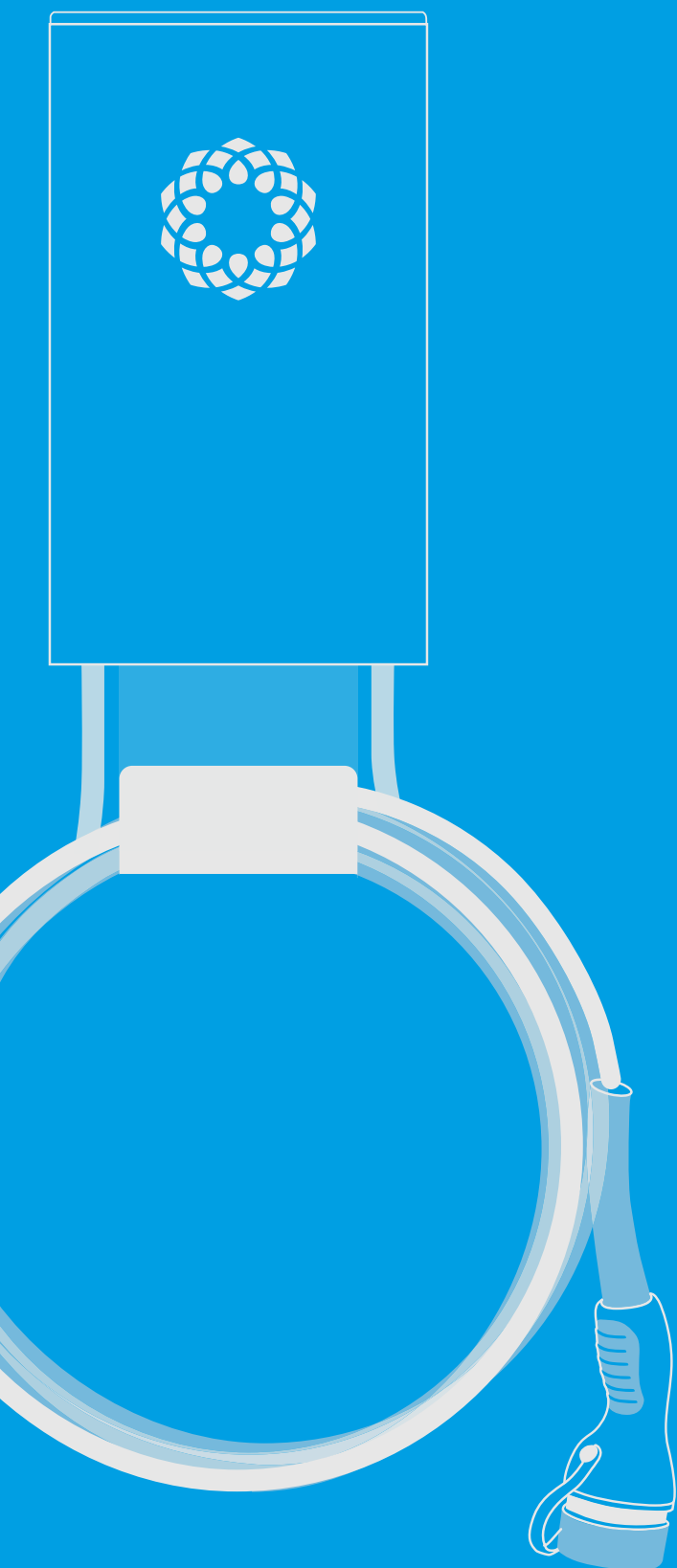




# Stilo

Assembly manual



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Before the installation, make sure that the module packages contain all the elements. Current version of the operation manual can be accessed at <http://enelion.com/en/help/>.

See the contents of the manual before initiating any activities related to the installation or the activation of the charger.

## 1. Important information

### 1.1. General Provisions

Installation and servicing of the device must be performed by qualified and authorized persons, and repairs may only be carried out by the manufacturer or entities authorized by the manufacturer.

Tampering with the mechanical, electrical and electronic components and the device software is forbidden and shall result in the nullification of the warranty. The exceptions include operations described herein and those agreed in writing with the manufacturer.

The manufacturer is not responsible for damage to property resulting from the forbidden interference in the product.

The electrical installation to be used by the device during its operation must meet the conditions described in the installation manual. The manufacturer is not responsible for incorrect assembly and/or protection of the electrical installation to which the device is connected.

The manufacturer is not responsible for the malfunction of the electrical installation to which the device is connected.

The electrical installation to be used by the device during its operation must comply with the legal standards in force in the place of assembly and the operation of the device. The manufacturer is not liable for any damage caused by an electrical installation that does not meet legal standards.

The device does not have a built-in switch. The device activates when the supply voltage is applied. The power supply cut off function must be provided by the appropriate electrical installation devices described in the assembly manual. Except in emergencies, the device must not be turned off during the charging process.

It is forbidden to supply the power to the device when the device casing remains open.

The use of a mechanically damaged charger or a charger that indicates a critical error is forbidden.

It is forbidden to place in the charger socket any objects not intended for this purpose. A working power cable with a cross-section appropriate for the power supplied to the device and appropriate for the type of electric vehicle, terminated with a functional plug type 2 in accordance with EC 62196-2 is the only object that may be plugged in the charger socket.

It is forbidden to use any extensions of the charging cable.

The manufacturer is not responsible for loss of health or life by any persons resulting from failure to comply with the above-mentioned recommendations.

The data plate on the device is an integral part of the device and its removal or damage shall result in the nullification of the warranty.

### 1.2. Safety instructions

Outdoor installation should not be carried out during precipitation or strong wind, if there is a risk that water or dirt may get into the device.

All operations described in this manual should be performed only having made sure that there is no voltage in the power cable.

## 2. General information

Stilo is a charging station intended for electric road passenger vehicles. It is made of an aluminum casing, closed with a top lid made of polymer material. It is equipped with an RFID reader, LED signaling and a charging cable of 4,7 m meters ended with a TYPE 2 plug. Additional accessories can be installed. The range of functions of the device can be extended by adding such accessories as Enelion Bridge, Enelion RCM B protection. Some parameters and functions can be changed by reprogramming the device with the use of the attached RFID card. Enelion Stilo is available in two colors: black and silver.

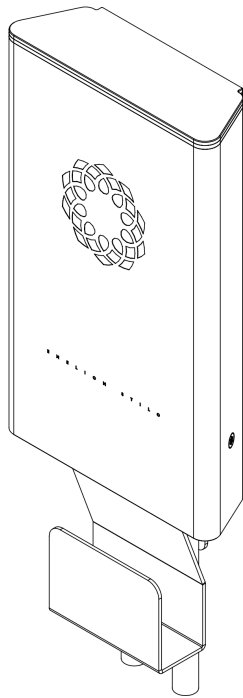


Fig. 1: Enelion Stilo.

All Enelion charging stations are compatible with the original Enelion Chain communication protocol, which enables operation in the local network of chargers. This enables the Enelion DLB function to be activated for dynamic load balancing, thus reducing the number of devices that require an Internet connection and optimizing the use of power in charging vehicles.

All Enelion devices can be fitted with Enelion Bridge (an add-on to be purchased separately). It equips the devices with Smart functions and facilitates their connection to a remote management system (OCPP 1.6 compliant) via the Internet.

### INFO

For more information, see the “User Guide”. It contains detailed information about the functionality and use of the device.

### 2.1. Opening and closing of Enelion Stilo.

### INFO

The anti-theft torx T25 bit – included with the charger – is needed to open (or close) Enelion Stilo.

### INFO

Closing of the device is performed by repeating the steps in the reverse order.

### INFO

The operations described below are identical for the device already mounted on the wall. Please note that the device must be opened at least once before the installation to allow access to the mounting holes on its back and to connect the power cable.

1. Locate the device closing bolt and remove it, using the torx T25 bit (included) and a screw driver.

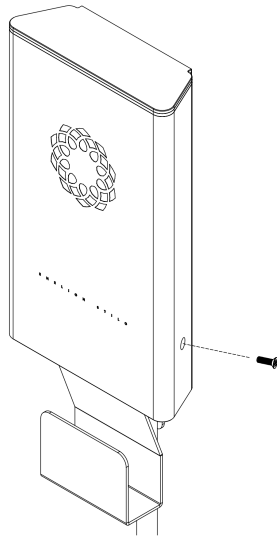


Fig. 2: Location of Enelion Stilo closing bolt.

2. Hold the casing and slide it up the guiding grooves to remove it.

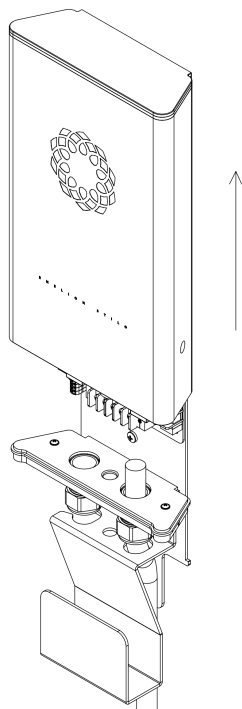


Fig. 3: Removing Enelion Stilo casing.

3. Store the casing in a safe place.

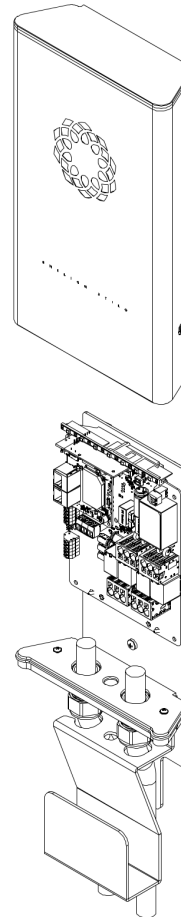


Fig. 4: Fully open Enelion Stilo.

**⚠ WARNING**

Be careful not to crumple the signal tape while fitting the front panel.

### 3. Design recommendations for the installation

#### 3.1. Recommended power connection

Enelion charging stations are adapted to five-wire power supply from TN-S type and TT type grid. It is possible to apply three-wire power supply from TN-S type grid.

##### ⚠ WARNING

Connection possibilities have been described in "User manual", in the Device *configuration section*.

Enelion charging terminal must be powered from the electrical switchboard. The board must have the required protections in the form of an overcurrent circuit breaker with B or C characteristics and rated current of 32 A or lower, appropriate to the device version. To be compliant with the PN-EN IEC 61851-1: 2019-10 standard, each charging point must also be protected against type A or B residual current. This requirement must be met by one of the below:

1. installation of a type B residual current device (RCD B 30 mA/40 A) or RCD EV (30 mA/40 A) in the switchboard,
2. installation of a type A residual current device (RCD A 30 mA/40 A) in the switchboard with the application of Enelion RCM B – type B Residual Current Monitor, attached to the charging terminal.

The final selection of the safety devices belongs to an authorized designer or a qualified electrician.

The above requirements result in the necessity to use independent cables for multi-socket devices: Wallbox Duo Power and Wallbox Adspace.

Wallbox Duo multi-socket device allows one to power the charging sockets only in 1-phase mode. Therefore, it should be powered with one four-wire cable.

The cross-section of the power supply cables must be selected by an authorized electrician, depending on the distance from the switchboard and other conditions pertinent to the location. To obtain the maximum charging power in wall-mounted devices, the use of cables with a conductor cross-section not greater than 6 mm<sup>2</sup> is recommended. The maximum cross-section of the power supply cable to be assembled in connection terminals is 16 mm<sup>2</sup>. The diameter of the power supply cable

with insulation must not exceed 16 mm<sup>2</sup>.

Cables running underground must be installed in accordance with the binding building regulations. For convenient installation, flexible power cables, stranded type, terminated with clamping sleeves are recommended

##### ⚠ WARNING

To supply the voltage to the installed and connected charging station, first switch on the RCD protection, and next the overcurrent switch.

For installation, about 50 cm of power cable reserve from the expected installation position is recommended. For Wallbox Adspace devices, a reserve of about 110 cm of the cable supplying power to the left socket is recommended.

#### 3.2. Recommended communication network

Enelion devices support the Enelion Chain communication interface. For its implementation, a wired connection between the devices is required using an Ethernet CAT 5 or CAT 6 cable.

For installation, leave about 50 cm of communication cables from the expected installation position.

The network works in a serial topology where:

- the number of Enelion charging points does not exceed 100 devices,
- the total length of the communication cable connecting the devices does not exceed 500 m.



Fig. 5: Enelion Chain network topology.

Enelion devices equipped with the Enelion Bridge module can use the Internet connection via the Ethernet interface in the LAN network. In order to utilize this function, run the Ethernet CAT 6 cable to the device in which the use of this option is expected.



**INFO**

Devices equipped with Enelion Bridge can also use WiFi and GSM interfaces to ensure the Internet connection, but they do not have requirements related to cable installation.

**WARNING**

The manufacturer accepts no responsibility for any damage resulting from failure to comply with the above-mentioned recommendations.

### 3.3. Location selection criteria

Wall-mounted Enelion devices may be installed both internally or externally.

The device has been designed to be installed near parking spaces for electric vehicles. When used in the vehicle collision hazard zone, the structure should be secured with appropriate fenders painted in yellow and black stripes (warning about the gauge).

Bear in mind that the national regulations may define the space for the installation. The device should not be located in a place of high exposure to sunlight, which could cause overheating. Do not install the device near heat sources or in small, closed spaces (e.g. in a box).

It is forbidden to install a power cord that does not comply with the guidelines in section *3.1 Recommended power connection*. It is forbidden to install the device in potentially explosive environment.

Local regulations for electrical installations, fire prevention measures and accident prevention must be taken into account, and escape routes at the installation site must be provided.

It is forbidden to install the device in a location where falling objects may damage the charger.

Before installation, make sure that the mounting space for the device is sufficient.

Wallbox family devices should have at least:

1. 10 cm clearance on each side of the unit.

Stilo family devices should have at least:

1. 10 cm clearance on the right side of the unit.
2. 50 cm clearance above the top edge of the device.
3. 100 cm clearance below the bottom edge of the device.

## 4. Assembly

### **⚠ WARNING**

Before commencing the installation, switch off the power supplied to the cables.

### 4.1. Preparing the installation

1. Place the packaged Enelion Stilo horizontally, in accordance with the markings on the packaging. Cut the package open along the indicated line. Take the device out of the cardboard box, remove the foam protection and put the device in the correct horizontal position.
2. The foam protection contains useful accessories required for the mounting of the device. Before recycling the packaging, collect those accessories that include:
  - anti-theft torx T25 bit,
  - RFID configuration card.
3. Open Enelion Stilo in accordance with the instruction included in section 2.1 *Opening and closing of Enelion Stilo*.
4. Remove the bolts fixing the hook for the charging cable.

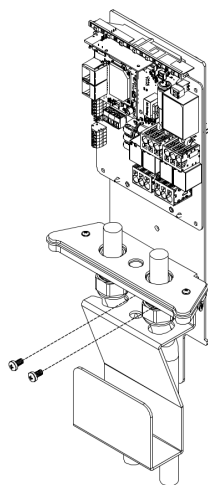


Fig. 6: Removing the charging cable hold.

5. Remove the bolt fixing the wall anchor.

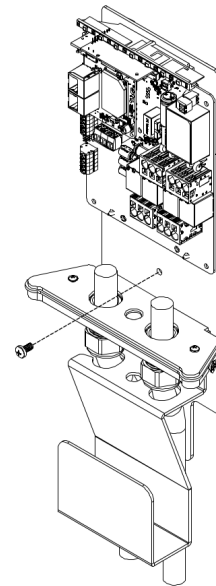


Fig. 7: Removing the anchor bolt.

6. Separate the wall anchor from the device by distancing both parts from each other.

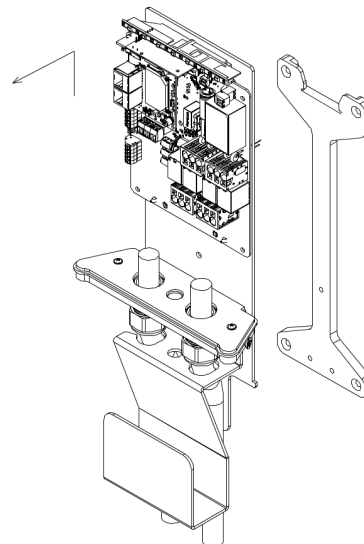


Fig. 8: Removing the device from the wall anchor.

### 4.2. Selection of bolts and anchors

Enelion Stilo is mounted on vertical surface using bolts. The device has four mounting openings.

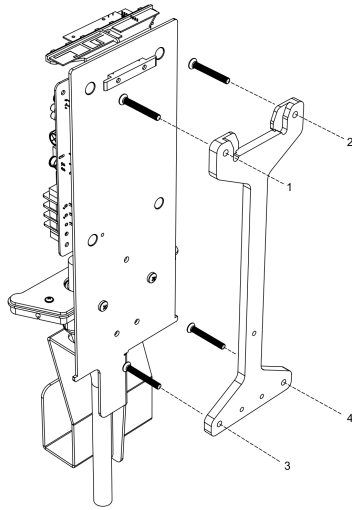


Fig. 9: Enelon Stilo with the wall anchor.

Follow the information listed below to choose the appropriate method of assembly, depending on the mounting surface:

1. four mounting holes are positioned on the plan of a rectangle with dimensions of 270 mm x 80 mm (width x height),
2. mounting holes have a diameter of 5,5 mm,
3. use countersunk-head screws,
4. the bolt's head must not protrude above the sling plane (it must hide in the hole),
5. the device weighs 4,85 kg,
6. mounting must provide stability for the device to be used with the integrated cable of significant weight.

#### **⚠ WARNING**

Use all mounting holes in the process of installation.

### 4.3. Cable routes

Power supply entry is located in the bottom part of the device (opening A). Maximum cross-section of the power supply cables is 6 mm<sup>2</sup>. The use of stranded-core wire cable is recommended.

The insertion of communication cables is possible from the bottom of the device. This requires cutting the gasket in the lower partition of the device (opening B). The opening diameter for communication cables is 12 mm. The detailed connection instructions can be found below in *5 Connection*.

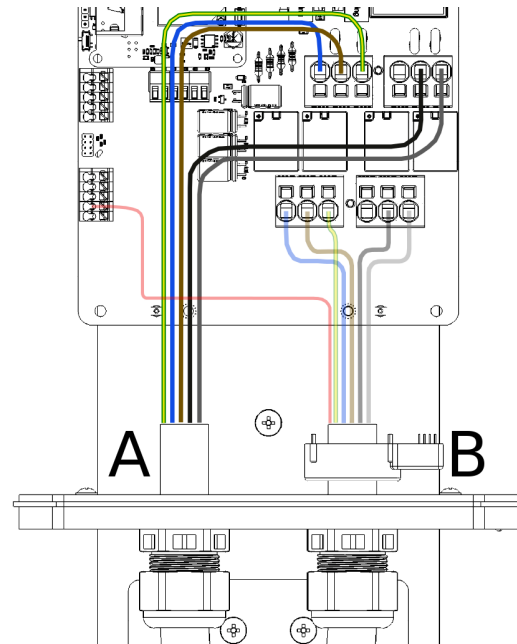


Fig. 10: Location of cable insertion points in Enelon Stilo.

### 4.4. Mounting the device

#### **INFO**

The device has been equipped with a template facilitating the installation.

1. Make sure that there is no voltage in the power cord.
2. Determine the target position of the device using the attached template and the level and mark the mounting holes. The mounting holes, the position of the wall anchor and the outline of the rear wall of the device are marked on the mounting template. The mounting holes should be located at least 7 cm from the edge of the wall (horizontally) and 10 cm) from the edge of the wall in the case of a recess. Provide adequate space above the device for the casing to be slid onto the device (min. 40 cm). Make sure that the power cable is

at least 30 cm long, measured from the edge of the device marked on the template.

3. Make mounting holes in the wall (mounting to gypsum board walls is not recommended) and install wall expansion bolts (suitable for the surface).

Mounting holes should be made in accordance with the specification of expansion bolts. The bolts should be placed in the cleaned holes.

4. Put the wall anchor to the holes and fix it with bolts.

**⚠ WARNING**

Use countersunk screws only. The head should be completely hidden in the deepened hole (it cannot protrude above the surface of the wall anchor).

5. Put the open (according to section 2.1 *Opening and closing of Enelion Stilo*) device to its final position by threading the power cord through the gland and hook it on the previously installed anchor.
6. (Optional) Insert the length of at least 35 cm of the communication cables into the device.
7. Fix the device to the wall anchor with a mounting screw (similarly to point 5 in section 4.1 *Preparing the installation*).
8. Screw on the power cable gland ensuring tightness.
9. Secure the hook of the charging cable with the fastening screws (similarly to point 4 in section 4.1 *Preparing the installation*).

**⚠ WARNING**

The hook may not fit its rest (bottom) if one of the gland nuts is not drawn home completely.

10. Push from up side the aluminum housing onto the device from the top and secure it from the side with an anti-theft screw.

The device mounted in this way can be connected.

## 5. Connection

### 5.1. Power connection

Diagrams of connection types.

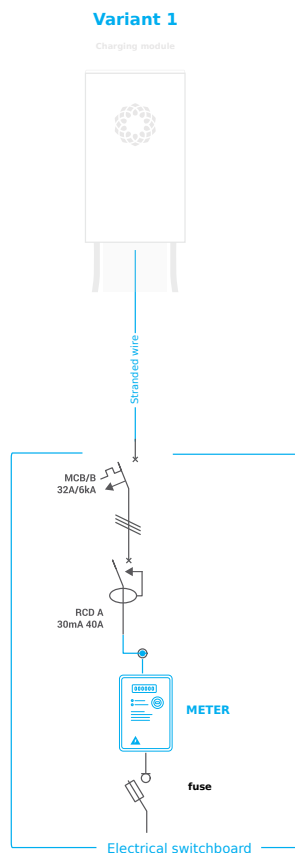


Fig. 11: Connection type diagrams 1./2.

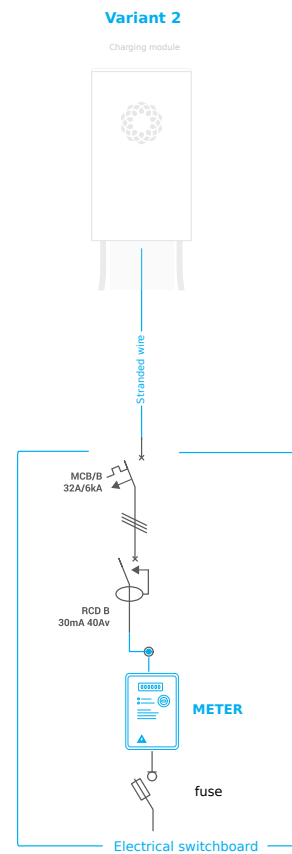


Fig. 12: Connection type diagrams 2./2.

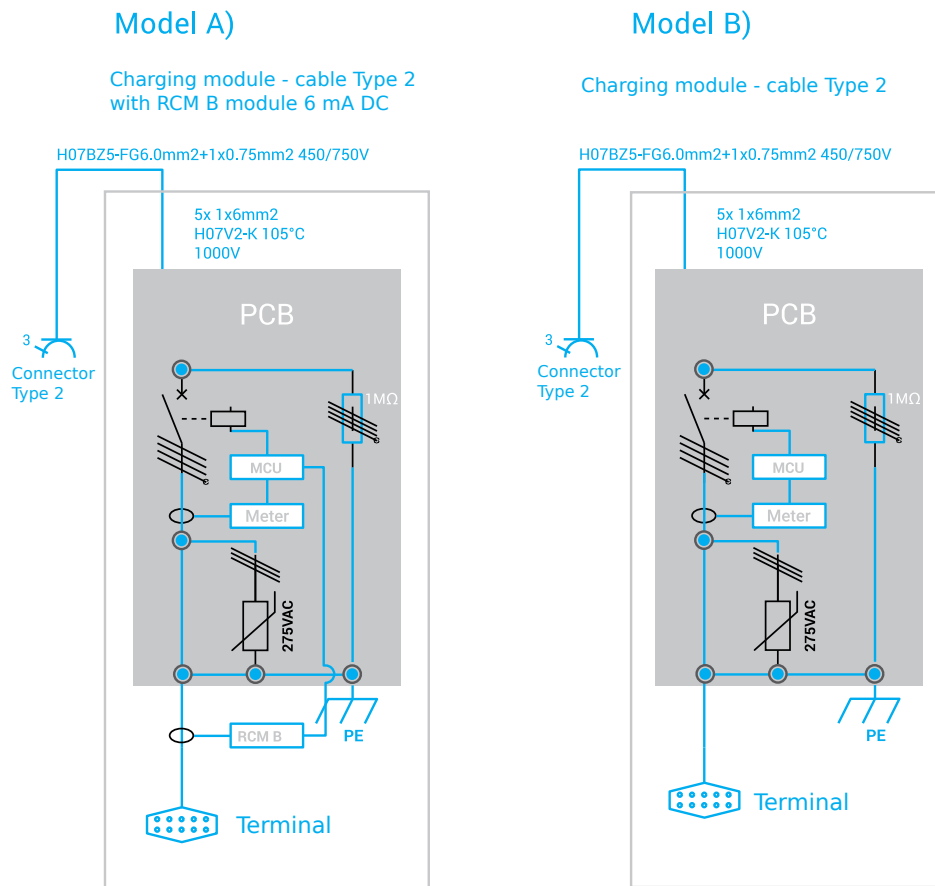


Fig. 13: Pictorial diagrams of Stilo Modules

### 5.1.1. Standard power connection

1. Prepare the power supply cable.  
Remove 250 mm of the main insulation off the power supply cable. Terminate the individual wires of the cable with fork (M4 or M5 size) or sleeve terminals.
2. Insert the power supply cables into the terminals in accordance with the markings.

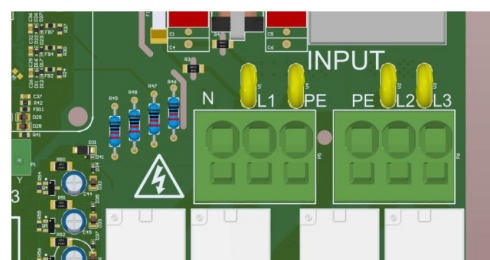


Fig. 14: Connecting the charging controller to the current terminals.

3. The connector which is used, doesn't require a special tool for assembling and disassembling the cables. To install the cable, press it into the connector (like the red and blue cables in the picture). To remove the wire, use a flat-head screwdriver to release the spring clamp (same as the black tool in the graphic). Connectors accept wire and cable up to 6 mm<sup>2</sup> inclusive (cable with a suitable

sleeve).

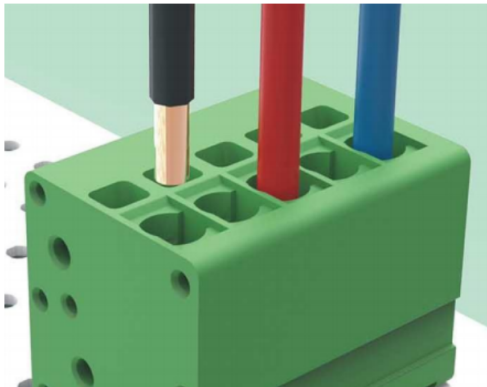


Fig. 15: Connection to the charging controller current terminals - detailed view of the connector.

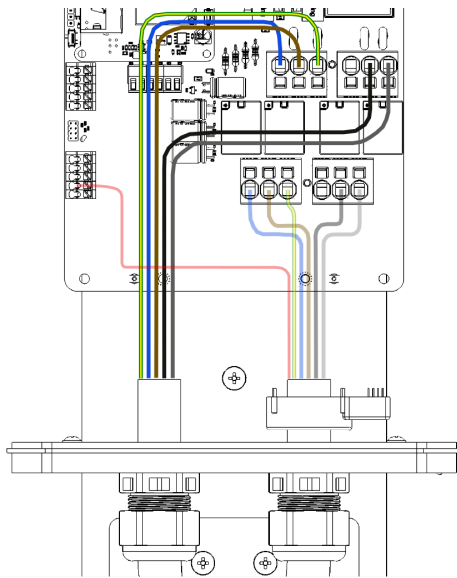


Fig. 16: Correctly performed electrical connection.

#### INFO

It is also possible to use a three-wire power supply in a TN-S network. The possible connection methods for the device are described in the User Manual in the section titled *Device configuration*.

#### HINT

The colors of the phase wires in Enelion Box may not match the colors of the power cables, maintaining, however, the guidelines on Enelion Wallbox label. This is a correct and expected situation when using the phase sequence function.

### 5.1.2. RCM B Connection

Enelion RCM B – Residual Current Monitor type B accessory. Enelion RCM B in combination with the RCD A used in the switchgear meet all safety requirements.

1. Connect the device to the dedicated socket on the PilotBox board. [Fig. 17]

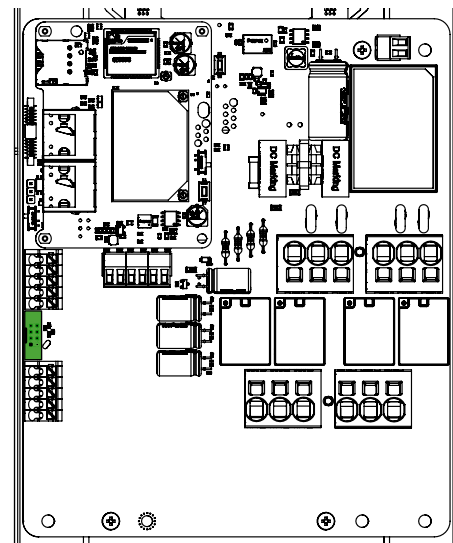


Fig. 17: PilotBox RCM B socket.

2. Pass through the RCM B hole four powering cables (All three phases and neutral cord.)

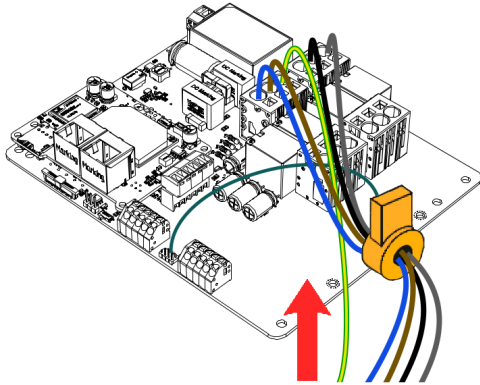


Fig. 18: RCM B connection

**HINT**

The way of cables through the RCMB hole does not matter. The RCMB monitor could be freely assembled on the socket cables or on the main income cables.

**INFO**

More information in the User Manual.

## 5.2. Enelion Chain

If the communication between the devices is expected to be via Enelion Chain network, the cables should be connected to the charge controller. Two cores of the communication cable and the screen grounding are used for communication. To connect correctly:

1. Prepare communication cables
2. (a) for devices at the beginning of the network, select a pair of communication wires,
- (b) for devices in a section of the network, prepare the communication cables inserted into the device by connecting together the cores of the incoming and outgoing wires (in variant A) or move to the next step (in variant B, check figures below).

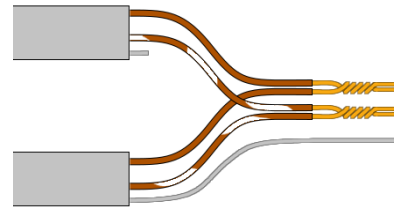


Fig. 19: Incoming and outgoing communication cable connection (variant A)

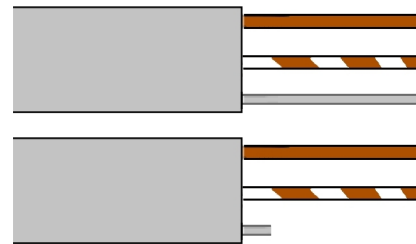


Fig. 20: Incoming and outgoing communication cables (variant B)

3. Release the connector terminal by pressing the button using a flathead screwdriver and insert the wires into the respective locations. There will be single wires for devices at the start and end of the network.

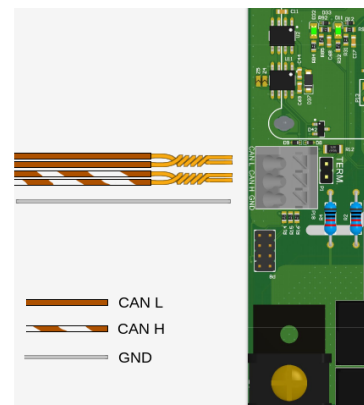


Fig. 21: Diagram of Enelion Chain communication cables connection (variant A)



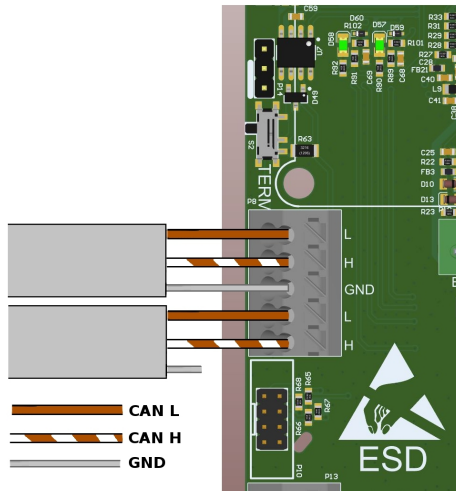


Fig. 22: Diagram of Enelion Chain communication cables connection (variant B)

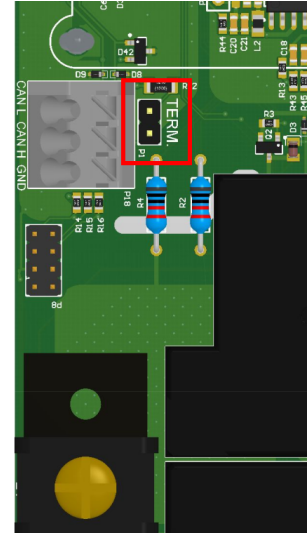


Fig. 25: The place of applying the terminating jumper (variant A)

4. Use termination for devices at the beginning and end of the network. In case of variant A place terminating jumper on the marked headers [Fig 25]. In case of variant B termination is done by slide the switch down, to show white square. In alternate version, if there is no switch, place a jumper on two pins in the header inside the charger marked by white line [Fig. 26].

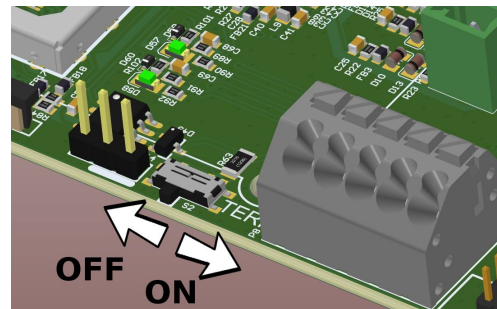


Fig. 26: The place of applying the terminating jumper (variant B)

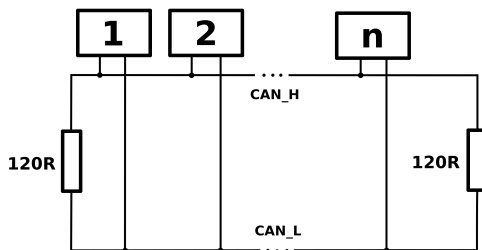


Fig. 23: Termination diagram.

### 5.3. Internet connections via Ethernet interface in LAN network

To provide the Internet connection to a charger equipped with Enelion Bridge module via Ethernet interface:

1. Insert the Ethernet cable into the device through the gland for communication cables.
2. Terminate the cable with the RJ45 connector according to TIA-568A/B to 100BaseT.



Fig. 24: A sample jumper.

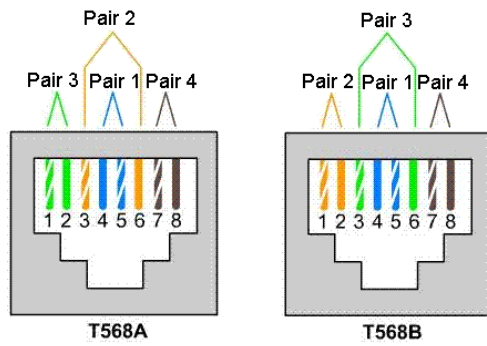


Fig. 27: Termination of the Ethernet cable according to TIA-568A/B to 100BaseT.

3. Connect the Ethernet cable to the WAN/INTERNET socket of Enelion Bridge module marked with number 2.

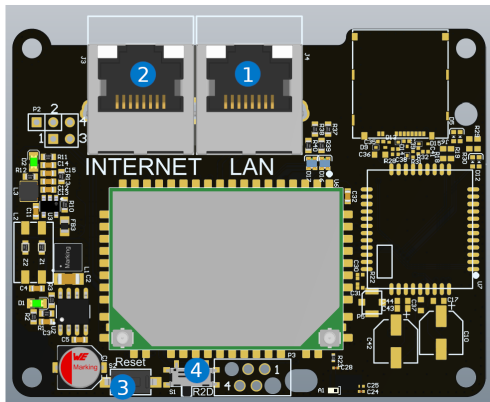


Fig. 28: Enelion Bridge module diagram.

## 6. Maintenance

The device is designed to operate in temperatures from  $-25\text{ }^{\circ}\text{C}$  to  $55\text{ }^{\circ}\text{C}$ . The manufacturer does not guarantee the proper functioning of the charging station in temperatures outside the specified range. Chargers that are damaged because of exposure to temperatures below  $-25\text{ }^{\circ}\text{C}$  or above  $55\text{ }^{\circ}\text{C}$  are not covered under the warranty. In case it is necessary to open the device, make sure that it is disconnected from the power source. With the device installed outdoors, make sure that there is no precipitation or strong wind.

### WARNING

The device may only be opened by a qualified and authorized person.

### 6.1. Cleaning

The correct way to clean the charger is to wipe the housing with a microfiber cloth using a cleaning agent dedicated to anodized aluminum. Plexiglas elements (front panel) and plastic elements (socket) should be cleaned with a microfiber cloth using a cleaning agent dedicated to cleaning windowpanes. Other cleaning methods (e.g. wire brush) may lead to the damage of the device housing. Damage resulting from improper cleaning of the device does not constitute grounds for warranty claims.

### WARNING

The device meets the IP 54 standard. Therefore, it is forbidden to wash the charger with pressure washers, garden hoses, shower or any other water stream sources.

## 7. Technical data

### 7.1. Enelion Stilo

Electrical data	
Routing of the power cord	Surface mounted
Power cord cross-section	Recommended minimum cross-section • 5 x 6,0 mm <sup>2</sup> (32 A nominal current)
Supply voltage (Europe)	3 x 230 V/400 V <sub>AC</sub> (+/-10%)
Voltage frequency	50 Hz/60 Hz
Network type	TN, TT (IT per special request)
Overvoltage category	III according to EN 60664-1
Rated short-circuit current	Effective value < 6 kA according to z EN 61439-1
Overcurrent protection	Not included. Protection to be made in accordance with the locally valid regulations and according to the type of the device.
Protection Class	Class I
Socket type	Type 2, standard socket 4,7 m 32 A/400 V <sub>AC</sub> in accordance with EN 62196-1

Mechanical data	
Dimensions (width x height x depth)	185 mm x 430 mm x 56 mm
Weight	5,4 kg ± 5%
IP Class	IP54
Mechanical strength class	IK10

Interface	
Charging network development	Enelion Chain
Add-ons	<ul style="list-style-type: none"> <li>• Enelion Bridge</li> <li>• Enelion RCM B</li> </ul>
RFID	MIFARE cards compliant with ISO ISO 14443

Ambient conditions	
Working temperature	from -25 °C to 55 °C
Storage temperature range	from -40 °C to 80 °C
Permitted relative air humidity	from 5% to 95%
Elevation above the sea level	max. 2000 m

Signs of installation faults	
Damaged varistors on PilotBox	It means faulty connection powering cords

**⚠ WARNING**

Above information may be the basis for exclusion of warranty.



