

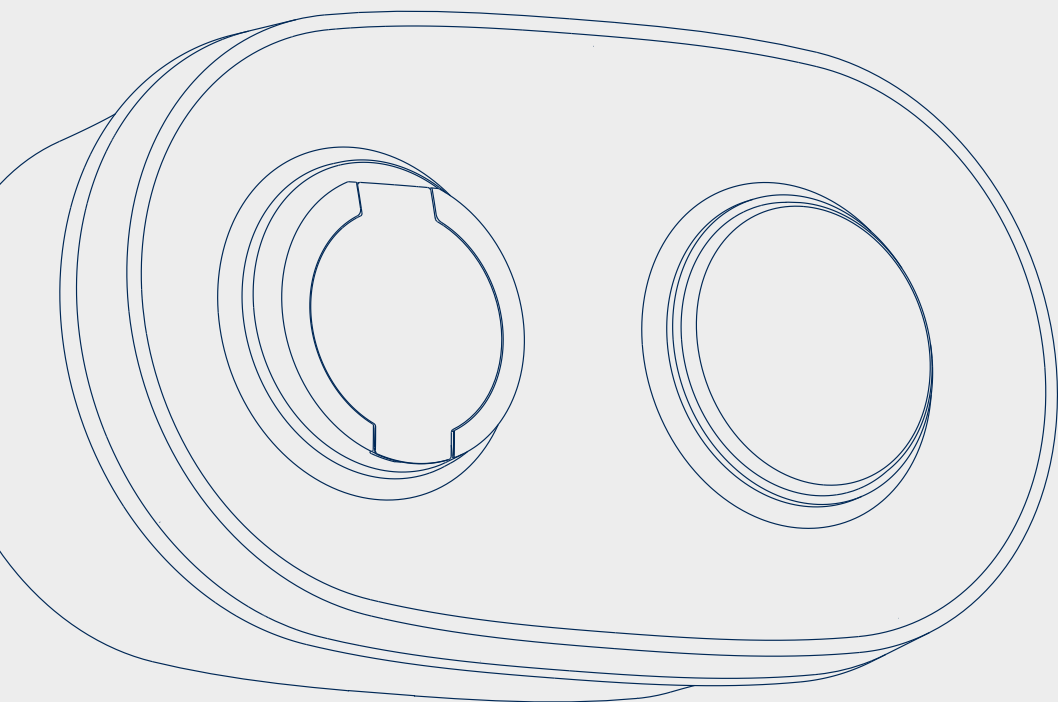
ostra

Installation manual



2020:
good industrial
design

Made in the Netherlands



BlueMarble[®]
Charging

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1. Introduction

OSTR is the smart charging station with a single socket for charging electric vehicles.

This manual contains the information necessary to install and use the OSTR. Read the instructions in this installation manual through carefully before you start. Please also keep this installation manual for future use.

If you have any questions or need any help, please contact your sales representative, the installer or go to www.ostracharger.com.

2. About the manual

You are now reading the OSTRÁ installation manual. This manual contains instructions for the OSTRÁ regarding installation, use and maintenance, in that order.

OSTRÁ is a smart charging station, specially equipped with a socket for charging electric vehicles (suitable for connection to Type 2, mode 3). The purpose of this manual is to adequately inform everyone involved in installing, connecting and maintaining the OSTRÁ. This will ensure that your charging station is installed, used and maintained safely. Installation is therefore only possible after reading this manual; this also applies to accredited installers.

Please note: Installations may only be carried out by people who meet the suitability requirements for working on electrical installations.

2.1 Structure of manual

The manual starts with instructions about the manual itself.

This is followed by general information about the OSTRÁ charging station (section 3), followed by section 4 with conditions for the installation. These must be observed in order to install the OSTRÁ correctly; something that is explained in section 5.

If you are not mounting the charging station to a wall, section 6 will explain how to install accessories such as the OSTRÁ Pole or the OSTRÁ Column. The OSTRÁ Charging Controller is then discussed in section 7, followed by 'correct use' in section 8.

Section 9 contains guidelines for maintenance and faults. This is followed by the manual unlocking of the Type 2 socket (section 10) on account of maintenance conditions.

Finally, section 11 contains the conformity declaration of the manufacturer, BlueMarble Charging B.V.

2.2 Guide to symbols

This manual uses the following symbols:



Caution, Electricity! Careless acts or failure to observe the guidelines could result in a life-threatening electric shock.



Caution, Danger! Careless acts or failure to observe the guidelines could result in physical injury or damage to the product.

3. Product description

3.1. OSTRAs

OSTRA is a smart charging station for charging electric vehicles. A charging station always consists of an OSTRAs Charging Controller together with one or more OSTRAs which are configured and connected together. Together, this forms the intelligent heart of your charging infrastructure.

Depending on the implementation, an OSTRAs Charging Controller up to 100 OSTRAs can form a smart charging network and connect wirelessly to each other, divided between a maximum of 10 groups of charging stations.

3.2 Connecting with back office (myOSTRA)

To connect the OSTRAs with a back office, an OSTRAs Charging Controller is required. The OSTRAs Charging Controller is provided as an external accessory, so does not form part of the charging point itself. OSTRAs can also be equipped with an OSTRAs Internal Charging Controller as an optional extra, to create a stable 4G connection.

3.3 Conditions for use

The OSTRAs will only charge a vehicle when:

- The charging cable is connected to both the vehicle and the OSTRAs, via both plugs at the ends*;
- A valid charging card has been presented to the OSTRAs RFID-reader (does not apply to the OSTRAs versions Plug & Charge and Connect & Charge);
- Authorisation has been granted by the back office** (does not apply to the OSTRAs Plug & Charge);
- The vehicle has accepted the charging session.

* To enable power to the socket, both charging cable plugs must be inserted in both the OSTRAs and the vehicle and authorisations have been granted.

** OSTRAs models connected to myOSTRA via an OSTRAs Charging Controller can also start a charging session by means of a start/stop command from the myOSTRA back office.

3.4 Switching the OSTRAs on and off

Following installation, the OSTRAs can be switched on by the relevant circuit breaker. You can make OSTRAs voltage-free, and therefore switch it off, by switching off that same circuit breaker.

3.5 Intentional and unintentional use

OSTRA is only suitable for charging Mode-3-compatible electric vehicles.

3.6 Technical specifications

Technical specifications

Charging capacity*	Max. 3.7 / 7.4 / 11 / 22 kW
Charging mode	Mode 3
Socket	Type 2, IEC 62196-2 (optionally a fixed Type-2 charging cable)
Number of sockets	1
Quality marks	CE Declaration of Conformity
Main connection	single-phase or three-phase, 230V–400V, 16A and 32A
Internal safeguard against overcurrent	DC 6mA (DC leakage current) AC 30mA leakage current detection (configuration setting)
kWh measurement	Standard embedded kWh meter Optional MID-certified kWh meter for business transactions
Ambient temperature	-25°C to +50°C

Air humidity	Max. 95%
Authorisation**	Auto Start of RFID card
Status information	LED indicator
Communication**	Stand-alone External OSTRA Charging Controller Internal OSTRA Charging Controller with SIM card
Communication protocol	OCPP 1.6J
Designed in accordance with	IEC 61851-1 (2011), EC 61851-22 (2002)
Protection rating	IP65 (OSTRA Base), IP54 (OSTRA Perla, IK10
Installation requirements	NEN 1010
Cable entry	Via the underside, with a strain relief
Cable connection	Terminal block for power cable with: fixed core: max. 6 mm ² flexible core: max. 10 mm ²
Housing	Polycarbonate (PC)/ABS
Dimensions in mm	370 x 135 x 210 mm
Weight	3.4 kg
Mounting	Wall, on pole or built-in
Standard colours	RAL 7021 Black-grey, RAL 9010 Pure white

* The maximum charging capacity of 22 kW is determined by the resistance of the charging cable, the maximum permissible charging capacity of the vehicle and OSTRA's fuse protection.

** Depending on the OSTRA model

3.7 Specifications per type of OSTRA

	OSTRA Plug & Charge	OSTRA Home	OSTRA Home & Work	OSTRA Business UTP-P1	OSTRA Business PoE	OSTRA Business 4G	OSTRA Satellite
1-3 fase 32A	✓	✓	✓	✓	✓	✓	✓
Type 2 socket	✓	✓	✓	✓	✓	✓	✓
Type 2 fixed cable	O	O	O				O
DC 6mA leakage current detection (see section 4)	✓	✓	✓	✓	✓	✓	✓
AC 30 mA leakage current detection (see section 4)	✓	✓	✓	✓	✓	✓	✓
RFID card reader		✓	✓	✓	✓	✓	✓
RF technology		✓	✓	✓	✓	✓	✓
Internal kWh meter		✓					
MID-certified 3-phase kWh meter			✓	✓	✓	✓	✓
OSTRA Charging Controller	N/A	UTP-P1	UTP-P1	UTP-P1	PoE	4G	N/A
Autostart	✓						

O = Optional

3.8 Installation, use and maintenance instructions

The safety instructions below apply to the installation and use of the charging station. Read these instructions carefully and make sure that they are followed.

3.8.1 Installation

- Only install the OSTRA on a suitable supply circuit while complying fully with local technical requirements and safety regulations.
- Do not install an OSTRA in an environment of explosive and/or highly flammable substances.
- Do not install an OSTRA in areas susceptible to flooding without taking additional measures.
- When attaching to a wall, the load-bearing capacity must be at least 40 kg.
- The location of the installation must have an even and sturdy surface.

- Preferably do not install the OSTRAs in bright sunlight and in a location with an ambient temperature of -25 to max. +50 degrees Celsius.
- Make sure that the location of the OSTRAs is such that users can use their charging cable without putting strain on it (i.e. pulling it taut).
- Installation cables must be laid on the basis of the maximum charging current at the input to the charging station. Assume a continuous maximum load. The cable diameters in this manual are an indication. The installer is responsible for determining the correct cable diameter for connecting the OSTRAs and satisfying the relevant standards and regulations.
- Make sure that the charging cable is unable to come into contact with heat sources.
- Make sure that the charging cable cannot become warped or wedged stuck and cannot pose a tripping hazard for the environment.

3.8.2 Use

- Make sure that the equipment is used under the right operating conditions.
- Make sure your hands are dry when inserting or removing the plugs.
- Always pull on the grip of the plug, never the cable.
- In the event of damage and/or accidents, the charging station must be made voltageless right away.
- Make sure that the charging cable isn't warped or wedged stuck, cannot be driven over and doesn't pose a tripping hazard for the surroundings.
- In the case of an OSTRAs with a fixed charging cable, unwind the charging cable completely during charging and avoid loops.
- Make sure that none of the plug ends can come into contact with water.

3.8.3 Maintenance

- Always make sure that the OSTRAs are voltageless for carrying out maintenance work and other work; only the OSTRAs Front and the OSTRAs Perla (see image 5.1.2) can be mounted, dismantled and replaced whilst electrified (OSTRA hot-swap technology).
- Wait at least 10 seconds after disconnecting the OSTRAs from the power connection. The OSTRAs may still contain electric charge immediately after disconnecting.

- Only allow work to be carried out by a qualified employee. This person must have read the manual, and act in accordance with standard IEC 60364 (Electrical Installations for Buildings). Failure to do so can result in injury or hazardous situations when working with electricity with a risk of life-threatening electric shock.
- The work must not be carried out if it is raining or if the air humidity is higher than 95%.
- Do not use any powerful water jets or aggressive cleaning agents for cleaning.

3.9 Warranty

BlueMarble Charging B.V. guarantees the equipment and software against production faults and material defects and craftsmanship for two years from the date of delivery. Accessories such as charging cards and power adapters have a one-year warranty.

Problems arising from causes not attributable to the manufacturer are the responsibility and risk of the installer and/or customer.

Examples of these causes are:

- The instructions in this manual have not been followed;
- The charging station has not exclusively been used to charge Mode-3-Compatible electric vehicles;
- The installation has not been carried out by an accredited installer;
- You have made changes to the product yourself;
- Third parties have damaged the OSTRAs (vandalism).

Consult the general terms and conditions and the full warranty conditions at www.bluemarblecharging.com.

4. Conditions for installing the OSTR

It must be possible to make a charging station voltageless automatically using an earth switch if a leakage current is detected. The residual current device (type A or type B, depending on the local regulations) must be incorporated in the technical installation or may form part of the charging station depending on the type of OSTR component. Every model of OSTR is equipped with a DC 6 mA and AC 30 mA leakage current detection as standard.

The OSTR charging station must be connected and installed by an accredited installer. Installer and owner are responsible for the installation, operation and maintenance to the OSTR. Obey the law for the safety of people, animals and goods (in NL NEN 3140), as well as the statutory installation regulations for the country in question.

Have the installer clearly mark what circuit breaker is linked to the OSTR.

The OSTR is suitable for wall, pole and column mounting as standard and optionally as built-in. An installation height between 950 mm and 1500 mm is recommended at all times.

For built-in, please contact BlueMarble Charging B.V.

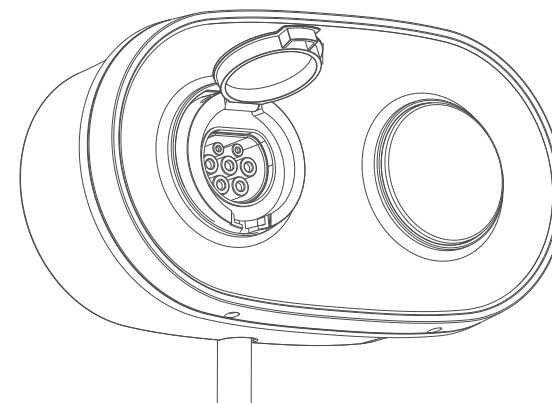
- Section 5.6 for wall mounting
- Section 6.1 for mounting to OSTR Pole
- Section 6.2 for mounting to OSTR Column

5. Installation of the OSTR

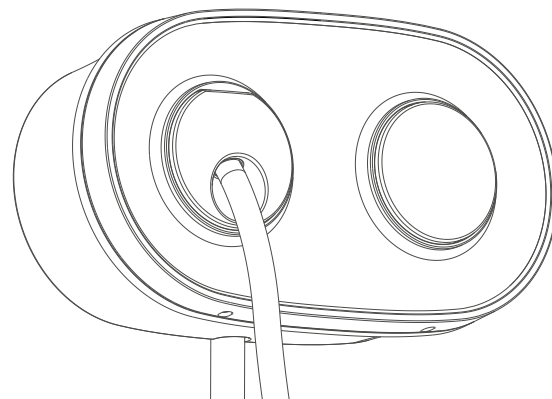
The OSTR charging station comes in two versions:

1. OSTR charging station with Type 2 socket
2. OSTR charging station with fixed charging cable equipped with a Type 2 plug

Choose a suitable and even wall on which to attach the OSTR (for precise instructions: see section 3.8).



OSTR charging station with Type 2 socket

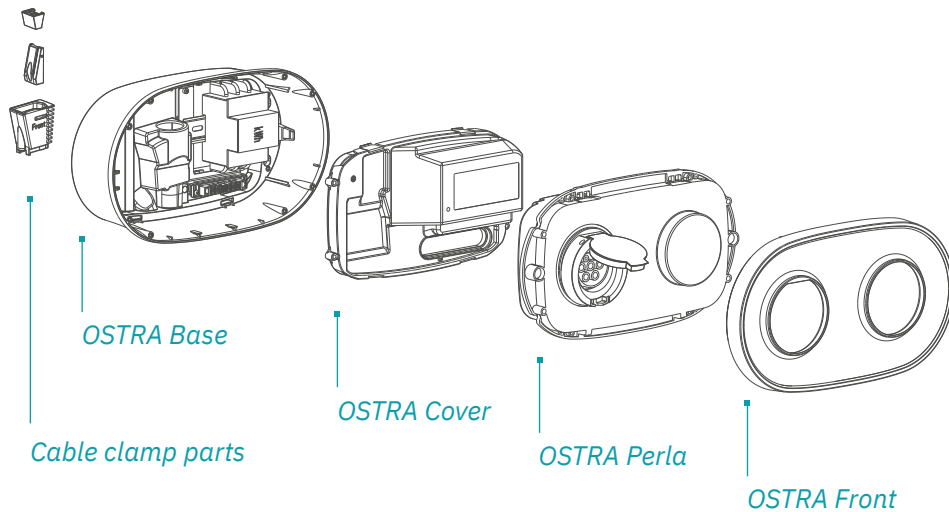


OSTR charging station with fixed charging cable equipped with a Type 2 plug

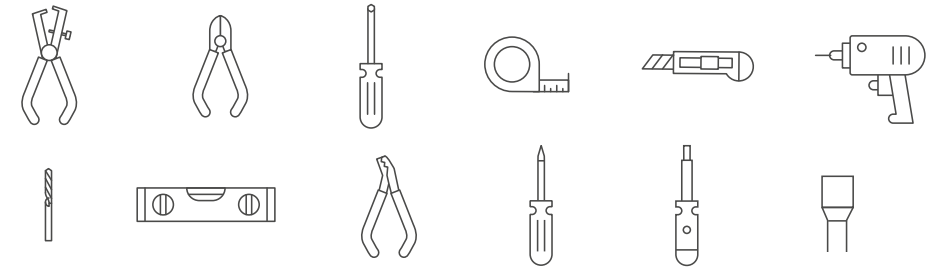
5.1 Parts of the OSTR

An OSTR charging station consists of:

- OSTR Base
- OSTR Cover (transparent)
- OSTR Perla
- OSTR Front
- Cable clamp
- Cutting gland
- Bags with fastening materials
- OSTR Charging Controller (depending on the OSTR model)
- OSTR User interface sticker and infographic
- Charging Station Identifier Label (C) and infographic
- OSTR drilling template



5.1.1



5.2 Installation tool

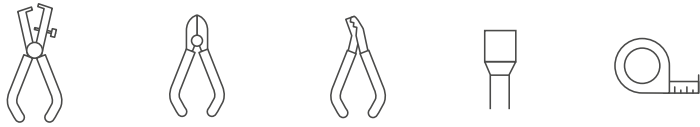
Use the following tools and materials for the installation:

- Wire stripper
- Pliers
- Hex Screwdriver (3 mm)
- Torx Screwdriver (size T25)
- Measuring tape
- Cutter
- Hammer drill or impact drill (for wall attachment)
- Drill bit (6 mm)
- Spirit level
- Voltage detector screwdriver
- End sleeve if there is a power cable with a flexible core

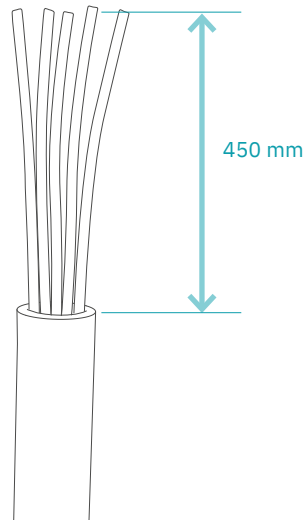


Bags of fasteners

5.2.1

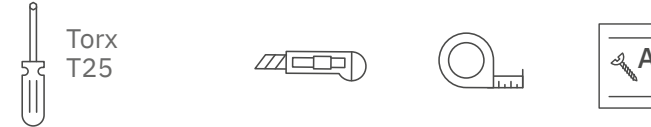


5.3 Preparing the power cable

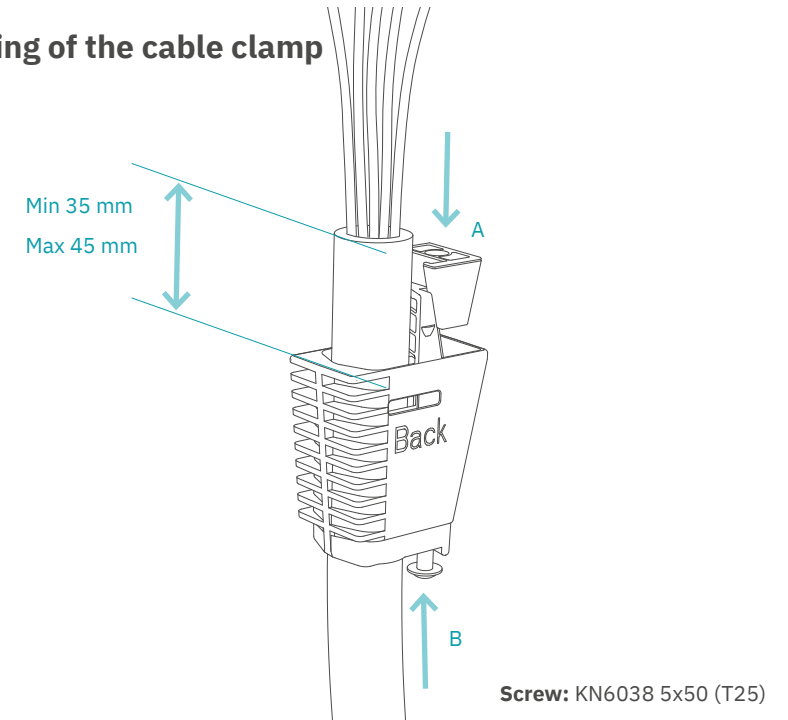


5.3.1

Strip the outer cover of the 3 or 5-wire power cable to 450 mm so that the internal coloured power cables become visible. Then strip the internal cables to expose the core. If applicable, finish the soft core with suitable end sleeves (not provided). (image 5.3.1).



5.4 Mounting of the cable clamp



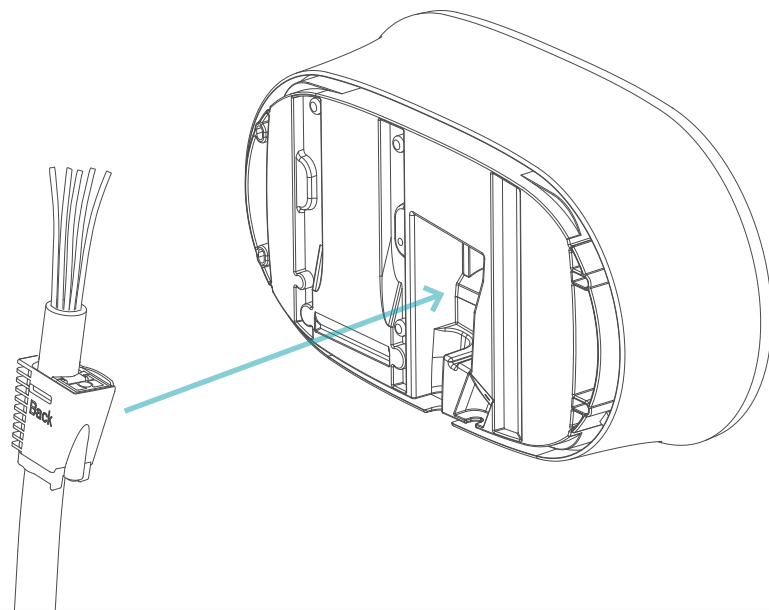
5.4.1

Slide the cable clamp over the power cable as indicated in the image above. Pay attention to the minimum and maximum protrusion length of the power cable: min. 35mm/max. 45mm. Make sure that the clamp (arrow A) is pressed firmly whilst the screw is being tightened (arrow B). The cable clamp is now fastened to the cable (image 5.4.1).

! Caution

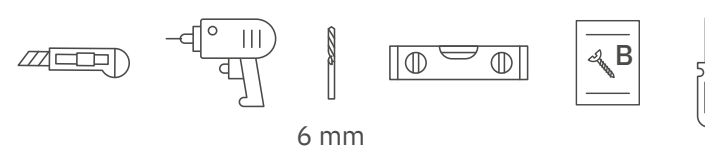
Fix the cable clamp at the correct height compared to the stripped part (image 5.4.1).

5.5 Connection of the cables to the terminal block

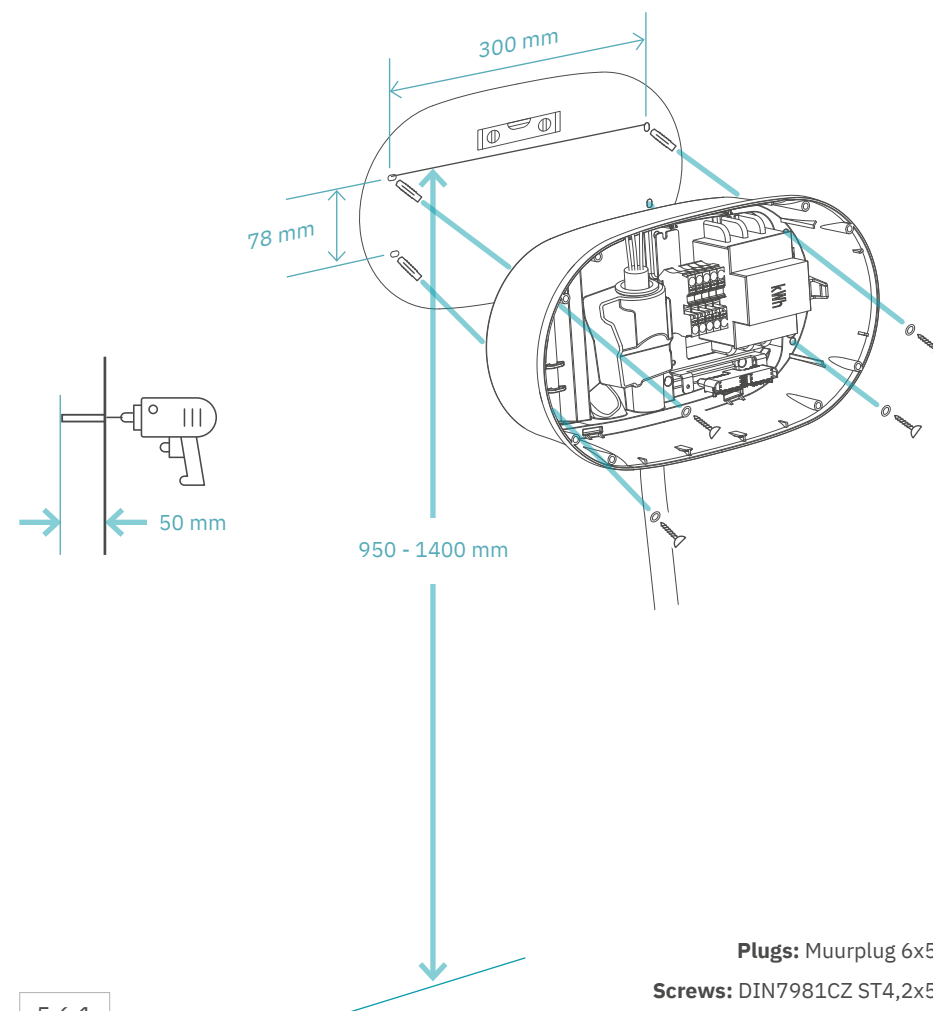


5.5.1

Connect the cables as indicated in image 5.5.1.



5.6 Wall mounting of the OSTR



5.6.1

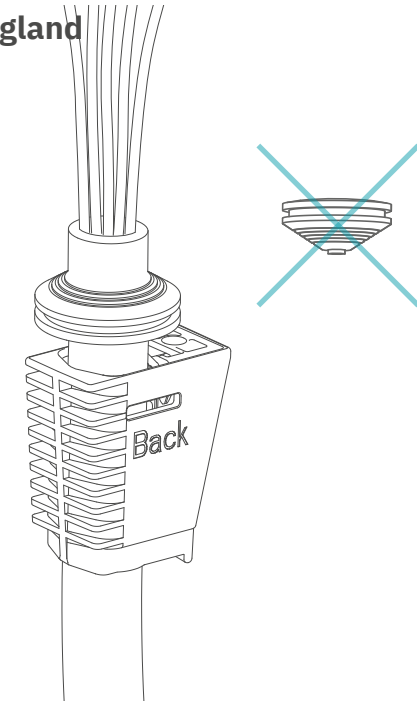
Using a spirit level and the drilling template provided, make sure that the attachment to the wall is horizontal. Insert the cable into the housing from the back and place the cable clamp in the housing. Now mount the OSTRAs to the wall using the fastening materials from bag B. Make sure that by tightening, the OSTRAs do not warp or buckle, or do so as little as possible.

! Caution

Check the position of the indicated drill holes using a measuring tape. The distances between the drill holes horizontally and vertically are 300 mm and 78 mm respectively.



5.7 Mounting of the cutting gland



5.7.1

Cut out the gland to make a suitable seal between the cable and the gland. Feed the power cable through the gland and make sure that the gland is orientated correctly, as indicated in the image.

! Caution

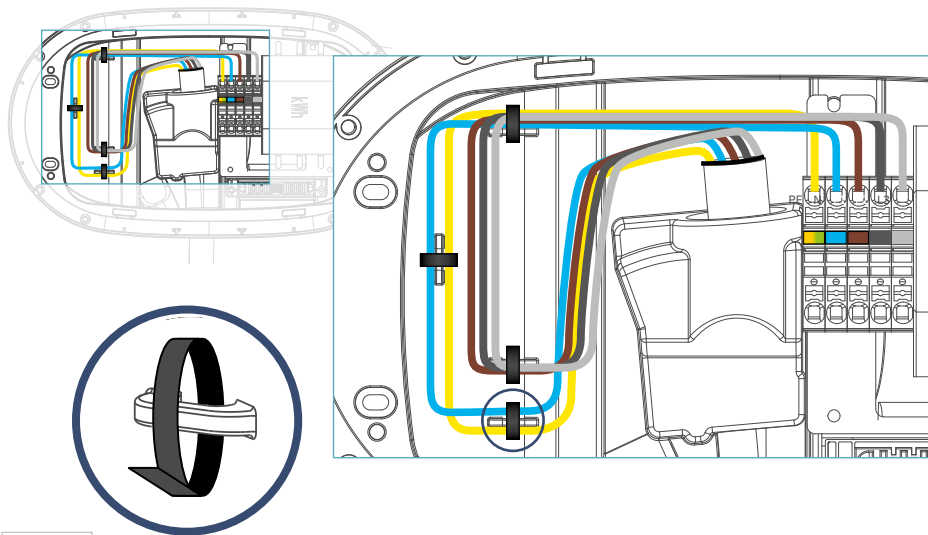
The orientation of the gland (can be found in bag A) is important.



5.8 Connection of the cables to the terminal block

Connect the cables as indicated in image 5.8.1.

Use the tie-wraps from bag B to mount the cabling in the OSTRABase and to tie it together. Cut off the excess pieces of tie-wrap for an attractive finish.



5.8.1

! Caution

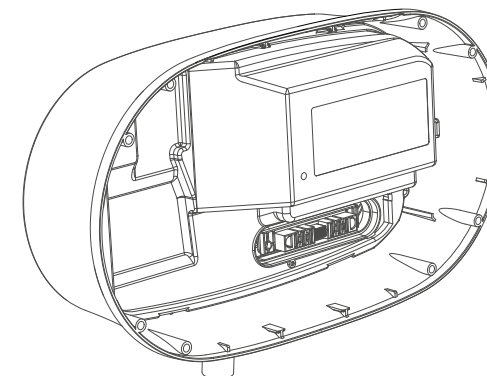
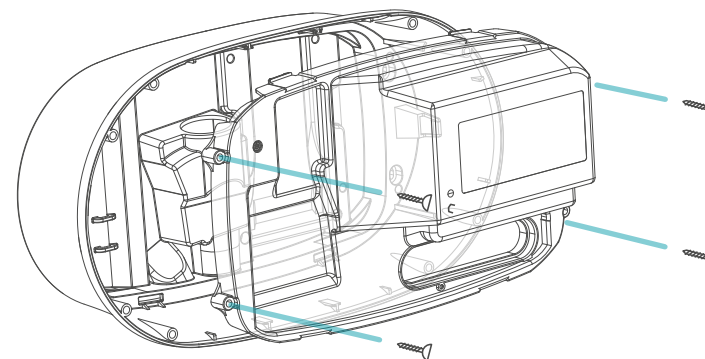
The cable clamps are suitable for connecting 6 mm² fixed or 10 mm² flexible core power cables.



3 mm
Hex
screwdriver



5.9 Installation of the OSTRACover



5.9.1

Screw: DIN912 M4x20

Place the OSTRACover over the power cable, terminal block and the optional kWh meter and make sure that no cables become jammed between the OSTRACover and the OSTRABase. Press the OSTRACover into the OSTRABase.

Base until it clicks into place and then tighten the OSTR A Cover using the fastening materials from bag C.



! Caution, Danger

Screw by hand, not electrically.

! Tip

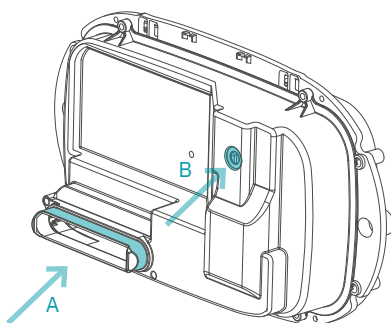
Half mount all screws before tightening them completely. After mounting the 4 screws, they can be firmly tightened.



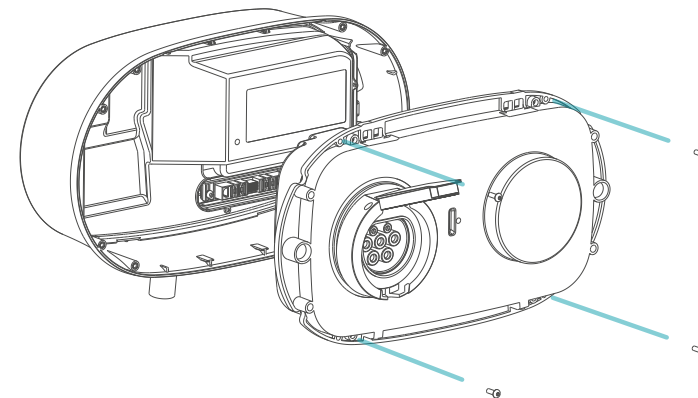
3 mm
Hex
screwdriver



5.10 Mounting of the OSTR A Perla



5.10.1.a



5.10.1

Screw: DIN912 M4x12

Place the attachment hooks of the OSTR A Front in the notches on the top of the OSTR A Perla. By firmly pressing the OSTR A Front when tightening the screws, ensure a good connection between the OSTR A Front and the OSTR A Base. Do not use any electrical tools for this.



! Tip

Start the assembly in the left corner and proceed with a crisscross mounting pattern.

! Caution, Danger

Before installing the Perla, first check the presence of a rubber O-ring (arrow A) and the rubber plug (arrow B) on the back of the OSTR A Perla, indicated in image 5.10.1.a.



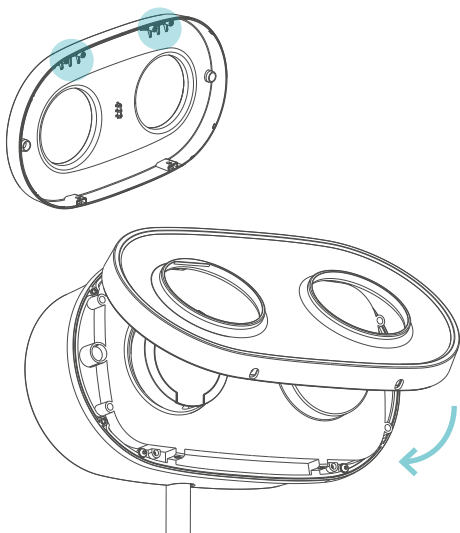
3 mm
Hex
screwdriver



5.11 Mounting of the OSTRa Front

Place the attachment hooks of the OSTRa Front in the notches on the top of the OSTRa Perla. By firmly pressing the OSTRa Front when tightening the screws, ensure a good connection between the OSTRa Front and the OSTRa Base. Do not use any electrical tools for this. Ensure a good connection between the OSTRa Front and the OSTRa Base by firmly pressing the OSTRa Front when tightening the screws.

5.11.1 OSTRa Front mounting of an OSTRa with a socket

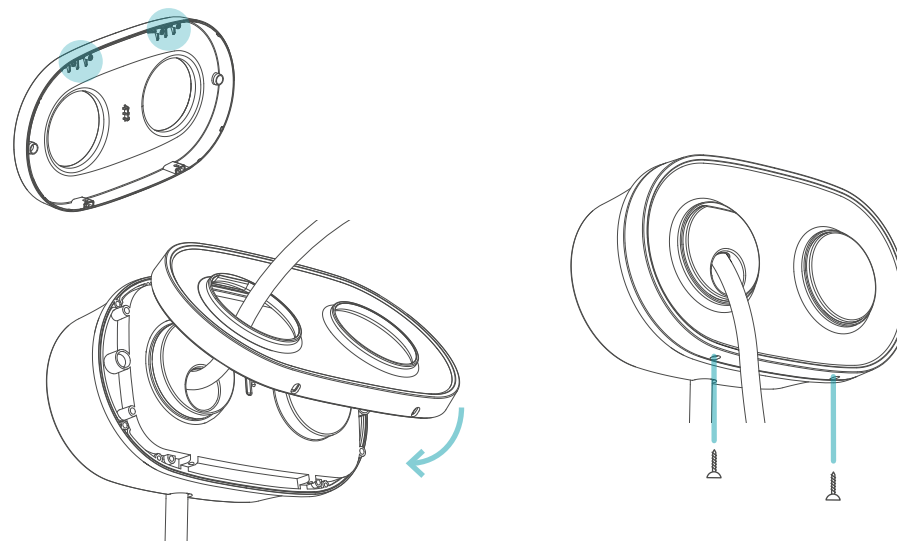


5.11.1

Screw: DIN912 M4x8

Orientate the OSTRa Front such that the attachment hooks fall in the OSTRa Perla's notches. Use the fastening materials from bag E and fasten to the bottom of the OSTRa Front.

5.11.2 OSTRa Front mounting of an OSTRa with a fixed cable



5.11.2

Screw: DIN912 M4x8

In the case of an OSTRa with a fixed cable, the charging cable must be inserted through the OSTRa Front first (image 5.10.2). Orientate the OSTRa Front such that the attachment hooks fall in the OSTRa Perla's notches. Use the fastening materials from bag E and fasten to the bottom of the OSTRa Front.



! Caution, Danger

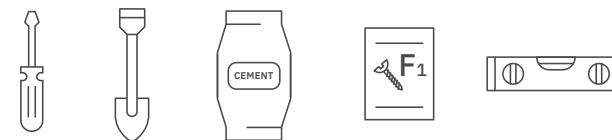
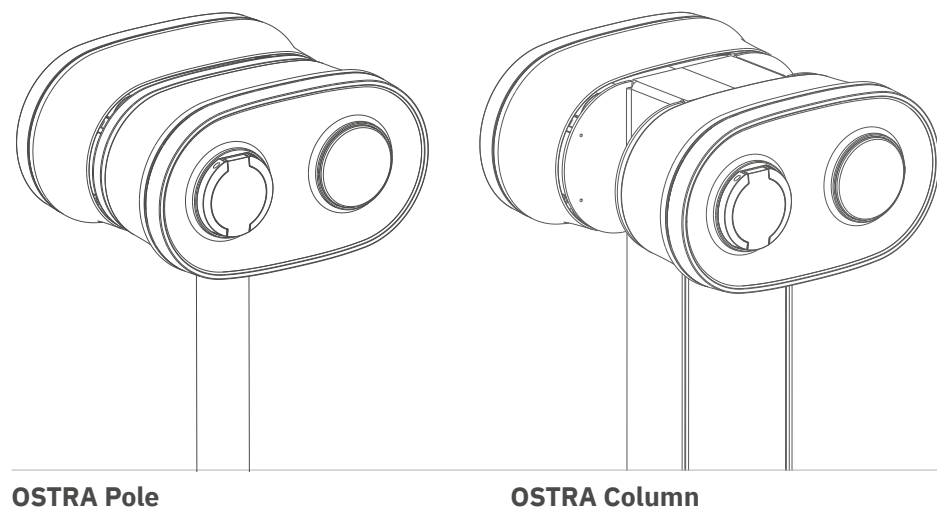
Screw by hand, not electrically.

Before tightening the screws, the OSTRa Front must be pressed onto the OSTRa to prevent any cracks from forming around the OSTRa. Only then can both screws be tightened.

6. Mounting of the OSTRAPole or OSTRAColumn

In addition to wall-mounting, an OSTRAPole can be attached to an OSTRAColumn or an OSTRAPole. The OSTRAColumn and OSTRAPole are available in several designs.

Due to the wide variety of toughened surfaces, no fastening materials are supplied to attach the OSTRAColumn or OSTRAPole to a toughened surface. The installer will have to determine on location which fastening materials are suitable for installing the OSTRAColumn or the OSTRAPole.

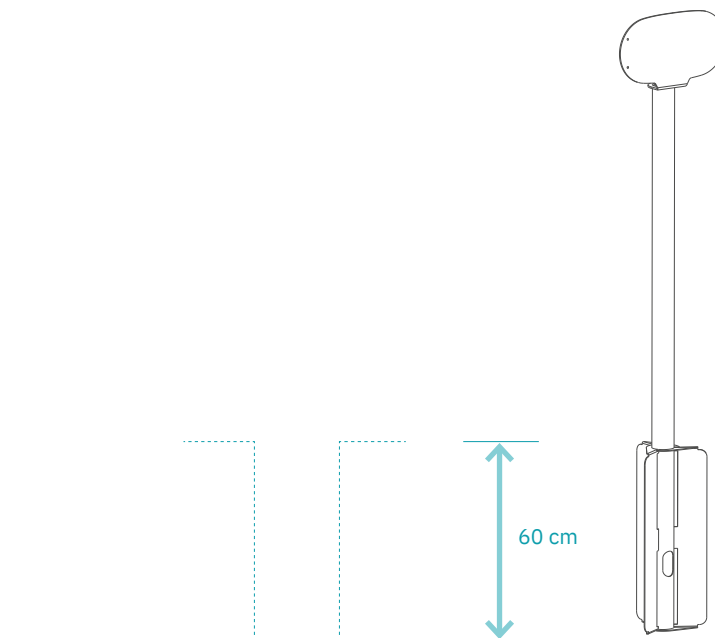


6.1 Mounting of the OSTRAPole

The OSTRAPole is available in two different types:

- 1 - OSTRAPole with fixed ground anchor
- 2 - OSTRAPole with foot plate

6.1.1 Installation of OSTRAPole with fixed ground anchor



6.1.1

The OSTRAPole with a fixed ground anchor is suitable for locations whether there isn't a fixed surface. Go through the following steps to install an OSTRAPole with fixed ground anchor:

1. Guide the cable through the underside of the pole to the top.
2. Install the pole, taking into account the thickness of any paving.
3. Connect the OSTRAPole charging station (see paragraphs 5.2 to 5.10, excl. 5.6) and attach the OSTRAPole to the OSTRAPole using the fastening materials from bag F-1.

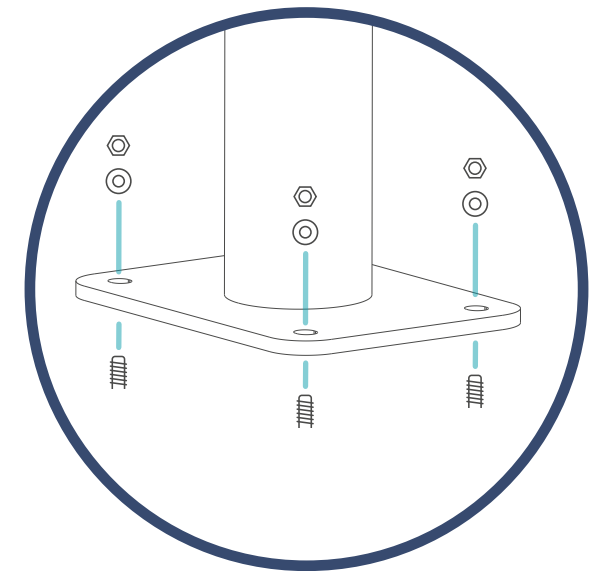
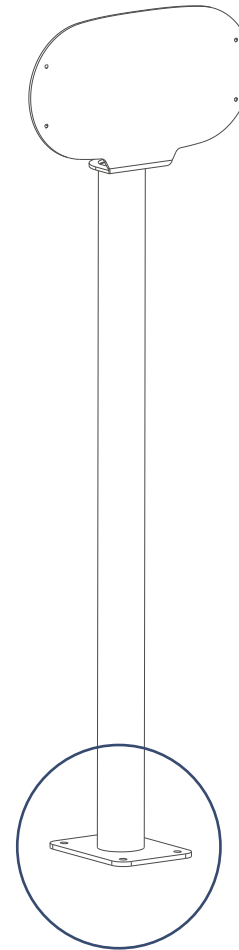
! Tip

If the surface is loose, use of additional sand cement is recommended (not provided).

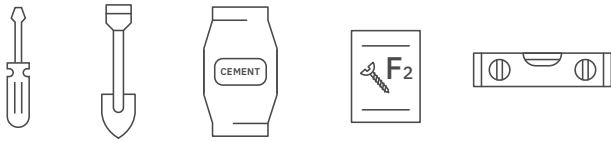
6.1.2 Installation of OSTRAPole with foot plate

The OSTRAPole with foot plate comes with a foot plate with holes for a bolt-nut connection for installation on a toughened surface. To install an OSTRAPole with foot plate, carry out the following steps:

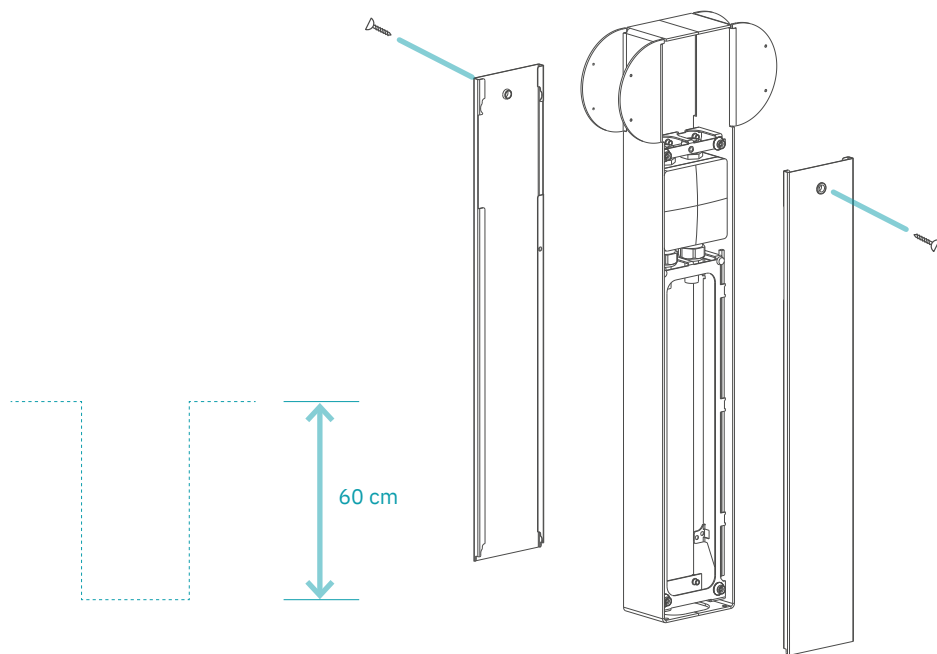
1. Determine the location of the pole and prepare the attachment points in the surface.
2. Guide the cable through the underside of the pole to the top.
3. Attach the pole to the surface. The fastening materials are not provided.
4. Connect the OSTRAPole and attach the OSTRAPole to the pole using the fastening materials from bag F-1.



6.1.2



6.2 Mounting of the OSTRAColumn



6.2.1

Screw: DIN912 M6x25

Installation of the ground anchor on a soft surface

An OSTRAGround Anchor can be used to mount an OSTRAColumn on a soft surface. Go through the following instructions before installing an OSTRAColumn on an OSTRAGround Anchor:

1. Go through the installation manual supplied with the ground anchor.
2. Position the ground anchor so that the top plate is horizontal and that top of the ground anchor protrudes just above ground level. Take into account the thickness of any paving.
3. Install the cable sleeve by guiding it through one of the holes in the base plates or side plates and make sure that the power cable protrudes at least 95 cm above ground level.
4. Preferably pour quick concrete, sand and soil in and around the ground anchor. Fill to approx. 50 mm under the rim.
5. Guide the cabling through the cable sleeve.
6. Remove the front panel of the OSTRAColumn*. Store the panel and screws carefully!
7. Place the OSTRAColumn on top of the ground anchor. The OSTRAColumn has four attachment holes (approx. 8 mm) for a screw connection with the ground anchor in its foot. The fastening materials are supplied with the ground anchor.
8. Make sure that the OSTRAColumn is level and tighten the screws.
9. Attach the ground wire to the earth terminal of the ground anchor*. The fastening materials are supplied with the ground anchor.
10. Repair the ground and level off with soil, sand and any paving.

! Tip

If the surface is loose, use of additional sand cement is recommended.

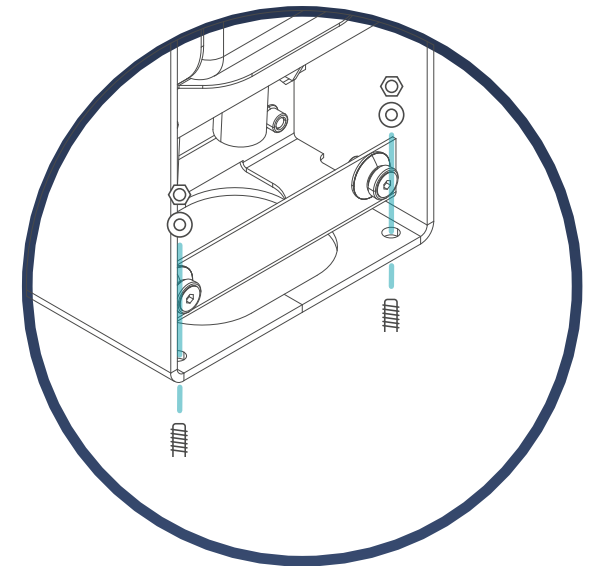
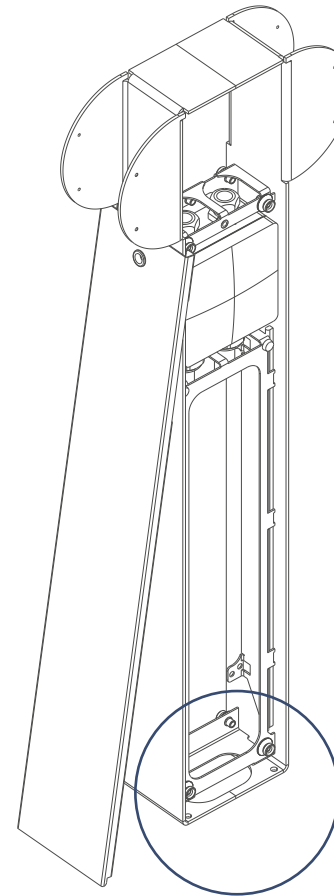
Installation of OSTR Column on toughened surface

You can screw the OSTR Column to the ground through the holes in the base of the OSTR Column. Go through the following steps before mounting the OSTR Column on a toughened surface:

1. Decide on the location of the OSTR Column and make sure you have a suitable fastening option.
2. Remove the front panel of the OSTR Column*. Store the panel and screws carefully!
3. Guide the cable through the underside of the OSTR Column to the inside.
4. Place the OSTR Column in the required location. The OSTR Column has four attachment holes (approx. 8 mm) for a screw connection with a hard surface in its foot.**
5. Make sure that the OSTR Column is level and tighten the nuts.

* All parts of the OSTR Column come with and are connected to a ground wire.

** Fastening materials are not provided.



6.3 Connection of the power cable

1. Make sure that the working environment is safe and check that the installation and the power cable are voltageless.
2. Remove the lid from the junction box. Store the lid and screws carefully!
3. Check whether the grounding of the column and the panels are connected properly. Each panel must be connected to the frame, and from here to the earth terminal in the junction box.
4. Insert the power cable into the junction box using the gland provided (M25*1.5 / 8-17 mm).
5. Connect the power cable to the terminals.
6. After connecting the power cables, replace the lid on the junction box using the corresponding screws. Do not use electrical tools for this.
7. Return the front panel of the OSTRAColumn to its original place. Turn the screw sufficiently into the frame so that the panel is unable to slide upwards or downwards.

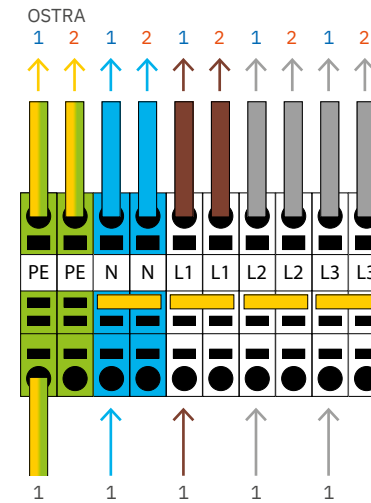
The OSTRAColumn can be connected in three ways.

- A. Supply single power cable
- B. Supply double power cable
- C. Supply single power cable and loop through

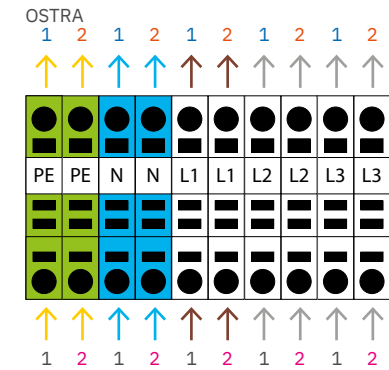


! Caution, Danger

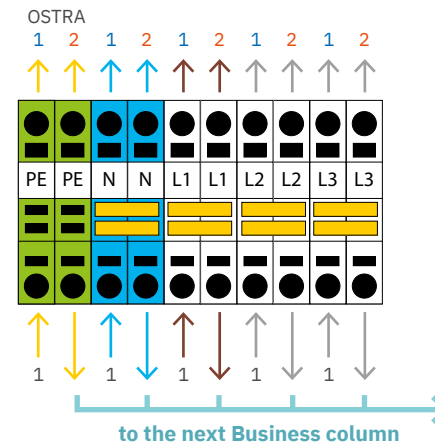
Screw by hand, not electrically.



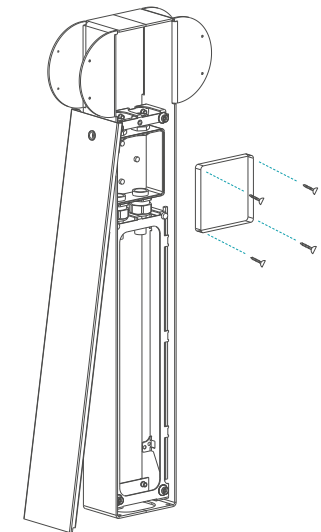
A. Supply single power cable



B. Supply double power cable



C. Supply single power cable and loop through



6.3.1

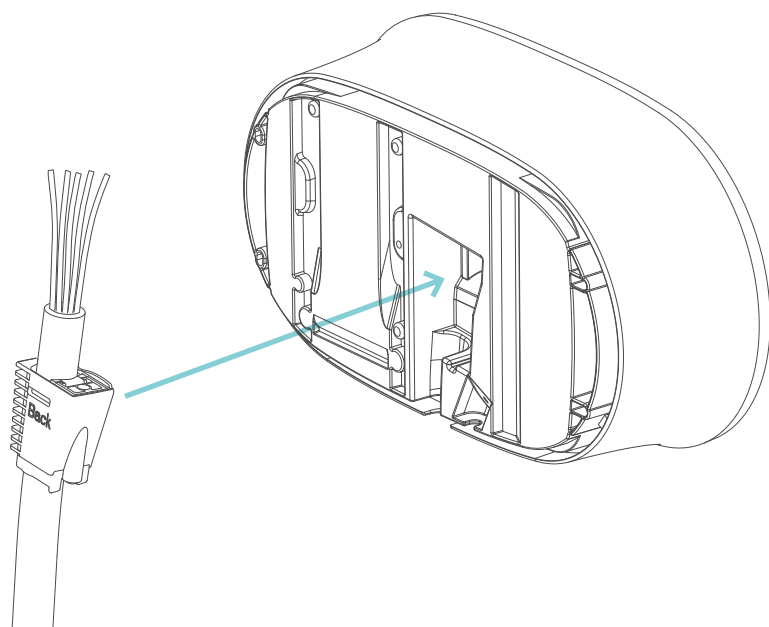


3 mm
Hex
screwdriver

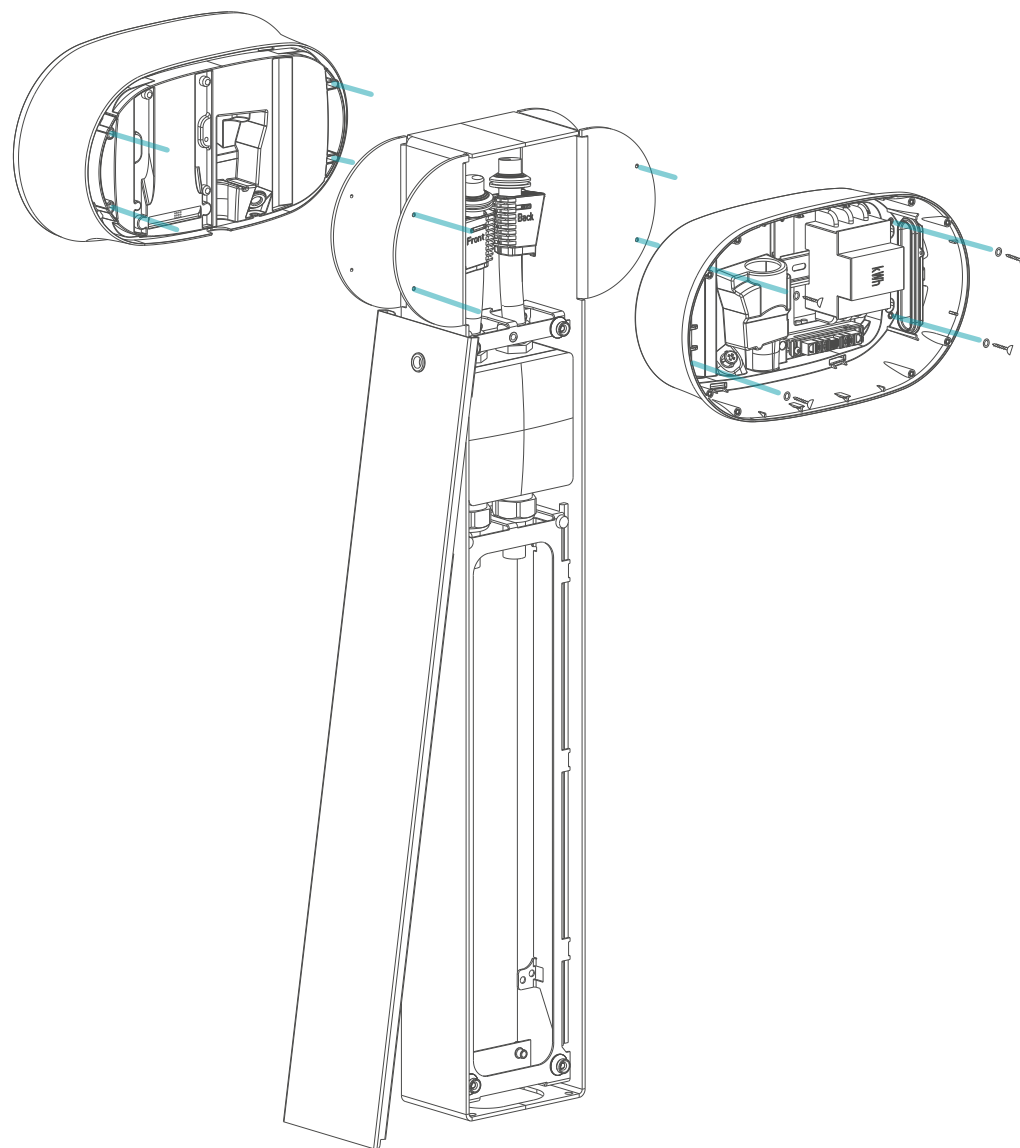


6.4 Mounting of an OSTR A on the OSTR A Column

1. Prepare the strain relief as stated in section 5.3 and insert the supply cable into the OSTR A.
2. Screw the OSTR A onto the OSTR A Column using the fastening materials from bag F-2.
3. Go to section 5.6 for the further installation of the OSTR A(s).



6.5.1



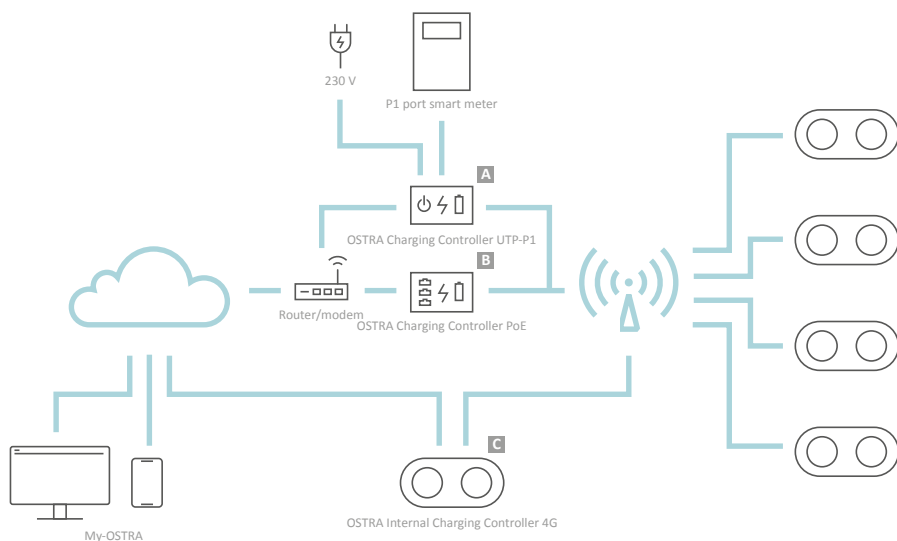
6.5.2

Screws: DIN912 M4X25

7. Commissioning of the OSTRA Charging Controller

7.1 The OSTRA Charging Controller

To configure an OSTRA and to connect it to the internet and the control platform myOSTRA, an OSTRA Charging Controller is required. The OSTRA Charging Controller is used to configure the charging capacity as well as the Smart Charging and Dynamic Load Balancing settings. Depending on the type of OSTRA Charging Controller, a smart charging network up to 100 OSTRA charging stations can be configured. An OSTRA Access Point can optionally form part of the installation for extending the wireless RF range.



The OSTRA Charging Controller is available in three versions:

1. OSTRA Charging Controller UTP-P1; indicated with “A” in the previous image.
2. OSTRA Charging Controller PoE; indicated with “B” in the previous image.
3. OSTRA Internal Charging Controller 4G; indicated with “C” in the previous image.

7.2 Connecting the OSTRA Charging Controller

To connect and configure an OSTRA Charging Controller, the OSTRAs must be installed as described in sections 5 and 6. .

7.2.1 Deciding on the position of the OSTRA Charging Controller

Take into account the following factors when deciding on the correct position for the OSTRA Charging Controller:

1. Obstructing obstacles between the OSTRA Charging Controller and the OSTRA(s)

The wireless RF connection between the OSTRA Charging Controller and an OSTRA is based on professional standards. In principle, the RF signal goes through walls, partitions and other physical obstacles, but strong obstacles such as concrete pillars, columns with iron reinforcement, coated window frames and steel structures can weaken the RF connection.

For an optimal connection, make sure that structures do not block the imaginary direct line between the OSTRA Charging Controller and the OSTRA. An example of optimal placement, for example, is: the OSTRA Charging Controller on the ceiling of the carport and an OSTRA on an OSTRA Column on the driveway.

In cases where it is not possible to create a continuous line between the OSTRA Charging Controller and the OSTRA, it is recommended that an OSTRA Access Point is installed in the immediate vicinity of the charging station.

2. A maximum distance of 15 metres between the OSTRA Charging Controller and the OSTRA

The RF signal of the OSTRA Charging Controller has a maximum range of approx. 15 metres 360°* around the OSTRA Charging Controller. An OSTRA will have to be installed within this range. A second OSTRA can once again be placed at a maximum distance of 15 metres from the first OSTRA, as long as these OSTRAs have been configured together as a charging station (OSTRA Hop technology). There must not be any obstacles or other obstructions. The RF range will also be able to decrease significantly if the RF signal of one OSTRA beams backwards to the next OSTRA (see section 3.1 and section 7.2.1).

OSTRAs from the same charging station configuration group make use of the OSTRA Hop technology and work like a mesh network. As a result, the signal and the messages are passed on to each other, thereby extending the RF range. Should a situation occur that an OSTRA charging station does not (or no longer has) a direct RF connection with the OSTRA Charging Controller, the communication of the OSTRA in question will still reach the OSTRA Charging Controller via a different OSTRA.

Additionally, an OSTRA Access Point can be installed as a signal booster to help achieve an optimal RF network in underground and above-ground car parks, for example.

* In the case of the OSTRA 4G Internal Charging Controller, the range is 180° forwards.

3. Configuring OSTRA charging stations within a group with its own OSTRA Charging Controller

By allocating several OSTRAs to an OSTRA Charging Controller, you are creating a smart charging network (SCN) with several OSTRAs, resulting in the following options:

- (Dynamic) Load Balancing of the available electric power between the OSTRAs within that charging station;
- Pricing adjustment for users of the OSTRA charging stations in a single group compared to users of OSTRA charging stations in other configuration groups.
- If required, a different beneficiary of the EV charging proceeds, for example in an underground car park or on a charging plaza belonging to shared business premises.

7.2.2 Connecting the OSTRA Charging Controller

OSTRA Charging Controller UTP-P1

With the OSTRA Charging Controller UTP-P1, it is possible to connect the Charging Controller to the smart meter's P1-port (DSMR 4.0 or higher). This allows the OSTRA Charging Controller to apply Dynamic Load Balancing*: distributing the total available electricity between the configured OSTRAs. This in turn prevents overloading of the local electrical grid.

* To use this function, a licence code is required, which is available via your supplier.

To create an optimal RF connection between the Charging Controller and the OSTRA, the Charging Controller must be mounted vertically to the wall with the "lid" in the direction of the location where the OSTRA(s) have been installed.

The OSTRA Charging Controller UTP-P1 has a power adapter, connected to a 230V wall socket. The OSTRA Charging Controller will also have to be connected to the internet using the UTP cable provided.

OSTRA PoE Charging Controller

The OSTRA PoE Charging Controller is powered via the ethernet cable through a router, modem or switch that supports Power over Ethernet (PoE). If the router, modem or switch does not support PoE, a PoE injector is available. Please contact your installer or BlueMarble Charging B.V. for this.

The Dynamic Load Balancing function can be added to the OSTRA PoE Charging Controller by incorporating an external energy meter with CT clamps in the installation. It is also possible to connect the OSTRA PoE Charging Controller to a local battery system. For more information, please contact BlueMarble Charging B.V.

To create an optimal RF connection between the Charging Controller PoE and the OSTRA(s), the PoE Charging Controller must be mounted centrally and with a line of sight to the OSTRAs. It is preferable to mount the Charging Controller PoE with the "lid" in the direction pointing to the location where the OSTRA(s) have been installed.

OSTRA 4G Internal Charging Controller

The OSTRA 4G Internal Charging Controller is built in to the OSTRA (as part of the OSTRA Perla) and is powered when the OSTRA is powered up. It is not currently possible to apply dynamic load-balancing with the help of the 4G Internal Charging Controller.

If several OSTRAs are installed next to each other at a single location, the OSTRA 4G Internal Charging Controller must be installed in the central OSTRA to ensure an optimal RF connection.

7.2.3 Connecting the OSTRA Charging Controller to the internet

All OSTRA Charging Controllers are configured to connect to the myOSTRA control platform as standard.

All OSTRA Charging Controllers are configured to connect to the myOSTRA control platform as standard.

- OSTRA Charging Controller UTP-P1 & OSTRA Charging Controller PoE

This happens with a UTP cable on a router, modem or switch, which is connected to the internet. Then it is necessary to configure the OSTRA Charging Controller. This is explained in further detail in paragraph 7.3.

- OSTRA Charging Controller 4G

4G network connection on the internet by means of a SIM card inserted in the OSTRA Internal Charging Controller 4G. The SIM card is supplied by BlueMarble Charging and is pre-configured.

7.3 Configuring and commissioning the OSTRA Charging Controller

Carry out the following steps to configure and commission the OSTRA Charging Controller, and to make a connection with myOSTRA.



! Caution, danger

The OSTRA Charging Controller must be connected and have an internet connection. Port 9000 for outgoing traffic must be opened on site.

7.3.1 Configuring and commissioning the OSTRA Charging Controller via the installation portal



! Caution, danger

The OSTRA Controller must be connected to the internet and the OSTRA Charge Point Management System in advance

1. Scan the QR code on the OSTRA Charging Controller (in the case of the Internal Charging Controller 4G on the front of the OSTRA Perla) or go to <https://installation.ostracharger.com/smartcharginghub> and log in.
2. If you don't have an account yet, create one by clicking "Register". Once you have registered, you will receive an activation e-mail. Activate your account and log in following confirmation.
3. Read the Controller ID and the Security Code on the packaging or on the OSTRA Charging Controller. Enter this as the first step in the installation portal. Click "Search" and the settings will be displayed. Go through the installation tool to configure the settings of the OSTRA Charging Controller in line with your requirements.
4. Enter the fuse rating of the main connection under "upstream fuse".
5. If the OSTRA Dynamic Load Balancing option has been ordered and an Optimizer Unlock Code has been received, this option can be ticked off and the Optimizer Unlock Code can be entered.
6. If there is a different type of Optimizer, select the brand in the pull-down menu and enter the Optimizer's IP address if a fixed IP address applies.

7. Select the required number of charging stations (group of charging points) and the number of OSTRAs (charging points) per charging station and click “Configure Charge Stations and Connectors”.

Here are some examples of charging station configurations:

- 1 charging station with 1 OSTRa: suitable for a home situation
- 1 charging station with 2 OSTRAs: suitable for a home situation or small company
- 2 charging stations with 4 OSTRAs per charging station: suitable for a location where, for example, 4 OSTRAs have been reserved for staff and 4 OSTRAs for guests

! Tip

If several OSTRAs have been installed in a single location, various charging stations can be configured. As a result, for each charging pole with one or more OSTRAs installed in it, the customer can configure various charging prices. See section 7.2.1 item 3 for other benefits.

For specific projects or questions, please contact BlueMarble Charging for project support.

8. If an OSTRa Access Point is being used, enter the Serial number under “Access points linked with Charging Controller (optional)”.
9. Open “Chargestation_0” and enter the fuse rating of this charging station with linked OSTRAs.
10. Select “no derating” if the circuit breaker is able to disperse sufficient heat in the distribution board.
11. If load-balancing between the OSTRAs is not used in the group of OSTRAs, enter the fuse rating of each OSTRa. If load-balancing is used, select the option N/A and the OSTRa Charging Controller will activate the load-balancing function within the group of OSTRAs.
12. Then under “Connector 1”, enter the Connector ID of the first OSTRa, plus the serial number of the OSTRa Access Point if the OSTRa must

be connected to an OSTRa Charging Controller by means of an OSTRa Access Point, if required.

13. For all connectors for “Chargestation_0”, enter the Connector IDs and click “Save”.
14. If necessary: repeat steps 9, 10 and 11 for Chargestation_1, Chargestation_2, etc.
15. When all charging stations with the OSTRAs have been entered, click ‘Check configuration’.
16. An overview of the entered settings will then appear. If you do not agree: click “Back” and amend the settings. If you agree: click “Send Configuration”. The settings are now sent to the OSTRa Charging Controller, which will take a few minutes.
17. Send the e-mail to the client from this page by entering the client’s e-mail address.

This will enable the client to start and complete the registration process, then link the charging solution to the myOSTRA account. If required, the client can also take out a service plan at that time with our service partner e-VOLTT. To find out more about the options and terms and conditions of e-VOLTT, go to www.e-voltt.com

! Tip

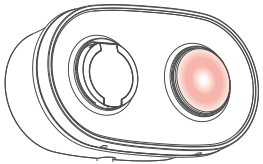
The myOSTRA and BlueMarble Charging Back Office is an open platform that works with open standards, so it is also possible to connect other manufacturers’ charging stations to the e-VOLTT platform (if OCPP-compatible). All charging stations can be controlled in a single environment and it is possible to configure an integrated smart charging network, consisting of different brands of AC and DC charging stations, by means of charging profiles.

7.4 Commissioning of the OSTR charging station

Carry out the following steps to commission the charging station.

1. Switch on the mains voltage at the distribution box. The OSTR will carry out a self-test and search for a connection with the OSTR Charging Controller*. This will take around 1 minute. During this start-up phase, the LED indicators will give the following colour indications:

* When starting up the charging station, the OSTR Plug & Charge will carry out a self-test but will not search for a connection with an OSTR Charging Controller.

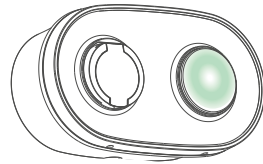


Flashing red:

The OSTR is busy making a connection with the OSTR Charging Controller

Permanent red:

An earth fault has been detected



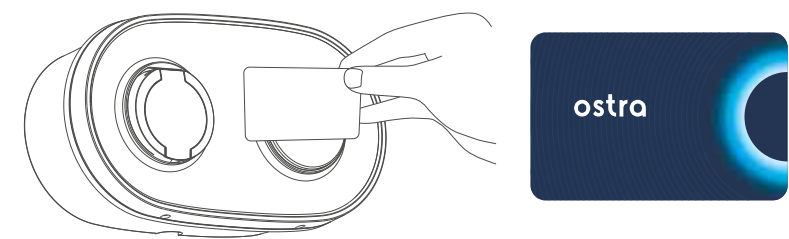
Green:

No faults have been detected and there is an active connection with the Charging Controller. The OSTR is ready for use

2. To conduct a practical test, insert the plug of the charging cable in the OSTR and in the vehicle and start a charging session with the help of one of the charging cards provided.

8. Use of the OSTR

8.1 Starting charging



1. Insert the charging cable in the socket of the vehicle and then in the socket of the OSTR.
2. Hold the charging card in front of the RFID reader. The charging station will check the validity of the charging card and you will hear three short tones; if the card is accepted, the LED indicator will briefly flash yellow and you will hear three short tones again. If the card is not accepted, a tone will sound once and the LED indicator will briefly flash red, before turning green again.
3. Once the card has been accepted, the charging cable will audibly be locked in the OSTR.
4. After a few seconds, the indicator will turn blue. The vehicle is now charging.

8.2 Stopping charging

1. Hold the charging card used to activate the charging session in front of the card reader once again. A short tone will sound.
2. The charging session will stop, the lock broken and the indicator will turn briefly yellow, followed by green.
3. After a few seconds, the charging cable can be removed from the OSTR.

8.3 LED colour codes

A user interface sticker is provided with every OSTR, intended to adhere to the top of the OSTR Front if required. As a result, the status of the charging station and charging session can be read according to the table below.

LED colour codes

Flashing red	Searching for a connection with the OSTR Charging Controller
Green	OSTR is available & ready to charge
Yellow	Charging card authorisation, awaiting permission from the vehicle to start charging or the vehicle is already fully charged (suspended EV)
Blue	Active charging transaction
Red	Earth fault or other type of fault detected
Flashing red a one-off tone	Charging card has not been authorised to start or stop a charging transaction

9. Maintenance and faults



! Caution, Electricity

The electrical system must be fully disconnected from all power connections to carry out installation or maintenance work.

! Caution, Electricity

The charging station contains electrical components that may still contain electrical charge after disconnecting the power connection.

Wait at least 10 seconds after disconnecting before starting maintenance work.

The owner or user is responsible for maintaining the charging station, and both the law for the safety of persons, animals and goods (in NL NEN 3140), as well as the installation regulations applicable in the country of assembly (in NL NEN 1010) must be obeyed.

9.1 Cleaning



! Caution, Danger

Do not use any powerful water jets for cleaning, as this could release an electric shock.

! Caution, Danger

The sockets must not be cleaned from inside.

The OSTRa can be cleaned on the outside using a soft, damp cloth. Do not use any aggressive or chemical cleaning agents for this and keep the socket closed at all times.

9.2 Faults and Solutions

The table below can help to find a solution for simple faults. If the table below doesn't help, please contact the charging pole operator, the installer or your service provider.

Problem	Possible cause	Possible solution
Charging station not responding and LED is off	– No power to the charging station	– Circuit breaker and/or residual current circuit breaker and/or earth leakage circuit breaker in the distribution box is not switched on – Contact the installer
Charging station not responding but LED is green	– In this case there may be a temporary software problem	– Switch off the power supply to the OSTRa for at least 1 minute – Switch the OSTRa Charging Controller off for 1 minute – Then switch the OSTRa Charging Controller back on first, followed by the OSTRa
Earth leakage circuit breaker fails	– Earth fault in the charging station – Special earth resistance required for the vehicle – Fault in the vehicle – Faulty charging cable	– Check electrical wiring for damage. Replace damaged wires – Moisture or condensation on electrical connections. Dry the connections if necessary – Replace the charging cable – Measure the earth resistance and compare it to the resistance requested by the vehicle supplier, for example: Renault Zoe < 150 Ohm – Contact the installer

LED indicator flashes red when the charging card is being held against the device	– Charging card has not been authorised – There is no communication with the Back Office	– Check the settings in the Back Office to see whether the charging card has been connected to the charging station and/or whether it is interoperable (roaming configured) – Check whether the OSTR Charging Controller has a connection with the OSTR and the CPMS (Charge Point Management System) – Contact the charging card operator
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LED indicator continuously flashes red	– The OSTR doesn't have a connection with the OSTR Charging Controller	– Check that the internet connection is working – Check whether the RF connection has been disrupted – Contact the installer
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The charging cable plug won't come out of the socket	– Wrong card used to stop charging – Plug won't release	– Use the same card to stop the charging as was used to start the charging – Push the plug further into the socket and hold the card in front of the card reader again – Turn off the earth switch in meter cupboard and turn back on again after 1 minute – Unlock the socket manually (see section 10) – Contact the service desk of the charging pole operator
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The Charging Controller UTP-P1 LED is not illuminated	– There is no power to the Charging Controller	– Check to see whether the micro USB connector and the power adapter are connected properly
The Charging Controller UTP-P1 LED is illuminated red	– The Charging Controller is not connected to the internet or the CPMS (Charge Point Management System)	– Check whether there is an active internet connection at the location. – Check whether port 9000 in the router is open
The Charging Controller UTP-P1 LED is illuminated green but is still not connected to the CPMS	– Possible cause is there is a faulty external power adapter caused by overvoltage (permitted max. is 230V)	– Replace the external power adapter of the Charging Controller UTP-P1

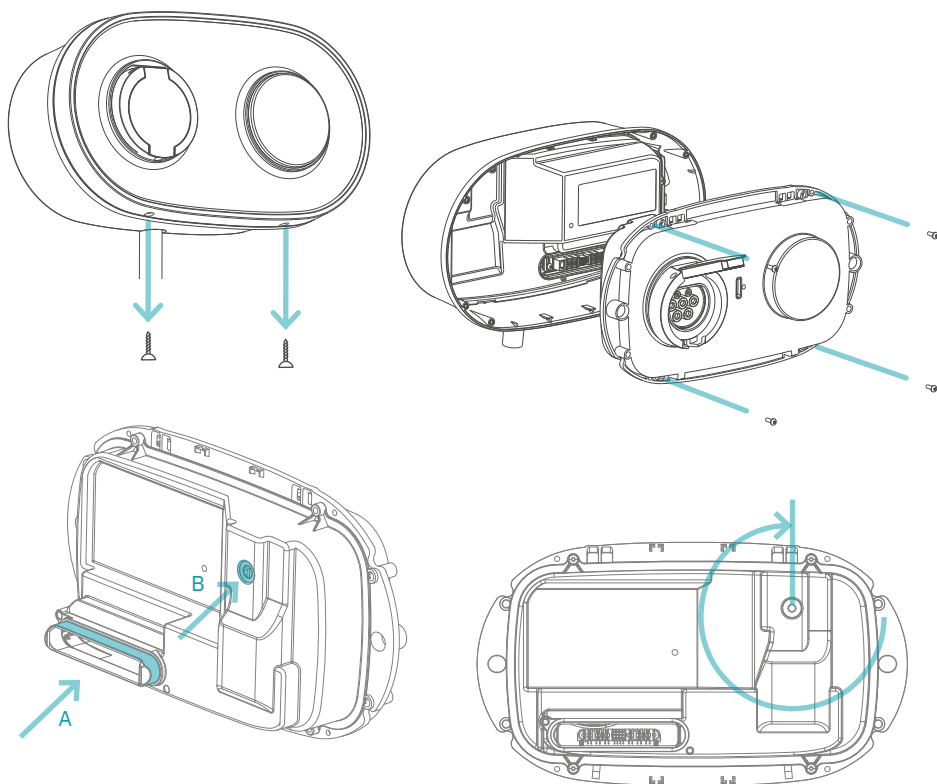
9.3 Waste & Environment

Electrical electronic equipment including accessories must be disposed on separately from general household waste. Reuse of materials saves fuel and energy and helps significantly towards protecting the environment.

10. Unlocking the Type 2 socket manually



3 mm
Hex
screwdriver



10.1.1

Maintenance: Unlocking the Type 2 socket manually

- Switch off the power to the charging station (see section 3.4)
- Remove the OSTRAL Front according to the instructions in section 5.10
- Remove the OSTRAL Perla according to the instructions in section 5.9
- Remove the rubber plug (arrow B) from the back of the OSTRAL Perla
- Using a small screwdriver, turn the red groove in the OSTRAL Perla clockwise until the plug is unlocked
- Before the OSTRAL Perla is replaced, check whether the O-ring (arrow A) and the rubber plug (arrow B) have been installed on the back of the OSTRAL Perla. Do as in image 10.1.1.
- Replace all parts in the opposite order, making use of the correct fastening materials



! Caution, electricity

The electrical system must be fully disconnected from every power connection to carry out installation or maintenance work.

! Caution, electricity

The charging station contains electrical components that may still contain electrical charge after disconnecting the power connection. Wait a minimum of 10 seconds after disconnecting before starting work.

11. Declaration of conformity

The charging station complies with the RoHS directive (RL 2011/65/EU) for the protection of public health and the environment.

The corresponding declaration of conformity is available from the manufacturer.

Manufacturer declaration

BlueMarble Charging B.V., Radioweg 4, 1324 KW Almere, the Netherlands, declares entirely under its own responsibility that its products under the name 'OSTRA Charger', to which this declaration relates, are CE-certified and meet the essential requirements of the EMC directive 2014/30/EU, low voltage directive 2014/35/EU and radio equipment directive 2014/53/EU in accordance with the following standards:

EN 62311:2008

EN 61851-1:2011

EN 61851-22:2002

EN 61000-6-1:2007

EN 61000-6-3:2007+A1

EN 301489-1 V2.2.0 (draft)

EN 301 489-3 V2.1.1 (final draft)

EN 301 489-52 V1.1.0 (draft)

EN 301511 V9.0.2

EN 300330 V2.1.1

EN 62479:2010

www.ostracharger.com