

EV/BOX

EVBox Troniq High Power

Installation Manual

EV/BOX

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Installation Manual

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1. Save these instructions

This manual contains important instructions for EVBox Troniq High Power that need to be followed during installation, operation and maintenance of the unit. You must carefully read the safety information in this manual before you start.

2. Symbols used in this manual

DANGER

Indicates an imminently hazardous situation with a high level of risk which, if the danger is not avoided, will cause death or serious injury.

WARNING

Indicates a potentially hazardous situation with moderate risk level which, if the warning is not obeyed, can cause death or serious injury.

CAUTION

Indicates a potentially hazardous situation with a medium risk level which, if the caution is not obeyed, may cause minor or moderate injury or damage to the equipment.

Note

Notes contain helpful suggestions or references to information not contained in the manual.

3. Safety

3.1. Safety instructions

Read and observe the following safety precautions before you install, service, repair, relocate, use or decommission your EVBox Troniq High Power charging station. The installer must ensure that the charging station is installed in accordance with the relevant country-specific standards and local regulations.

The installation must be performed by a trained and EVBox certified installer.

DANGER

Not following the installation and user instructions given in this manual will result in the risk of electric shock, which will cause severe injury or death.

- Read this manual before installing or using the charging station.
- If you are unsure about how to install or use the charging station after reading this manual, contact your retailer or reseller for more information.

DANGER

Installation, servicing, repair, relocation, or decommissioning of this charging station by a non-qualified person will result in the risk of electric shock, which will cause property damage, severe injury, or death.

- Only a qualified electrician is permitted to install, service, repair, or relocate the charging station.
- The user must not attempt to service or repair the charging station as it does not contain user-serviceable parts.
- State or province and local regulations may be applicable and may vary depending on your place of residence or country of use. A qualified electrician must always ensure that the charging station is installed, serviced, repaired, relocated, and decommissioned according to the applicable state or province and local regulations.

DANGER

Working on electric installations without proper precautions will result in the risk of electric shock, which will cause severe injury or death.

- Switch off the input power before installing the charging station.
- Do not switch on the charging station if it is not fully installed or not secure, unless specified in the maintenance instructions.
- Do not install a charging station that is faulty or has a noticeable defect or deficiency.

 DANGER

Operating the charging station when it is damaged or worn will result in the risk of electric shock, which will cause severe injury or death.

- Do not operate the charging station if the power supply, the enclosure or an EV connector is broken, cracked, open, or shows any other indication of damage.
- Do not operate the charging station if a charging cable is frayed, has broken insulation, or shows any other indication of damage.
- In the event of danger and/or an accident, have the electrical supply to the charging station disconnected immediately.
- Contact your installer if you suspect that the charging station is damaged.

 DANGER

Some electric vehicles release hazardous or explosive gasses when charging which will result in the risk of explosion, which may cause severe injury or death.

- Refer to your vehicle user manual to check if your vehicle releases hazardous or explosive gases when charging.
- Follow the instructions given in the vehicle user manual before choosing the location of the charging station.

 DANGER

Extensive exposure of the charging station to water will result in the risk of electric shock, which may cause severe injury or death.

- Do not direct powerful jets of water toward or onto the charging station.
- Do not put the charging plug into any liquid.

 WARNING

Installing the charging station during wet environmental conditions (for example, rain or fog) can result in the risk of electric shock and damage to the product, which can cause severe injuries or death.

- Do not install or open the charging station during wet environmental conditions (for example, rain or fog).

 WARNING

Incorrect use of the charging station may result in the risk of electric shock, which may cause injury or death.

- Make sure that the contact area of the charging plug is free from dirt and moisture before starting a charging session.
- Make sure that the charging cable is positioned so that it will not be stepped on, tripped over, driven over, or otherwise subjected to excessive force or damage. Where applicable, make sure that the charging cable is correctly stowed when it is not in use, and be sure that the charging plug does not touch the ground.
- Only pull on the charging plug hand grip and never on the charging cable itself.
- Keep the charging station, charging cable and charging plug away from heat sources, dirt, and water.
- Do not use explosive or readily flammable substances near the charging station.

 WARNING

Using adapters, conversion adapters, or cord extensions with the charging station can result in technical incompatibilities and can result in damage to the charging station, which can cause injury or death.

- Before connecting the charging station, have a qualified electrician confirm that all wiring is properly installed and complies with applicable state or province and local requirements.
- Use this charging station to charge compatible electric vehicles only. Refer to the charging station specifications in the charging station installation manual for details.
- Refer to your vehicle user manual to check if your vehicle is compatible.

 WARNING

Exposure of the charging station or the charging cable to heat or flammable substances can result in damage to the charging station, which can cause injury or death.

- Make sure that the charging station and the charging cable never come into contact with heat.
- Do not use explosive or readily flammable substances near the charging station.

 WARNING


Using the charging station under conditions not specified in this manual can result in damage to the charging station, which can cause injury or death.

- Use the charging station only under the operating conditions specified in this manual.


 WARNING

Working on electrical installations without using personal protective equipment can result in the risk of injury.

- Use personal protective equipment such as eye protection, cut-resistant gloves, and non-slip safety shoes to prevent personal injuries.


 WARNING

Be sure that the charging cable is positioned and stored so that it will not be stepped on, tripped over, or otherwise subjected to damage or stress.

 CAUTION


Charging a vehicle with the charging cable not completely extended can result in overheating of the cable, which can damage the charging station.

- Before you connect the charging cable to the vehicle, fully unwind the charging cable so it has no overlapping loops.

 CAUTION

Putting fingers into or leaving other objects inside the plug port (for example, during cleaning) can cause injury or can damage the charging station.

- Do not put your fingers into the plug port.
- Do not leave objects inside the plug port.

 CAUTION


Not taking precautions against ESD (Electrostatic discharge) can damage electronic components in the charging station.

- Take the necessary precautions against ESD before touching electronic components.

 CAUTION

Improper use of the charging station can result in damage to the charging station, which can cause injury or death.

- Read and understand this manual before installing or using the charging station.
- Do not allow children to operate or play with the charging station. Adult supervision is required when children can access a charging station that is in use.
- Do not put fingers into the electric vehicle connector.

 CAUTION

Not enabling firmware updates for this charging station, or disabling, opting out of, or otherwise failing to install available firmware updates, can cause the charging station to encounter problems, function with errors, and be more prone to safety or security risks.

 CAUTION

Individual electric utilities and other providers of physical electricity distribution service may impose registration or connection requirements applicable to the charging station. The user and/or the user's qualified electrician should contact the local utility or provider of electricity distribution service to confirm that the existing infrastructure is adequate to accommodate installation of the charging station and to confirm the existence of any registration, connection, or other requirements.

⚠ CAUTION

Improper use of the charging station can result in damage to the charging station, which can cause injury or death.



- Read and understand this manual before installing or using the charging station.
- Do not allow children to operate or play with the charging station. Adult supervision is required when children can access a charging station that is in use.
- Do not put fingers into the electric vehicle connector.

⚠ CAUTION

Improper use of the charging station or failure to follow the installation and user instructions will not only create a risk of electric shock, which will cause severe injury or death, but may also void any limited warranty that is in effect.

- Read this manual carefully before arranging for installation or using the charging station.
- If you are unsure how to install or use the charging station after reading this manual, contact your retailer or reseller for more information.

3.2. Safety labels on the packaging

Label	Location	Description
	On the packaging	Tip over hazard. Packaging to be handled with a mechanical unloading device or forklift.
	On the packaging	ATTENTION! Content to be checked in the presence of the carrier Packaging not to be handled without a mechanical unloading device of forklift

4. Introduction

This Installation and User Manual outlines the installation requirements and steps for EVBox Troniq High Power, as well as how to use the station.

These instructions are valid for several models of the charging station. Some features and options described may not apply to your charging station.

4.1. Important information

The document is produced for information purposes only and does not constitute an offer binding upon EVBox. EVBox has compiled the contents of this document to the best of its knowledge. No express or implied warranty is given for the completeness, accuracy, reliability, or fitness for particular purpose of its content and the products and services presented therein. Specifications and performance data contain average values within existing specification tolerances and are subject to change without prior notice. Prior to ordering, always contact EVBox for the latest information and specification. EVBox explicitly waives liability for any direct or indirect damage, in the broadest sense, arising from or related to the use and/or interpretation of this document. © EVBox Bordeaux. All rights reserved.

4.2. Retention of the Manual

Keep this manual for the entire lifetime of the EVBox Troniq High Power.

CAUTION

This manual is intended as a resource for qualified personnel with experience in working on High Voltage projects who are capable of identifying the requirements and taking all necessary precautions to safely complete a EVBox Troniq High Power installation.

All EVBox manuals can be downloaded from www.evbox.com/manuals.

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www.evbox.com/support

4.3. Related documents

Below the list of related documents:

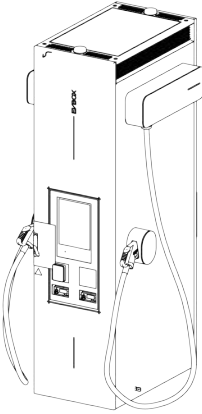
Document	Number	Location
EVBox Troniq High Power maintenance manual	D002887	EVBox Partner portal ⁽¹⁾
EVBox Troniq High Power installation report	D003061	evbox.com/manuals
EVBox Troniq High Power commissioning report	D003059	EVBox Partner portal ⁽¹⁾
EVBox Troniq High Power preventive maintenance plan	D002378	evbox.com/manuals
EVBox Troniq High Power preventive maintenance report	D003058	EVBox Partner portal ⁽¹⁾
EVBox Troniq High Power Installation Template	D003091	EVBox Partner portal ⁽¹⁾
EVBox DC products software user guide	D002625	EVBox Partner portal ⁽¹⁾
⁽¹⁾ The EVBox Partner portal is accessible via your local EVBox certified partner.		

Table 1. Digital Reporting

Web version	APP version
	
Web Version URL https://forms.evbox.com/232993492288068	Download and Install the App https://forms.evbox.com/app/233246648080861

4.4. List of supplied components

Table 2. Charging station package

#	Description	Quantity	Illustration
1	Charging station	1	

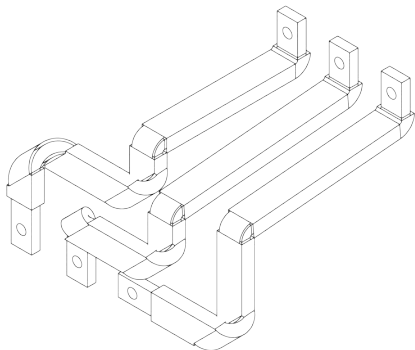
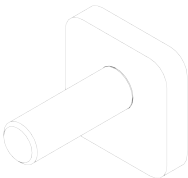
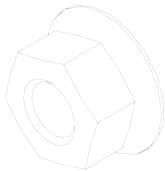
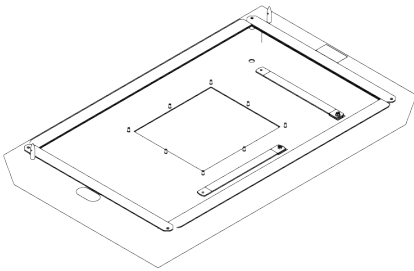
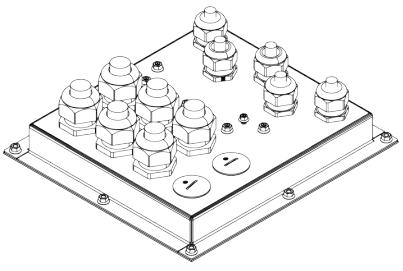
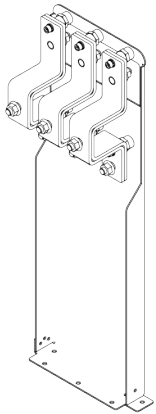
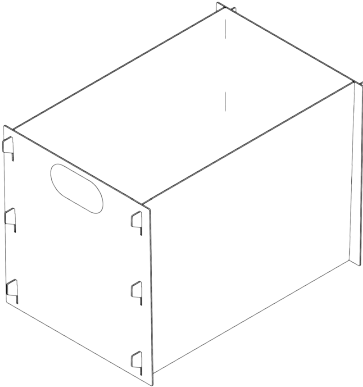

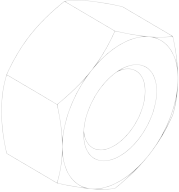
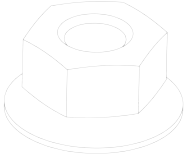


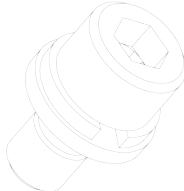
#	Description	Quantity	Illustration
2	Set of flexibars	1	
3	Disconnecter bracket	4	
4	Disconnecter nut Twolock M10	4	

Table 3. Baseboard package

#	Description	Quantity	Illustration
5	Prepared baseboard	1	
6	Connection tower part 1	1	
7	Connection tower part 2	1	

#	Description	Quantity	Illustration
8	Installation template	1	
9	High pressure washer M12	4	
10	Stainless steel hexagonal M12 nut	4	
11	Bolt Twolok M6x14	14	
12	Lifting eye-threaded rod M12 x 36 mm	4	

#	Description	Quantity	Illustration
13	Socket head screw with spring and flat washer M10 x 30 mm	4	
14	Socket head screw with washer M6 x 12 mm	1	

4.5. List of tools

CAUTION

Some operations described in this manual may require a ladder or a stepladder.

Refer to your local regulation regarding the working height and relevant safety instructions.

WARNING

Improper use of a step ladder can cause injury or death.

- Obey the manufacturer's instructions for the step ladder.

Below is the list of the tools required (not included) to install the EVBox Troniq High Power:

- 1/2" ratchet
- 1/2" drive wobble extension
- 1/2" metric 6-point socket, 13 and 16 mm
- 1/4" ratchet
- 1/4" metric 6-point socket, 7 and 8 mm+ socket holder drive
- PZ2 screwdriver
- 2 mm hex screw
- 1/2" Torque wrench (14, 35, 45 Nm)
- Technical marker for bolt tightening
- Drill
- Concrete drill bit, 12 mm
- Door key (type 455)
- Ladder or stepladder (maximum working height: 2.4 m)
- For Payter option: PZ1 screwdriver, USB Type A to Micro B
- Ethernet cable RJ45
- Suitable lifting equipment to hoist the station (see [Handling by crane on page 15](#))
- Temporary weather shelter

5. Transport and storage

5.1. Storage

WARNING

Condensation inside the cabinet damages the charger.

- Only transport and store the charging station in its original packaging. No liability can be accepted for damage incurred when the product is transported in non-standard packaging.
- Store the charging station **away from exposure to the sun** and in a dry environment in the temperature range stated in the specifications (see [storage conditions on page 21](#)).
- Disconnect input power before removing the charging station for storage or relocation.

Failure to follow these instructions will result in waiver of warranty and product damage.

EVBox Troniq High Power has a built-in heater, with dedicated power supply (see [Upstream requirements on page 30](#)), to prevent condensation inside the cabinet.

1. **Before installation**, the heating system must be connected when the charging station:
 - is stored outside,
 - is stored in an interior location that does not meet the [storage conditions on page 21](#).
2. **During installation**: the heating system must be activated immediately when the charging station is installed.
3. **After commissioning**: the heating system must always be activated.

Failure to follow these instructions will result in waiver of warranty and product damage.

Note

Charging station must be connected to the earth if the heating system is used on a temporarily location.

5.2. Transport

WARNING

Damaged product

After any transportation, make a detailed visual inspection of the charging station **with its packaging removed**. Reject the product if there is any visible damage. Make all damage claims to the transport operator immediately and also immediately inform the sender regarding transport insurance.

Failure to follow these instructions can result in death, serious injury or equipment damage.

Visual inspection

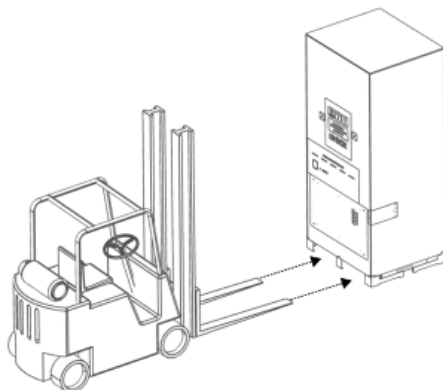
Check if:

- The exterior packaging has been damaged.
- The exterior panels of the charging station are damaged (shock, scratch, ...).
- The doors are working properly.
- The interior of the charging station is clean and undamaged.

5.3. Packed product handling

Handling with a forklift

Handle the packed product with a forklift.



5.4. Packaging removal

⚠ CAUTION

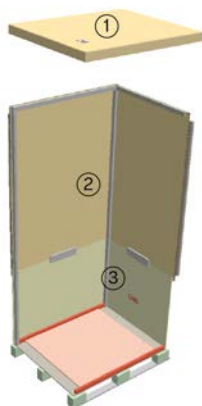
Some operations described in this manual may require a ladder or a stepladder.

Refer to your local regulation regarding the working height and relevant safety instructions.

⚠ WARNING

Improper use of a step ladder can cause injury or death.

- Obey the manufacturer's instructions for the step ladder.



1. Remove the roof.
2. Remove the upper side panels.
3. Remove the lower side panels.

5.5. Supplied components

The packaging includes the following components:

6. EVBox Troniq High Power handling

- Charging station
- Baseboard
- Connection tower
- Cable entry plate
- 4 x lifting screws
- Installation template

6. EVBox Troniq High Power handling

⚠ WARNING

Incorrect handling can result in death, serious injury, or equipment damage.

- Observe the handling instructions.
- Do not handle the product in an other way than described.
- Take all measures required to avoid damage to the product and other hazards.

6.1. Handling by crane

⚠ CAUTION

Some operations described in this manual may require a ladder or a stepladder.

Refer to your local regulation regarding the working height and relevant safety instructions.

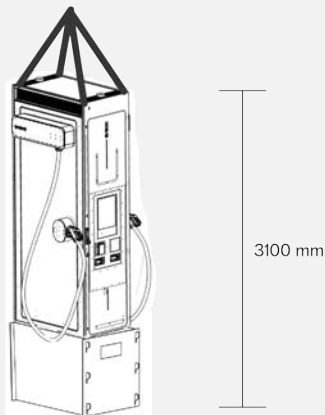
⚠ WARNING

Improper use of a step ladder can cause injury or death.

- Obey the manufacturer's instructions for the step ladder.

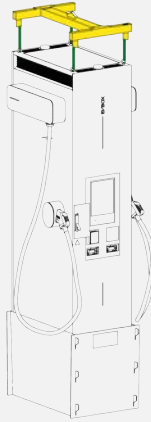
i Note

To install the station, it is necessary to have a crane that can lift more than 3100 mm:

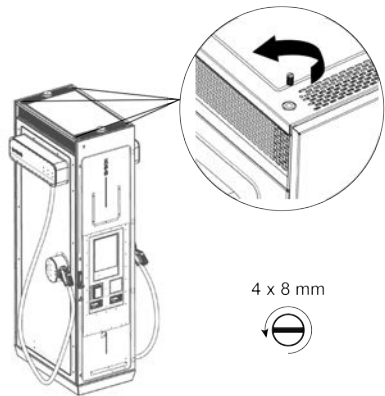


i Note

To reduce the lifting height, it is possible to use a lifting beam:



1. Remove the 4 slotted screws on the roof. Put them aside:

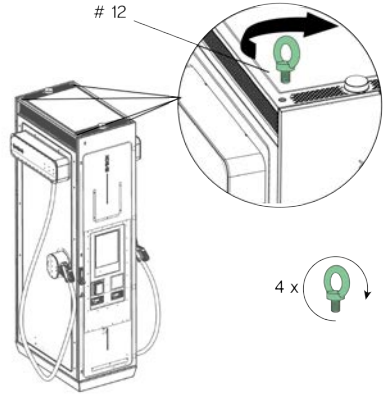


2. Screw the 4 lifting rings:

⚠ WARNING

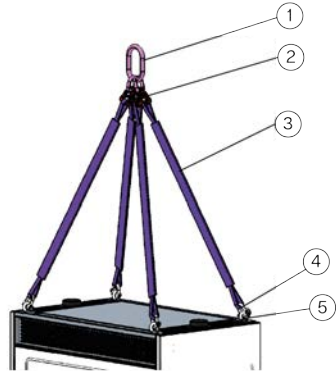
Incorrect tightening of the lifting rings can result in death, serious injury, or equipment damage.

- Lifting rings must be fully engaged in the chassis.



3. Install the hooks and the slings:

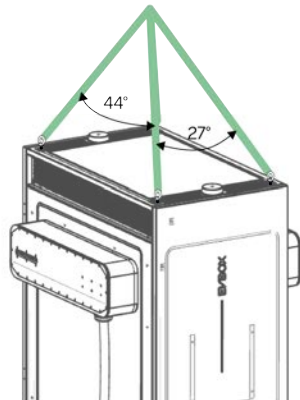
Item	Description
1	Head link, 4 pieces (not included)
2	Connecting link for sling (not included)
3	Sling with two loops (at least 3.28 ft / 1 m) (not included)
4	Straight shackle or D-shaped (not included)
5	Male eyelet (lifting ring) M12.



4. Adjust the slings:

⚠ CAUTION

Maintain the hoisting angle as shown below:



5.

⚠ DANGER

Incorrect handling can result in death, serious injury, or equipment damage.
Handle the charging station with very limited accelerations: less than 0.05g.

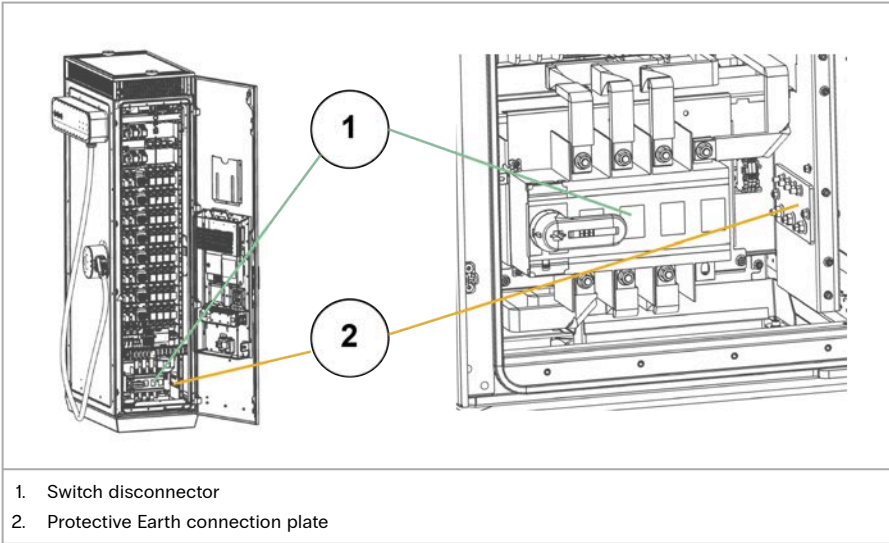
7. Product features

7.1. Product parts

Table 4. External view



Table 5. Internal view



7.2. Product type guide

October 2023 // International

EVBox Troniq Products

Product Type Guide

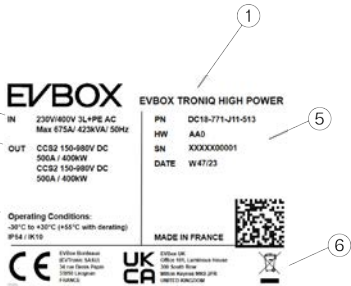
DC 18 - A B C - D E F - G H I

STATION	MODEL	CABLE (RIGHT SIDE)	CABLE (LEFT SIDE)	AC	POWER MODULES/ OUTPUT	SENSORS	EMV PAYMENT	DC METER	REGIONAL COMPLIANCE	PRODUCT LINE
DC DC Charger	T8, Horizon	1. CCS2 dry 100 A / 250 A long 2. CCS2 cooled 3. CCS2 cooled 4. CCS2 dry 500 A / 250 A Compaq 5. CCS2 dry 500 A / 250 A Compaq 6. CCS2 dry 500 A / 375 A sheet 7. CCS2 dry 500 A / 375 A sheet 8. CCS2 cooled short 9. CCS2 cooled long 10. CCS2 dry 350 A short 11. CCS2 dry 350 A long 12. CCS2 cooled short 13. CCS2 cooled long 14. CCS2 cooled long	1. No AC socket 2. AC socket (with AC ME) (sheet)	1. 3 x 30 KW 150 KW 2. 4 x 30 KW 120 KW 3. 5 x 30 KW 150 KW 4. 6 x 30 KW 180 KW 5. 7 x 30 KW 210 KW 6. 8 x 30 KW 240 KW 7. 8 x 30 KW 240 KW 8. 8 x 30 KW 240 KW 9. 1 x 40KW 40KW 10. 1 x 40KW 40KW 11. 10 x 40KW 400KW	1. No sensor 2. T8, wall door 3. T8, switch 4. Door switch	1. Not included 2. Payter Payment Terminal P18 for EU 3. Payter Payment Terminal P18 for the US 4. Payter Connections with Payter Terminal Apollo for EU	1. Uncooled DC meter 2. 2 x Uncooled certified DC meters 3. 2 x MD / 1 x certified DC meters 4. 1 x CTDP certified DC meters	1. CE 2. ILL	1. Modular Standard Height 2. Modular Compact Height 3. High Power	

LEGEND:
Electric green will be available as an option in the future

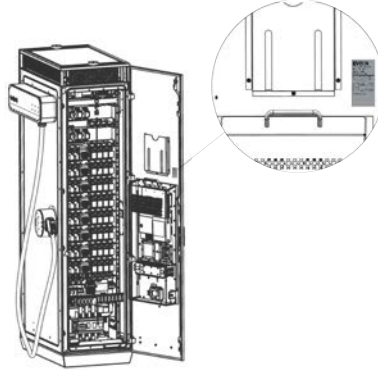
EVBOX

7.3. Nameplate

Nameplate	Description
 <p>The nameplate contains the following information:</p> <ul style="list-style-type: none"> 1: Product name: EVBOX TRONIG HIGH POWER 2: Input current: 230V/400V 3L+PE AC, Max 675A/ 423kVA/ 50Hz 3: Output current: CC52 150-980V DC, 500A / 400kW, CC52 150-980V DC, 500A / 400kW 4: Operating Conditions: -30°C to +30°C (+55°C with derating) IP44 / IK10 5: Product information: PN DC18-771-J11-513, HW AAD, SN XXXXX00001, DATE W47/23 6: Conformities: CE, UK CA, and a recycling symbol. 	<ol style="list-style-type: none"> 1. Product name 2. Input current 3. Output current 4. Operating conditions 5. Product information 6. Conformities

7.4. Touchscreen - Nameplate

The touchscreen nameplate is located behind the HMI cover.



Nameplate		Description
①	EVBOX EVBOX SUCCESS V4 PN : S001740AA0	1. Product number
②	Nominal Voltage : 24V DC Nominal Current : 1A Maximum Power : 24W Contains a non-rechargeable lithium 3.0V cell battery CR1220	2. Technical data
③	EVBox Bordeaux (EVTronic SASU) 34 rue Denis Papin 33850 Léognan FRANCE MADE IN FRANCE	3. Place of product manufacturer

8. Technical specifications

DC OUTPUT	
Connector type	Mode 4 (DC charging) CCS2
Output power	400 kW - 360 kW - 320 kW
Power module granularity	40 kW
Output voltage range	150 VDC to 980 VDC
Output current	up to 500 A / 980 VDC per cable 500 A for > 30 mn at 20 °C ambient
Cable reach <i>from charger front to nozzle tip</i>	> 3 meter reach

DC OUTPUT**i Note**

The power delivered by the charger depends on several factors, such as:

- Vehicle battery's voltage
- Vehicle battery's temperature
- Vehicle state of charge
- Ambient temperature

STRUCTURE AND PHYSICAL PROPERTIES

Enclosure material	Power coated paint, enclosure in alloy, galvanized and stainless steel
Enclosure ratings	IP54 / IK10
Operating noise level	70 dB(A) with full 400kW power, by 25°C ambient, measured at 3 m from the front of the charger ⁽⁴⁾
Operating temperature	-30 °C to +30 °C (+30 to +55 °C with derating)
Storage temperature	-40°C to +70°C
Operating humidity	20% to 95% relative humidity, non-condensing
Storage humidity	20% to 85% relative humidity, non-condensing
Ambiance	Non explosive area
Cooling	Forced ventilation
Maximum installation altitude	2000 m
Dimensions (W x H x D)	<ul style="list-style-type: none"> · 866 x 2479 x 1050 mm · 960 x 2500 x 1200 mm packed
Weight	400 kW: 780 kg / < 820 kg packed
Colors	Body: Traffic white (RAL 9016) Other: Black grey (RAL7021), Jet Black (RAL9005) <i>Most RAL colors and stickering service available with a minimum order quantity</i>
EMC Classification	Class A Caution: This equipment is not intended for use in residential environments and may not provide adequate protection to radio reception in such environments.

CERTIFICATION & COMPLIANCE

CE
UKCA
RED Directive 2014/53/EU
IEC 61851-1: 2017; EN 61851-1: 2019 / IEC 61851-23: 2014; EN 61851-23: 2014/C1: 2016 / IEC 61851-21-2: 2018; EN 61851-21-2: 2021
DC Meters Class A according to EN50470, with accuracy better than +/- 2%, 2 possible configurations: – Eichrecht For Germany and Austria – MID / LNE (LNE: for France; MID: for the rest of Europe)

CONNECTIVITY

Authorization	RFID/NFC, Autocharge (MAC Address) Optional contactless Payment terminal with Pinpad, supporting Apple Pay
RFID reader	Contactless reader RFID/NFC (ISO 14443, ISO 18092, ISO 15693, ISO 18000-3, Calypso, Mifare Ultralight C, Classic, Desfire)

CONNECTIVITY	
Status indication	LED strips
HMI	15" IK10 anti-vandalism LCD color touchscreen
Network connection	CPO Backend via 4G/LTE (3G/2G Fallback) or Ethernet EVBox remote monitoring server via a second modem
Communication protocol to the backend	OCPP 1.6J ⁽³⁾ , ready for later software update to OCPP 2.0.1
Communication protocol to the EV	DIN70121, ready for later software update to Plug & Charge / ISO 15118

AC INPUT			
Voltage range	400 VAC +/-10% (main) 230 VAC +/-10% (heater)		
Number of phase	3P + GND (main), 1P + N (heater)		
Frequency	50 Hz		
Nominal input current	320 kW	360 kW	400 kW
	486 A	547 A	608 A
Short circuit current rating (I _{SCCR})	25 kA		
Power factor	> 0.99		
Efficiency	> 95.5% full load (All inclusive, measured between the AC inlet to the end of the CCS connector)		
Surge protection device	Type 2 / 3P+N / 400V / 20 kA		

⁽²⁾ Can increase at higher temperatures

⁽³⁾ For further technical specifications, please refer to the EVBox DC Firmware guide.

⁽⁴⁾ Results in the field will be influenced by the environment, the measuring instruments and their calibration.

9. Prepare for installation

The following recommendations are intended as a guide to help you prepare for the installation of the EVBox Troniq High Power charging station.

9.1. Safety precautions

You must read and observe the [Safety instructions on page 3](#) at the beginning of this manual before you install, service, or use the EVBox Troniq High Power charging station. The installer must ensure that the charging station is installed in accordance with the relevant country-specific standards and local regulations.

9.2. Plan installation

Electrical

- Calculate the existing electrical load to determine the maximum operating current for the charging station installation.
- Calculate the distance from the local power supply panel to the charging station installation to find the voltage drop. Local regulations may apply and can vary depending upon the region or country.
- Obtain all necessary permits from the local authority that has jurisdiction.
- PE grounding connectors must be not spliced.
- Refer to local regulations, maximum current and voltage drop to select the conductor sizes (section, ...).
- Prepare the upstream electric switchboard according to local regulations and the EVBox recommendations in [Upstream requirements on page 30](#).
- Prepare the installation areas with the correct power wiring and data cabling.

Other

- Make sure that there is good cellular reception where the charging station will be installed.
- Use the correct tools and ensure sufficient material resources and protection measures.
- Obtain all necessary permits from the local authority that has jurisdiction.

Ethernet network

To connect several EVBox Troniq High Power (for network sharing), it is necessary to install an Ethernet network (see [Ethernet prerequisite on page 30](#)).

9.3. Select location

Observe the following recommendations to select the location.

This Charging station is intended for:

- Outdoor and indoor areas
- Location in a non-restricted area

Install the charging station in:

- A non explosive environment
- An environment with no accumulation of sand, dust, snow, ...
- Environment where it is not exposed to extreme sunlight and vulnerable to external damage.

Example of environment :

- Outdoor: Urban and industrial atmospheres, moderate sulphur dioxide pollution. Coastal area with low salinity.

Note

In locations with harsh weather conditions (e.g., high temperatures, snow, strong sun conditions, etc.), it is recommended to ensure additional protection such as canopy or roof protection. Make sure there is no height conflict for the charging station installation (see [Handling by crane on page 15](#)).

9.4. Parking space placement

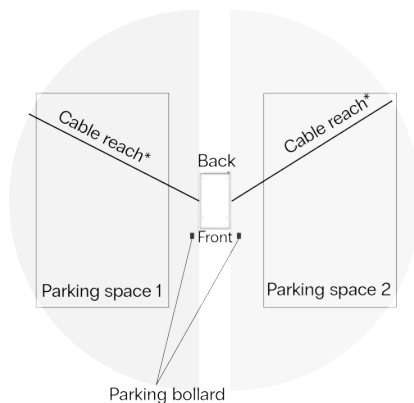
To achieve the maximum cable length, it is recommended to place the EVBox Troniq High Power as described below.

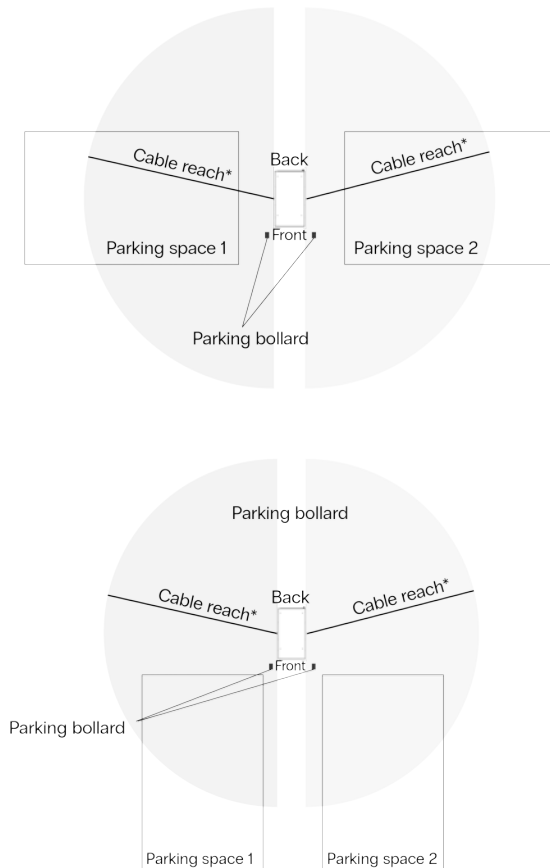
Note

Leave adequate free space in front of the charging station to ensure that users can interact with the touchscreen and other interfaces safely and comfortably.

Note

Leave at least 600 mm on both side of the charger in order to ensure the connector is accessible.





*: Cable reach: > 3 m

Note

For people with reduced mobility (wheelchairs, etc.) see [Disabled access on page 62](#). It is recommended to install the EVBox Troniq High Power on plain ground (no sidewalk).

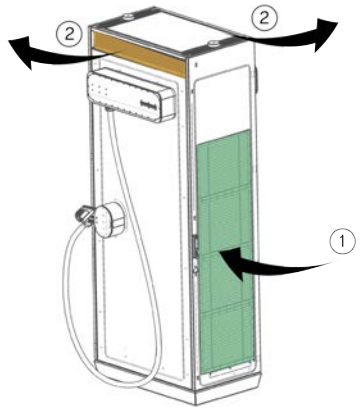
Note

Bollards should not interfere with the clearance around the charger (see [Clearance on page 26](#)).

9.5. Cooling

The air inlet is located at the back door of the charging station and the air outlet is on the roof of the charging station.

For indoor use, the room must have a ventilation exceeding 2600 m³/h.



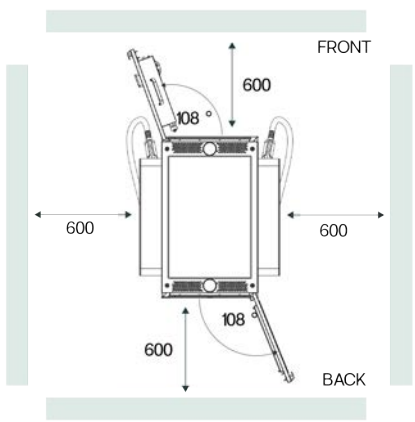
- 1. Air inlet
- 2. Air outlet

9.6. Clearance

The EVBox Troniq High Power requires the following space for cable handling by users and for maintenance operations.

Note

As the ventilation inlet is located at the back of the charging station, the free space at the back must be ventilated accordingly.



Values in mm

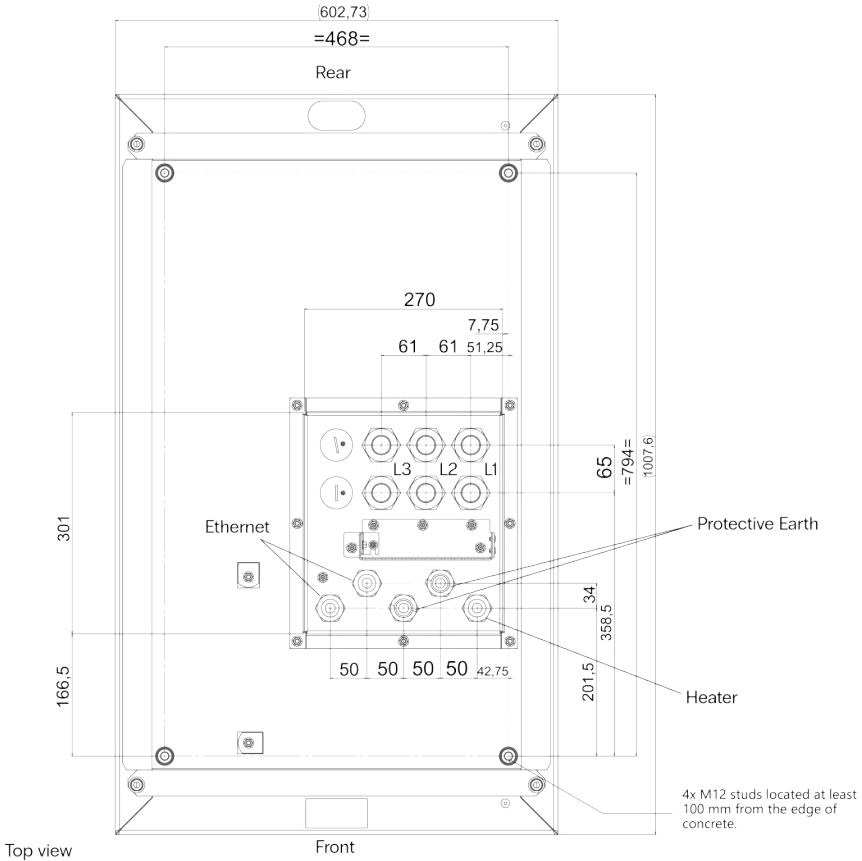
9.7. Foundations

Observe the following rules regarding the foundations:

- Foundations must be carried out in accordance with local regulations.
- Concrete characteristics must be calculated based on the technical data of the charging station.
- The concrete should be frost-proof.
- Thickness of the foundations must be calculated in accordance with the weight of the system and the installation site.
- The foundation must be flat and leveled.
- Foundations must be under the ground.
- Charging station must be installed on the ground.

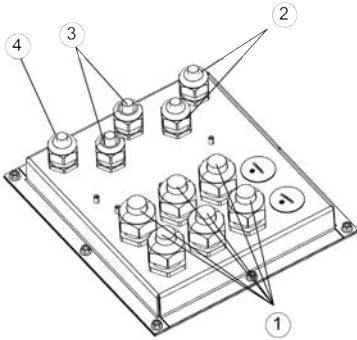
9.8. Layout plan

Prepare the foundation according to the diagram below:



The installation template is available on [EVBox Partner portal](#) see [D003091AA0_EVBox_Troniq_High_Power_Installation_Template](#)

Cable entry plate



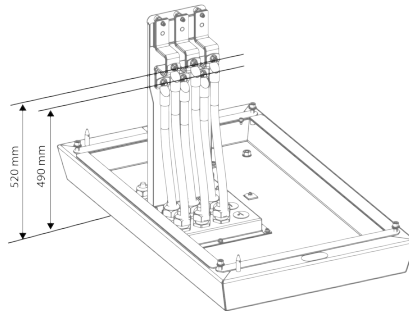
1. Cable glands (x 6) for L1, L2 and L3. External cable diameter: 0.87..1.26" (22..32 mm)
2. Cable glands (x 2) for Ethernet cables. External cable diameter: 0.28..0.59" (7..15 mm)
3. Cable glands for Protective Earth (x 2). External cable diameter: 0.35..0.83" (9..21 mm)
4. Cable glands for heating system. External cable diameter: 0.28..0.59" (7..15 mm)

i Note

If the cable glands inner diameter does not fit with the selected power supply cables, please contact your local EVBox representative.

Input cables minimum height

Observe the minimum height for the input cables



9.9. Protection against electric shock and short circuits

Protection against electric shock

The charging station contains the following devices to protect against electric shock:

- IMD (Insulation Monitoring Device). One on each outlet on CCS2.
- Surge protector on the AC grid input.

The following device is not included in the unit and must be installed in the switchboard upstream:

- Refer to local regulations, maximum current and voltage drop to select the device against electric shock in switchboard upstream (see [Technical specifications on page 21](#)).

Short circuit protection

The charging station contains the following devices to protect against short circuit:

- CCS2 outlet is protected by fuse.
- 24 VDC power supply is protected by circuit breaker 10A.

9.10. DC Smart Charging

If the DC Smart Charging feature is used at the site to dynamically share the power loads between several EVBox DC charging stations, an Ethernet network must be installed to connect the charging stations.

For Ethernet port location, see [Touchscreen - Ports on page 56](#).

9.11. Ethernet prerequisite

An Ethernet network must be installed to connect chargers when:

- DC Smart charging feature is used
- Modem sharing

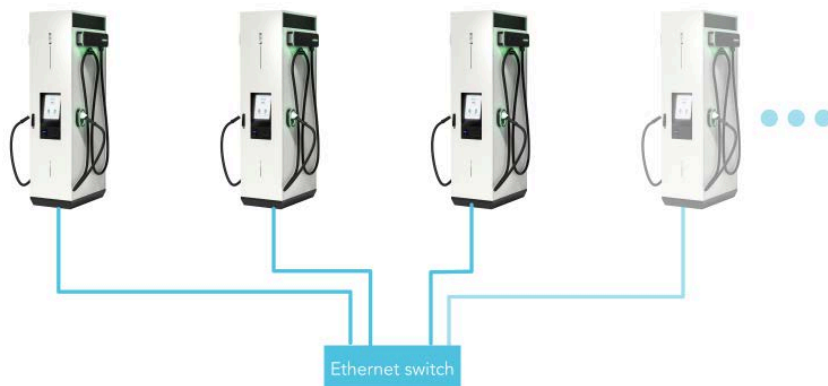
CAUTION

Ethernet cables must be separated from high voltage cable by:

- A distance barrier of 5 cm,
- Or, isolation barrier.

If several EVBox Troniq High Power have to be connected together, it is necessary to use an external switch.

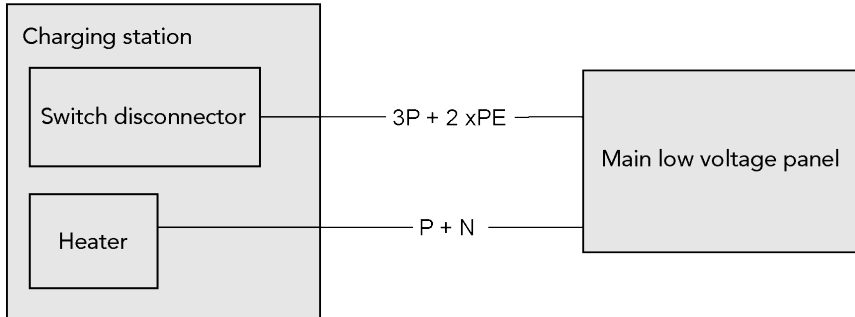
Connection example (Ethernet switch not included)



9.12. Electrical requirements

9.12.1. Upstream requirements

Charging station must be supplied with power according to the diagram below:



Charging station

Electrical connection must be carried out by a professional electrician according to the local regulations.

Charging station must be connected to an electrical network with the following characteristics:

- 3 Phases (3P + 2 x PE).
- 400 VAC +/- 10%
- 50 Hz

The main switch disconnecter, located upstream of the charger power supply, must be rated by the installer.

Refer to local regulations, maximum current and voltage drop to select the upstream protection (see [Input current on page 0](#)).

Heater

The heating system must be connected independently to an electrical network with the following characteristics:

- 1P + N (Class II)
- 230 VAC +/- 10%
- 50 Hz
- Maximum input current: 5.2 A

Refer to local regulations, maximum current and voltage drop to select the upstream protection.

Note

A RCD 30mA type A is required as minimum.

9.12.2. Power supply cables

The cables come from the bottom of the charger through cable glands.

The appropriate cable cross section of the supply cable depends on the power rating and distance between the power supply cabinet and the charging station. The voltage drop must not exceed 5% (it is advisable to have a maximum allowable voltage drop of 3%).

Note

- Diameter of the cable is to be defined as per [Plan installation on page 23](#).
- Only one cable per cable gland is allowed (see [Layout plan on page 28](#)).
- Do not open unused cable glands.

Failure to adhere to these instructions will result in the ingress of water, dust, or worse— animals entering the charging station—thus leading to premature malfunction.

3 phase power supply connection

Recommended conductor	Terminal	Terminal diameter	Maximum terminal width	Tightening torque	
Extra flexible multicore	Ring cable lug	M10	39 mm	40 Nm	16 mm

Heater power supply connection

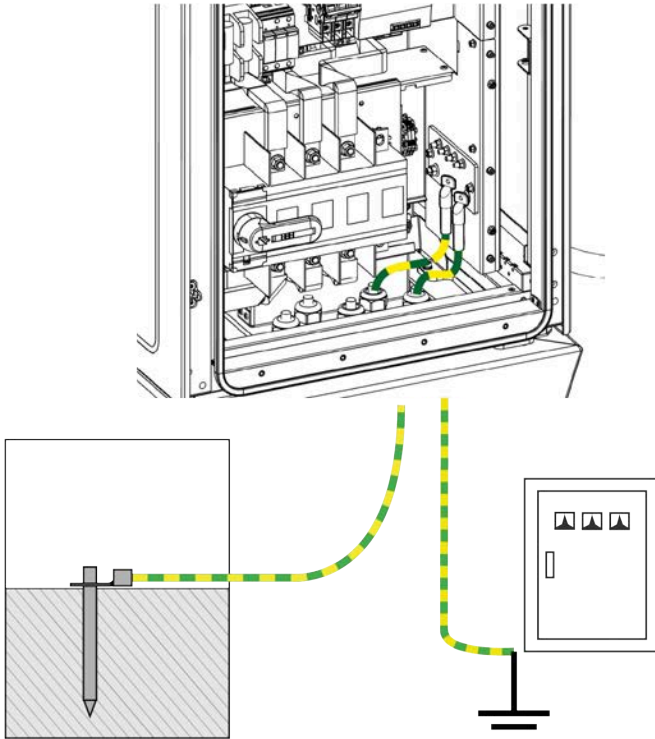
Observe the following rules for the heater power supply connection:

Line section (P + N)	Minimum 2.5 mm ²
Type of connection	2-pole terminal strip
Recommended end sleeves	END SLEEVES AHI DIN HL2.5/12BU

9.12.3. Protective earth instructions

Observe the following rules for the protective earth instructions:

- The measured value of earth impedance, in dry conditions (in summer with no rain), of the charger must be lower than 20 Ohms.
- The PE cross section shall be rated by the installer with reference to local regulation.
- According to the IEC 61439-1 standard, the minimal PE cross section must be S/2, where S is the line conductors cross section of 3-phase power supply.
- The maximum cross section permissible for one PE cable is 120 mm².
- It is mandatory to have 2 separate PE connections (for redundancy). Including one, recommended, bonded to earth locally to the charger:



- It is recommended to use the same section for both PE cables.

Example of PE cable cross section:

- If the 3-phase power supply cable cross section is $2 \times 240 \text{ mm}^2$ per line, then the PE cross section is $2 \times 120 \text{ mm}^2$.

Protective earth connection

Terminal	Terminal diameter	Tightening torque	Hex
Tubular lugs	M8	14 Nm	13 mm

10. Install the EVBox Troniq High Power

10.1. Install the baseboard

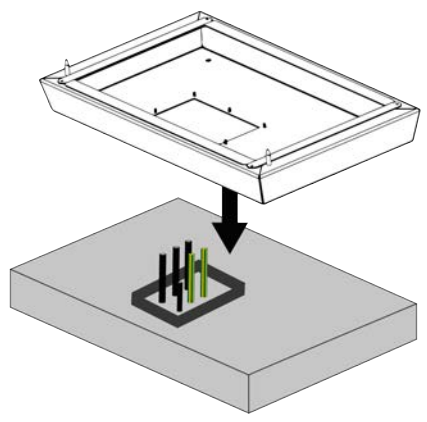
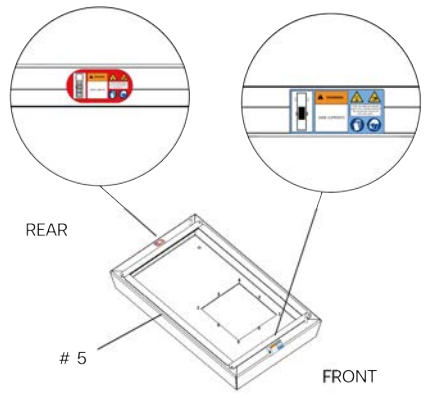
WARNING

Risk of electric shock. Can result in serious injury or death.

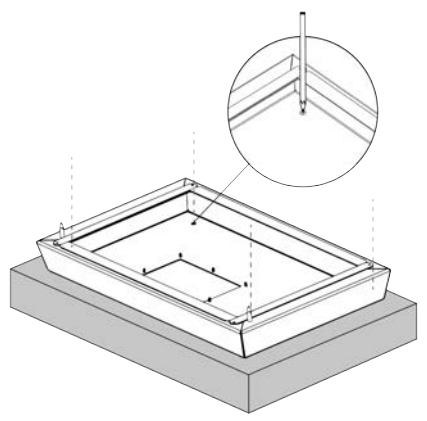
Verify the absence of voltage before servicing.

Recommended threaded rods: M12 stainless steel, length outside of the ground : between 30 mm and 60 mm.

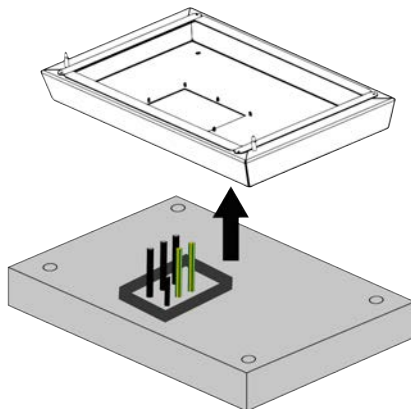
- 1. Place the baseboard on the concrete foundation:
Note the orientation of the baseboard.



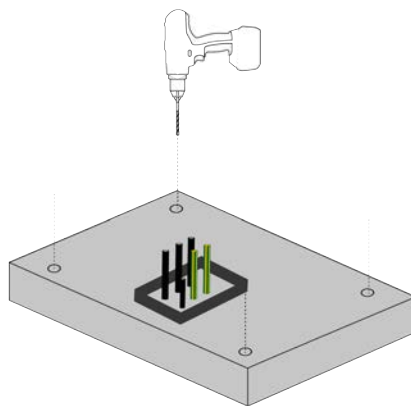
- 2. Mark the 4 positions:



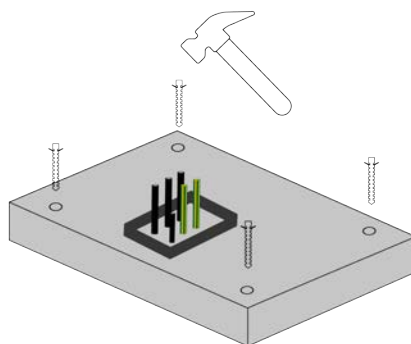
3. Remove the baseboard:



4. Drill the 4 holes (12 mm):



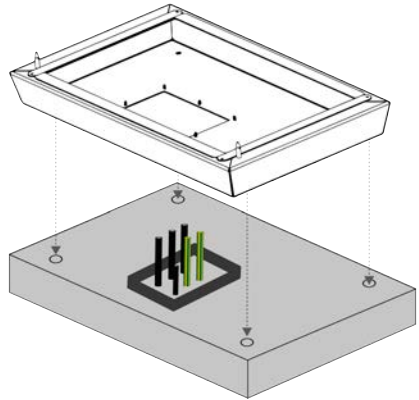
5. Install the anchors bolt (not included):



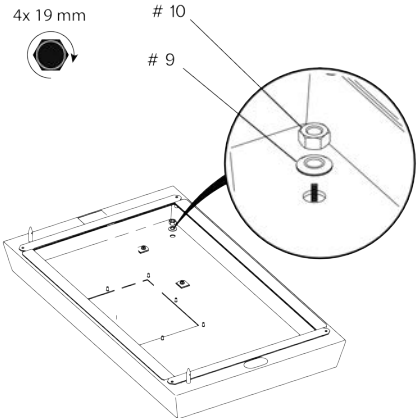
6. Place the baseboard:

i Note

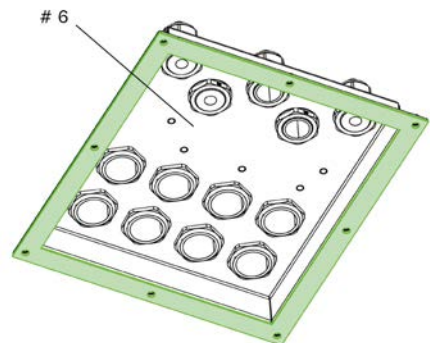
Check that the baseboard is level.



7. Tighten the 4 screws of the baseboard:



8. Verify the presence of the seal on the cable entry plate:

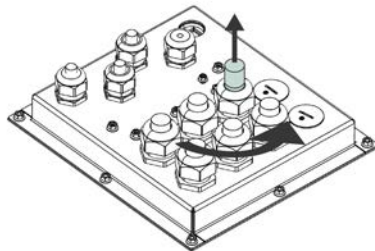


10. Install the EVBox Troniq High Power

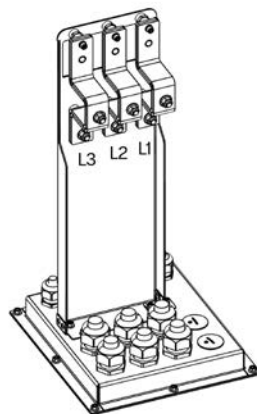
9. Release and remove the protection of the cable glands.

Note

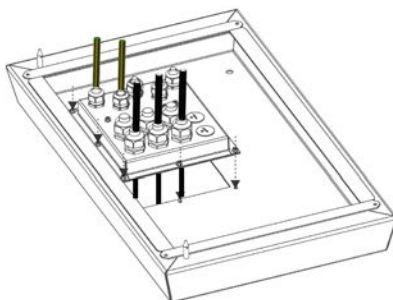
Let the caps on the unused cable glands.



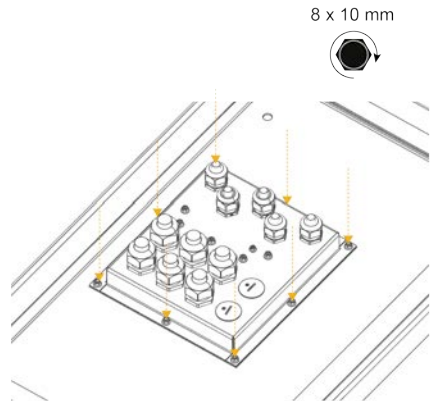
10. Note the phase order:



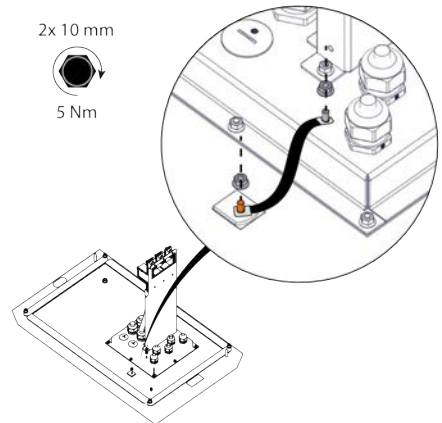
11. Pass the cables through the corresponding cable glands and insert the cable entry plate:



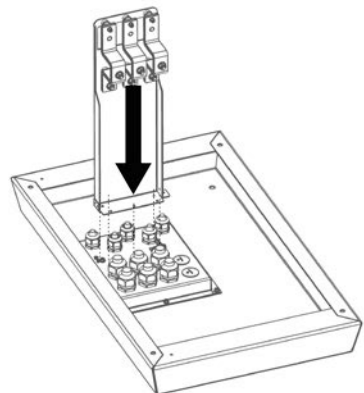
12. Tighten the cable entry plate:



13. Install the Protective Earth braid between the entry plate and the baseboard:

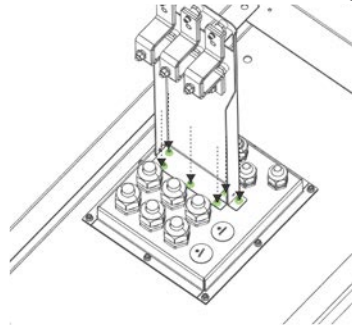


14. Install the connection tower:



15. Tighten the connection tower:

5 x 10 mm



16. Prepare and connect the power supply cables:
Make a mark on the nut to confirm the tightening torque.

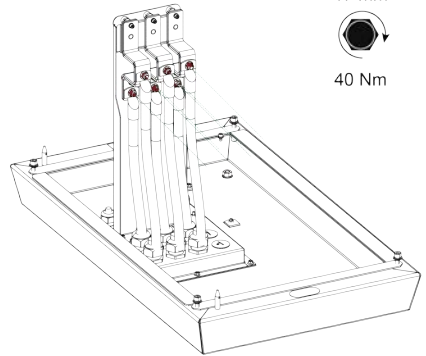
i Note

- Make sure the connection tower is not twisting while tightening the cables.
- To maintain isolation clearance, make sur the terminal lugs are aligned to the connection.

17 mm

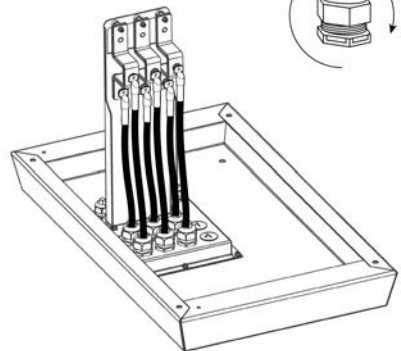


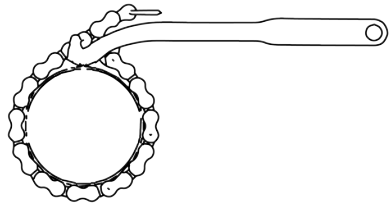
40 Nm



17. Make sure the baseboard is level and tighten the cable glands:

It is recommended to use a chain pipe wrench to tighten the cable glands:





18. Example of installed connection tower:



10.2. Handling

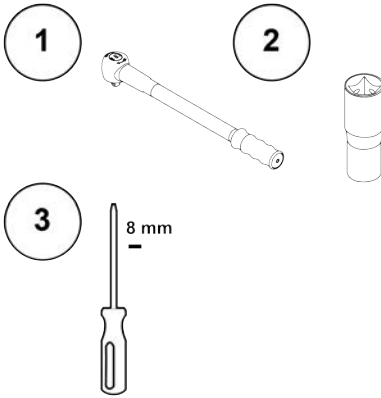
WARNING

- Always transport the charger in an upright position.
- Do not manipulate the charger when it is connected to the power supply.
- Do not use a crane type hoist that is unable to support the weight of the charger.
- The center of gravity of the charger is high, take care when handling.
- Do not place your hand underneath the charger or inside the feet through the side openings.
- The charger must be protected against overturning. This protection must be maintained until final mounting.

10.3. Installation

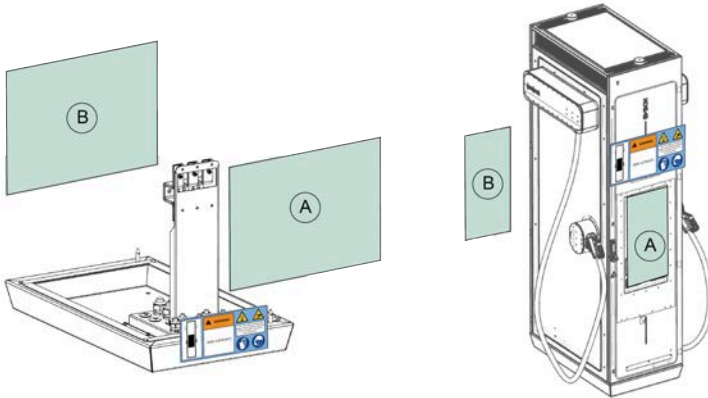
WARNING

Put up caution tape and warning signs to mark working areas. Make sure that connection of the electrical current cannot occur during installation. No unauthorized persons should be permitted to enter the working areas.

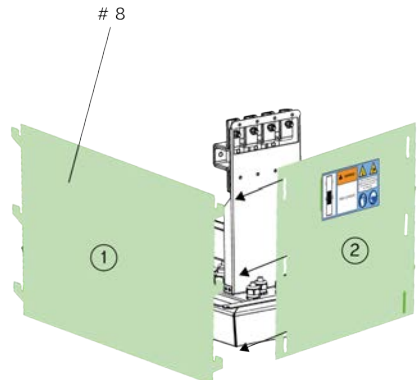


1. 1/2" Torque wrench (40 Nm)
2. 1/2 " socket 17 mm
3. Flat screwdriver 8 mm

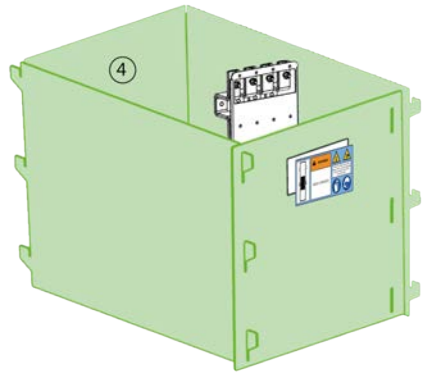
Position the station and the baseboard according to the diagram below:



1. Position the installation guide (1) and place the installation guide (2):



2. Install the installation guide (3) and (4):



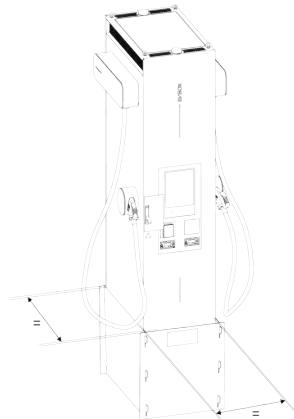
3. To protect the cables, put them safely in the baseboard:



4. Lift the station to the baseboard:

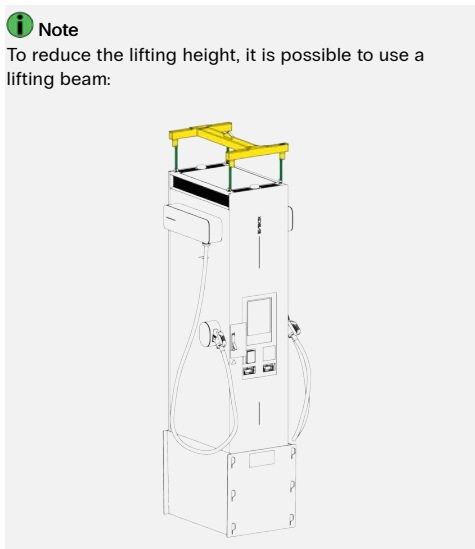
**Note**

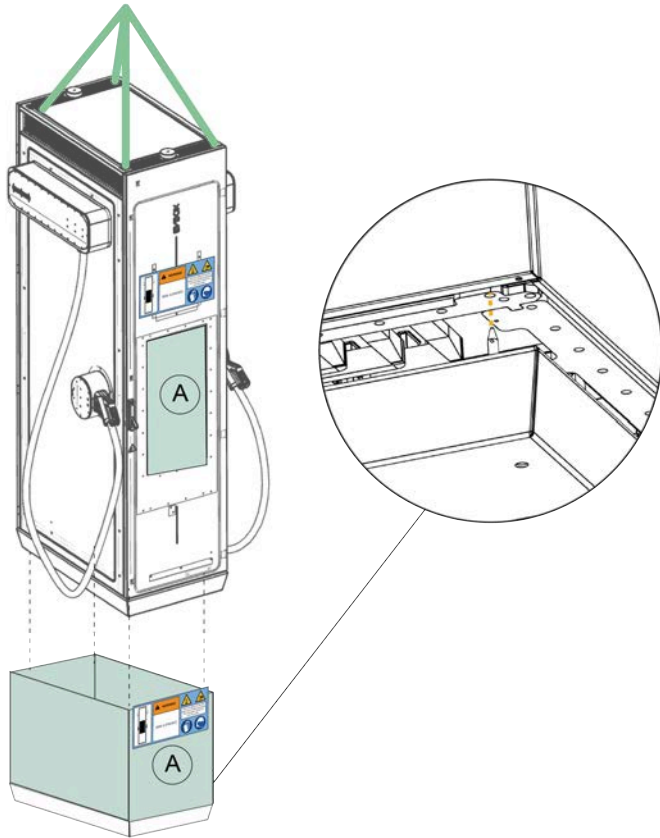
Make sure the 2 guidance pins are inserted in the frame.



i Note

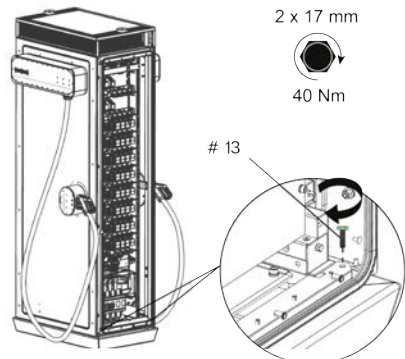
To reduce the lifting height, it is possible to use a lifting beam:





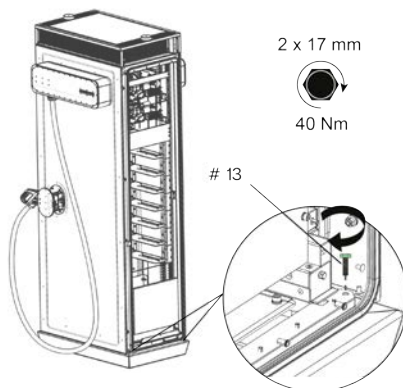
Make sure that spaces between installation template and charging station are the same on both sides, front and rear.

5. Tighten the 2 front side screws:

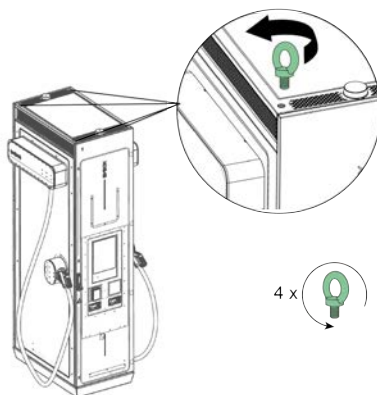


10. Install the EVBox Troniq High Power

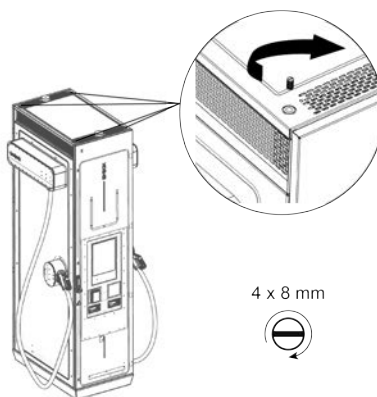
6. Tighten the 2 back side screws:



7. Remove the 4 lifting rings (put them aside in case the station needs to be lifted again).



8. Install the 4 slotted screws, removed during previously, on the roof:



10.4. Open the door

CAUTION

When opening the door, pull the handle firmly and completely, to prevent the cylinder touching the door.
Failure to follow this instruction will result in visible damage to the product.

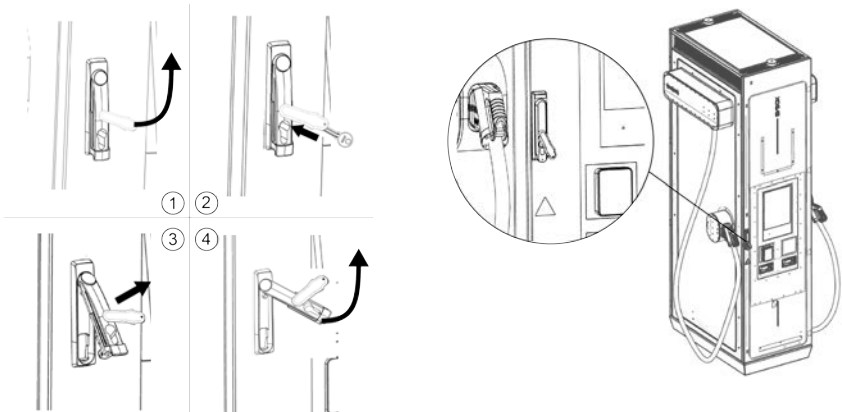
Note

The lock cylinder can be replaced by a custom one, make sure you have the appropriate key to open the door.

Tool: door key (type 455).

Locate the handle.

Open the door:

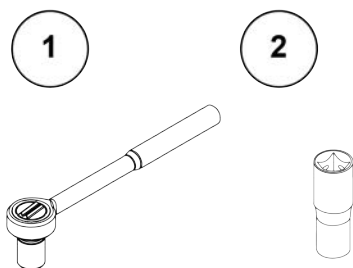


1. Turn the handle cover.
2. Use the key to open the lock.
3. Pull the handle firmly and completely, to prevent the cylinder touching the door.
4. Turn the handle counter-clockwise while making sure the cylinder does not dent the paint.
5. Open the door.

10.5. Remove the lower plastic cover

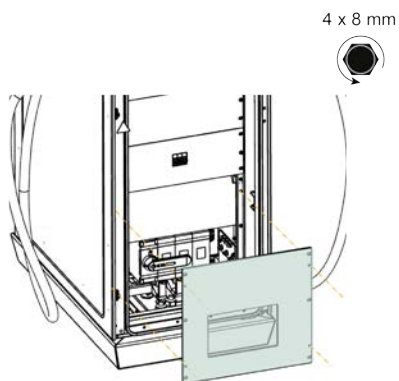
Note

Keep the plastic panel off to the side in a place not exposed to the sun.

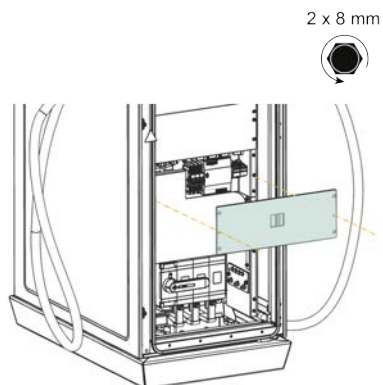


1. 1/4" Ratchet wrench
2. 1/4" Socket 8 mm

1. Remove the first protection cover:

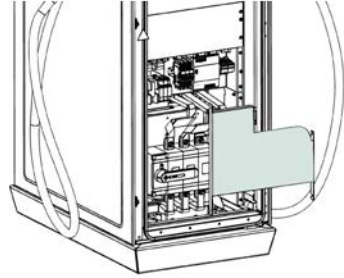


2. Remove the second protection cover:



- Remove the third protection cover:

4 x 8 mm

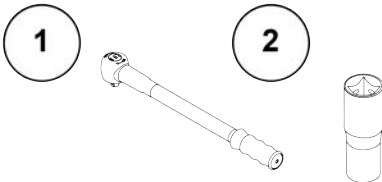


10.6. Electrical connections

WARNING

Risk of electric shock. Can result in serious injury or death.
Verify the absence of voltage before servicing.

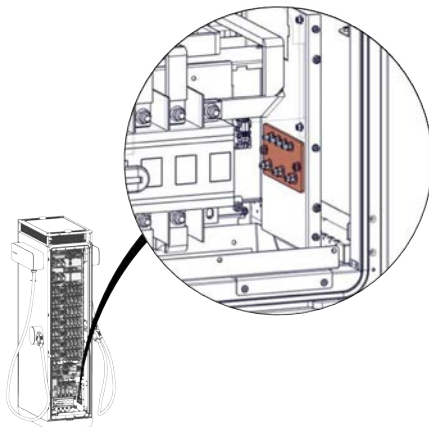
10.6.1. Protective Earth terminal



- 1/2' Torque wrench (14 Nm)
- 1/2' socket 13 mm

10. Install the EVBox Troniq High Power

1. Locate the Protective Earth terminal:

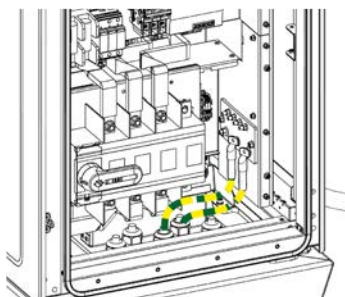


2. Connect the Protective Earth cables:
Make a mark on the nut to confirm the tightening to torque.

13 mm



14 Nm

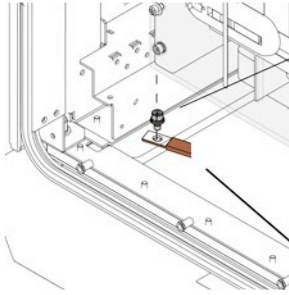


3. Install the Protective Earth between the baseboard and the charging station:

1x 6 mm



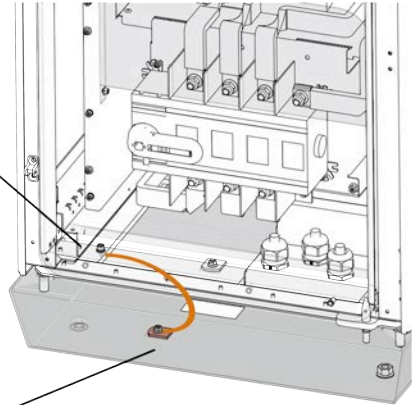
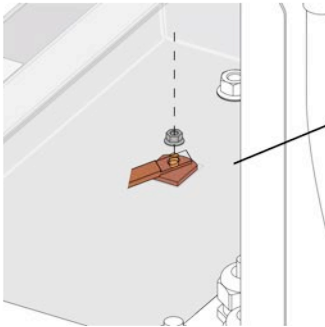
6 Nm



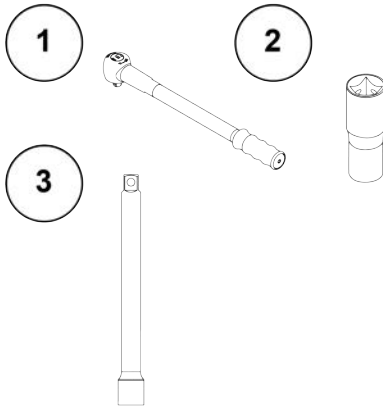
1x 10 mm



5 Nm

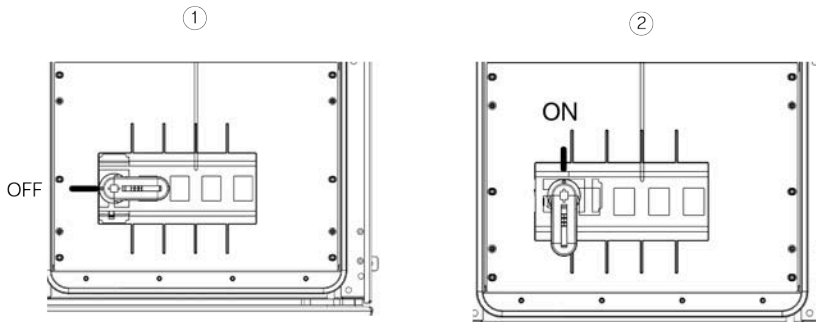


10.6.2. Power terminal



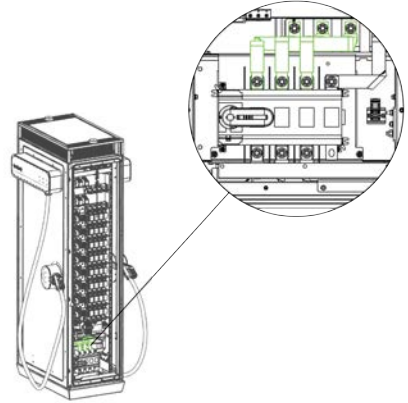
1. 1/2" Torque wrench (45 Nm)
2. 1/2" socket 16 mm
3. 1/2" extension

Below illustrates the positioning of the state (ON, OFF) of the switch:



1. Switch disconnector is in ON position. The station is energized
 2. Switch disconnector is in OFF position. The station is not energized
- The switch disconnector must in OFF position.

1. Locate the power terminal:

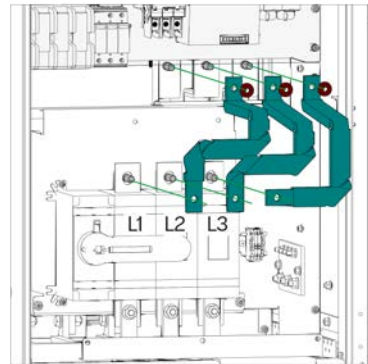


2. Tighten the flexibars on the connection tower:
Make a mark on the nut to confirm the tightening to torque.

3 x 17 mm



45 Nm

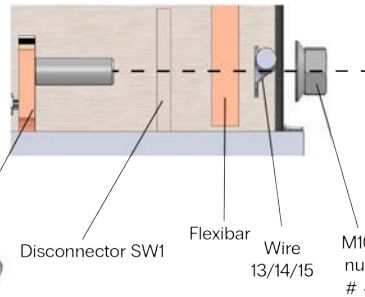


3. Place the cables 13 / 14 / 15 on the switch disconnecter and tighten them:

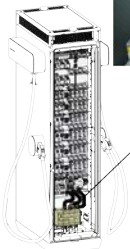
3 x 16 mm



56 Nm

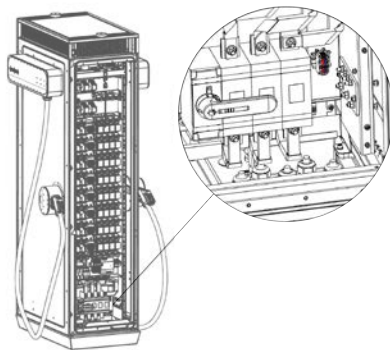


Disconnector bracket
3

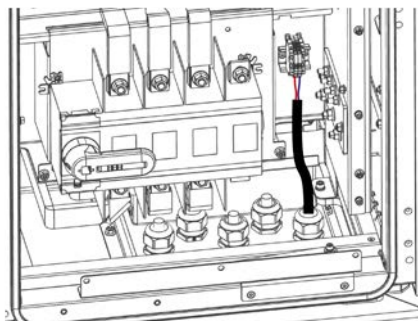


10.6.3. Heating system terminal

1. Locate the heating system terminal:



2. Connect the 1P + N cables to the terminal:



Legend	Description
L	Phase
N	Neutral



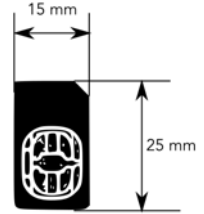
10.7. Network - Connections

10.7.1. SIM card - Installation

NOTE

The following SIM card requirements must be respected:

- Mini size SIM card (2FF)
- Do not use a 3-in-1 style SIM card.

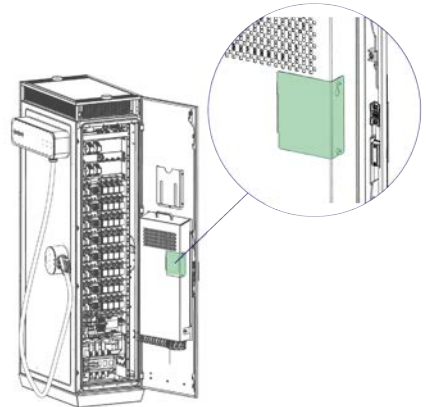


i Note

If it is not possible to get supplies Mini SIM (2FF) but only Nano SIM (4FF) It is possible to order a Nano SIM card (4FF) to Mini SIM card (2FF) adaptor (DCA008956) or a Micro SIM card (3FF) to mini SIM card (2FF) adaptor (DCA009213).

This is the only approved reference. Any other adaptor will damage the product and void the warranty.

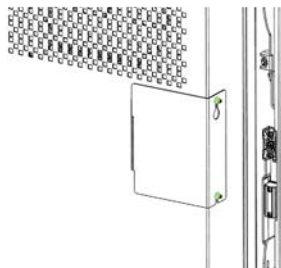
1. Open the front door.
2. Locate the touchscreen cover:



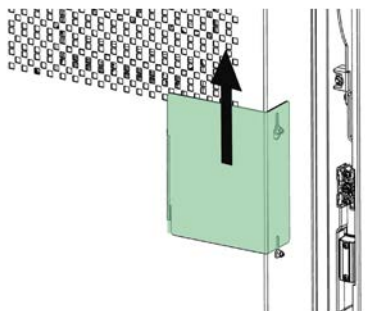
10. Install the EVBox Troniq High Power

3. Loosen the two M6 nuts that hold the cover:

2 x 10 mm



4. Remove the cover:

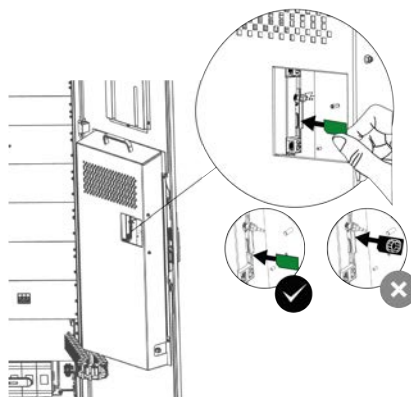


5. Insert the SIM card:



Note

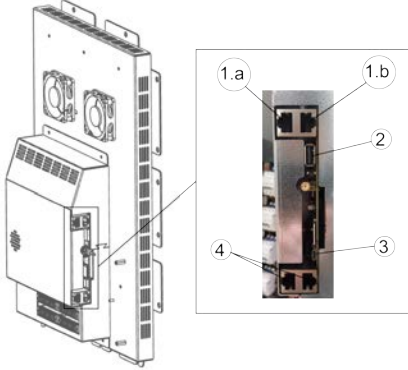
SIM card should be not touched on the contacts.



6. Install the cover.
7. Screw the two M6 nuts that hold the cover.

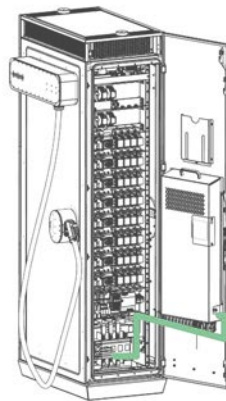
10.7.2. Touchscreen - Ports

The touchscreen has the following communication ports.

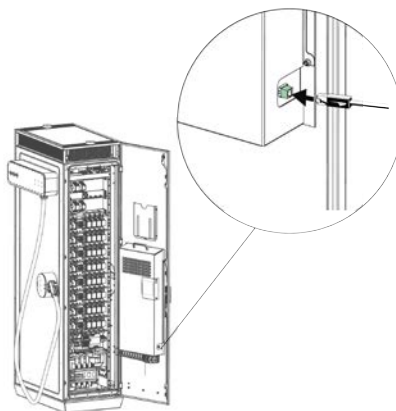
Legend	Description
	<p>1.a. Ethernet / RJ45 : for internal connections, inside the charging station only. Applicable from software version 5.x.</p> <p>1.b. Ethernet / RJ45: for external communications, such as other EVBox Troniq High Power (DC Smart charging, or modem sharing such as other EVBox Troniq High Power or external IP router). Applicable from software version 5.x.</p> <p>2. USB Type A: used to connect an USB key for firmware update, or to connect another module.</p> <p>3. Micro USB: Used for programming.</p> <p>4. CAN: 2 RJ45 ports used for CAN communication between boards.</p>

10.7.3. Ethernet cable

1. Root the Ethernet cable from the cable gland to the Ethernet port (use the cable path):



2. Connect the Ethernet cable:



10.8. Installation report

Once the installation is completed, fill the Installation report document (see [EVBox Partner Portal](#)).

11. Commissioning

Note

The unit needs to be properly assembled in accordance with the assembly instructions.

11.1. Danger: risk of electric shock

DANGER

Risk of electric shock.

Even if SW1 is OFF, power supply is still present on the charging station. Before servicing, switch off the power at the main breaker.

The heater is supplied by an independent power supply. Before servicing, switch off the power at the main breaker.

WARNING

Hazardous voltages

Before servicing:

Electrical charge may be stored for up to 5 min after switching off

Discharge and make sure it is voltage-free.

12. Use the EVBox Troniq High Power

The charging station can be used by ordinary people (no special qualification or training is needed).

The owner of the charging station shall provide to the customer all of the necessary procedures, as well as security and warning related information.

DANGER

Operating the charging station when it is damaged or worn will result in the risk of electric shock, which will cause severe injury or death.

- Do not operate the charging station if the power supply, the enclosure or an EV connector is broken, cracked, open, or shows any other indication of damage.
- Do not operate the charging station if a charging cable is frayed, has broken insulation, or shows any other indication of damage.
- In the event of danger and/or an accident, have the electrical supply to the charging station disconnected immediately.
- Contact your installer if you suspect that the charging station is damaged.

13. Decommissioning

Remove and dispose of the charging station in accordance with applicable federal, state or province, and local disposal regulations.





DANGER: Risk of electric shock

Before the charging station is removed, switch off all power at the power supply cabinet. Secure the power supply cabinet and put up warning signs to prevent accidental supply of power.

To remove the EVBox Troniq High Power station, follow the installation steps listed above in reverse order (see [Install the EVBox Troniq High Power on page 33](#)).

Dispose of the charging station in a responsible manner.

	<p>Do not dispose of this charging station in household waste. Instead, dispose of this charging station at a local collection point for electric/electronic devices in order to enable recycling and thus avoid negative and hazardous environmental impact. Ask your city or local authorities for the address of your local facility.</p>
	<p>Recycling materials saves raw materials and energy, making a major contribution to conservation of the environment.</p>

14. Preventive maintenance

For safe operation of the charger and to ensure a continuous and adequate level of service for users, regular maintenance and control of the equipment is required.

In addition to these regular maintenance operations, in the case of a fault or suspected fault, a corrective maintenance operation must be performed.

These maintenance operations are described:

- In the preventive maintenance plan attached to this document.
- In the maintenance manual and its annexes.

This documentation as well as the complementary technical notes and software updates are regularly published and must be followed. The actions concerned must be performed by an EVBox-approved service provider.

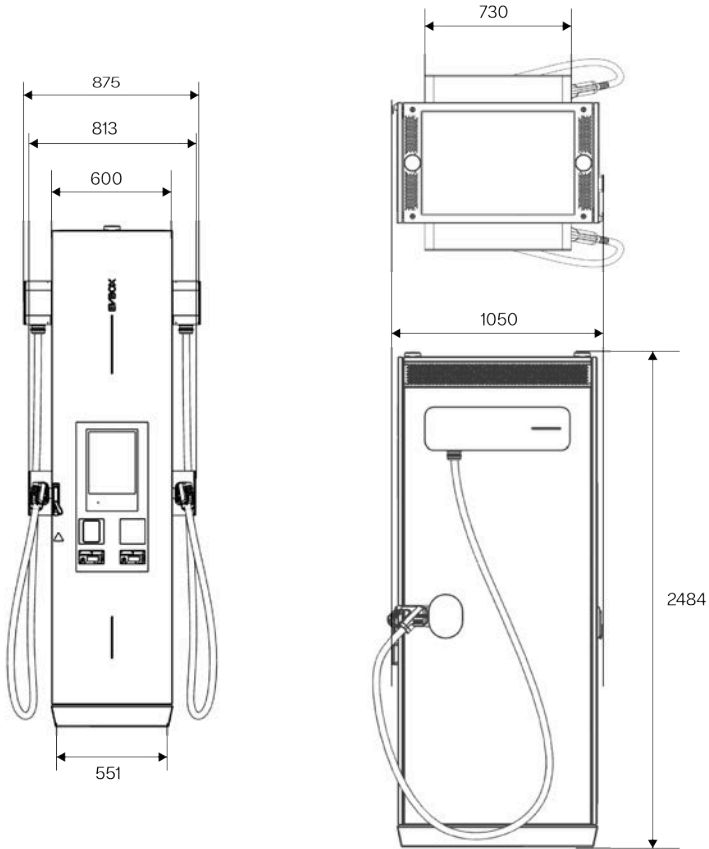
The owner of the EVBox Troniq High Power is responsible for the condition of the charging station, and the laws concerning the safety of persons, animals, and property must be observed, as well as the Federal, State or Province, and/or local installation requirements.

15. Appendix

15.1. Glossary

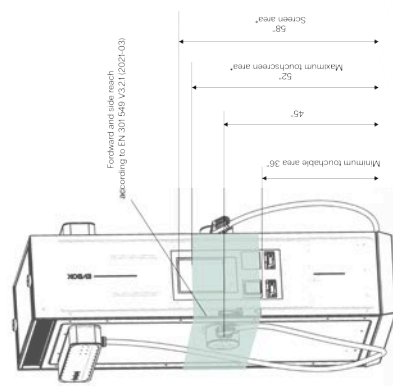
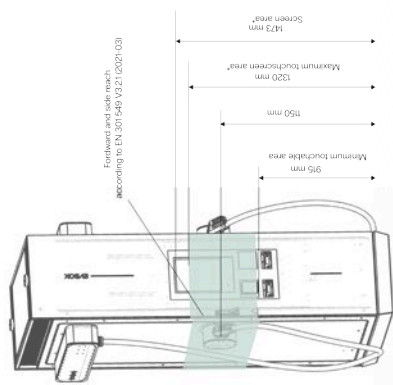
Abbreviations and acronyms	Meaning
AC	Alternating Current
DC	Direct Current
EMC	Electromagnetic Compatibility
EV	Electric Vehicle
EVCS	Electric Vehicle Charging Station
HMI	Human Machine Interface
IMD	Isolation Monitoring Device
LED	Light Emitting Diode
MCB	Miniature Circuit Breaker
NFC	Near Field Communication
PE	Protective Earth
RCD	Residual Current Device
RFID	Radio Frequency Identification

15.2. EVBox Troniq High Power - Dimensions



Values in mm

15.3. Disabled access



*: from software version 5.x

15.4. EU Declaration of Conformity

EVBox declares that the radio equipment type EVBox Troniq High Power is in compliance with Directive 2014/53/EU. The full text of the EU Declaration of Conformity is available at help.evbox.com.

Table 6. Regulatory Information

Technology	Frequency bands	Max. output power (EIRP)
GSM 900	880 MHz - 915 MHz	21.6 dBm
GSM 1800	1710 MHz - 1785 MHz	22.5 dBm
UMTS Band I	1920 MHz - 1980 MHz	21.6 dBm
UMTS Band VIII	880 MHz - 915 MHz	17.3 dBm
LTE Band 1	1920 MHz - 1980 MHz	21.7 dBm
LTE Band 3	1710 MHz - 1785 MHz	20.1 dBm
LTE Band 8	880 MHz - 915 MHz	17.0 dBm
LTE Band 20	832 MHz - 862 MHz	17.2 dBm
LTE Band 38	2570 MHz - 2620 MHz	17.0 dBm

16. Disclaimer

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EVBox strives to manufacture products of the highest quality. EVBox products are fully CE certified and compliant with the essential requirements of EMC Directive 2014/30/EU, Low Voltage Directive 2014/35/EU, Radio Equipment Directive 2014/53/EU and Restrictions of Hazardous Substances Directive 2011/65/EU (as amended by 2015/863/EU). More details can be found at evbox.com or in this installation manual. EVBox products are sold with a limited warranty described at evbox.com/general-terms-conditions.

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