

Green Cell

HabuDen

Charging point for electric vehicles Installation instructions Service guide

For: EVGC021A2250, EVGC021A2275, EVGC021B2250, EVGC021B2275

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1. Introduction

HabuDen is a technologically advanced, intelligent charging point with maximum 22 kW power, suitable for all electric vehicles equipped with a 2 connector. Wi-Fi and Bluetooth communication guarantees charging control via the intuitive GC application. Moreover, the slim design of the charging point means that it takes up a minimum of space at the installation site.

2. Certificate of correct installation

<https://docs.greencell.global/manuals/EVGC02/GC-HabuDen-Installation-Certificate.pdf>

Certificate of correct installation

I declare that the charging station with serial number:

.....

located at..... was installed in accordance with the manufacturer's installation instructions by an authorized electrician with authorization number.....

Name and address of the entity installing the device:

.....

.....

Name and surname of the person authorized to issue the certificate:

place, date signature

3. Safety rules

SAFETY RULES

Please exercise caution when using and disposing of the device. Improper use and failure to follow the instructions below may pose a threat to life, health and property.

Note: The charging point is not equipped with an emergency stop switch. Before installing HabuDen, it is required to install in the electrical network a residual current circuit breaker type A 30mA (RCD A) and curve MCB C, limitation class 3, short-circuit capacity of the circuit breaker 6 kA 40A.*

* HabuDen already comes with RDC-DD (DC sensing device) compatible with IEC62955.

Important: EV power devices are not able to exchange information with the installation regarding the request and presence of ventilation.

/ General precautions

- Read all the following precautions carefully before using the device.
- The device is intended for use only in electric vehicles with a Type 2 connector.
- The power limit set for the device must match the parameters of the power supply network.
- The device can be used in places with unrestricted access.
- The device can be used by ordinary people.
- Before turning on the device, make sure that the input voltage, frequency and other parameters of the device comply with the specifications of your vehicle and power grid.
- Use and store the device within the temperature range of - 25°C to 40°C (- 13°F to 104°F).
- Do not install the device in a place exposed to fire or extreme temperatures, and avoid places exposed to direct sunlight for many hours. If the device is exposed to strong sunlight or heat for an extended period of time, its temperature may exceed the permissible operating range.
- Protect the device from excessive dust and fumes.
- Keep the device away from flammable and explosive materials and gases.
- Always keep the Type 2 connector completely dry and clean.
- Do not insert any objects or body parts into the device.
- Do not operate the device with wet hands.
- Do not use the charging cable with an extension cord or adapter.
- It is required that the electrical installation used to charge an electric vehicle be checked by an electrician.
- Keep the device away from children and animals.
- Persons with limited capabilities or lack of experience and knowledge must be supervised or instructed before using this appliance.
- Use the device in accordance with the general safety rules and safety requirements for working with electrical equipment in force in your country or region.
- Make sure you know what to do in the event of electrical accidents and fires.
- Use the device in accordance with local requirements and restrictions.
- When installing, using, maintaining and servicing the device, comply with local environmental protection and waste disposal regulations to avoid environmental pollution.
- Comply with BHP regulations when installing, using, maintaining and servicing the device.

/ Precautions for installation

- It is recommended that the device be installed by an electrician with appropriate qualifications and certificates.
- When assembling the device, use insulated tools and follow appropriate safety measures.
- The instructions for use of the device and applicable norms and standards must be strictly observed.
- Report any accident that occurs to your supervisor.

/ General criteria for selecting a location

The device is intended for use indoors and outdoors, and can be used in places with unlimited access. Therefore, it is necessary to ensure appropriate configuration requirements and device protection at the installation site. When choosing a location, the following criteria should be taken into account:

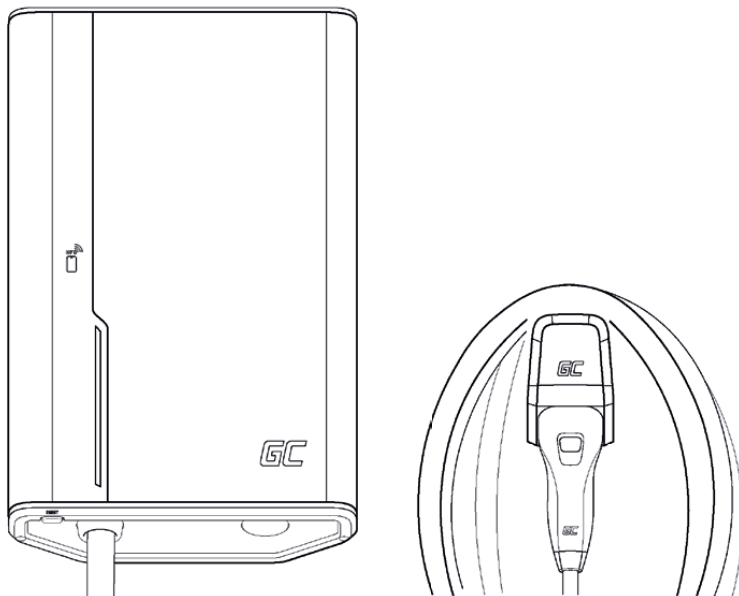
- Local electrical regulations, fire prevention measures and accident prevention regulations, as well as escape routes in the area, must be taken into account.
- The device may only be installed in stationary applications: on walls, poles or equivalent locations and must be permanently connected.
- Mount the device so that it is not in close proximity to pedestrian traffic and that no one can trip over the cables.

Connected charging cables must not cause tripping hazards or obstruct or cut through pedestrian or motorized traffic.

- Install the device in such a way that it can be used by disabled people.
- Do not install the device in places exposed to ammonia or ammonia gas (e.g. in stables or on their premises).
- The mounting surface must be stable enough to withstand mechanical forces.
- Do not install the device in places where falling objects could damage it (e.g. suspended ladders or car tires).
- The device cannot be exposed to direct water jets (e.g. from a nearby hand car wash, high-pressure washer, garden hose).
- The device should be protected from direct rain whenever possible to prevent damage due to ice, hail, etc.
- If possible, install the device away from direct sunlight.
- Install the device outside the potentially explosive atmosphere.
- International installation standards (e.g. IEC 60364-1 and IEC 60364-5-52) and national installation standards and regulations must be followed.

Important: If the device is installed in a place not protected from rain, always hang the cable on the holder included in the kit. Please remember to arrange the connector correctly (see drawing 1), as it covers the pins against raindrops, ensures faster evaporation of moisture and prevents corrosion.

Figure 1



/ Precautions when handling

- Check whether the packaging and device have not been damaged during transportation. Do not use the device if you notice any damage. In such cases, please contact the manufacturer's warranty service.
- Do not use sharp objects to open the package. This may damage the device.
- Do not leave the packaging or its components near children. Packaging components in the hands of children may cause choking.
- Regularly inspect the device for visible structural damage, which may pose a risk of electric shock when working with a damaged charging station.
- Before charging, make sure the device is not damaged and the connector is dry and clean.
- Connect the device only to a properly installed and properly grounded power supply network.
- Never open the device's casing yourself. Touching live parts can be fatal.
- To avoid exposure to electric shock, never disconnect a Type 2 connector while it is energized. Before disconnecting the charging cable, you must first stop the charging process in your vehicle.
- Never use the device with a tangled or coiled cable. This may lead to overheating. If this happens, do not touch the cable with bare hands.
- Do not use the device if it is visibly damaged, if damage is suspected, or if you suspect any critical failure.
- Do not use the device if it does not function properly and in accordance with the instructions. In this case, consult the manufacturer, authorized dealer or electrician.

- If you notice damage to the device while operating, first stop the charging process in the vehicle and then disconnect the cable from the vehicle.
- If the device is damaged, repairs can only be carried out by the manufacturer.
- Arbitrary modification or interference in the structure, electronics or software of the device is prohibited.
- Failure to follow any of the above precautions will void the warranty and may result in damage to the device, electrical system or vehicle.
- Improper use of the device and failure to follow any of the above precautions may result in fire, and in extreme cases may lead to loss of health or life due to electric shock.
- The manufacturer is not liable for damage to property, loss of health or life in the event of failure to comply with any of the above precautions.

At the end of its useful life, do not dispose of this product with normal household waste. For proper disposal, recovery and recycling, please take it to a designated collection point.

The "Fire protection measures" chapter refers to the requirements of the Office of Technical Inspection in Poland

/Fire protection measures

If you notice a fire, immediately notify the residents of the danger zone and call the fire brigade (tel. 112). In case of fire, do the following:

- disconnect HabuDen and, if possible, other electrical devices,
- notify the State Fire Service,
- notify people near the fire about the need to evacuate,
- start extinguishing the fire with extinguishing agents.

Important: Live electrical equipment must not be extinguished with water, foam or other solutions containing water due to the risk of electric shock. Dry powder, CO2 extinguishers or sand can be used to extinguish them.

Maintenance and cleaning

Follow the instructions below to keep your device clean and safe:

- Before cleaning and maintenance, disconnect or turn off the fuse connected to the device.
- Only clean the outside of the device.
- Use a slightly damp or antistatic cloth.
- Do not use any detergents or chemicals to clean the device.
- Always keep the connector dry and clean. If wet, allow it to dry completely before use.

4. Technical specifications

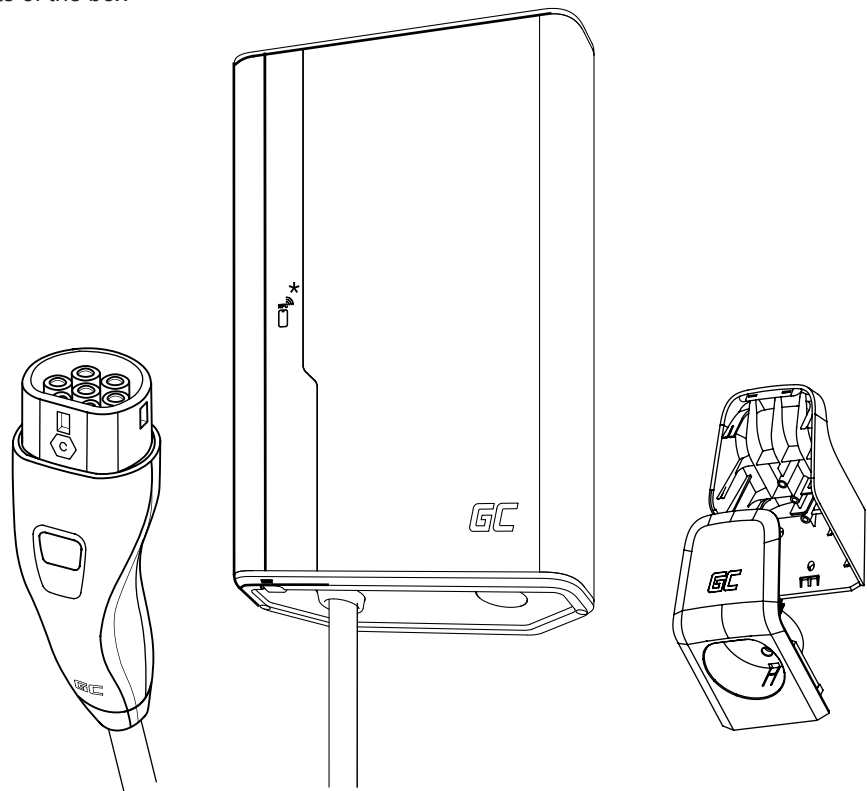
Name	HabuDen
Model	EVGC02
Electrical data	
Voltage	230 V (1 phase) 400 V (3 phase)
Rated current	32 A (max)
Max. charging current settings	6 A / 8 A / 10 A / 13 A / 16 A / 20 A / 25 A / 32 A
Rated frequency	50-60 Hz
Total power	22 kW
Overvoltage category	III
Rated residual current	6 mA DC
Non-operational residual current	3 mA DC
Residual current circuit breaker	Built-in RDC-DD 6mA DC ** RCD A must be additionally installed
Grounding/grounding system	TT/ TN-C-S/ TN-S/ IT
Connectivity	Wi-Fi 2.4GHz, Bluetooth
Device class	Class II equipment with functional earthing
Low voltage electrical installation	AEVCS (low voltage switchgear and controlgear assembly for electric vehicle charging stations)

Rated surge withstand voltage	4kV
Rated diversity factor (RDF)	1
Circuit breaker	MCB 40A curve C, limitation class 3, short-circuit capacity 10 kA must be additionally installed
Physical properties	
Charging point module dimensions (mm)	338 x 211 x 73
Cable length	5 m (EVGC021A2250, EVGC021B2250) / 7,5 m (EVGC021A2275, EVGC021B2275)
Weight	5,51 kg (with 5 m cable) 6,72 kg (with 7,5 m cable)
Environmental conditions	
Operating temperature	-25–40 °C (-13–104 °F)
Degree of protection	High mechanical resistance
Protection against water and dust	IP54
Impact resistance	IK10
Storage and transport temperature	-25–40 °C (-13–104 °F)
Altitude	< 2000 m
Humidity	Outdoor: 5 - 95% non-condensing
Standards	
Compatibility with	EN IEC 61851-1:2019 IEC 61851-21-2:2018, IEC 62196-1:2014 IEC 62196-2:2016 ETSI EN 301 489-17 V3.3.0; ETSI EN 301 489-3 V2.2.0:2021 ETSI EN 300 328 Wi-Fi ETSI EN 300 330 V2.1.1 2017 ETSI EN 300 220-2 V3.2.1 2018 RED Directive 2014 / 53 / UE and Directive RoHS 2011 / 65 / UE
Output (vehicle connector)	Type 2
Electric vehicle charging mode	3 mode
Classification EMC	Environment B

5. Assembly instructions

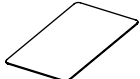
01

Presentation of the contents of the box



Wallbox with 2 plug

Handle parts

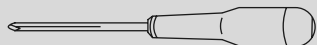
4 × 	screw 5 × 80, head PZ2 with foam washer
4 × 	pin 8 × 65
3 × 	screw 4,5 × 40, head PZ2
3 × 	pin 6 × 30
2 × 	screw ST2,9x13
	handle locking spring
	additional wallbox cable seal
	card NFC *

*optional, depends on version

02

List of required tools

Tools with voltage rating 1000 V



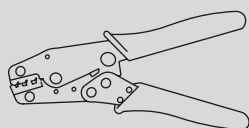
PZ2 screwdriver



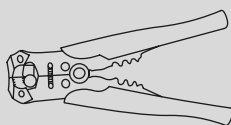
PH1 screwdriver



2,5 mm flat-head screwdriver



Wire crimper



Insulation stripper



Pliers

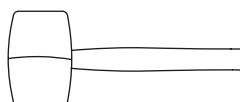
Tools without rated voltage 1000 V



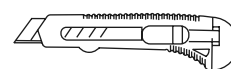
8 mm concrete drill bit



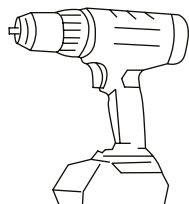
6 mm concrete drill bit



Hammer



Knife



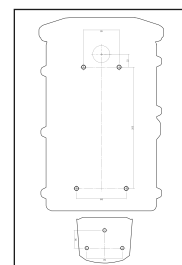
Electric drill



Spirit level



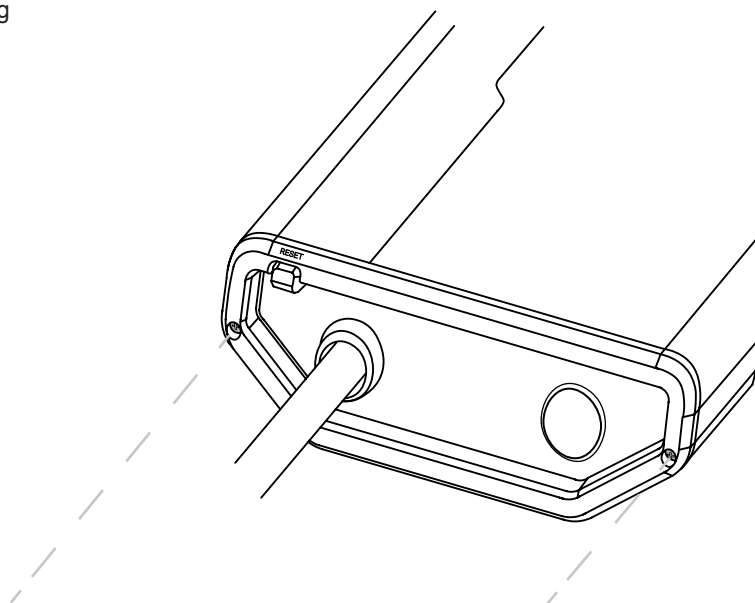
Measuring tape



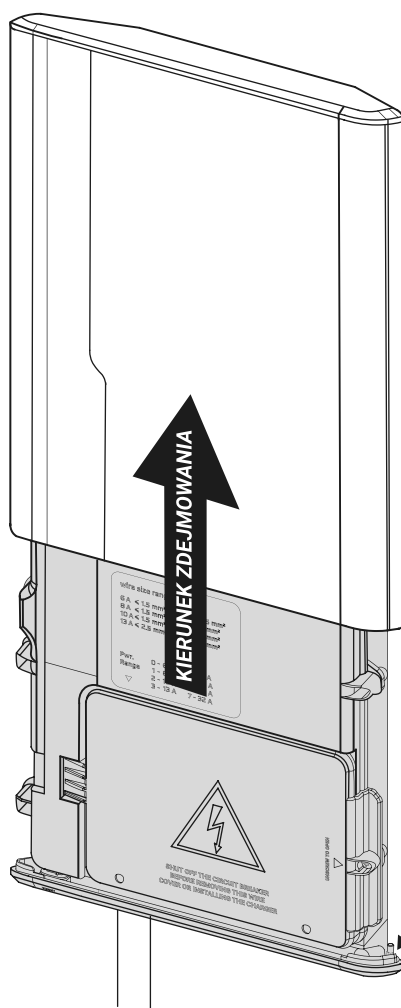
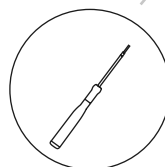
Cardboard template from a box

03

Removing the aluminum housing



Remove the two screws using the PH1 screwdriver

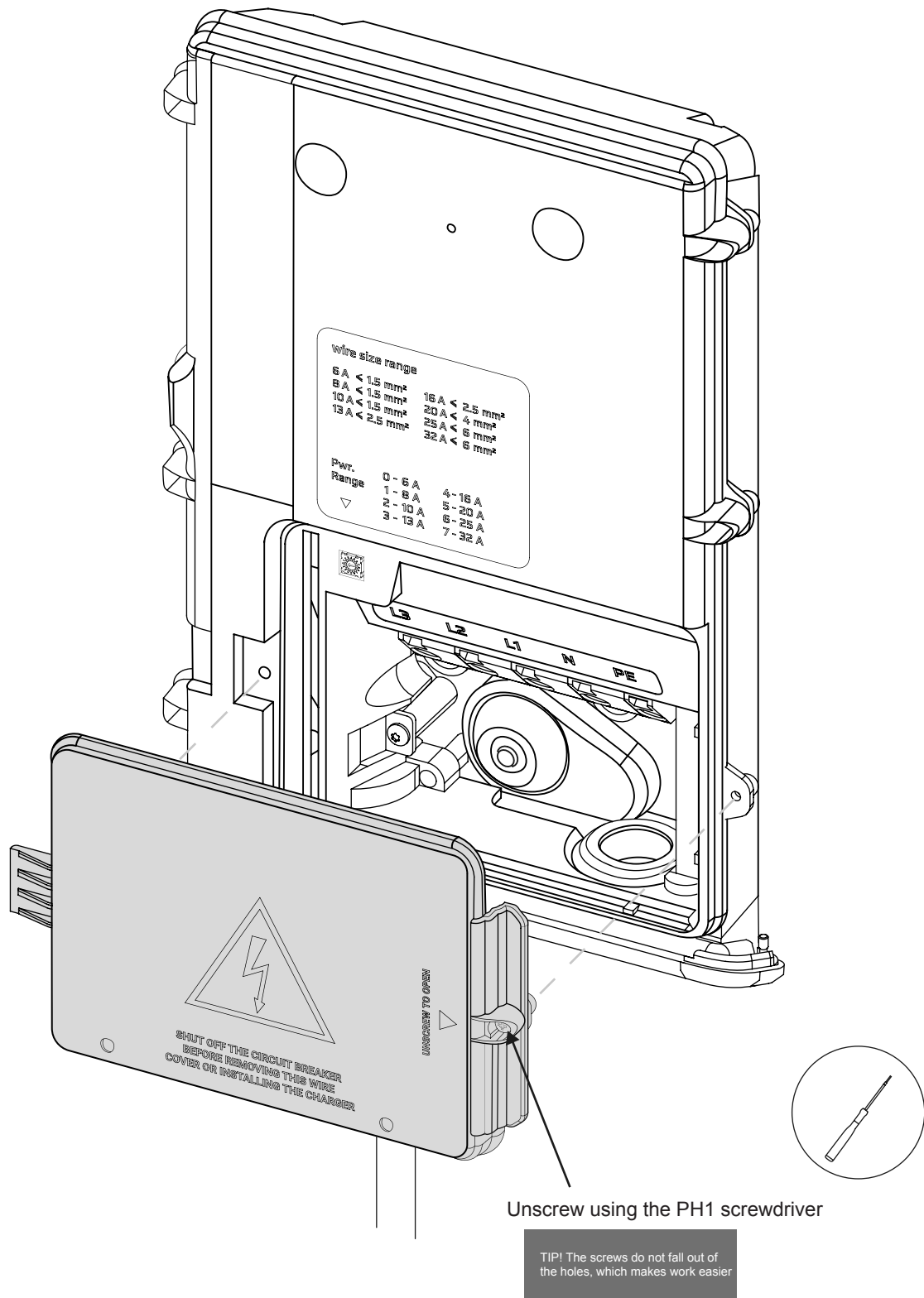


TIP! The screws do not fall out of the holes, which makes work easier.

Remove the aluminum casing from the main body of the charger

04

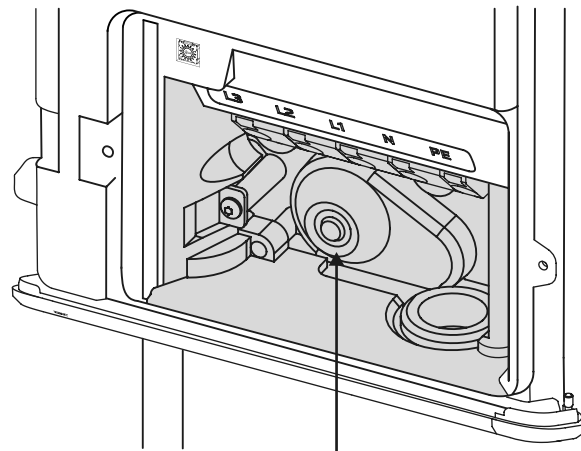
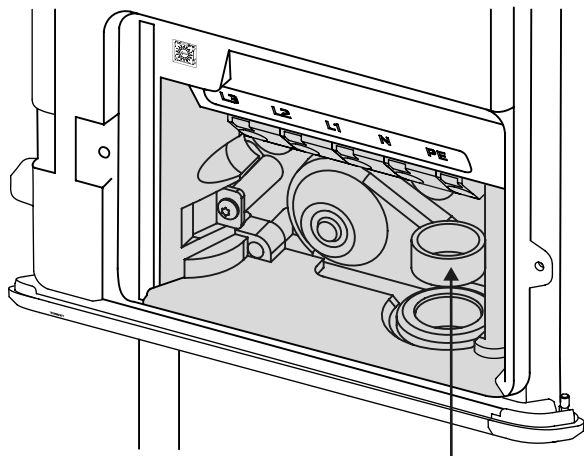
Removal of the flap



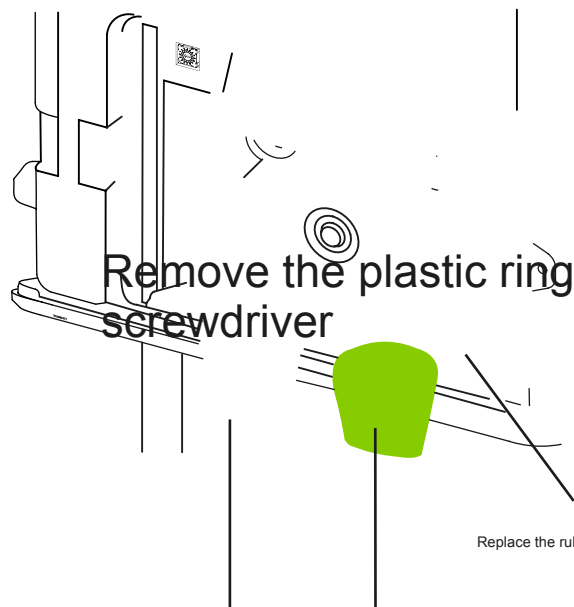
05

Cabling options

POWER CABLE FROM THE BOTTOM

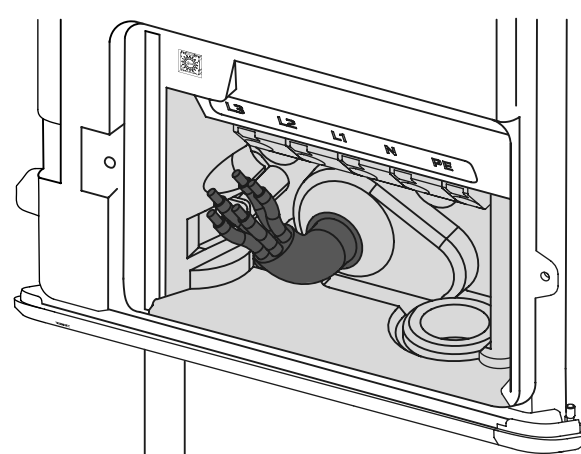
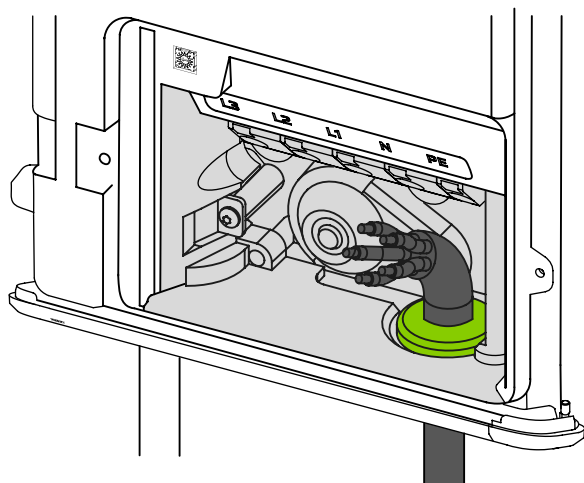


Cut a hole with a knife with a diameter slightly smaller than the diameter of the power cable



Remove the plastic ring with a flat-head screwdriver

Replace the rubber gasket with the green one with a hole included in the kit

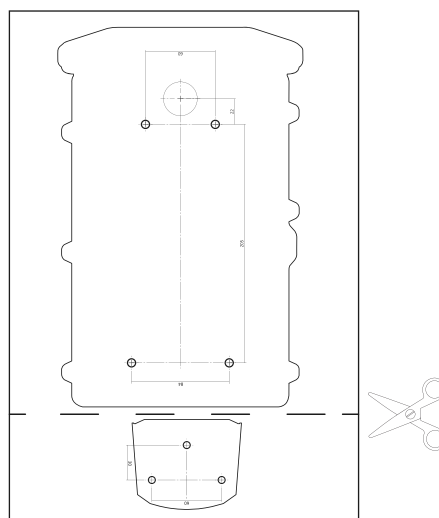


06

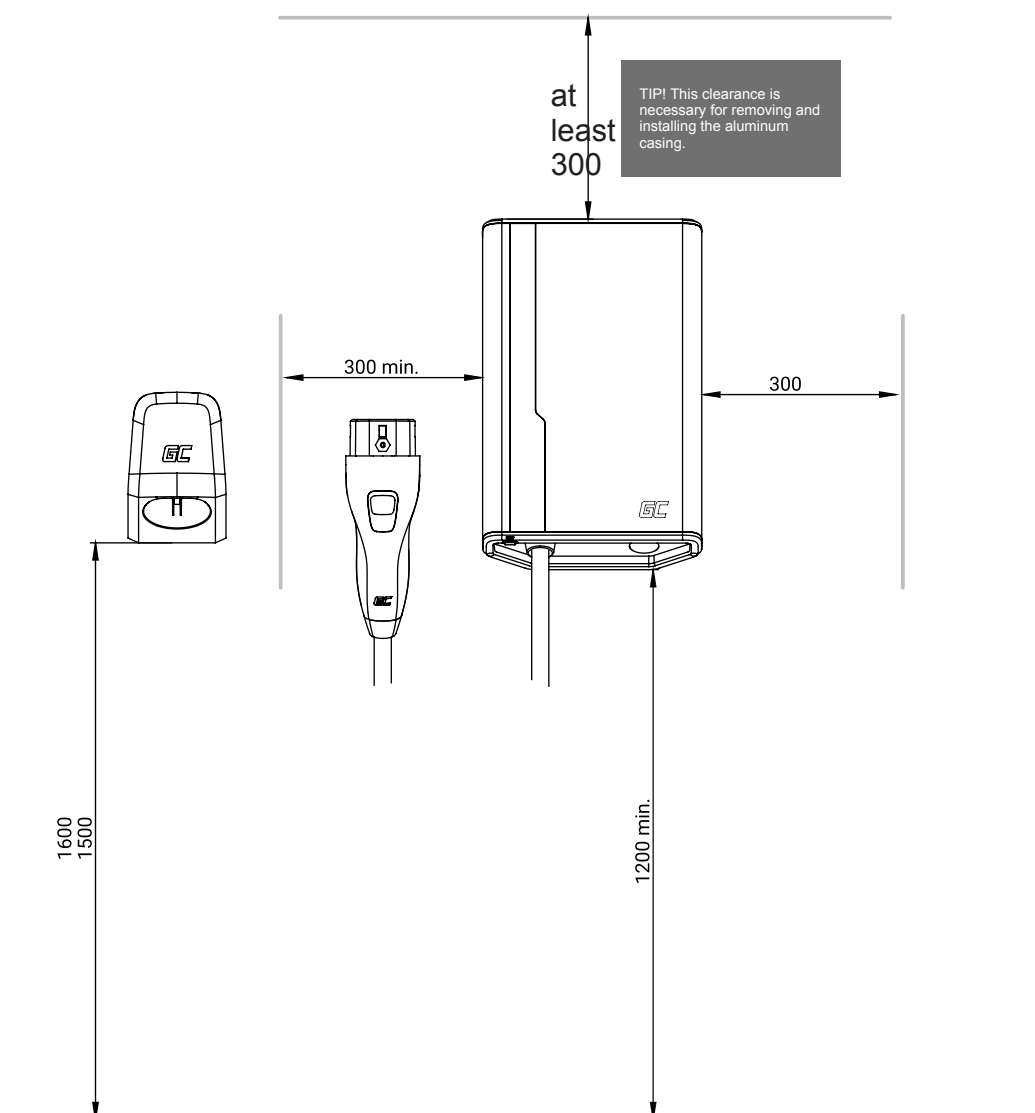
Wall mounting

Use a cardboard template and a level to drill the mounting holes. Pay attention to use the appropriate drill size, according to the template. Place the dowels in the holes using a hammer.

ATTENTION! The wall must have a thickness of at least 80 mm.

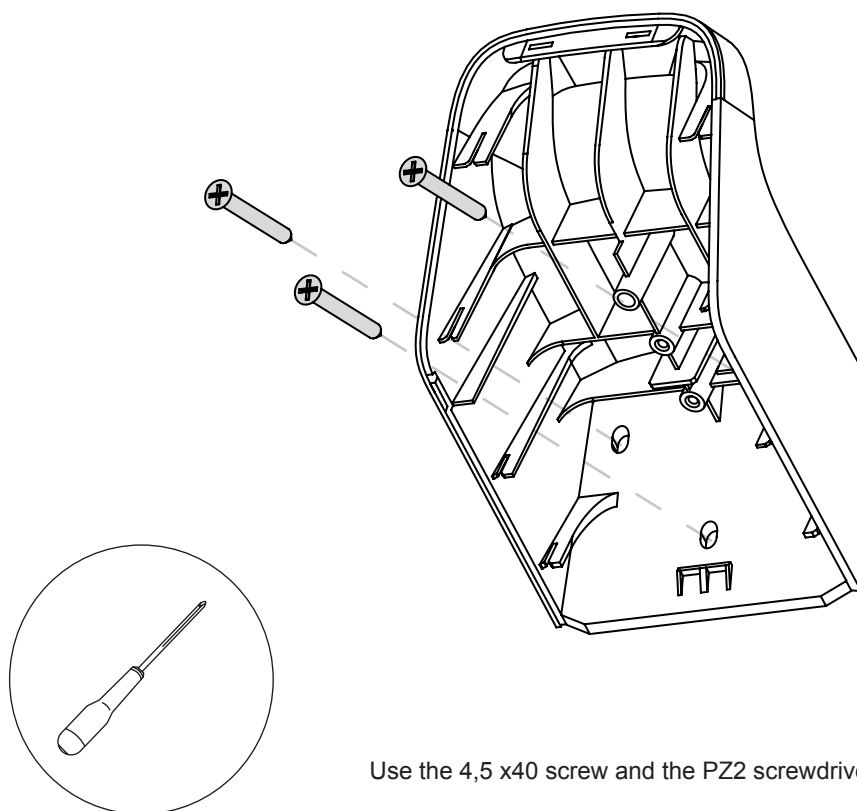


INSTALLATION SPACES



07

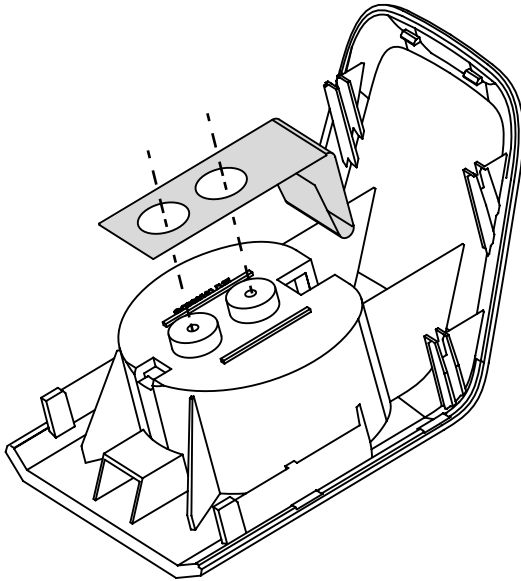
Hanging the main body of the handle



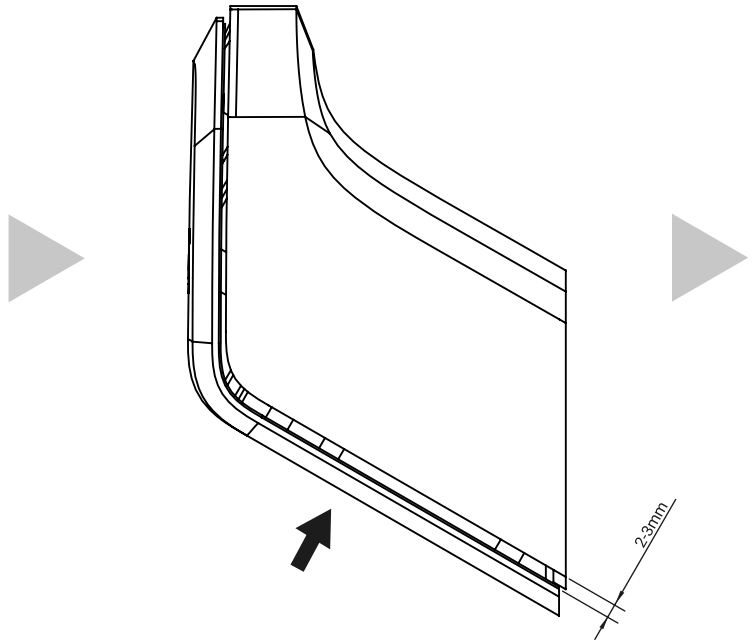
Use the 4,5 x40 screw and the PZ2 screwdriver

08

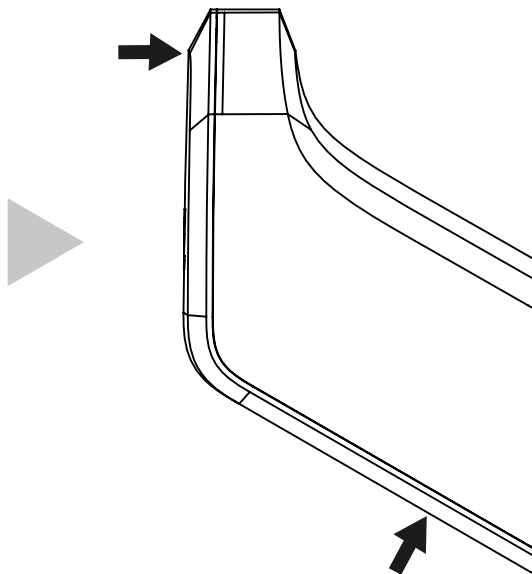
Fixing the front handle body



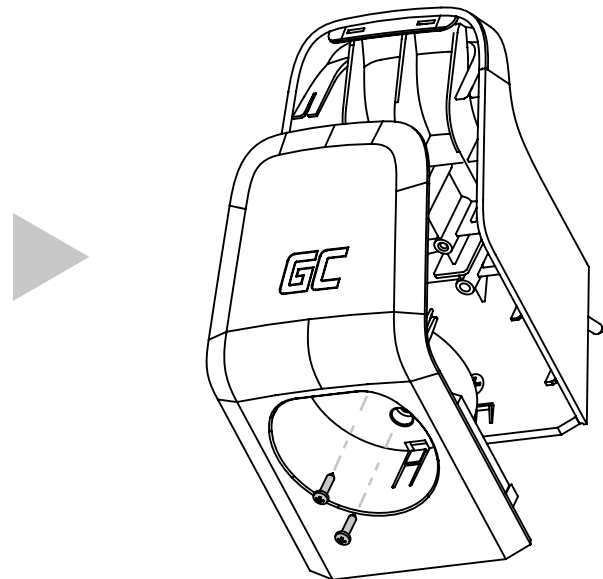
Insert the spring element



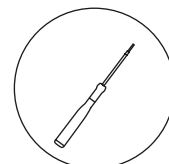
Align the ribs without force to the gap 2 - 3 mm between the parts in the directions indicated



Press the parts together at the top and bottom until the gap closes and you no longer hear any clicking sounds

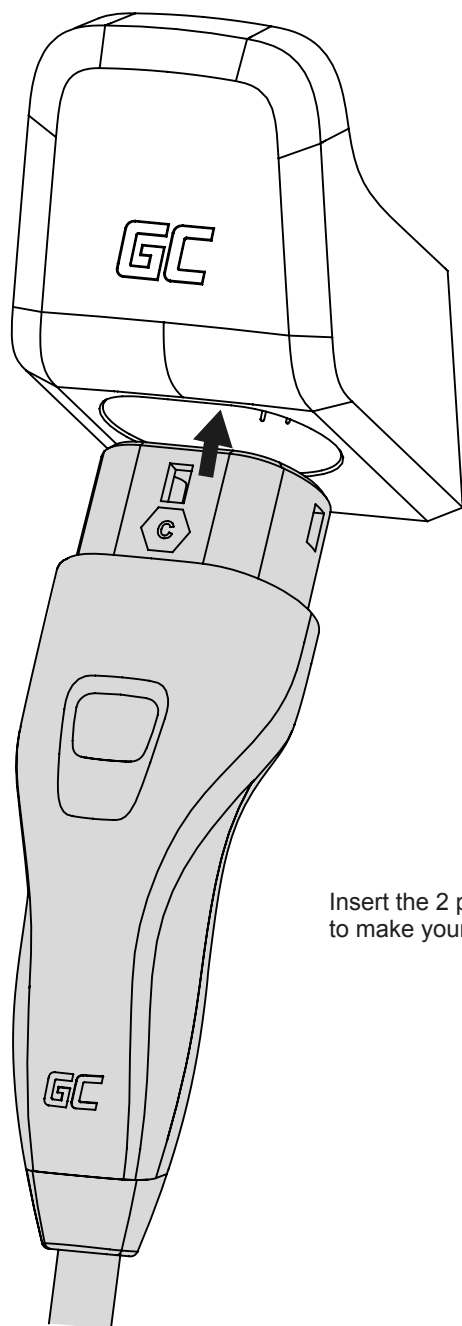


Attach the 2 holder with screws using the PH1 screwdriver



09

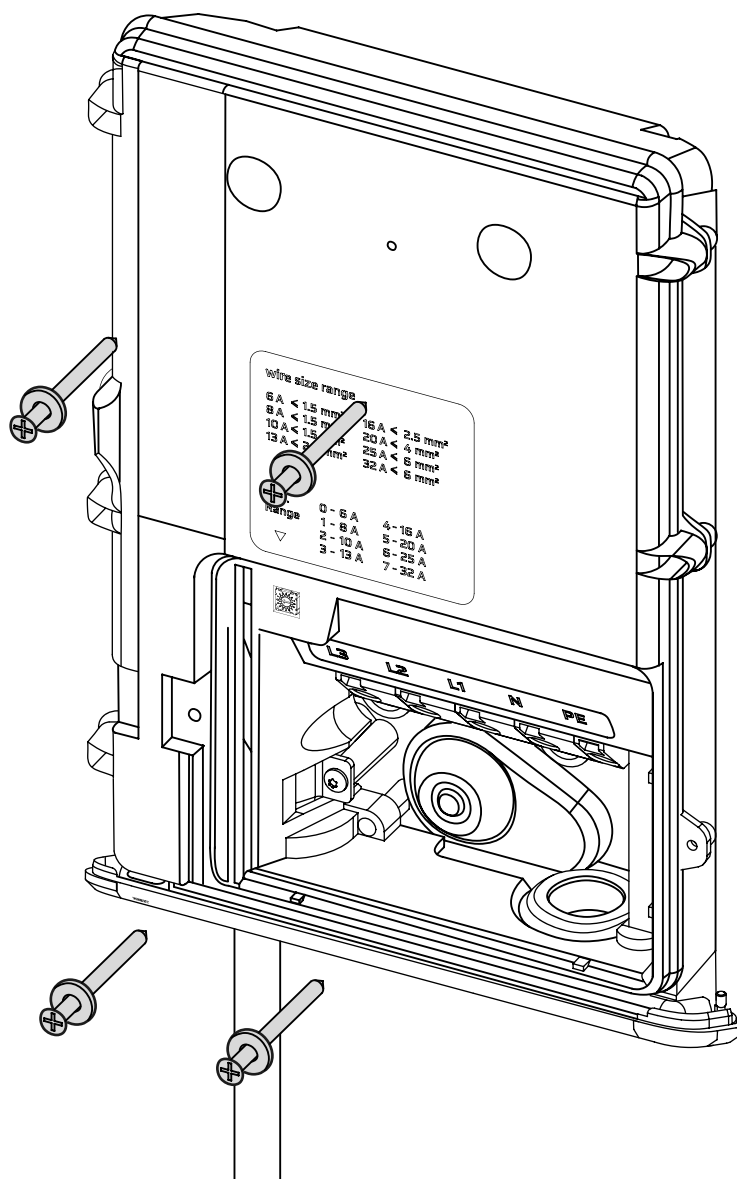
Hanging the plug-in type 2



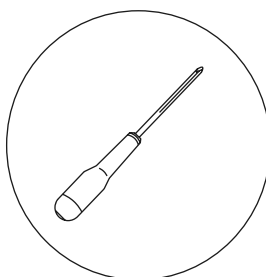
Insert the 2 plug into the holder and hang the cable on the holder to make your work easier.

10

Hanging the wallbox

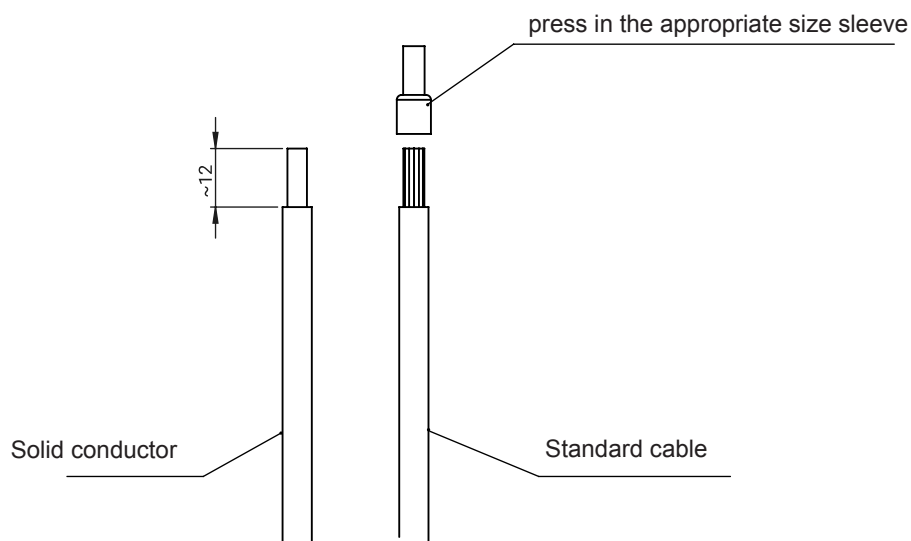


Attach the charger to the wall using the four included screws with foam washers. Use the PZ2 screwdriver.



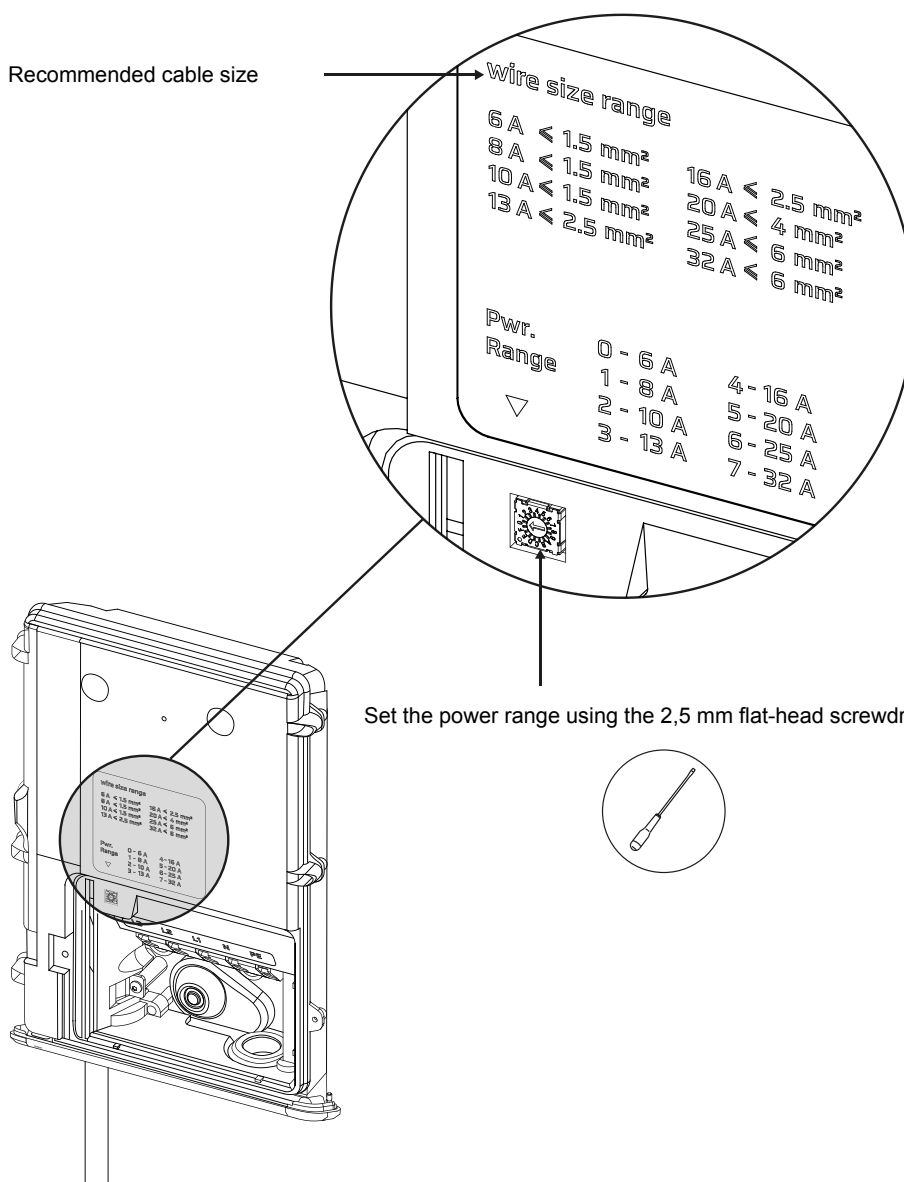
11

Cable preparation



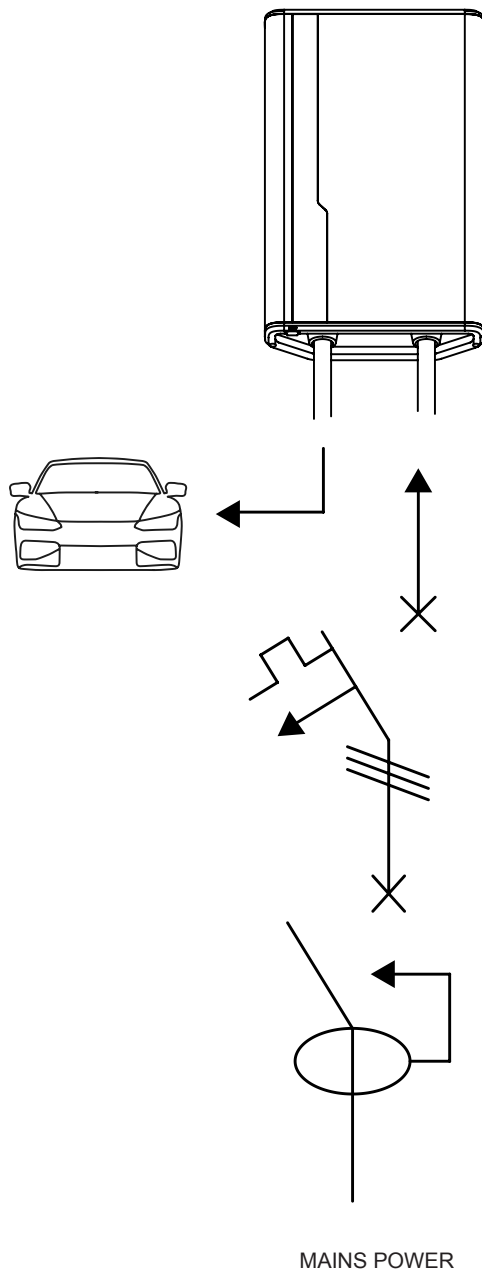
Select the current value

Recommended cable size



12

Power connection options



The Habuden charger is equipped with a residual current circuit breaker (RCD -DD) compliant with the IEC62955 standard. The charger is not equipped with an emergency stop switch. It is required to install a type A residual current device 30mA (RCD A) and a MCB Curve C class 3 miniature circuit breaker with short-circuit capacity 10 kA 40A in the mains before installing HabuDen.

MCB/C32A/10kA

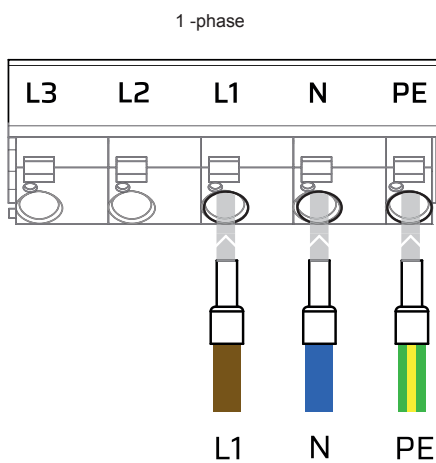
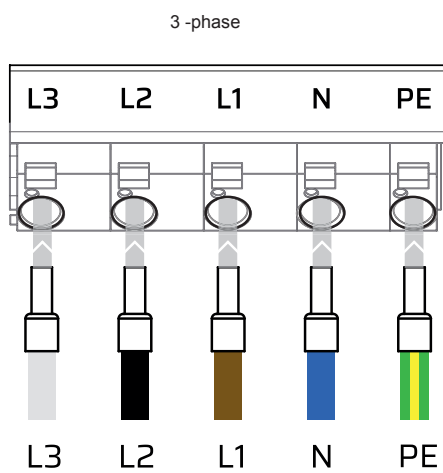
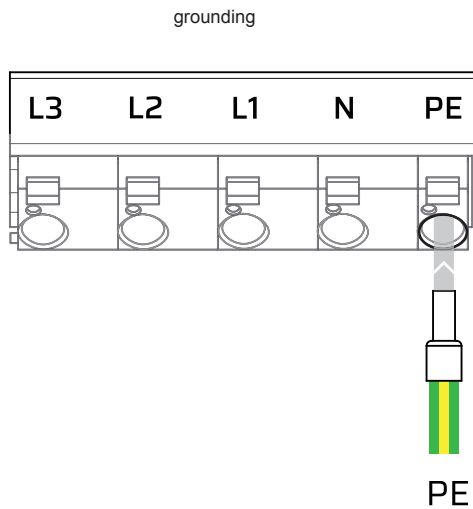
1. Circuit breaker (MCB C 32A 10 kV): It should be selected according to the maximum charging current Habuden. It is recommended to install a 32A protection device with characteristic C. If the device is set to a lower current value, it is correct to install a protection device with a lower current value.

RCD/Type A/30mA/40A

2. Residual current circuit breaker (RCD A 30mA 40A): Residual current circuit breaker with sensitivity 30mA, characteristic A and rated current 40A.

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Power connection options



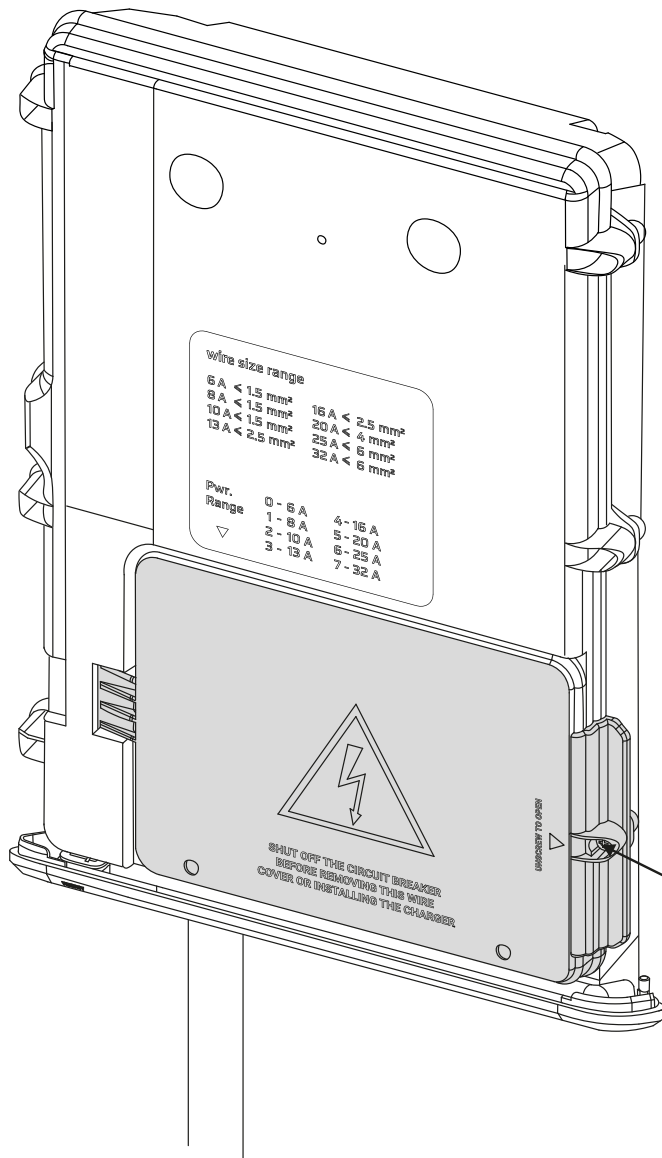
Attention! The cables should be secured in the oval holes. The square hole above the oval one is for inserting a screwdriver and loosening the cable catch.

Scan the QR code to see the instructional video.

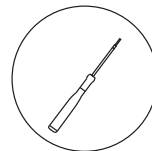


13

Closing the flap

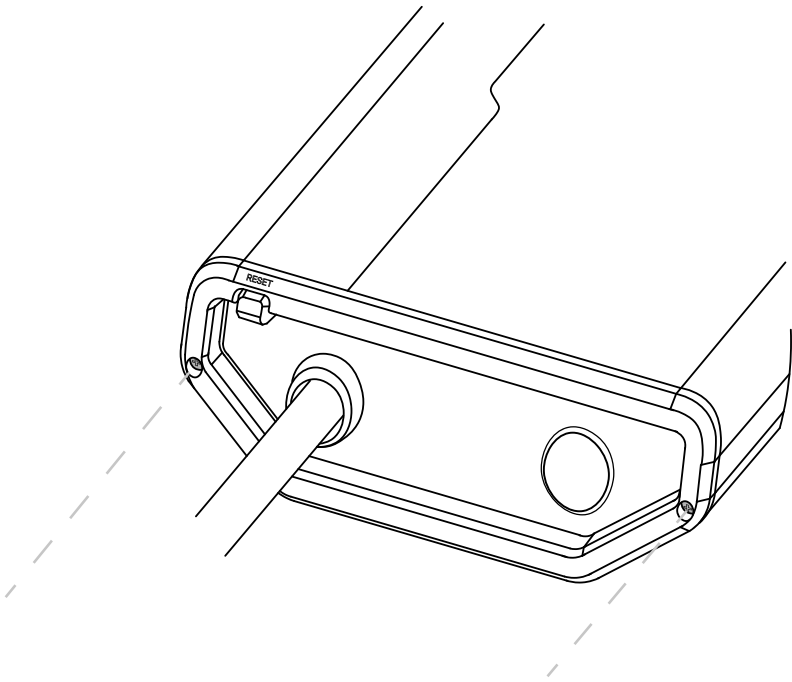
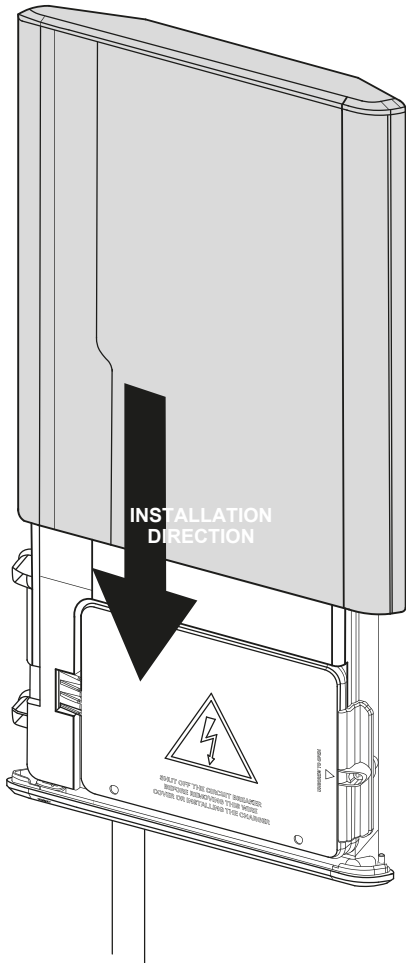


Secure the cover with a screw. Tighten with a PH1 screwdriver.

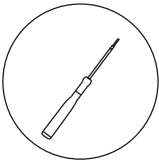


14

Installing the aluminum housing



Tighten using the PH1 screwdriver

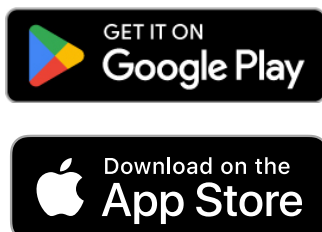


6. Device configuration

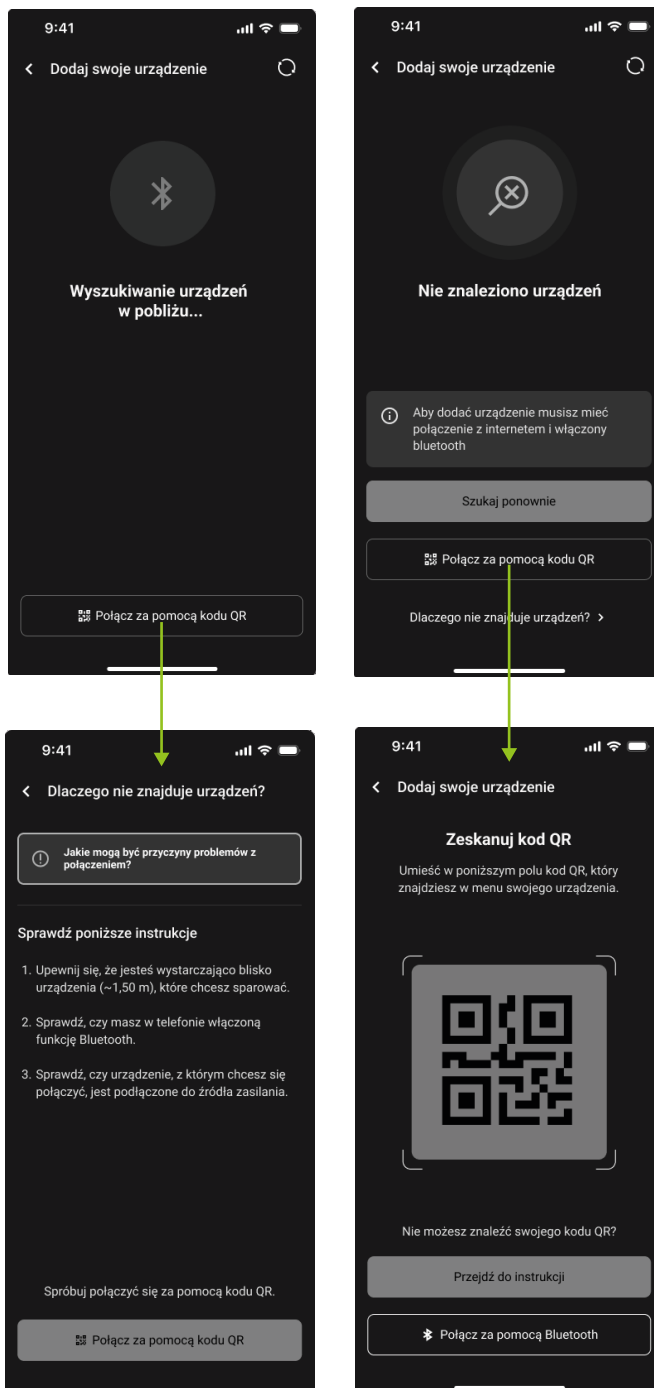
First connection to the application.

To fully use the HabuDen charger, you must connect to the mobile application. The GC application will allow you to configure your device.

Download the app from Google Play or Apple Store.



Attention. Digital products are subject to periodic updates and improvements - the application screenshots below may differ from the actual state. If you have any questions, please contact Technical Support. (page 33)



Pairing with the mobile app (GC app)

The device can be paired via Bluetooth and QR Code.



HabuDen is ready to be paired by Bluetooth for 2 minutes. After 2 minutes, pairing with the device will not be possible.

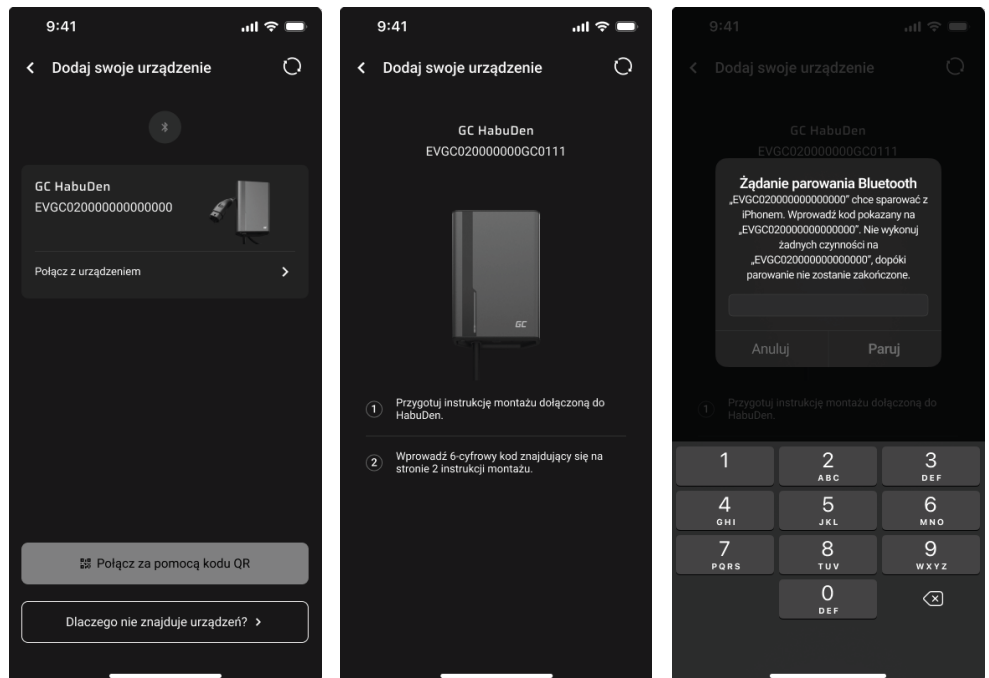
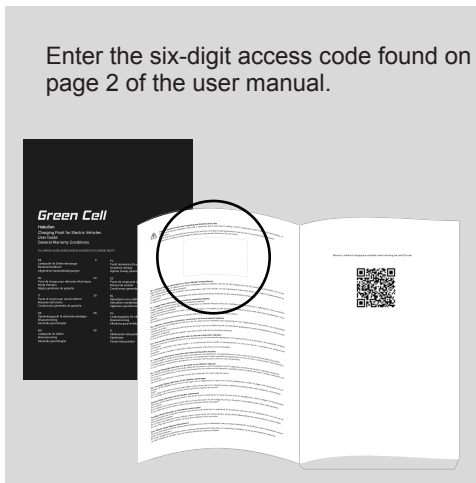
To pair with your device again, reset it. Hold the button located at the bottom of the device housing for approx. 10 seconds, wait for the light signal and start pairing again.

After Bluetooth searches for the device or scans the QR code, the device will be visible on the list and ready to connect.

Follow the instructions below:

- Select the device you want to connect to - it may take a few minutes to connect to your device.

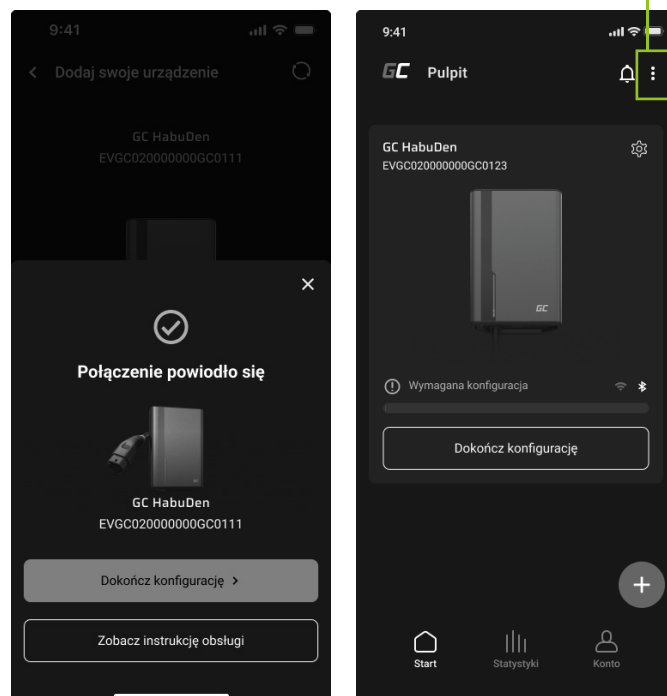
Enter the six-digit access code found on page 2 of the user manual.



If you encounter errors while connecting to your device, please follow the instructions below.

Complete removal of the device.

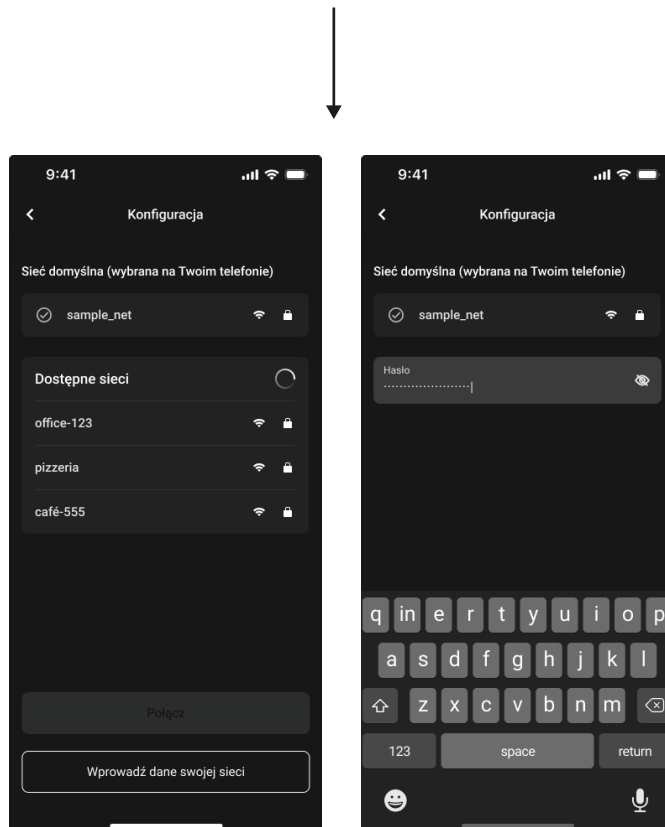
- Go to your device's advanced settings in the app.
- Select Restore factory settings.
- Select Remove device.
- Go to Bluetooth settings of your smartphone.
- Select the paired device list and select HabuDen (device serial number).
- Select Forget this device or Unpair.
- Reset HabuDen and wait for the light signal.
- Reconnect to your device via Bluetooth.



For the HabuDen device to function properly, device configuration must be completed. Select Finish setup and connect to an available Wi-Fi network.

You can select one of the available networks shown on the screen or enter the Wi-Fi credentials.

Attention! To access the charger remotely using the GC application, the Wi-Fi network must be connected to the Internet.

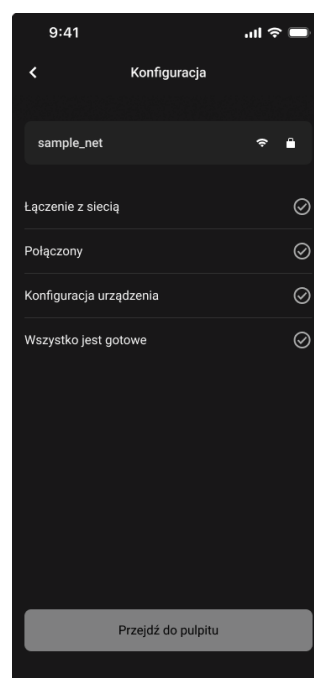


Wprowadź hasło sieci lokalnej i wybierz Połącz

Follow the on-screen instructions during setup. Configuration may take a few minutes.

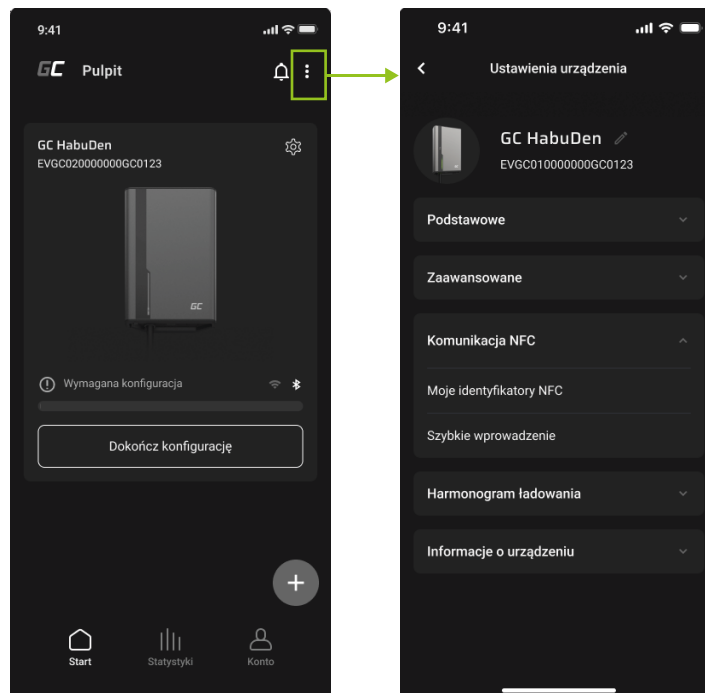
Once confirmed, the setup is complete and the charger is fully ready for use.

If any configuration errors occur, follow the instructions - Complete removal of the device. (page 24)



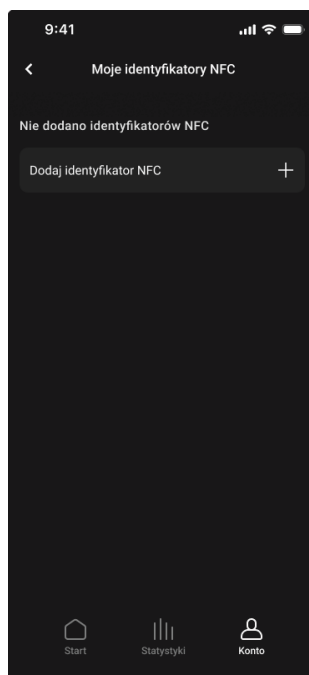
To add a NFC card or tag, go to the basic settings of the HabuDen device.

Select Allow NFC communication.



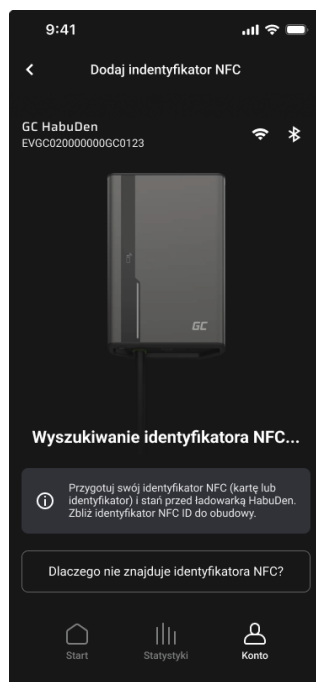
To add a NFC card or tag, go to the basic settings of your HabuDen device.

- Select Allow NFC communication on this device.
- Prepare your NFC card or tag
- Select Add ID NFC
- Check the light signal on the device
- Place the NFC card or tag in the indicated location on the device housing.

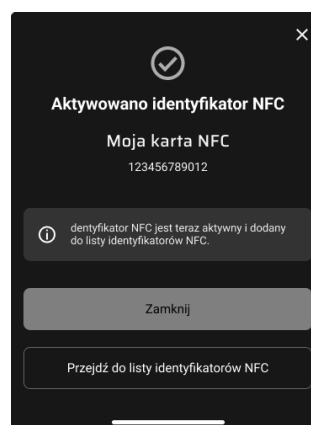
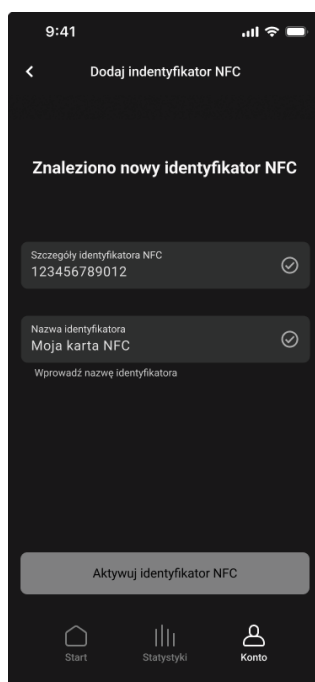


If you encounter errors while adding the NFC ID, please refer to the instructions in the GC application





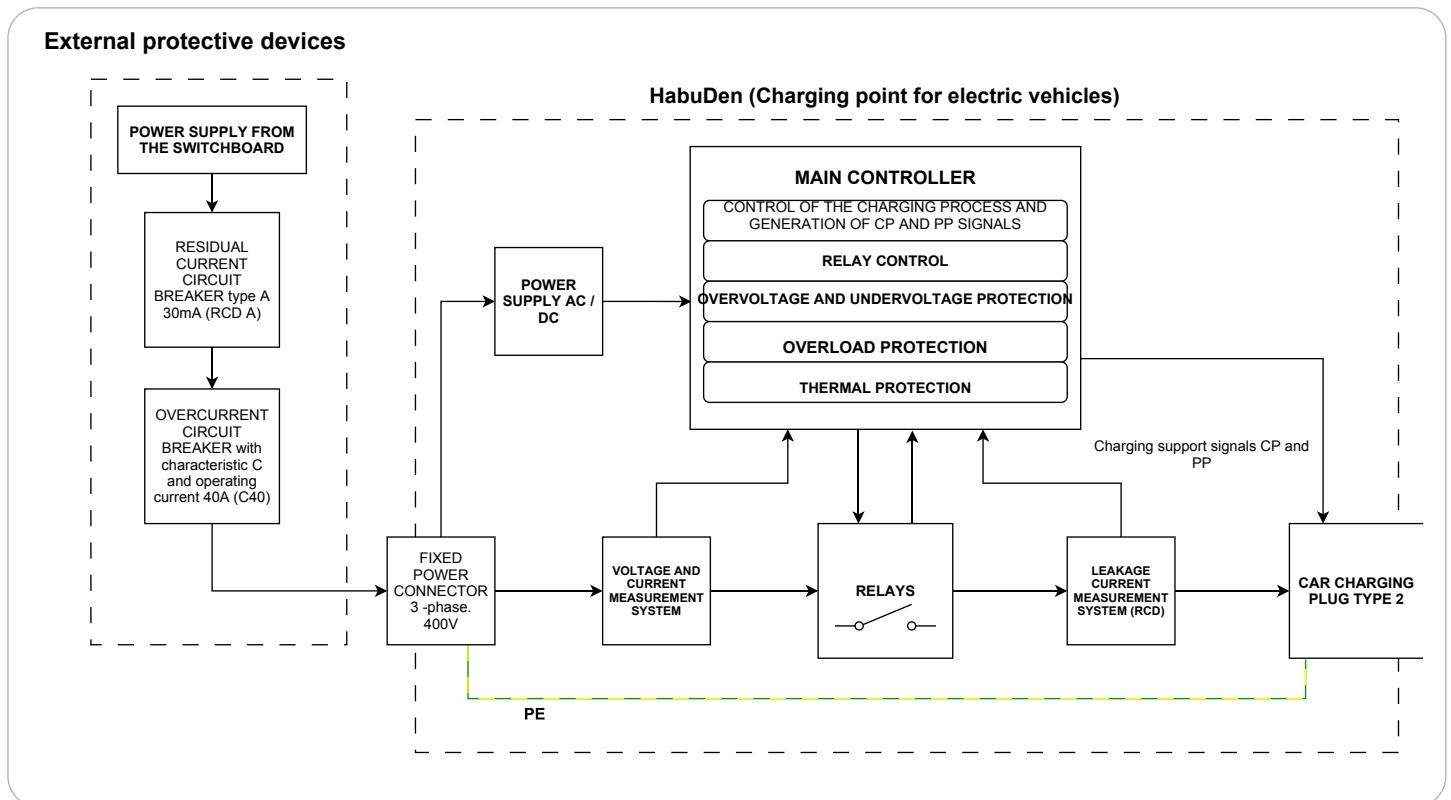
Enter the card or tag name
NFC and select Activate ID
NFC.



7. SERVICE GUIDELINES FOR REPAIRS/REPLACEMENT OF STATION COMPONENTS

- All service activities should be performed only by qualified personnel.
- Do not attempt to repair HabuDen yourself.
- Removing the plastic cover of the Habuden station exposes you to the risk of electric shock!
- Before carrying out any service work, disconnect the power supply to the charging station at the power source (switchboard/connection) and secure it against accidental reconnection!
- Before starting service work and after completing it, it is advisable to take photos of the device's condition. Photos should be attached to the repair/service report.
- Damaged components can only be replaced with new, unused ones with identical nominal and technical parameters.
- During the warranty period, replacement of components and repair of the station may only be performed by the manufacturer or an authorized entity.
- After completing the repair work, check the functionality of the station in accordance with points A1-A6 of the manual below and confirm it with an appropriate protocol.

Block diagram necessary for servicing and repairing the device



7.1 PERIODIC TECHNICAL INSPECTION OF THE STATION

RISK OF ELECTRIC SHOCK!!! Before starting any work, disconnect the power supply to the charging station at the switchboard/connection point and secure it against accidental re-powering.

	Test name	Frequency
A1	External visual inspection	At least once a year
A2	Measurement of the continuity of protective and equipotential conductors	Once a year
A3	Cable insulation resistance test	Once a year
A4	Measurement of station grounding resistance	Once a year
A5	Measurement of the effectiveness of protection against electric shock	Once a year
A6	Verification of the correct operation of residual current circuit breakers	Once a year

All service activities should only be performed by qualified personnel. Do not attempt to repair the station yourself.

Do not repair the Habuden charging station yourself. Opening or removing the covers of the Habuden charging station exposes you to the risk of electric shock!

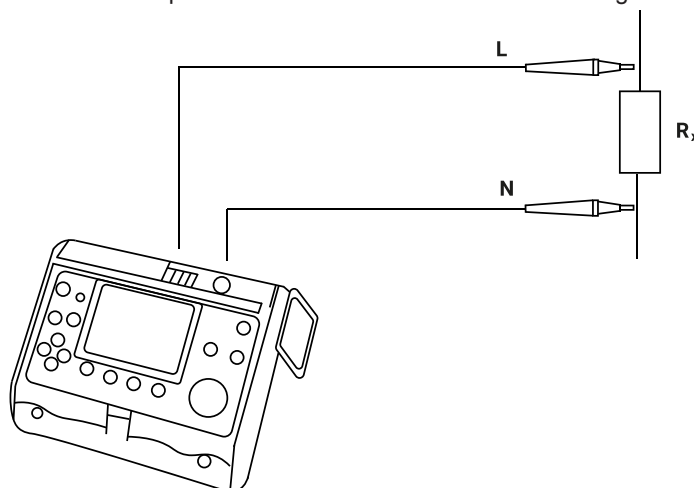
It is recommended to carry out an annual technical inspection of the charging station covering points A1-A6. After each service operation, a service report must be prepared.

A1 Visual inspection of the station and installation site

The station, installation site and surroundings should be visually assessed for possible mechanical damage, irregularities and threats. The inspection should be carried out in light conditions guaranteeing the detection of potential damage and from a distance enabling proper assessment of the inspected object. Visually assess the technical condition of the charging cable - plug/cable. Assess the condition of the insulation along the entire length of the cables and the technical condition of the connector (pins and housing). The result is positive if no damage is found and the device is in satisfactory condition. The result is negative if the condition is unsatisfactory or the device is damaged. The device must be repaired or temporarily taken out of service.

A2 Continuity measurement of protective and equipotential conductors

In accordance with the requirements of the standard, the electrical continuity of protective conductors in main and supplementary equipotential bonding and live conductors in the case of ring circuits should be measured. According to the PN-EN 61557-4 standard, continuity measurement should be performed with a current of 200 mA and higher.



Additionally, with the meter terminals open, the voltage should be in the range of 4-24 V. The required measurement accuracy should be greater than 30%. The continuity of the protective conductor should be measured both on the device's power supply terminals and on the plug entering the car socket (Type 2).

The method of performing wire continuity measurements is shown in the figure above. The measurement is performed with direct current. The continuity condition is considered to be met if the resistance of the entire single equipotential bonding or protective connection (conductors and their connections) does not exceed 1,0 Ω .

A3 Testing the insulation resistance of cables

Insulation resistance should be measured between the active conductors and the protective conductor connected to the earthing system. For this measurement, active cables can be connected to each other. Measurements should also be made between (ungrounded) protective conductors and earth. The test voltage depends on the rated voltage of the circuit and is given in the table below. Additionally, the minimum insulation resistance values for individual circuits are provided.

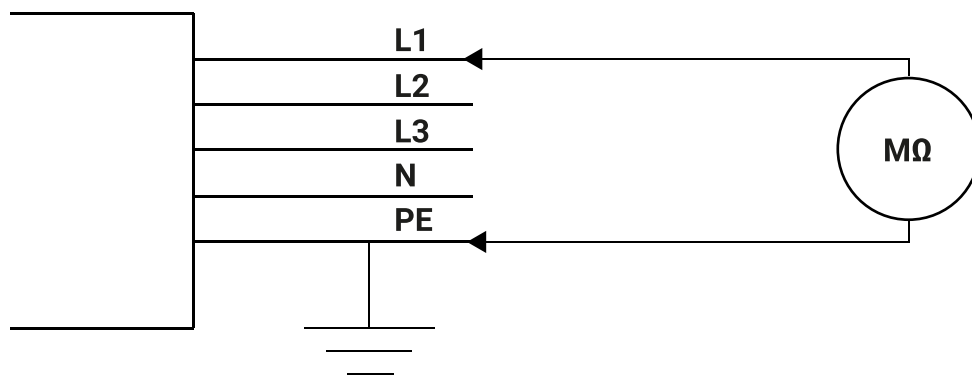
- Test voltage - depends on the rated circuit voltage (according to the table below).
- Minimum insulation resistance values - given for appropriate circuits.

Nominal circuit voltage	Direct current test voltage (V)	Insulation resistance (M Ω)
SELV and PELV	250	$\geq 0,5$
Up to and including 500 V, including FELV	500	$\geq 1,0$

Note: Active cables may be connected together for testing purposes.

If there is a possibility that surge protectors (SPD) or other devices affect the measurement result or may be damaged, they should be disconnected before measuring the insulation resistance. If disconnecting such devices is not possible (e.g. SPD built into stationary sockets), then the test voltage for this circuit should be reduced to 250 V DC. However, the insulation resistance should still be at least 1 M Ω .

Measurements of insulation resistance of electrical installations PN-HD 60364-6



A4 Measurement of station ground resistance

The most commonly used method for measuring earth resistance is the technical method, often called the "drop of potential" method. Two additional auxiliary electrodes are placed to perform the measurement. These electrodes are placed in one line. The acceptance criterion for measurement results is $R \leq 10 \Omega$. Before disconnecting the test connector, use a clamp meter to check whether current flows through the connector. In this case, disconnecting the connector poses a risk to both the person carrying out the measurements and other users of the installation!

A5 Measurement of the effectiveness of protective earthing

The measurement of short-circuit loop impedance is most often performed using a technical method, causing the so-called artificial short circuit. A special device then measures the voltage without load and during a short-term load with a short-circuit resistor. The fault loop impedance is calculated based on the difference in voltage drops. The impedance value must be small enough (and the value of the short-circuit current large enough) to allow a current to flow in the circuit allowing the overcurrent protection to operate and disconnect the power supply in no longer than the maximum time allowed by the PN-HD standard 60364 - 4 - 41. For TN systems, in accordance with the requirements of the PN-HD 60364-4-41 standard, the following conditions should be met:

$ZS \times I_a \leq U_0$, where:

- ZS is the loop impedance,
- I_a is the tripping current at the time specified in the table below, taking into account the arrangements specified in PN-HD 60364-4-41,
- U_0 is the nominal voltage of AC or DC with respect to ground.

Nominal voltage U_0 (V)	Maximum turn-off time (s) for final circuits ≤ 32 A	Maximum disconnection time for distribution circuits and circuits protected by circuit breakers > 32 A
120	0.8	5
230	0.4	5
400	0.2	5

Note: Disconnection may be required for reasons other than protective grounding.

For distribution circuits and circuits protected by circuit breakers with currents above 32 A, the maximum permissible tripping time is 5 s. According to the EN 61557-3 standard, loop impedance measurements should be performed with a measurement error smaller than 30%.

A6 Verification of operation of residual current circuit breakers (RCD).

The effectiveness of automatic disconnection using RCD circuit breakers should be checked in accordance with the PN-EN 61557-6 standard. The measurement should be performed depending on the station version, taking into account the type of installed RCD (type A or B) and the residual current of 30 mA. Protection performance is considered satisfactory if the RCD circuit breaker trips at a current of 30 mA or less, with a maximum disconnection time of 0,3 seconds.

7.2. Repair Guidelines:

7.2.1 Replacing the Type 2 cable

Repair or replacement of the integrated Type 2 cable is strictly prohibited. If the Type 2 cable is damaged, contact the manufacturer to replace the damaged element.

7.2.2 Replacing the input power cable

If the power input cable is damaged, follow these steps:

1. Disconnect the power.

2. Remove the aluminum cover by unscrewing the screws on the bottom of the charger. Remove the screw from the translucent cover. Disconnect the cables from the individual terminals.
3. Replace the damaged cable.
4. Assemble everything in reverse order.
5. Perform a set of periodic tests to ensure installation has been performed correctly.

7.2.3 Replacing the driver board and power board.

In the event of a station failure and the need to replace the controller/control board, this should be immediately reported to the station owner. The station must be dismantled and returned to the manufacturer.

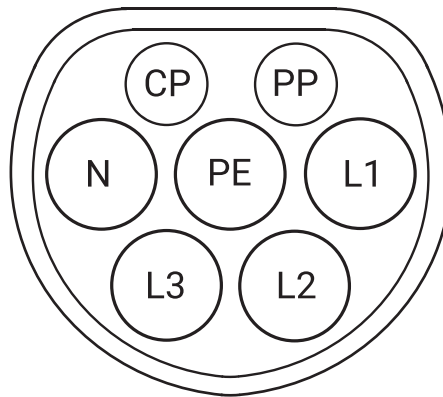
7.2.4 Description of basic service activities

1. Check the outside of the charging station:

- a. Check if the LED bar is working properly.
- b. Check the housing for damage.
- c. Check cables with wires, sockets, contacts in connectors, depending on the type of connection.
- d. Check whether the station is attached to the ground/wall.
- e. Clean the outside of the charging station.

2. Check the operation of the charging station:

- a. Check that the station is turned on by looking at the charging indicator.
- b. Check the operation of the RFID readers (if present) during identification by presenting the RFID card - observe the reaction of the station.
3. Measure the ground resistance of the charging cables/sockets.



All maintenance and service work should only be performed by qualified personnel. Any replacement of charging station components is only permitted by authorized service personnel.

7.3. Device self-diagnosis

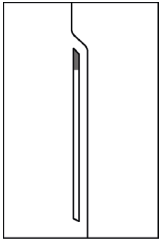
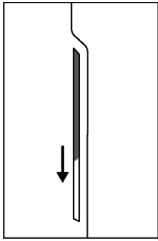
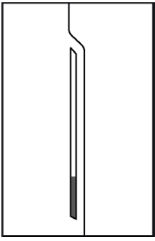
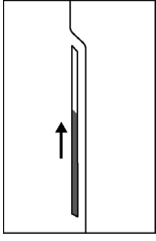
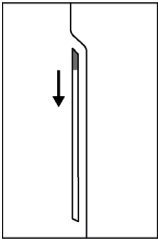
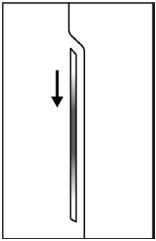
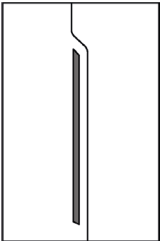
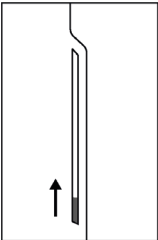
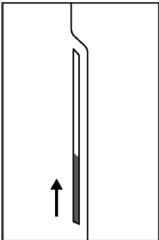
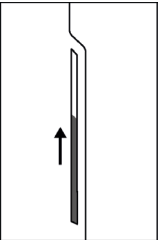
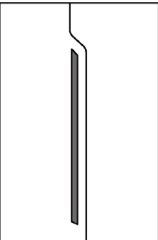
The device is designed as maintenance-free, so it is equipped with a self-diagnosis algorithm. It is activated each time before the car is charged. The self-diagnosis algorithm checks parameters such as:

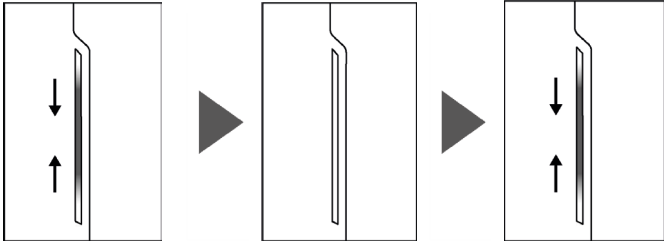
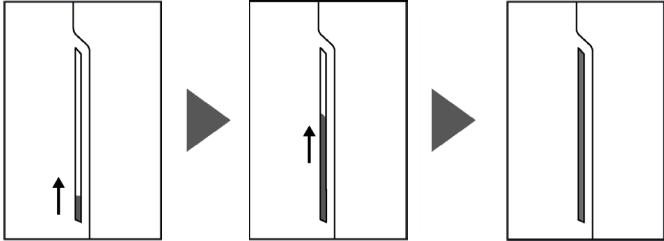
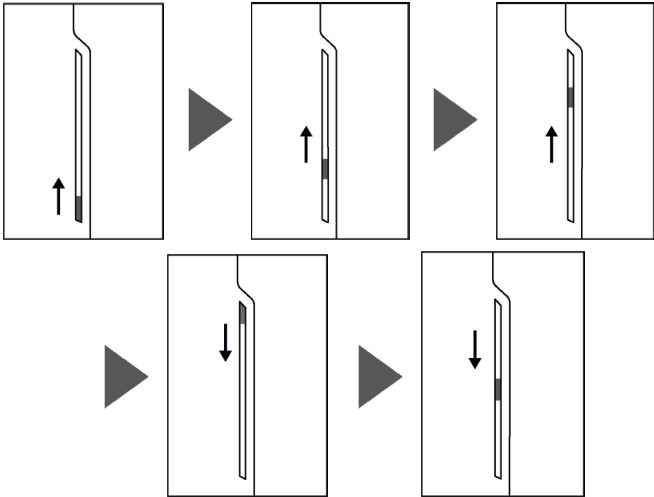
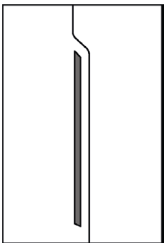
1. Supply voltage too low (undervoltage protection).
2. Supply voltage too high (overvoltage protection).
3. Too high leakage current, both AC and DC (protection RCD).
4. Charging current (overload protection).
5. Relay short circuit.
6. Continuity of the protective conductor.
7. Correctness of signals controlling charging parameters.
8. Correct operation of the device itself (internal supply voltages, communication statuses and communication with the application, etc.).

If any error occurs, it is signaled on the LED bar and through an appropriate message in the mobile application.

8. Troubleshooting

LED indicators

Green diode LED	
1 Launch	 3 mrugnięcia 
2 Ready	
3 Connected correctly	
4 Charging	 
5 Loading complete	
6 Software update	   

7 Pairing mode	
Red diode LED	
8 Connection error	
9 Warning	
10 Critical error	

/LED indicators - explanations

LED signaling	Explanation	What to do
1	Launch The green LED animation is played from top to bottom by 2 s and then goes to standby mode. This animation plays: - when the charger is connected to power - when the charger restarts without an error	• Wait until the charger is ready.
2	Ready The bottom of the LED bar lights up green. The charger is ready for operation.	• You can open the cover of the vehicle's charging port (in Teslas) and/or connect the connector.
	With the NFC function enabled: authorization - waiting for card/device.	• Authorize using card/device.
3	Connected correctly The animation of the green LED is played from bottom to top by 1 s. This animation plays when the charger is properly connected to the electric vehicle.	• Wait until the device starts charging your electric vehicle.
	With the NFC function enabled: authorization - card/device accepted; pairing mode - card/device paired.	• Wait until the device starts charging your electric vehicle.
4	Charging The LED animation with a green gradient plays from top to bottom and then repeats. The animation speed corresponds to the charging power - the higher the power, the faster the animation bar. This animation plays during the charging process.	• You can adjust the charging parameters in the application and/or leave the device in safe conditions to charge your electric vehicle.
5	Charging complete The entire LED bar lights up green. This animation plays when the electric vehicle is fully charged.	• Disconnect the connector from the electric vehicle.
6	Software update Note: update information is displayed in the application. When the charger is in use, the update will be performed after the charging process is completed. The animation of the green LED diode pulsates from bottom to top, filling the LED strip. This animation plays during a firmware update.	• Wait for the software update to be performed (the application will display information that the update is required). • If the update is completed successfully, the green LED will light up - the device can be used. • If the update fails, the red LED will light up - check the details in the application.
7	Pairing mode With NFC function enabled: pairing mode - waiting for card/device. The LED animation with a green gradient plays from the center up and down, then repeats.	• Touch the NFC card to the reader at the charging point until it is paired.
8	Connection error The animation of the red LED plays from bottom to top and fades out. Repeats until EV is disconnected. This animation plays if there is any problem with the connected electric vehicle. With NFC function enabled: authorization - card/device rejected.	• Disconnect the connector from the electric vehicle and reconnect it. • If the problem persists, please contact Customer Service: support@greencell.global • Try again, follow the instructions in the application

		or contact customer service: support@greencell.global
9	Warning The red LED flashes from top to bottom until the cause of the warning is cleared.	• If this happens while charging, disconnect the charger from the electric vehicle. If the red LED is still on - restart the charger by pressing the reset button for 5 seconds. • Check the application for detailed information and contact the manufacturer's customer service: support@greencell.global
10	Critical error The entire LED bar flashes red. This animation plays when the charger cannot be used and requires diagnosis and repair.	• If this happens while charging, disconnect the charger from the electric vehicle. • Check the app for details about what happened and contact your electrician or manufacturer customer service: support@greencell.global

9. Contact and technical support

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Designed and made in Poland.