

EVBox Elvi **fixed cable**

Installation and user manual
Part A

EVBox Elvi fixed cable

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1. Introduction

Thank you for choosing this EVBox Elvi. This Installation and User Manual tells you how to install and use the station. You must carefully read the safety information before you start.

1.1. Scope of the document

Keep this manual for the entire life cycle of the EVBox Elvi.

This manual is intended exclusively for qualified personnel who can assess the work and identify potential danger.

This manual comprises two parts:

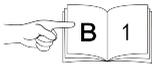
- Manual Part A - This part contains the instructions.
- Manual Part B - This part contains the illustrations for the instructions.

You must read both parts of the manual.

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

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1.2. Symbols used in this manual

Symbol	Explanation
	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.
	This symbol indicates that the illustrations corresponding to the indicated chapter are to be found in Manual Part B.
1., a. or i.	Action to be followed in the stated order.

1.3. Certification and compliance

FCC Communication Regulations

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

- 1) This device may not cause harmful interference.
- 2) This device must accept any interference received, including interference that may cause undesired operation.

**WARNING:**

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

**WARNING:**

This equipment should be installed and operated with a minimum distance of 20 cm (8 in) between the radiator and any part of the human body.

US contact information:

1930 Innovation Way,
Suite 200,
Libertyville,
IL 60048, USA

www.evbox.com

Canadian Regulatory Statements

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions:

- (1) this device may not cause interference.
- (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential

radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

This equipment complies with the ICES RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 cm (8 in) between the radiator and any part of the human body.

**Note:**

This device, when operated in the band 5.150–5.250 GHz, is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems.

Americans with Disabilities Act (ADA) Compliance

While single-family residential installations do not have complex parking requirements, commercial, public and multi-unit residential installation have additional parking considerations that include Americans with Disabilities Act (ADA) accessible Electric Vehicle Charging Stations (EVCS) spaces and meeting the minimum requirements for spaces in parking lots and facilities. EVCS site hosts often experience challenges in providing ADA accessible EVCS spaces in addition to standard EVCS spaces while maintaining the minimum requirements for parking. Consideration of the available parking is important for residents as well as employers and employees. Installing charging stations in unassigned spaces or common areas for availability to all residents at MUDs requires compliance with ADA accessibility regulations. Please check with your State and Local government agencies to understand and implement the necessary accommodations for people with disabilities.

Product and environmental characteristics



The charging station has been UL-certified by the manufacturer and bears the UL logo for USA and Canada. The relevant declaration of conformity may be obtained from the manufacturer.

1.4. Product classification

Power supply input	EV supply equipment permanently connected to AC supply network.
Power supply output	AC EV supply equipment.
Normal environmental conditions	Outdoor use.
Access	Equipment for locations with unrestricted access.
Mounting method	Stationary equipment, wall-mounted or pole-mounted.
Protection against electric shock	Class 1 equipment.
Charging modes	Level 2.

2. IMPORTANT SAFETY INSTRUCTIONS

Read these instructions before you install this product. SAVE THESE INSTRUCTIONS.

**WARNING:**

When using electric products, basic precautions should always be followed, including the following:

2.1. INSTRUCTIONS PERTAINING TO RISK OF FIRE OR ELECTRIC SHOCK

**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 reseller for more information

**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. Keep the power off until the charging station is fully installed and secure.
- Do not switch on the charging station if it is not fully installed or not secure.
- Do not install a the 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.

**DANGER:**

Service replaceable fuses:

- Disconnect power at the power supply cabinet before replacing the fuse.

**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 this 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.

2.2. GENERAL SAFETY INSTRUCTIONS

**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.

**CAUTION:**

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

- Read and understand this manual before installing or using the charging station.

- Do not allow children to operate the charging station. Adult supervision is required when children are near a charging station that is in use.
- Do not put fingers into the electric vehicle connector.



CAUTION:

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, and thus cause injuries or death.

- Use this charging station to charge Level 2 compatible electric vehicles only.
- Refer to the vehicle user manual to check if the vehicle is compatible.



CAUTION:

To reduce the risk of fire, connect only to a circuit provided with 40 amperes maximum branch circuit overcurrent protection in accordance with the ANSI/NFPA 70 National Electrical Code and/or CSA C22.1 - 15 Canadian Electrical Code, Part 1.



CAUTION:

This product must be connected to a grounded, metal, permanent wiring system, or an equipment-grounding conductor must be run with the circuit conductors and connected to the equipment grounding terminal on the product.



CAUTION:

Use 8 AWG copper wire rated at 75°C (167°F) only.

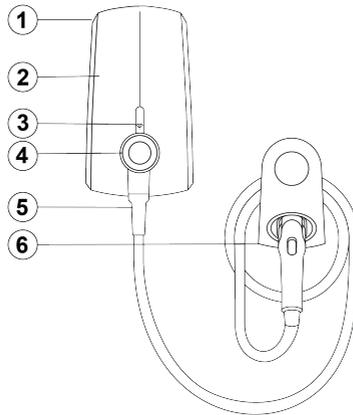
2.3. MOVING AND STORAGE PRECAUTIONS

Obey the following guidelines when moving and storing the charging station:

- Never lift the charging station using its charging cable.
- Disconnect input power before removing the charging station for storage or relocation.
- 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 in a dry environment in the temperature and humidity ranges given in the specifications.

3. Product features

3.1. Description



1. Wall dock

The wall dock connects to the power supply and it contains the electrical components.

2. Station

The station can either be a Hub station or a Satellite station, and in any installation there must be one Hub charging station (see [Hub-Satellite installations \(optional\) on page 17](#)). Up to 10 Satellite charging stations can connect to the Hub charging station.

- A Hub station includes the charge card reader, LED ring, Wi-Fi module, optional RF module, Bluetooth module, optional cellular modem, optional smart charging module, and charging cable connection.
- A Satellite station includes the charge card reader, LED ring, RF module and charging cable connection.

The station clips onto the wall dock.

3. Charge card reader

This is the area where you scan your charge card or key fob. Depending on the configuration settings, Elvi reads the data from your card to start or stop a charging session.

4. LED ring

The LED ring indicates the status of Elvi.

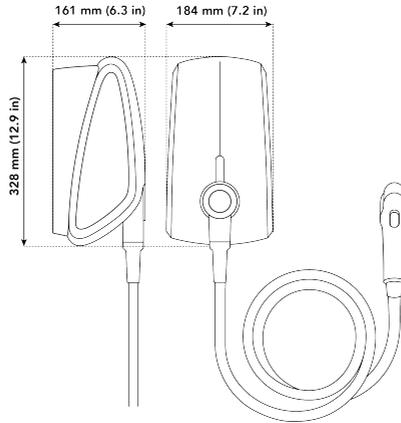
5. Charging cable

Elvi has a fixed charging cable.

6. Cable dock (optional)

A cable dock with a plug holder can be used to stow the cable.

3.2. Dimensions



3.3. Technical specifications

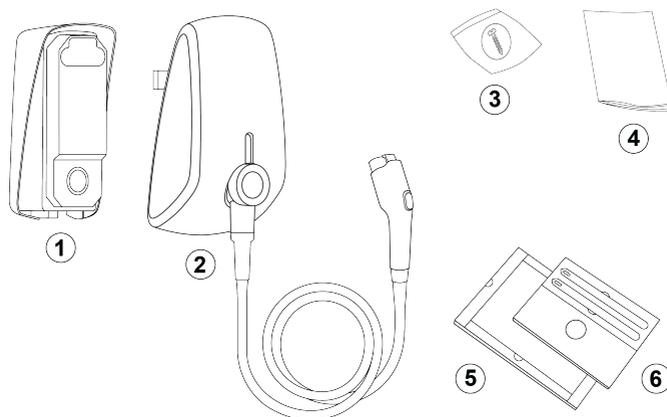
Feature	Description
Electrical properties	
Maximum charge rate	7.2 kW (1 phase - 30 A).
Charging mode	Level 2 (UL2594).
Fixed charging cable	Type 1 plug (SAE J1772).
Charging cable length	6 m (20 ft).
Connection capacity	1-phase, 240 V, 30 A, 60 Hz.
Metering *	UL-certified kWh meter with California Title 24 compliance for service metering.
Safety and certification	
Upstream installation protection	See Power supply requirements on page 15 .
Operating temperature range	-25° C to +45 °C (-13° F to +113° F).
Storage temperature range	-25 °C to +60 °C (-13° F to +140° F).
Maximum installation altitude	2000 m (6 561 ft).
Enclosure ratings	IP55 (IEC 60529), IK10 (IEC 62262).

Feature	Description
Safety Class	Safety Class I and overvoltage Category III.
Replaceable fuse	250 V, 2 A, fast, 5 x 20 mm, ceramic.
Connectivity	
Authorization	RFID reader (Mifrare 13.56 MHz).
Communication standard	Wi-Fi 2.4/5 GHz and Bluetooth 4.0 (Hub only).
Cellular communication *	4G LTE / 2G GSM (Hub only).
Hub-Satellite RF communication *	915 MHz.
Physical properties	
Weight	Approximately 6 kg (13¼ lbs).

* Dependent on the model.

3.4. Delivered components

Components in the packaging



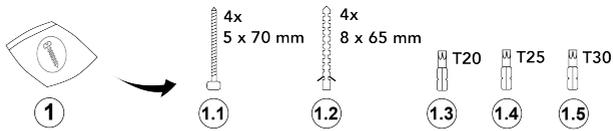
1. Wall dock.
2. Station with charging cable.
3. Installation kit for wall dock.
4. Installation and user manuals.
5. Drilling template.
6. Accessories folder.



Note:

The installer must supply additional components required for the installation of the charging station. See [Tools and material required on page 15](#).

Components in the kit



1 Installation kit for wall dock.

1.1 Torx screws T25 5 x 70 mm (13/64 x 2 3/4 in).

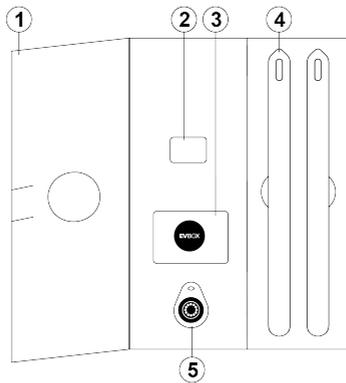
1.2 Wall plugs 8 mm x 65 mm (5/16 x 2 9/16 in).

1.3 Torx bit T20.

1.4 Torx bit T25.

1.5 Torx bit T30.

Accessories folder



1. Accessories folder.

2. Chargepoint ID and security code.

3. Charge card.

4. Unlock tools.

5. Key fob.



Note:

Keep the accessories folder in a safe place as it contains the Chargepoint ID and the security code.

4. INSTALLATION INSTRUCTIONS



DANGER:

Risk of electric shock.

- Read and obey the safety precautions at the beginning of this manual before you install, 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.

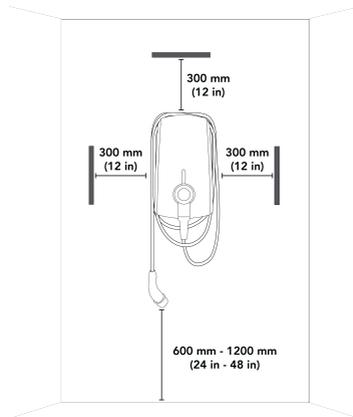
4.1. Prepare for installation

4.1.1. Plan for installation

The following recommendations are a guide to help you plan the installation of the charging station.

Choose location

- Position the charging station, where possible, in a location where it is not exposed to sunlight and vulnerable to external damage.
- The wall must have a flat structure and must be able to hold a load of at least 100 kg (220 lbs).
- The minimum free space around the charging station is 300 mm (12 in).
- The location must allow the charging cable to remain within its bending tolerance.
- The height of the charging plug must be within the tolerance shown when the charging cable is stowed around the charging station or when inserted in the optional cable dock.



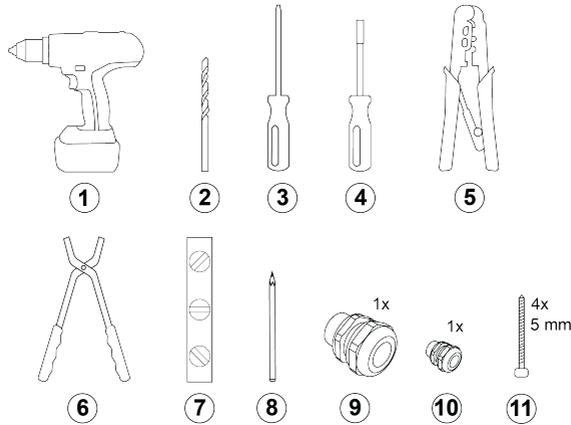
Pre-installation checklist

- The local installation regulations are identified and are followed.
- All necessary permits are obtained from the local authority that has jurisdiction.
- The existing electrical load has been calculated to find the maximum operating current for the charging station installation.
- A miniature circuit breaker (MCB) and residual current device (RCD) are installed upstream and have ratings that correspond to the local power supply as well as to the required charging power.
- All cables match the specifications for the charging station that you are going to install.
- The correct specification of power supply cable has been routed to the installation area, and there

is sufficient cable length to strip and connect the wires.

- The power supply cable remains within its bending tolerance during and after installation.
- The recommended tools are available on site. See [Tools and material required on page 15](#).
- The plugs, screws, and drill bit used for installing the charging station are suitable for the wall structure.
- The power supply cable and the optional Smart Charging network cable comply with the specifications for the charging station that you are going to install.

4.1.2. Tools and material required



1. Drill.
2. Drill bit 8 mm (5/16 in).
3. Screwdriver (flat).
4. Screwdriver with adapter for Torx bit.
5. Wire stripper (network cable).
6. Wire stripper (power cable).
7. Spirit level.
8. Pencil.
9. Conduit fitting, 1/2 in cULus Listed, power supply cable. (Installer supplied.)
10. Conduit fitting, optional Smart Charging network cable. (Installer supplied.)
11. Wood screws, pan head, 5 mm (13/64 in) diameter *. (Installer supplied.)



Note:

* Wood screws are required when Elvi is installed on a wood or panel wall. Only use pan head screws with a head diameter of between 8 and 10 mm (5/16 and 25/64 in). Do not use countersunk screws. Screw length is set by the thickness of the wall material.

4.1.3. Power supply requirements

The appropriate wire gage 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%). The maximum wire gage that can be fitted is AWG 8.

Route the power supply cable to the position where the charging station will be installed. Make sure of the following:

- There must be enough cable for it to extend at least 500 mm (20 in) above the cable connection point of the charging station.
- The bend radius tolerance must not be exceeded.

The cable enters the charging station from below.

The maximum power rating for a single charging station is specified below.

Power	Connection	Input current	Output current
7.2 kW	240 V Split phase	1 x 30 A	1 x 30 A

4.1.4. Using Wi-Fi (Hub only)

The Hub charging station is equipped with a multi-radio module. The wireless module includes dual-mode Bluetooth v4.0 (BR/EDR and low energy) and dual-band Wi-Fi (2.4 and 5 GHz bands). For Wi-Fi connectivity, the device supports Wi-Fi IEEE 802.11 (a/b/g/n).



CAUTION:

For Canada: Wi-Fi using the 5 GHz band is not permitted outdoors.

Notes on Wi-Fi security:

- Wi-Fi Protected Access 2 (WPA2), also known as WPA-Personal or 802.11i, is the most common security setting for Wi-Fi networks. WPA2 has replaced WPA.
- It is not possible to have WPA with AES/CCMP (Advanced Encryption Standard/Counter and CBC-MAC Protocol) encryption or WPA2 with TKIP (Temporal Key Integrity Protocol).
- WEP (Wired Equivalent Privacy) and TKIP are not supported as they are considered unsecure. WEP is now deprecated in the 802.11i specification. Open networks are supported (i.e. networks with no password). However, it is not advised to use open networks for connecting the charging station.
- Enterprise security is the common name for all methods that use 802.1X to authenticate with a backend RADIUS server. Enterprise security is not supported by the charging station.

Recommendations when configuring your Wi-Fi router and access point:

- Do not set the option to hide your network because a hidden network will not broadcast to the charging station.
- Make sure that your router is not limiting connections to certain MAC addresses.
- Set the Wi-Fi security to WPA/WPA2, also known as WPA Mixed Mode. This mode allows the charging station to connect with WPA TKIP-level encryption, and lets other devices use WPA2 Personal (AES) encryption.
- Make sure you set a strong Wi-Fi password. A minimum of eight characters are required in a password.
- Make sure that the a/b/g/n modes under the 2.4 GHz and 5 GHz frequencies are active. The charging station will choose the fastest available mode for its operation. 5 GHz is faster, but has a shorter range. 2.4 GHz is better suited for a longer range. The installer must examine the signal strength of both networks during Wi-Fi setup on the charging station.

4.1.5. Smart Charging (optional)

A Smart Charging system to optimize load balancing can be connected to the Hub charging station. Route a SFTP Category 5 or 6 network cable from the Smart Charging system to the installation area of the Hub charging station. For outdoor installations, use a UV stabilized network cable. Make sure that

there is sufficient cable length to strip and connect the cable to the wall dock. See [Install_wall_dock](#) for cable connection instructions.

4.1.6. Hub-Satellite installations (optional)

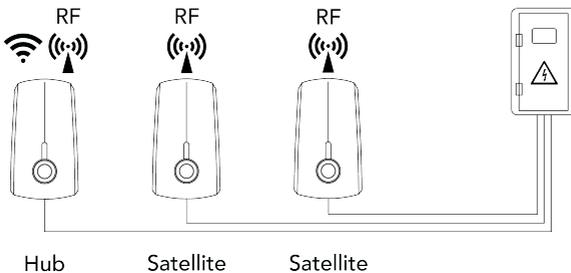
A Hub-Satellite charging station installation can consist of up to 10 Satellite charging stations connected to the Hub station. In any installation there must be one Hub station, and all Satellite stations connect to that Hub station using wireless RF communication. The Hub-Satellite installation is set-up using the EVBox Connect app. See [Configure a Hub-Satellite installation on page 23](#).

A Hub-Satellite installation is used for the following functions:

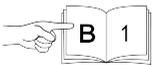
- To distribute available power over the charging stations that are being used. For correct load balancing, a Hub-Satellite configuration must be connected from a single power supply cabinet. If a group of charging stations is powered from a different power supply cabinet then that group of stations must be a separate Hub-Satellite configuration.
- Sharing a common Internet connection using either a Wi-Fi connection to a local Wi-Fi router or an optional SIM to connect through a cellular network.

Note the following when choosing locations for Satellite charging stations:

- All Satellites must be within 100 m (328 ft) of the Hub.
- Obstructions such as walls and floors can decrease the strength of the communication signal.
- If the Satellite is not within range of the Hub, or if the signal strength is too low, then the Satellite will not appear in the EVBox Connect app.



4.2. Unpacking



See the corresponding illustrations in manual B.

1. Open the package then remove the packaging holding the accessories folder.
2. Remove the accessories folder from the packaging.



Note:

Keep the packaging to use as the drilling template when installing the wall dock.

3. Lift out the charging station and place it on a soft surface.
4. Remove the installation kit bag.
5. Remove the filler packaging.
6. Remove the charging cable and place it on a soft surface.
7. Remove the station from the wall dock:

- a. Push the two unlock tools, slot first, fully upwards into the holes on the bottom of the station until you hear a click.
- b. With both hands, pull the station from the wall dock in a straight line to disengage the station electrical connector from the wall dock.

Place the station on a soft surface.



Note:

To prevent damage to the locking tabs or the electrical connector, do not twist or skew the station.

- c. Remove the two unlock tools from the wall dock.

4.3. Install the wall dock



See the corresponding illustrations in manual B.

1. Hold the drilling template on the wall and level it using a spirit level.
2. Mark four screw points on the wall then remove the drilling template.
3. For a concrete or brick wall, install screws as follows:
 - a. Drill four 8 mm (5/16 in) holes to a depth of 70 mm (2 3/4 in).
 - b. Install four 8 x 65 mm (5/16 x 2 9/16 in) diameter wall plugs.
 - c. Partially install four Torx 5 x 70 mm (13/64 x 2 3/4 in) screws using the Torx T25 bit, allowing sufficient screw length for the wall dock to be installed.
4. For a wood or panel wall, install wood screws as follows:
 - a. Drill four 3 mm (3/32 in) pilot holes to the depth of the screws that will be used.
 - b. Partially install four 5 mm (13/64 in) wood screws, allowing sufficient screw length for the wall dock to be installed.



Note:

The screw type can differ from that shown.

5. Install the wall dock as follows:
 - a. Place the wall dock onto the four 5 mm (13/64 in) screws then slide it downwards to engage the screws.
 - b. Tighten the four 5 mm (13/64 in) screws using a suitable bit.



Note:

For installation of the wall dock on a wooden wall, the screw type can differ from that shown.

6. Remove three Torx T20 screws and one slotted screw, then remove the transparent cover.
7. Prepare the conduit fitting as follows:
 - a. Remove the conduit support from the wall dock.
 - b. For the power supply cable, use a hole cutting bit or a flat-blade screwdriver to remove the large conduit fitting knock-out from the conduit support.

- c. For the optional Smart Charging network cable (Hub only), use a hole cutting bit or a flat-blade screwdriver to remove the small conduit fitting knock-out from the conduit support.
- d. Install the conduit fittings for the power supply cable and optional Smart Charging network cable.
- e. Feed the power supply cable and optional Smart Charging network cable through the conduit fittings so they extend a minimum of 180 mm (7 in) above the conduit fitting. Strip the sheathing from the cables above the conduit fittings.
- f. Install the conduit support in the wall box.
- g. Tighten the power supply cable and optional Smart Charging network cable conduit fittings to secure the cables and meet the IP rating.

8. Prepare and connect the power supply cable as follows:



Note:

Use 8 AWG copper wire rated at 75°C (167°F) only.

- a. Strip the power wire ends.
With stranded (flexible) wiring, use wire end sleeves with a ferrule length of 12-15 mm (0.47-0.60 in) and apply a square crimp for optimal fit into the terminal blocks.



Note:

Only use UL approved cable sleeves that are suitable for the wire size.

- b. Connect the power wires to the terminal blocks and torque the screws.
GROUNDING INSTRUCTIONS: This product must be connected to a grounded, metal, permanent wiring system, or an equipment-grounding conductor must be run with the circuit conductors and connected to the equipment grounding terminal or lead on the product.

9. For the optional Smart Charging, prepare the network cable as follows:

- a. Strip the network cable green and green/white wires.
Strip the network cable wire ends. Install wire end sleeves with a ferrule length of 12-15 mm (0.47-0.60 in) and apply a square crimp for optimal fit into the terminal blocks.



Note:

Only use UL approved cable sleeves that are suitable for the wire size.

- b. Push the wires into the terminal blocks.

Wire	Terminal block
Green	A
Green/white	B

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

10. Install the transparent cover as follows:

- a. Make sure that the rubber seal is correctly installed on the transparent cover.
- b. Install the transparent cover on the wall dock. Make sure no wiring is trapped between the transparent cover and the wall dock.
- c. Install the three Torx bolts M4 x 40 using the T20 bit.
- d. Install the slotted screw with a flat-head screwdriver. A tamper-evident seal can be installed on

this screw.

4.4. Install the station



See the corresponding illustrations in manual B.

No tools or materials are required to install the station.



Note:

The wall dock must be installed before the station can be installed.



Note:

When a wall dock cover has been installed, first remove the wall dock cover using the unlock tools.

1. Align the station with the wall dock.
2. Press the station evenly onto the wall dock until you hear a 'CLICK'. Press on each corner of the station to make sure that it is fully engaged with the wall dock.
Make sure that there is no gap between the station and the wall dock.

4.5. Commissioning

You can configure the operation of Elvi using the EVBox Connect app.

Charging stations can be connected to a Charging Management Platform (CMP) or they can be configured as not-connected installations. Online charging stations connect to the CMP using Wi-Fi or optional cellular data connection, depending on the model.

The charging station Chargepoint ID and Security code are required for configuration, and these are located on the accessories folder.

4.5.1. Register the charging station with CMP (optional)

For an online charging station, activate the charging station with the CMP on the CMP website or by using the CMP-specific app. Contact the Charging Point Operator (CPO) for details about the charging station activation procedure.

4.5.2. EVBox Connect app

Download and install the EVBox Connect app on your smartphone or tablet:



4.5.3. Pairing



Note:

Pairing is only applicable to a Hub charging station.

1. Switch on electrical power to Elvi.
Elvi powers up and runs the start-up sequence.
Bluetooth is now activated.
2. Open the EVBox Connect app on your smartphone or tablet, then select **START PAIRING** in the app.
3. Select the Chargepoint ID of Elvi, then select **PAIR**. The LED ring on Elvi flashes purple during pairing (Bluetooth is active).
4. Confirm the Chargepoint ID of Elvi.
5. Enter the security code.
The app configuration menu opens.

You can now configure the charging station.

4.5.4. Configure the installer mode settings

The installer mode settings must be configured before the charging station is activated.



WARNING:

Risk of electric shock, which can cause severe injuries or death. Only a qualified electrician is permitted to access the installer mode.

1. Make sure that your smartphone or tablet is paired with the charging station.
2. In the EVBox Connect app, select **Installer mode** and then enter the security code.
3. Select **Charge current**, then set the minimum and maximum charging current.



DANGER:

The maximum charging current setting must match the capacity of the power supply.

4. Select **Set Charger to Online** to be online or offline.

For a charging station set to offline:

- The charging cards and key fobs which are added to the EVBox Connect app are used to start and stop a charge session.

For a charging station set to online:

- A charging session uses the Charging Management Platform.
- The charging cards and key fobs used must be registered with the Charging Management Platform to be able to start and stop a charging session.

5. Select **Charging Management Platform**, then select a platform from the list.
6. While paired, you can also configure the user settings for the charging station. See [Configure the user settings on page 22](#).
7. Reboot your charging station to save the settings.

The settings are saved and the charging station reboots.

4.5.5. Configure the user settings



Note:

A qualified electrician must first configure the installer settings before the user can set the user settings.



Note:

The user settings configured for a Hub charging station are also applied to Satellite charging stations in the same installation.

1. Make sure that your smartphone or tablet is paired with the charging station.
2. In the EVBox Connect app, select **Charging Station Setting** then select **Wi-Fi Connection**. Connect the charging station to your local Wi-Fi connection.
3. Select **Cards** and add a charge card or key fob to use every time you start charging.
4. Select **Charger Access Control** and set how you want to start a charge session:

For a charging station set to offline:

- **Activate using card/key fob:** the charging cards and key fobs which are saved in the EVBox Connect app are used to start and stop a charge session
- **Autostart:** the charging session starts and stops when the charging cable is connected and disconnected.

For a charging station set to online:

- **Activate using card/key fob:** the charging card/key fob used will authenticate the session on the Charging Management Platform.
- **Autostart:** the charging card or key fob which is saved and selected in the EVBox Connect app will authenticate the session on the Charging Management Platform.

5. If required, select **LED settings** and set the brightness of the LED ring.
6. Select reset.

The settings are saved and the charging station reboots.

4.5.6. Configure a Hub-Satellite installation

**WARNING:**

Risk of electric shock, which can cause severe injuries or death. Only a qualified electrician is permitted to access the installer mode.

1. Make sure the Hub station is on.
2. Switch on electrical power to the Satellite charging stations.
The Satellite charging stations power up and run the start-up sequence.
RF communication is now activated and the Satellite charging stations are ready to pair.
3. Make sure that your smartphone or tablet is paired with the Hub charging station.
4. In the EVBox Connect app, select **Installer mode** and then enter the Security code.
5. Select **Pair RF satellites** then select **PAIRING MODE**.
The app searches for Satellite charging stations.
6. Select the Satellite charging stations you want to pair with the Hub charging station.
The LED rings on the selected satellite charging stations flash purple.
7. Select **PAIR TO HUB**.
The app pairs the Satellite charging stations with the Hub charging station. The paired Satellite charging stations are shown in the app.

The Hub-Satellite charging station installation can now use Smart Charging dynamic load balancing and share a common Internet connection using either a Wi-Fi connection or a cellular network.

5. OPERATING INSTRUCTIONS



DANGER:

Risk of electric shock.

- Read and obey the safety precautions at the beginning of this manual before you use this charging station.

5.1. Charge with the charging station

5.1.1. Start and stop a charging session

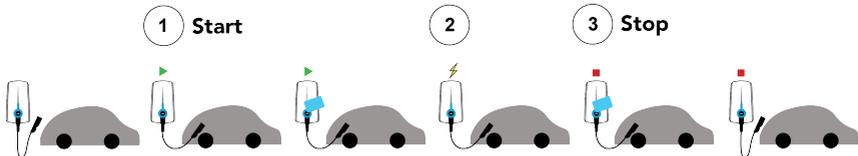
1. Start charging

- Plug the charging cable into your car.
- If you use a charge card or key fob, hold it in front of the reader on the charging station to start charging.*

2. Your car is charging.

3. Stop charging.

- If you use a charge card or key fob **, hold it in front of the reader on the charging station to stop charging.*
- Unplug the charging cable from your car.



* When the charging station is configured to only accept charge cards or key fobs. See [Commissioning on page 20](#).

** You must use the same charge card or key fob that you used to start the charging session.

5.1.2. LED indicator ring

LED ring color	What it means	What to do
 LED ring off or green.	The charging station is ready for use.	<ul style="list-style-type: none"> • Connect the charging cable. • Select the authorization method (for example, charge card, or key fob).
 LED ring flashing green.	The charge card or key fob is being authorized.	Wait until the LED ring shows blue.

LED ring color	What it means	What to do
 <p>LED ring blue.</p>	<p>The charging station is charging the vehicle.</p>	<ul style="list-style-type: none"> • Wait until the vehicle has charged. • Stop charging at any time.
 <p>LED ring yellow.</p>	<p>The car is fully charged.</p>	<ul style="list-style-type: none"> • Stop the charging session using the authorization method used for activation (for example, charge card or key fob). • Unplug the charging cable.
 <p>LED ring flashing yellow.</p>	<p>Charging session is in queue (applicable for Smart Charging only).</p>	<p>When power becomes available, charging will start or resume and the LED ring will show blue.</p>
 <p>LED ring red.</p>	<p>An error has occurred.</p>	<p>Check Troubleshooting on page 26 for a solution.</p>
 <p>LED ring flashing red.</p>	<p>The charge card or key fob is not authorized.</p>	<ul style="list-style-type: none"> • Authorize the user. See Configure the user settings on page 22. • Contact the charge card service operator if necessary. • A Satellite charging station has become disconnected from the Hub charging station.
	<p>A Satellite charging station has become disconnected from the Hub charging station.</p>	<p>Check the Hub-Satellite pairing. See Configure a Hub-Satellite installation on page 23.</p>
 <p>LED ring flashing purple.</p>	<p>The Hub charging station is in Bluetooth pairing mode and ready to pair with the EVBox Connect app.</p>	<p>See Pairing on page 21.</p>

LED ring color	What it means	What to do
	A Satellite charging station is selected in the the EVBox Connect app for pairing to the Hub charging station.	See Configure a Hub-Satellite installation on page 23 .

5.2. Troubleshooting

Troubleshooting must only be done by a qualified electrician unless otherwise stated. Incorrect installation, repairs or modification can result in danger to the user and may void the warranty and liability.

This is a general troubleshooting guide listing the most common issues. If you are not able to solve an issue, visit www.evbox.com/support for further help from our service pages and support team.

Problem	Possible cause	Solution
LED ring is off.	The charging station is in idle mode and the LED ring idle state is set to off or timer. (The LED ring comes on when the charging station is used.)	Use the EVBox Connect app to set the LED ring idle state to on or timer. The LED ring will stay on continuously.
	No power to the charging station.	<ul style="list-style-type: none"> • Disconnect the charging plug from the vehicle. • Check that the residual-current device and circuit breaker on the main power supply panel are on (check by user). • Switch off the charging station at the circuit breaker in the power supply cabinet. Wait 20 seconds then switch on the charging station. • If the LED ring does not show green within 20 minutes, verify that the station is configured and registered correctly. See Commissioning on page 20. • Check that the supply cable entering Elvi is live (check by qualified electrician).

Problem	Possible cause	Solution
LED ring flashes red 10x. RCD prevents charging.	<ul style="list-style-type: none"> • Ground connection error in Elvi. • Special ground resistance needed for the vehicle. • Fault in the vehicle or defective charging cable. 	<p>If the vehicle does not have a fault, check the following items (check by qualified electrician):</p> <ul style="list-style-type: none"> • The ground connection on Elvi. • The charging cable.
LED ring shows red continuously.	Ground fault.	Check the ground connection on the electrical installation (check by qualified electrician).
LED ring shows yellow continuously	<ul style="list-style-type: none"> • Vehicle is on a timer. • Vehicle is fully charged. • Ground resistance is too high (with specific vehicles, this must be approximately 50 Ohms). 	<ul style="list-style-type: none"> • Check that the charging plug is fully inserted into the vehicle (check by user). • Change the setting of the timer in the vehicle (check by user). • Check the ground connection on the electrical installation (check by qualified electrician). • Replace the charging cable (check by qualified electrician).
Red LED starts flashing immediately after the card is held against the reader.	Charge card is not authorized for charging at Elvi.	<ul style="list-style-type: none"> • Check that the charge card is registered (check by user). • Check the settings of the charging station in the EVBox Connect app, and the Charging Management Platform app if available. For more information, contact your operator or service provider. • Switch off the charging station at the circuit breaker in the power supply cabinet then switch on, and check the Wi-Fi reception (check by user). • Check in the EVBox Connect app that the Wi-Fi network is connected to the charging station (check by user). • If the charging station has a cellular module, check that the charging station has reception (check by CPO).

6. MAINTENANCE INSTRUCTIONS



DANGER:

Risk of electric shock.

- Read and obey the safety precautions at the beginning of this manual before you install, 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.



CAUTION:

The user must not attempt to service or repair Elvi as it does not contain user-serviceable parts.

6.1. Maintenance by user

The user of Elvi 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 Elvi and its installation inspected by a qualified electrician on a regular basis and in compliance with installation regulations applicable in your country.



CAUTION:

Do not use a hose or a high pressure spray to clean Elvi.



CAUTION:

Do not use aggressive chemical cleaners or solvents to clean Elvi.

1. Remove dirt and natural organic matter on the outside of Elvi using a damp soft cloth.
2. Check the charging plug for dirt. Clean if necessary.
3. Check the charging plug for damage. A qualified electrician must replace the charging cable if the charging plug is damaged.

6.2. Maintenance by qualified electrician

Only a qualified electrician is permitted to do the following maintenance procedures.

6.2.1. Remove the station



See the corresponding illustrations in manual B.

1. Switch off power to the charging station at the power supply cabinet.
2. Push the two unlock tools, slot first, fully upwards into the holes on the bottom of the station until you hear a click.
3. With both hands, pull the station from the wall dock in a straight line to disengage the station electrical connector from the wall dock.

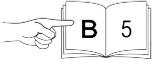


Note:

To prevent damage to the locking tabs or the electrical connector, do not twist or skew the station.

4. Remove the two unlock tools from the wall dock.

6.2.2. Replace the charging cable



See the corresponding illustrations in manual B.



Note:

When working on the station, place the station on a soft surface to protect it from damage. Be careful not to damage the locking tabs on the station.

1. Remove the station.
2. Remove the bolt using the Torx T30 bit.
3. Turn the station over and remove the charging cable from the station.
4. If the rubber seal is not on the charging cable plug, remove the rubber seal from the station socket.
5. On the new charging cable, make sure that the rubber seal is in place and not twisted. The rubber seal must fit correctly to ensure that the enclosure rating is met.
6. Push the charging cable firmly into the station.
7. Turn over the charging station and place it on a soft surface.
8. Install the Torx M6 x 45 bolt using a Torx T30 bit.
9. Install the station. See [Install the station on page 20](#).

6.2.3. Replace the fuse



See the corresponding illustrations in manual B.

The replaceable inline fuse is located in the wall-box.

1. Remove the station. See [Remove the station on page 28](#).
2. Remove the three Torx T20 screws and one slotted screw, then remove the transparent cover.
3. Screw open the inline fuse holder and remove the fuse.
4. Insert a new fuse of the same type and rating, then screw close the inline fuse holder.
5. Install the transparent cover as follows:
 - a. Make sure that the rubber seal is correctly installed on the transparent cover.
 - b. Install the transparent cover on the wall dock. Make sure no wiring is trapped between the transparent cover and the wall dock.
 - c. Install the three Torx bolts M4 x 40 using the T20 bit.
 - d. Install the slotted screw with a flat-head screwdriver. A tamper-evident seal can be installed on this screw.
6. Install the station. See [Install the station on page 20](#).

7. DECOMMISSIONING

Remove and dispose of the charging station in accordance with applicable local disposal regulations.

**DANGER:**

Risk of electric shock.

- Read and obey the safety precautions at the beginning of this manual before you install, 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.

Removal is the reverse of the installation procedure (see [INSTALLATION INSTRUCTIONS on page 14](#)).

Dispose of the charging station in a responsible manner.



Do not dispose this charging station in household waste. Instead, dispose this charging station at a local collection point for electric/electronic devices in order to enable recycling and thus avoiding negative and hazardous impacts on the environment. Ask your city or local authorities for respective addresses.



Recycling of materials saves raw materials and energy and makes a major contribution to conserving the environment.

8. Appendix

8.1. Glossary

Abbreviation	Meaning
AC	Alternating Current.
CMP	Charging Management Platform. The backend platform that links a charging station to the CPO.
CPO	Charging Point Operator. The owner and/or operator of the the charging station installation.
ESD	Electrostatic discharge.
EV	Electric vehicle.
RF	Radio frequency communication.
LED	Light Emitting Diode.
MCB	Miniature Circuit Breaker.
OCPP	Open Charge Point Protocol.
RCD	Residual Current Device.

8.2. Disclaimer

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