

EVBox Iqon

Maintenance manual

CE version

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1. Introduction

This Maintenance Manual tells you how to service and maintain the charging station. You must carefully read and obey the safety information before you start.

The owner of the charging station is responsible for the condition of the charging station, whereby both the law regarding the safety of persons, animals, and property must be observed, as well as the installation regulations in force in the country of use. Have the charging station and its installation inspected by a qualified electrician on a regular basis and in compliance with installation regulations applicable in your country.

Periodical servicing is necessary to keep the charging station in a clean and safe condition. Refer to the Periodical servicing schedule below for the recommended servicing tasks and periods.

Maintenance is required when a fault has occurred. For some of the procedures in this Maintenance Manual, two persons are required.

This Maintenance Manual is only intended for use by a qualified electrician.

Symbols used in this manual



DANGER:

Indicates an imminently hazardous situation with a high risk level 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 this manual.

1., a. or i. Action to be followed in the stated order.

1.1. Periodical servicing schedule

The following maintenance schedule is recommended for the charging station.

Months	Clean exterior	Clean interior	Clean charging cable	RCBO test
1	✓ *	--	--	--
6	✓	✓	✓	✓

* For intensive-use locations, clean the touchscreen weekly.

2. Safety

2.1. Safety precautions

**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.

**DANGER:**

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

- Only a qualified electrician is permitted to install, service, repair and relocate the charging station.
- The user must not attempt to service or repair the charging station as it does not contain user-serviceable parts.
- Local regulations may be applicable and may vary depending on your region / country of use. The qualified electrician must always ensure that the charging station is installed according to the 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 input power before installing the charging station.
- Do not switch on the charging station if it is not fully installed or not secure.
- Do not install a charging station that is faulty or has a noticeable issue.

**DANGER:**

Operating the charging station when it indicates an error state, or when the charging station or the charging cable have cracks, show extensive wear, or other physical damage, will result in the risk of electric shock, which will cause severe injury or death.

- Do not operate the charging station if 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, a qualified electrician must immediately disconnect the electrical supply from the charging station.
- 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 will 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 or handling the charging station with wet hands will result in the risk of electric shock, which will cause severe injury or death.

- Do not direct powerful jets of water toward or onto the charging station.
- Never operate the charging station with wet hands.
- 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:**

Using a damaged charging station or a damaged charging cable may expose the user to electric components and result in the risk of electric shock, which may cause injury or death.

- Make sure that the charging station, the charging cable, and the charging plug are free of damage before starting a charging session.
- 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, making 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 charge plug away from heat sources, dirt or water.

**WARNING:**

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

- 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 will cause injury or death.

- Make sure that the charging station or 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 may result in damage to the charging station, which may cause injury or death.

- Only use the charging station under the specified operating conditions in this manual.

**WARNING:**

Risk of injury when working on a charging station. Use personal protective equipment such as eye protection, cut-resistant gloves and non-slip safety shoes to prevent personal injuries.

**WARNING:**

Fire safety (Only for Poland):

- When safe to do so, switch off power to the equipment that is burning or endangered by fire.
- Do not use water to extinguish electrical installations and equipment that have a live power supply.
- To extinguish a charging station, use an extinguisher that is specified for use on electrical equipment with a rating of up to 1 kV.

**CAUTION:**

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

- Before you charge the vehicle make sure that the charging cable is completely unwound and has no overlapping loops.

**CAUTION:**

Putting fingers into or leaving other objects inside the plug port (for example, during cleaning) may 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:**

The use of devices with (electro) magnetic properties in the vicinity of the charging station may damage the charging station and affect its operation.

- Keep and use (electro) magnetic devices at a safe distance from the charging station.

**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.

2.2. General safety instructions

**WARNING:**

Improper use of a step ladder may cause injury or death. Obey the manufacturer's instructions when using a step ladder.

**WARNING:**

Risk of injury when working on a charging station. Use personal protective equipment such as eye protection, cut-resistant gloves and non-slip safety shoes to prevent personal injuries.

**CAUTION:**

The use of devices with (electro) magnetic properties in the vicinity of the charging station may damage the charging station and affect its operation.

- Keep and use (electro) magnetic devices at a safe distance from the charging station.

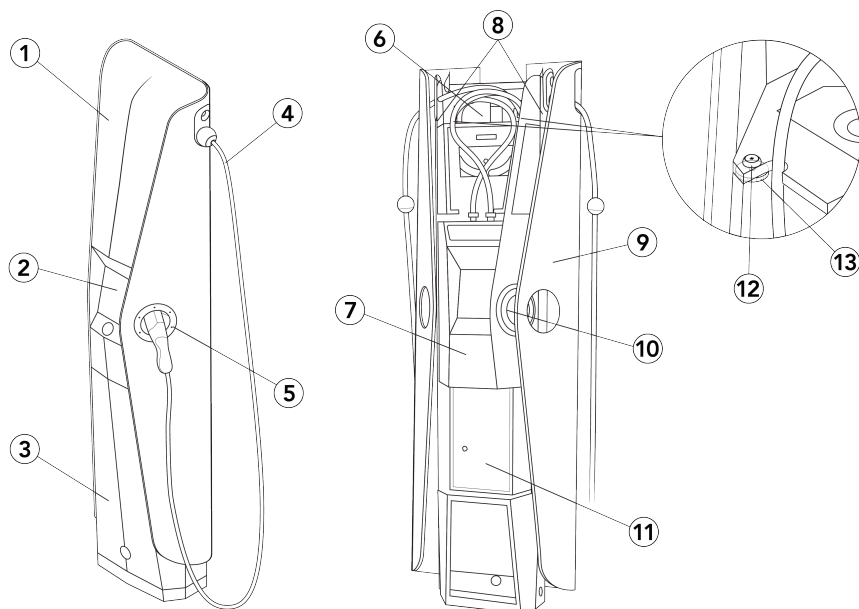
**CAUTION:**

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.

3. Preparation

3.1. Description

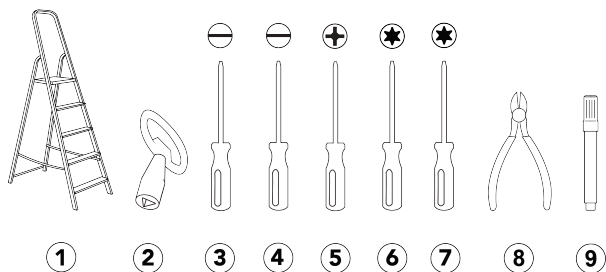


1. Top cover.
2. Display.
3. Bottom cover.
4. Charging cable.
5. LED ring.
6. Charging cable locking mechanism.
7. Charger box.

8. Lifting eyes.
9. Side panel.
10. Holder for charging cable plug.
11. Installer box.
12. Spare part: Torx T25 screw (2x).
13. Spare part: Thumbnut (2x).

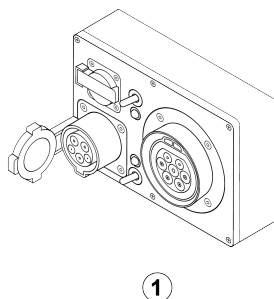
3.2. Tools and material

Tools - required



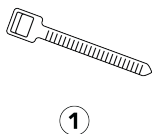
1. Step ladder. (Required when replacing a charging cable.)
2. Iqon key to open covers.
3. Screwdriver, flat blade, 4 mm.
4. Screwdriver, flat blade, 8 mm.
5. Screwdriver, PH2.
6. Screwdriver, Torx T20.
7. Screwdriver, Torx T25.
8. Wire cutter.
9. Marker pen, black indelible ink.

Tools - optional



1. EVBox Dual Socket Test Box, article number 462323 (or equivalent electrical vehicle test box CCS1).

Materials - locally-sourced



1. Cable ties, UL-approved (US only), various sizes.

3.3. Prepare the work area

**DANGER:**

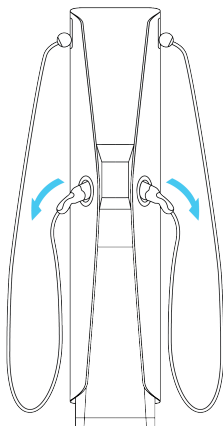
Working on electric installations without proper precautions will result in the risk of electric shock, which will cause severe injury or death.

- Read and obey the safety precautions at the beginning of this manual before you install, repair, service or use this charging station.
- 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.

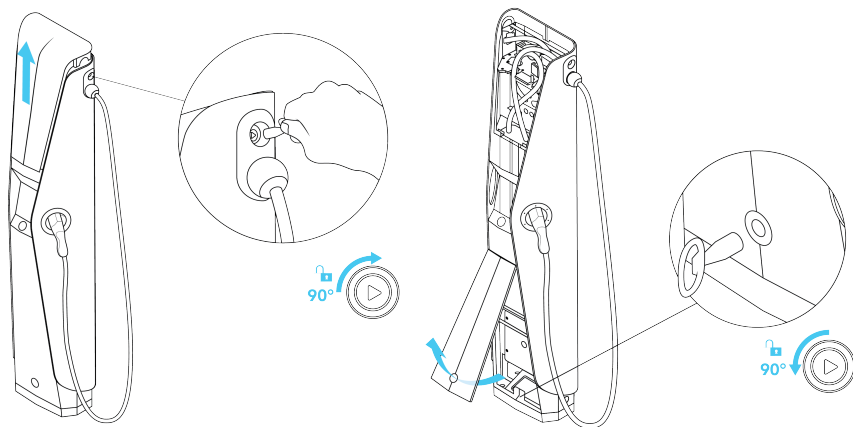
1. In the power supply cabinet, switch off the power supply to the charging station.
2. Secure the power supply cabinet and put up warning signs to prevent accidental supply of power.
3. Make sure that unauthorized persons cannot access the work area.

3.4. Open the charging station

1. Prepare the work area (see [Prepare the work area on page 10](#)).
2. Place a protective mat on the ground to protect the charging cables and plugs from damage.
3. Take out the charging cable plugs from the holders and place them on the protective mat.

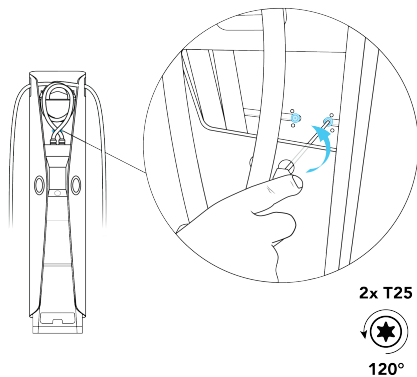


4. Unlock the top and bottom covers using the key, then remove the covers. Put the covers front side up in a place where they will not be damaged.

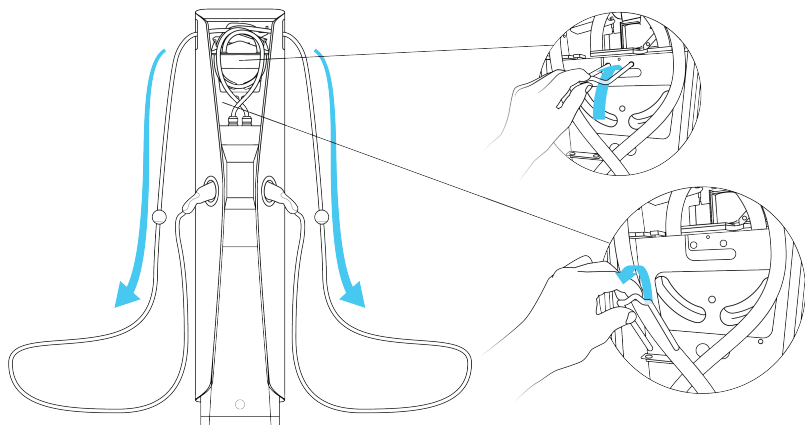


5. Open the side covers as follows:

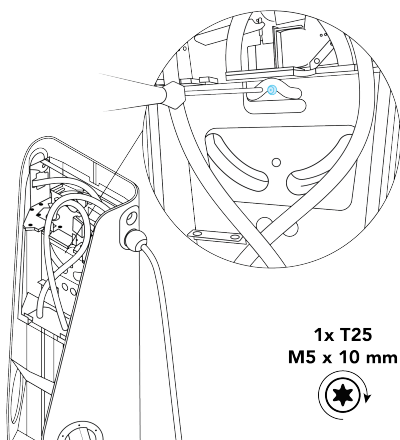
- a. Loosen two Torx screws that secure the side panels at the top.



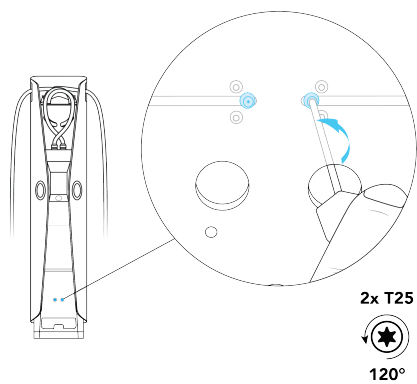
- b. Fully extend the charging cables and insert the safety pin.



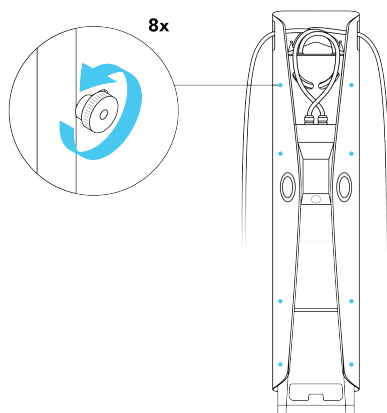
- c. Install a flanged Torx T25 M5 x 10 mm screw to secure the safety pin.



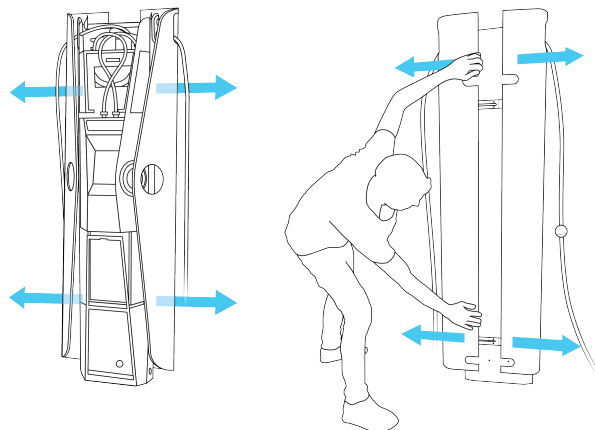
- d. Loosen two Torx screws that secure the side panels at the bottom.



- e. Remove the eight thumbnuts.



- f. Carefully slide open each side panel.



4. Maintenance instructions

**DANGER:**

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

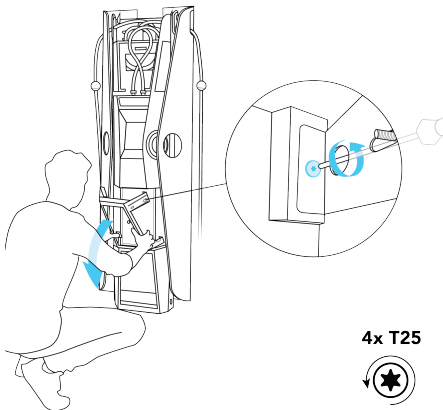
- Switch off input power before installing the charging station.
- Do not switch on the charging station if it is not fully installed or not secure.
- Do not install a charging station that is faulty or has a noticeable issue.

4.1. Replace the charger box and installer box assembly

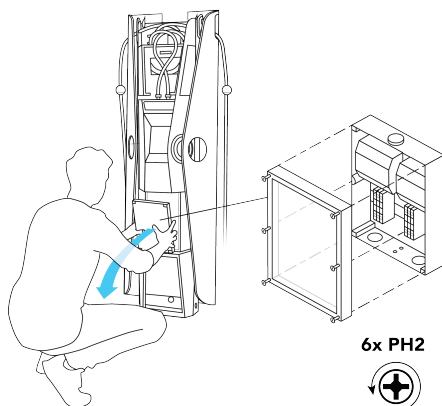
The charger box and installer box are removed as one assembly. After the replacement of the charger box, the charging station must be re-registered at the Charging Point Operator (CPO).

4.1.1. Remove the charger box and installer box

1. Prepare the work area (see [Prepare the work area on page 10](#)) then open the charging station (see [Open the charging station on page 10](#)).
2. Access the installer box as follows:
 - a. Remove four Torx screws and the frame from the installer box.



- b. Loosen six Phillips PH2 screws and remove the installer box cover.



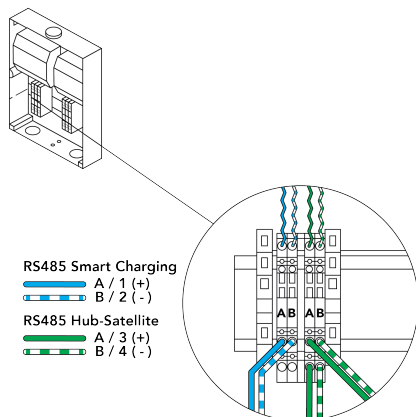
3. Disconnect the RS485 wires from the terminal blocks.



Note:

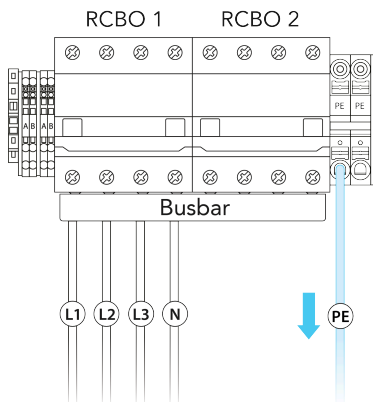
Carefully note which RS485 wiring connects to the charging station. The RS485 wiring depends on the configuration:

- The Smart Charging connection is optional, and is only found on the Hub station.
- The Hub-Satellite connection is optional and is only used on a Hub-Satellite installation.
- The Hub charging station and the final Satellite charging station will only have a single Hub-Satellite connection.
- The final Satellite charging station may also have a 120 Ω resistor at the Hub-Satellite connection.

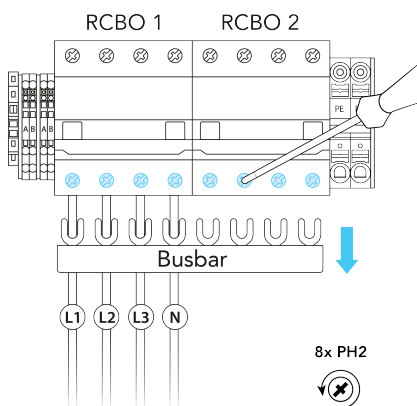


4. For a single 3-phase 400 V AC 64 A power cable connection, disconnect the single power cable as follows:

- a. Disconnect the single protective earth/ground (PE/G) wire from the PE/G terminal block.



- b. Loosen 8 screws and remove the busbar that connects RCBO 1 and RCBO 2 together.

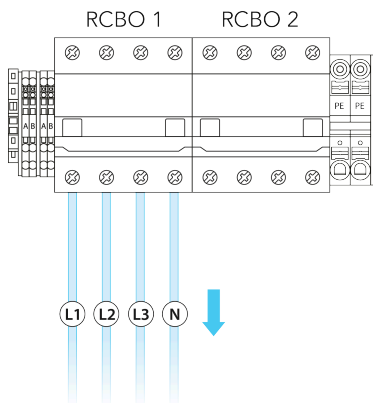


- c. Disconnect the four wires of the power cable from one RCBO.



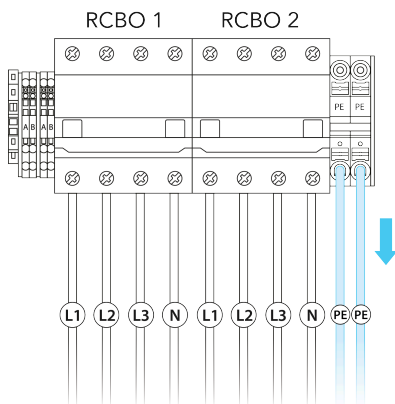
Note:

The power cable can be connected to either RCBO.

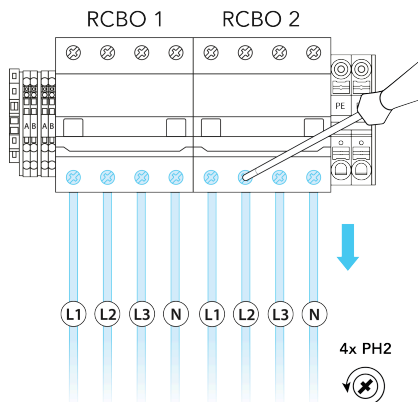


5. For two 3-phase 400 V AC 32 A power cables, disconnect the two power cables as follows:

- a. Disconnect two protective earth/ground (PE/G) wires from the PE/G terminal block.



- b. Disconnect eight wires of two power cables from the two RCBOs.

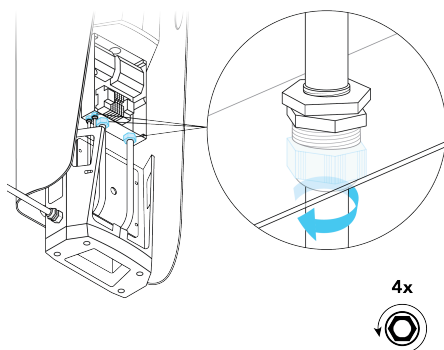


6. Unscrew the three or four cable glands on the bottom of the installer box.

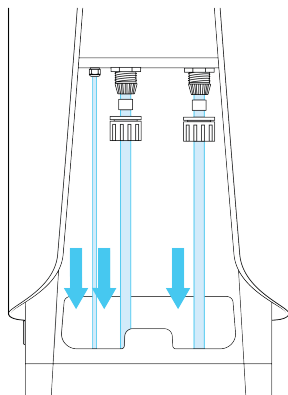


Note:

For a single power connection, there is only one power cable.

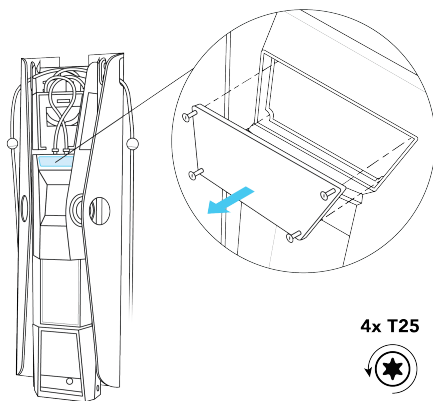


7. Pull the power cables and the RS485 cables from the installer box.



8. Disconnect the charging cables:

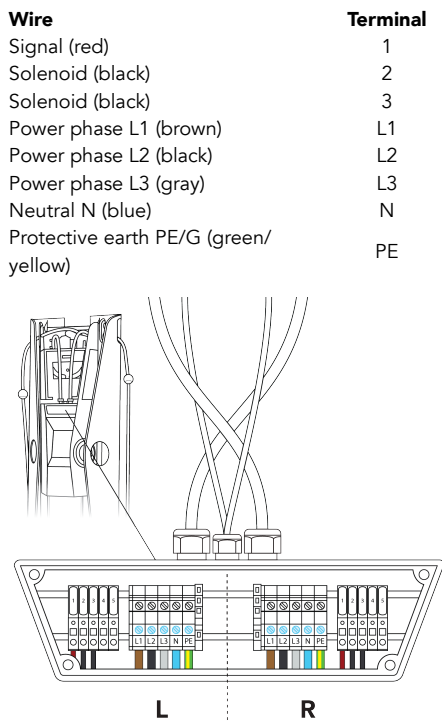
- a. Remove four Torx T25 screws and the service hatch from the charger box.



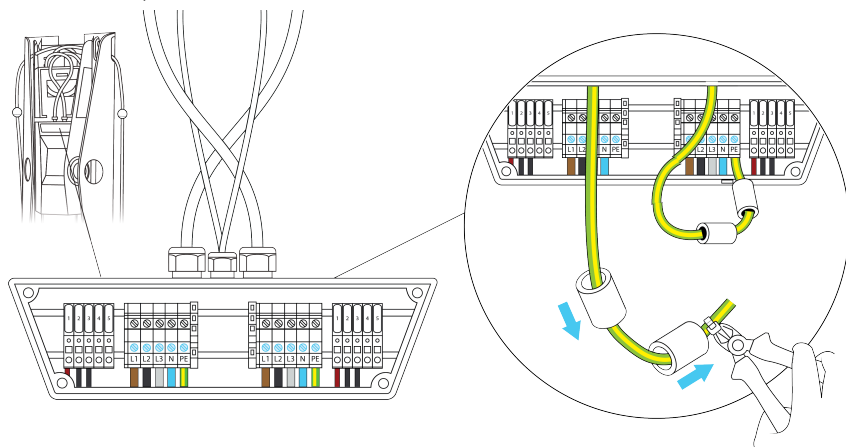
- b. Disconnect the following two sets of wires from the charger box:

**Note:**

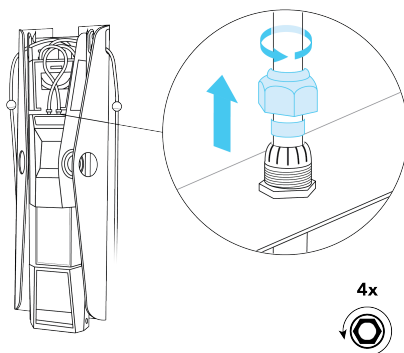
The terminals on the left are for the left charging cable and brake solenoid. The terminals on the right are for the right charging cable and brake solenoid.



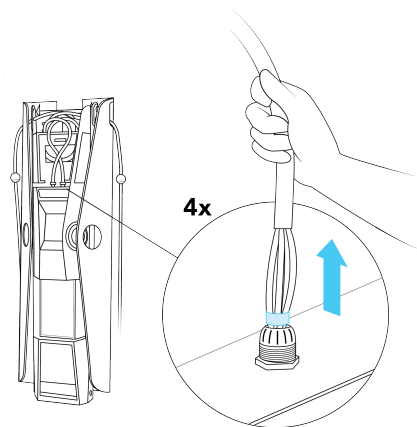
- c. If installed, cut and discard the cable tie that secures two ferrite beads to each PE/G wire. Remove and keep two ferrite beads from each PE/G wire.



- d. Unscrew the four cable glands.

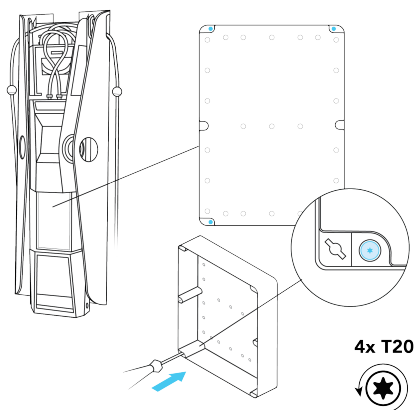


- e. Pull the two charging cables and two solenoid cables through the cable glands.



9. Remove the installer box and charger box:

- a. Remove four Torx screws that secure the installer box to the charging station.



- b. Hold the charger box in place, then remove four Torx screws that secure the charger box to charging station.

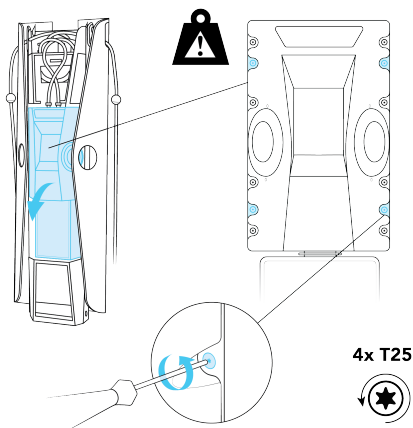
Remove the charger box and the installer box as one assembly from the charging station.

**CAUTION:**

The charger box and installer box assembly weighs approximately 9.3 kg.

**Note:**

Only remove the four Torx screws that secure the charger box. Removing other screws may affect the IP rating of the charger box.



10. Return the charger box and installer box assembly to the charging station distributor.

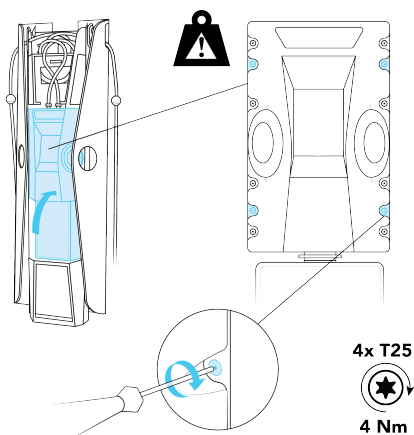
4.1.2. Install the charger box and installer box

1. Install the installer box and charger box:

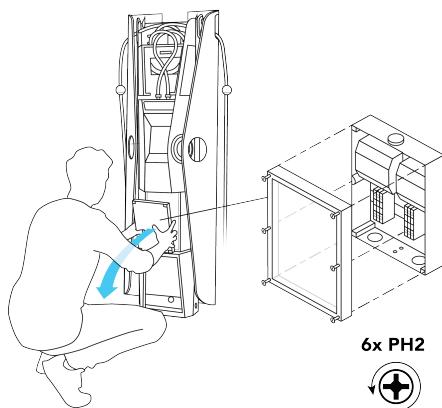
- a. Hold the charger box and installer box assembly on the back plate of the charging station and align the screw holes. Secure the charger box with four Torx screws.

**CAUTION:**

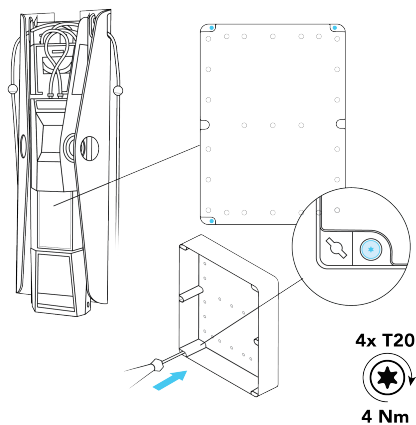
The charger box and installer box assembly weighs 9.3 kg.



- b. Loosen six Phillips PH2 screws and remove the installer box cover.

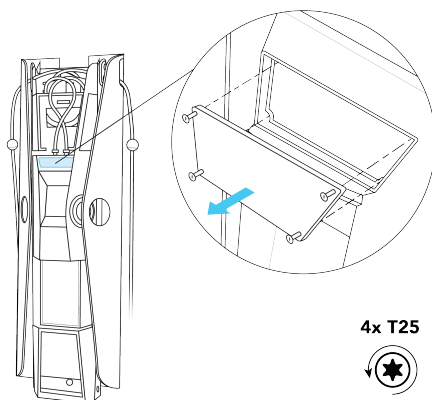


- c. Secure the installer box with four Torx screws.

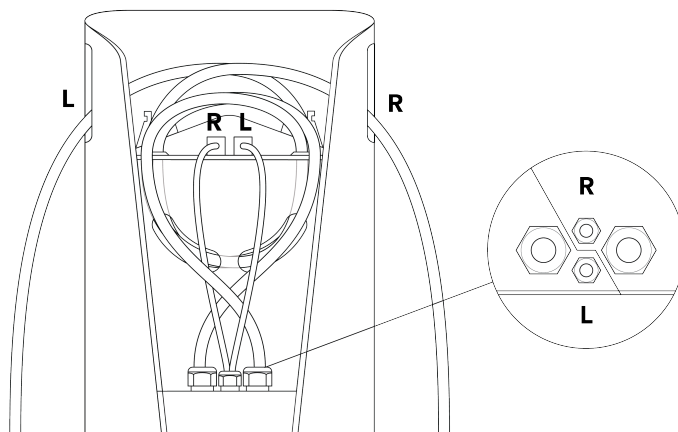


2. Connect the charging cables:

- a. Remove four Torx T25 screws and the service hatch from the charger box.

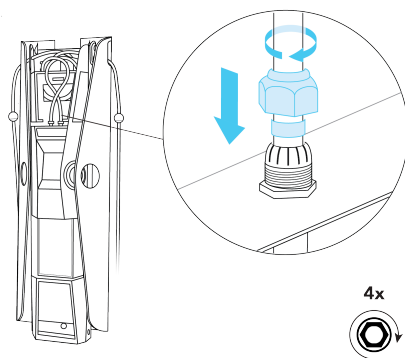


- b. Guide the solenoid cables and charging cables through the four cable glands. Make sure that the cables use the correct glands and that the cable routing is correct.



L = Left, R = Right

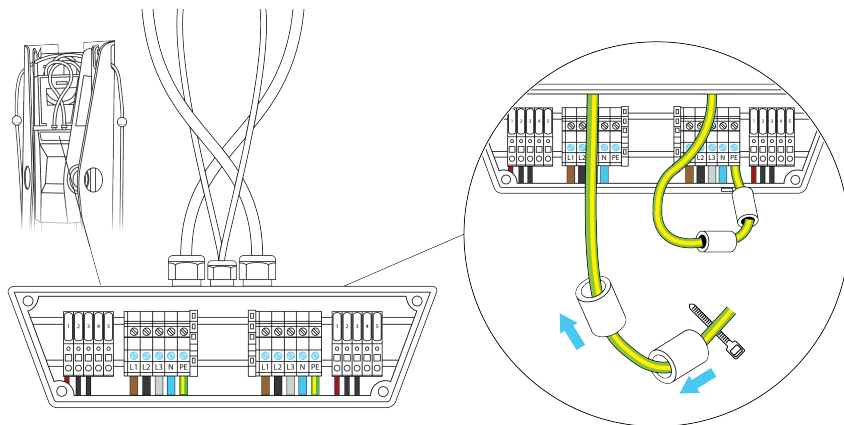
- c. Tighten the cable glands.



- d. Install two ferrite beads on each PE/G wire and secure them in position using one cable tie.

**Note:**

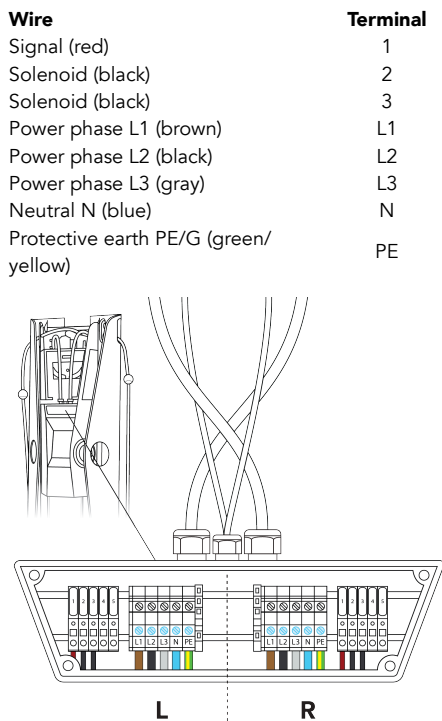
Position the ferrite beads on the PE/G wire to obtain the best fit in the charger box.



- e. In the charger box, route the cables to their applicable terminals. Connect the following two sets of wires to the charger box:

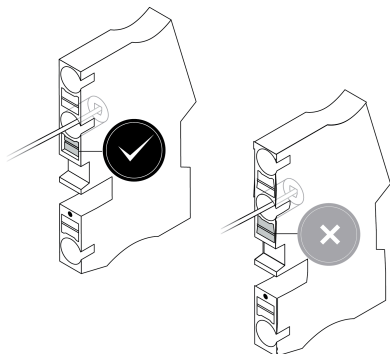
**Note:**

The terminals on the left are for the left charging cable and brake solenoid. The terminals on the right are for the right charging cable and brake solenoid.

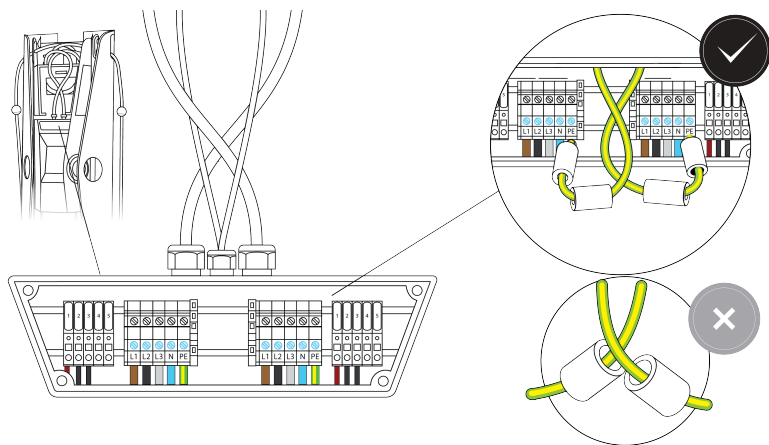


L = Left, R = Right

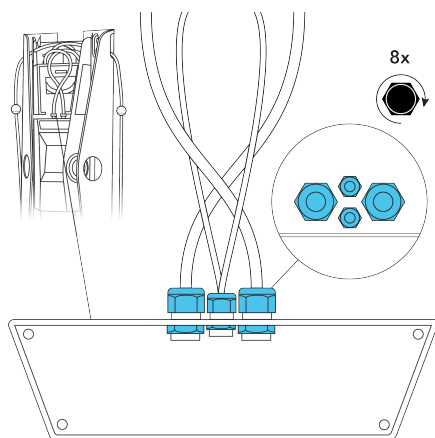
- f. Pull on each wire to make sure it is correctly connected. The indicators on the terminal blocks must be in the locked position.



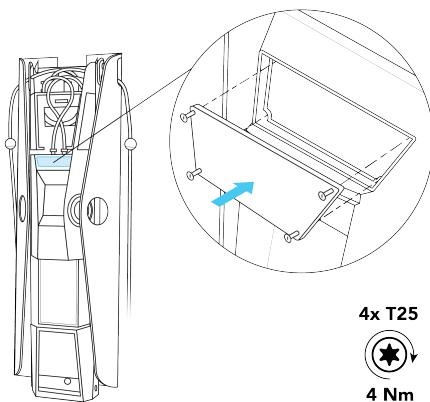
- g. Make sure that the ferrite beads on one PE/G wire do not touch the ferrite beads on the other PE/G wire.



- h. To ensure the station IP rating and the security of cables, make sure that the cable glands on the top of the charger box are tight:
- Check the four cable gland sealing nuts on the outside of the charger box.
 - Check the four cable gland lock nuts on the inside of the charger box.

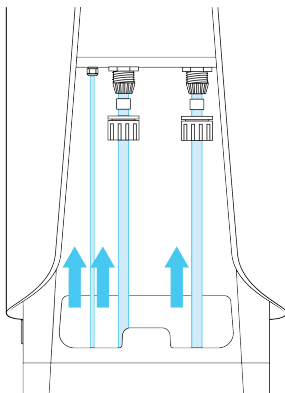


- i. Install the service hatch with four Torx T25 screws.

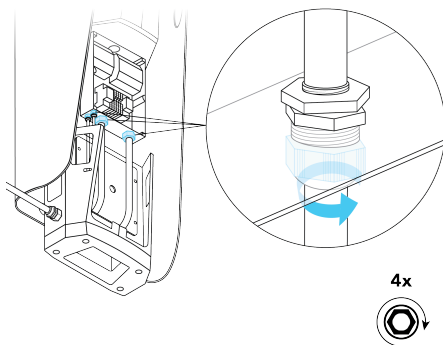


3. Connect the power and RS485 wires:

- a. Pull the power cables and the RS485 cables from the installer box.



- b. Feed the power cables and RS485 cables through the two conduit fittings and two cable glands into the installer box.

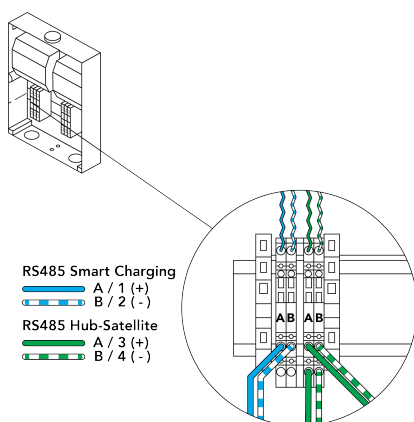


- c. Push the ferrules on the RS485 network cable wires fully into the terminal blocks.

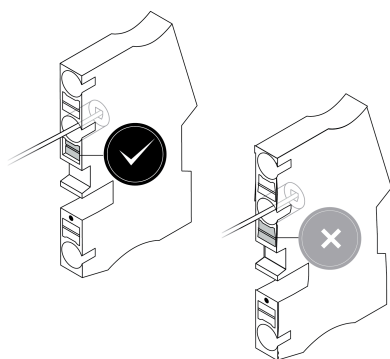
**Note:**

Connect the RS485 wiring in the same configuration that you noted during removal. The RS485 wiring depends on the configuration:

- The Smart Charging connection is optional, and is only found on the Hub station.
- The Hub-Satellite connection is optional and is only used on a Hub-Satellite installation.
- The Hub charging station and the final Satellite charging station will only have a single Hub-Satellite connection.
- The final Satellite charging station may also have a 120 Ω resistor at the Hub-Satellite connection.



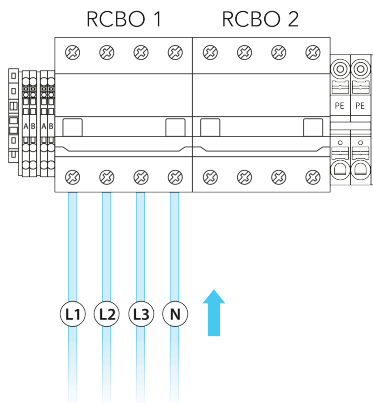
- d. Pull on each network cable wire to make sure it is correctly connected. The indicators on the terminal blocks must be in the locked position.



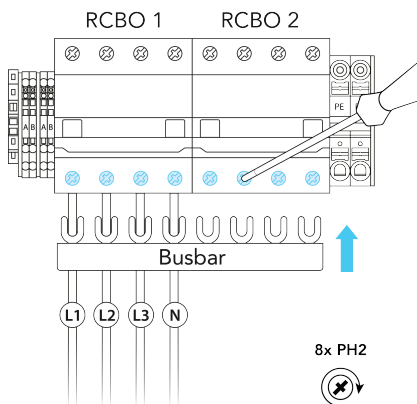
4. For a single 3-phase 400 V AC 64 A power cable connection, connect the single power cable as follows:
- Connect the four wires of the power cable to one RCBO.

**Note:**

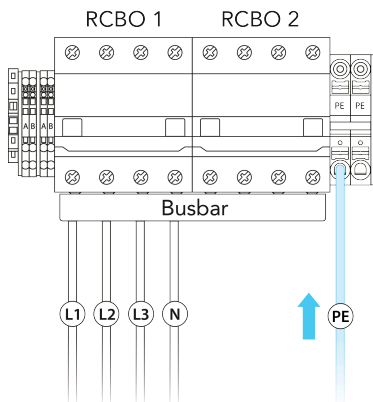
Connect the single power cable to the same RCBO that was used on the removed installer box.



- Install the busbar to connect RCBO 1 and RCBO 2 together, then tighten 8 screws.

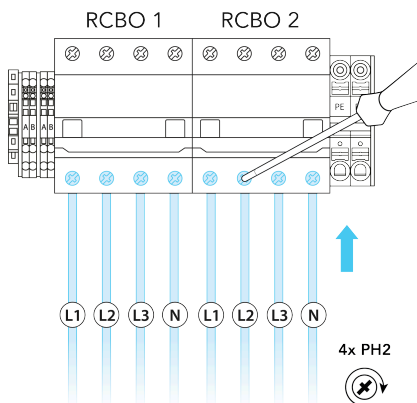


- c. Connect the single protective earth/ground (PE/G) wire to the PE/G terminal block.

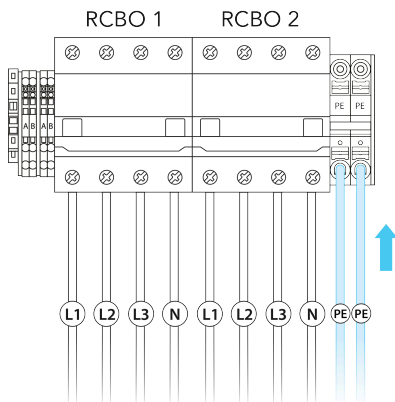


5. For two 3-phase 400 V AC 32 A power cables, connect the two power cables as follows:

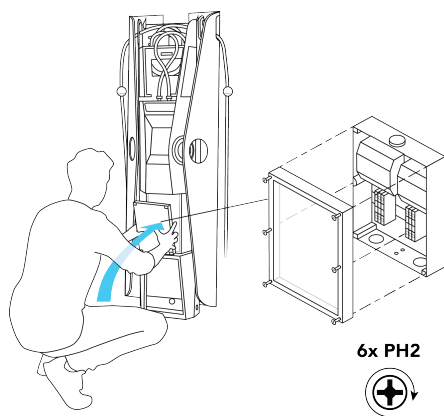
- a. Connect the eight wires of two power cables to the two RCBOs.



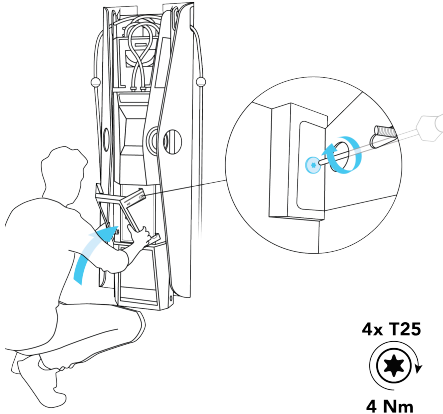
- b. Connect two protective earth/ground (PE/G) wires to the PE/G terminal block.



6. Install the installer box cover then tighten the six PH2 screws.



7. Install the installer box frame using four Torx screws.



8. Apply the new charging station sticker as follows:


Note:

The new charger box has a unique registration number. This number is on a sticker that needs to be applied to the charging station. The number is required to re-register the charging station at the Charging Point Operator (CPO).

- a. Clean the area on the bottom right side of the charging station where the sticker will be placed.


CAUTION:

Do not use aggressive chemical cleaners or solvents.

- b. Place the sticker on the right side of the charging station.
 - c. On the existing sticker on the bottom left side of the charging station, use a black indelible marker to hide the old EVB-P registration number.
 - d. In the Installation and commissioning manual Part B that was delivered with the charging station, place the new configuration sticker on top of the existing sticker.
9. Close the charging station (see [Close-up after maintenance on page 73](#)).
 10. Re-register the charging station at the charging point operator (see [Commission the charging station on page 78](#)).
 11. Test the charging station (see [Test the charging station on page 78](#)).

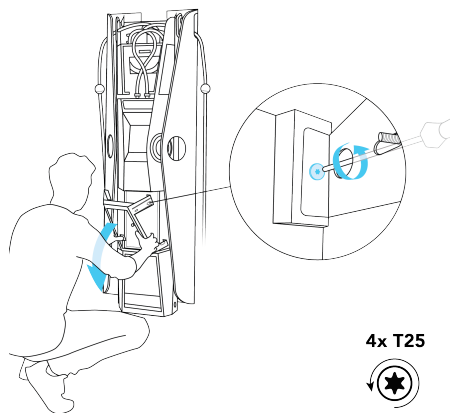
4.2. Replace a kWh meter

Two kWh meters are installed. The procedure is the same for each kWh meter.

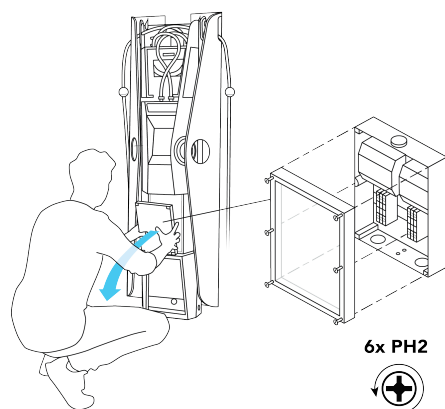
4.2.1. Remove the kWh meter

1. Prepare the work area (see [Prepare the work area on page 10](#)) then open the charging station (see [Open the charging station on page 10](#)).

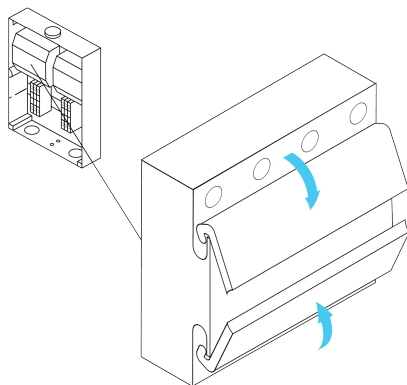
2. Remove four Torx screws and the frame from the installer box.



3. Remove six PH2 screws and the installer box cover.

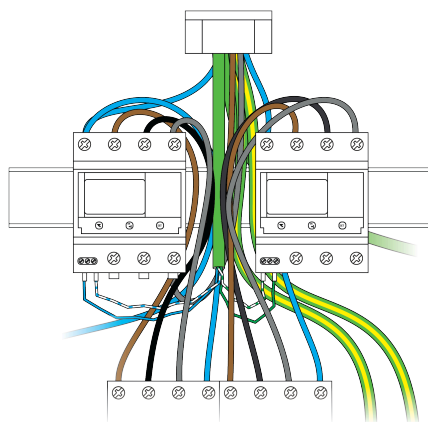


4. Open the terminal covers on the kWh meter to be removed.

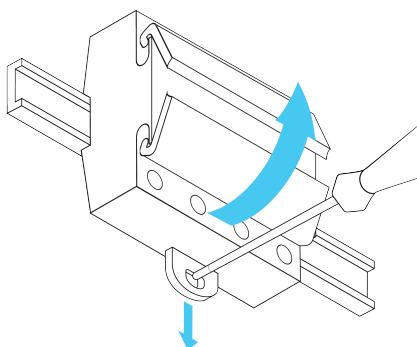


5. Disconnect the following wires from the kWh meter:

Location on meter	Wire	Terminal
Top	Power phase L1	1
Top	Power phase L2	4
Top	Power phase L3	7
Top rear	Neutral	11
Top front	Neutral	11
Bottom	Power phase L1	3
Bottom	Power phase L2	6
Bottom	Power phase L3	9
Bottom	Signal (solid color)	36
Bottom	Signal (white/color)	37

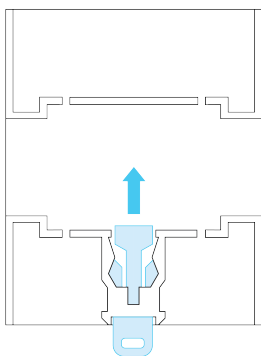


6. Release the kWh meter from the DIN rail, then remove the kWh meter from the installer box.

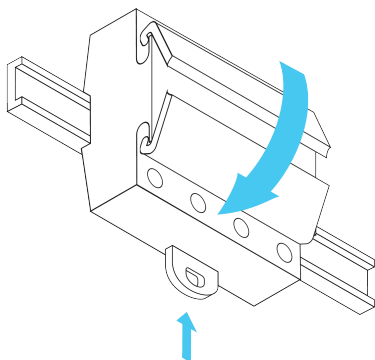


4.2.2. Install the kWh meter

1. On the kWh meter, make sure the clip is fully up.

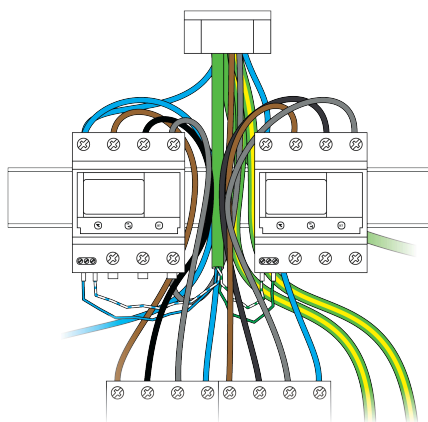


2. Place the kWh meter on the DIN rail, pull down the kWh meter then clip it on to the DIN rail.

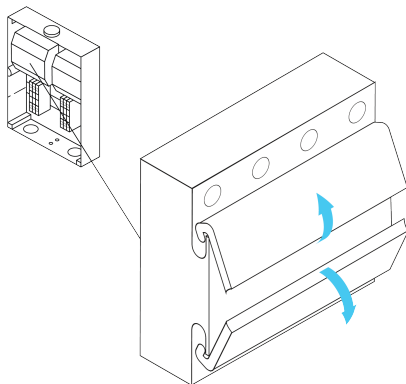


3. Connect the following wires to the kWh meter:

Location on meter	Wire	Terminal
Top	Power phase L1	1
Top	Power phase L2	4
Top	Power phase L3	7
Top rear	Neutral	11
Top front	Neutral	11
Bottom	Power phase L1	3
Bottom	Power phase L2	6
Bottom	Power phase L3	9
Bottom	Signal (solid color)	36
Bottom	Signal (white/color)	37



4. Close the terminal covers on the kWh meter.



5. Set the kWh meter (see [Set the kWh meter address on page 42](#)).

4.2.3. Set the kWh meter address

After replacement, the kWh meter address must be set to **1** (kWh meter for the left charging circuit) or **2** (kWh meter for the right charging circuit).



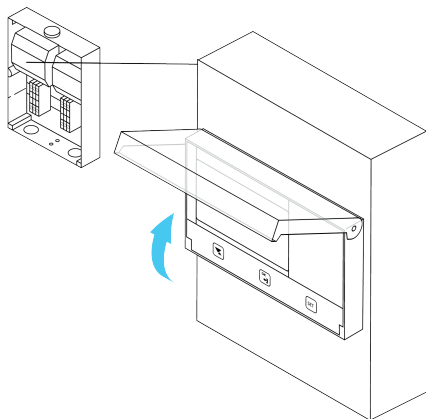
DANGER:

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

- Make sure it is safe to supply electrical power to the charging station.
- Do not leave the charging station unattended with the covers open.
- Only supply electrical power for the purpose of testing and adjusting the charging station.
- Remove electrical power when the procedure is complete.

1. In the power supply cabinet, supply power to the charging station.

2. Open the display cover on the kWh meter.

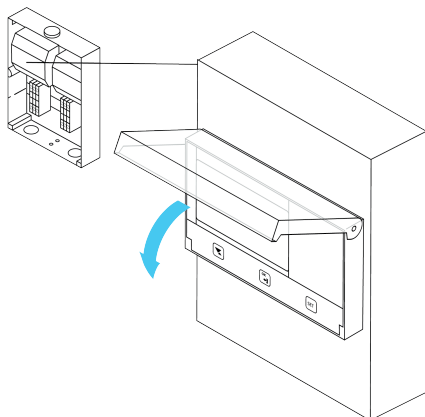


3. Check and set the kWh meter as follows:

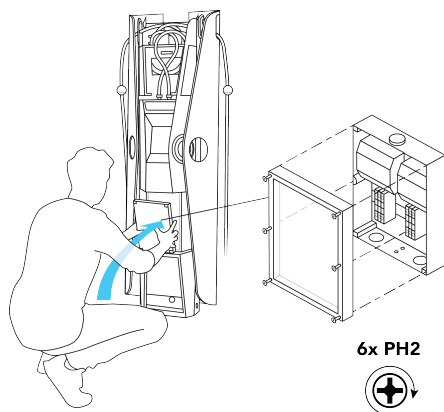


- a. Press **SET** to display "**r5-485**".
- b. Press **OK**, then press the arrow button to display "**AddrES**".
- c. Press **OK**. The display shows the current kWh meter address "**1**" or "**2**".
- d. To change the address, press **SET** then press **OK** two times to move the cursor to the third digit.
- e. Press the arrow button to set the address to "**001**" or "**002**".
- f. Press and hold **OK** for >2 seconds for four separate times to return to the main screen.

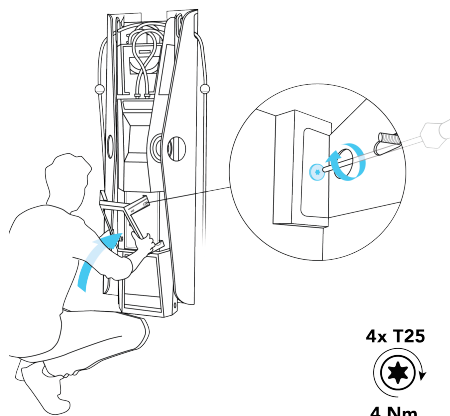
4. Close the display cover on the kWh meter.



5. In the power supply cabinet, isolate the power supply to the charging station.
6. Install the installer box cover then tighten the six PH2 screws.



7. Install the installer box frame using four Torx screws.



8. Close the charging station (see [Close-up after maintenance on page 73](#)).
9. Test the charging station (see [Test the charging station on page 78](#)).

4.3. Replace a Charging cable

This procedure is for the right charging cable. The procedure for the left charging cable is the same.

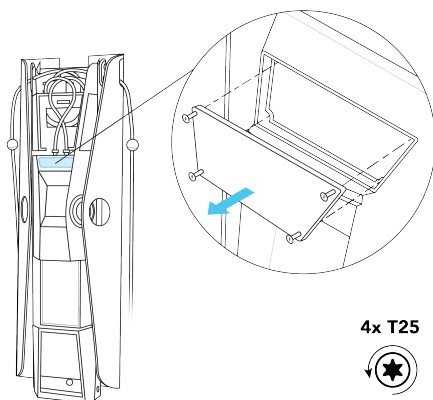
**Note:**

Use a step ladder to access the cables and brake mechanisms at the top of the charging station.

4.3.1. Remove the charging cable

1. Prepare the work area (see [Prepare the work area on page 10](#)) then open the charging station (see [Open the charging station on page 10](#)).
2. Disconnect the charging cables:

- a. Remove four Torx T25 screws and the service hatch.



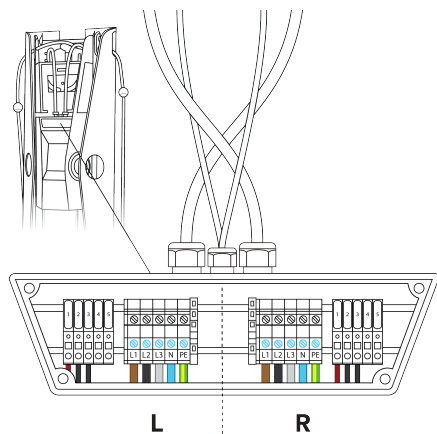
- b. Disconnect the following set of wires for the charging cable that you are replacing:



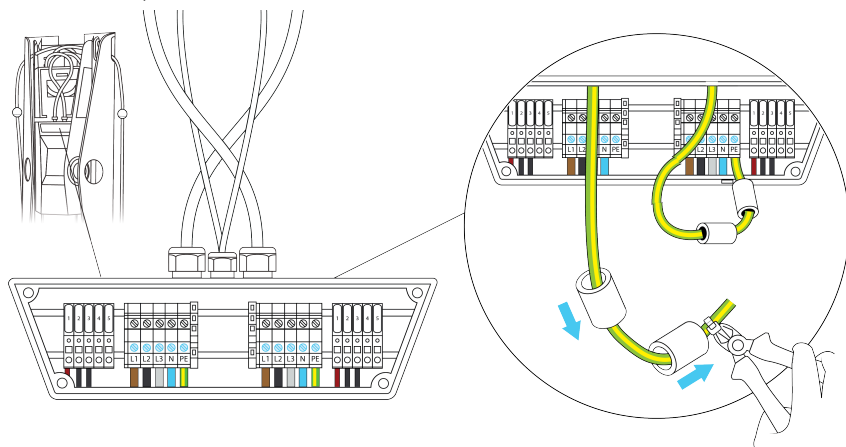
Note:

The terminals on the left side are for the left charging cable. The terminals on the right side are for the right charging cable.

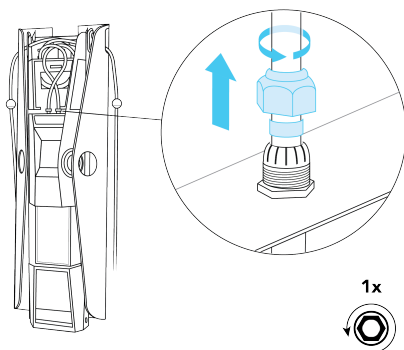
Wire	Terminal
Signal (red)	1
Power phase L1 (brown)	L1
Power phase L2 (black)	L2
Power phase L3 (gray)	L3
Neutral N (blue)	N
Protective earth PE/G (green/ yellow)	PE



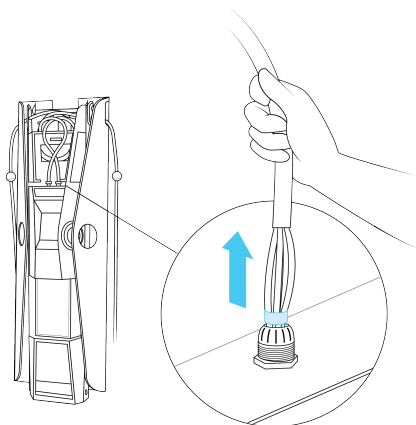
- c. If installed, cut and discard four cable ties that secure two ferrite beads to each PE/G wire. Remove and keep two ferrite beads from each PE/G wire.



- d. Unscrew the cable gland.



- e. Pull the charging cable through the cable gland.



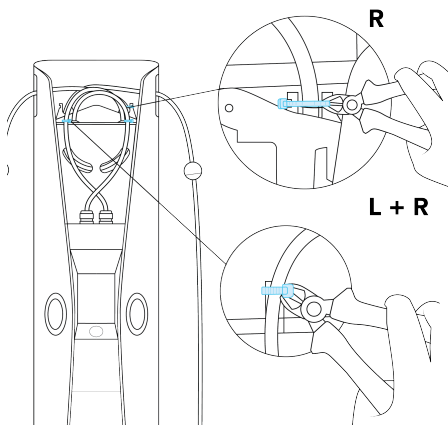
3. Remove the charging cable:

- a. Remove the cable ties that secure the charging cable to the charging station.



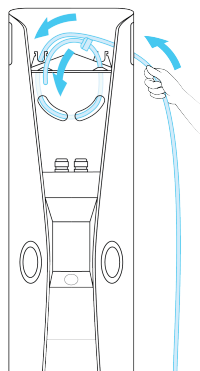
Note:

The right charging cable has two cable ties. The left charging cable has one cable tie.

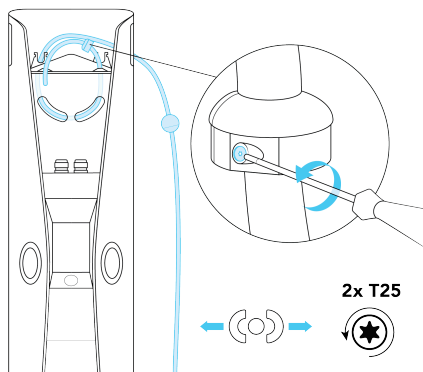


L = Left, R = Right

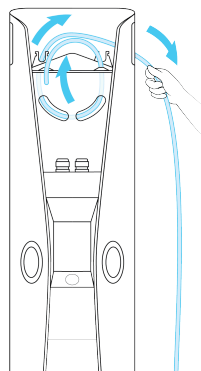
- b. Push the charging cable out of the charging cable locking mechanism to access the strain relief.



- c. Remove and discard the strain relief.

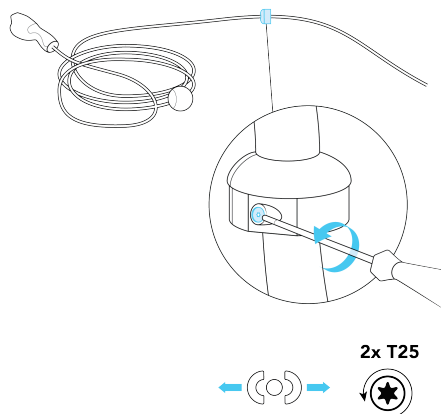


- d. Pull the charging cable out of the charging station.

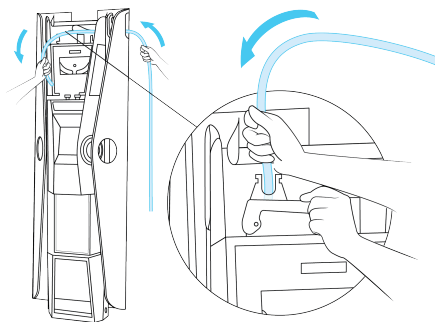


4.3.2. Install the charging cable

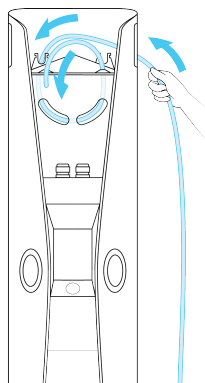
1. Install the charging cable:
 - a. Place a protective mat on the ground and place the charging cable and plug on the mat.
 - b. Remove and retain the strain relief from the new charging cable. Note the crimp mark on the charging cable where the strain relief was installed.



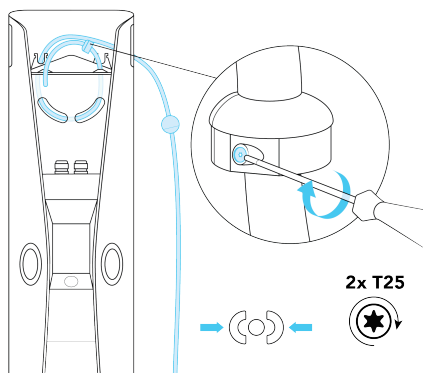
- c. Push the brake down to open the charging cable locking mechanism then insert the charging cable.



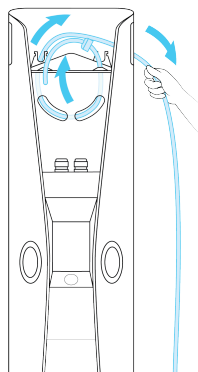
- d. Guide the charging cable around the counterweight and feed it through the strain relief hole at the top. Pull the charging cable out 1 m (40 in).



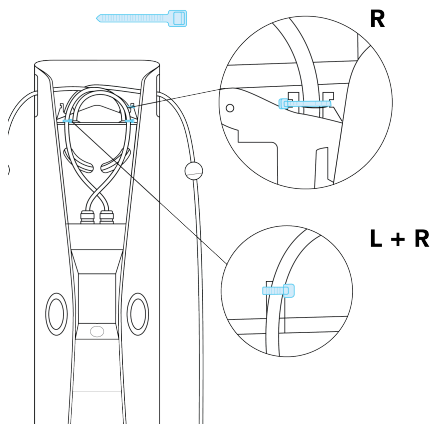
- e. Install the strain relief on the charging cable at the crimp mark (730 mm (28 ¾ in) from the beginning of the black insulation).



- f. Pull the charging cable back until the strain relief reaches the charging cable locking mechanism.

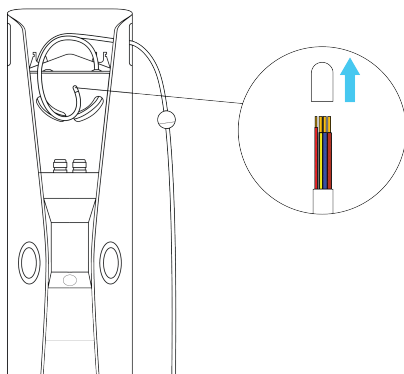


- g. Secure the charging cable to the charging cable support using two new cable ties.

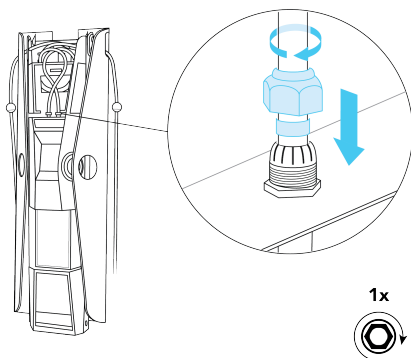


L = Left, R = Right

- h. Remove the protection cap from the end of the charging cable.



- i. Guide the charging cable through the cable gland then tighten the cable gland.



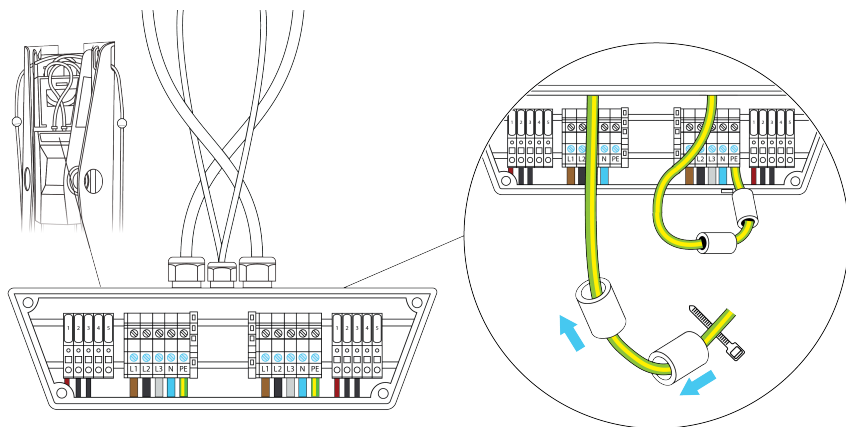
2. Connect the charging cable:

- a. Install two ferrite beads on the charging cable PE/G wire. Secure the ferrite beads in position using one cable tie.



Note:

When ferrite beads were installed on the removed charging cable, these can be re-used on the replacement charging cables.



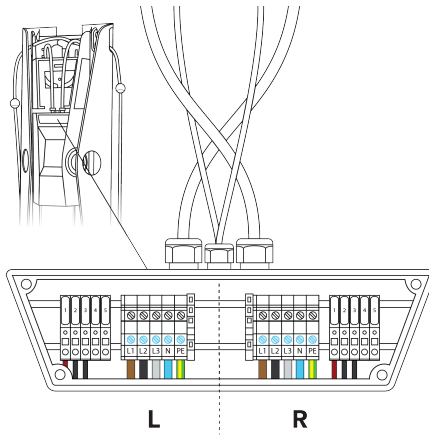
- b. Connect the following set of wires for the charging cable that you are replacing:



Note:

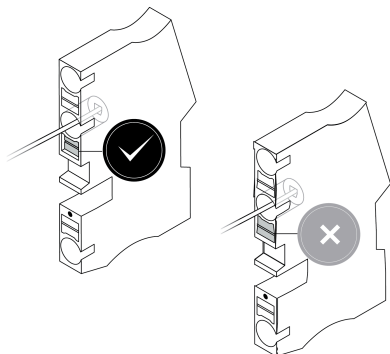
The terminals on the left side are for the left charging cable. The terminals on the right side are for the right charging cable.

Wire	Terminal
Signal (red)	1
Power phase L1 (brown)	L1
Power phase L2 (black)	L2
Power phase L3 (gray)	L3
Neutral N (blue)	N
Protective earth PE/G (green-yellow)	PE

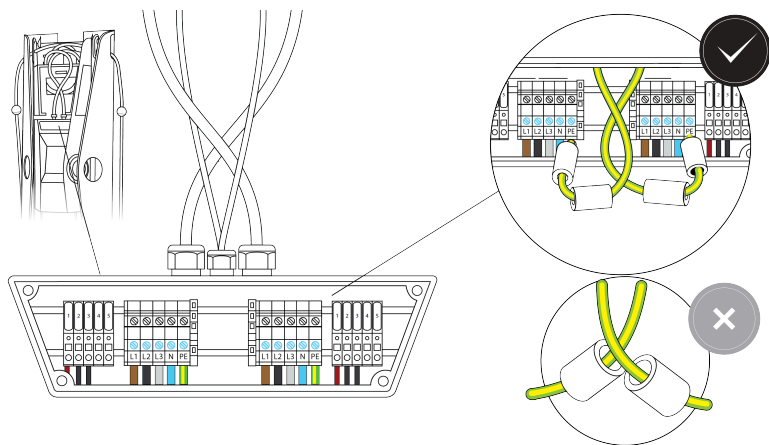


L = Left, R = Right

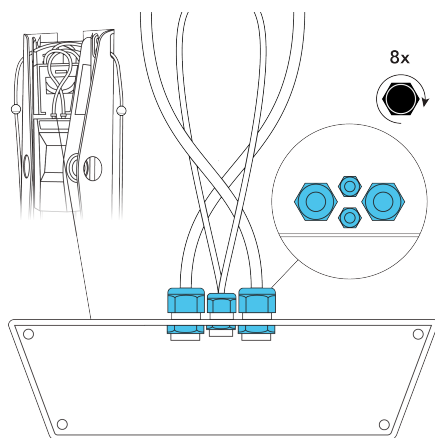
- c. Pull on each wire to make sure it is correctly connected. The indicators on the terminal blocks must be in the locked position.



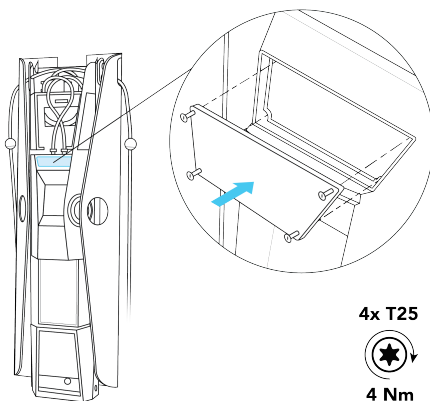
- d. Make sure that the ferrite beads on one PE/G wire do not touch the ferrite beads on the other PE/G wire.



- e. To ensure the station IP rating and the security of cables, make sure that the cable glands on the top of the charger box are tight:
- Check the four cable gland sealing nuts on the outside of the charger box.
 - Check the four cable gland lock nuts on the inside of the charger box.



- f. Install the service hatch using four Torx T25 screws.



3. Close the charging station (see [Close-up after maintenance on page 73](#)).
4. Test the charging station (see [Test the charging station on page 78](#)).

4.4. Replace a LED ring

Two LED rings are installed. The procedure is the same for each LED ring.

4.4.1. Remove the LED ring

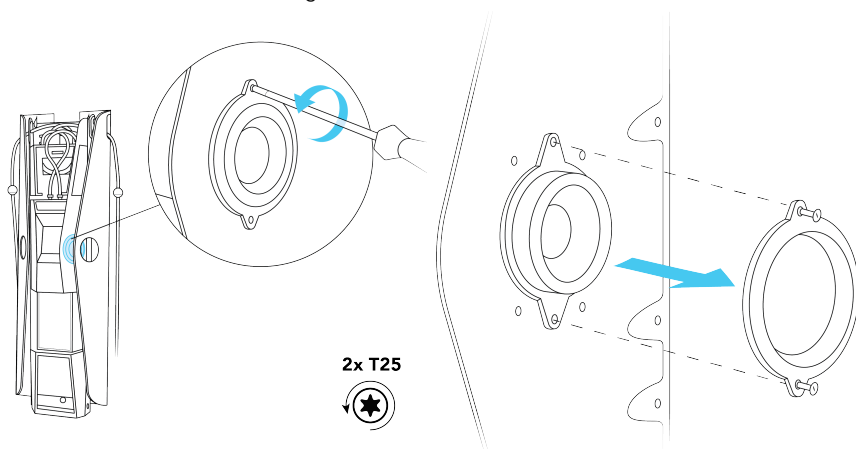
1. Prepare the work area (see [Prepare the work area on page 10](#)) then open the charging station (see

[Open the charging station on page 10\).](#)

**Note:**

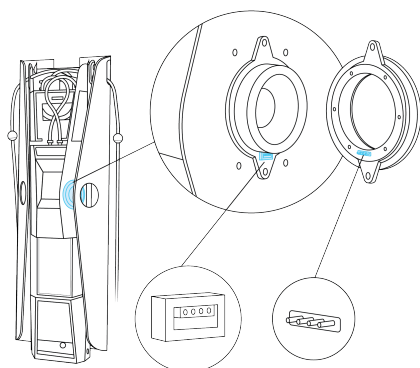
It is only necessary to open the side panels.

2. Remove two screws and the LED ring.

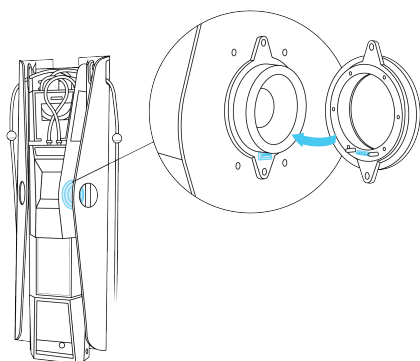


4.4.2. Install the LED ring

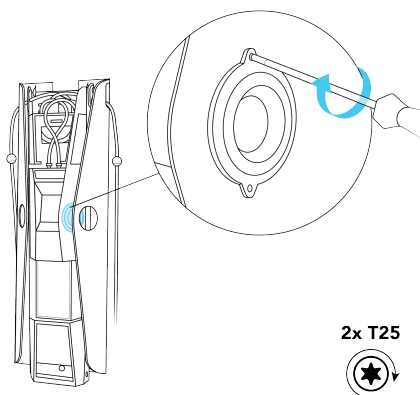
1. Make sure the pin contacts on the charging station are clean.



- Align the two pins on the LED ring with the holes in the charging station and push the LED ring into position.



- Install two screws to secure the LED ring.



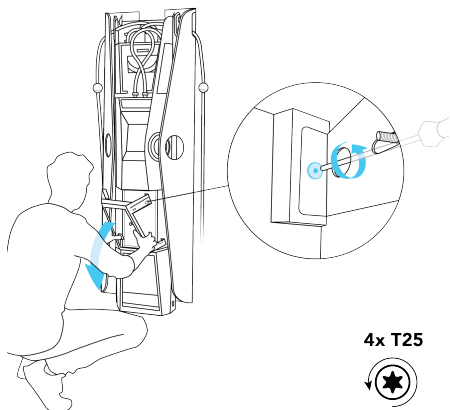
- Close the charging station (see [Close-up after maintenance on page 73](#)).
- Test the charging station (see [Test the charging station on page 78](#)).

4.5. Replace a RCBO

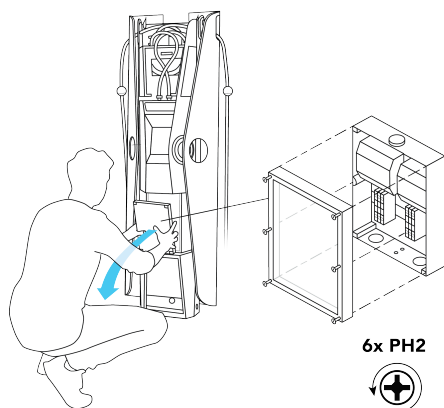
4.5.1. Remove the RCBO

- Prepare the work area (see [Prepare the work area on page 10](#)) then open the charging station (see [Open the charging station on page 10](#)).
- Access the installer box as follows:

- a. Remove four Torx screws and the frame from the installer box.

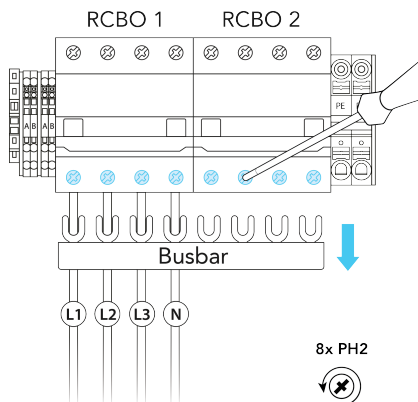


- b. Loosen six Phillips PH2 screws and remove the installer box cover.



3. For a single 3-phase 400 V AC 64 A power cable connection, disconnect the single power cable as follows:

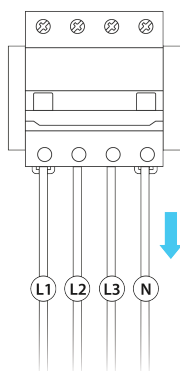
- a. Loosen 8 screws and remove the busbar that connects RCBO 1 and RCBO 2 together.



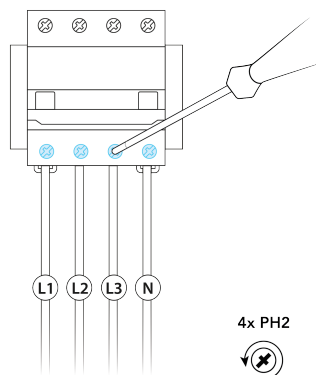
- b. If the power cable is connected to the RCBO to be replaced, disconnect the four wires of the power cable from that RCBO.

**Note:**

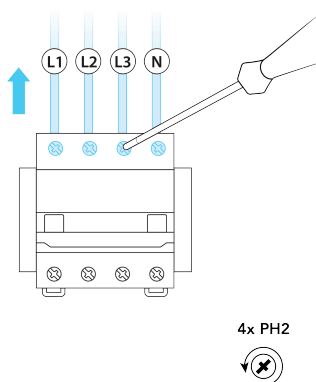
The power cable can be connected to either RCBO.



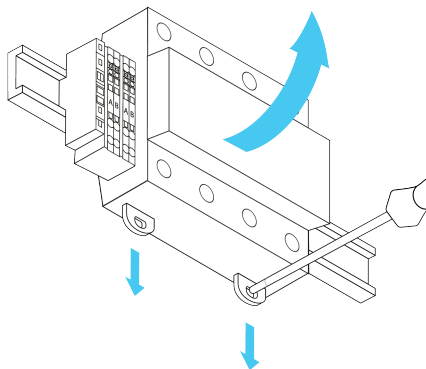
4. For two 3-phase 400 V AC 32 A power cables, disconnect the four wires of the power cable from the RCBO that will be replaced.



5. Disconnect the four output wires from the RCBO.

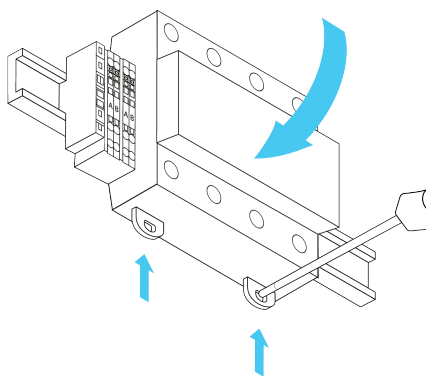


6. Release the RCBO from the DIN rail, then remove the RCBO from the installer box.

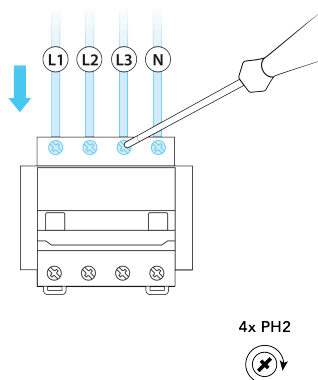


4.5.2. Install the RCBO

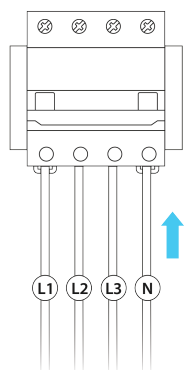
1. Install the RCBO on the DIN rail and push the locks up to secure the RCBO.



2. Connect the four output wires to the RCBO.

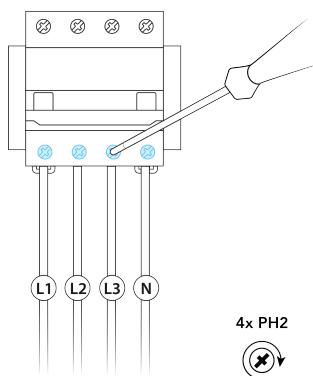


3. For two 3-phase 400 V AC 32 A power cables, connect the four wires of the power cable to the RCBO.

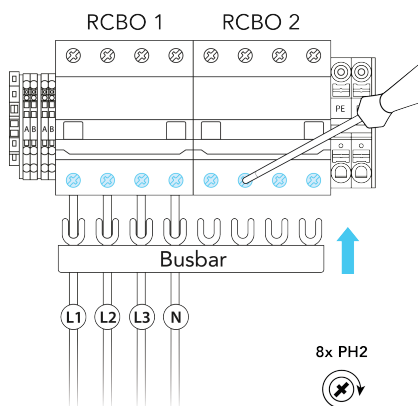


4. For a single 3-phase 400 V AC 64 A power cable connection, connect the single power cable as follows:

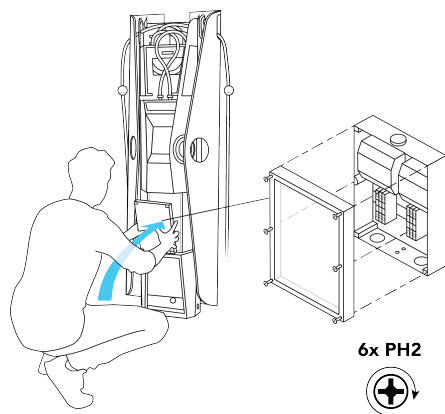
- a. If the power cable is connected to the RCBO that was replaced, connect the four wires of the power cable to that RCBO.



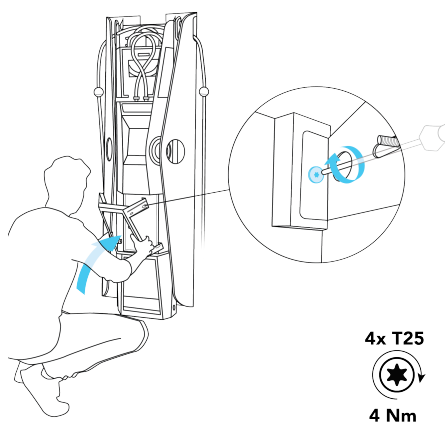
- b. Install the busbar to connect RCBO 1 and RCBO 2 together, then tighten 8 screws.



5. Install the installer box cover then tighten the six screws.



6. Install the installer box frame using four Torx screws.



7. Close the charging station (see [Close-up after maintenance on page 73](#)).
8. Test the charging station (see [Test the charging station on page 78](#)).

5. Servicing instructions

Refer to to [Periodical servicing schedule on page 3](#) for the recommended servicing schedule.

**CAUTION:**

Do not use a hose or a high pressure spray to clean the charging station.

**CAUTION:**

Do not use aggressive chemical cleaners or solvents to clean the charging station.

5.1. Clean the exterior

1. Clean the outer surfaces and covers using a soft damp cloth and mild detergent spray.
2. Wipe any moisture off using a soft dry cloth.
3. Clean the touchscreen using cleaning wipes specifically intended for use on touchscreens.

5.2. Clean the interior

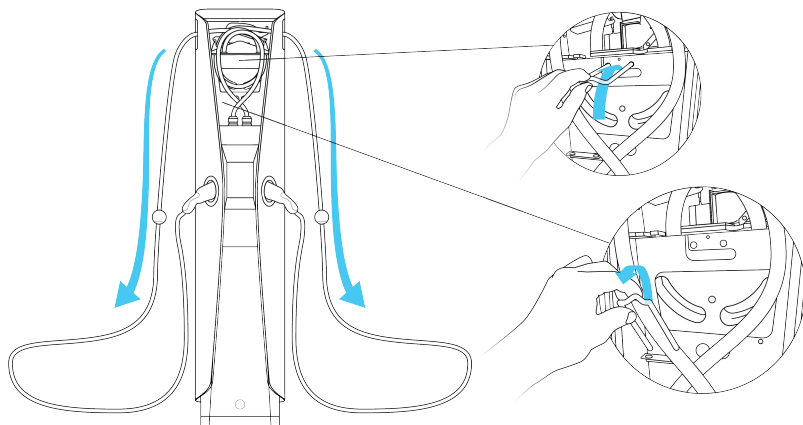
1. Prepare the work area (see [Prepare the work area on page 10](#)) then open the charging station (see [Open the charging station on page 10](#)).
2. Use a brush and a vacuum cleaner to remove loose dirt and debris from the interior of the charging station.
3. Clean accessible interior surfaces using a soft damp cloth and mild detergent spray.
4. Close the charging station (see [Close-up after maintenance on page 73](#)).

5.3. Clean the charging cables

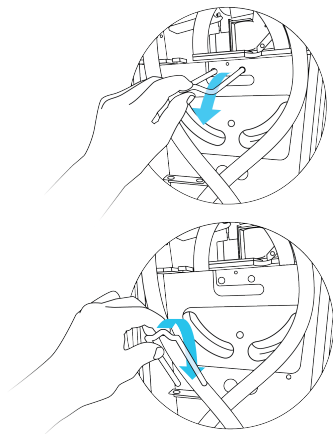
Charging cables and the cable rollers can become dirty from dust, frequent use, or the cable touching the ground.

1. Prepare the work area (see [Prepare the work area on page 10](#)).
2. Remove the top cover (see [Open the charging station on page 10](#)).
3. Place a protective mat on the ground to protect the charging cables and plugs from damage.

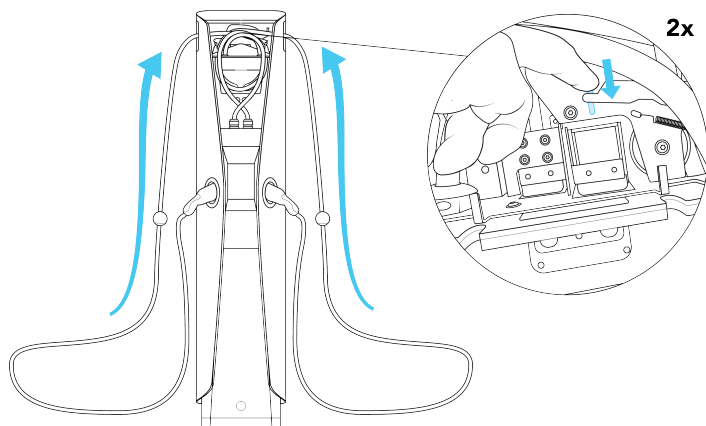
4. Fully extend the charging cables and insert the safety pin.



5. Clean the external surfaces of the charging cables and plugs using a soft damp cloth and mild detergent.
6. Check the charging plug for damage and for foreign matter. Clean if necessary.
7. Clean the cable feed rollers using a soft damp cloth and mild detergent.
8. Remove the safety pin and place it back into its holder.



9. Retract the charging cables by pushing down the levers in the cable locking mechanism.



10. Install the top cover (see [Close-up after maintenance on page 73](#)).

5.4. Test the RCBO



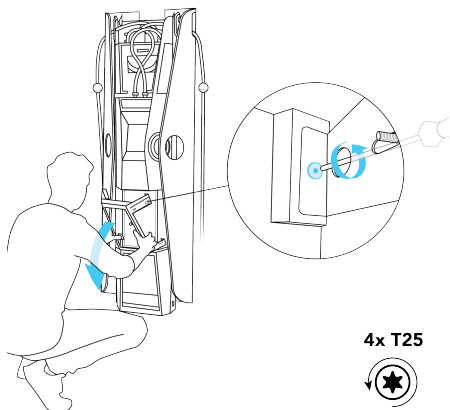
DANGER:

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

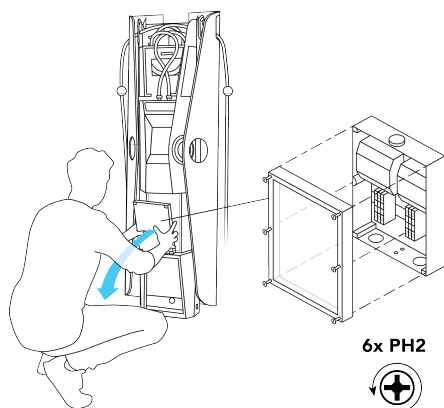
- Make sure it is safe to supply electrical power to the charging station.
- Do not leave the charging station unattended with the covers open.
- Only supply electrical power for the purpose of testing and adjusting the charging station.
- Remove electrical power when the procedure is complete.

1. Prepare the work area (see [Prepare the work area on page 10](#)).
2. Remove the bottom cover of the charging station (see [Open the charging station on page 10](#)).
3. Access the installer box as follows:

- a. Remove four Torx screws and the frame from the installer box.

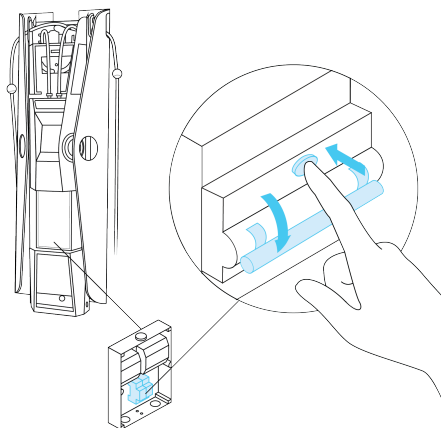


- b. Loosen six Phillips PH2 screws and remove the installer box cover.

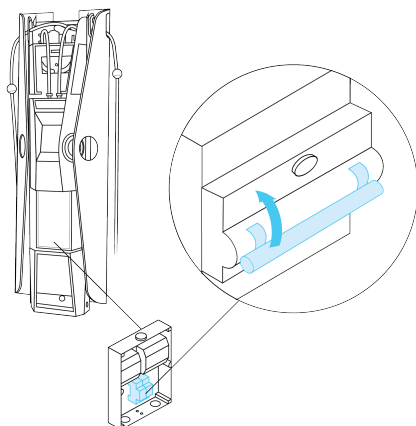


4. In the power supply cabinet, supply power to the charging station.

5. On each RCBO, press the TEST button to trip the RCBO.

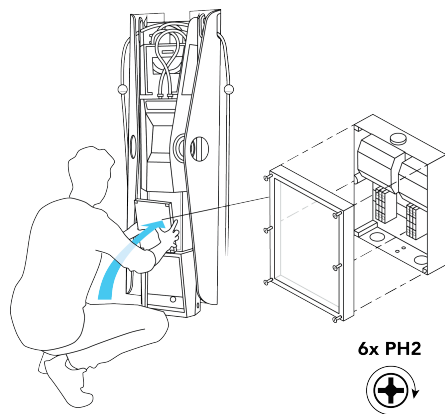


6. After testing, reset each RCBO.

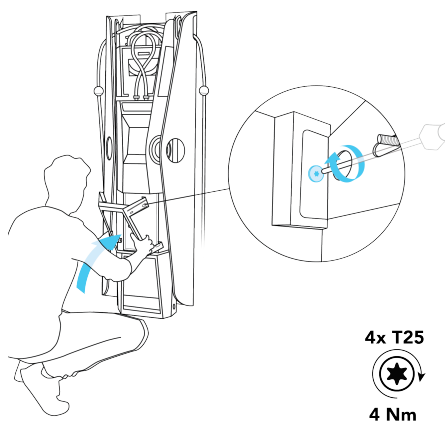


7. In the power supply cabinet, isolate the power supply to the charging station.

8. Install the installer box cover then tighten the six screws.



9. Install the installer box frame using four Torx screws.



10. Install the bottom cover of the charging station (see [Close-up after maintenance on page 73](#)).

6. Close-up after maintenance

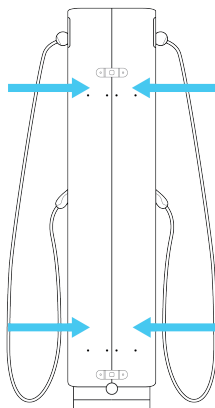
6.1. Close the charging station

**Note:**

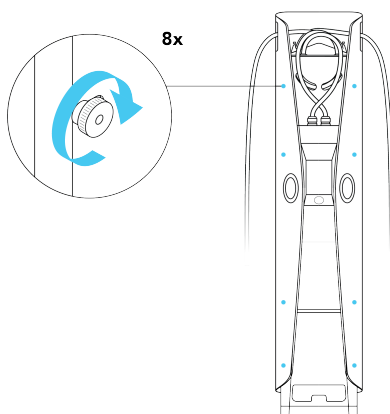
Spare thumbnuts and Torx M5 T25 screws are installed near the charging cable brake mechanism (see [Description on page 8](#)).

1. Close the side covers as follows:

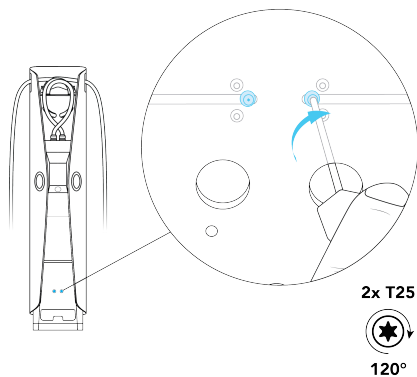
- Slide the side panels closed.



- Install and tighten the eight thumbnuts.



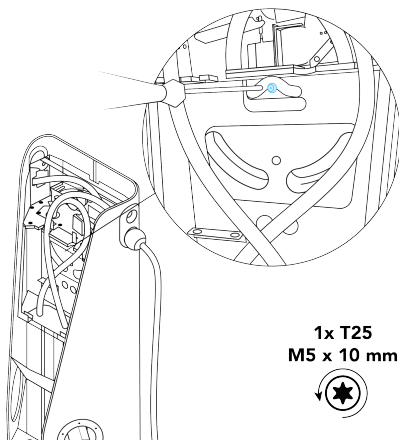
- c. Tighten two Torx screws that secure the side panels at the bottom.



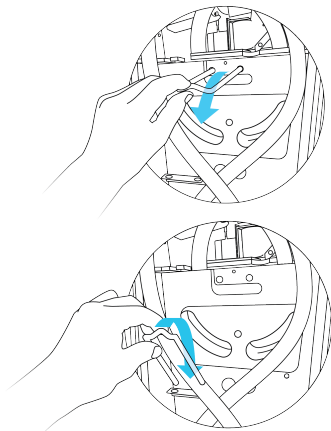
- d. Remove the flanged Torx T25 M5 x 10 mm screw that secures the safety pin.

**Note:**

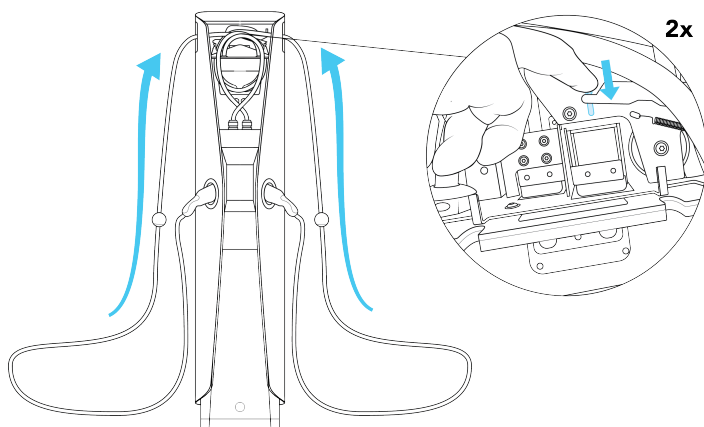
Do not install the safety pin screw when the safety pin has been removed. The screw can catch on the charging cable mechanism.



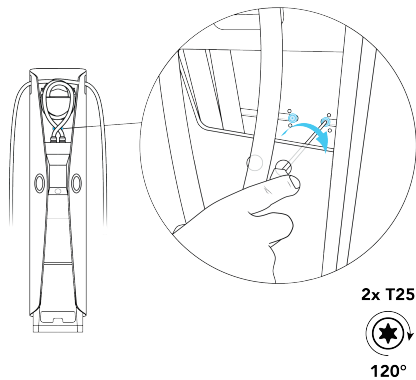
- e. Remove the safety pin and place it back into its holder.



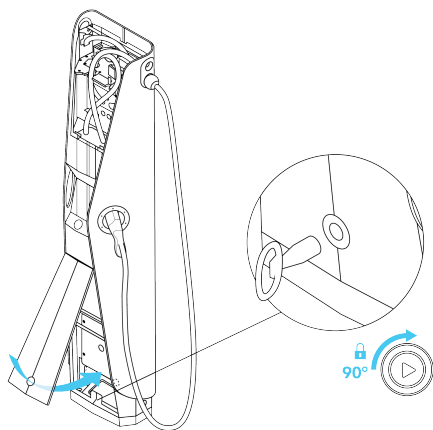
- f. Retract the charging cables by pushing down the levers in the cable locking mechanism.



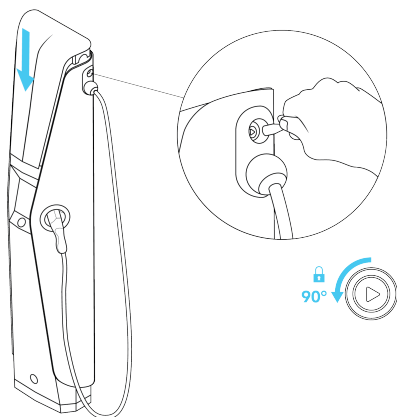
- g. Tighten two Torx screws that secure the side panels at the top.



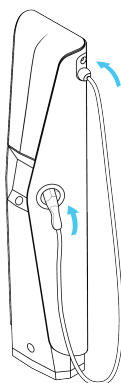
2. Install the bottom cover.



3. Install the top cover.



4. Place the charging cable plugs in the holders. Make sure the cables are fully retracted.



7. Testing and commissioning

7.1. Commission the charging station

After replacing a charger box in an Iqon Hub, use the EVBox Connect App to connect the Hub to the charging management system of the CPO. Then contact the support channel of the CPO to re-register the new EVB-P registration number of the Hub charging station with the CPO, and request that the CPO configures the Iqon Hub for use.

**Note:**

The new charger box has a unique registration number which can be found on the new sticker applied to the charging station.

After replacing a charger box in an Iqon Satellite, supply power to the complete Hub-Satellite cluster. The Hub will automatically find the newly-connected satellite (through the RS485 connection). Then contact the support channel of the CPO to re-register the Satellite using the EVB-P registration number of the Hub charging station, and request that the CPO configures the Iqon Satellite for use.

7.2. Test the charging station

**Note:**

Make sure that the charging station is correctly registered with the CPO before you start the test.

1. In the power supply cabinet, supply power to every charging station in the Hub-Satellite installation.
2. On each touchscreen of the charging stations that were repaired or serviced, make sure that an error screen is not shown.
3. Test the charging station by charging two vehicles at the same time.

**Note:**

The EVBox Dual Socket Test Box can also be used instead of a vehicle (see [Tools and material on page 9](#)).

**Note:**

An active charge card or app can be used to start and stop a charging session.

Make sure of the following results:

- No error screen is shown on the touchscreen.
 - The LED rings do not show red or flashing red.
 - The vehicle charges correctly using each charging cable.
4. If an error does occur, check the following:
 - Make sure that both covers are correctly closed.
 - Check that all PE/G cables are correctly connected.
- If an error screen is still shown on the touchscreen after corrective action, contact the CPO for more information about errors from the applicable charging station.
5. Disconnect all vehicles or test boxes from the charging station.

8. Disclaimer

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