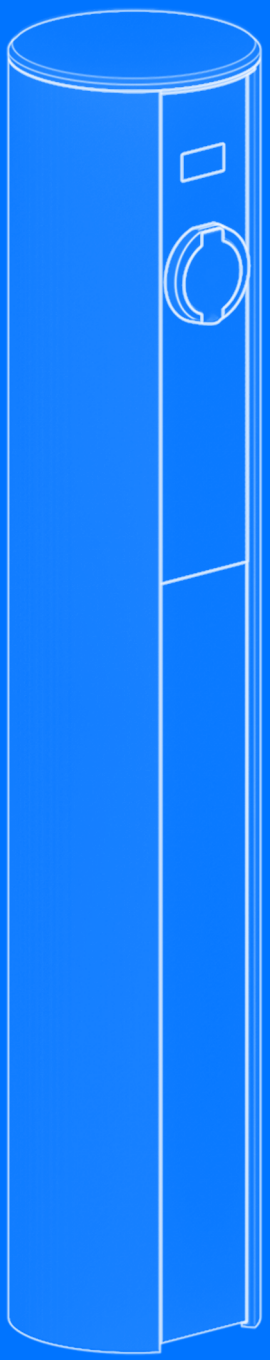
enelion

Vertica

Manual for Vertica Modules,
Vertica Pole and accessories.



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Contents

Congratulations on the purchase of the Enelion charger and thank you for your trust.
Before the installation, make sure that the module packages contain all the elements. Current version of the operation manual can be accessed at: **https://enelion.com/en/support/**

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.

INFO

The set of Vertica charger includes three self-adhesive plates with information about the value of supply current. Select the appropriate one according to the specification and fix it next to the data plate.

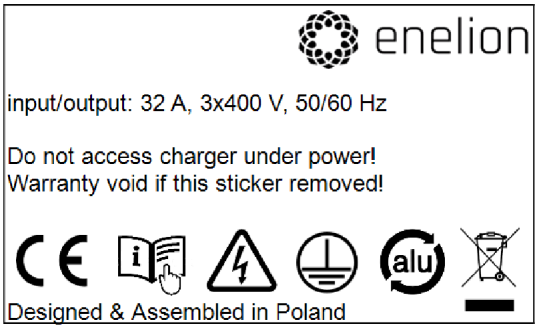

Fig. 1: Example of info plate

1.2. Safety instructions

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

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

2. General information

Vertica is a modular charging station for electric cars, which consists of Vertica Pole as a casing, Vertica Modules involved in the charging process and optional addons and accessories.

The modular design facilitates an easy modification of the functions of the device by replacing or adding charging modules and accessories to best suit customers' needs. Preparation for use depends on the selected machine functions of the device.

Fig. 2: Enelion Vertica charging station.

2.1. Additional functions

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, reducing the number of devices that require an Internet connection and optimizing the use of power in charging vehicles.

All Enelion devices can also be fitted with the Enelion Bridge (an add-on sold separately), which 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, please refer to the User Manual. It contains detailed information about the functionality and use of the device.

2.2. Vertica Pole

Vertica Pole is a necessary part of the device. Vertica Modules are installed in it, which are the executive part of the charging process. It is available in 2 colors: silver and black.

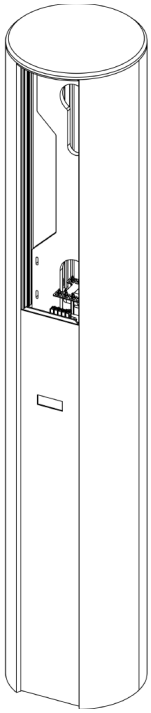

Fig. 3: Vertica Pole without the charging modules installed.

2.2.1. Opening and closing of the device

Vertica Pole structure secures the access to the interior of the device. Before performing any operations on the device, open the Vertica Pole according to the instructions.

INFO

In order to close the Vertica Pillar, perform all steps in reverse order.

INFO

Closing and opening of the Vertica Pole does not change depending on the presence of Vertica Modules in the device.

1. Using the Torx Security T25 bit provided, unscrew the device cover bolts. They are located on both sides of the device. Put the cover in a safe place where it will not be exposed to damage.

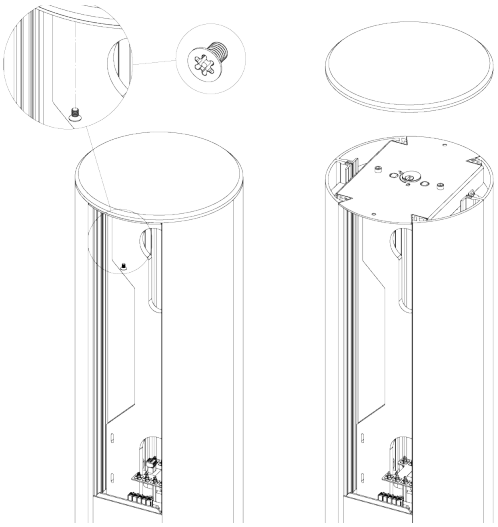

Fig. 4: Removing the cover of the Vertica Pole.

2. Unlock the lock plate with the key (if there is a Yale lock). Next, using the 5 mm Allen key, unscrew the M6 bolts and remove the lock plate.

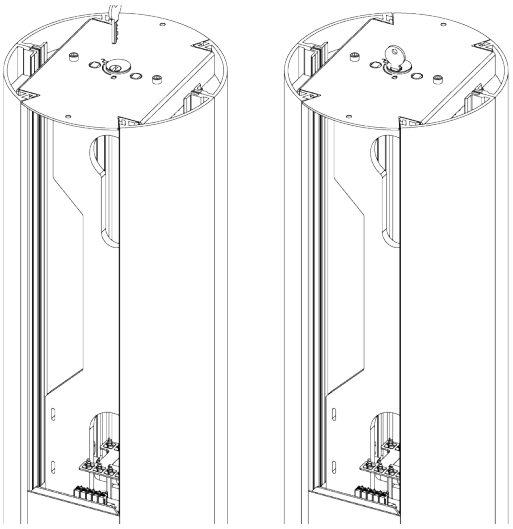

Fig. 5: Unlocking the lock plate.

3. Dismantle the lock plate by lifting it upwards.

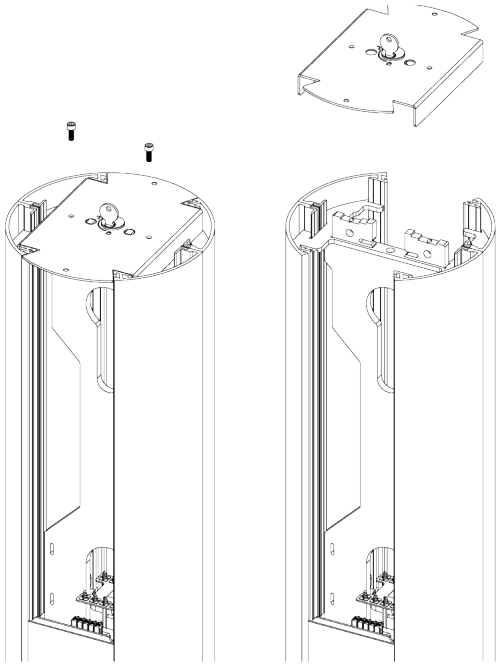

Fig. 6: Removing the lock plate.

2.3. Vertica Module

2.3.1. Vertica Module with a socket

The Vertica module with a socket is a functional part of the charging station.

This module provides a Type 2 socket for charging vehicles with up to 32A three phase and can be mounted on either side of the Vertica Pole. It is equipped with an OLED screen displaying instructions and information about the charging in progress.

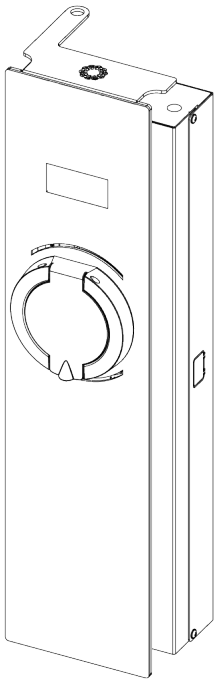

Fig. 7: Enelion Vertica Module with a socket.

2.3.2. Vertica module with a cable

The Vertica module with a cable is a functional part of the charging station.

The Vertica module with a cable is a functional part of the charging station. This module provides a charging cable for charging vehicles with up to 32A three phase and can be mounted on either side of the Vertica Pole. It is equipped with an OLED screen displaying instructions and information about the charging in progress.

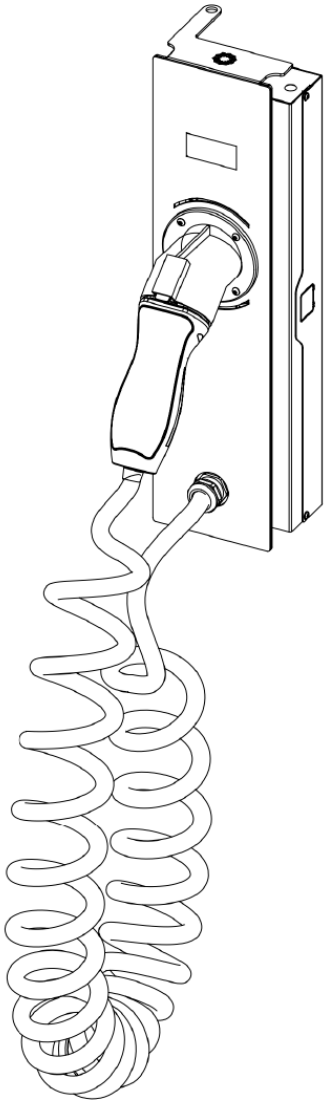

Fig. 8: Enelion Vertica Module with a cable.

2.3.3. Assembly and disassembly of Vertica Modules

INFO

To shut down the device, perform all steps in reverse order.

1. Open the Vertica Pole according to the instructions in section ***2.2.1 Opening and closing of the device.***
2. Lift the module above the Vertica Pole and place the bottom edge in the guide slot. Carefully insert the Vertica Module into the power socket until its top edge is flush with the edge of the Vertica Pole.

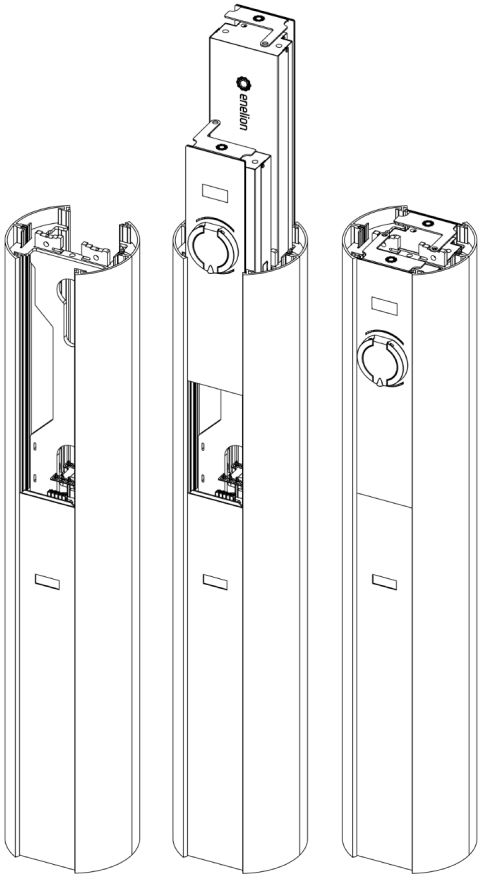

Fig. 9: Assembly of Vertica Modules

3. Close the Vertica Pole in accordance with the instruction ***2.2.1 Opening and closing of the device.***

3. Design indications of the installation

3.1. Recommended electrical connection

Vertica System charging stations are adapted to a fivewire power supply in a TN-S type network.In the standard type of installation, each Vertica Module should be powered by a separate cable from the switchgear.The switchgear should have the required protection in the form of an overcurrent circuit breaker with B or C characteristics and rated current of 32 A or less, depending on the configuration of the device.In compliance with the PN-EN IEC 61851-1: 2019-10 standard, each charging point must also be individually protected against residual current type A and B.This requirement can be met by the administrator/owner when installing a type B residual current device (RCD B 30 mA/40 A) or RCD EV (30 mA/40A) in the switchboard.

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

Another recommended and simultaneously more economical solution is the installation of an RCD B purchased from Enelion together with the device.It is also possible to use the Enelion RCMB– Residual Current Monitor type B accessory – see section 6.3.2 Enelion RCM B.Enelion RCM B additionally protects the station and, together with the RCD A used in the switchgear, meets all safety requirements.If it is necessary to supply the power to the pole with two charging modules from one cable, Vertica Splitter, described in chapter 5 Installation of Vertica Pole, should be used – the accessory allows for safe branching of the power supply to two charging panels inside Vertica Pole.Ene-lion Spliter includes a junction block, two B32 over current protections, a wiring set and mounting hardware.The whole device is mounted on the attached TS35 rails at the bottom of Vertica Pole.Remember to protect each Vertica Module with a residual current device with the characteristics described above.The cross-section of the power cables must be selected by an authorized electrician based on the distance from the switchgear and other location conditions.

INFO

In case of Enelion Splitter, the standard cross-section of the Cu power cables is 16 mm2.
At the customer's request, the maximum cross-section of Cu/Al power cables is 50 mm2

Cables in the ground must be installed in accordance with the binding building regulations.As a matter of convenience, flexible power cables, stranded type, terminated with clamping sleeves are recommended for the installation.

The cable should protrude approximately 80 cm above the foundation level.

3.2. Supplied accessories and electrical connection

Due to the modular structure of the Vertica System charging stations, the method of electrical connection depends on the applied add-ons.Moreover, in order for certain functions to be performed, it is necessary to connect the device according to the determined sequence of phases.Electrical connection of the Vertica Pole is typically made with two separate 5 x 6 mm2 Due to the modular structure of the Vertica System charging stations, the method of electrical connection depends on the applied add-ons.Moreover, in order for certain functions to be performed, it is necessary to connect the device according to the determined sequence of phases.Electrical connection of the Vertica Pole is typically made with two separate (6 mm2 insulated ring terminal, M5 mount).A dedicated crimping tool for insulated connectors is required.Stranded cables must be terminated with an insulated crimp ferrule of the appropriate size.

3.3. Location selection criteria

Enelion Vertica may be installed both inside or outside. The device is designed for installation near parking spaces dedicated to 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).

INFO

Vertica Pole assembly system enables the pole to rotate by multiple 90-degree angle turns.

Please 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 its overheating.Do not install the device near heat sources or in small, closed cubicles (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 electrical connection.It is forbidden to install the device in potentially explosive environment.

Local regulations for electrical installations, fire pre-

vention 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 there is free space above the charger at least one meter from its outline. Also after installation, make sure that no fixed objects (e.g.advertising boards, road signs, etc.) appear in the space above the outline of the device.This space is required for servicing the charging station.

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

3.3.1. Connection type diagrams

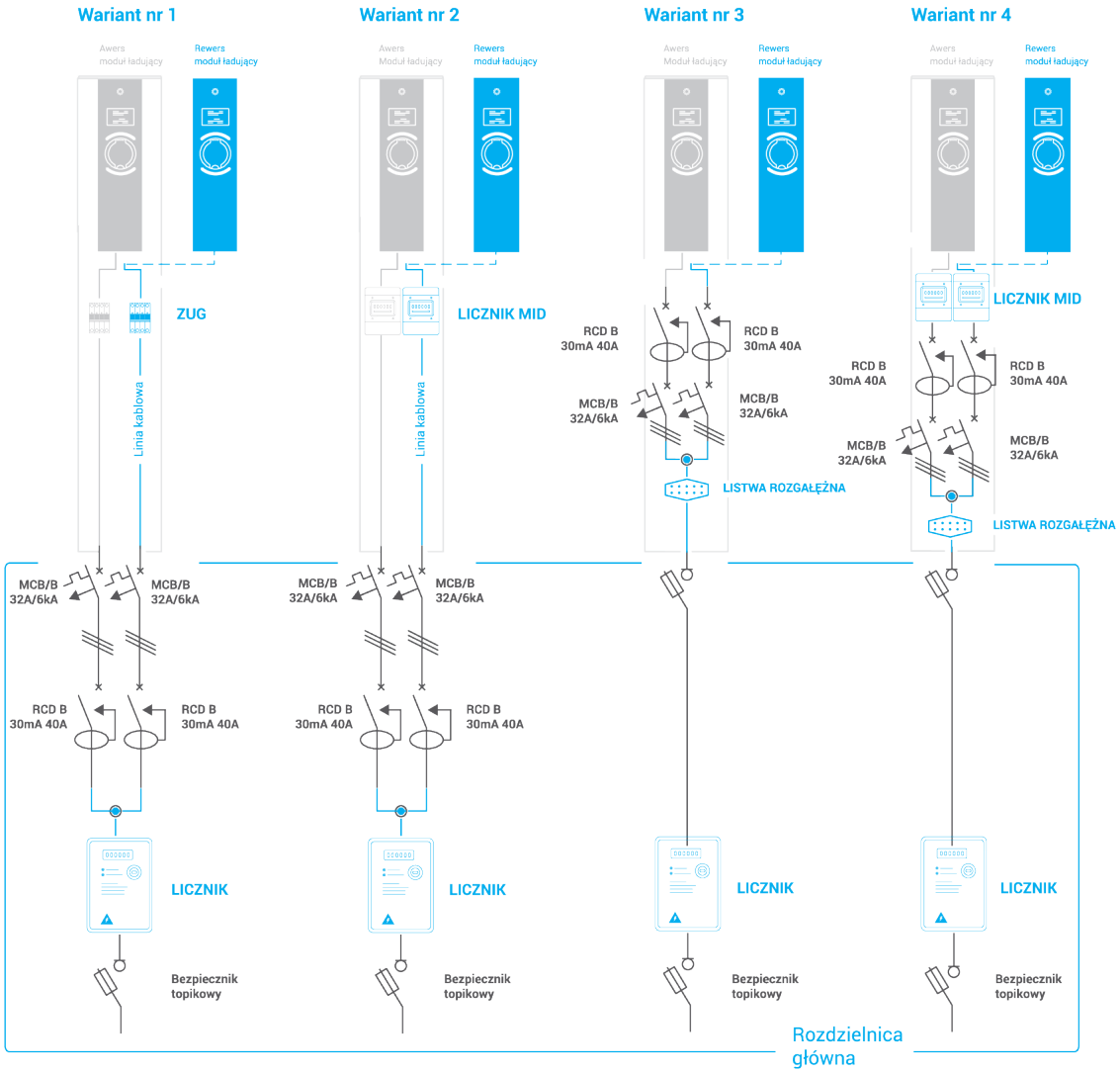

Fig. 10: Connection types part 1/2

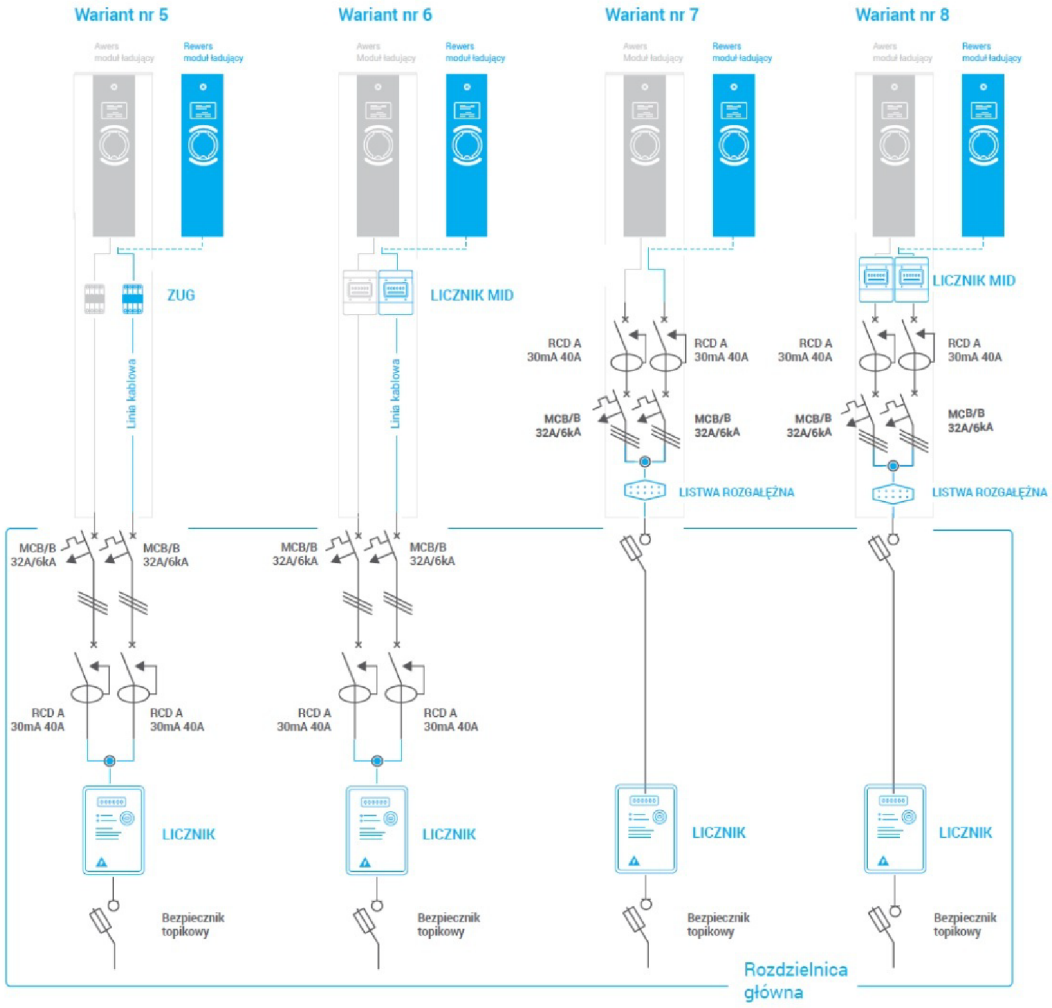

Fig. 11: Connection types part 2/2.

3.3.2. Pictorial diagrams of Vertica Modules

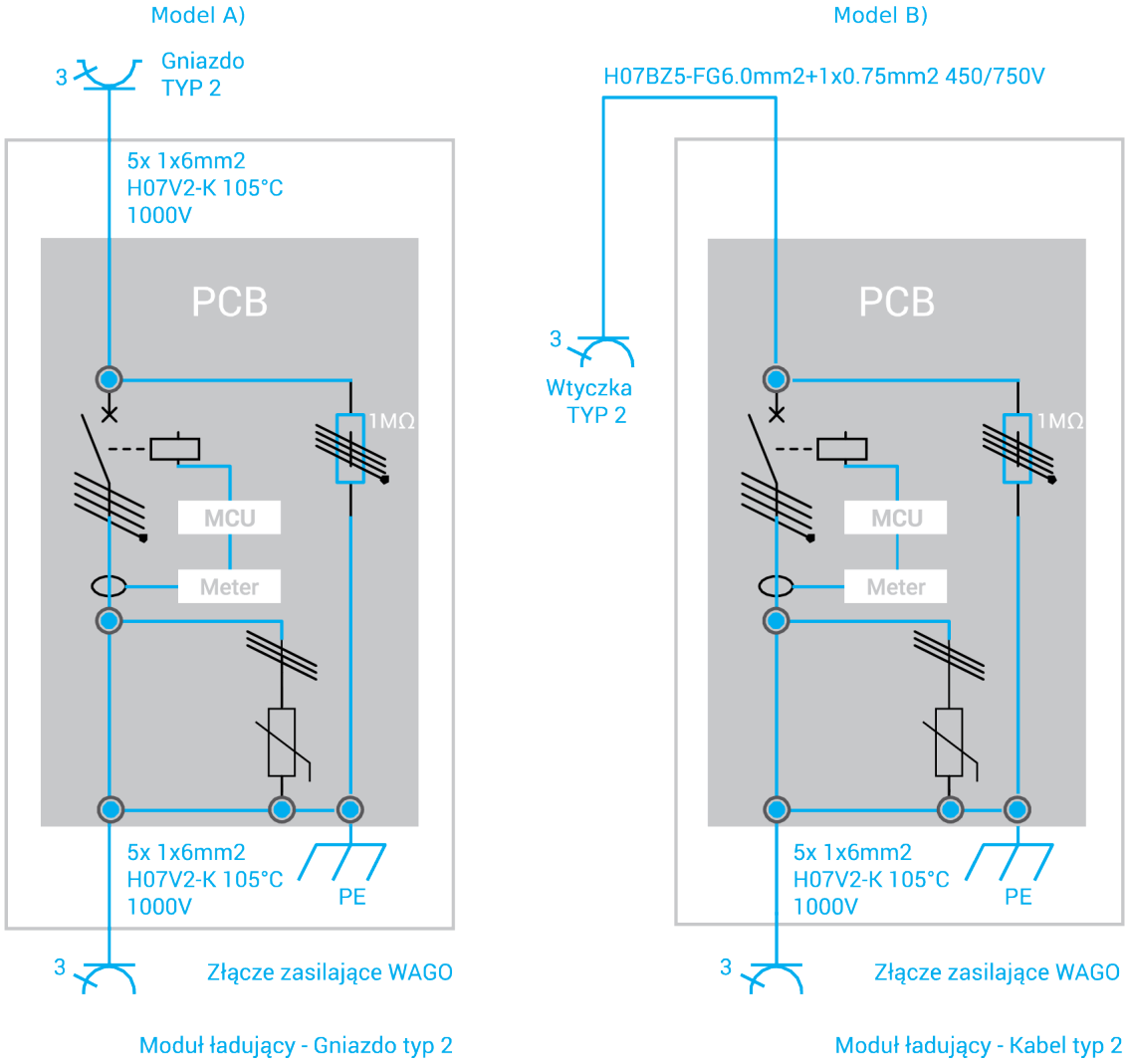

Fig. 12: Pictorial diagrams of Vertica Modules part 1/2.

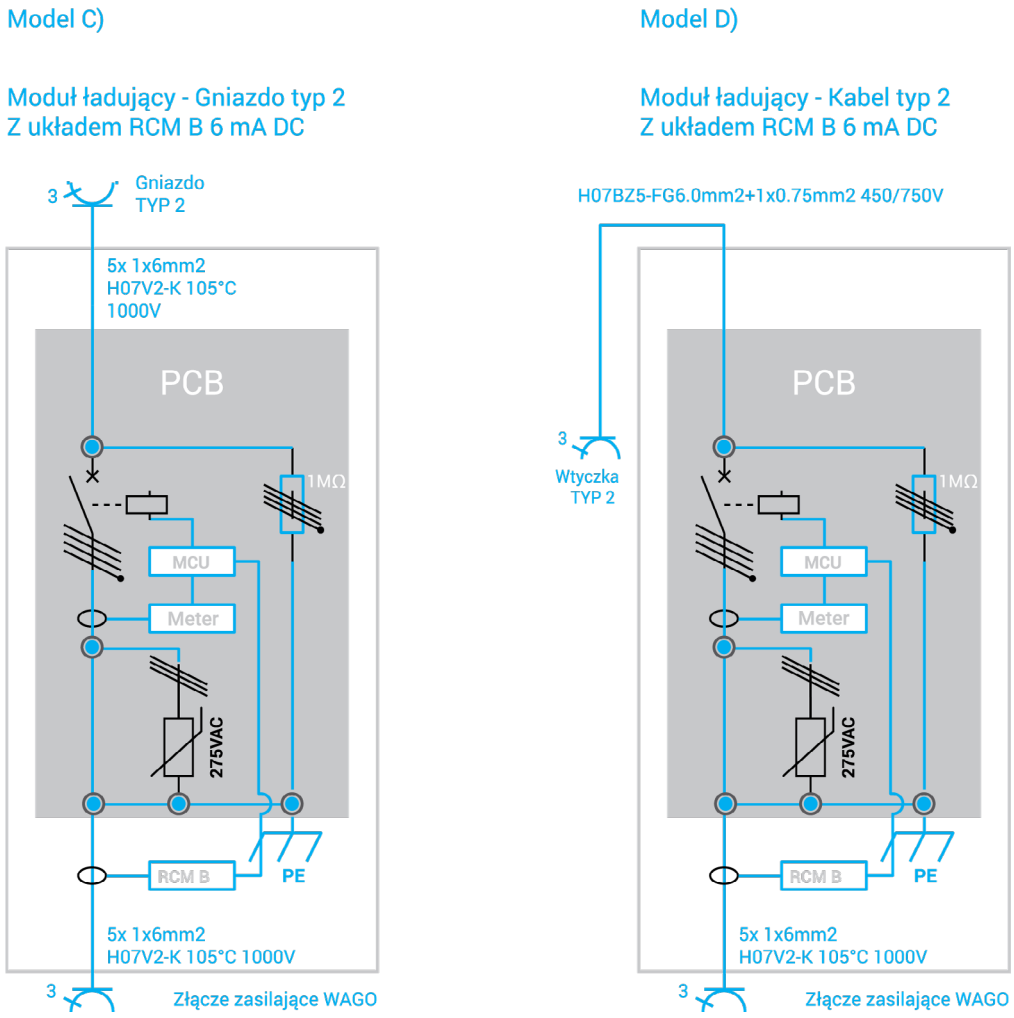

Fig. 13: Pictorial diagrams of Vertica Modules part 2/2.

4. Foundation

Vertica Pole can be installed in three ways:

- on a customized Enelion prefabricated foundation,
- on an appropriate existing foundation with the use of additional mounting bolts,
- using the Enelion foundation set.

4.1. Enelion prefabricated foundation

The customized Enelion prefabricated foundation enables shortening the assembly period by eliminating the need to wait for the concrete to cure.

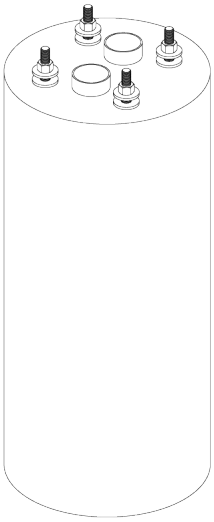

Fig. 14: Enelion prefabricate foundation.

The foundation set consists of:

- 1 x prefabricated foundation,
- 8 x washers,
- 8 x M12 nuts.

4.1.1. Construction of the foundation applying the Enelion prefabricated element

1. Remove the M12 nuts and washers from the prefabricated foundation and secure them until Vertica Pole has been installed.
2. An excavation of over 400 mm x 600 mm (diameter x depth) or 400 mm x 400 mm x 600 mm (width x length x depth) should be made. Compact the soil directly under the foundation to the compaction index of at least 0.97.

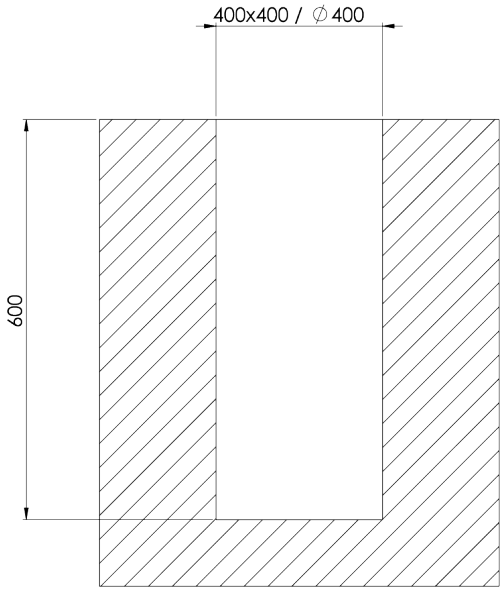

Fig. 15: Diagram of the foundation excavation.

3. Thread all the required cables through the cable ducts of the prefabricated foundation. Place the prefabricated element and plumb it in the trench at a depth of 0,60 m below the ground level.

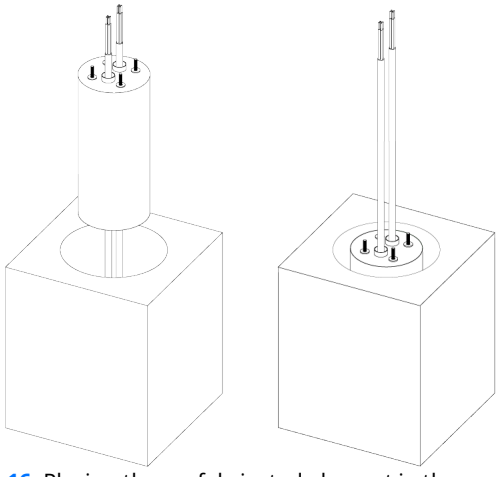

Fig. 16: Placing the prefabricated element in the excavation.

4. Fix the prefabricated element by filling the remaining space in the excavation with soil and compact it to the compaction index of at least 0.97.

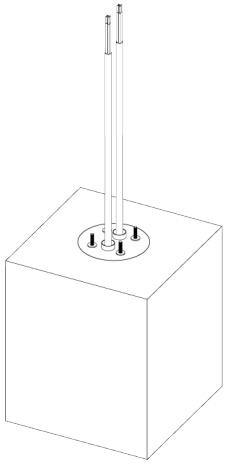

Fig. 17: Properly constructed foundation using the prefabricated element.

The foundation prepared in this way enables the installation of Vertica Pole.

4.2. Appropriate existing foundation

In case there is an existing foundation suitable for the purpose, equipped with an electrical connection, meeting the legal and construction requirements, it is possible to install Vertica Pole after ensuring that Vertica Pole is properly attached to the foundation. It is recommended to apply M12 threaded rods.

4.2.1. Preparation of the existing foundation

1. Drill holes for chemical anchor bolting in the foundation in accordance with the instructions of the manufacturer of the applied bolting. Install the anchors in a square of 120 mm x 120 mm. The cables must fit into the cable grommets of Vertica Pole.

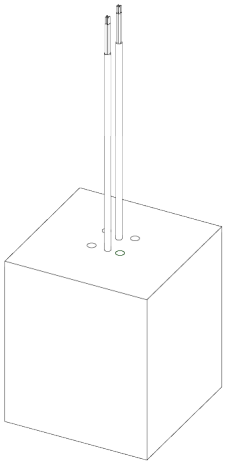

Fig. 18: Drilled holes for chemical anchor bolting.

2. Install chemical anchor bolting in accordance with the instructions of the manufacturer. The minimum anchorage depth is 110 mm. The installation should result in the ends of the threaded rods protruding 40 mm to 60 mm above the foundation surface.

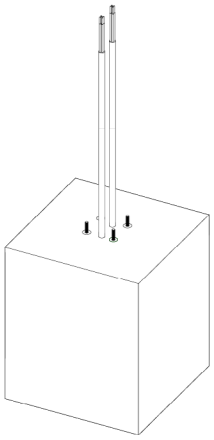

Fig. 19: Properly constructed foundation with the use of anchors.

After preparing the anchors according to the instructions, the installation of Vertica Pole may proceed.

4.3. Enelion foundation set

The Enelion foundation set enables the construction of a foundation suitable for the installation of the Vertica Pole. To construct the foundation correctly, the Enelion foundation set needs to be set in concrete in the excavation.

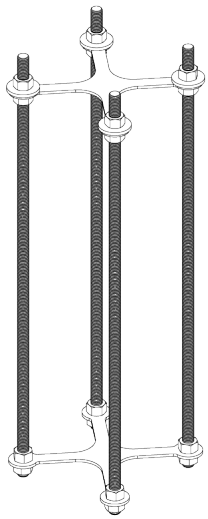

Fig. 20: Enelion foundation set.

The foundation preparation set consists of:

- 4 x threaded rods,
- 2 x base plates,
- 8 x washers,
- 20 x M12 nuts.

4.3.1. Construction of the foundation using the Enelion foundation set

1. Make a trench in the substrate with dimensions of250 mm x 600 mm (diameter x depth) or 250 mmx 250 mm x 600 mm (width x length x depth). Compact the soil directly under the foundation tothe compaction index of at least 0. 97.
2. Assemble the Enelion foundation set as shown. The upper base plate should be 40 mm to 60 mm- from the end of the threaded stud.

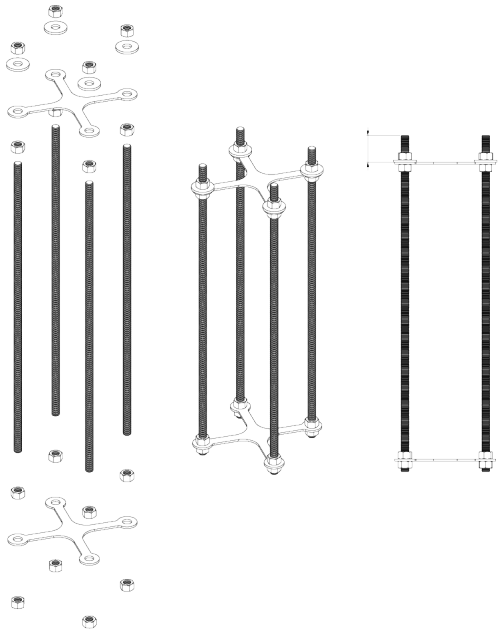

Fig. 21: Guidelines for the installation of the Enelion foundation set.

3. Place the assembled Enelion foundation set inthe trench. Run the power cables above the surface to a height of about 800 mm. Fix the foundation set vertically so that the ends of the threaded rods protrude 45 mm to 65 mm above the intended foundation surface. The upper base plate should be above the intended foundation surface and be level so that it can be removed once the concrete has cured.

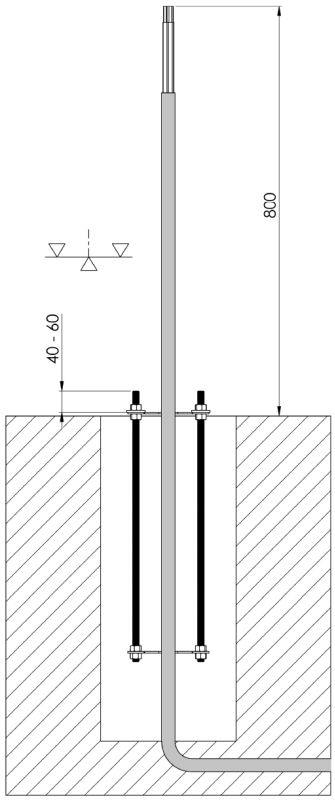

Fig. 22: Diagram of placing the foundation set in the excavation

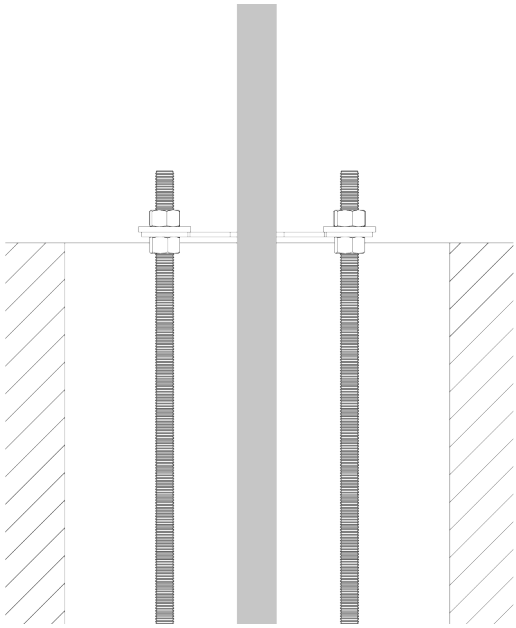

Fig. 23: Details of placing the upper base plate in the excavation

4. Put concrete B25 (C20/25) in the foundation.

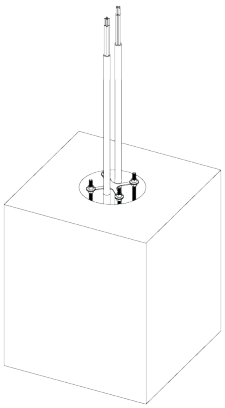

Fig. 24: Foundation set correctly placed in the excavation

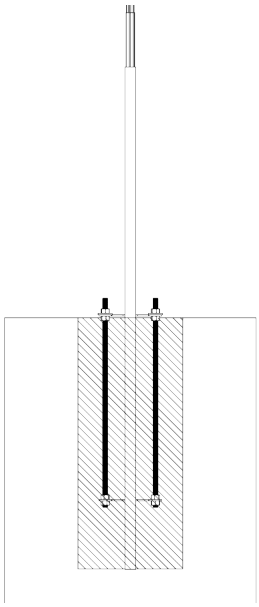

Fig. 25: Cross-section of the foundation set cast in the concrete

5. Once the concrete has cured, unscrew the M12 nuts, remove the washers and the upper base plate. The washers and nuts will be needed later to affix Vertica Pole.

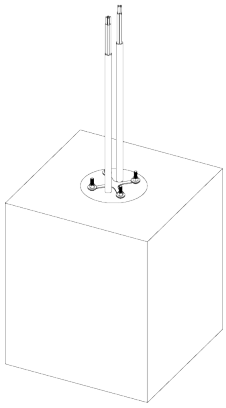

Fig. 26: Correctly cast foundation set.

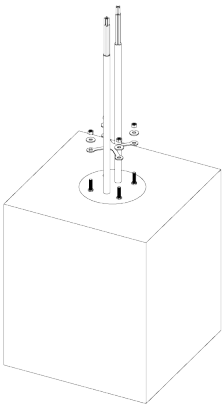

Fig. 27: Removing of the upper base plate from the foundation set.

6. Secure the bolts partly protruding from the concrete with bituminous mass (do not cover the thread).

The foundation prepared in accordance with the above instructions is ready for Vetrtica Pole to be mounted.

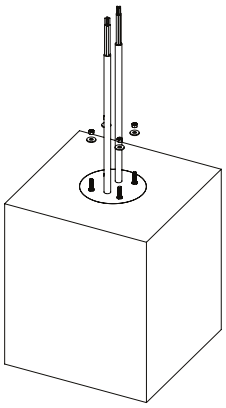

Fig. 28: Screwing nuts and spacer washers onto protruding rods.

5.Installation of Vertica Pole

WARNINIG

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

WARNINIG

Before proceeding with the installation, prepare the products according to the instructions regarding the accessories.

5.1. Preparation for installation

1. Place the packed Vertica Pole horizontally, as indicated on the packaging. Cut the package along the marked line. Take the device out of the cardboard box, remove the foam protection and place the device vertically in the correct position.
2. The foam protections contain useful accessories that are necessary for mounting the device. The accessories should be collected before disposing of the packaging:
   - Torx Security T25 bit.
3. Open Vertica Pole as instructed in section ***2.2.1 Opening and closing of the device***
4. The lower masking panels should be slid up on both sides of Vertica Pole and put away where they will not be at risk of damage. When being pulled out, the panel should always be in a plane parallel to Vertica Pole, until they are completely pulled out from the guide slots.

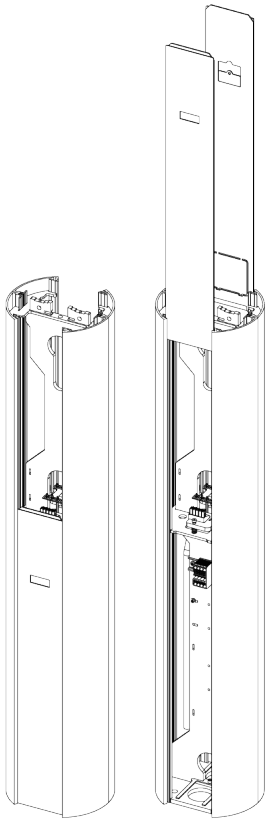

Fig. 29: Sliding the lower masking panels out of the Vertica Pole.

Vertica Pole is mounted to the ground with 4 M12 nuts screwed onto the previously prepared threaded rods. We recommend the installation on a previously leveled surface. If it is necessary to adjust the vertical position of the device, it is permissible to install additional M12 nuts or washers on the bolts, before mounting Vertica Pole. In such a case, however, one should ensure that the space between the foundation surface and the bottom of Vertica Pole is filled.

1. Route the power cables as shown in the figure. Mount Vertica Pole on the prepared foundation.
2. Screw the Vertical Column to the foundation using 4 pieces of M12 nuts and washers, with a torque within the range of 40 Nm-45 Nm. Protect the nuts, washers, and the remaining M12 bolt with a thin layer of technical grease.

Vertica Pole installed in this way can be equipped with accessories and can be connected to the electricity network.

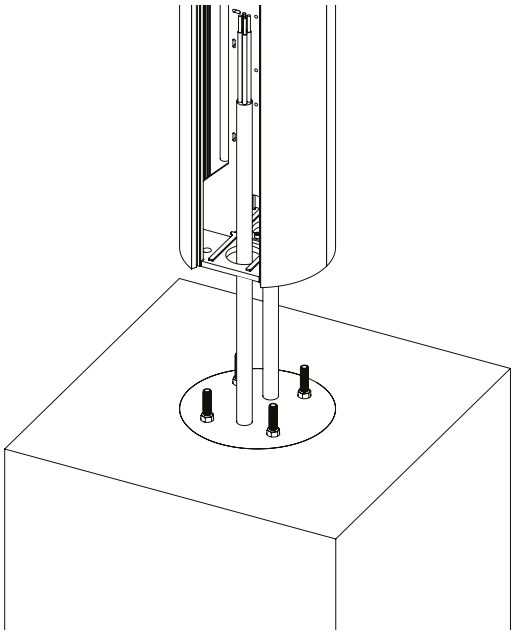

Fig. 30: Mounting Vertica Pole on the foundation.

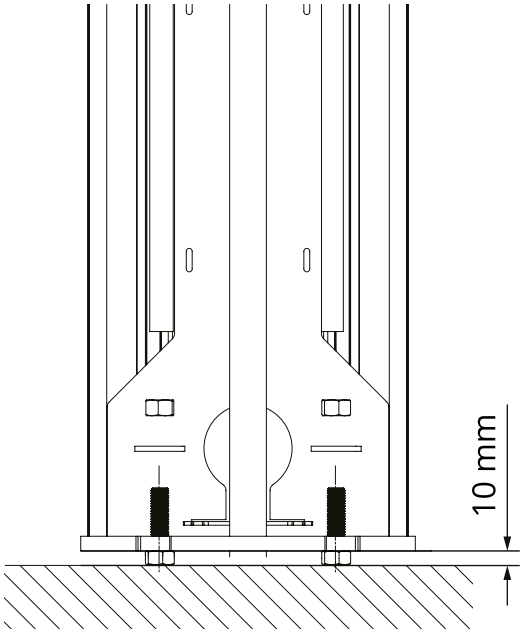

Fig. 31: Cross-section through the base of the Vertica Pole during assembly.

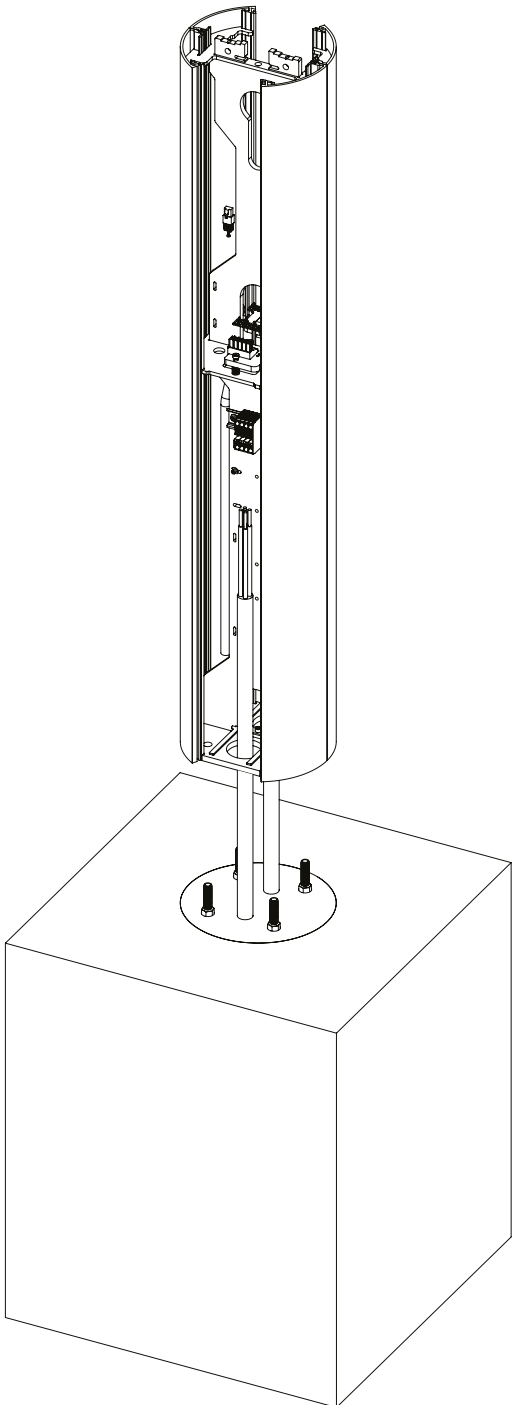

Fig. 32: Mounted and bolted Vertica Pole.

5.1.1. Standard connection

The connection may be performed based on the markings on the packaging label of the Vertica Module intended for this Vertica Pole socket. An example marking specifying the connection of phases in the default order (L3, L2, L1, N) on the label is shown below.

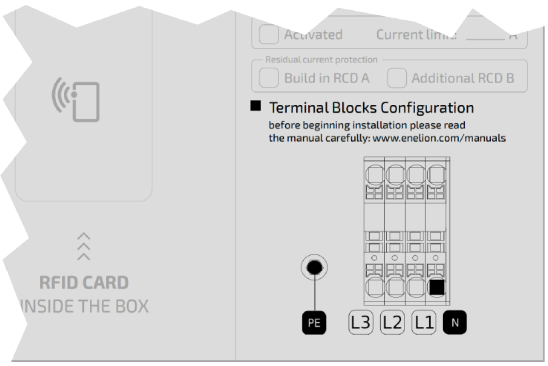

Fig. 33: Sample part of a product label

1. A sample connection is as follows.

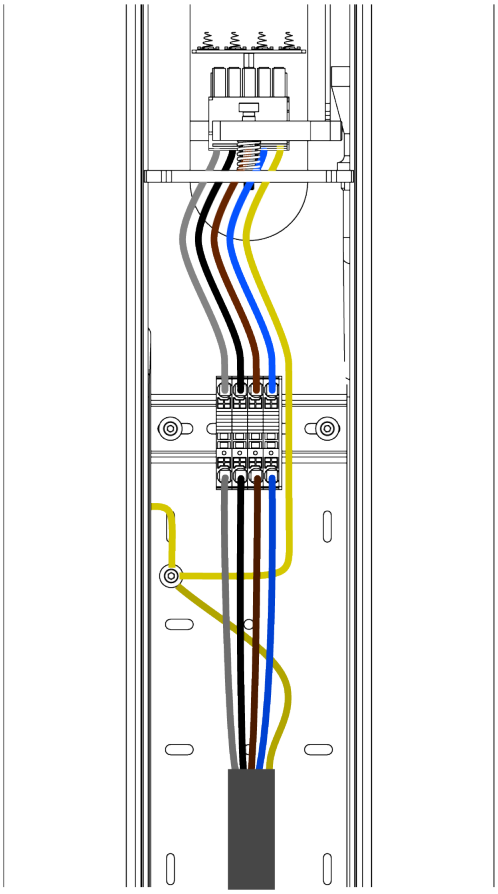

Fig. 34: Example Vertica Pole connection.

2. A similar connection may be made on the opposite side of Vertica Pole.

WARNINIG

The PE protective conductor absolutely must be connected to one common point on one selected side of the Vertica Pole!

HINT

The colors of the wires in Vertica Pole may not match the colors of the power cables maintaining, however, the guidelines on the Vertica Module label. This is a correct and expected situation.

5.1.2. Enelion MID Add-on

Enelion MID, which is an additional certified electricity meter, is installed individually for each of the Vertica Modules.

HINT

Keep the clamp connection from the neutral conductor equipped with the side hole plug, in case Enelion Vertica Splitter will be installed at a later time.

1. Disconnect the power cables from the clamp connectors by pressing the orange release holds and pulling the wires. Then dismantle all clamp connections.

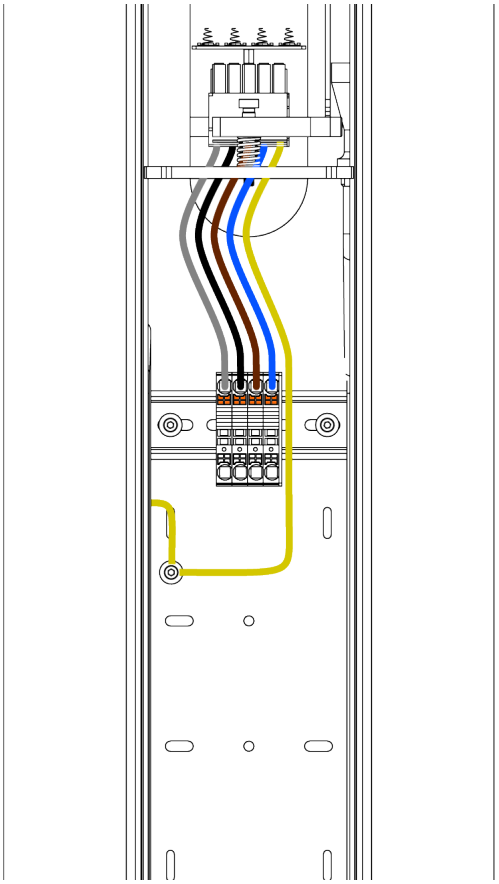

Fig. 35: Standard connection of Vertica Pole.

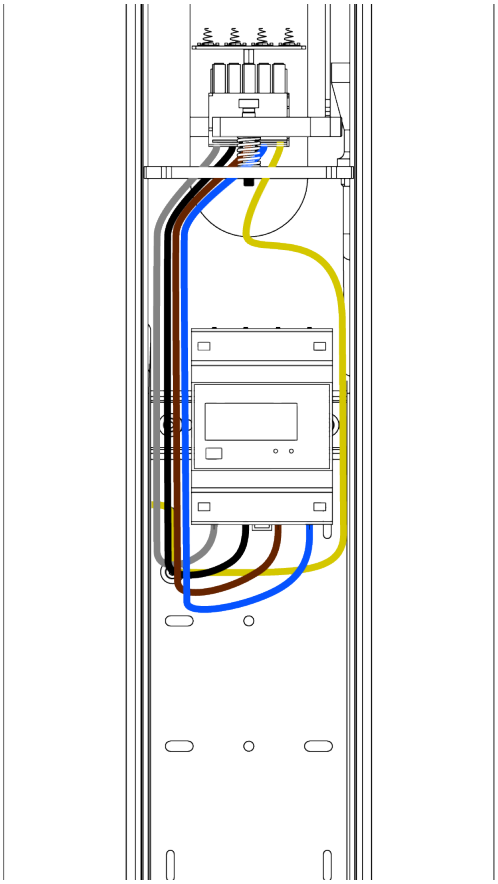

Fig. 36: MID meter fitted in Vertica Pole.

2. Mount Enelion MID on the free DIN3 rail and connect the phase conductors and the neutral one to the meter terminals, in accordance with the markings on the applied meter.

3. Connect the two signal wires to the socket located on the PCB board mounted in Vertica Pole. The red wire to the “A +” port, the white wire to the “B-“ port.

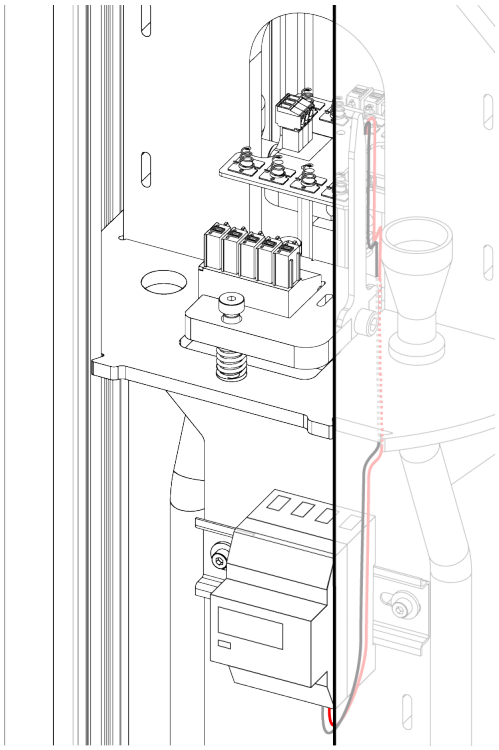

Fig. 37: Routing the MID meter signal cables.

4. The basis for the connection are the markings on the packaging label of the Vertica module, intended for this socket of Vertica Pole, which should be interpreted in accordance with the attached diagram.

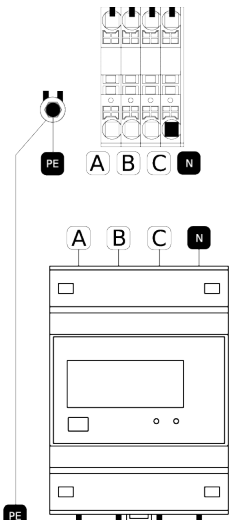

Fig. 38: Diagram of the relationship between standard connection and the one using a MID meter.

5. An example connection is as follows.

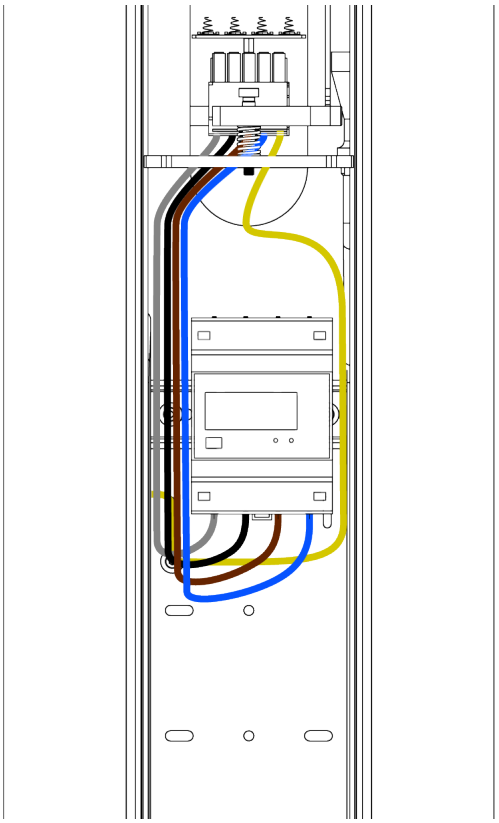

Fig. 39: Example of Vertica Pole connection with the use of MID meter.

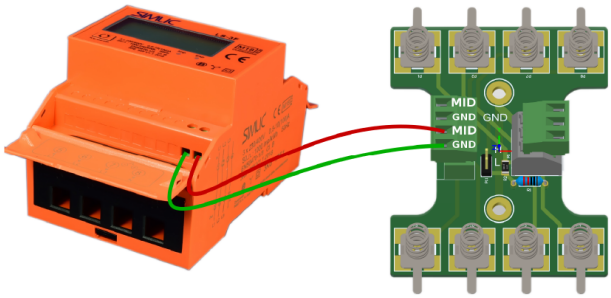

Fig. 40: MID meter connection diagram.

INFO

After correct connection, the charging station will recognize the presence of the meter and start charging energy on its basis.

HINT

In case of two MID meters in the Vertica pole, the second one should be connected correspondingly, to the other two pins.

HINT

The colors of the wires in Vertica Pole may not match the colors of the power cables maintaining, however, the guidelines on the Vertica Module label. This is a correct and expected situation.

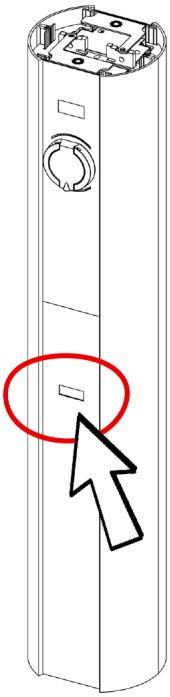

Fig. 41: Location of a MID meter window.

5.1.3. Enelion Chain Add-on

If communication between devices via the Enelion Chain network is expected, connect the cables to the charge controller.For communication, 2 cores of the communication cable and the shield ground are used. For proper connection:

1. prepare communication cables for devices at the beginning of the network, select a pair of communication cables
   - for devices on a network section, prepare the communication cables introduced to the device by connecting the incoming and outgoing conductor wires together, as in the figure below
   - For devices on the network segment, prepare the communication cables introduced into the device by connecting the wires of the incoming and outgoing cable, as shown in the picture below.

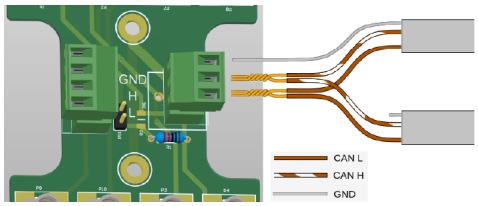

Fig. 42: Connecting communication wires to VertiCAN board.

   - fix the wires in the plug in the screw connection (elevator) according to the markings on the VertiCAN base plate.

2. Use termination for the devices at the beginning and end of the network. Termination is done by placing a provided jumper on the two pins on the board inside the Vertica pole. The jumper is to be found in the pouch along with RFID cards.

Fig. 43: Provided jumper.

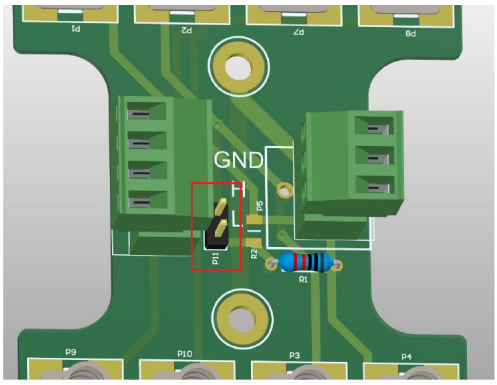

Fig. 44: Place for the jumper.

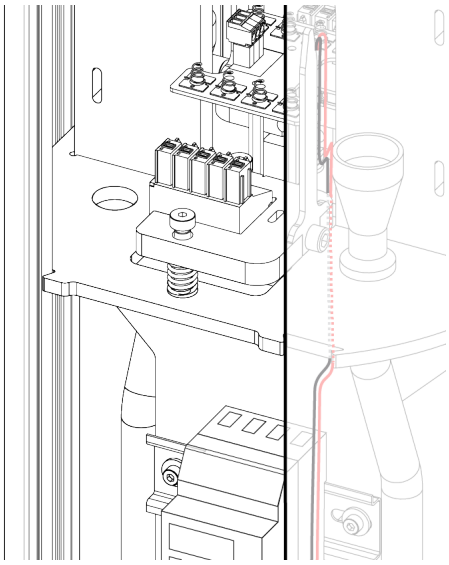

Fig. 45: Marking place in the pole for VertiCAN.

Fig. 47: Short RJ45WK connector.

5.2. Internet connection via Ethernet interface in the LAN

To ensure internet connection to a charger equipped with an Enelion Bridge module via the Ethernet interface:

1. Insert the Ethernet patchcord into the device through the gland for communication cables.
2. End the cable with the RJ45 connector according to the TIA-568A/B do 100BaseT.
3. Connect the above mentioned Ethernet cable to the WAN/INTERNET Enelion Bridge module marked with number 2..

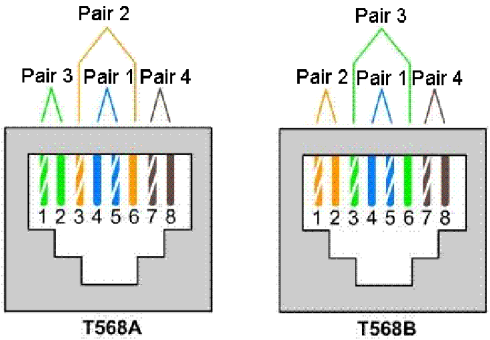

Fig. 46: Ending the Ethernet Patchcord according to TIA-568A/B do 100BaseT

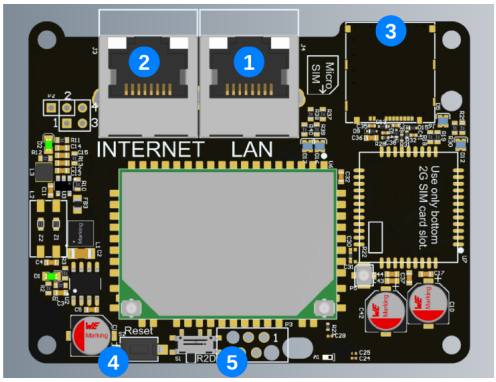

Fig. 48: The Enelion Bridge module

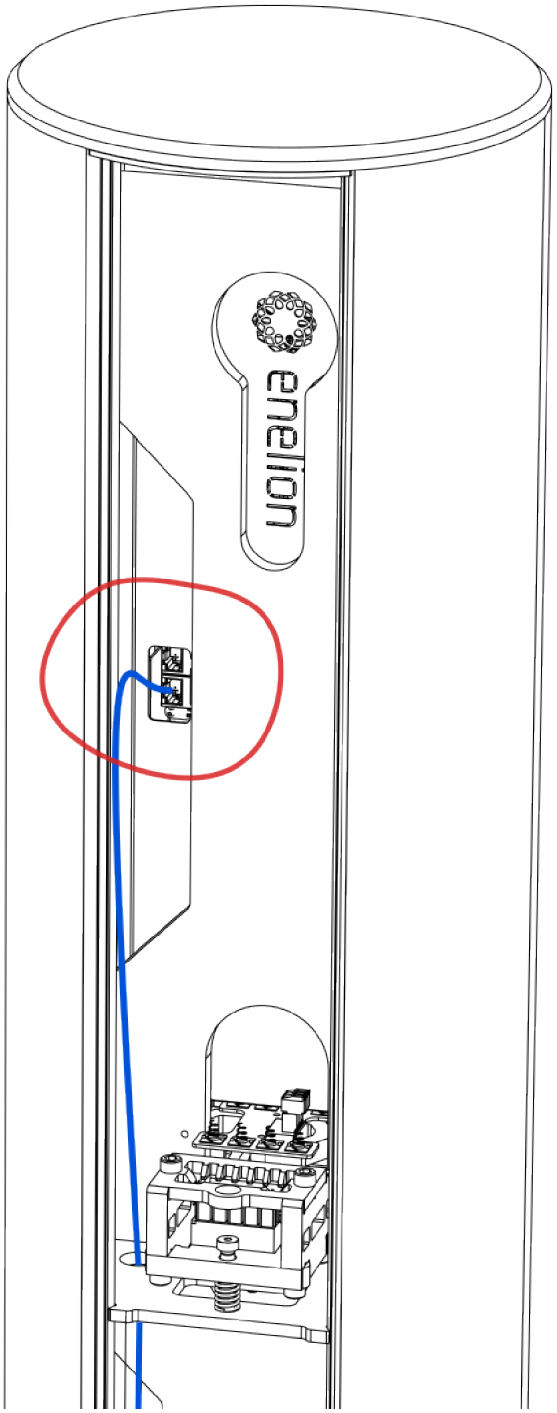

Fig. 49: Cable routed to the Ethernet socket.

5.2.1. Add-on – Vertica Splitter with an additional meter and residual current protection

If power is supplied to the charging station using a single cable, it is necessary to use a safe Enelion-provided branching. It includes a connection terminal, overcurrent protection, and residual current protection. The instructions below apply to the situation where the Enelion MID add-on has already been installed.

Only copper cables can be used with Vertica Splitter terminals.

When using the Vertica Splitter, follow the presented diagram.

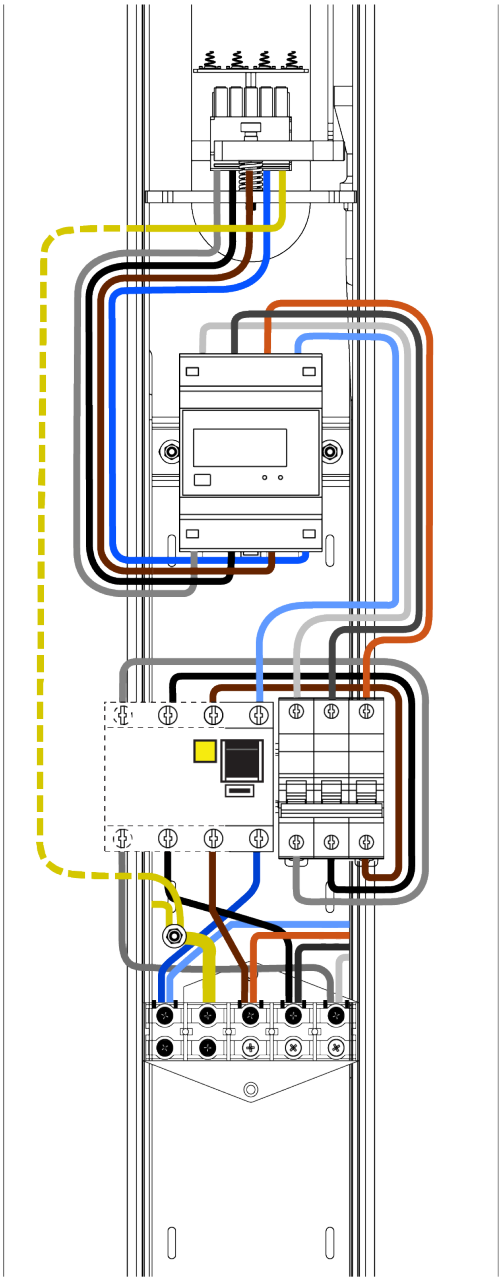

Fig. 50: Obverse of the Vertica Pole after mounting the Vertica Splitter with the MID meter present.

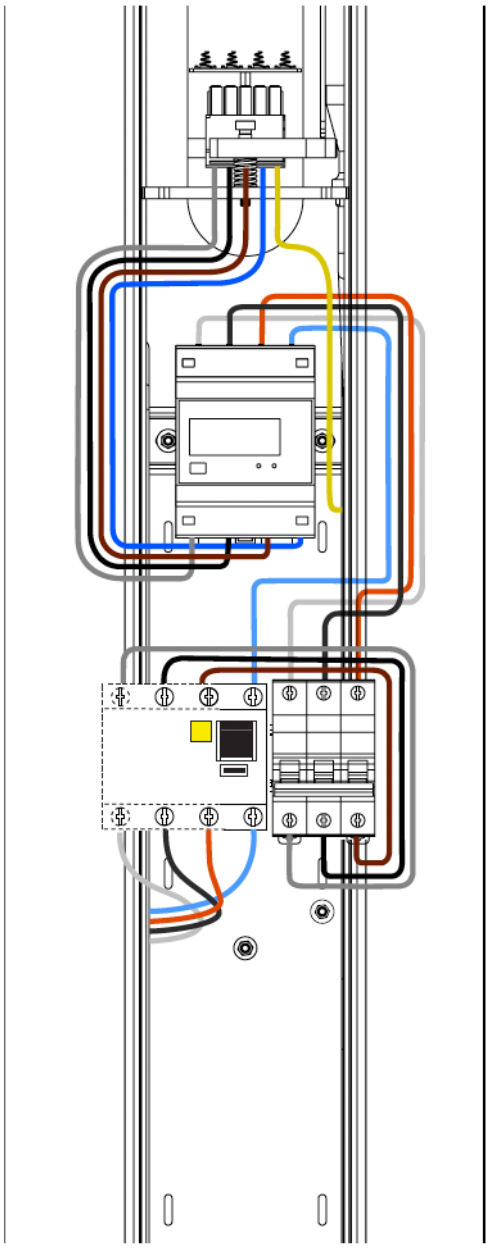

Fig. 51: Reverse of the Vertica Pole after mounting the Vertica Splitter with the MID meter present.

INFO

It is permissible to install the protections in a different orientation and/or using other mounting points as long as the connections are consistent with the presented diagram.

5.3. Installation of Vertica bottom masking-panels

Vertica bottom filler panels cover the lower part of Vertica Pole, while providing the ability to read the optional Enelion MID meters.

The bottom filler panels should be raised above the Vertica Pole, then inserted into the guides and lowered until the panels rest on the springs located at the bottom of Vertica Pole.

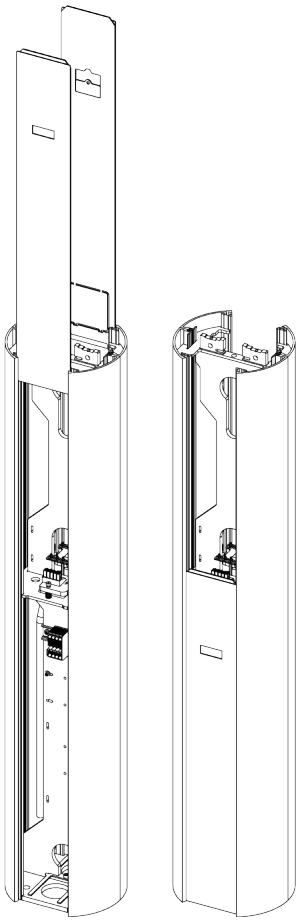

Fig. 52: Inserting the lower masking panels into Vertica Pole.

6.Installation of the Vertica Module

INFO

If you are building an advanced charging station system using the Enelion Chain and Enelion Bridge systems, please contact the Enelion support department. Contact information is available at **http://enelion.com/en/help/.**

6.1. Preparation for installation of the Vertica Module with socket

1. Place the packed Vertica Module with its socket in a horizontal position, as indicated on the package. Cut the package along the marked line. Take the device out of the cardboard box, remove the foam protection and place the device horizontally with the front facing up.
2. The key accessories required to start the device are placed in the foam protections. The accessories should be collected disposing of the packaging:
   - RFID configuration card,
   - user RFID tag.

WARNINIG

The attached configuration card is intended only for the Charging module to which it was attached. It contains device configuration parameters, recorded in accordance with customer requirements. If the card is lost or damaged, please contact your vendor.

HINT

The label on the Vertica Module packaging provides key information regarding electrical connection. Save the packaging or copy information on the packaging before disposing of the packaging.

INFO

The prepared Vertica module can be equipped with accessories or installed in the basic version.

6.2. Preparation for installation of the Vertica Module with a cable

The Vertica module with a cable is delivered individually in a package.

1. Place the packed Vertica Module with the cable in a horizontal position as indicated on the package. Cut the package along the marked line. Leave the charging cord in the cardboard intact.
2. Carefully remove the Vertica Module with regard to the weight of the charging cable.
3. Remove the cardboard partition that divides the packaging.
4. Remove the charging cable.
5. Take the device out of the cardboard box, remove the foam protection and place the device horizontally with the front facing up.
6. The key accessories required to activate the device are placed in the foam protection. The accessories should be collected before disposing of the packaging:
   - RFID configuration card,
   - user RFID tag.

WARNINIG

The attached configuration card is intended only for the Charging module to which it was attached. It contains device configuration parameters, recorded in accordance with customer requirements. If the card is lost or damaged, please contact your vendor.

HINT

The label on the Vertica Module packaging provides key information regarding electrical connection. Save the packaging or copy information on the packaging before disposing of the packaging.

INFO

The prepared Vertica module can be equipped with accessories or installed in the basic version.

6.3. Installation of accessories

HINT

Some steps for installing add-ons are common. When installing multiple add-ons, consult their installation instructions before starting the installation.

6.3.1. Enelion Bridge

Enelion Bridge is mounted in one selected Vertica Module. Thanks to the integrated Enelion Chain connection within the Vertica Pole, the Smart and Online functions are available for both Vertica Modules. The installation of Enelion Bridge is identical for the module with a cableand with a socket.

WARNINIG

Bridge modules with firmware version 3.0.0 and newer don't support GSM 2G. To connect the charger to Interhet using GSM network you need to install LTE module, sold separetely.

1. Place the equipped Vertica Module on a stable and flat surface with t he front facing down. In the case of the Vertica Module with a cable, the fact of the device having larger dimensions should be taken into account during its installation. Unscrew the four marked screws with a PH1 screwdriver. Next, remove the rear cover of the Vertica Module.

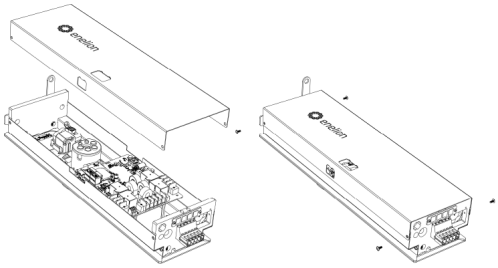

Fig. 53: Opening the Vertica Module.

2. Install Enelion Bridge in accordance with the markings on the charging controller, fastening it with the three present clasp locks.

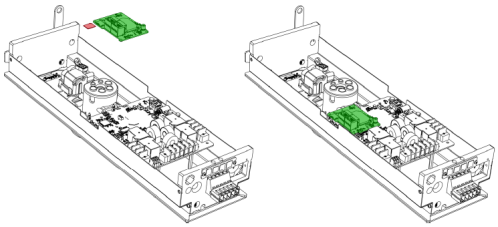

Fig. 54: Installing Enelion Bridge in the Vertica Module.

WARNINIG

Pay particular attention to the orientation of Enelion Bridge. The Ethernet ports must line up with the opening on the back cover of the module.

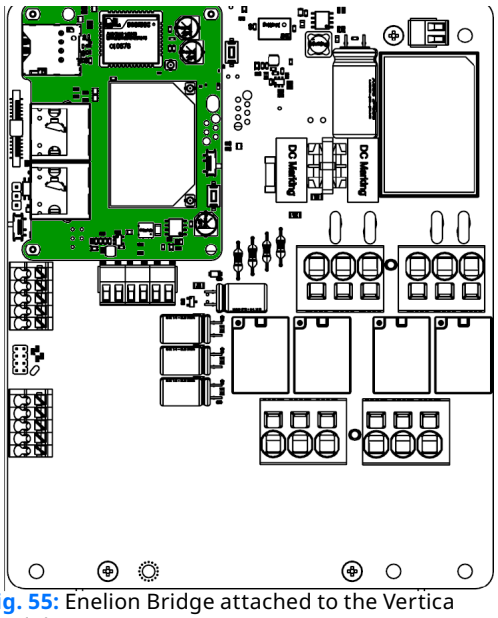

Fig. 55: Enelion Bridge attached to the Vertica Module.

3. Use the enclosed mounting tape to mount the antennas set on the plastic surface under the charging controller.
4. Remove the plugs for Enelion Bridge service openings from the rear cover. Reinstall the Vertica Module back cover and fix it with the original screws.

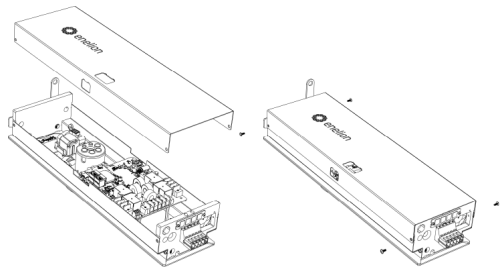

Fig. 56: Closing the Vertica Module.

WARNINIG

To get the full range of functions offered by Enelion Bridge, it needs to be configured. „User Manual" contains instructions on this subject. The device will not use any additional functions without the configuration!

INFO

It is good practice to mark the Vertica Module equipped with Enelion Bridge. When installing in the Vertica Pole and connecting the internet connection via Ethernet, it is necessary to install this module first.

6.3.2. Enelion RCMB

Enelion RCM B should be installed in each Vertica Module where additional protection against electric shock (6 mA DC) is to be provided.

INFO

Before installing Enelion RCMB, make sure that the information label on the package contains information about the startup configuration of the installed add-on. Otherwise, despite the installation of Enelion RCM B, the Vertica Module will not respond to its presence.

1. Place the equipped Vertica Module on a stable and flat surface with the front facing down. In the case of the Vertica Module with a cable, the fact of the device having larger dimensions should be taken into account during its installation. Unscrew the four marked screws with a PH1 screwdriver. Next, remove the rear cover of the Vertica Module.

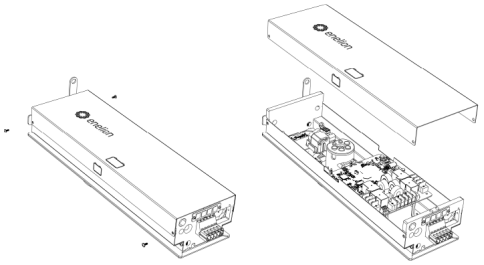

Fig. 57: Opening the Vertica Module.

2. Loosen the 4 screws marked with a PH1 screwdriver, then remove the rear cover of the Vertica Module.

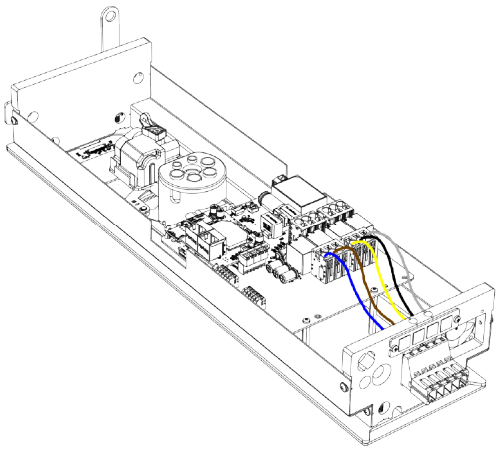

Fig. 58: The charging controller power connector on the Vertica Module.

3. Disconnect the 4 wires marked N, L1, L2, L3 from the power connector. Use a PZ2 screwdriver to do this.

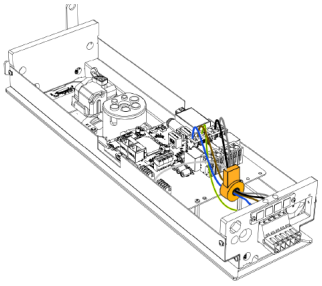

Fig. 59: Vertica module during installation of Enelion RCMB.

HINT

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

4. Plug the sensor connector in the socket on the charging controller labeled “P19 P20” placed on its left side.
5. Reinstall the Vertica Module rear cover and reattach it with the original screws.

After entering the device configuration, Enelion RCMB will continue to function while the device is in use.

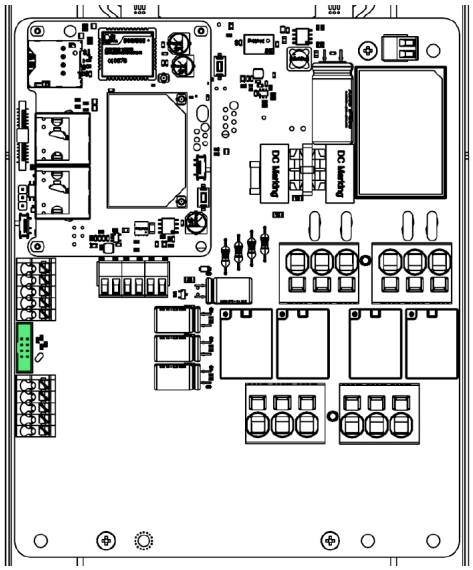

Fig. 60: Communication connector of the Enelion RCMB add-on.

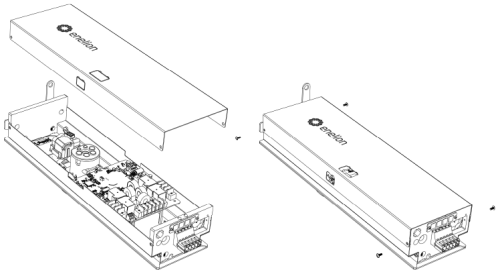

Fig. 61: Closing the Vertica Module with RCMB.

After introducing the device configuration, Enelion RCMB will function during the device’s operation.

6.3.3. Enelion Moduł LTE

Enelion LTE module is mounted in the same module as Enelion Bridge. As with the Bridge module, thanks to the integrated Enelion Chain connection within the Vertica Pole, the Online functions are available for both Vertica Modules. The installation of Enelion Bridge is identical for the module with a cable and with a socket.

INFO

To the launch the LTE module, Enelion Bridge Module is required.

1. Place the equipped Vertica Module on a stable and flat surface with the front facing down. Next, remove the rear cover of the Vertica Module.

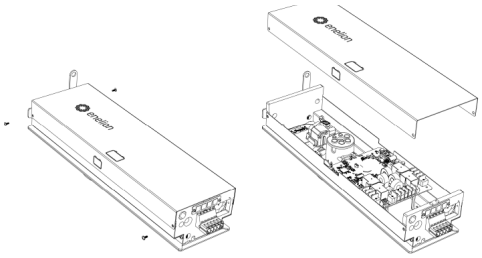

Fig. 62: Opening the Vertica module.

2. Put LTE Module into a hole prepared in the upper side of the housing, according to the diagram below.

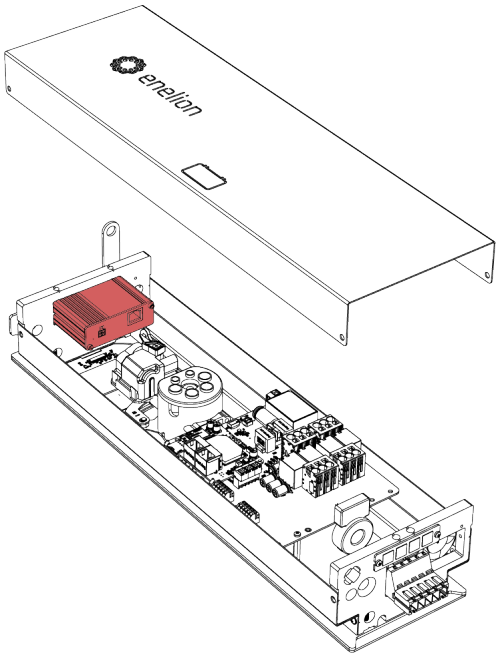

Fig. 63: Mounting the LTE module.

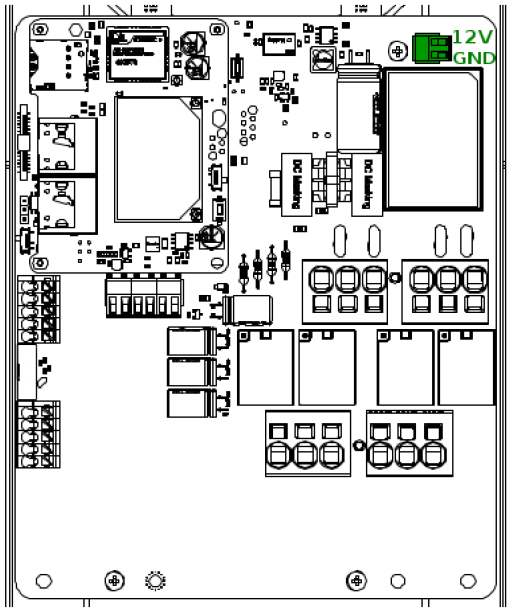

Fig. 64: Location of the power socket for LTE module power cable

WARNINIG

Make sure that the plug is put in correct position.

3. Connect RJ45 patchcord.

INFO

Make sure that the patchcord is connected to the proper RJ45 socket on the Bridge Module, labeled as „Internet”.

4. Connect the antenna cable. Guide the antenna cable through the dedicated hole and screw the SMA connector from the outside part of the Vertica pannel.

INFO

The antenna should be placed on the dedicated pad to improve a magnetic connection.

5. Connect power cable of the LTE module to a dedicated socket on the main board.

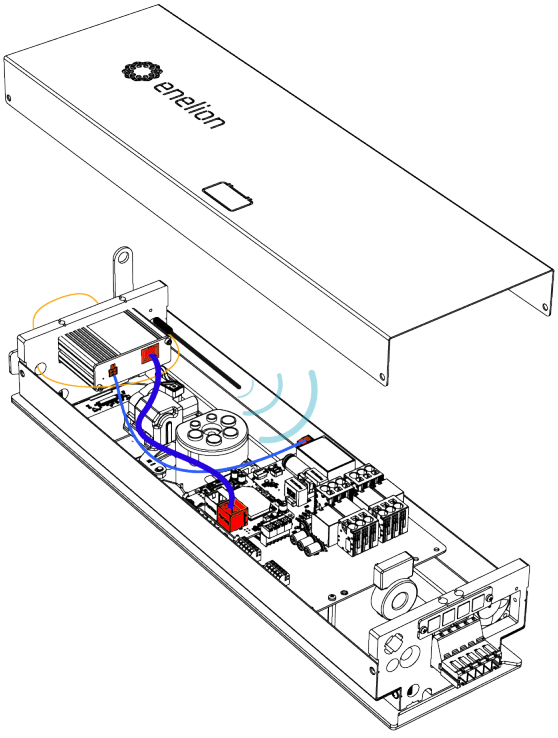

Fig. 65: Properly mounted LTE module.

6.4. Activation and use

After installing add-ons, Vertica Modules should be mounted in the installed and connected Vertica Pole.

1. Open the Vertica Pole (if closed after installation) according to section ***2.2.1 Opening and closing of the device.***
2. Install the Vertica Modules according to section ***2.3.3 Assembly and disassembly of Vertica Modules.***

INFO

When connecting Enelion Bridge to the Internet via Ethernet, make the connection before installing the next Vertica Module.

3. Close the Vertica Pole.
4. Power up the Vertica charging station.
5. Initialize the Vertica Modules, if not configured, with the provided configuration cards.

HINT

Full information on the initialization and use of the device can be found in the “User Manual”.

A charging station prepared in this way is ready for use.

7. Maintenance

The device is designed to operate in temperatures from -25 C to 55 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 C or above 55 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.

WARNINIG

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

7.1. 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.

WARNINIG

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.

8. Technical data

8.1. Vertica Pole

Electrical data	
Routing of the power cord	Sub-surface
Power cord cross-section	Recommended minimum cross-section • 5 x 6,0 mm2 (32 A nominal current)
Supply voltage (Europe)	3 x 230 V/400 VAC (+-10%)
Voltage frequency	50 Hz/60 Hz
Network type	TN, TT (IT per request)
Protection Class	Class I

Mechanical data	
Dimensions (height x width x depth)	250 mm x 1310 mm
Weight	22,5 kg ± 5%
IP Class	IP54
Mechanical strength class	IK10

Interface	
Tworzenie sieci ładowania	Enelion Chain
Elementy dodatkowe	Złącze licznika
Dodatki	• Enelion MID • Enelion Vertica Splitter • RCDB

Ambient conditions	
Working temperature	od -25°C do 55°C
Storage temperature range	od -40°C do 80°C
Permitted relative air humidity	od 5% do 95%
Elevation	maksymalnie 2000 m

8.2. Vertica Module with a socket

Electrical data	
Supply voltage (Europe)	3 x 230 V / 400 VAC (+-10%)
Voltage frequency	50 Hz / 60 Hz
Network type	TN, TT (IT na specjalne życzenie)
Overvoltage category	III zgodnie z EN 60664–1
Rated short-circuit current	Wartość skuteczna < 6 kA zgodnie z EN 61439–1
Overcurrent protection	Nie znajduje się w wyposażeniu urządzenia. Zabezpieczenie należy wykonać zgodnie z lokalnie obowiązującymi przepisami oraz zgodnie z wersją urządzenia.
Protection Class	Klasa I
Socket type	Typ 2, gniazdo standardowe 32 A / 400 VAC zgodnie z EN 62196–1

Mechanical data	
Dimensions (height x width x depth)	530 mm x 149 mm x 132 mm
Weight	3,1 kg ± 5%
IP Class	IP54
Mechanical strength class	IK10

Interface	
Dodatki	• Enelion Bridge • Enelion RCMB • modem LTE
RFID	Karty MIFARE zgodne z ISO 14443

Ambient conditions	
Working temperature	od -25°C do 55°C
Storage temperature range	od -40°C do 80°C
Permitted relative air humidity	od 5% do 95%
Elevation	maksymalnie 2000 m

8.3. Vertica Module with a cable

Electrical data	
Supply voltage (Europe))	3 x 230 V/400 VAC (+-10%)
Voltage frequency	50 Hz/60 Hz
Network type	TN, TT (IT per request)
Overvoltage category	III according to EN 60664–1
Rated short-circuit current	Effective value < 6 kA according to EN 61439–1
Overcurrent protection	Not included. Protection to be made in accordance with the locally valid regulations and according to the version of the device.
Protection Class	Class I
Socket type	Type 2, standard socket 32 A/400VAC according to EN 62196–1

Mechanical data	
Dimensions (height x width x depth)	530 mm x 149 mm x 180 mm
Weight	8,1 kg
IP Class	IP54
Mechanical strength class	IK10

Interface	
Przewód ładujący	typ spiralny, zasięg 4 m; uchwyt do odwieszenia
Charging network assembly	Enelion Chain
Additional elements	Złącze licznika
Add-ons	• Enelion Bridge • Enelion RCMB • modem LTE

Ambient conditions	
Working temperature	od -25°C do 55°C
Storage temperature range	od -40°C do 80°C
Permitted relative air humidity	od 5% do 95%
Elevation	maksymalnie 2000 m

9.Technical description

9.1. Form with boxes to fill in

Charging Station/General Access Charging Station	
Charging point, an element of public road transport infrastructure	
Type	Vertica
Pole Model Number	.....
Module Model Number	.....
Pole Serial Number	.....
Module Serial Number	.....
Number of charging points	1 / 2
Connection power	.....
Supply voltage	3 x 230 V/400 V AC (+-10%)
Network type	TN, TT (IT per request)
Output voltage	3 x 230 V/400 V AC 50 Hz/60 Hz
Charging current	.....
Protection class	Class I
IP class	IP54
Mechanical strength class	IK10
Dimensions (diameter x height)	250 mm x 1310 mm
Pole Weight	22 kg ± 5%
Module weight with socket/cable	2,7 kg / 8,5 kg
Interface height	1220 mm
Charging connector Type 2 EN62196–1	Socket/Cable with a plug
Working temperature	from -25°C to 55°C
Device location – WGS84	
Latitude	N S .....°.....°....., ...°°
Longitude	N S .....°.....°....., ...°°

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

WARNINIG

Information above may be the basis for exclusion of warranty.

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