Installation Manual

Vehicle Charging Station

STAGEV Core
STAGEV Pro
STAGEV Intelli

STAGEV

ver. 1.2

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STAGEV

1. Safety Instructions

1. Before installing or starting the device, please read this installation manual carefully.
2. Installation and servicing must be carried out only by a person with appropriate authorizations and qualifications for working with mains voltage up to 1kV.
3. Before beginning installation, it is absolutely necessary to disconnect the power at the installation site by switching off the appropriate circuit breaker in the distribution board.
4. All actions described in this manual must be performed only after confirming with a tester or meter that there is no voltage in the power cable, as high voltage poses a life-threatening hazard.
5. It is recommended to use insulated electrical tools during installation.
6. All local, regional, and national electrical installation regulations must be followed.
7. The product must be permanently installed at its designated location.
8. It is forbidden to install, use, or touch the device if it is damaged or not functioning properly.
9. Do not perform installation work near explosive zones or in areas where there is a risk of water exposure.
10. Do not use the device near strong electromagnetic fields or in close proximity to radio transmitters.
11. Installation cables should be routed in a way that prevents accidental mechanical or thermal damage.
12. Maintain appropriate distances between the device and heating or moving elements.
13. Disassembling the device in case of a malfunction is prohibited; disassembly must be performed by a qualified and authorized person.
14. Before connecting a load, ensure that its parameters comply with the device specifications.
15. After completing the installation, carefully check all connections for correctness.
16. Once you have confirmed that everything is properly connected, you may restore power and perform a device functionality test.

2. User Instructions

1. Follow the recommendations provided in this document.
2. Select the connection installation parameters according to the vehicle's maximum charging specifications (number of phases, cable cross-section, charging cable, electrical equipment).
3. Remember that the charger's charging power also depends on the vehicle and the quality and type of connection to the power grid.
4. It is forbidden to use the device in a manner inconsistent with its intended purpose.
5. Do not use the device if the housing shows visible damage.
6. Do not use the device if the cables or connectors show visible mechanical damage.
7. The device must be stored and used in a way that prevents access by children or individuals unaware of potential hazards.
8. Do not use the device if it has been exposed to water or if water exposure is suspected.
9. Do not use the charger near explosive or flammable substances – this poses a fire hazard.
10. Installation and commissioning of the device by unqualified personnel is strictly prohibited.
11. Repairs and maintenance must not be performed by individuals without proper qualifications.
12. Unauthorized modification of the device's software is prohibited.
13. The use of non-original or manufacturer-unauthorized spare parts is forbidden.

The warranty does not cover:

1. Disturbances and failures resulting from power grid issues.
2. Problems related to mobile network services.
3. Damage caused by random events beyond the manufacturer's control (e.g., natural disasters).
4. Malfunctions of the management system on the operator's side using the OCPP protocol.
5. Damage caused to the electric vehicle.

3.1 Device Description

Information. Throughout this document, the terms charging station and charger are used interchangeably and refer to the same device.

The STAG EV charging station is an advanced device for charging electric vehicles, designed with full flexibility and modularity in mind. Thanks to its thoughtful design, users can easily tailor the hardware configuration to their needs—both at the time of purchase and later through simple upgrades.

Our station is a solution for both home users and commercial facilities, offering high power, safety, and full control over the charging process.

Intuitive Operation

Access to the charger via: PIN, RFID, or mobile app

3-inch TFT touchscreen (tempered glass)

Color LED status indicator

Modular Design

Mainboard replacement without soldering

Expandable with additional features without returning the charger

Installation of MID meters, residual current protection, and communication modules on a DIN rail

Advanced Connectivity and Integration

Supports Ethernet, Wi-Fi, RS485, and optionally GSM/LTE

OCPP 1.6 protocol for integration with remote management systems

Dedicated mobile app for operation, charging process, and history viewing

Fits Any Space

Wall or pole mounting options

Compact dimensions and modern design

High mechanical resistance and sealing (IK10, IP66)

3.2 Technical Specifications

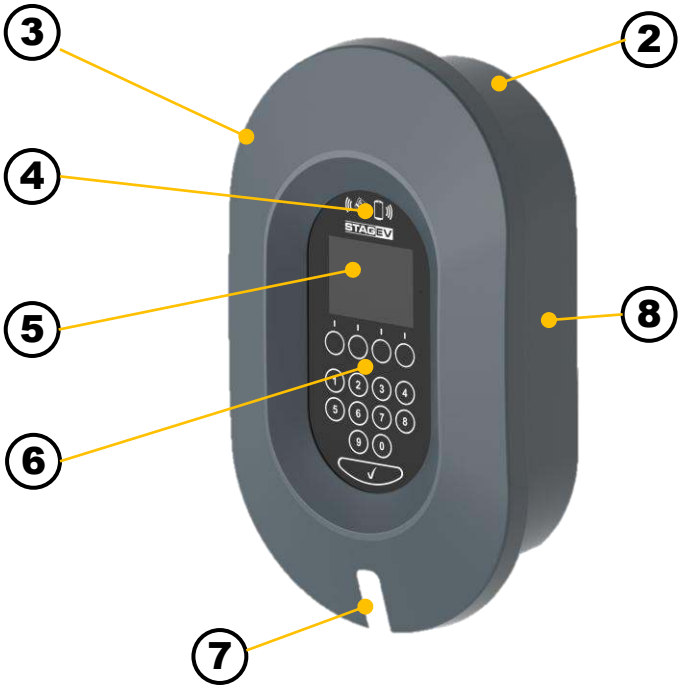
Parameter	Value
Maximum Charging Power	22 kW
Number of Phases	1, 2, 3
Input Voltage	400 V AC
Maximum Rated Current per Phase	32 A
Power Supply Frequency	50 – 60 Hz
Adjustment	8-32 A
Built-in Residual Current Protection	AC: 30mA, DC: 6mA
Option to Mount Residual Current Protection on DIN Rail	YES
Electrical Connectors	Quick lever terminals
Overheat Protection	YES – built-in
Overload Protection	YES – built-in
Vehicle Charging Plug Type	Cable entry from rear or bottom for Type 2 cable
Operating Temperature	-20 ^{o}C do + 55 ^{o}C
IP Protection Rating	IP66
Operating Humidity (non-condensing)	5% – 95%
UV Resistance	YES
Mechanical Resistance (IK Rating)	IK10
Display	3-inch TFT
Touch Panel	YES – 3 mm tempered glass
Color Status Indicator	YES
Charger Unlock via PIN	YES
Charger Unlock via Mobile App	YES
Charger Unlock via RFID/NFC Card	YES – optional
Mobile App	YES

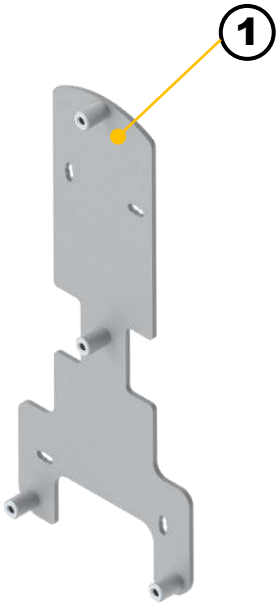
3.2 Technical Specifications (continued)

Parameter	Value
Wall Mounting	YES
Pole Mounting	YES
Ethernet Connectivity	YES
Wi-Fi Connectivity	YES
GSM / LTE Connectivity	YES – optional
OCPP 1.6 Protocol Support	YES - optional
MID Meter Mounting on DIN Rail	YES
RS485 Interface (isolated)	YES
Enclosure Material	PC/ABS + tempered glass
Dimensions [cm]	39 x 23 x 12,5
Weight	2,5 kg

Certifications	CE
Directives and Standards	2014/30/UE – EMC 2014/35/UE – LVD 2011/65/UE – RoHS II 2012/19/UE – WEEE IEC 61851-1 IEC 61851-21-2

3.3 Description of External Components of the Charger

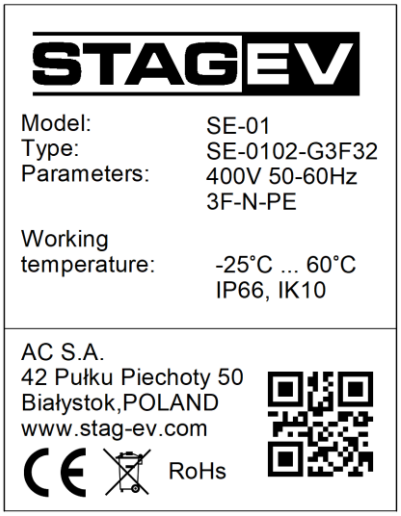




List of External Charger Components

1. Wall-mounted charger bracket
2. Enclosure
3. Cover
4. RFID/NFC card reader
5. TFT display
6. Touch panel
7. Status indicator
8. Identification label (see right →)

Identification Label



4.1 Basic Information

1. The selection of a charging station depends on the available power of the electrical connection and its type. Details can be found in the table in section **4.3 – Electrical Installation Requirements.**
2. The vehicle's charging power depends primarily on its type. Information on this can be found in the vehicle's user manual.

4.2 Installation Site

1. The charging station should be installed in a location that is as protected as possible from weather conditions to ensure proper operation and extend the device's lifespan.
2. The installation site should be at least 5 meters away from water, gas, and other explosion hazard zones.
3. The mounting surface must be stable and resistant to swaying, e.g., due to wind.
4. The length of the charging cable should be adapted to the location of the charging station and the position of the vehicle’s charging port.
5. It is also possible to install the station on a dedicated mounting post available from the charger manufacturer.

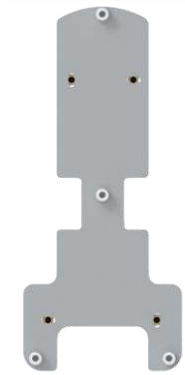
4.3 Electrical Installation Requirements

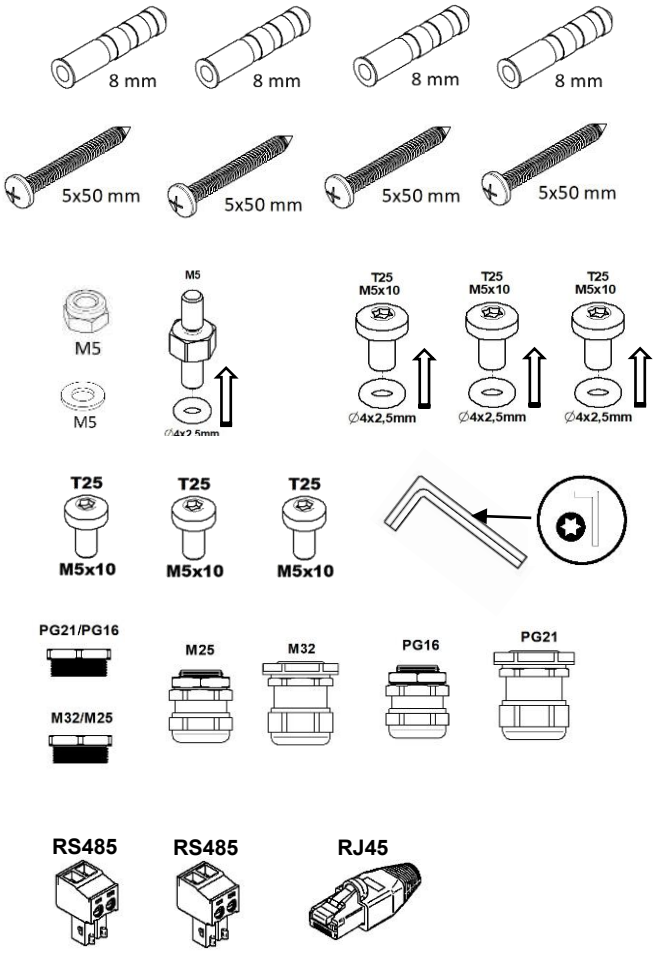
1. The device is intended for operation in TN-S or TT power supply systems, in either single-phase or three-phase configurations. Grounding is required for both the charging station and the mounting post (if used).
2. A protective earth (PE) conductor must be routed between the charging station and the power connection. The grounding resistance should not exceed 100 Ω.
3. The power connection must be equipped with a type A residual current device (RCD) with a sensitivity of 30 mA.
4. Appropriate cable cross-sections and circuit protection must be selected based on the planned charging power (see table below).

Connection Type	Charging Power	Cable Cross-Section	Short-Circuit Protection
Single-phase	3,7 kW	3 x 4 mm2	1 x 20A (type B or C)
Single-phase	7,4 kW	3 x 6 mm2	1 x 40A (type B or C)
Three-phase	11 kW	5 x 4 mm2	3 x 20A (type B or C)
Three-phase	22 kW	5 x 6 mm2	3 x 40A (type B or C)

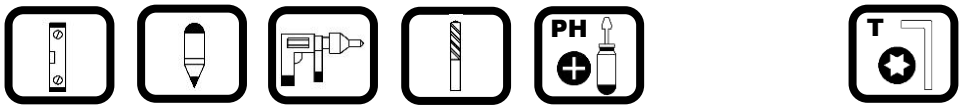
5.1 Basic Set Contents

Below is a visual list of the basic components included with the charging station.
In the extended version, the list may be supplemented with additional components such as: type 2 charging cable, type 2 connector parking socket or other accessories



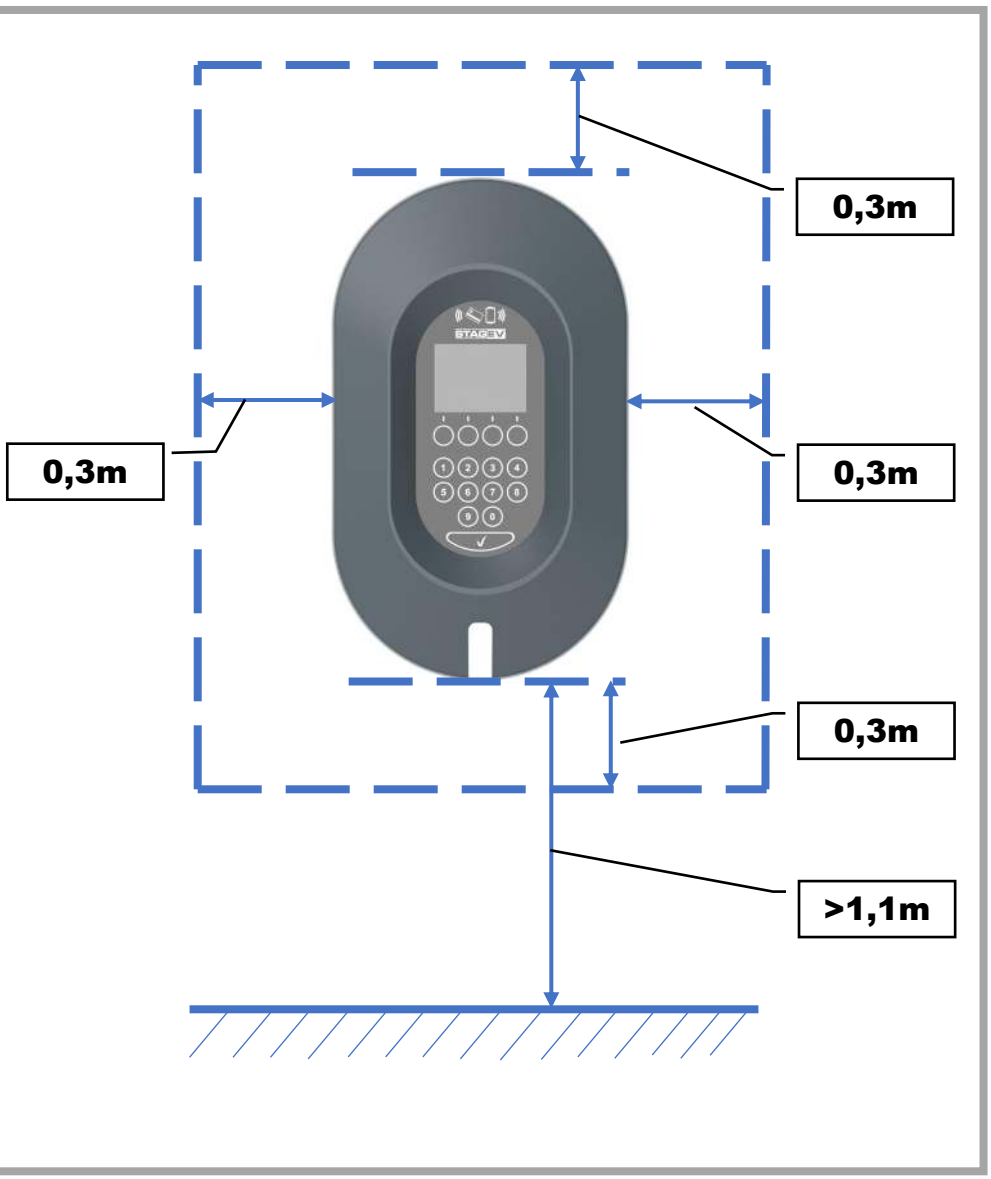


5.2 Required Installation Tools



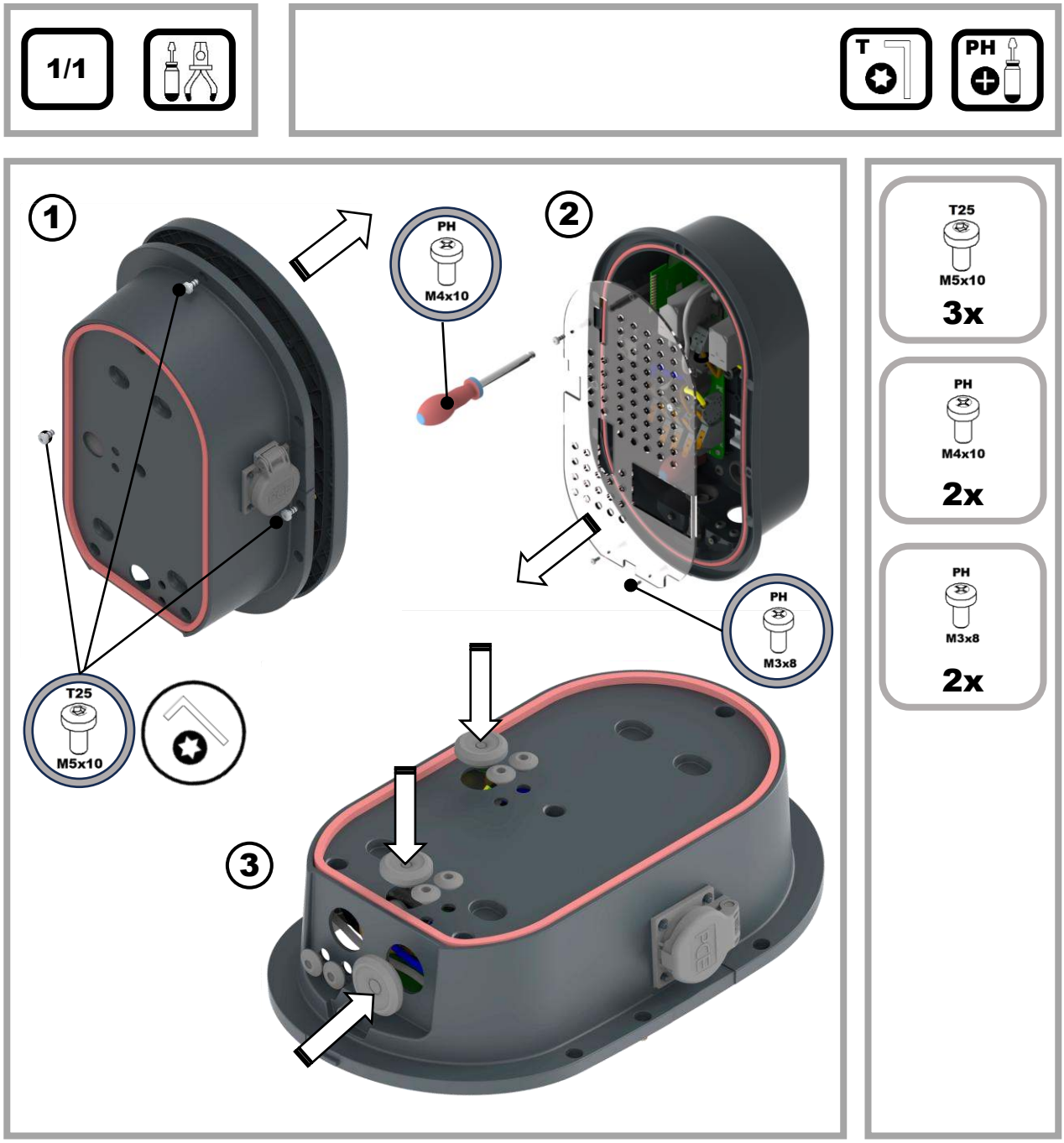
5.3 Required Mounting Clearances

The required mounting clearances are provided below to ensure user convenience, proper cooling of the charger, and to minimize interference with other electronic devices.



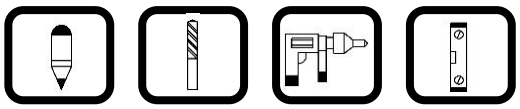
5.4 Preparing the Charger for Installation

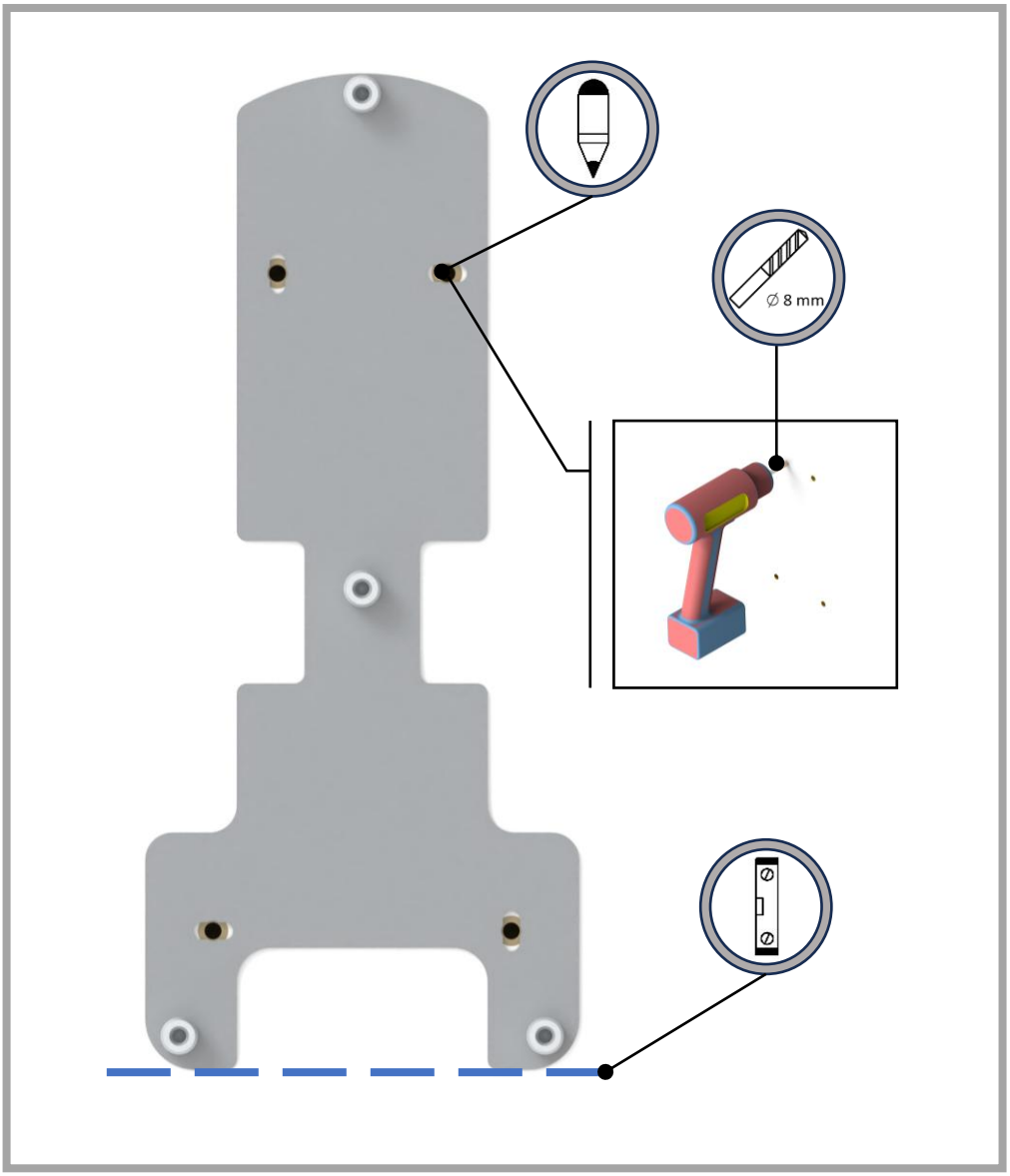
a) Unscrew the screw located at the back of the charger. It is positioned at the top of the unit (1).
b) Unscrew the protective cover screws (2).
c) Turn the charger body over and seal any unused openings (3).

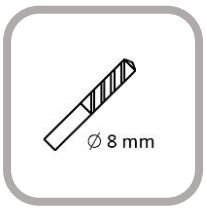


5.5 Mounting the Charger Bracket

a) Place the bracket against the wall as shown in the diagram below.
b) Hold a level against the bottom of the bracket, then mark the hole positions on the wall.
c) Remove the bracket and drill 4 holes at the marked positions using an 8 mm drill bit.







5.5 Mounting the Charger Bracket (continued)

a) Insert 8 mm wall plugs into the drilled holes.
b) Place the bracket against the wall so that the holes in the plugs align with the holes in the bracket.
c) Place washers on each screw, then insert the screws into the holes so they don't fall out.
d) Tighten all screws using a screwdriver or power drill.
e) Check the level and adjust if necessary.

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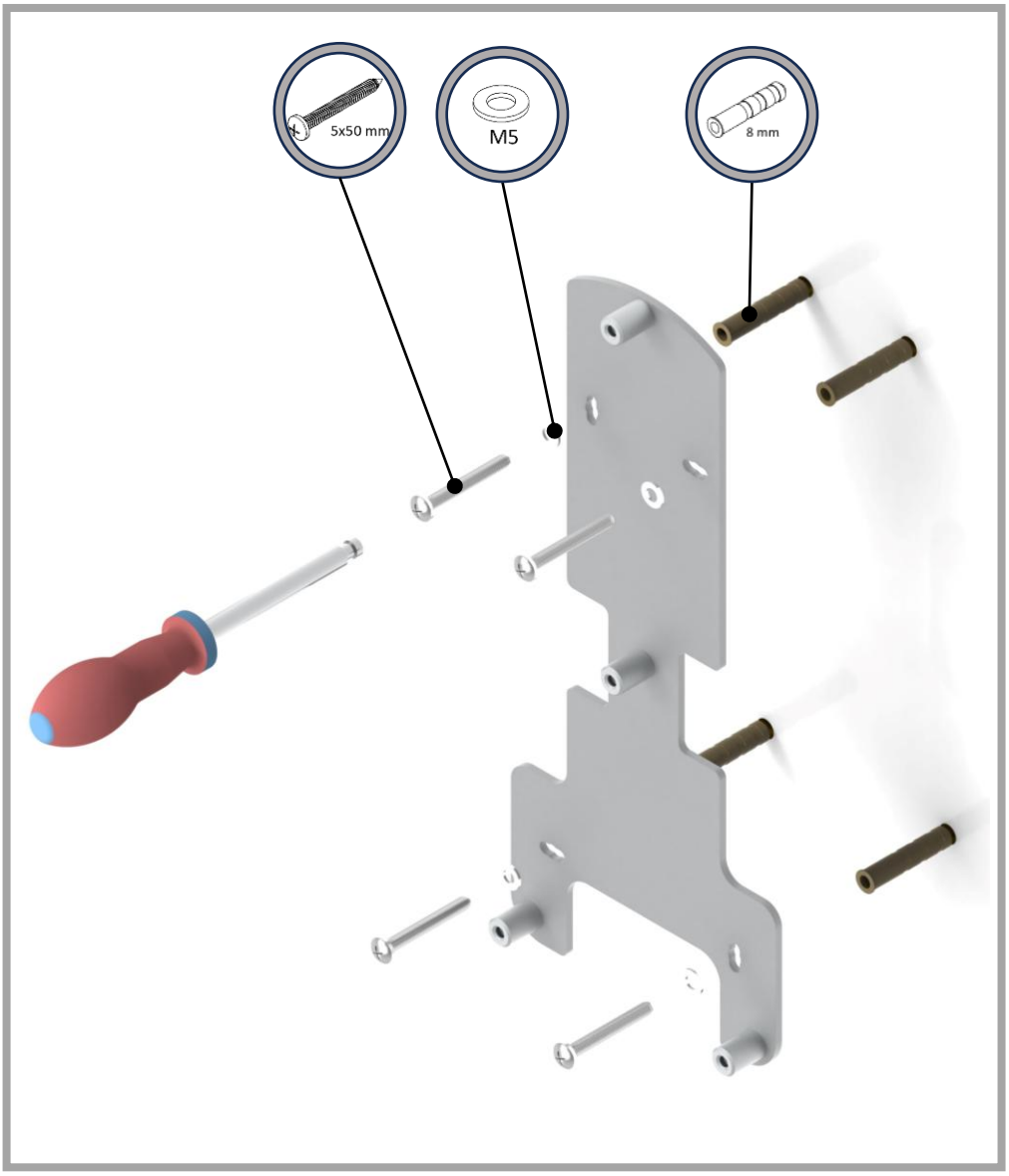
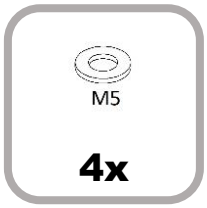
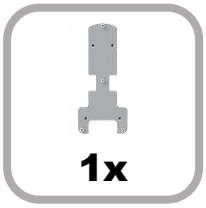






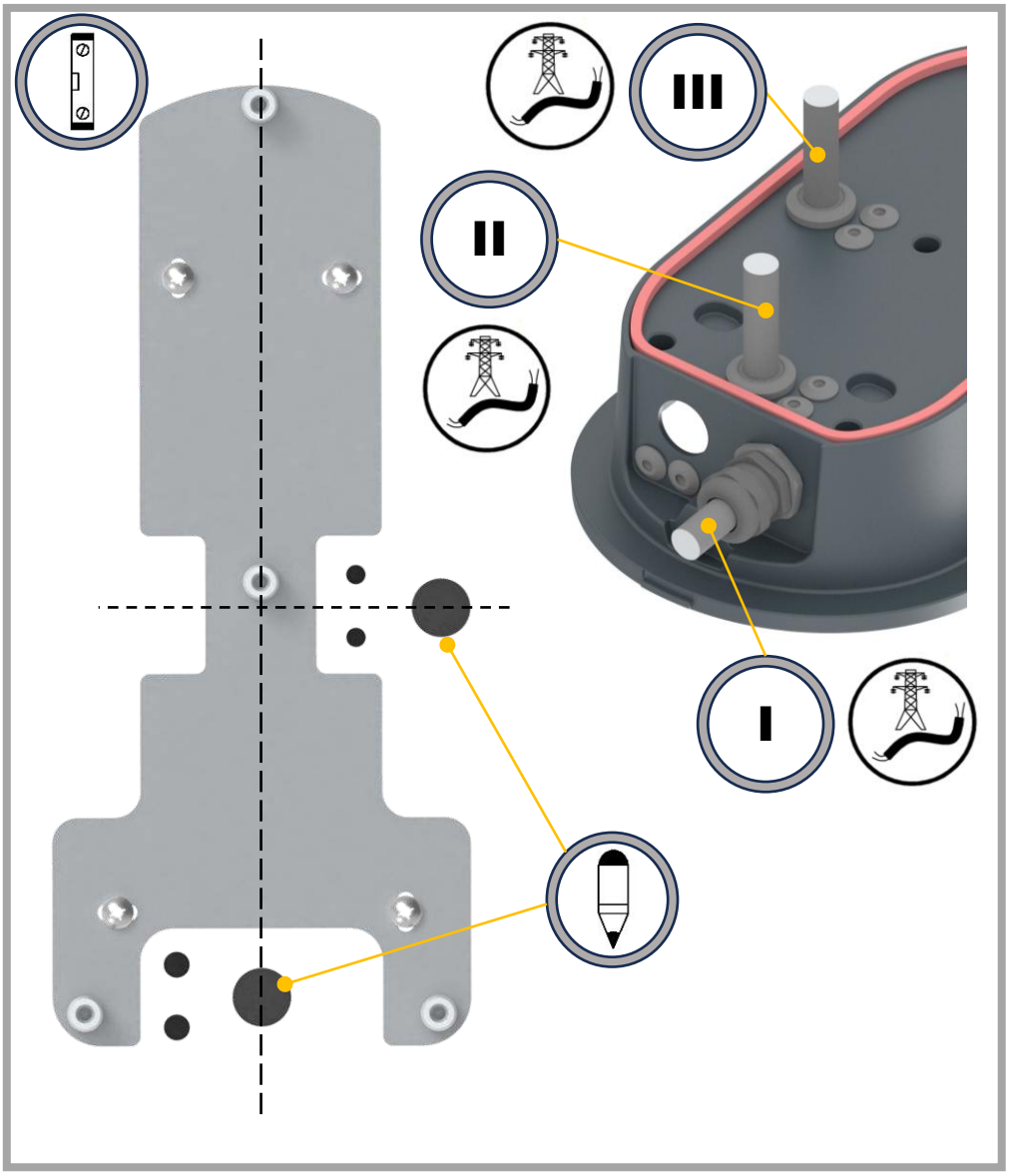
5.6 Routing the Power Cable

a) If the power cable is to exit the wall and enter the charger, mark the spot on the wall that aligns with the charger's opening labeled II or III. Then drill a hole in the wall with a diameter appropriate to the cross-section of the connection cable used.

b) If the power cable is to enter the charger from below, do not drill any holes in the wall for the power cable.

c) All unused openings should be sealed using the plugs included in the set.

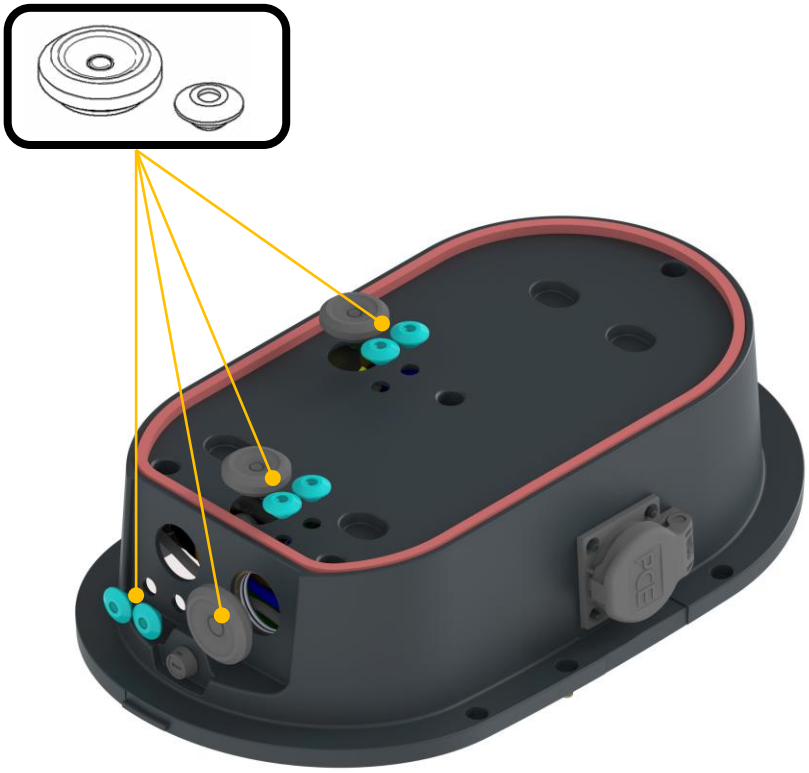
1/2



5.6 Routing the Power Cable

Note: All unused openings should be sealed with the caps included in the set.

2/2

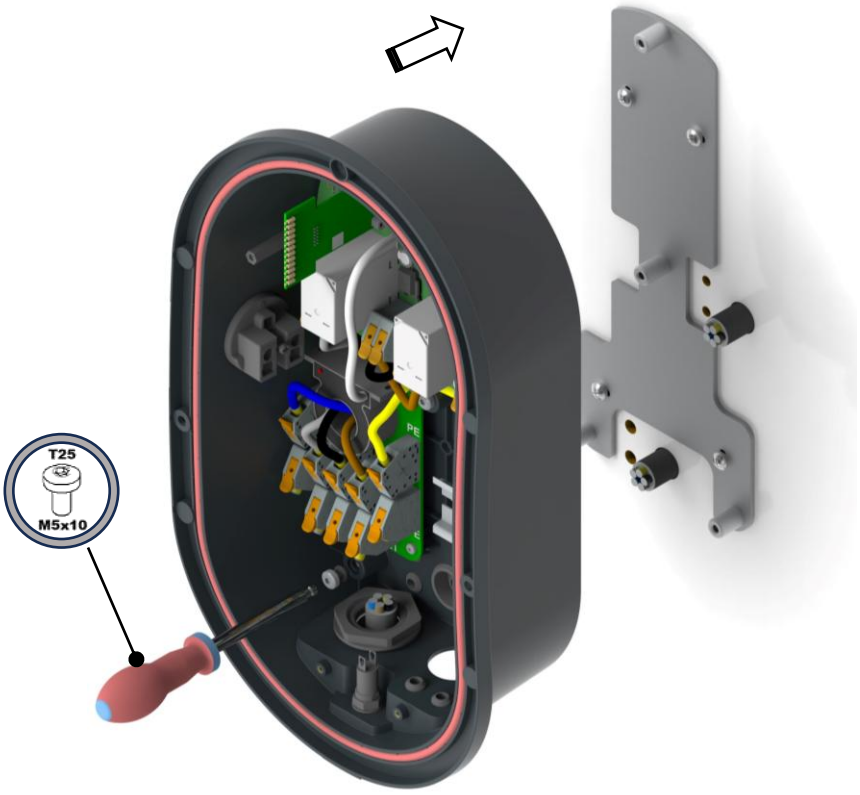


5.7 Mounting the Charger on the Hanger

a) Gently press the charger housing onto the hanger.
b) Tighten the 3 mounting screws to secure it to the hanger.

NOTE: The screws should be fitted with O-rings to ensure the charger housing remains sealed when operating in harsh environmental conditions.

1/1

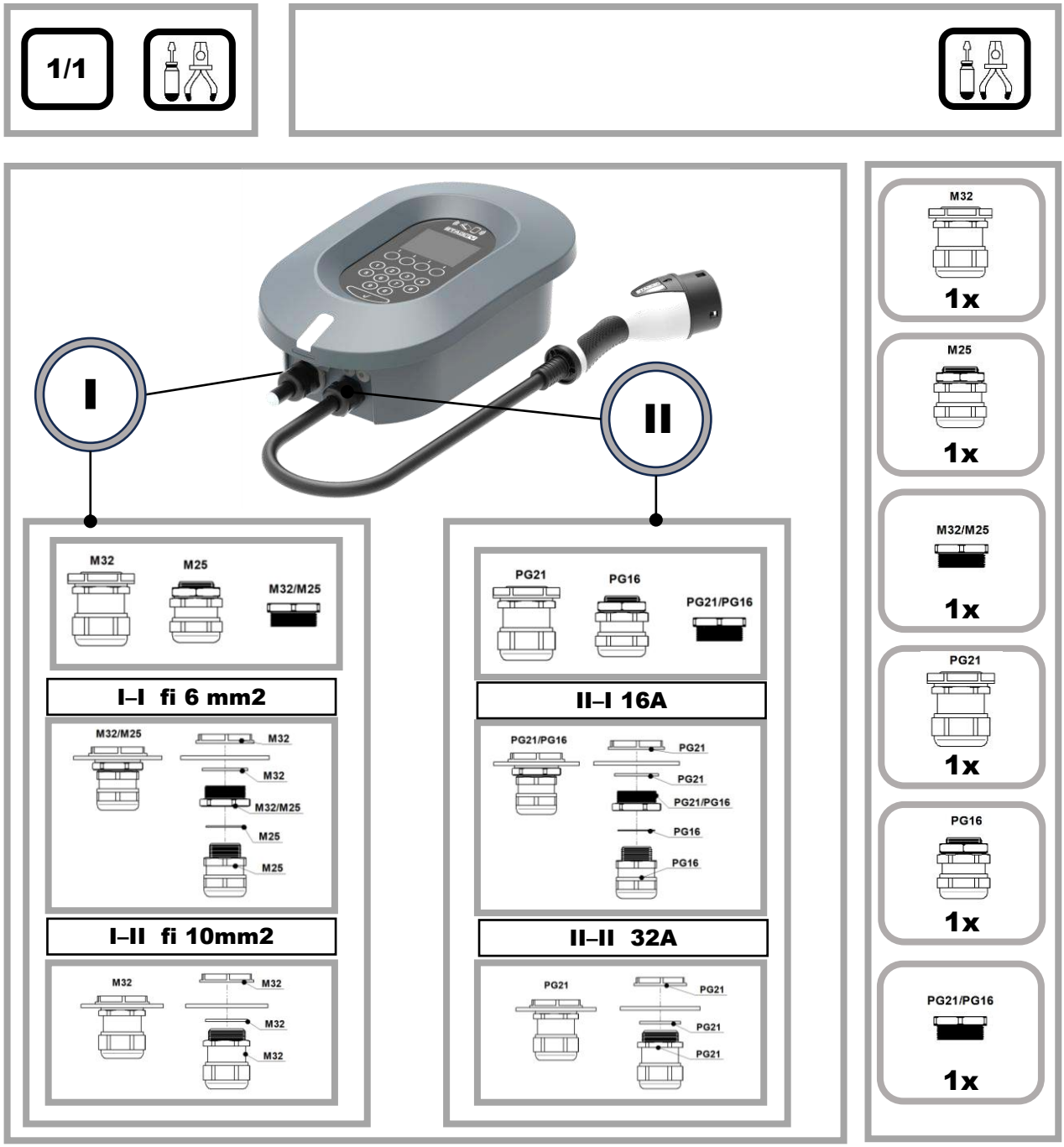


T25
M5x10
3x

5.8 Selection of Cable Glands for Connection Cables

The charger housing is designed to accommodate various diameters of both the power supply cable and the charging cable. The table below provides the recommended gland configurations depending on the diameter of the cables used.

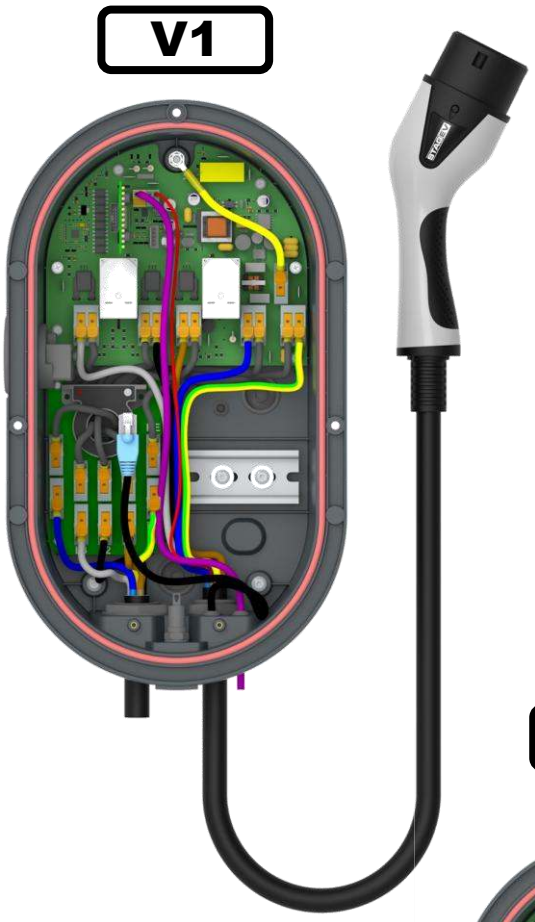
a) Section I: Gland configuration for the power supply cable.
b) Section II: Gland configuration for the charging cable.

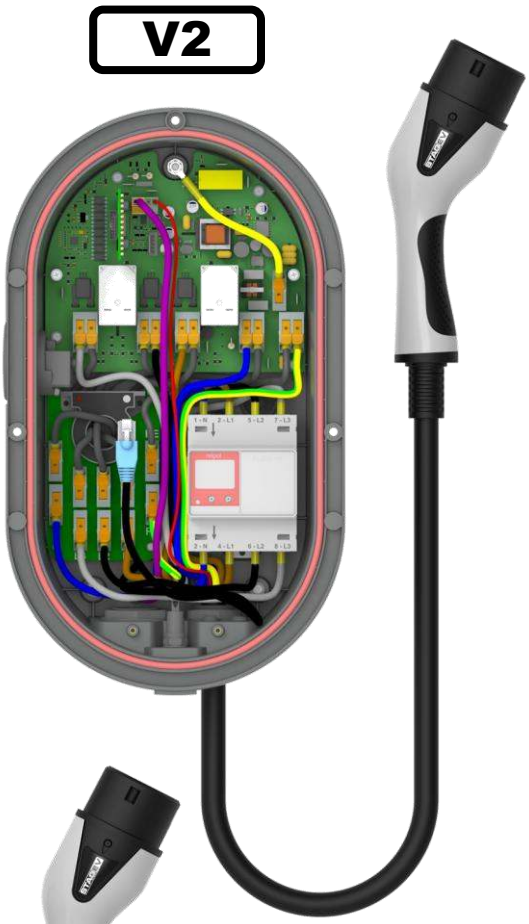


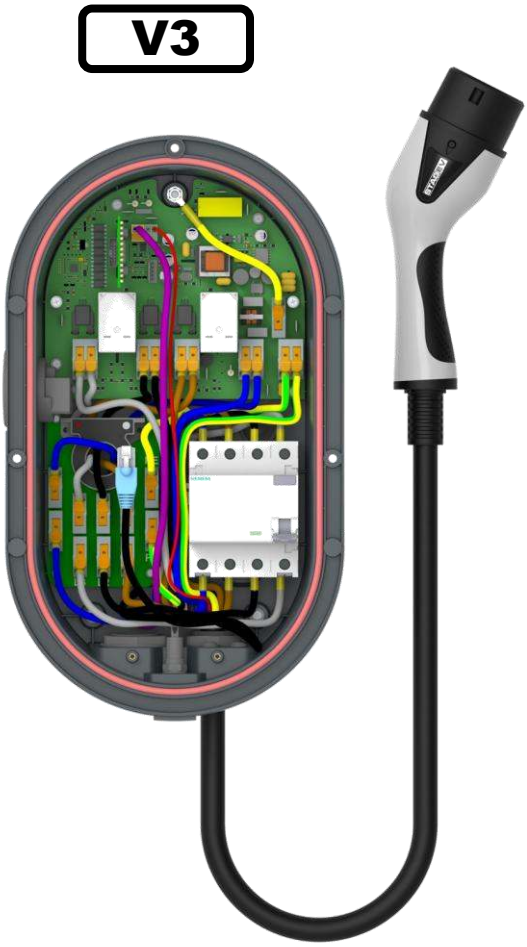
6.1 Electrical Installation Variants

The charger is equipped with a DIN rail (TH rail) for mounting one electrical accessory module.

V1 – Charger without any accessory on the DIN rail
V2 – Charger with an energy meter on the DIN rail
V3 – Charger with an AC residual current device (RCD)

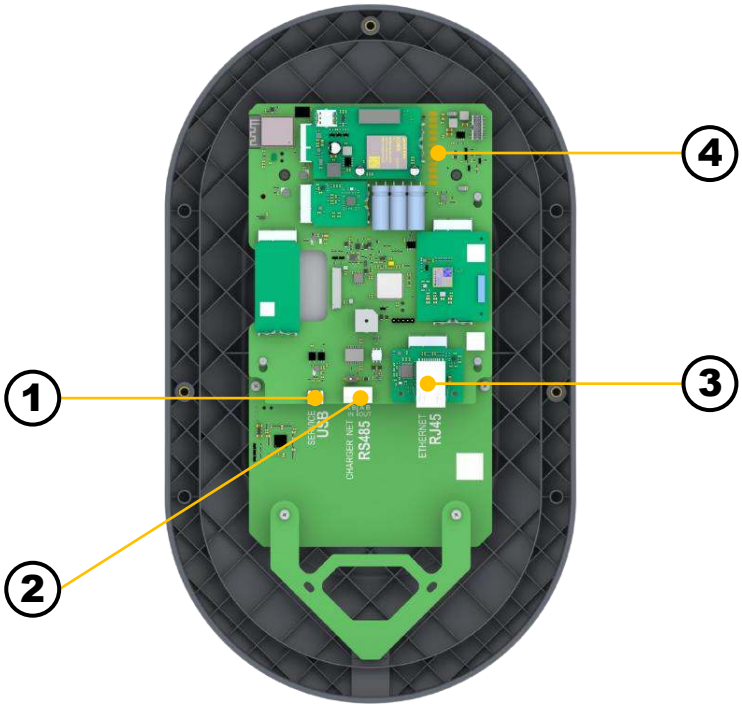






6.2 Communication Board

View of the reversed charger panel showing the communication board, which includes the following connectors for wired communication.

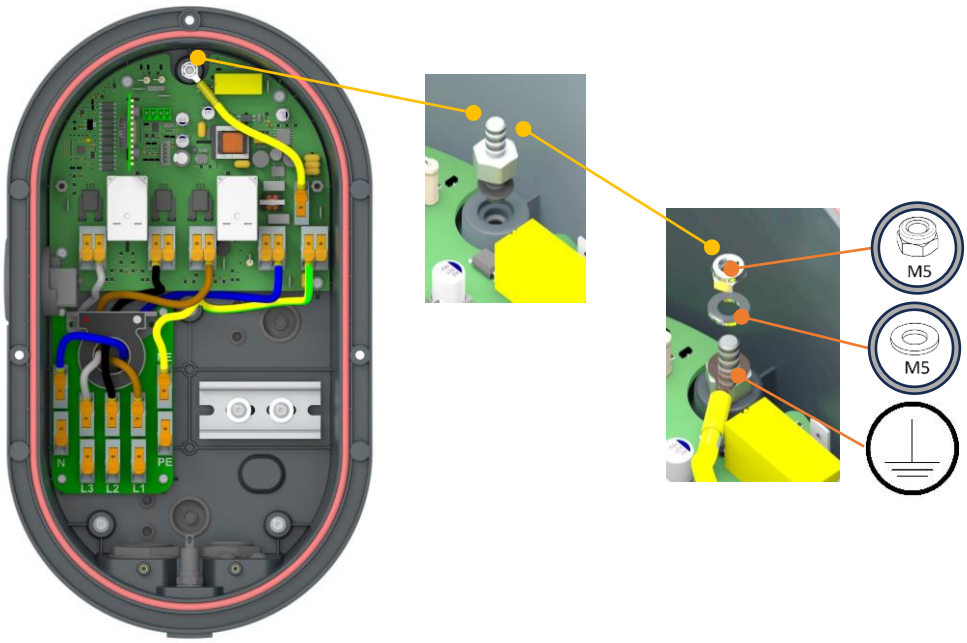


1. USB Communication Port – for installer/diagnostic use.
2. RS485 Communication Port – for wired communication with the charger or between multiple chargers.
3. Ethernet Port – for connecting to a wired internet network.
4. Internal Communication Port – for communication between the main board and the communication board.

6.3 Grounding Connection

The grounding installation should be carried out according to the diagram below.
Attach the cable with a ring terminal to the M5 screw and secure it with a spacer and nut.
Insert the other end of the cable into the quick-connector socket and snap it into place.

1/1



M5

1x

M5

1x

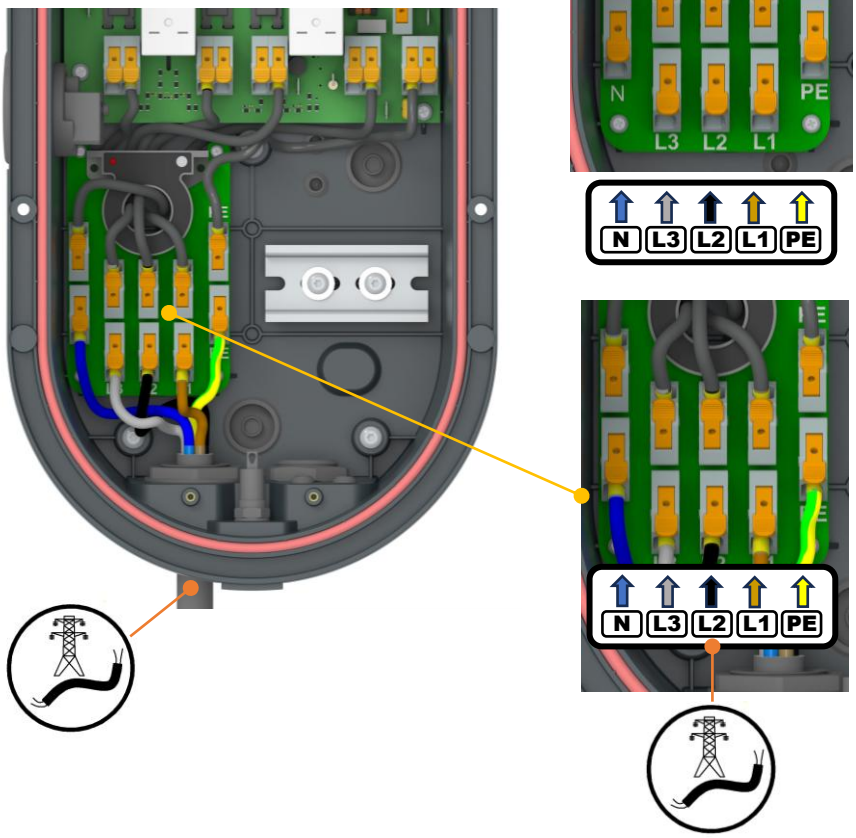
6.4 Connecting the Power Supply Cable – Variant 1

For the installation variant without additional equipment on the DIN rail, follow the connection diagram below. The charger supports 1-phase, 2-phase, or 3-phase connections. Connect the number of phases available in your power supply cable according to the diagram below.

a) Lift the levers of the quick-connect terminals.
b) Insert the individual wires according to the terminal markings, following the color coding shown below.
c) Lower the levers of the quick-connect terminals.

NOTE: Before switching on the power, carefully check that all wires are connected correctly and that the color coding is consistent!

1/1



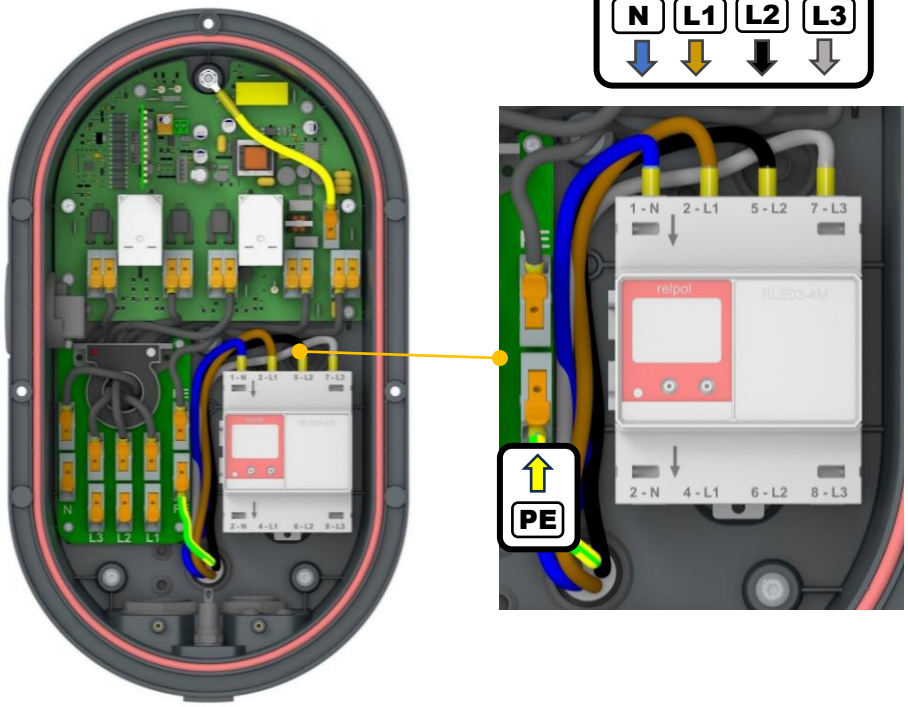
6.5 Power Cable Connection – Vars 2 & 3

For installation variants with additional equipment mounted on the DIN rail, follow the connection diagram below. The charger supports 1-phase, 2-phase, or 3-phase connections. Connect the number of phases available in your power supply cable according to the diagram below.

a) Insert the individual wires into the energy meter or residual current device (RCD) and tighten the screws.

b) Insert the wires into the appropriate terminals according to the connection markings, following the color coding shown below.

NOTE: Before switching on the power, carefully check that all wires are connected correctly and that the color coding is consistent!



6.5 Power Cable Connection – Vars 2 & 3

For installation variants with additional equipment mounted on the DIN rail, follow the connection diagram below.

a) Insert one end of each wire coming from the energy meter or residual current device (RCD) into the appropriate terminals on the PCB, following the connection markings and the color coding shown below.

b) Insert the other end of these wires into the quick-connect terminals and lower the levers to secure them.

NOTE: Before switching on the power, carefully check that all wires are connected correctly and that the color coding is consistent!

2/2

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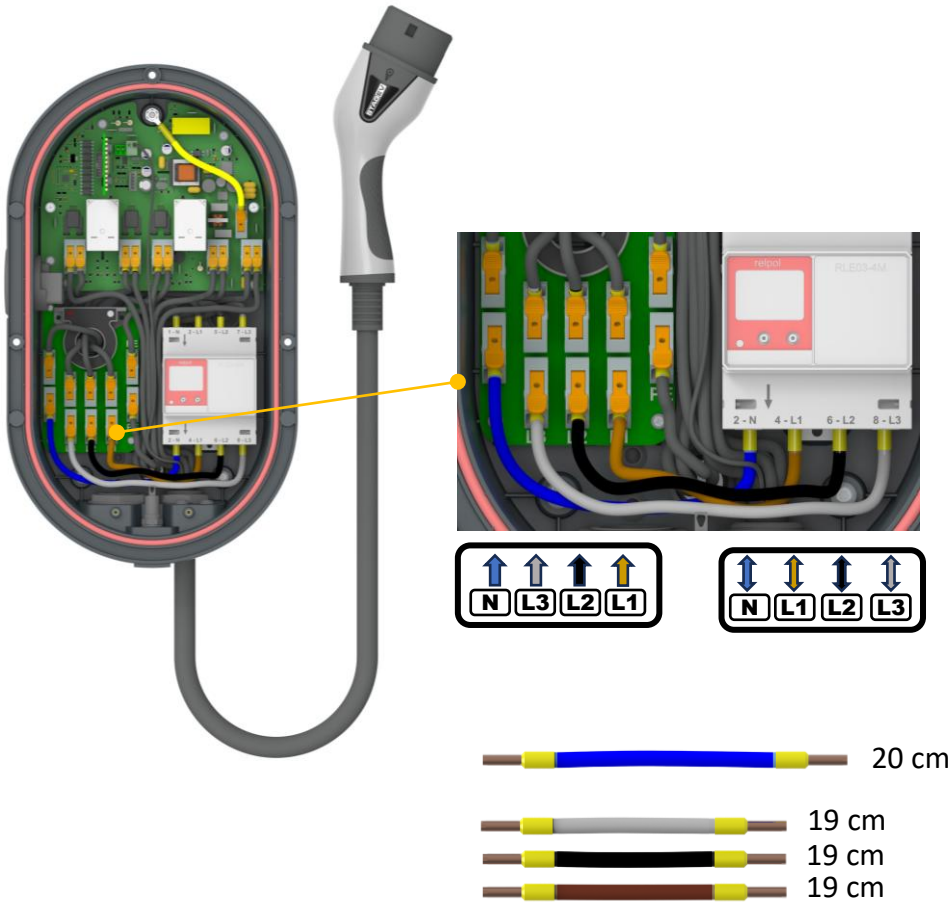


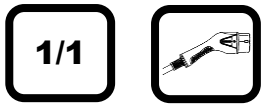
6.6 Connecting the Charging Cable

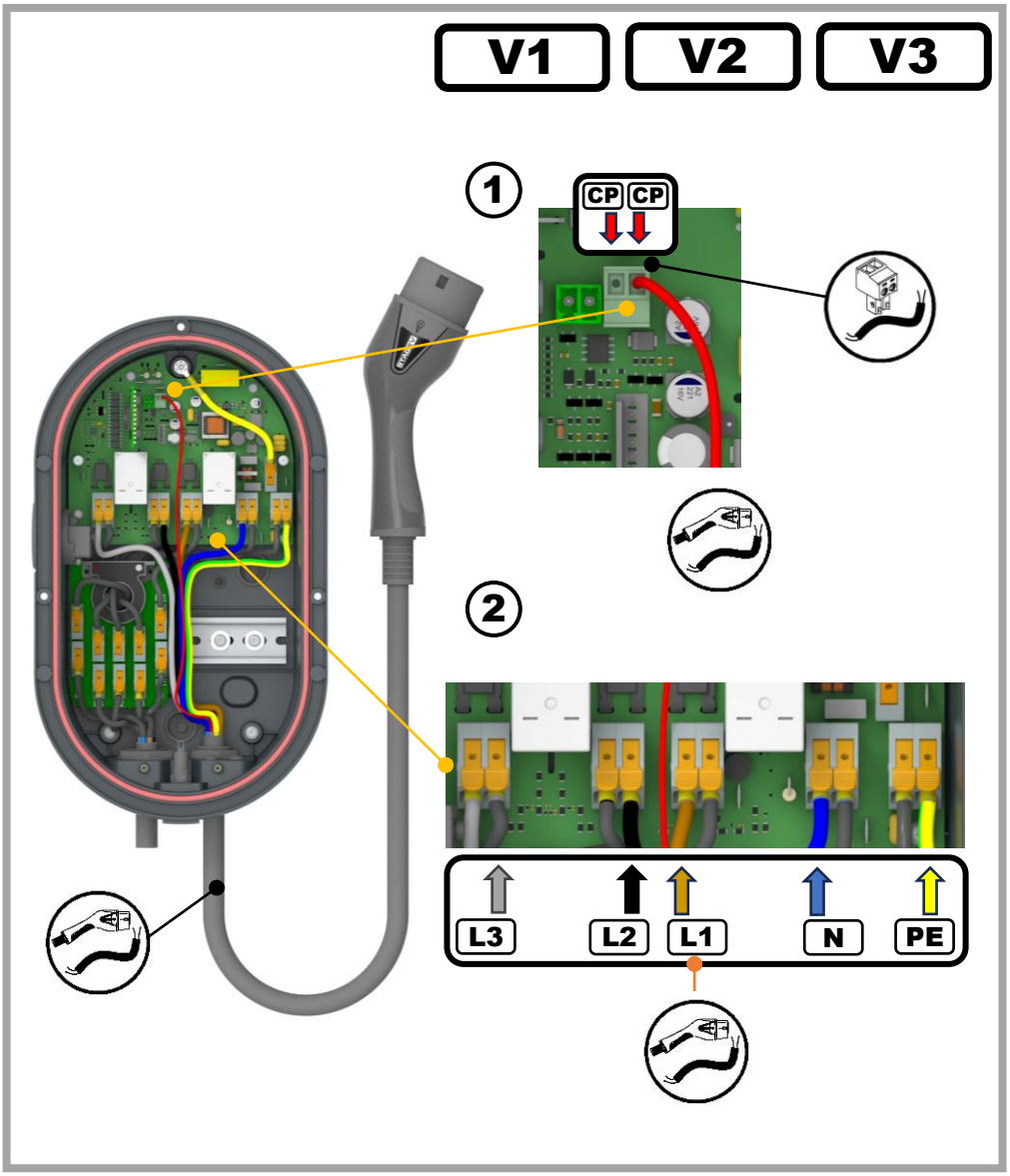
All installation variants use the same connection scheme for the vehicle charging cable.

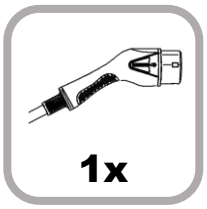
a) Connect the thin wire coming from the charging cable to the screw terminal marked CP, using either of the two available positions. The connection point is shown as item 1 in the diagram below.

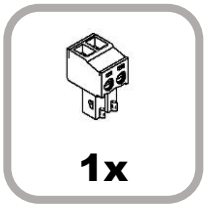
b) Connect the individual power wires to the quick-connect terminals, following the color coding as shown in diagram 2.

NOTE: Before switching on the power, carefully check that all wires are connected correctly and that the color coding is consistent!









6.7 Energy Meter Communication – DIN Rail

In addition to measuring energy consumption via the built-in microcontroller, the charger also supports connection to a certified (MID) energy meter for even more accurate measurement of energy used during vehicle charging.

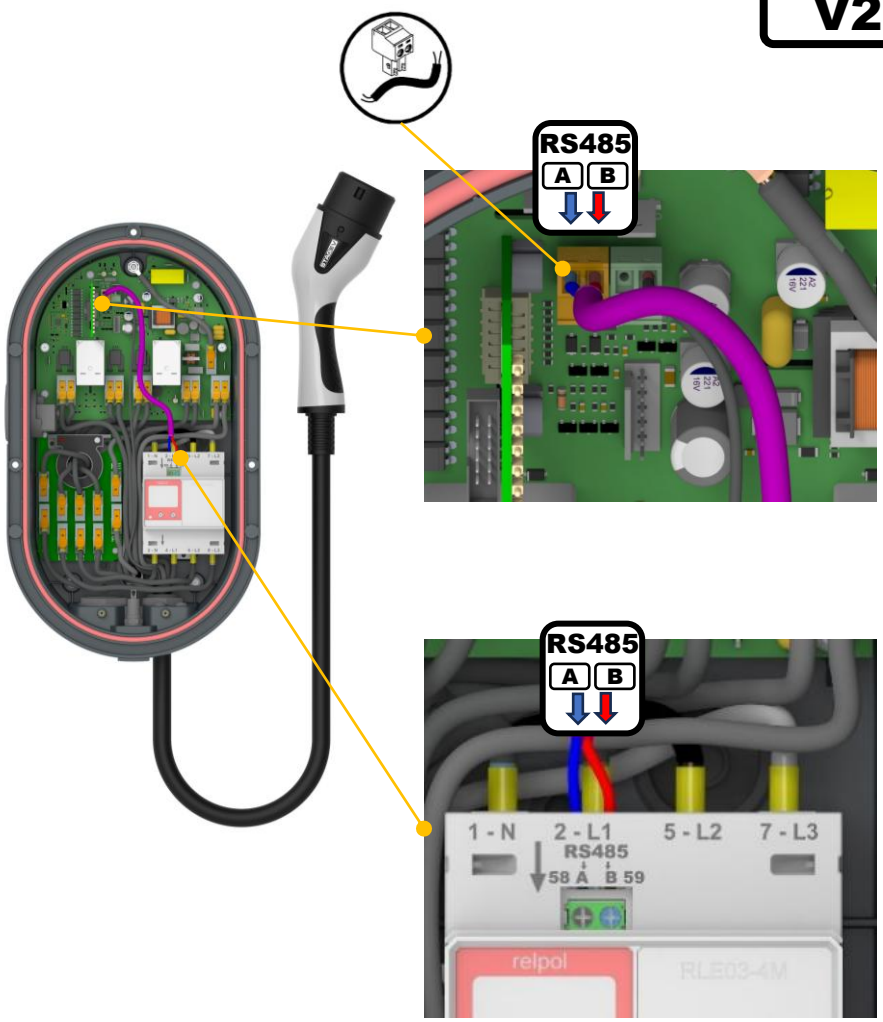
a) Purchase a meter compatible with the charger. A list of supported meters can be found in the technical specifications section of this manual.

b) Connect the wires according to the diagram below, ensuring correct terminal matching:
   - Connect one end of the wire to terminal A on the charger and the other end to terminal A on the meter.
   - Repeat the same for the second wire, connecting terminal B on the charger to terminal B on the meter.

1/1

PH

V2



RS485

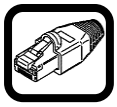
1x

6.8 Connecting the Ethernet and RS485 Cables

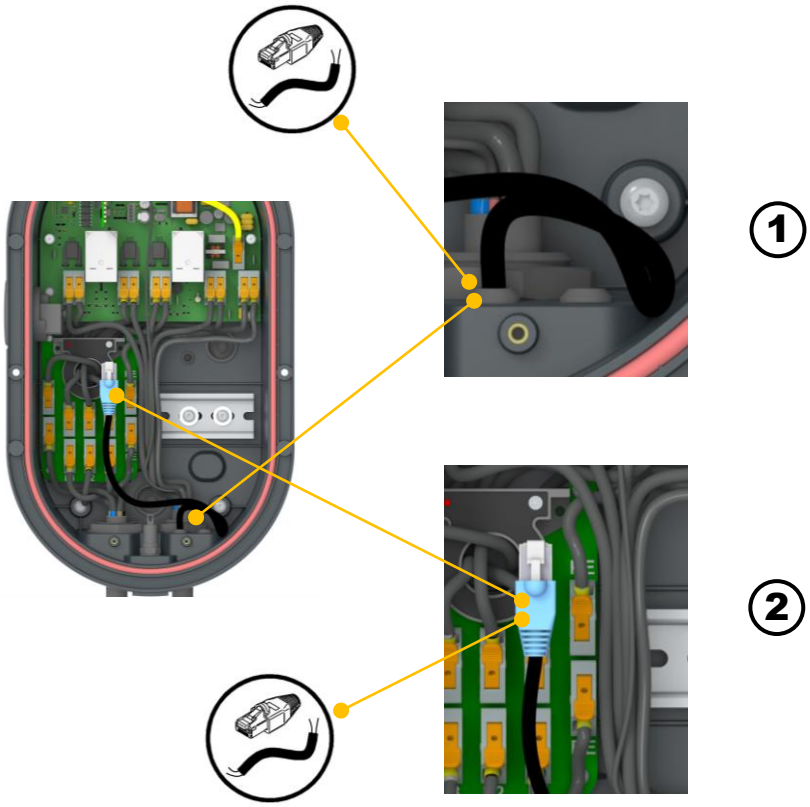
The charger allows for the connection of an Ethernet network cable for communication with a data exchange server. To do this:

a) Route the Ethernet cable through one of the housing openings (1).
b) Measure the required cable length, keeping in mind that the connection point is located on the cover (see next page).
c) Crimp an RJ45 connector onto the cable that has been fed into the charger (2).

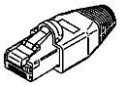
1/2



V1 V2 V3



RJ45



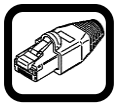
1x

6.8 Connecting the Ethernet and RS485 Cables

After crimping the RJ45 connector onto the network cable:

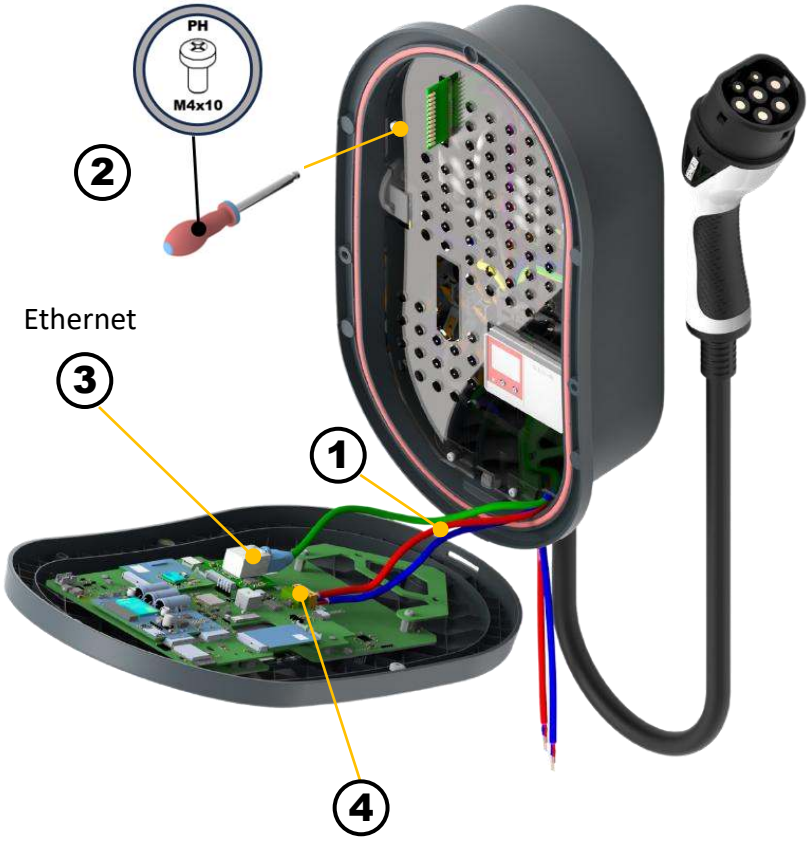
a) Route the Ethernet and RS485 cables out through the bottom of the protective cover.
b) Install and screw on the protective cover.
c) Insert the RJ45 plug of the Ethernet cable into the socket located on the cover.
d) Connect the two RS485 wires to the RS485 terminal, making sure to correctly assign them to terminals A and B.

2/2



PH

V1 V2 V3

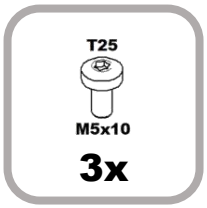


6.9 Closing the Enclosure

Before closing the cover, carefully check the correctness of all electrical connections !!!

The cover should be closed following the steps below in the specified order:

a) Insert the bottom part of the cover into the protruding latch on the enclosure.
b) Press the top part of the cover firmly against the enclosure and do not release it!
c) Tighten the top screw using the wrench included in the set.
d) If the charger is installed in an open environment, additionally tighten the side screws on both sides of the charger.



7. First Startup

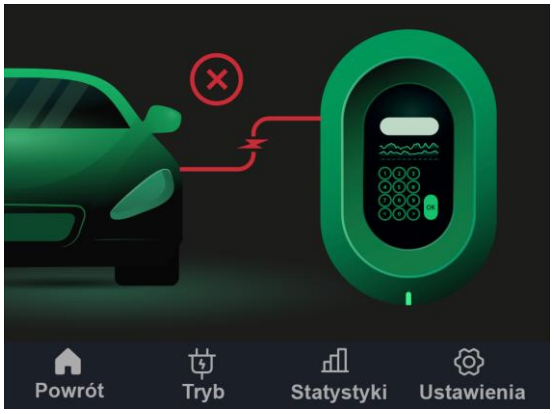
Switch on the main circuit breaker in the distribution board. You will then see the following screen on the charger's display.

Enter: 1, 2, 3, 4
and confirm

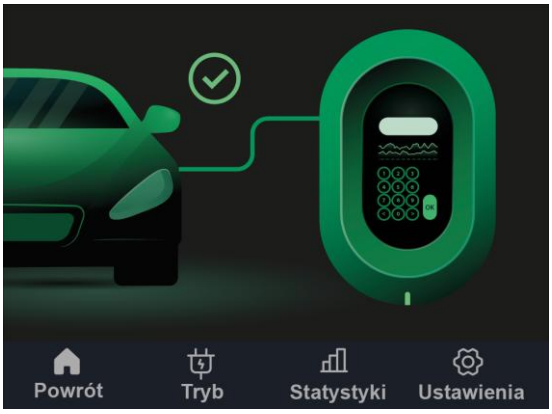
After unlocking the charger, it is recommended to first change the factory code to your own. This option is available in the settings.

The charger menu is intuitive. Below are the main screens:

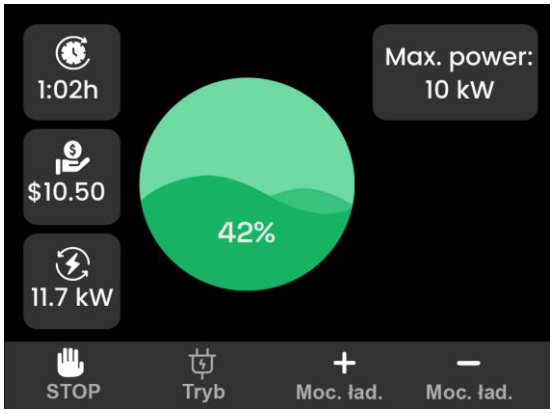
Waiting for vehicle connection



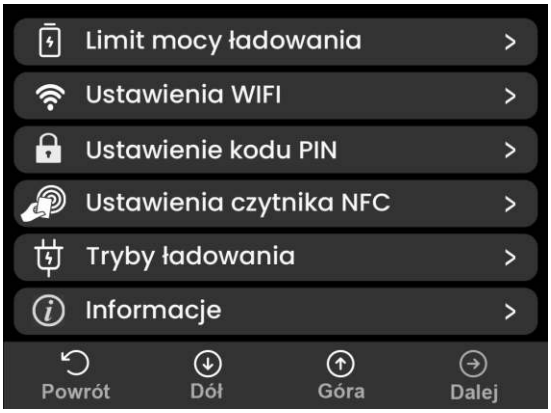
Vehicle connected



Charging in progress



Settings



7.1 Charger Status Indicator

The charger status indicator may emit a steady or pulsing light depending on the current state of the charger. Below is a list of colors and their meanings.

Solid white – Charger is idle, waiting for connection.
Pulsing white – Vehicle is connected but not charging.

Pulsing green – Charging in progress.
Solid green – Charging completed.

Pulsing red – Error.

8. Device Maintenance

All work related to installation, commissioning, disassembly, or servicing of the charging station should be carried out only by individuals with appropriate qualifications and experience.
Before starting any cleaning, make sure the device is disconnected from the power supply.

To ensure long-term and trouble-free operation of the charger, it is recommended to perform the following maintenance tasks every 6–12 months:

1. Cleaning the housing
Use a soft, slightly damp cloth (preferably microfiber) and a mild detergent (without alcohol or solvents).
Gently wipe the entire surface of the housing, paying attention to ventilation and gaps—remove dust, deposits, and insects.
Do not use pressure washers or large amounts of water.

2. Cleaning the touch panel
Clean the touch panel only with a dry or slightly damp microfiber cloth.
Do not use strong detergents, alcohol, or abrasive agents, as they may damage the surface or protective coating.
Avoid excessive pressure while wiping.

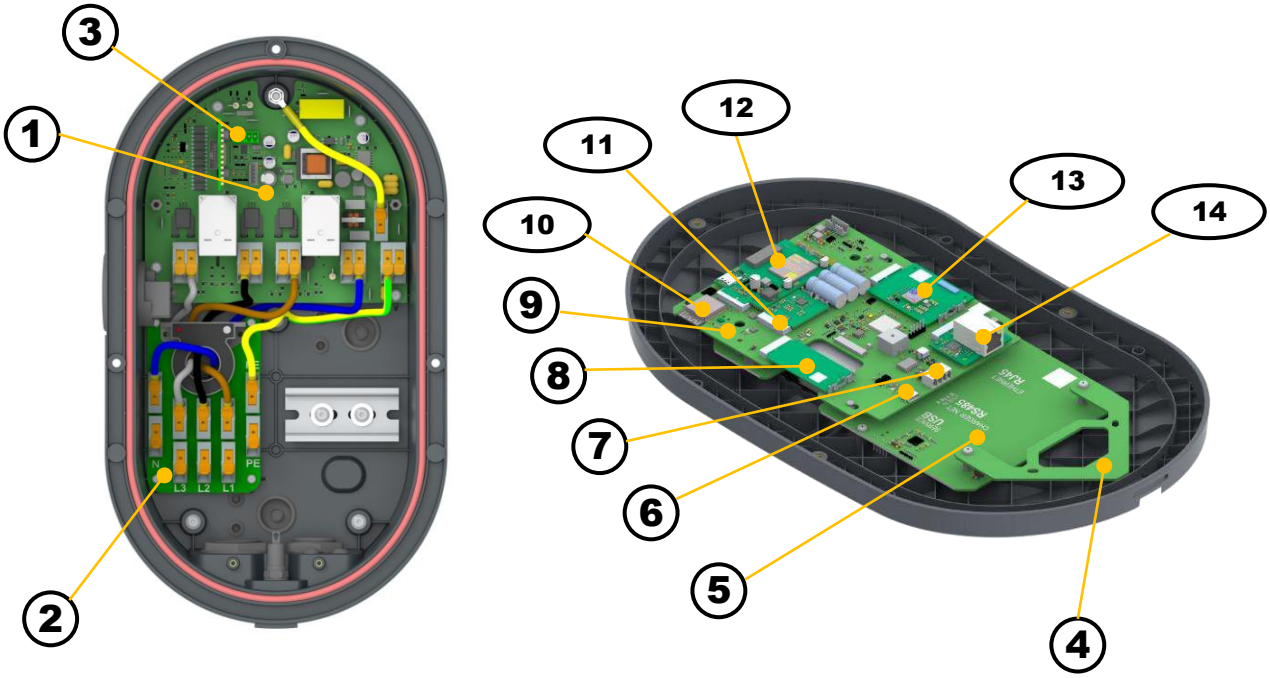
3. Inspection of rubber covers – unused port caps
Regularly check the condition of the caps protecting unused connectors or service openings.
Ensure they are not cracked, brittle, or loose.
If wear or damage is found, replace the cap with a new original spare part from the manufacturer.
Maintaining the seal of the openings prevents moisture and contaminants from entering the device.

4. Cleaning the charging cable socket
Visually inspect the charging cable socket for dirt, sand, moisture, or signs of corrosion.
Use compressed air to remove any debris from inside the socket. If necessary, gently wipe the interior with a dry, soft cloth. Never use damp tools or cleaning agents directly on the contacts..

9. Device Servicing

The charger can be repaired on-site by a person with the appropriate qualifications.
Before performing any work on the device, be sure to read the Safety Instructions described at the beginning of this document (page 3).
It is possible to replace damaged boards in the charger, as it has been designed for quick module replacement—there are no permanent (soldered) connections.
Additionally, the functionality of the charger can be expanded by adding extra modules. In such cases, there is no need to send the charger to a service center—the installation can be done directly on-site.

9.1 Placement of Charger Boards and Modules



1. Main board
2. Connection board
3. Connector for communication with the DIN rail energy meter
4. LED indicator board
5. Display and touch panel board
6. USB diagnostic port
7. RS485 connector
8. Radar module
9. Communication module
10. Built-in WiFi modem
11. RFID/NFC module
12. 2G/LTE module
13. Smart home module
14. Ethernet communication module

10. Disposal

All work related to installation, commissioning, disassembly, or servicing of the charging station should be carried out only by individuals with appropriate qualifications and experience.

If it is necessary to return the charging station to the manufacturer, please register your request at www.stag-ev.com. After submitting the request, you will receive detailed instructions on how to proceed.

Electrical and electronic devices may contain components that are hazardous to the environment and human health if not properly disposed of.
Equipment marked with the crossed-out wheeled bin symbol must not be disposed of with mixed household waste.
Instead, it should be taken to a designated e-waste collection point.
Information about local collection points and schedules can be obtained from your municipal office or the website of your local waste management system.

Manufacturer:
AC S.A.

Ul. 42 Pułku Piechoty 50
15-181 Białystok
Polska

www.stag-ev.com

STAGEV