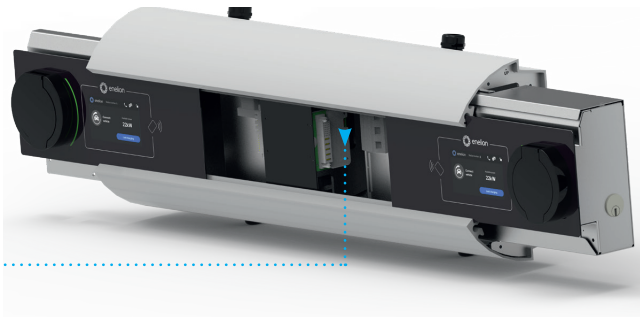
M1	M2	M3	M4	M5	M6	M7	M8	M9	M10
ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON
Bridge LTE	none	none	none	none	none	none	none	none	none

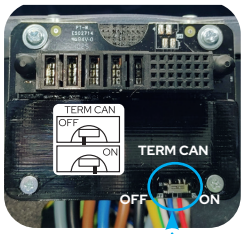
Example diagram for 10 modules connected in Enelion Chain network

M- MODULE AND NUMBER
ON and OFF - Termination is done by switching the slide switch to the right, to the "ON" position.
Presence in the LTE Bridge module

By default, termination in WALLBOX DUO PRO is enabled for both modules to ON.





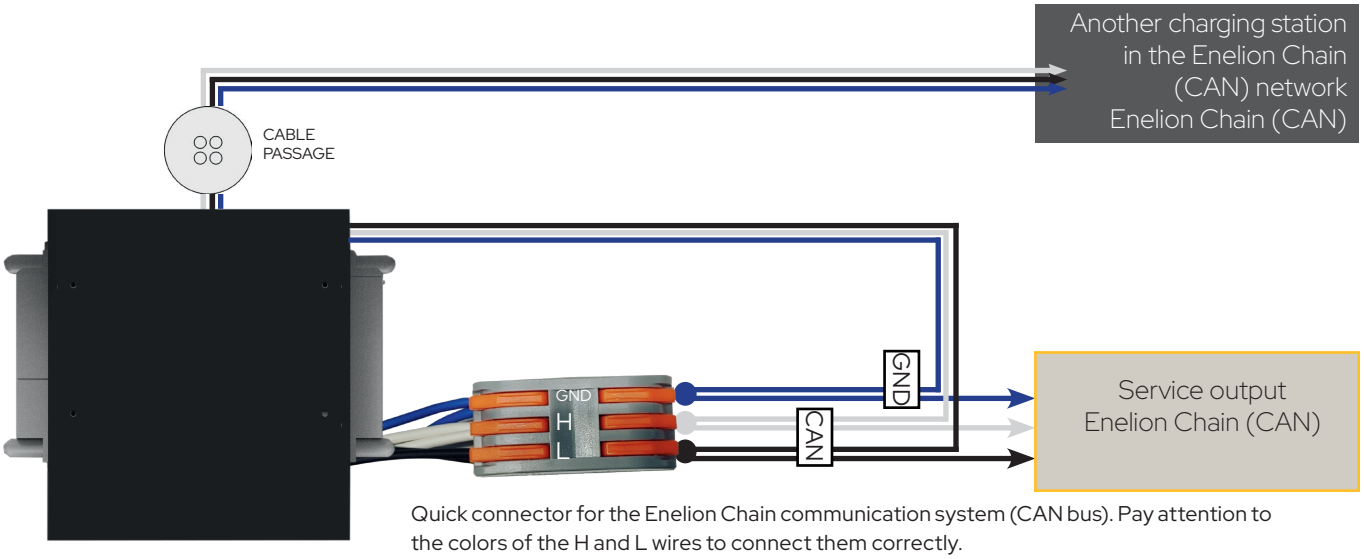


On both sides of the Frame HT 700 frame, you will find a switch for changing the termination under the power connector socket.
Enelion Chain (CAN)

Ważne: *Remember to switch the termination correctly; pay attention to the ON and OFF markings on both sides of the Wallbox frame HT 700.*

6.15 Enelion Chain (CAN) connection

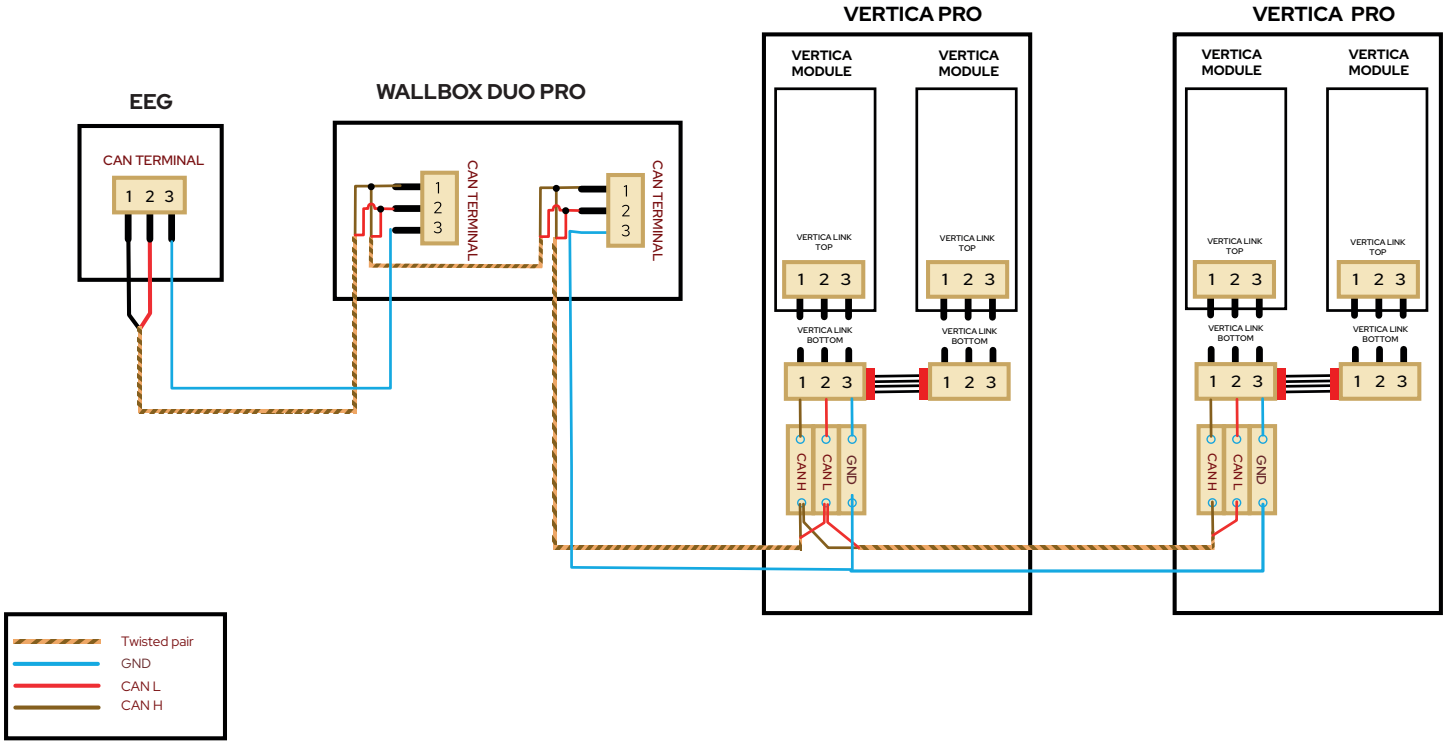
Enelion Chain (also known as a CAN bus chain). This solution requires all devices to be connected with a CAT5e or better network cable with copper wires (not CCA - Copper Clad Aluminum). A single twisted pair of wires is used for communication.
Select any pair of wires (color) and use it consistently throughout the installation. The Wallbox Frame HT 700 has a cable gland in the middle of the frame at the top or bottom for CAN cables.
In the middle of the frame, behind the power connectors, you will find a quick connector for CAN cables.
Cable-type wires must be terminated with an insulated crimp sleeve of the appropriate size.



Quick connector for the Enelion Chain communication system (CAN bus). Pay attention to the colors of the H and L wires to connect them correctly.

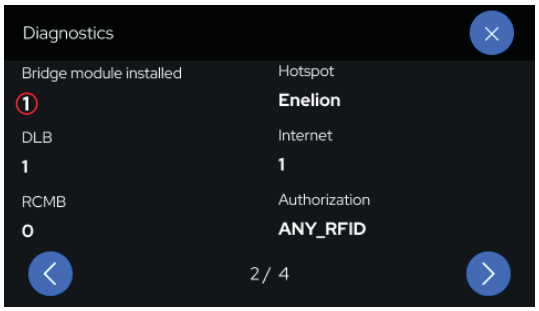
6.16 Connection diagram for various devices in the Enelion Chain (CAN) network

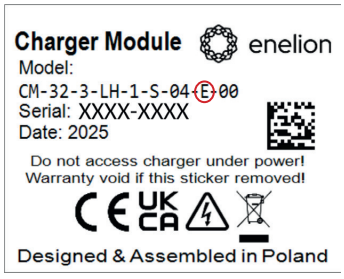
The ends of the bus must be terminated with a 120 Ohm resistor, for this purpose the termination must be switched to ON on the PCBs of the devices at the edge of the network.



6.17 Installing the SIM Card in the module CHARGER MODULE LH

Check if your module has been factory-equipped with Enelion Bridge LTE.
Before placing the Charger Module LH in the frame, the model number should include the letter E, indicating the presence of a communication modem.
You can also verify this on the **Diagnostics** screen by clicking on the headset icon and then the **Diagnostics** button.
The presence of the modem will be indicated by the number 1.

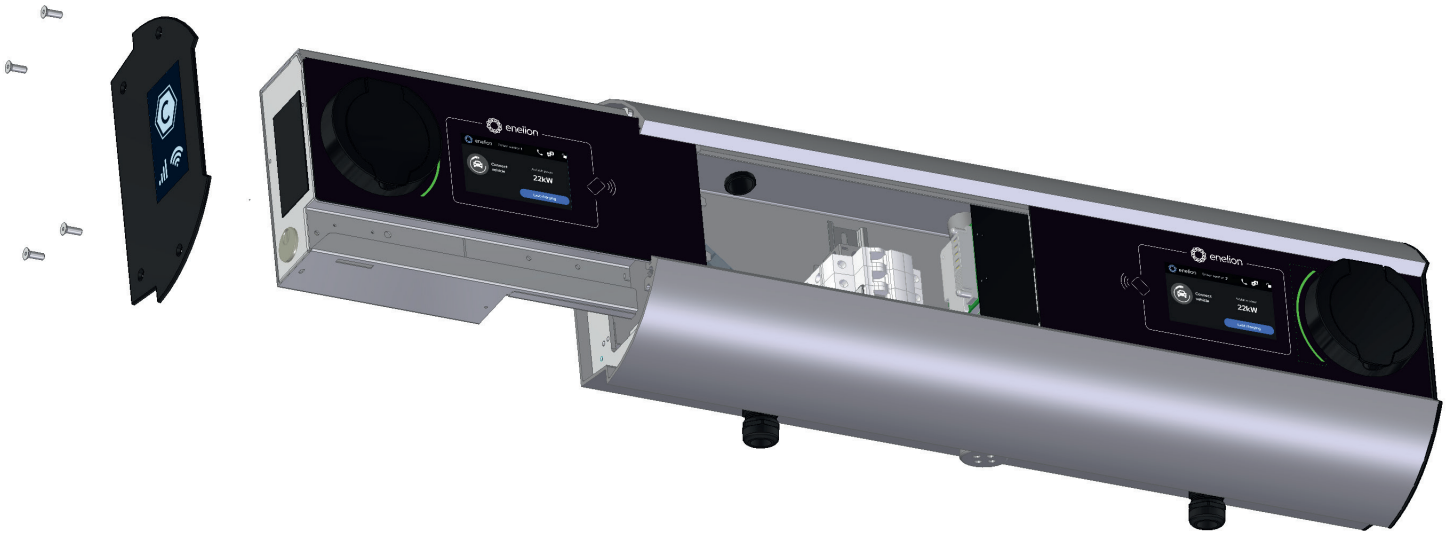


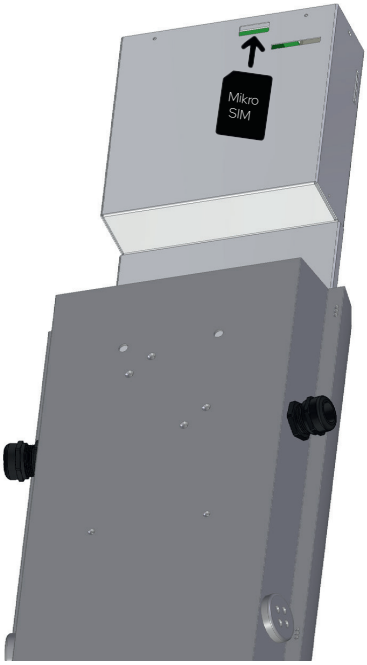


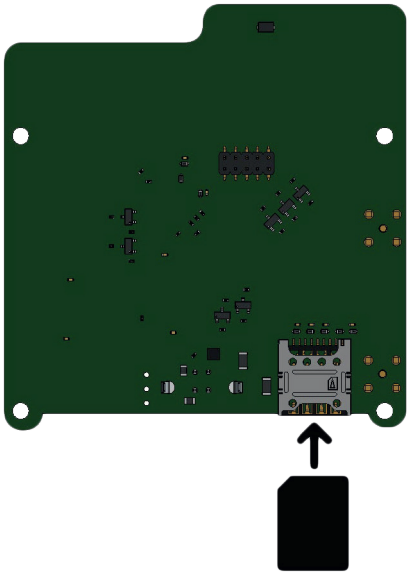
6.17 Installing the SIM Card in the module Charger Module LH

To provide an Internet connection to a charger equipped with an ENELION BRIDGE LTE modem using the LTE network, you must:

- Turn off the power in the switchboard before inserting the micro SIM card into the charging module.
- Only the Charger Module LH (left) can have the Enelion Bridge LTE modem installed.
- Make sure that your module has the Enelion Bridge LTE modem installed (letter E in the model number BRIDGE) or check the diagnostics tab.
- Unscrew the security screws using the included Torx Security T25 bit.
- Slide the left module out of the Wallbox Frame HT 700.
- The Charger Module LH must be equipped with an LTE card before it is placed in the Wallbox Frame HT 700.
- Please note that the LTE card must be inserted into the LTE slot with the contacts facing the PCB.
- The SIM card slot is located on the back of the module.
- Insert the module with the SIM card into the Wallbox Frame HT 700.







6.18 Technical specifications

Wallbox Duo PRO + Bridge LTE

General Specification	
Model	WALLBOX DUO PRO + Bridge LTE
Charging mode	Tryb 3 (IEC 61851-1)
Charging points	Up to 2
Connector type	Type 2 (IEC 62196-2), cable or socket
Charging power	Single-phase: 7.4 kW (32 A per phase, adjustable in 1 A steps) Three-phase: 22 kW (32 A per phase, adjustable in 1 A steps)
Charging current	Adjustable from 6 to 32 A (1-/3-phase)
Load balancing	SLB and DLB (Static and Dynamic Load Balancing) Network point addressing: Supported Socket lock control: Supported
Preconfigured phase rotation **	Yes
Nominal voltage	400 V (3×230 V)
Dimensions W x H x D	width 710 mm × height 250 mm × depth 145 mm
Weight	Wallbox Frame HT 700 - 4,9 kg Station Wallbox Pro (Frame HT 700 + x2 modules with socket: 12,4 kg Station Wallbox Pro (Frame HT700 + x2 modules with cable: 16,6 kg
Standby power consumption	12 W per module
Protection rating	IP54 (enclosure) IK10 (mechanical impact resistance)
Built-in energy meter	1-/3-phase, measurement accuracy >99%
Lock	* Patent lock

Functionality and Communication

Functionality and Communication	
* Bridge 2.6Q communication module (LTE):	LTE (4G) support Wi-Fi 2.4 GHz Micro SIM, APN-based authentication (user/pass) OCPP 1.6 JSON (full stack + Smart Charging / custom keys) Smart Charging, network configuration options (4G) Full branding of configuration panel (logo, colors) Network connection pre-configuration (Wi-Fi, Ethernet, GSM) OCPP configuration keys, backend connection OTA updates Configuration panel access via: hotspot
Authorization	Free Charge RFID (ISO/IEC 14443A, MIFARE Classic) Mobile apps / external systems (OCPP)

* Available as optional accessory
* Requires physical phase crossover during installation (as per DTB)

6.18 Technical Specificationse

Wallbox Duo PRO + Bridge LTE

Functionalities and communication	
Payments	Dynamic QR codes Contactless payment terminal Payter Apollo 4G/WiFi* Mobile apps / external platforms (OCPP)
Management and storage	Up to 16,383 RFID cards Registration of up to 33,000 transactions and diagnostic data Remote updates (AES-256), diagnostic files (.tar.gz) No remote access to console
Dynamic Load Balancing (DLB)	Local load balancing within the Enelion Chain (CANbus), firmware-based, no network access required Support for up to 100 charging points in a single chain Dynamic power balancing of grid connection via Enelion Energy Guard Fallback mode in case of OCPP connection loss Smart Charging

User Interface and Communication

User Interface and Communication	
Display	Default UI language and language selection menu Customizable touchscreen (logo, color scheme, advertisements) 4.3" touch LCD 300 cd/m² 480 × 272 px
Status indicators	LED status bar Touch display
Third-party application support	Compatible with third-party OCPP applications

Electrical Specification

Electrical Specification	
Power systems	TN-S TN-C-S TN-C TT IT
Cable cross-sections	Standard: 6mm²
Switching elements	Relays compliant with IEC 61810-1
Power Daisy Chain	Support for serial power distribution Cable cross-sections: Al/Cu up to 50 mm² Maximum current per chain: 3×135 A Required overcurrent protection: same as for 35 mm² Cu conductor Theoretical maximum number of charging points per chain: 24 × 16 A (1-phase) Recommended number of charging points: up to 8 × 32 A (3-phase, with DLB)
Integrated protections*	RCD A + RCM B + MCB B32 / RCB O + RCM B / RCDB + MCB B32

* Available as optional accessory

6.18 Technical Specifications

WALLBOX DUO PRO + Bridge (LTE)

Electrical Specification

MID Energy Meter*	
MID Energy Meter	Yes, optional
Type	Three-phase, impulse, 4-module
Voltage range	3 × 230 / 400 V
Current ratings	Min. 0,5 A Ref. 10 A Max. 100 A
Frequency	50 Hz
Pulse rate	1000 impulses/kWh
Accuracy class	Class B (MID compliant)
Protection rating	IP51
Compliance	EN 50470-1 EN 50470-3 MID 2014/32/UE

Electrical Protection

Electrical Protection	
Residual Current Device Type A (RCDA)*	4-pole Rated current: 40 A Tripping current: 30 mA AC Short-circuit capacity: 0.8 kA Protection rating: IP20
Residual Current Device Type B (RCDB) *	4-pole Rated current: 40 A Tripping current: 30 mA Trip time: <300 ms (AC), <40 ms (DC) Protection rating: IP20/IP40 Compliance: IEC/EN 62423
RCMB Detector *	Detection range: 6 mA DC Operating temperature: -40°C to +85°C Supply voltage: 5 V DC Compliance: IEC 62752:2016
Miniature Circuit Breaker (MCB) *	Type B, 3-pole Rated current: 32 A Short-circuit capacity: 6 kA Compliance: EN 60898 / IEC 60947-2 Protection rating: IP20
RCBO (Residual Current Circuit Breaker with Overcurrent Protection) *	Rated current: 32 A / 16A with single-wire power supply Residual current: 30 mA Trip characteristic: B/C Trip time: <300 ms Compliance: EN 61009-1, EN 61009-2-1 Protection rating: IP20/IP40

* Available as optional accessory

6.18 Technical Specifications

WALLBOX DUO PRO + LTE Bridge Set - Installation

Installation	
Recommended cable cross-sections	16 A: 5×4 mm² 32 A: 5×6 mm²
SPLITTER*	4-pole To 60 A, 690 V 2,5–16 mm²

Operating Conditions

Operating Conditions	
Operating temperature	-25°C/+55°C
Ambient humidity range	5% to 95% relative humidity, without condensation
Electrical safety class	Class I
Environmental protection	IP54 (dust and water resistance) IK10 (mechanical impact resistance)

* Available as optional accessory

6.19 Technical Specifications

Wallbox Frame HT 700

Electrical data	
Power cable routing	from above or below
Recommended minimum cable cross-section	5 × 6.0 mm² (for nominal current of 32 A)
Supply voltage (Europe)	3 x 230V / 400V AC (+-10%)
Frequency	50 Hz/60 Hz
Supported grid types	TN-S,TN-C-S,TN-C,TT,IT
Protection class	Class I

Mechanical Data	
Dimensions (W x H x D)	710 mm x 250 mm x 145mm
Weight	4,9 kg ± 5%
Mechanical impact resistance	IK10
Ingress protection rating	IP54

Local Charging Network	
Charging network architecture	ENELION CHAIN (CAN bus-based multi-point communication system)
Optional components	• ENELION MID • Splitter • RCD B, RCD A, RCB O

Environmental Conditions	
Operating temperature	-25°C/+55°C
Storage temperature range	-40°C to 80°C
Permissible relative humidity	5% to 95%
Maximum installation altitude	2000 m above sea level

* Available as optional accessory

6.20 Technical Specifications

CHARGER MODULE with socket

Electrical data	
Supply voltage (Europe)	3 x 230 V/400 VAC (+-10%)
Frequency	50 Hz/60 Hz
Supported grid types	TN-S,TN-C-S,TN-C,TT,IT
Overvoltage category	Category III in accordance with EN 60664-1
Rated short-time withstand current	RMS value <6 kA (EN 61439-1)
Overcurrent protection	Not included with the device. Protection must be implemented in compliance with local regulations and device version
Protection class	Class I
Socket variant	Type 2 standard socket, 32 A / 400 VAC (EN 62196-1)

Mechanical Data	
Dimensions (W x H x D)	180 mm x 350 mm x 105 mm
Weight	2,8 kg ± 5%

Optional components	
Optional components	• BRIDGE LTE* • RCM B*
RFID	MIFARE cards compliant with ISO 14443

Environmental Conditions	
Operating temperature	-25°C/+55°C
Storage temperature range	-40°C to 80°C
Permissible relative humidity	5% to 95%
Maximum installation altitude	2000 m above sea level

* Available as optional accessory

6.21 Technical Specifications

Moduł CHARGER MODULE with cable

Electrical data	
Supply voltage (Europe)	3 x 230 V/400 VAC (+-10%)
Frequency	50 Hz/60 Hz
Supported grid types	TN-S,TN-C-S,TN-C,TT,IT
Overvoltage category	Category III in accordance with EN 60664–1
Rated short-time withstand current	RMS value <6 kA (EN 61439–1)
Overcurrent protection	Not included with the device. Protection must be implemented in compliance with local regulations and device version
Protection class	Class I
Plug variant	Type 2 standard plug, 32 A / 400 VAC (EN 62196–1)

Mechanical Data	
Dimensions (W x H x D)	180 mm x 350 mm x 105 mm
Weight	5 kg ± 5%

Interfaces	
Charging cable	straight type, reach 5 m; includes cable hanger
Local Charging Network	ENELION CHAIN
Additional connectors	Meter interface
Optional components	• BRIDGE LTE • RCM B

Environmental Conditions	
Operating temperature	-25°C/+55°C
Storage temperature range	-40°C to 80°C
Permissible relative humidity	5% to 95%
Maximum installation altitude	2000 m above sea level

* Available as optional accessory

6.22 Inclusive Access Requirements

The Wallbox Duo Pro charging station complies with United Kingdom's PAS 1899:2022, regarding the adaptation of stations for people with special needs.

The method of installing the Wallbox Duo Pro station will determine compliance with regulations or rules regarding the adaptation of the device for people with disabilities.

The correct installation height of the station will comply with PAS 1899:2022 regulations.

Charging Station / Public Charging Station	
Charging point forming part of the public transport road charging infrastructure	
Type	WALLBOX DUO PRO
Charging socket (center line) min. 800mm - max. 950mm	fulfilled
Power cable connector (lower part of the handle) min. 800 mm - max. 950 mm	fulfilled
Screen / Touch interface min. 800 mm - max. 1200 mm	fulfilled
Payment terminal min. 800 mm - max. 1000 mm	fulfilled

6.23 AFIR regulations

The WALLBOX DUO PRO charging station complies with AFIR regulations.

The Wallbox Duo Pro charging station complies with a number of standards and regulations, including those relating to alternative fuel infrastructure, such as AFIR (Alternative Fuels Infrastructure Regulation), PLC and ISO15118, which aims to develop electric vehicle charging infrastructure in Europe.
For more information, see the .pdf file at the link below:
https://drive.google.com/file/d/14lFuJxr0PwF1wMvzmeG1G7wK71zLW5-j/view

You can also use the QR code for mobile devices:

6.24 Three-Phase PEN Fault Detection (UK-Specific)

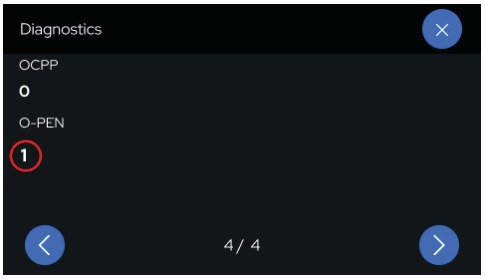
ENELION WALLBOX DUO PRO is equipped with an advanced three-phase PEN conductor fault detection system, designed to comply with UK safety requirements – whether installed in public, semi-public, or private locations.

In line with BS 7671:2018 (IET Wiring Regulations), Regulation 722.411.4.1, electric vehicle chargers connected to a TN-C-S (PME) earthing system must implement protective measures against faults involving the PEN conductor. Such faults can lead to dangerous voltage appearing on accessible metal parts.

To meet these requirements, ENELION WALLBOX DUO PRO:

- Monitors the PEN conductor for signs of disconnection or failure,
- Automatically halts charging if a fault is detected,
- Protects users by preventing hazardous touch voltages on exposed conductive components.

This integrated safety mechanism ensures that WALLBOX DUO PRO delivers a fully compliant and secure charging experience in all installation environments – even where installing a local earth rod is not feasible.
The function is enabled at the factory for UK deliveries or can be toggled using a dedicated RFID configuration card held by authorized service partners (APS).
The current status of the feature (1 - ON / 0 - OFF) is displayed in the Diagnostics screen upon first startup. To access it: tap the screen / headset icon / Diagnostics.



7.1 Preparation Before Startup:

- Check that the electrical installation and safety features are correct. In particular, check the protective conductor – marked PE, which is designed to protect against electric shock.
- Make sure that all cables are correctly installed and are not loose.
- Make sure that the module has been correctly inserted into the frame.
- If the module has not been positioned correctly, it may not start up.
- It is prohibited to install two modules with identical addresses 1 and 1 or 2 and 2.
- Check that the charging station has been installed correctly and does not pose a danger to the user. More information is available at https://enelion.com/pl/support/

Signs of incorrect installation	
Damaged varistors on the PilotBox (Rubik) board	this indicates an incorrect connection of the power supply conductors.

ATTENTION

The above issues may void the product warranty.

ATTENTION

The manufacturer is not liable for any damage resulting from improper connection of power conductors.
Please note that the charging station does not have a power switch.
Any electrical installation error may result in damage to modules and other components.

7.2 Factory Settings and Configuration

When purchasing the charging station from the manufacturer or distributor, inform the seller of your preferred configuration settings. This will help speed up the setup process and ensure the station is tailored to your specific needs.
Each module is individually configured and tested at the production stage based on the order. Incorrect configuration may result in unstable operation and authorization issues. Make sure the module power settings match the electrical installation.
Instructions on how to change the configuration can be found later in this manual.
Please inform the vendor of the following parameters:

1. **Addressing**
How many modules and with what addressing order? (e.g. 1/1, 1/2, 2/2 – Local Charging Network Addressing)

The two modules in the frame should have different addresses, e.g., 1/2 and 2/2. The exception is a frame with one module, in which case we address it as 1/1.

Custom addressing option - (Enelion Chain np: for example in an Enelion Chain setup: 1/4, 2/4, 3/4, 4/4 X/X when numerous (max 100) charge points are connected via CAN bus.

2. **Authorization Method - (when OCPP CMS is inactive)**
   - Any RFID tag - any card starts the charging process
   - Plug and charge - charging starts automatically when the plug is inserted (Freecharge)
   - Plug and charge with lock - same as above, plus socket locking is activated (for socket-type modules only)
   - Authorized RFID - only pre-authorized cards allow charging

3. **If using Authorized RFID mode (Authorized RFID)**
   - How many user groups? - Default: 1 pole with two modules = 1 group
   - How many modules per group? - Configurable per customer requirement
   - How many cards per group? - 1 card per module included in the set

4. **Power Configuration Options**
   - 22 kW (3 phases 32A)
   - 11 kW (3 phases 16A)
   - 7,4kW (1 phases 32A)
   - 3.7 kW (1 phases 16A)
   - Custom - adjustable in 1 A steps, from 6 A to 32 A, depending on the installation.

Available power for one module

5. **Dynamic load balancing (DLB)**
   - enabled (default limit set to 500 A)
   - disabled
   - Custom - adjustable in 1 A steps

6. **RCM B Monitor**
   - enabled (if the monitor is installed in the module)
   - disabled

7. **Custom status bar** (custom logo on screen)
   - enabled - logo must be provided before production in .png, .eps, .ai or .svg format
   - disabled

8. **LED Colour Settings**
   - Default (blue) - Default (blue) – blue LED indicates ready status
   - Swapped (green) - green LED indicates ready status

9. **Default Interface Language**

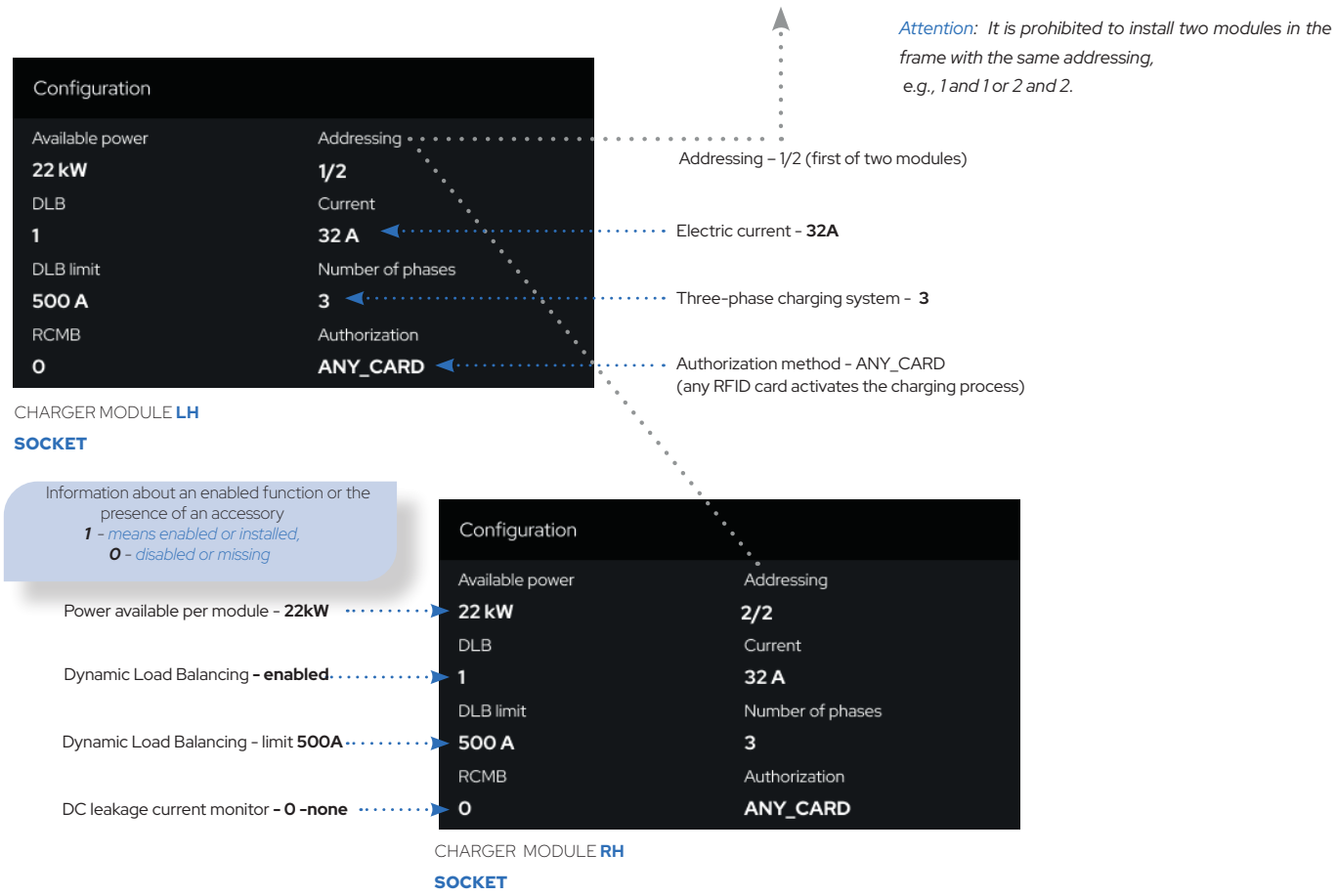
   - English
   - Polski
   - Cymraeg (Welsh) or Český
   - Portugues
   - Deutsch
   - Francais
   - Romana
   - Italiano
   - Nederlands
   - Dansk
   - Lietuviu
   - Slovenscina

For more information on factory settings, please visit:
https://drive.google.com/file/d/1yqgpwarGCfS2lsq2yAc6Hwxq_0PW5Ook/view?usp=sharing

7.3 Powering On the Device

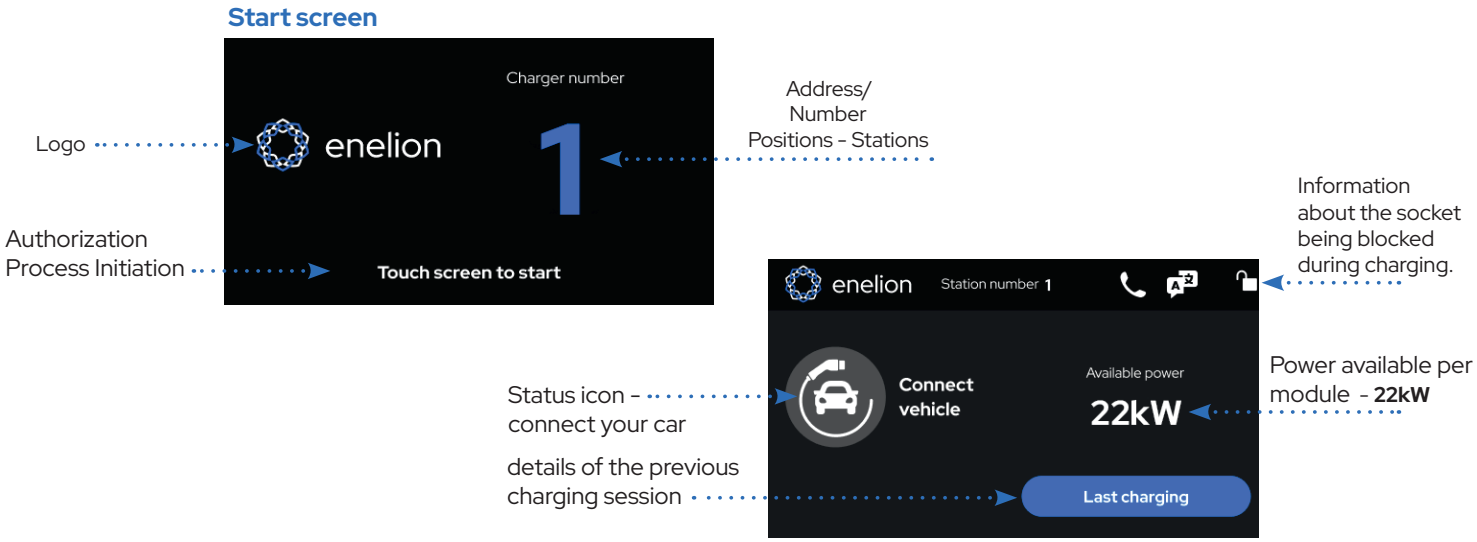
Before starting the charging process, pay attention to the configuration displayed immediately after powering on the device. The information provided will help you quickly identify the specific variant, power rating, power supply system, authorization method, addressing, and more. The image below shows an example configuration.

Wallbox Duo Pro modules can have different configurations in the left and right modules. The photos below show an example configuration. Remember that there should always be pairs of modules in the Wallbox Frame HT 700, by default **LH 1/2 and RH 2/2**, unless the customer wants otherwise.



7.4 Initial Startup Procedure:

After the module starts up, the start screen will appear after 6 seconds, displaying the manufacturer's logo or a personalized logo, the station number, and information about touching the screen anywhere to start. The station number is also the module's address on the CAN bus, e.g., 1/2, which is the first (1) module of two in the Wallbox Frame HT 700 frame.



7.5 Advertisements on the Start Screen

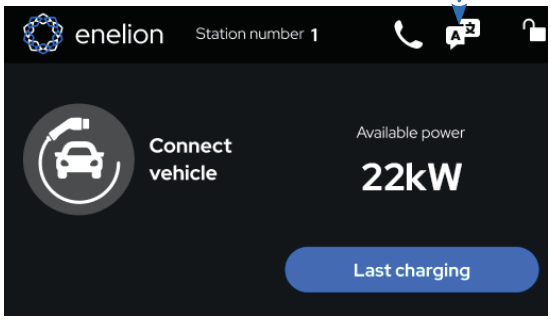
One of the new features is the ability to display advertisements on the screen. A maximum of 12 advertisements with dimensions of 272x480 pixels / 72dpi can be displayed. The ad graphics will be displayed every 5 seconds on a rotating basis. Ads are uploaded during the production stage and cannot be uploaded remotely. At the time of purchase, please send the files to the sales department with the resolution specified above. While the ad is being displayed, you can go to the start screen at any time by touching the screen anywhere.

Advertisements

Advertisement duration:
5 seconds.

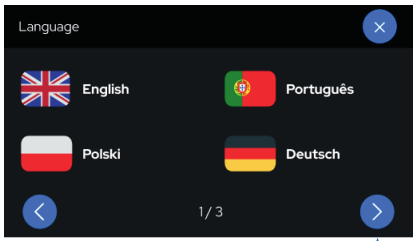
7.6 Language Selection

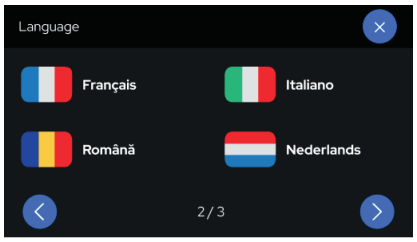
Additionally, you can change the interface language at any time: Tap the language icon in the top right corner of the screen. Then choose the language by tapping the left or right arrow

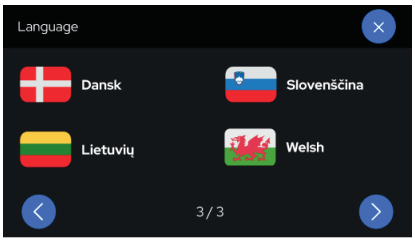


INFO

Arrange language pack changes with the sales department after purchase. During the production stage, it is possible to exchange the language pack to suit the customer's needs.





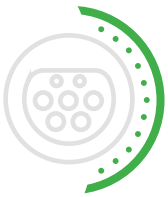


7.7 Signaling using light strips - LED interface

All Enelion charging stations are equipped with LEDs, called a light bar or LED interface, which provides information about the current status of the device using light signals. Light signals can be divided into **Continuous** charging point statuses and **Action** signals.

Availability status

When available, the light bars glow with a uniform **green** light. The station is ready to start the charging process when the car is connected.

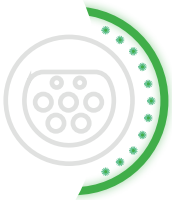


Action signaling

Some user actions are signaled by light effects on the LED interface.

The colors of some light signals depend on the continuous status of the charging point.

• Connecting or disconnecting the charging cable causes a single flash of the light bars in the current solid color of the charging point.
• Connecting or disconnecting the car causes two flashes of the light bars in the current solid color of the charging point, the same as in the "Connecting or disconnecting the charging cable" action.



Loading in progress

The LED interface glows **blue**, pulsing radially from the center towards the edges. The pulse rate depends on the charging power. When the power is less than 0.5 kW, the pulsing speed is 6 seconds, and for the maximum charging power of 22 kW, the pulsing speed is 1 second. If the charging station allows charging but the car is not drawing power, the light bar glows with a solid blue light.

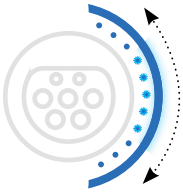
Changing the default colors

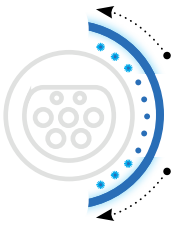
In the Wallbox Duo Pro station, it is possible to change the color of the LEDs from the default availability status color of green to blue.

The charger statuses will have their colors changed from green to blue.

Inform the seller about the color change or change the configuration in the Charger Module LH and RH modules.

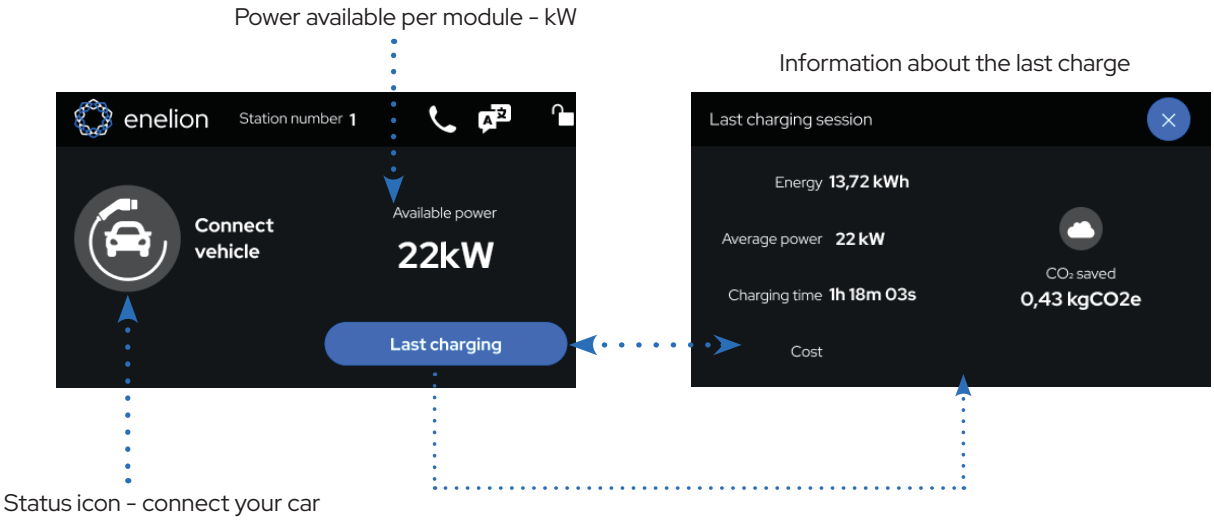
Further on in this manual, you will find a section on changing the configuration.





7.8 First Charging Session:

Plug the cable into the vehicle first, then into the charging station. For cable-equipped modules, insert the plug directly into the vehicle. The station's LED indicator will flash in the default colour. Follow the on-screen prompts. On the lower part of the screen, you'll find details of the previous charging session.



7.9 Charging Activation and Authorization:

The charging activation method requires placing the RFID card in the designated spot above the screen, activating it from the operator's application, or it will start automatically if the Plug and Charge (Freecharge) option is set. Icons indicating the current status of the module will appear on the screen. They will determine how we start the vehicle charging process.
The station activation process is determined by the device operator and can be carried out via contactless payments, in the case of a module with a Payter Apollo payment terminal.

The location of the RFID card reader (next to the screen).

Any RFID tag – Any RFID card can initiate charging and will activate socket locking during the session.

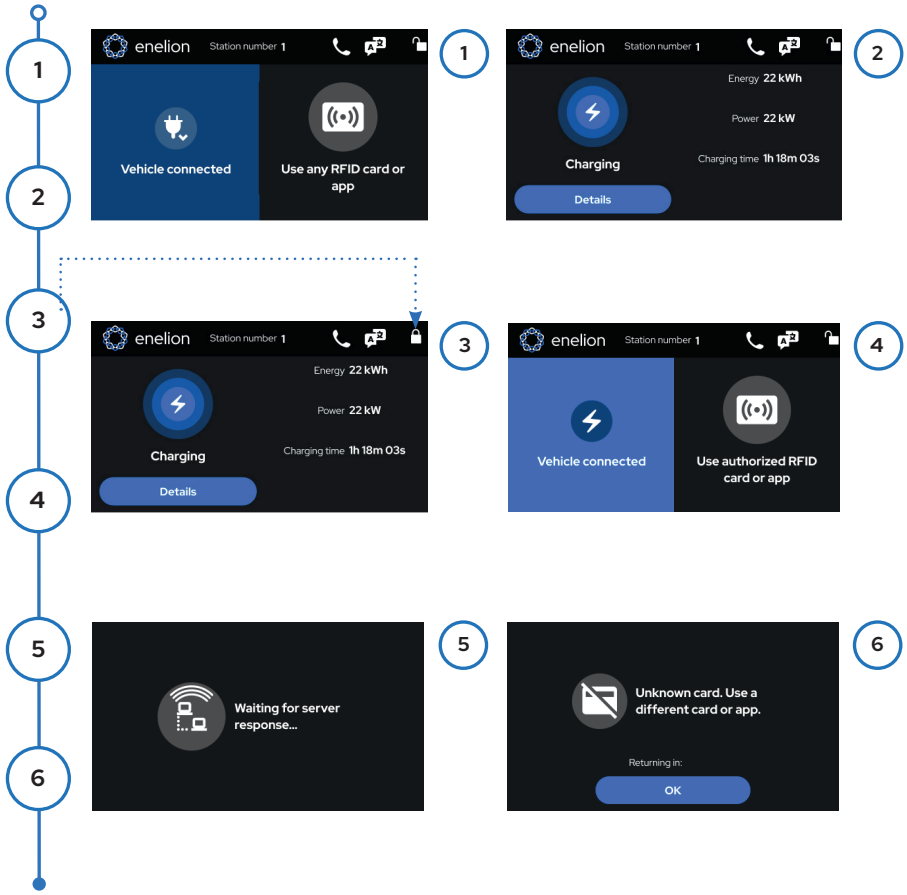
Plug and charge/ freecharge – Charging begins automatically after the plug is inserted into the vehicle. No user interaction is required. This method is functionally equivalent to the commonly used FreeCharge authorization.

Plug and charge with lock– After inserting the plug, charging will start and the socket lock will close during charging for modules with a socket.

Authorized RFID – Only pre-authorized RFID cards can start charging and activate socket locking during the session.

OCPP– Charging is initiated via an operator's app or a predefined RFID card, using the Open Charge Point Protocol.

Invalid RFID card – Invalid RFID card – The presented card is not recognized. Use a valid RFID card or initiate the session through the operator app.



7.10 Activation of charging via a payment terminal

The charging station can be optionally equipped with a payment terminal.

Starting charging in cooperation with a payment terminal:

1. Connect the cable to the charging station,
2. Connect the cable to the car,
3. Select the corresponding connector number on the payment terminal screen,
4. Follow the instructions displayed on the payment terminal screen,
5. Make sure that the lock is properly closed and that the charging procedure has started,

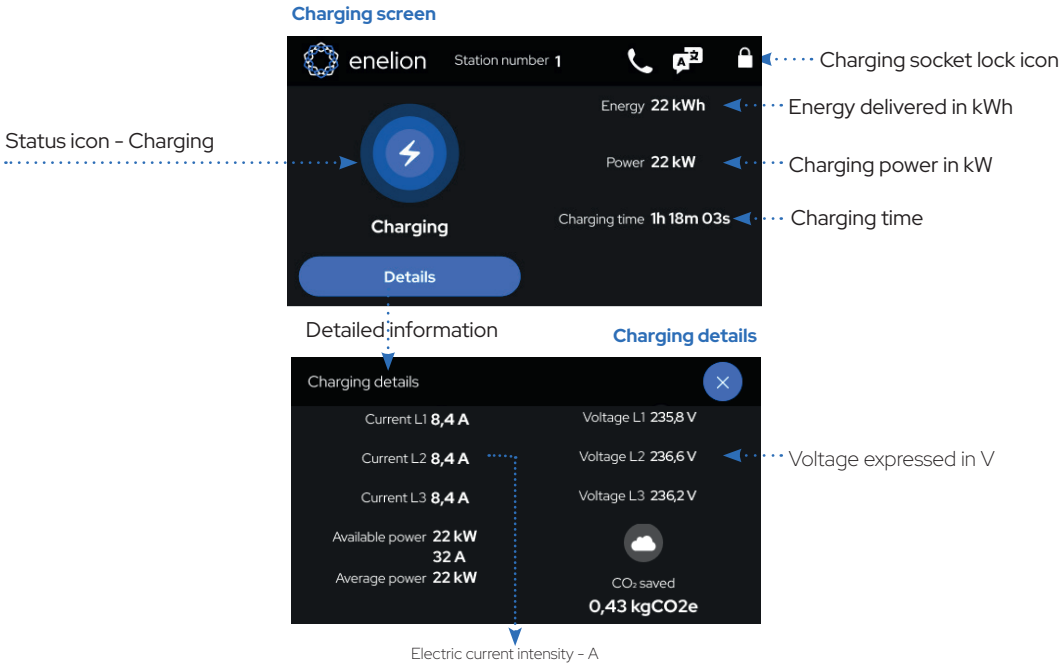
Ending charging in cooperation with the payment terminal:

To end the charging procedure, disconnect the charging cable from the car. This releases the cable lock on the charger and switches it to standby mode.

The default procedure for starting and ending charging in cooperation with the payment terminal can be modified by the station operator.

7.11 Charging Process

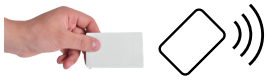
The charging process will start immediately after charging is activated. You can also view charging details by clicking the Details button. The color of the LEDs will change to indicate charging.



7.12 Charging Completion

The charging process can be stopped at any time in several ways. This will depend on how the charging station is activated. Methods for stopping charging are listed below.

- **Any RFID tag** - tapping any RFID card on the reader

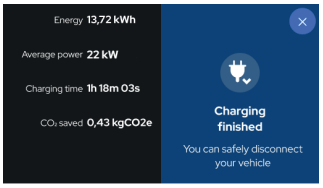


- **Plug and charge** (Freecharge) - unplugging the charging cable from the station

- **Plug and charge with lock** (Freecharge with lock) - stopping charging from the vehicle, then unplugging the cable from the vehicle and finally from the station
- **Authorized RFID** - tapping an authorized RFID card on the reader

- **OCPP** - stopping the charging session via the operator's mobile app (OCPP Operator App / STOP)

Operator App



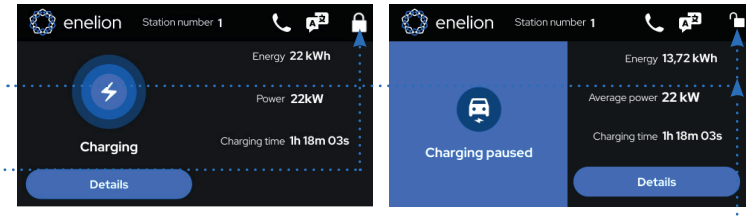
7.13 Emergency charging stop

Emergency stop method for stations without a STOP switch in the event of, for example, a malfunction or emergency situation.

The charging process can be interrupted by using the RFID card again or by unplugging the connector from the car.

During charging, when the lock on the charging station is closed, it is not possible to pull the plug out of the socket.

When the station is configured to operate with an inactive lock, it is possible to interrupt the charging procedure by unplugging the charging station.

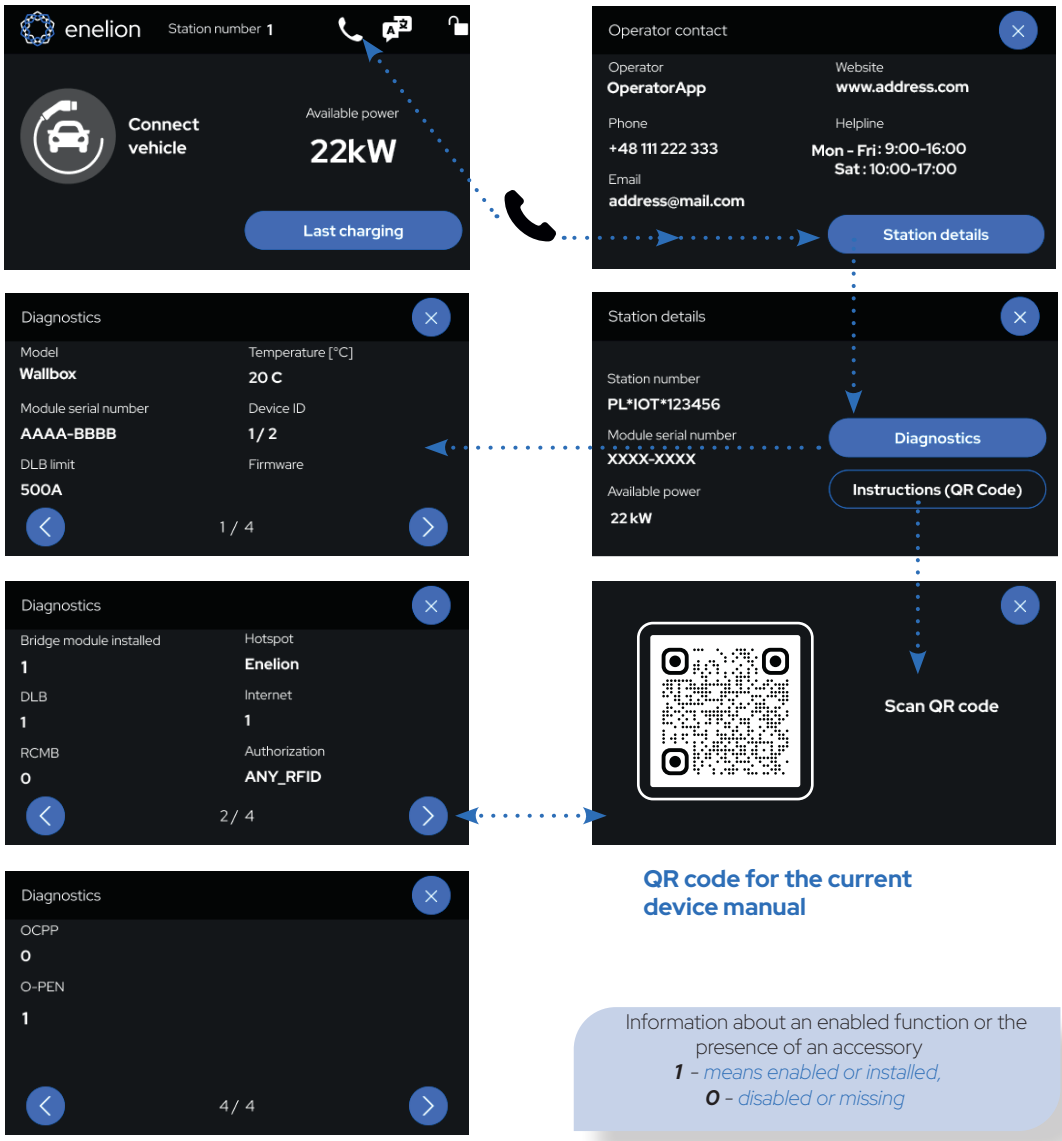


8.1 Device Overview, Support Options, and Diagnostic:

A new feature introduced in Wallbox Duo Pro modules is the ability to check a wide range of parameters and access quick technical support. In the Contact with Operator tab, you will find contact details in case support is needed, a failure occurs, or charging activation is required. In the Diagnostics tab on page 2, you will find a QR code linking to the complete documentation of the device. Reading this information is very straightforward. Simply tap anywhere on the home screen, then tap the receiver icon located at the top of the screen.
This opens the Contact with Operator screen, followed by the Station Details button, then the Diagnostics button.

Screen display Diagnostics:

- Contact details for the operator
- Station details
- Serial number
- Addressing
- Authorization method
- Temperature
- Authorization method
- Installed communication module Bridge
- Presence of RCM B monitor
- Internet connection
- Hotspot name
- Software version
- Dynamic balance
- Built-in 3-phase O PEN protection
- Active OCPP operator protocol



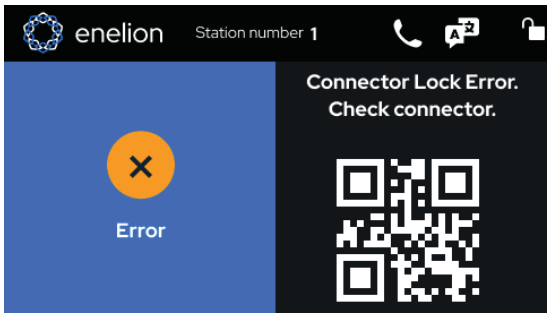
QR code for the current device manual

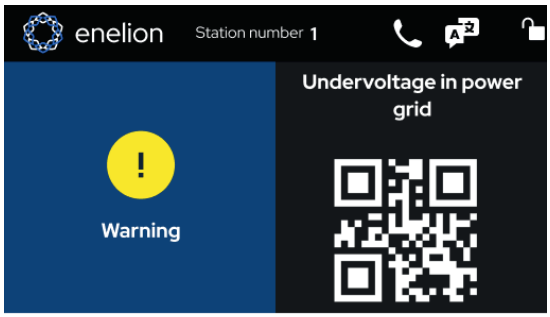
Information about an enabled function or the presence of an accessory
1 *- means enabled or installed,*
0 *- disabled or missing*

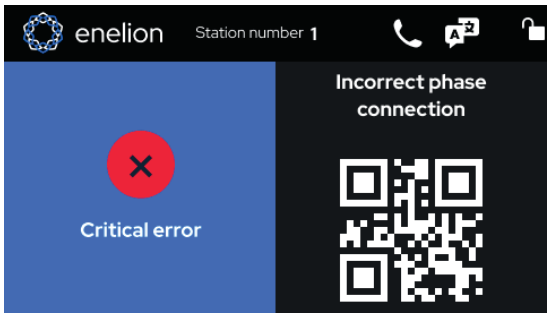
QR code link: https://enelion.com/pl/support-wallboxduo-pro/ to the full technical documentation of the device.

8.2 Error Codes and Troubleshooting Guidelines

During regular operation, the device may display various error codes on the screen.
These may be caused by different factors – for example, an incorrectly inserted plug into the module socket.
A simple solution is to repeat the action and check whether the issue occurs again.
Follow the on-screen instructions. If a QR code appears, scan it and follow the provided guidance.
A full list of error codes is available at:
https://service-support-enelion.happyfox.com/kb/section/9/
Alternatively, scan the QR code.







All error codes can be found on the website: https://service-support-enelion.happyfox.com/kb/section/9/
Or scan the QR code

9.1 Customizing the Touchscreen Interface

The touchscreen interface can be customized to meet specific needs using the open OCPP (Open Charge Point Protocol) standard.
More information is available in the document Wallbox Duo Pro – Touchscreen Customization availat
https://drive.google.com/file/d/1PeY8JXPzFLL-QIFPHt9VpkmhJQ0FwQQG/view?usp=drive_link

Main customization options include:

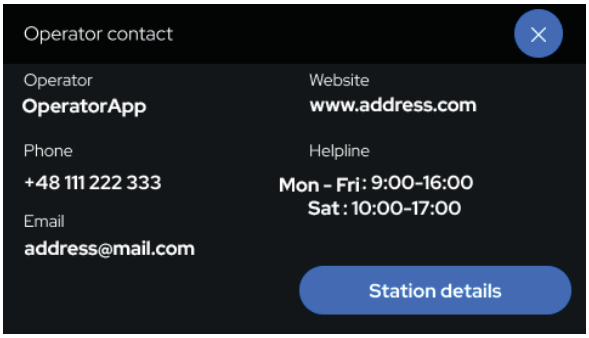
- Tariff configuration – Set pricing by kWh, by minute, or a flat rate per session.
- Branding and contact information – Adjust the layout color, operator name, website, support data, and replace the Enelion logo with your own.
- Ad management – Enable automatic advertisements or manually select displayed content.
- Custom messages – Display important information directly on the charging station screen.

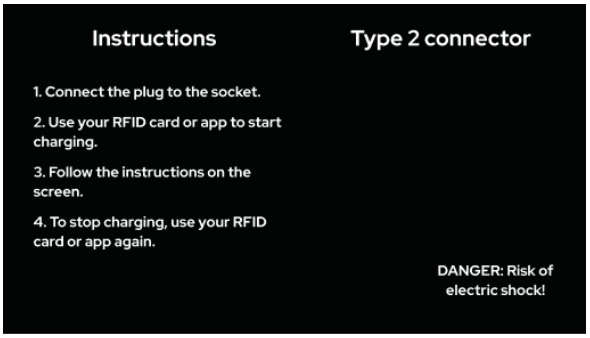
INFO

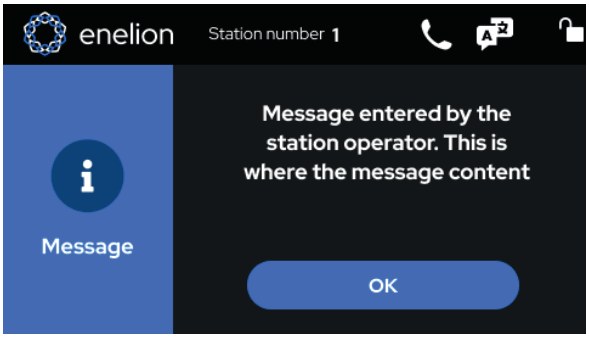
Some settings cannot be changed remotely via OCPP.
These include language selection, ad images, and branding elements (such as company logo and layout color). They must be configured during the manufacturing process.

9.2 Data, logs, tariffs, operator messages

The new Charger Module LH and RH modules enable the display of multiple information via the OCPP protocol. The device operator will decide what information is to be displayed on the screen. Once the new Charger Module has been purchased, the operator no longer needs to cover the device with operating instructions; all they need to do is enter the instructions via the OCPP protocol. Several example options are provided below.





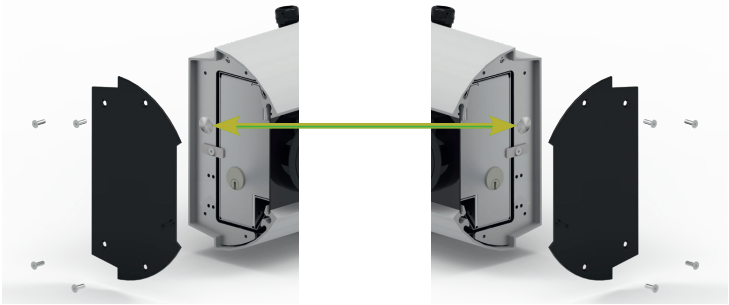


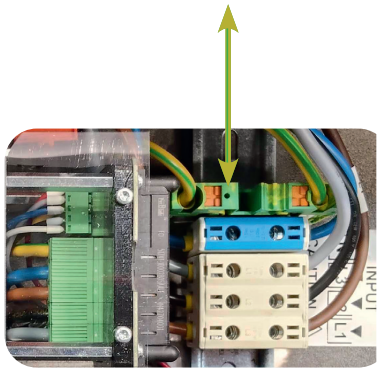
10.1 Commissioning and Periodic Safety Inspections

The charging station should be thoroughly tested electrically at intervals of no more than 5 years.
The proper functioning of the residual current device should be tested annually.
Tests to check the efficiency of the station, electric shock protection, etc. should be carried out in accordance with currently applicable standards and regulations. Tests may only be carried out by authorized personnel.
Below are instructions for performing the most important tests.
To take the measurement correctly, unscrew the security screws using the Torx Security T25 bit provided.
They are located on both sides of the device. Place the covers in a location where they will not be damaged.

10.2 Measurement of Grounding Resistance at the Main Equipotential Bonding Point

In the Wallbox Duo Pro station, the Main Equipotential Bonding Point is secured with T25 safety screws. The Main Bonding Point is located on the side of the Wallbox Frame HT700 on both the right and left sides, in a dedicated location without any coating. The PE wires in the middle of the frame are connected to a dedicated **DEGSON DS10-PE-01P-1C-00AH** rail connector.

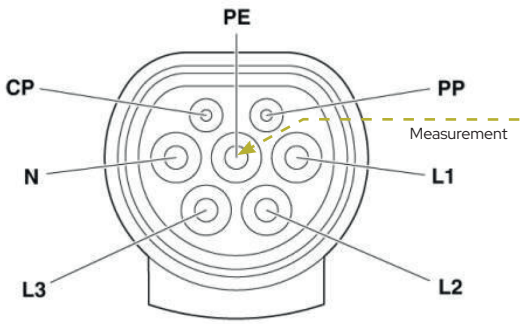


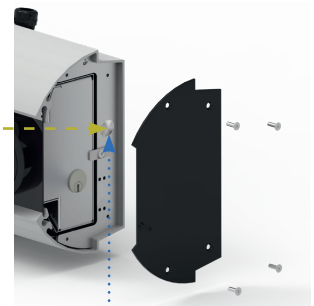


Basic frame version
Wallbox frame HT 700

10.3 Continuity Testing of Protective Conductors

The continuity test should be performed between the main equipotential bonding point (PE bar) and the PE contact in the charging socket – or in the case of a tethered station, in the charging plug.
The test must be conducted in accordance with EN 61557-4:2007.
The open-circuit test voltage should range from 4 V to 24 V (AC or DC). The test current must be at least 200 mA. The required measurement accuracy must be better than 30%. The maximum allowable resistance is 3 Ω.





At this point,
measure the ground resistance of the device.

10.4 Measurement of Housing Ground Resistance

The charging stations have an aluminum, grounded enclosure – protection class 1. For aesthetic reasons, the surface is powder coated, which makes it a poor conductor. When measuring resistance, the probes should be placed in dedicated areas on the side of the frame without any coating (the appropriate areas are marked below). The probes should be pressed firmly against the metal surface to break through the oxide layer. The measurement should be performed at least three times, and the most favorable result should be taken as the final result.
The measurement should be performed in accordance with the standard: EN61557-4:2007.
The open circuit test voltage should be between 4 and 24 V (AC or DC). The continuity test should be performed with a current greater than or equal to 200 mA. The required measurement accuracy should be better than 30%. The maximum permissible resistance is 3 Ω.

Ground resistance measurement points Wallbox Frame HT700 frame

10.5 Measurement of Operational Earth (Working Ground) Resistance

This test applies only if an operational earthing system has been implemented.
It may be performed using a technical, compensatory, clamp-based, or other permitted method in accordance with applicable regulations – EN 61557-5. Maximum allowed resistance: 30 Ω.

10.6 Verification of Protective Conductor Current Imbalance Detection (Anti-Balance Protection)

The measurement is performed on the connection terminals of the charging station. In the Wallbox Duo station, these terminals will be in the form of a screw terminal strip (single-cable version with splitter) or a terminal strip, as well as so-called spring clips. The measurement must be carried out in accordance with the following standards: HD60364-6:2016-07, HD 60364-44-1:2017, for all power supply phases of the charging point. The test must be carried out using a meter that allows operation in circuits with an RCD circuit breaker. Alternatively, the measuring device must be equipped with a function that allows the circuit to be measured with a residual current device without triggering the device. Check that the short-circuit current at the measurement point is sufficient to trigger the over-current protection within the required time. Use the most favorable result to assess the effectiveness of the protection.

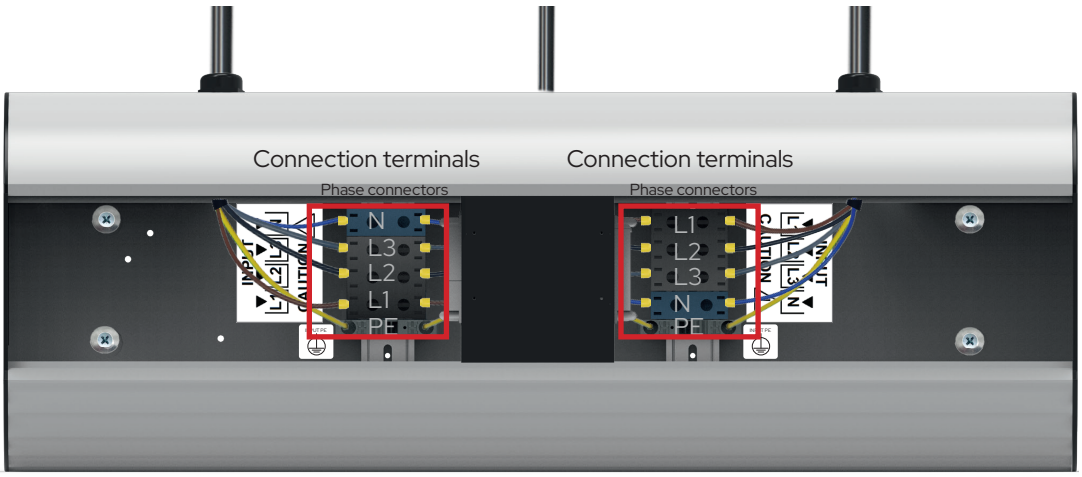
The following condition must be met:

$Z_s \times Ia \leq U_0$ for $t \leq 0, 4s$

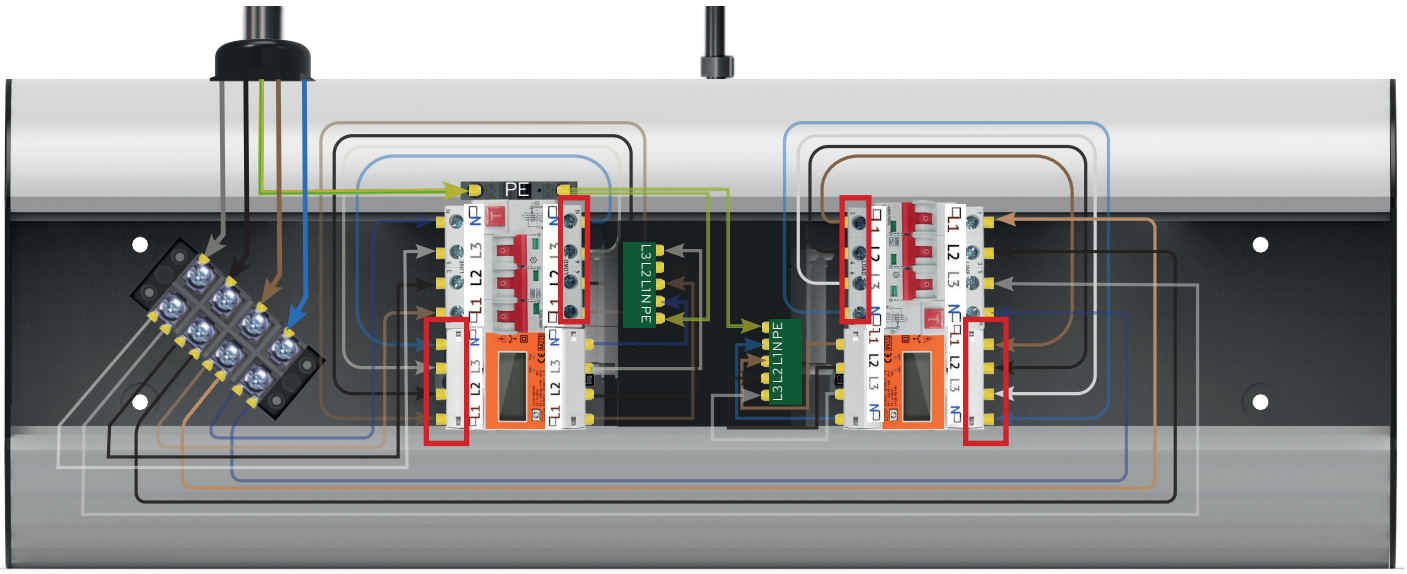
Z_s short-circuit loop impedance,

I_a current causing automatic power shutdown during $t \leq 0, 4s$,

U_0 rated voltage (phase) = 230 V



Connection terminals in the Wallbox Frame HT 700 frame



Wallbox Frame HT 700 with Splitter + RCB O connection cube and MID energy meter.

10.7 Functional Testing of Residual Current Devices (RCDs)

Each charging point must be protected against residual direct current faults (DC) by means of a Type B residual current protection device. This requirement is based on the EU declaration of conformity to EN IEC 61851-1:2019-10. The requirement can be fulfilled by installing: an RCD Type B (30 mA / 40 A), or an RCD EV (0 mA / 40 A) in the distribution board. Alternatively, it is possible to use the Enelion RCM B accessory (Residual Current Monitor Type B). In combination with an RCD Type A in the distribution board, the Enelion RCM B meets all applicable safety requirements. In systems where the Wallbox Duo Pro pole powers two charging modules from a single power line (with Wallbox Duo Splitter accessory), both overcurrent and residual current protections are located in the lower compartment of the pillar. The RCD test may only be performed when the charging process has been initiated, i.e. with power present at the charging socket – State C. Use an appropriate RCD tester and a vehicle simulator (test adapter) to perform the test. During testing, ensure access to: the distribution board or the lower compartment of the charging station, to reset protection devices. Each RCD trip event will disconnect power to the station. After restoring power, the charging session must be restarted.
For devices protected with RCD Type A and equipped with Enelion RCM B, the testing procedure is similar. In Type B mode, when the built-in RCM B triggers, all relays open immediately, charging is interrupted, a warning message is displayed on-screen, and the LED status interface starts blinking to alert the user. The charging process is halted until the user takes manual action. To reset the system and resume charging: Unplug the connector from the charging station. If the station uses RFID authentication, scan the RFID tag to release the plug lock. For public charging stations in Plug & Charge mode, unplug the vehicle — this also releases the lock.
After the session ends, the charger is ready for the next user. If overcurrent protection in the distribution board tripped earlier:

- Power must be restored by resetting the breaker, and the charging process must be restarted.

Repeat the process until all required tests have been completed.
RCD testing procedure:

- Ensure access to all RCDs
- Switch on the station power
- Use a test adapter (vehicle simulator) to begin charging
- Connect the RCD tester to the adapter
- Follow the tester's instructions to measure RCD parameters
- After each RCD trip, reset it and repeat the procedure until the test completes successfully

The actual tripping sensitivity of the installed residual current protection devices must be verified according to the following conditions:

RCD A = 0, $35I_{\Delta n} \leq I_{\Delta r} \leq 1, 4I_{\Delta n}$,
Where $I_{\Delta n}$ = 30mA

RCD B = 0, $5I_{\Delta n} \leq I_{\Delta r} \leq 2I_{\Delta n}$,
Where $I_{\Delta n}$ = 30mA

RCM B = 0, $5I_{\Delta n} \leq I\Delta r \leq I_{\Delta n}$,
Where $I_{\Delta n}$ = 6mA DC

According to IEC 62955

The response time of the device should be measured.

Standardized Maximum Tripping Times for RCD Type A [in seconds]:

$I_{\Delta n}$	$2I_{\Delta n}$	$5_{\Delta n}$	$I_{\Delta n}$ ≥5A
0,3	0,15	0,04	0,04

Standardized Maximum Tripping Times for RCD Type B [in seconds]:

$2I_{\Delta n}$	$4I_{\Delta n}$	$10_{\Delta n}$	$I_{\Delta n}$ ≥5A
0,3	0,15	0,04	0,04

Additionally, the proper operation of the "TEST" button on the RCD must be verified while the circuit is energized and the breaker is turned on. Pressing the button must result in: immediate power disconnection, and the toggle switch moving to the "OFF" (0) position.

10.8 Insulation Resistance Test of the Supply Electrical System

During testing, the charging station must be disconnected from the mains or the charging module must be removed from the Wallbox Frame HT 700.
The test should be performed in 3-wire or 5-wire mode, depending on the installation. It is recommended to use devices dedicated to measuring insulation resistance with a valid calibration certificate. The meter can be connected, for example,to the output terminals of the overcurrent circuit breaker installed in the switchgear, the lower part of the pole, or another convenient location.

ATTENTION

During insulation resistance measurements, it is absolutely essential to disconnect the supply voltage and ensure that the voltage cannot be accidentally reconnected!

If surge protection devices are present in the tested installation, disconnect their connections to phases L1, L2, L3 and neutral (N) before the test, and reconnect them afterwards.
If the charging station includes energy meters, disconnect the cables from the input terminals and use them as the test points. Failure to disconnect the meter will lead to understated resistance values: approx. 1500 kΩ for phase-to-phase and approx. 750 kΩ for phase-to-neutral. The insulation test procedure, required test voltages, and minimum resistance thresholds during commissioning and periodic testing should comply with the IEC60364-6-61 standard.
In most cases, the test voltage is 500 VDC and the minimum required insulation resistance is 1 MΩ.
Insulation resistance measurements should be conducted between the conductors as indicated in the attached table.

Resistance [MΩ]									
L1-L2	L1-L3	L2-L3	N-L1	N-L2	N-L3	PE-L1	PE-L2	PE-L3	N-PE
min 1	min 1	min 1	min 1	min 1	min 1	min 1	min 1	min 1	min 1

10.9 Insulation Resistance Test of Charging Station with Installed Charging Module

It is recommended to use devices dedicated to insulation resistance measurements with a valid It is recommended to use devices dedicated to measuring insulation resistance with a valid
calibration certificate. The maximum permissible test voltage is 500 VDC. When testing the insulation resistance of a charging station, pay attention to the polarity of the test voltage. This is important because of the measuring and protection circuits used inside the device. The polarity of the insulation resistance meter can be easily checked with a universal multimeter on DC voltage measurement. If this is not possible, measuring the insulation between N and PE on the charging station socket will indicate the polarity of the meter. When the result is around 90 kΩ – 400 kΩ, the applied voltage has N-PE+ polarity. Otherwise, the meter will indicate >500 kΩ, which means N+ PE- polarity. For convenience, mark the measurement probes accordingly and perform the remaining measurements with the correct polarity from the table.
When performing measurements with the Sonel MPI 520/530 meter with the AUTO ISO-1000 attachment or similar, in automatic mode, all measurements will have the correct polarity.
The N-PE measurement only needs to be performed in one polarity. When performing measurements with the Gossen Metrawatt PROFITEST MXTRA meter and a 2-pole adapter, the measurement polarity is marked in the photo below.

10.9 Insulation Resistance Test of Charging Station with Installed Charging Module

The table below outlines the criteria for evaluating insulation condition and test polarity.

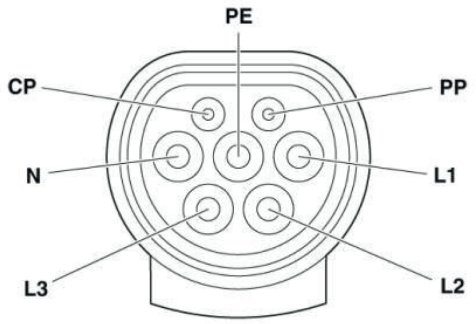
Measurement Configuration	Nominal Resistance	Minimum Acceptable
PE+ L1-	1 MΩ	800 kΩ
PE+ L2-	1 MΩ	800 kΩ
PE+ L3	1 MΩ	800 kΩ
N+ L1-	>500 kΩ	1 MΩ
N+ L2-	>500 kΩ	1 MΩ
N+ L3-	>500 kΩ	1 MΩ
N- PE+	>500 kΩ	90 kΩ
N- PE+	400 kΩ	90 kΩ
L1-L2+	2 MΩ	900 kΩ
L1- L3+	2 MΩ	900 kΩ
L3+ L2-	2 MΩ	900 kΩ

INFO

Insulation resistance measurements are conducted using DC voltage.
Different manufacturers apply various polarity conventions, and this is not standardized.
For instance, the Sonel MPI 520/530 applies negative voltage to phase wires and positive to N/PE.
If the polarity is reversed (positive to L, negative to N), the internal power circuit of the device is activated via the socket, simulating load.
As a result, the resistance readings may drop to a few dozen kΩ, which does not reflect the true insulation condition.

10.10 Test Adapter and Measurement Equipment Overview

An additional factor affecting the test is the adapter used between the charging station and the measuring device.
The Metrawatt adapter (PRO-TYP II Z525A) includes LED voltage indicators, which can be useful during basic functionality tests. However, these LEDs, together with 80 kΩ current-limiting resistors, significantly impact the insulation resistance test results (yielding values below 80 kΩ depending on polarity).
For this reason, such adapters or any other adapters containing voltage indicators should not be used for insulation resistance testing.
Only adapters acting as passive pass-through devices without additional internal circuits may be used.
Otherwise, measurements should be performed directly at the Type 2 socket contacts, observing all safety guidelines.
Below is an illustration describing the contacts in the socket.



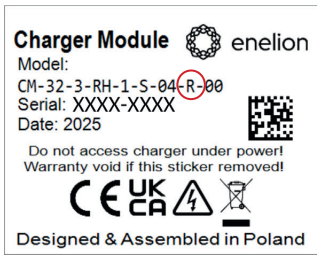
Pin designation for Type 2 charging station socket

10.11 Verification of Electric Shock Protection Effectiveness

The station is tested up to the first overcurrent protection device. Measurements are taken with the station disconnected and the charging module disconnected. Tests and measurements of the technical parameters of the electrical installation under test to determine its safety against electric shock should be performed under conditions similar to those of normal operation, in accordance with the provisions of the current HD 60364-4-41 standard. The continuity test of active and protective conductors shall be performed on the basis of the current HD 60364-6 standard. In the case of the Wallbox Duo Pro station, where each panel is powered by a separate cable, the fuse is located in the appropriate switchboard. When performing the electrical installation, the fuse must be appropriately selected for the location and configuration of the device.
When powering the Wallbox Frame HT 700 frame with two modules and one cable, the overcurrent protection and branching are located inside the station. This splitter is called a Splitter (connection cube) and is offered as an accessory in the Enelion range. Circuit breakers with B and C or RCB O characteristics with a rated current of up to 32 A are used for stations powered by two cables and 16 A for stations powered by one cable. The power cable must be protected in the switchboard in accordance with the guidelines contained in the installation manual for the specific Enelion device model.

10.12 Repeat Functional Test of Residual Current Devices

Each charging point must be protected against type B residual current (devices with EU declaration of conformity with standard EN IEC 61851-1:2019-10). This requirement can be met by installing a type B residual current device (RCD B 30 mA/40 A) or RCD EV (30 mA/40 A) in the switchboard. It is also possible to use the Enelion RCM B - Residual Current Monitor type B accessory. Enelion RCM B in combination with RCD A used in the switchboard meets all safety requirements. When powering the Wallbox Frame HT 700 with two charging modules with a single cable (using the Splitter accessory), the overcurrent and residual current protection devices are located inside the Wallbox Frame HT 700.
The efficiency of residual current devices (residual current circuit breakers) should be assessed
in accordance with the requirements of the current PN-HD 60364-6 and PN-IEC 755+A1+A2 standards
The test can be performed when the charging process has started - voltage applied to the socket, status C.
For this purpose, use an appropriate overcurrent circuit breaker tester and a vehicle simulator - adapter.
During testing, access to the switchgear must be ensured in order to raise the safety devices or, in the case of a single-cable powered station, it will be necessary to remove the modules, raise the safety devices, and reinsert the modules into the Wallbox Frame HT 700.
Each activation of the circuit breakers during testing will shut down the station's power supply. After power is restored, the charging process must be restarted.
For stations protected by RCD A circuit breakers equipped with Enelion RCM B, the procedure is similar.
The difference arises when testing the protections in mode B. When the built-in RCM B protection is triggered, the relays are immediately opened, interrupting the charging process, and the appropriate information is displayed on the screen.
The warning contains information about the reason for the interruption of charging, the error number, the exact description of which can be found in the manual, and the LED interface flashes in a specific way to draw the user's attention. The charging process is suspended until the user takes action.
To reset the system and enable charging again, pull the plug out of the station socket. For charging stations with RFID card identification, use the card to unlock the plug. At public charging stations with Plug & Charge (freecharge) configuration, disconnect the vehicle – this also unlocks the station. Once the charging process is complete, the station is ready for the next charge. If the circuit breaker trips beforehand, turn the power back on by lifting the lever and start the next charging process.



INFO

Information about whether the module is equipped with an RCM B (Residual Current Monitor, Type B) can be found on the serial/model number label located on the rear of the module. A module with a DC leakage monitor includes the letter "R" in its model number.
This can also be confirmed immediately after powering on the station: a Configuration screen will appear for 3 seconds.
Value 1 indicates the RCM B monitor is present
Value 0 indicates it is not installed

10.13 Functional Testing of the Charging Station – Methodology and Procedure

Functional tests must be carried out using a suitable tester. The charging point must be handled as in a standard charging process. The entire procedure for starting, ending charging, etc. can be found above in the sections
(First charge, Charging activation, Charging process, and End of charging).
Please note that the station behaves differently depending on the configuration: with RFID authorization and Free Charge.
The Error Codes section at the end of the manual describes the error codes and situations diagnosed by the station. Based on these, you can determine whether the station is correctly diagnosing vehicle faults. Examples of faults include a missing LED, CP short circuit, PP short circuit, etc. Such situations can be simulated with an appropriate test system dedicated to AC charging stations.

11.1 ENELION BRIDGE LTE – Remote Communication, System Management, and OCPP Connectivity

The Enelion Bridge LTE is a key component for connecting one or more modules to the internet via an LTE network.
It supports multiple functionalities and is essential when using OCPP configuration.
One of its primary communication links is Enelion Chain (CAN), which enables one LTE-equipped master module (Bridge LTE) to manage up to 98 slave modules without LTE, using the Enelion Chain protocol (i.e., a CAN bus daisy-chain).
For more details, refer to the section Connection Variants – Enelion Chain (CAN).
Before using any of the available settings, ensure that a SIM card is properly installed in the Bridge LTE module.
See Connecting to LTE Network – SIM Card for more information.

The Enelion Bridge module installed inside the Enelion charging station enables:

Charging point monitoring and basic management includes:

- Charging point status
- Meter readings
- Charging power
- Available power
- Connector lock control
- Charging point restart
- LTE internet access
- WiFi internet access

Integration with Energy Management Systems supporting OCPP 1.6 (JSON)

– User authorization and billing

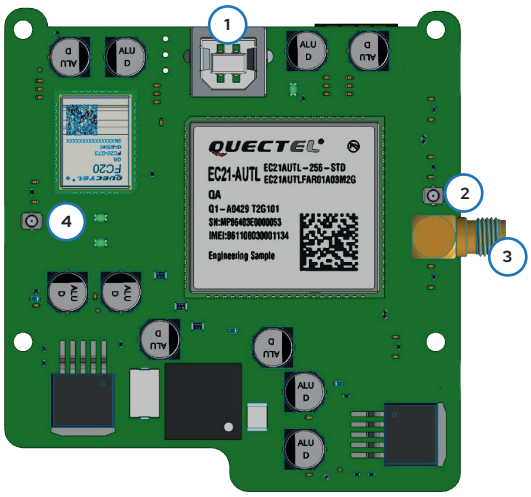
– Real-time monitoring of station status and charging power

– Reservation management

– Charging power profiling

– Access control to the charging point

– Remote diagnostics and firmware updates



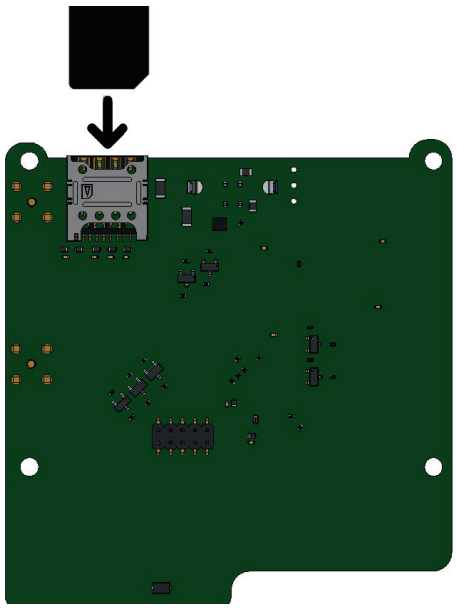
Enelion Bridge LTE

1. USB port
2. UFL socket for main LTE antenna
3. SMA socket for secondary antenna
4. UFL socket for WiFi antenna

Connectivity methods

The Bridge module can be accessed in two ways:

- Over the emitted WiFi network
- Using a USB cable, in cases where the WiFi connection to the Bridge LTE is not available



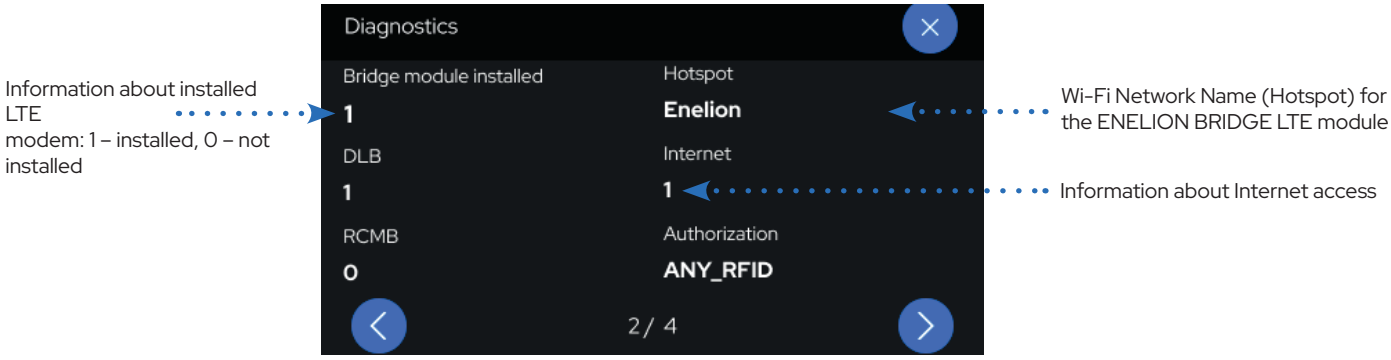
Bridge LTE (rear view) and SIM card orientation
Enelion Bridge LTE

11.2 Connecting to the Configuration Interface

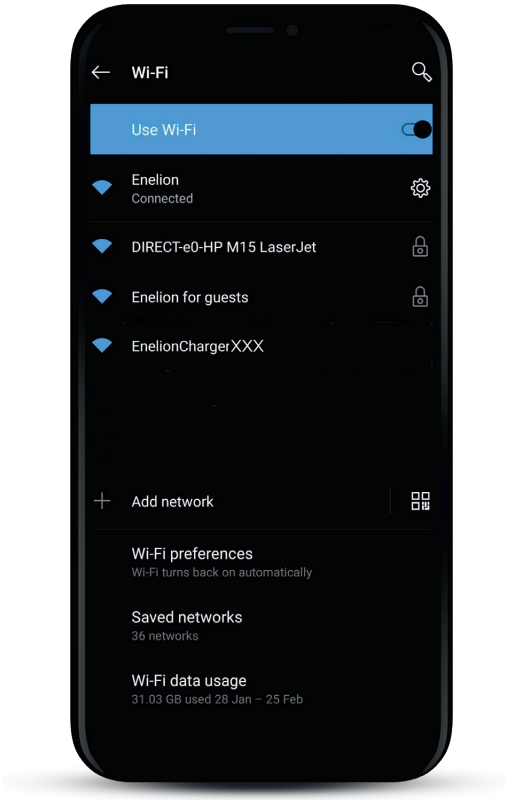
The Wallbox Duo Pro charger allows you to connect to the configuration panel via a Wi-Fi hotspot.
Before attempting to connect, check the name broadcast by the hotspot. Simply click anywhere on the start screen, then click on the handset at the top of the screen.
The Contact Operator screen will appear, followed by the Station Details / button and the Diagnostics button.
Remember to check all modules connected to the Enelion Chain network.

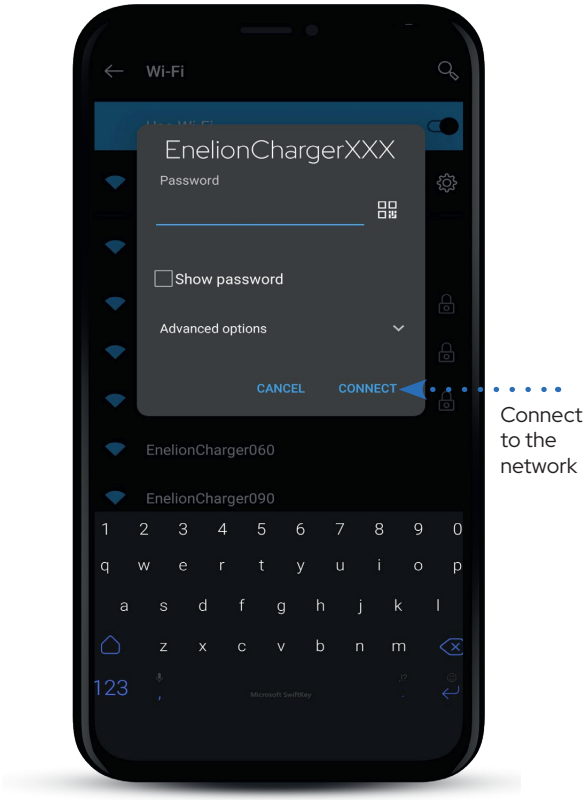
INFO

In dual-module chargers or chargers connected via Enelion Chain (CAN), there should be only one module equipped with Bridge LTE.



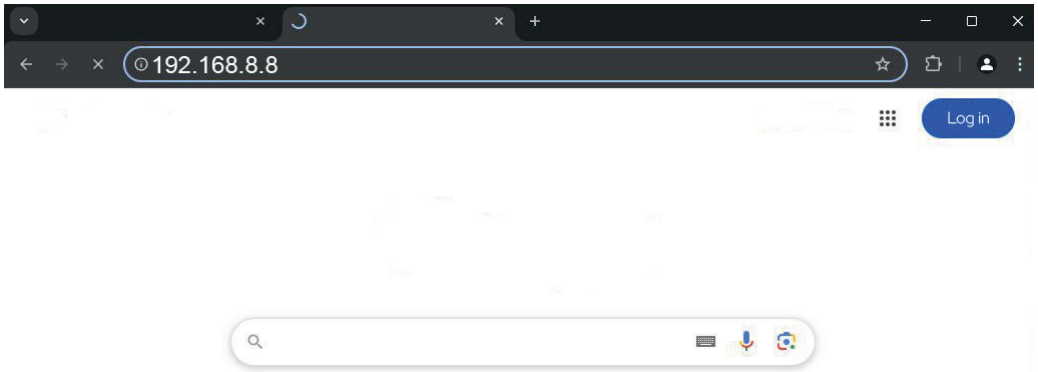
To connect to the Wi-Fi hotspot:
Use a computer or smartphone to scan for available Wi-Fi networks. After powering on the device, wait approximately 3 minutes. Then refresh your Wi-Fi networks list by toggling Wi-Fi off and on again on your device. The network will appear under the name: "**EnelionChargerXXX**" where XXX refers to the last 3 digits of the Bridge LTE serial number.
By default, the network is not password-protected.
Selecting this network will establish a direct connection to the device.



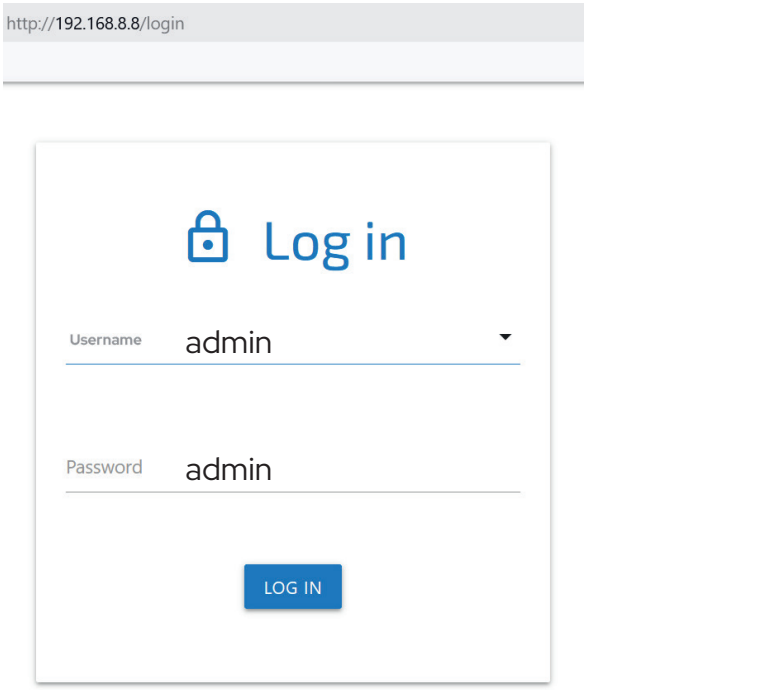


11.3 Accessing the Configuration Panel

Once connected to the device network, you can access the configuration panel via a web browser.
Enter the address: **http://192.168.8.8** in the address bar and log in.



The configuration panel provides access to two accounts:
user (standard user)
admin (administrator)
The default password for both accounts is the same as the username and can be changed in the settings.

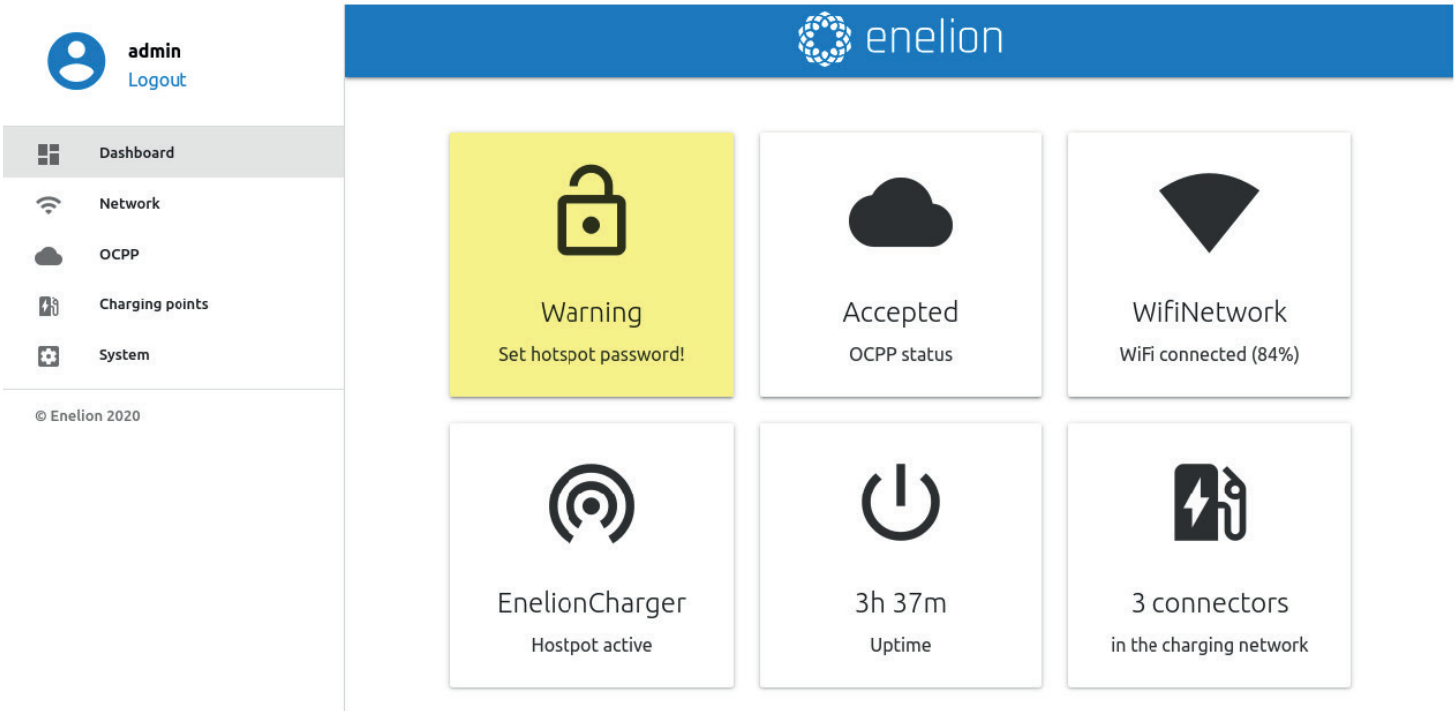


If the password to the configuration panel is lost, it is possible to reset the device to factory settings.

Please note:
All settings will be erased and must be reconfigured manually after the reset.

11.4 Charging Points – Status Overview

The configuration panel interface consists of: a top bar with the Enelion logo, consistent across all subpages,
a sidebar displaying the logged-in username and navigation to individual sections, and the main content area of the current section.



11.5 Dashboard Overview

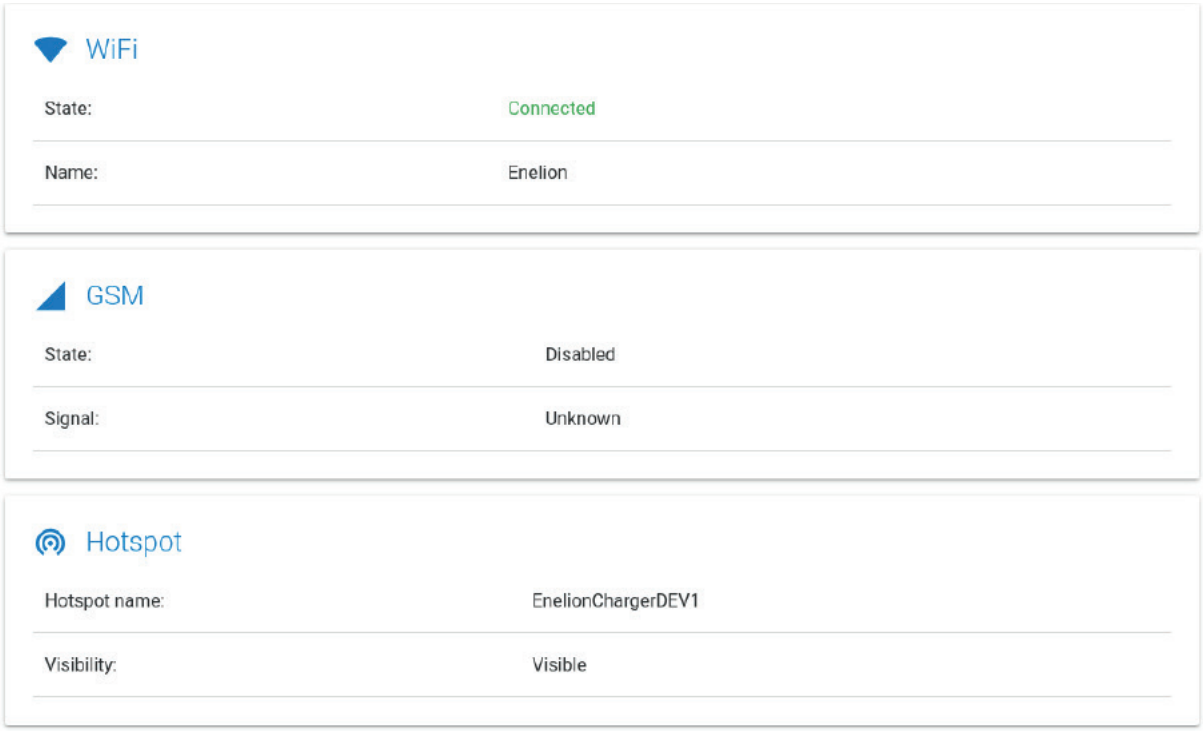
The Dashboard tab displays general information about the status of the Bridge LTE and the charging network, shown in the form of tiles. Depending on the device's state, not all tiles may be visible at once.

Available tiles include:

- OCPP status
- Wi-Fi connection status
- GSM connection status
- Hotspot status
- Device uptime
- Number of charging points in the network
- Individual tiles for each charging point currently in use
- Presence of Energy Guard in the network

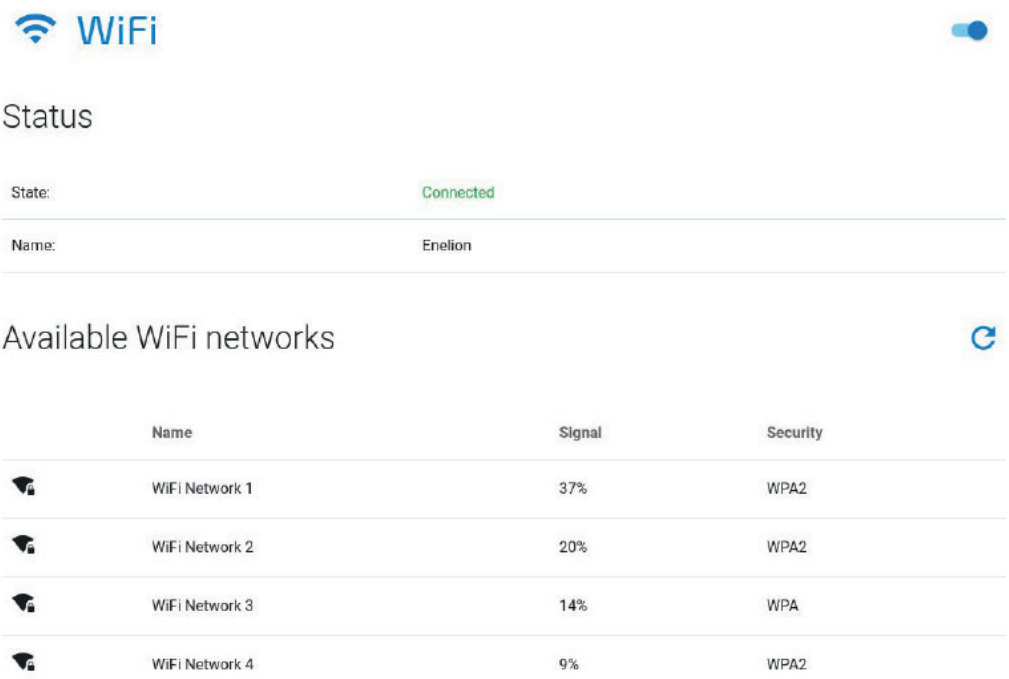
11.6 Network Settings Overview

The Network panel consists of three subpages: **WiFi, GSM, and Hotspot.** The Network tab provides an overview of all available network interfaces. Clicking on any interface tile will take you to the corresponding subpage.



11.7 Wi-Fi Configuration and Diagnostics

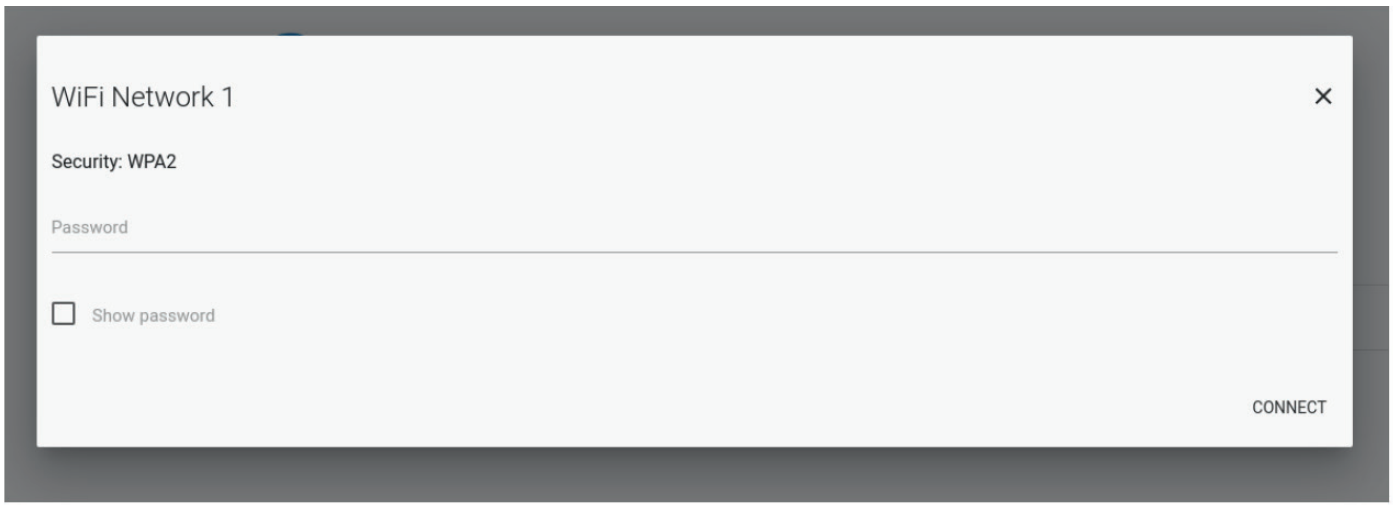
The Enelion Bridge supports Wi-Fi connectivity using the 802.11 b/g/n standard at 2.4 GHz. The WiFi subpage allows you to manage the Bridge's Wi-Fi connection. You can disable the Wi-Fi interface using the toggle switch on the right-hand side of the subpage header. The Status section displays detailed information about the current Wi-Fi connection.



The Available WiFi networks section shows a list of all Wi-Fi networks detected by the Bridge module in its surroundings.

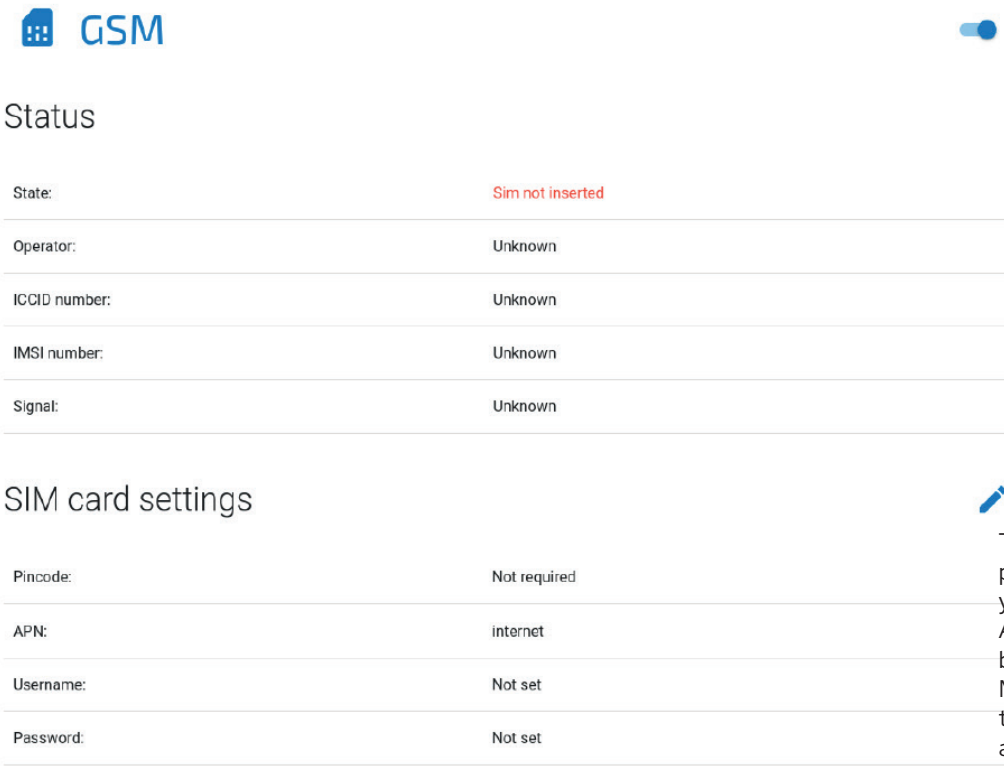
11.7 Wi-Fi Configuration and Diagnostics

In addition to displaying signal strength and security type, the list allows manual refresh by clicking the refresh icon on the right-hand side of the section header. Clicking on any network in the list will open a window where you can enter a password (for secured networks) and save the settings to establish the connection.



11.8 GSM (LTE) Configuration and Signal Status

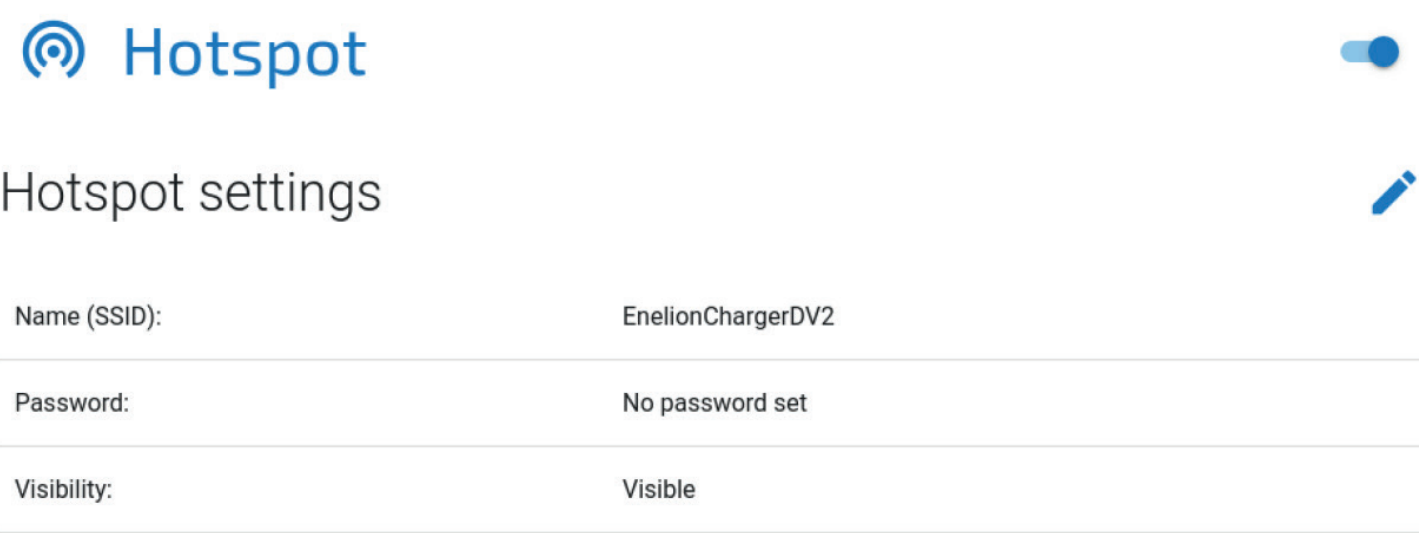
The Enelion Bridge is equipped with an LTE Cat 4 module.
To connect the Bridge to the GSM network, ensure that the SIM card is properly inserted into the SIM slot before powering up the charging station.
After starting the charging station, go to the GSM section and enable the LTE module using the toggle switch in the top-right corner. After a moment, the screen should display the SIM card status. If no PIN is required, the SIM card is active, and the device is within GSM network coverage, the GSM Status section will be populated with SIM card information and the State field will indicate “Ready”.

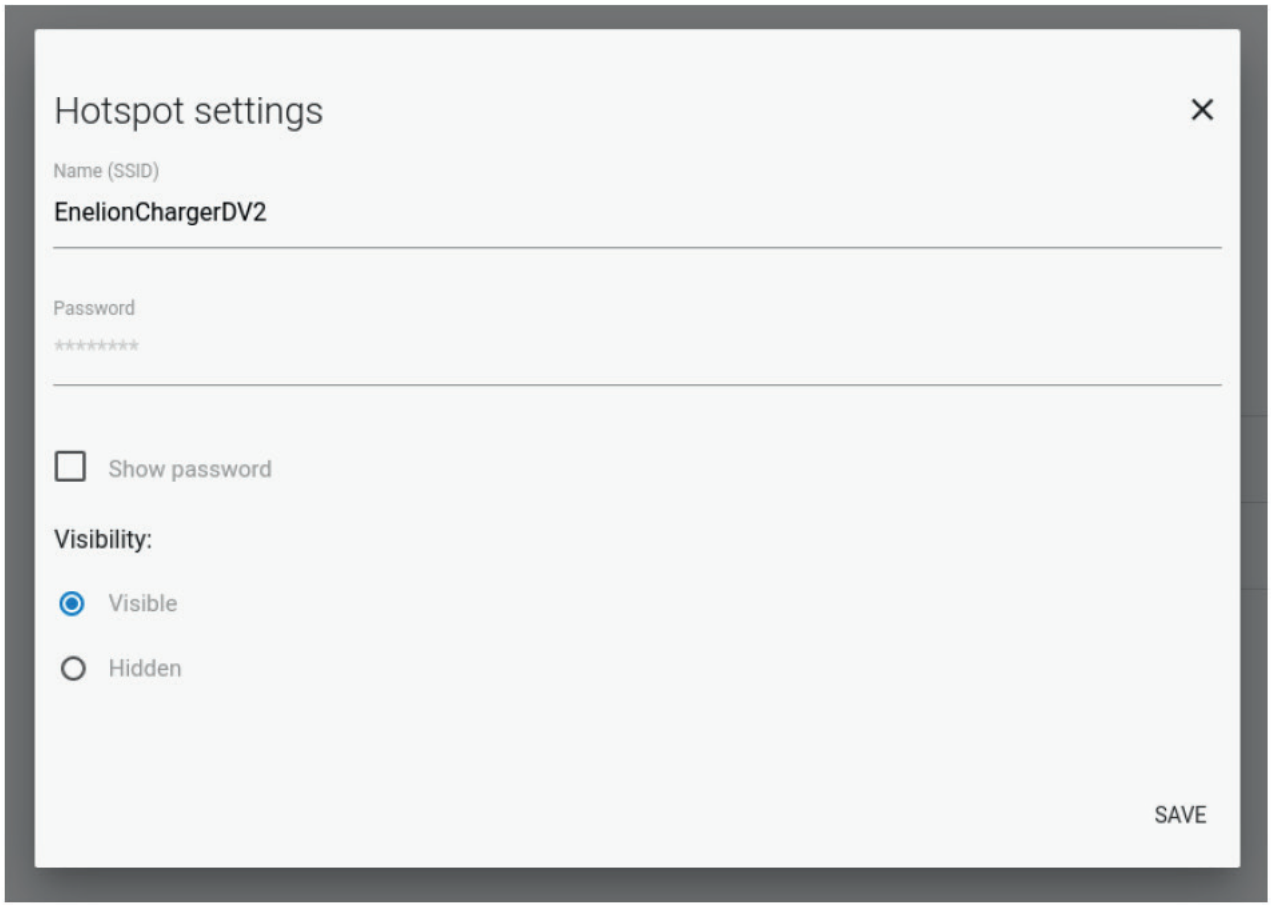


To change the configuration, click the pencil icon. This will open a window where you can enter the new configuration. After entering the data, click the Save button to apply the changes.
Make sure to enter the PIN number if the SIM card requires one, as well as the appropriate APN protocol depending on the LTE network operator.

11.9 Hotspot (SSID) Settings and Access

The Hotspot section displays the status of the WiFi network broadcasted by the Bridge module and its configuration settings.
Just like the main WiFi interface, the hotspot can be disabled using the toggle switch located on the right-hand side.
Hotspot configuration includes the network name, password, and an option to hide the network.
The password must be at least eight characters long.





11.10 OCPP Settings Overview

Connection to the backend management system is established using the OCPP 1.6 JSON over WebSocket protocol.
Enabling OCPP communication on the Bridge module will alter the behavior of charging points as follows:

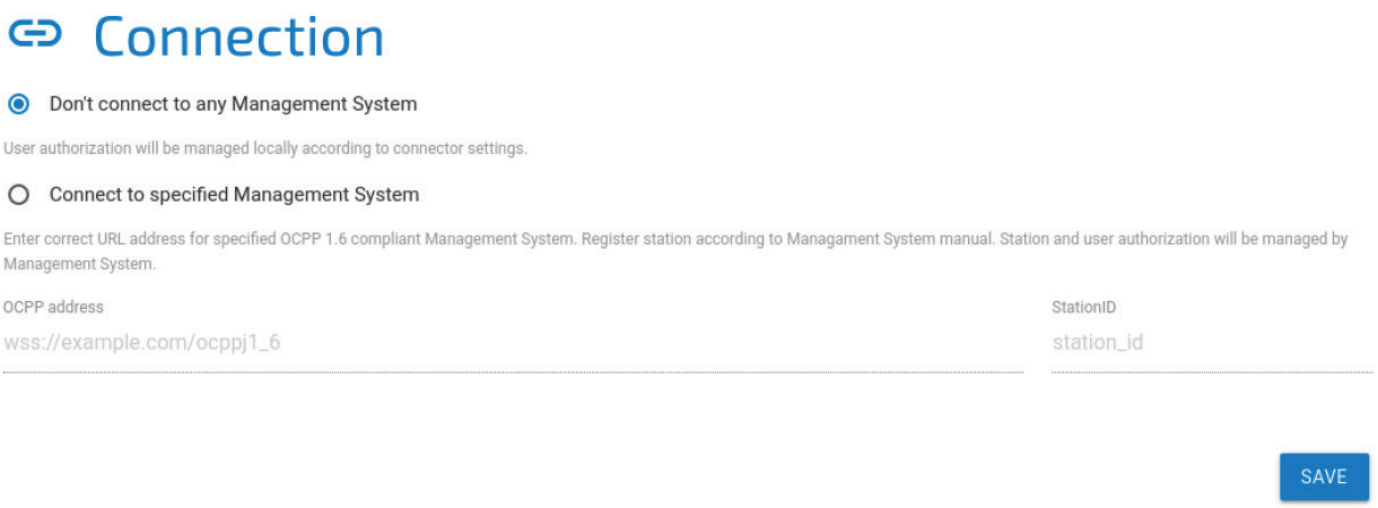
- Charging points configured in Free Charge mode will begin sending their serial number to the management system for authorization purposes. To allow charging, the respective serial number must be registered in the backend. In the case of the Enelink system, this process is handled automatically.
- Charging points set to RFID mode will begin authorizing RFID cards through the management system. Users who were previously able to charge may lose access unless their RFID cards are registered in the backend.
- Using the Emergency Start Charging button, available in the charging point settings, will send the point's serial number to the backend – similarly to Free Charge configuration.
- No RFID card will be accepted if the Bridge module cannot connect to the OCPP server. However, offline authorization settings can be configured from the management system.
- The communication module will begin caching the statuses of presented cards. This local cache can be cleared remotely via the management system.

11.11 OCPP – Server Connection Management

In the Connection subpage, you can choose one of the following connection modes with the OCPP server:

- Don't connect to Management System – the default setting. It disables the Bridge module's connectivity with the backend.
- Charging point behavior, including RFID authorization, remains unchanged.

Connect to specified Management System – connects the Bridge module to a third-party backend.
When selected, the following fields must be filled in:
OCPP URL – the server address.
Station ID – the charging station's unique identifier..



Click Save to apply your changes.
The result of the connection attempt (server response) can be viewed on the Dashboard under the OCPP Status tile.

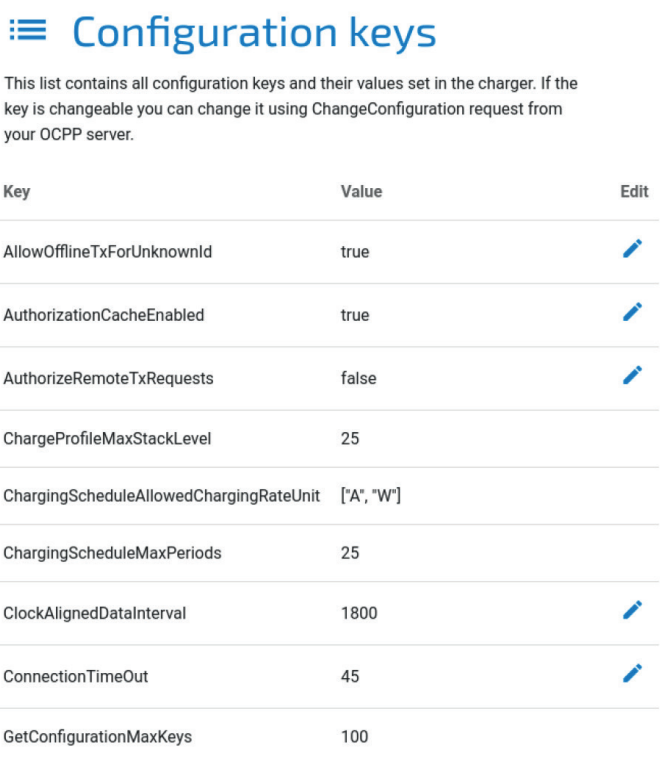
11.12 OCPP – Connection Status and Diagnostic

Possible OCPP connection statuses

OCCP status	OCPP Status
Accepted	The device has successfully connected to the backend management system.
Pending	The device is attempting to connect, but the backend is not yet ready to accept it.
Rejected	The device connects to the server, but is not accepted. Contact your backend provider.
Offline	OCPP communication is enabled, but the connection to the backend is currently inactive. Additional details can be found in the System Logs section. Inactive OCPP communication is disabled.
inactive	OCPP communication is disabled.

12.13 OCPP Configuration Keys

The Configuration Keys subpage allows you to view and edit the values of configuration keys defined by the OCPP 1.6 specification.
Clicking the pencil icon opens an editing window for the selected key.
Keys that are read-only cannot be modified.

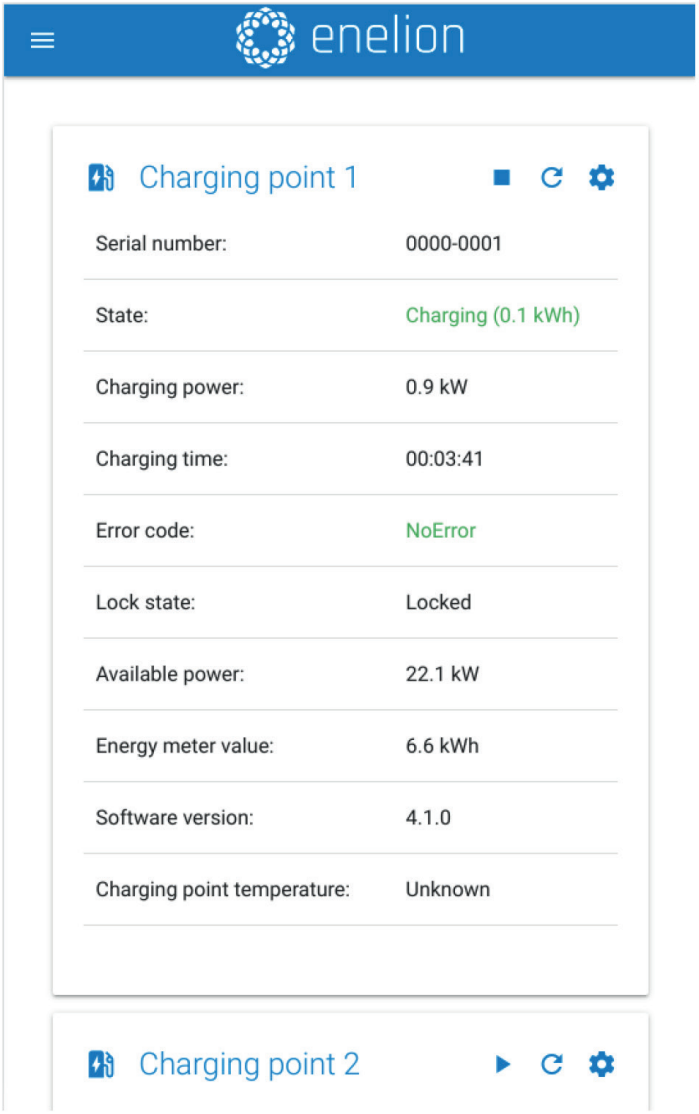


ATTENTION

Changing the values of these configuration keys may affect the behavior of the charging station in unexpected ways. Only use this feature if you understand the implications of the changes.

12.14 Charging points - Overview

The Charging Points section allows you to manage all devices connected to the charging network, including charging points and the Energy Guard module. The Overview subpage displays a list of charging points along with detailed information about each one. The Bridge module automatically detects the number of charging points. If any expected devices are missing from the list, check the physical connections between the charging stations.



The possible charging socket statuses are described in the table below

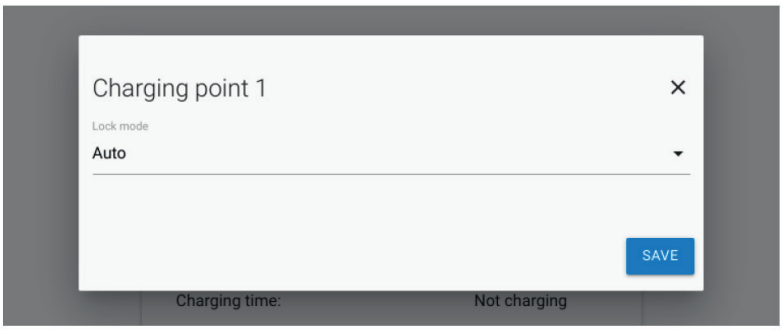
Socket Status	Description
Available	Charging point is available
Preparing	Preparing for charging. A vehicle is connected or the station is awaiting connection after successful authorization
Charging	Charging is in progress
SuspendedEV	Charging is suspended by the vehicle. This may occur when the vehicle is fully charged or charging has been paused for another reason
SuspendedEVSE	Charging is suspended by the charging station. This may be due to dynamic load balancing or power profile restrictions
Unavailable	The charging point is unavailable. Charging will not start. This status is enforced by the management system
Reserved	Charging point is reserved. Status enforced by the management system
Faulted	A fault has occurred. More information is available in the station's interface

The possible lock statuses are as follows:

Lock Status	Description
Unlocked	The socket lock is open.
Locked	The socket lock is engaged
Unsupported	The charging station does not have a socket lock or does not support this function

11.15 Charging Point Settings and Parameter Configuration

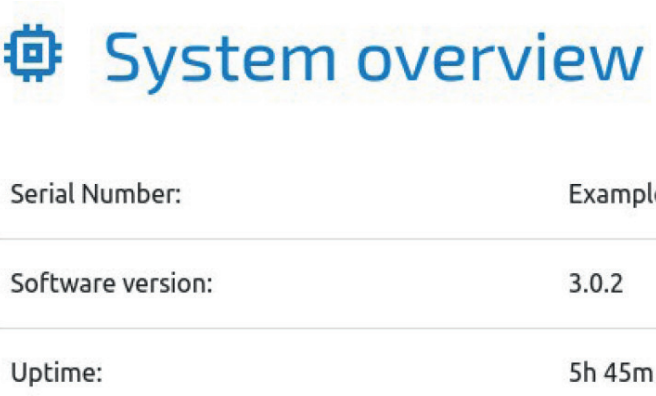
The buttons located to the right of each charging panel name allow you to restart the panel, start/stop charging, and adjust its configuration. Within the settings, you can change the socket lock mode, with the following options:



Lock Mode	Description
Automatic lock	The lock is managed automatically by the charging station. After successful user verification and plugging in the cable, the lock will engage. The lock is released upon completion of the charging session or when the cable is unplugged from the vehicle.
Always open	The lock remains open regardless of the charging state or cable connection.
Always closed	The lock remains closed at all times, allowing permanent locking of the cable on the station side

11.16 System – General Overview

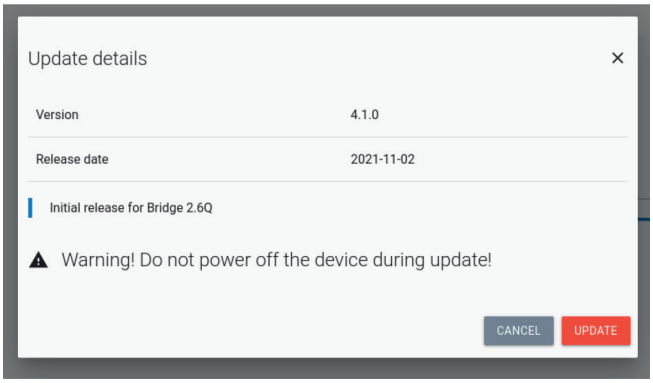
The System section provides tools for managing the settings of the Bridge module. In the Overview tab, you can view details such as: Serial number and model number of the Bridge module, Production date, Firmware version, Device uptime since last restart.



11.17 System – Firmware Update Management

The Update section allows you to update the firmware of the charging station using an update file.
To perform an update: Click the grey button to select the firmware file. Then click the **Submit** button to begin the update process.

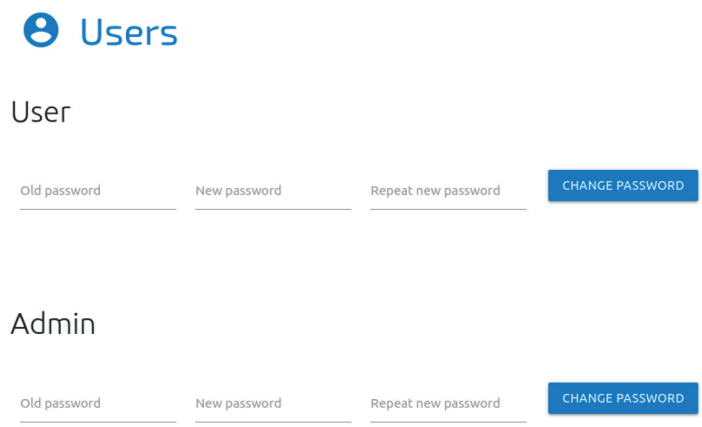
The Bridge module will begin the update process, which should take no longer than 3 minutes. After the update is complete, the configuration panel will automatically restart with the new firmware version.
Note: If the update is performed over the WiFi network generated by the Bridge module, you may need to reconnect to the network manually once the module restarts.



11.18 System – User Account Settings

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

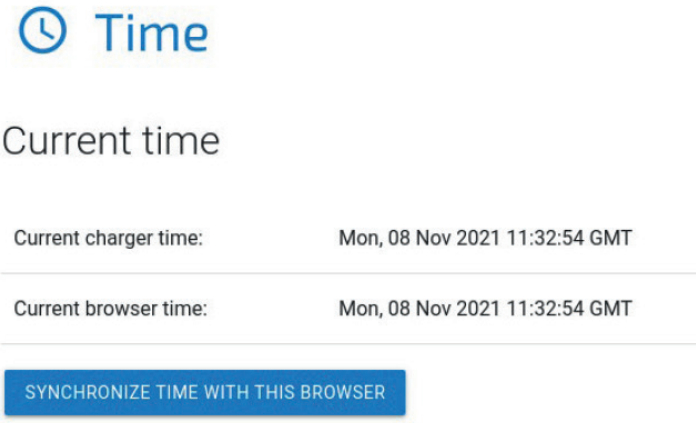
Tabs that are not accessible to the user account include: OCPP and Update.
Additional restricted functionalities include: Viewing logs, Changing the administrator password



The Users subpage allows you to change user passwords. To change a user's password, enter their previous password in the corresponding field, enter the new password twice, and then confirm the change by clicking Change password.

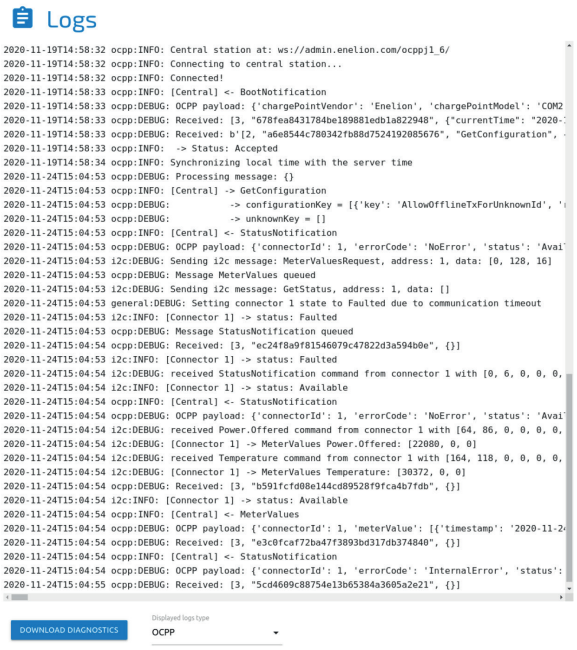
11.19 System – Time and Time Zone Configuration

The Bridge module synchronizes time using both OCPP commands and an NTP time server.
The Time tab allows you to view the current time used by the Bridge module and synchronize it with the time of the device currently accessing the configuration panel.



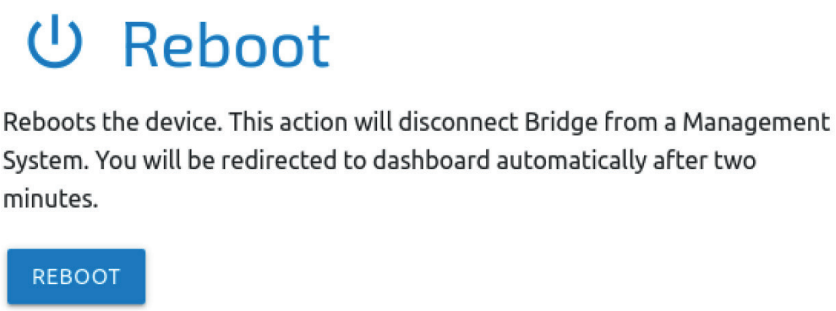
11.20 System – Event Logs and Session History

A list of events that occurred on the Bridge module can be viewed in the Logs tab.
Depending on the type of logs you're interested in (system, OCPP communication, or internal charging network communication), you can select the relevant category from the Displayed logs type dropdown list.
The list refreshes only when scrolled to the most recent events.
The Download diagnostics button allows you to download a diagnostics file to your device. In case of issues with the Bridge module, this file can assist Enelion Support in identifying the cause.
The Users subpage allows you to change user passwords. To change a user's password, enter the current password, then the new password twice, and confirm the change using the Change password button.



11.21 System – Restart Procedure

The Reboot button allows you to restart the Bridge module.
After restarting, the Bridge will reopen the Dashboard section of the configuration panel.



11.22 Technical Data and Device Information Summary

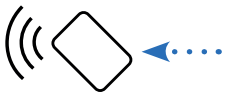
Bridge LTE – Technical Specifications

Dane techniczne	
WiFi	2.4 GHz, 802.11 bgn
GSM Modem	LTE Cat 4, Max. 150 Mbps (DL), Max. 50 Mbps (UL)
OCPP Version	OCPP 1.6 JSON over websocket
Network Ports Used	TCP 20 and 21 – FTP protocol used for remote firmware updates and diagnostic downloads TCP 80 and 8080 – OCPP connection with the backend management system TCP 443 – Encrypted OCPP communication TCP and UDP 53 – DNS protocol UDP 123 – NTP protocol for time synchronization
Supported Number of Charging Points	Up to 100

12.1 Manual Configuration Changes

The device initialization process is performed for the first time during the production stage. Each time the charging station is turned on, it will load the stored configuration. If necessary, it is possible to change the configuration of an already initialized charging station. This requires recording a new configuration card for the station. This may involve placing an order for a card with the dealer who sold the station or using the DealerToolBox software together with the Enelion Reader Card and cards purchased from the manufacturer. In order to change the configuration, with a new configuration card issued for this device, perform the following steps:

- Disconnect the car from the charging point.
- Ensure that the station is ready for use.
- Place the RFID card on the reader.



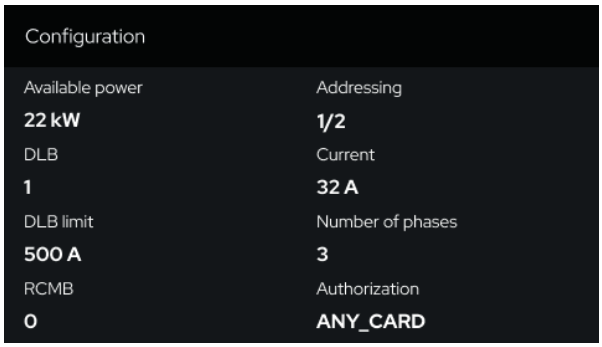
The location of the RFID card reader – next to the screen

- Wait a few seconds for the charging station to respond. If the configuration is read correctly, the light bar will flash white four times.

The station will restart and a configuration screen will appear on the display for 3 seconds.
After changing the configuration, the charging station will restart.
Once restarted, it will be ready for use.
The full configuration can be checked by turning the station's power back on or on the display in the Diagnostics section.

ATTENTION

Changing the configuration carries the risk of improper charger operation or authorization failure. Make sure that the station's power settings are correctly matched to the electrical installation



Configuration Change – DealerToolBox

The configuration can also be changed using the DealerToolBox software in combination with the DealerToolBox RFID Programmer and configuration cards provided by the manufacturer

Steps:
- Contact the manufacturer to obtain DealerToolBox login credentials
- Install the software on a desktop computer
- Connect the DealerToolBox RFID Programmer card reader to the desktop
- Place a blank card on the reader
- Log in to the DealerToolBox software

12.2 Configuration Management via DealerToolBox

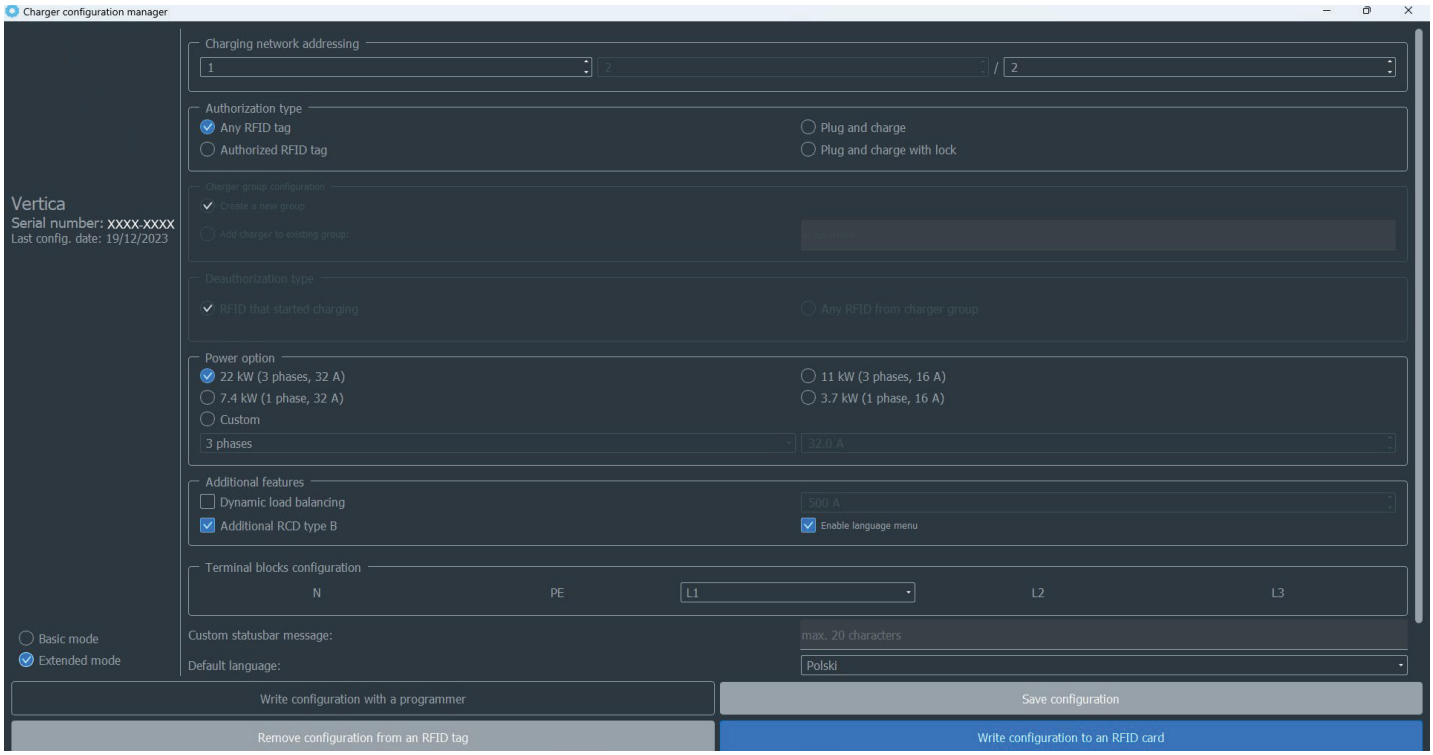
After logging in and selecting the desired configuration, write it to the RFID card by clicking the "Write configuration to an RFID card" button. Once you have a new configuration card prepared, follow these steps:

- Disconnect the vehicle from the charging point
- Ensure the station is ready for use.
- Tap the RFID card on the reader.

The location of the RFID card reader - next to the screen

- Wait a few seconds for the station to respond. A successful configuration read will be indicated by the LED light bar flashing white four times.

The station will restart and show the Configuration screen for 3 seconds
Once the configuration is changed, the charging station will reboot and be ready for use upon restarting.
To review the updated configuration, simply power cycle the station again.



13.1 Cleaning Guidelines

Due to the IP54 protection rating, it is prohibited to wash the charging station with pressure washers, garden hoses, showers, or any other sources of water jets. Plastic parts should be cleaned with a microfiber cloth and a cleaning agent intended for glass.
Other cleaning methods (e.g., wire brushes) may damage the device housing. Other cleaning methods (e.g., wire brushes) may damage the device housing.
The correct way to clean the charger is to wipe the casing with a microfiber cloth using a cleaning agent designed for cleaning glass. Damage resulting from improper cleaning of the device is not covered by the warranty.

13.2 Device Disposal and Environmental Compliance

This electronic device must not be disposed of with household waste. There may be free collection points in your area where you can return old devices. Please follow local regulations for proper and environmentally friendly disposal.

14.1 Basic Information

The ENELION charger (hereinafter referred to as the device, charger, or charging terminal) is an electric vehicle charging station designed in accordance with international standards, including IEC 61851-1 and IEC 62196-2, for charging electric vehicles equipped with compatible connectors.

Any unauthorized interference with the device's mechanical, electrical, electronic components, or software is strictly prohibited and will void the warranty. Exceptions include operations specifically described in this manual or those agreed upon in writing with the manufacturer. The manufacturer assumes no liability for damage to property resulting from such prohibited modifications.

The electrical installation to which the device is connected must meet the requirements outlined in the installation instructions. The manufacturer is not responsible for improperly executed or insufficiently protected electrical infrastructure. Furthermore, the electrical installation must comply with the applicable legal and safety standards of the country in which the device is installed and operated. The manufacturer assumes no liability for damage resulting from non-compliant or faulty installations.

The device is not equipped with a built-in power switch. It powers on automatically when supply voltage is present. Disconnection from the power source must be provided via external protective devices as specified in the installation documentation. Except in emergency situations, the device must not be powered down during an active charging session.

It is strictly forbidden to energize the device while the housing is open, or to operate a unit that is mechanically damaged or indicates a critical fault status on the display or LED indicators.

Only charging cables and plugs intended for EV charging may be inserted into the socket. The only approved connection is a functional Type 2 charging cable, suitable for the device's power rating and the vehicle's requirements, in compliance with IEC 62196-2. The use of extension cords, adapters, or conversion plugs is strictly prohibited.

Due to its IP54-rated enclosure, the device must not be cleaned with pressure washers, garden hoses, showers, or any other source of high--pressure water spray.
The manufacturer allows the purchase of support packages—including extended warranty and service options—during the warranty period, provided a qualifying inspection is completed beforehand. For details, please contact the ENELION Sales Department.

14.2 Station servicing and maintenance

A service inspection must be performed annually. Mechanical components such as the socket, charging cable, plug lock, plug, plug holder, and other fixed components require only surface-level visual inspection. These elements are not considered wear parts and are not expected to require replacement under normal operating conditions during the station's service life.

During inspection, attention should be paid to:
Signs of corrosion, Water ingress, Salt crystallization, or
any other indicators of deterioration in the condition of the unit.

If any damage is observed to components such as the socket, cable, plug, plug holder, or any other fixed part of the charger, this must be reported to the station operator. The replacement of these components must be carried out by an authorized ENELION service center.

All service work must be performed with the power supply disconnected.

Fault diagnostics are performed using the device's display, which presents error codes along with descriptive messages identifying the issue.

The electrical diagram and internal construction details for the charger are available in the installation manual specific to each Wallbox Duo PRO model.

Note: The charging station does not support active ventilation.

14.3 Functional tests

Functional tests must be performed using an appropriate tester.
Functional tests must be performed at least once a year and after each installation and service.
The charging point should be treated as in a standard charging process.
The entire procedure for starting, ending charging, etc. is described in the chapter - Starting Wallbox Duo Pro.
Please note that the station operates differently depending on the configuration: with RFID authorization and in Freecharge mode.

The section **Troubleshooting - error codes** further on describes situations diagnosed by the charging station. Based on these, it is possible to determine whether the station is correctly diagnosing faults on the vehicle side.

14.4 PP contact – plug and charging cable detection

The charging station with a socket recognizes the rated load capacity of the connected cable based on the resistor between the PP and PE contacts located in its plug.

Below is a table showing the permissible load capacity of the cable expressed in [A] for a given resistance Rc.

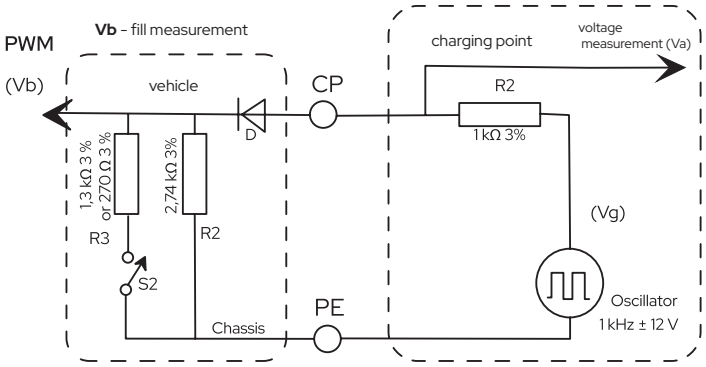
RESISTANCE VALUE RC (±3%)	NOMINAL CURRENT LOAD OF THE CABLE
220 Ω	32 A
680 Ω	20 A
1500 Ω	13 A

The PP status is checked before charging begins. In the event of a short circuit between PP and PE, charging will not start regardless of the vehicle's C or D status.

For charging stations with a cable, the load capacity of the cable is checked in the same way on the car side.

14.5 CP contact - communication line between the vehicle and the charging station

The vehicle, using appropriate resistors, changes the signal voltage to communicate its state to the charging station. Additionally, several abnormal situations can also be detected.



Simplified circuit diagram of the communication circuit:

14.6 Station statuses and alarms

The charging station responds to various states by displaying information on the LCD screen and LED bars. After functional testing, check the station's response to the following states:

- states A B C E,
- PP to PE short circuit error before charging starts,
- short circuit error of the diode inside the vehicle,
- warning, LED status – yellow, flashing.

VEHICLE STATUS	CONNECTION WITH THE VEHICLE	CHARGING CAPABILITY	DESCRIPTION
A	NO	NO	Charging station in standby mode - Status LED: Green, pulsating
B	YES	NO	Detection of vehicle presence - Status LED: Blue, pulsating
C	YES	YES	Charging in progress - Status LED: Blue, pulsating from the center towards the edges
D	YES	YES	Charging in progress - Status LED: Blue, pulsating from the center towards the edges
E	YES	NO	Warning - the charger interrupts the charging process but automatically attempts to restore the charging state. Status LED: Yellow, pulsating. Example: CP to PE short circuit.
F	YES	NO	Error - the indicator will pulsate with red light, indicating a problem that requires human intervention. The error can be reset by reconnecting the vehicle to the charger. Example: RCM B tripping.

Station states detected by the charging station

14.7 Error Codes

The error code consists of three parts corresponding to: error category, error source, and error number.

Where: W01/02

- **W** – error category (in this case: warning)
- 01 – error source (communication error with the car)
- / – Separator
- 02 – error number (short circuit on the CP signal line)

Sources of errors

Number	Source of error
01	Communication with the car
02	Detection of differential current
03	Power grid
04	Device defect

Error categories

There are three types of alarms: The category is indicated by the first letter in the error code and indicates how serious the error that occurred in the charging station is. There are three error categories:

- **W** - Warning

Warning errors are errors that the station will attempt to correct automatically, or after which it will be able to return to the state preceding the error.
The light strips will emit a uniform yellow light and flash green pulses. The number of flashes depends on the source of the error. The light bars will glow with a steady yellow light and flash with green pulses. The number of flashes depends on the source of the error.

- **E** - Error

Errors in this category are errors that require user intervention to return the charging station to working order. To reset the error, the user must disconnect the car from the charging point. After disconnecting the car, the charging point should return to its default state. When an error occurs, the light bars will be dimmed and will flash red. The number of flashes depends on the source of the error

- **F** - Defect - critical error

Damage errors are critical errors detected by the charging station that prevent the device from continuing to operate. When an error of this category is detected, the charging station should be sent for servicing. When an error occurs, the light bar will glow red continuously and flash red. The number of flashes depends on the source of the error.

Error numbers

The detailed error number can be read from the charging station display. Each error source has its own set of errors that may occur during device operation.

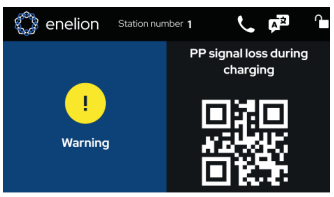
14.7 Error Codes - Warnings

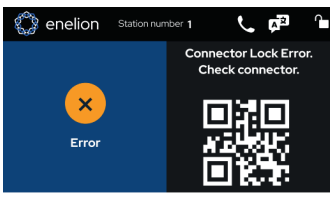
In the event of a screen failure, errors can be read using light signals displayed on LED bars.

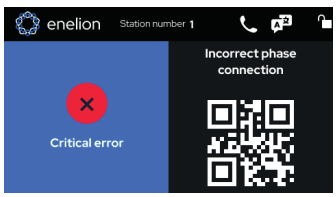
Warnings				
Source	**Number**	**Type of error**	**Possible solution**	**Light bar response**
01	01	Short circuit on the PP line	Check the cable connection to the charger or replace charging cable.	
	02	Short circuit on the CP line	Wait for another attempt to communicate with the car or try to disconnect and reconnect the car	
	03	Diode failure in the car		
	04	Wrong status in the communication protocol	Wait for another attempt to communicate with the car	
	05	PP signal disappeared during the charging process	Wait for another attempt to communicate with the car or press the charging cable plug with greater force.	
	06	No PP signal detected	Disconnect and reconnect the charging cable.	
02	01	Phase loss on the first phase connected to the charger	Check the circuit breakers which supply the charger and wait for the error to be reset.	
	02	Overvoltage in the power grid detected	Wait for the power grid to stabilize and the error to be reset.	
	03	Voltage dip in the power grid detected		
	04	Overvoltage in the car charging process detected	The charging will be stopped and retaken after some time.	
	05	Incorrect phase connection to the charger	Turn off the charger and check the power connection. The power supply can only be connected in the order: L1, L2, L3 or in the appropriate sequence. An error in the installation can lead to improper operation of the dynamic load balancing (DLB) function.	
03	01	First detection of type A differential current (AC 30 mA) during charging	Please wait for the error to reset. Loading will restart after a specified period of time.	
	02	First detection of type B differential current (DC 6 mA) during charging		

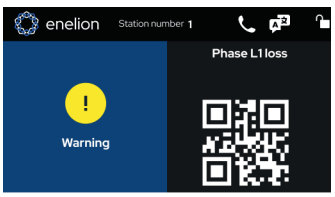
Error codes detected by the charging station and how to resolve them - Warnings

When a warning appears, the LCD screen will display, for example, the disappearance of the PP signal during charging.





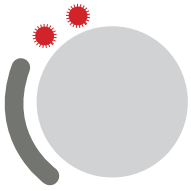
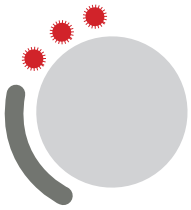




The LCD screen and LED strips will also display errors and critical errors - damage.

14.7 Error Codes - Errors - Damage

Error codes

Errors				
Source	**Number**	**Type of error**	**Possible solutions**	**Light bar response**
02	01	Socket lock error	Adjust the cable plug in the charger socket. If necessary, re-authorize	
	02	Socket unlock error	Adjust the cable plug in the charger socket and wait for another attempt to unlock the socket.	
03	03	Residual current AC 30 mA type A detected when charging	Detection of the residual current causes the charging to stop. To reset the error, disconnect the car from the charger.	
	04	Residual current DC 6mA type B detected when charging		

Failure				
Source	**Number**	**Type of error**	**Possible solutions**	**Light bar response**
03	05	Residual current type A or B detected at any moment when no car is charging.	The charger may be damaged. The device should be immediately switched off and sent to the servicing point.	
04	05	Incorrect phase connection to the charger	Turn off the charger and check the power connection. The power supply can only be connected in the order: L1, L2, L3 or in the appropriate sequence.	
05	01	Communication module failure	Turn off the charger and disconnect the cables connecting the charger to the network. If the error still appears after switching on, the charger may require service. Contact the Dealer.	
05	02	The Bridge communication module has lost connection with the charging point.	Check the connection between the charging points and whether the communication cables have been terminated. For more information, refer to the installation instructions.	

Error codes detected by the charging station and how to resolve them - Errors - Damage

Error names

The detailed error name can be read from the charging station display. During operation, various error codes may appear on the device screen. This may be caused by various factors, e.g., a plug that is incorrectly inserted into the module socket. A simple method is to repeat the action and check if it occurs again. Follow the instructions on the screen. If a QR code appears on the screen, scan it and follow the instructions. All error codes can be found on the website:
https://service-support-enelion.happyfox.com/kb/section/9/

14.8 Frequently Asked Questions

Frequently Asked Questions

ENELION LUMINA CHARGER DOESN'T CONNECT TO THE Wi-Fi NETWORK

Make sure that the Wi-Fi password has been entered correctly. It may help to move the Wi-Fi router closer to the charging station. Check if your station has a communication module on the LCD screen and if the default SSID name EnelionChargerXXX is displayed.

ENELION LUMINA CHARGER DOESN'T CONNECT TO THE GSM NETWORK

Make sure the GSM network settings were entered correctly and that the charger is in the network signal range.

I CANNOT ACCESS THE CONFIGURATION PANEL

Make sure you are connected to the charger's Wi-Fi Hotspot. Please check if you use correct IP address: 192.168.8.8.

In other cases contact technical support.

Please describe the situation in which the problem occurred in detail so that our technicians can locate its source more quickly and provide more effective assistance. If you have a module equipped with a Bridge communication module, you can attach a file with event logs to your report, if possible (you can download it by pressing the System /Logs/ Download button.

16.1 SUPPORT AND SERVICE

The current full version of the device manual is available at:

https://enelion.com/support-wallboxduo-pro/

Returns and complaints

For returns and warranty claims,

please contact your distributor or Enelion's customer support team.

Helpful documents and video materials can be downloaded from:

https://enelion.com/support

Factory Service:

Enelion sp. z o.o

Mialki Szlak 52,

80-717 Gdansk, Poland

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that is subject to change without notice.

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WALLBOX DUO PRO

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