

BusinessLine

Installation manual

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General

Errors or inaccuracies

For any inaccuracies or omissions, or to provide feedback and suggestions, send an email to support@evbox.com.

Product and environmental characteristics

The charging station has been CE-certified by the manufacturer and bears the CE logo. The relevant declaration of conformity may be obtained from the manufacturer. The charging station complies with the RoHS Directive (RL 2011/65/EU). The relevant declaration of conformity may be obtained from the manufacturer. Electrical and electronic appliances, including accessories, must be disposed of separately from the general municipal solid waste. Recycling of materials saves raw materials and energy and makes a major contribution to conserving the environment.




1. Safety regulations

Safety warnings

Warning: Risk of electric shock

- Please read the documentation provided with the charging station to acquaint yourself with the safety instructions and directions before installing or using the charging station.
- In the event of danger and/or accidents, have the charging station disconnected immediately by a certified electrician.
- Do not operate the charging station if it is physically damaged or if the charging cable shows signs of cracks, excessive wear, or other visible damage. Contact EVBox or your distributor for more information.
- Do not direct powerful jets of water toward or onto the charging station. Never operate it with wet hands. Do not put the EV plug into any liquid.
- Please carefully read our instructions and the vehicle's operating instructions in your owners manual before charging your electric vehicle.
- Failure to follow these guidelines may result in serious injury or even death.

 **Warning:** Turn off input power to your charging station at the circuit breaker panel before installing, maintaining or servicing the unit. Make sure that the input power stays off until the cover is in the correct position.

Cautions

- Use this charging station for charging all Mode 3 compatible electric vehicles only. Refer to your vehicle owner's manual to make sure that your vehicle is compatible.
- This product may impact the operation of implanted electronic medical devices. Consult with the supplier of the electronic medical device if its operation can be influenced by charging effects before operating the charging station.
- This charging station may only be installed, maintained, and repaired by qualified personnel. Incompetent installation or repairs may result in danger to the user and could result in a voided warranty.
- This product contains no user serviceable parts. Consult EVBox or your distributor for more information. Please do not attempt to service or repair the charging station yourself.
- Do not install a defective charging station or a station with an obvious problem. For instructions on installation, refer to chapter "6. Install station".
- Make sure that the charging cable cannot come into contact with heat sources.
- Make sure that the product is only used under the correct operating conditions (refer to chapter "4. Technical specifications").
- Do not use explosives or readily flammable substances in the vicinity of the charging station.
- Persons unable to estimate the dangers involved in operating a charging station should not use the charging station.
- Do not allow children to operate this device. Adult supervision is required when children are in the proximity of a charging station that is in use.
- Make sure that the charging cable is positioned so that it will not be stepped on, tripped or driven over, or otherwise subjected to excessive force or damage.
- Make sure that the charging cable is not kinked or jammed.
- While charging, the cable must be completely unwound and connected to the vehicle without overlapping loops (this is to avoid the risk of the charging cable from overheating).
- Always pull on the plug's hand grip, never on the charging cable itself.
- Do not put fingers or other objects inside the charging port or plug port.
- Do not switch on the charging station if the covers are not in place.

1. Safety regulations

Remarks

- This product is designed and tested in accordance with international standards.
- All components were correctly connected and operationally tested before dispatch of the charging station.
- The use of this product is limited to those applications it is designed for.
- These instructions are valid for several models of the charging station. It is possible that some features and options described herein may not apply to your charging station.
- The charging station complies with Safety Class I (ground terminal safety) and Category III (overvoltage).
- Do not modify the charging station in any way. This will result in loss of warranty and liability, and may lead to dangerous circumstances.

Safety

- Power is not active on the socket of the charging station until both a plug is inserted and there is approval of the RFID card.
- The BXXXX-X100 models have both a circuit breaker and a residual current device (type A - 40A-30mA) for each socket.
- The BXXXX-X001 models have a circuit breaker but do not have a residual current device. All models have a 16A circuit breaker (C6A) for the control circuit.

Transport and storage

- Make sure that the main power is disconnected before storing or transporting this product. No liability can be accepted for damage during transport if the product is transported in anything other than the original packaging.
- Store the charging station in a dry environment. The storage temperature must be between -25°C and $+60^{\circ}\text{C}$.

Maintenance

Dirt on the outside of the charging station can be cleaned off using a soft, damp cloth. The owner or user is responsible for the maintenance of the charging station, whereby both the law regarding the safety of persons, animals, and property (in EN 50110-1) as well as the installation instructions in force in the country of use must be observed.

Note: *Some electric vehicles require an external ventilation system to prevent the accumulation of hazardous or explosive gasses when charging indoors. Consult the vehicle's owner manual to determine whether or not your electric vehicle requires ventilation during charging. This charging station is not designed for charging these vehicles and must not be used for charging electric vehicles that require external ventilation.*

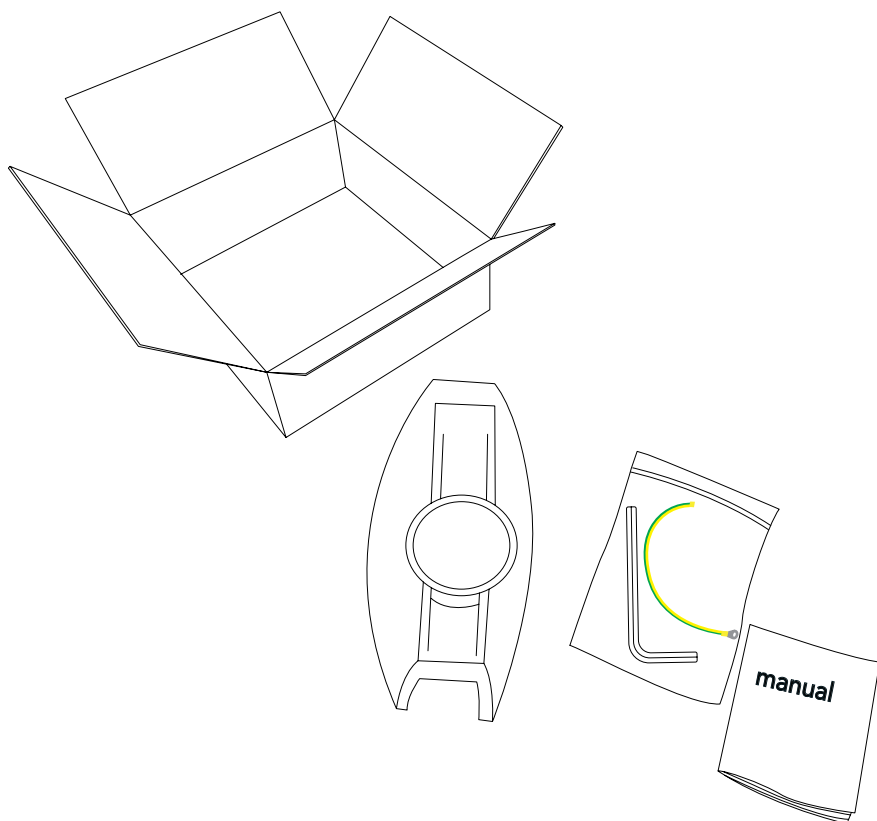
2. What's inside

1x EVBox BusinessLine unit
(single or double socket)

**1x Hex key to open
the cover of the unit**

1x Ground cable

1x User manual



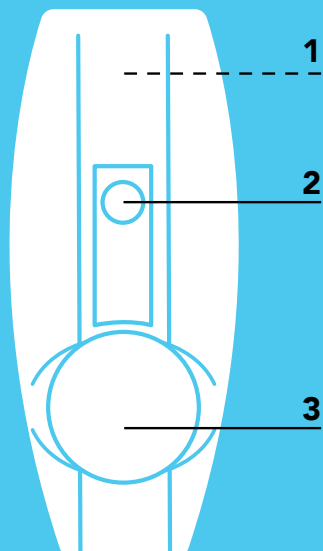
3. Product features

About BusinessLine

The EVBox charging station is compatible with all Mode 3 electric vehicles. The charging station is designed for both indoor and outdoor use. Operation of the charging station is approved at an ambient temperature between -25°C and +60°C. Some models of the charging stations are connected to a central system for registration of the number of kilowatt-hours (kWh) charged.

Online BusinessLine (model with communication module)

The smart charging station is designed with an RFID card reader, a kWh meter and a cellular data and GPS module. These components together allow for the authorization and communication of the charging session procedure with the central system, which in turn enables the processing and settlement of transactions. A data connection link with the charging station is essential for the charging station to work properly. However, a good link cannot always be obtained in enclosed spaces; for instance, a closed or underground car park. In these cases, the communication module should be positioned outside the charging station along with the GSM/GPS antenna and connected to the charging station. See Chapter 7: Install communication module externally.



1. Mode 3 controller

The Type 2 socket is connected to the Mode 3 controller and locking module in accordance with the IEC-61851 standard. This means that the charging station is constantly checking for the presence of a ground connection. In addition, the current is only switched on once a supported charging cable has been correctly connected to both the charging station and the vehicle and the presented RFID card is authorized.

2. RFID reader

This is the area where you scan your RFID card or key fob. The BusinessLine reads the data from your card to start or stop a charging session. If the charging station is not connected to a vehicle and/or is not activated by the RFID card, the charging session does not start.

3. LED status indicator

BusinessLine's LED status indicator makes clear what the BusinessLine is doing at all times.

4. Technical specifications

4.1 Specifications overview

Technical features	
Charging capacity per socket	3.7 kW, 7.4 kW, 11 kW, 22 kW
Socket type	Type 2
Number of sockets	1 or 2
Output power per socket	1-phase or 3-phase, 230V – 400V, 16A or 32A
Connection capacity	1-phase or 3-phase, 50Hz, between 2.5 – 10mm ²
Secondary power supply	12VDC – 2.5A
Temperature range (°C)	-25°C to +60°C
Humidity (non-regulating)	Max. 95%
Communication	GPS / GSM / UMTS / cellular data and GPS module/ controller with RFID reader
Communication protocol	OCPP 1.2, 1.5 and 1.6
Physical features	
Designed according to	IEC 61851-1 (2010), EC 61851-22 (2002)
Protection	IP54, IK10
Installation standards	EN/IEC 61000-32 (2014), EN/IEC 61000-3-3 (2013) EN/IEC 61000-6-2 (2016), EN/IEC 61000-6-3 (2007) + A1 (2011) EN/IEC 60335-1 (2012) +A13 (2017), EN/IEC 60364-4-41 (2017) EN/IEC 60529-1 (1989) +A1 (1999) + A2 (2013) EN/IEC 60950-1 (2005) + A1 (2009) + A2 (2013) EN/IEC 60950-22 (2017), EN/IEC 61851-1 (2017) EN/IEC 61851-22 (2002), EN/IEC 62196-1 (2014) EN/IEC 62196-2 (2017)
Housing	Polycarbonate
Max. installation height	+2,000m above sea level
Dimensions (mm)	600 x 255 x 410 mm (double socket) 600 x 255 x 205 mm (single socket)
Weight (kg)	14 kg (double socket) 8 kg (single socket)
Mounting	Wall or pole
Standard colors	RAL 5017 (blue), RAL 7016 (dark grey), RAL 7042 (light grey), RAL 9016 (white)

B3162-5301-1-V-07

MODEL CAPACITY SOCKETS COMMUNICATION MODULE / kWh SECURITY VERSION CABLE EXTRA ACCOUNT COLOR

E: Elvi
H: HomeLine
B: BusinessLine
ML: PublicLine

1: One-phase
2: Split-phase (240 V - USA)
3: Three-phase
4: 4-wire three-phase

13: 13 A
16: 16 A
30: 30 A
32: 32 A

0: Single cable
1: Single socket
2: Dual socket
3: Dual cable

0: No security
1: RCD type A + MCB
2: RCD type A with 32A feeding cable
3: CB (not in satellite)
4: RCD type A + MCB
5: Charge Circuit with fuse holders
6: RCD type EV + security with fuse holders
7: RCD type B + MCB

0: RFID reader
1: OnOff button
2: Autostart
3: Key switch
4: RFID + QR

0 (old) / 1 (new): Type 1 socket
2: Type 2 socket with shutter (FR)
3: Type 2 socket
4: Type 2 socket (FR)
5: Side 1, Type 2 socket + Side 2
6: Type E socket (FR)
7: Type F socket with shutter + Type F socket (EU)
41: EVBox type 1 cable, 4 meters, linear
42: EVBox type 2 cable, 4 meters, linear
43: EVBox type 1 cable, 12 ft, linear, UL
61: EVBox type 1 cable, 6 meters, linear
62: EVBox type 2 cable, 6 meters, linear
63: EVBox type 1 cable, 18 ft, linear, UL
81: EVBox type 1 cable, 8 meters, linear
82: EVBox type 2 cable, 8 meters, linear
83: EVBox type cable, 1 linear, UL
91: EVBox type 1 cable, 1 linear, UL
92: EVBox type 2 cable, social
93: EVBox type 1 cable, spiral, UL

1: Type 1
2: Type 2
1: Type 1+ Type 2
2: ZE Security
W: Window
D: Demo model

0: Autostart controller 471021, alternative push button key switch controller 471048
 No communication module, no kWh meter
1: Controller 471041, communication module 471042, 5-pulse kWh meter
2: Controller 471011, communication module 471043, 5-pulse kWh meter
3: G2 Satellite controller 471044, no communication module 471045, 5-pulse kWh meter
4: G3 Satellite controller 471011, no communication module, 5-bus kWh meter
5: G3 controller 471011, communication module 471046 UMTS-E (Europe), 5-bus kWh meter
6: G3 controller 471011, communication module 471045 UMTS-A (USA), 5-pulse kWh meter
7: G3 controller 471011, communication module 471047 UMTS-J (AUS/JPN), 5-bus kWh meter
8: G3 controller 471011, communication module 471045 UMTS-A, 5-bus kWh meter, L1/AN - No UL

A1: G4 powerboard Elvi-EU 472100, WiFi 472105, communication module 472110 UMTS-E (Europe), Modbus kWh meter
A3: G4 powerboard Elvi-EU 472100, WiFi 472105, Modbus kWh meter
A4: G4 powerboard Elvi-EU 472100, WiFi 472105
B1: G4 powerboard Elvi-US 472115, WiFi 472105, communication module 472111 LTE-A (USA), Modbus kWh meter
B3: G4 powerboard Elvi-US 472115, WiFi 472105, Modbus kWh meter
B4: G4 powerboard Elvi-US 472115, WiFi 472105
D1: G3 controller 471011, communication module 471048 LTE-A (USA), 50-pulse kWh meter
N5: G3 controller 471011, communication module 471046 UMTS-E (Europe), no kWh meter

LEGEND:
Strikethrough: Obsolete
 Light blue: Will be available as an option in the future

5. Product type guide

6. Install station

6.1 Safety requirements

⚠ Connecting and installing this product must be done by a qualified electrician. The owner or facility manager is responsible for the installation, operation, and maintenance of the charging station, whereby both the law regarding the safety of persons, animals, and property must be observed, as well as the installation instructions enforced in the country of use.

⚠ Read the safety instructions before you start work on the installation.

⚠ Ensure the correct supply voltage/power and ensure that the meter cabinet is properly secured.

- The charging station complies with Safety Class I (the charging station is supplied with a ground terminal for safety) and overvoltage Category III. The charging station complies with Safety Class I (ground terminal safety) and Category III (overvoltage).
- The incoming and/or outgoing terminals for the alternating current are fitted with an uninterruptible grounding for safety. If it is possible that the ground safety has been damaged, the charging station must be taken out of operation and secured against accidental activation.
- Each charging station must be protected by a residual current device (Type A-EV or Type B) with direct current fault detection of >6 mA DC. The residual current device must disconnect all the phases connected and the "Neutral". The applied RCD must comply with local law and regulations.
- Before switching on the charging station, check that the power source available corresponds to the configuration settings of the charging station as described in this manual and that all the cables inside the charging station have been properly connected.
- Make sure that the product is only used under the correct operating conditions (refer to chapter "4. Technical specifications").
- Never operate the charging station in wet or very dusty surroundings.

Planning the installation

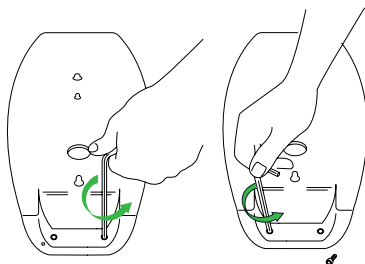
Minimum requirements

- Make sure that each side of the unit is connected to its own dedicated power line, except for models BXXX2-X20XX (which must be powered by a 1 x 32A rated power cable).
- Calculate the existing electrical load to find the maximum operating current.
- Calculate the distance to ensure minimal voltage drop.
- Obtain any necessary permits from the local authority that has jurisdiction and make sure to schedule the follow-up inspection with a qualified and licensed electrician after the installation is complete.
- Use only copper conductors.
- Refer to local wiring regulations to select the conductor sizes.
- Ensure that there is always adequate free space (at least 20 cm) around the charging station for ventilation purposes.
- Use appropriate tools and provide resources and protection measures.

6. Install station

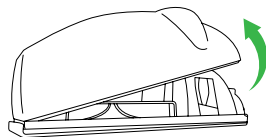
6.2 Open cover(s)

1. Locate the two screws at the bottom of the unit (four screws for the BusinessLine with double sockets).
2. Use the hex key provided to unscrew (as shown in the image).
3. Open the cover from the bottom as shown.



6.3 Choose location

Position the charging station, where possible, in surroundings not subject to extreme sunlight and where external damage cannot occur. The charging station can be installed on a stainless steel pole which can be ordered with the charging station, whereby the supply cable enters through the bottom of the pole. The other option is to mount it onto a sturdy wall between 90 cm and 120 cm from ground level. Here, the supply line is fed through a cable gland at the lower side of the aluminum base plate or the hole on the back side of the base plate. The wall must be able to bear a load of 60 kg.



6.4 Run power supply cables

All charging stations must be fitted with their own power supply cables and a properly dimensioned RCB that accounts for derating according to the standard IEC 61439-2. The appropriate wire gauge of the supply cable depends on the power rating and the distance between the meter cabinet and the charging station. The voltage drop must not exceed 5% (it is advisable to take into account a maximum allowable voltage drop of 3%). The maximum wire gauge that can be fitted is 10 mm².

Some double stations are fed with one power cable and others with two. Please take note of which station you are installing. The type number or article number of the station signifies if it is fed with one or two power cables.

The maximum power rating for each connector is given in the table below. Run a power line from the main circuit board with an appropriately rated circuit breaker and RCD. Use a conduit to run the power line to the charging station. The power line enters the station via the backplate in the case of a single station and through the pole for double stations.

6. Install station

6.5 Connector capacities

Power per connector	Connection	Input current	Output current
3,7 kW	Single phase	2x16A	2x16A
3,7 kW*	Single phase	1x32A	2x16A
7,4 kW	Single phase	2x32A	2x32A
11 kW	Three phase	2x16A	2x16A
11 kW*	Three phase	1x32A	2x16A
22 kW	Three phase	2x32A	2x32A

* These stations are fed with one cable.
All other stations are fed with two cables.

Each power supply cable must be protected by a residual current device (Type A-EV or Type B) with direct current fault detection of >6 mA DC. The residual current device must switch off all the phases connected and the "Neutral". The applied RCD must comply with local law and regulations.

6. Install station

6.6 Attach power supply cable

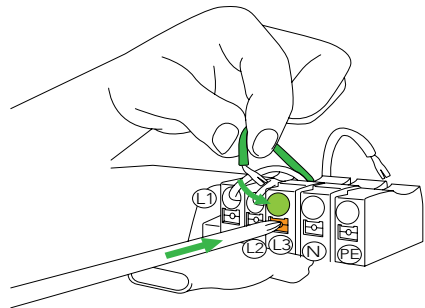
Lead the supply cable through the slot in the bottom of the pole/ bracket and ensure that it protrudes at least 50 cm above the pole.

Make sure that the power supply cable has a sufficient length to permit small movements during installation in order to avoid a break in the supply cable.

6.7 Connect station

Prevent any accidental switching on of the current during installation by taking adequate measures to ensure this. Protect the working environment against unauthorized persons and inform the surrounding area about the work (for example, setting up caution tape or warning notices).

1. Be sure not to trap any loose wires during the process.
2. Check whether the pole/bracket goes far enough (40 cm) into the charger and rests on the upper support.
3. Ensure that the power supply cable is passed through the pole. Insert it into one of the holes on the pole, so that it can be easily connected.
4. Connect the power supply cable(s) to the main switch(es) or installation block.



6. Install station

5. Hold the power supply cable in place with a cable tie (for strain relief).

6. Find the pre-drilled holes in the pole for attaching the charging station (for Double BusinessLine).

7. Connect the pole to the ground with the supplied ground cable and the M6 bolt + washer to the lowermost tube terminal (for Double BusinessLine).

8. Now tighten the tube clamps that have been pre-mounted using the two M10 socket spanners (for Double BusinessLine).

9. Check all plug connections on the charge box by firmly pressing the connectors.

6. Install station

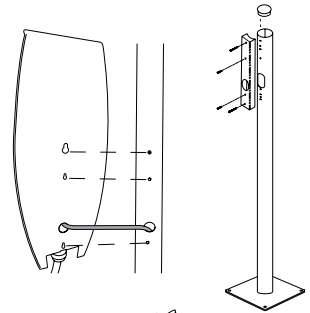
6.8 Mount station

(various options available)

Pole mounting

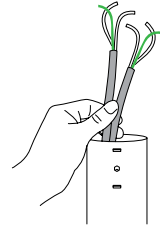
EVBox charging stations can be mounted on a pole in the ground. For this, EVBox offers the CombiPole (article no. 290150).

The double BusinessLine stations can be mounted directly on the CombiPole without additional provisions. The single BusinessLine stations are to be attached to the CombiPole by using the provided BusinessLine adapter kit (art. no. 290165). The BusinessLine adapter kit is provided with a separate installation manual.



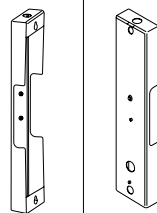
Wall mounting

Mount the charging station on a flat surface with the bottom of the charging station between 70 cm and 110 cm above ground level. Ensure there is at least 20 cm of free space around the station available for ventilation purposes. The wall must be able to bear a load of at least 70 kg. The power supply cable can be inserted either through the bottom gland of the charging station or through the hole on the back side of the base plate. For charging stations equipped with an attached charging cable, the power supply cable must be inserted via the hole on the back side of the base plate.



Wall mounting bracket

The charging station can also be installed on a wall bracket. The bracket is attached to a plate measuring 195 x 195 mm with four holes for attachment. Install the bracket at a height of 90–120 cm. The wall/foundation must be able to bear a load of at least 60 kg.

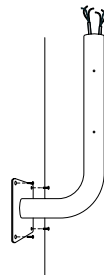


Wall mounting pole

The charging station can also be installed on a wall pole. The wall pole is attached to the wall/foundation with four screws. Install the wall pole at a height of 70–100 cm. The wall/foundation must be able to bear a load of at least 70 kg.

In the ground

To install the pole, dig a hole deep enough so that the base of the pole sits at 60 cm below ground level and align vertically. Ensure that the holes for securing the charging station are in the correct position with respect to the parking spot(s). The pole is provided with anchor blades of 300 x 300 mm. Place the BusinessLine base unit on the adapter kit and tighten the nuts evenly with a hex key so that the base part is not deformed. The charging station's front cover needs to lock in tightly on the base unit to ensure IP54 level protection.



On foundations

A pole with four bolts is available as an option for securing to foundations or onto a concrete floor. The base plate measures 195 x 195 mm with four holes for attachment. The foundation must be able to bear a load of at least 60 kg.

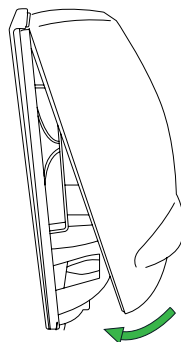
6. Install station

6.9 Finish installation

1. Ensure that the circuit breaker/RCD are in the "On" position.
2. Check the resistance value of the ground. This depends on the user settings. Certain electric vehicles may need a special grounding resistor. Refer to the vehicle owner's manual. If grounding is not sufficient, a grounding rod must be implemented at the closest distance possible to the charging station.
3. Hang the covers onto the frame by inserting the top of the cover into the frame's top edge and then hinging downwards. Make sure that no wires are trapped.
4. Please note! Make sure that each cover locks into the frame properly and that the rubber pads are in place in order to guarantee IP54 protection.
5. Check that the cover securely locks into the open notch at the bottom of the frame.
6. Switch on the supply current at the main distributor/meter cabinet. The charging station will now carry out an automatic test. The LED ring around the socket shows the following color indications during the test (max. 60 seconds):

RED flashing: Booting, running test protocol, and looking for a connection to the network.

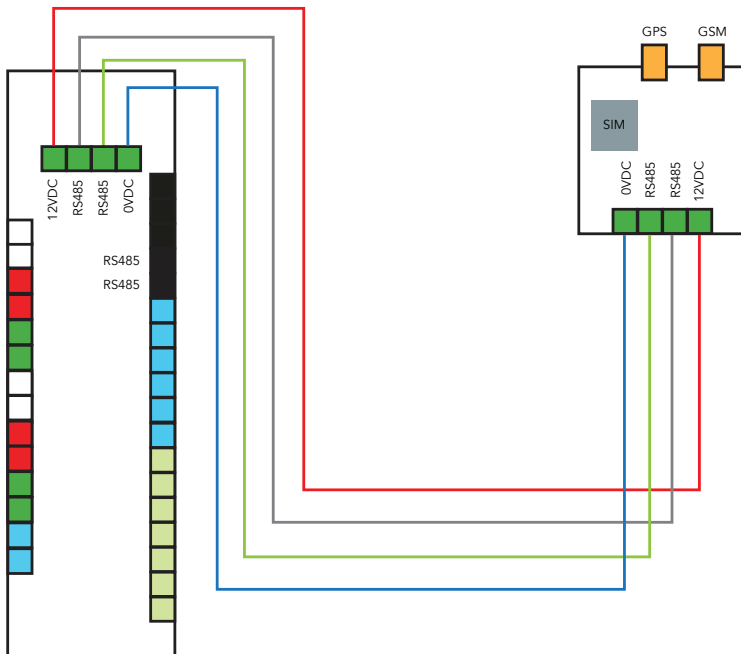
GREEN or OFF: On standby, ready for use. (The LED ring is off for charging stations with Autostart; for RFID-operated charging stations, the LED ring is green in standby mode.)
7. For every charging point, check line-to-line and neutral-to-line voltages upstream of the power relays.
8. Carry out a functional test on both connectors in accordance with the specifications of the charging station. For this, use a test box for charging stations (available as an option). Contact your supplier for more information about EVBox Test Box.
9. You can now tighten the cover bolts at the bottom using the hex key. (TIP: When the charging station is mounted on a wall, the space for tightening these cover screws is very limited. Use a small ratchet with a hex key bit of 5 mm).



7. Install communication module externally

A cellular data link with the charging station is essential for the charging station to function properly. However, a good link cannot always be obtained in enclosed spaces; for instance, a closed or underground car park. In these cases, the communication module can be positioned outside of the charging station along with the GSM/GPS antenna and then connected to the charging station. The procedure is as follows:

1. Remove the communication module from the controller it is fixed to by using pliers to pinch the top points of the white feet.
2. Remove the GPS/GSM antenna from the frame.
3. Find a suitable point where the data connection signal is sufficiently strong.
4. Install 4-pole plugs on the communication module and the controller. These plugs can be obtained separately.
5. Make the connection as illustrated below. An ethernet cable (SFTP Cat. 5) should be used for this. The maximum distance between the communication module and the charging station is 1,200 m. With large distances (over 60 m), it is necessary to install a 12 V external power supply.
6. Install the communication module and antenna in a closed cabinet (IP54). An assembly set with all the materials needed for this (excl. cable and 12 V power supply) is available as an option (part no. 470050).



8. Configure Hub-Satellite

8.1 How does it work?

In a Hub-Satellite system, the Hub contains a communication module. This Hub can be linked to up to 19 Satellite connectors. The advantages are that it is easier to manage the charging stations and that, for locations with poor data connection coverage, only a single communication module has to be installed externally. Also, a smart grid can be established over all connectors, thus optimizing power usage and enabling more electric vehicles to charge simultaneously should power limitations exist. The Satellite charging stations must be connected in a chain.

8.2 Power configuration

For accurate performance of the smart grid, it is essential that you consult your charging station operator (CPO) to set the maximum power available on the grid. If multiple three-phase Satellite stations are connected in the smart grid, it is also advisable to swap the primary phase to distribute power consumption as evenly as possible over all phases. Be sure to note the connector number printed on the Mode 3 charge box and the phase it uses as its primary phase. For optimal performance of the smart grid, it is essential to inform your CPO of the configuration as well.

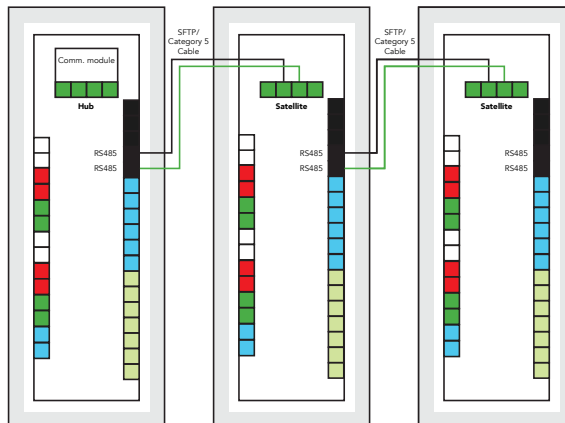
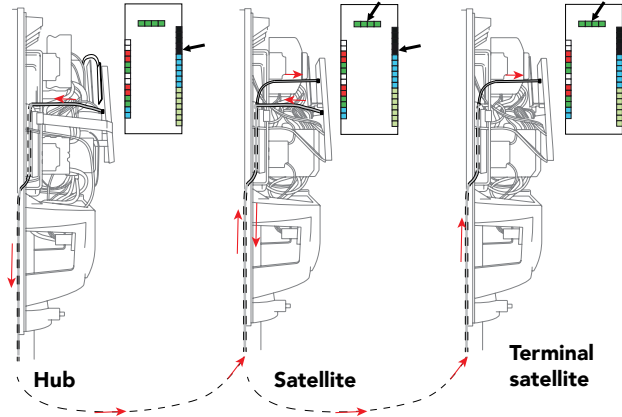
8. Configure Hub-Satellite

8.3 Attach data cables

In a Hub-Satellite system, the Hub contains the communication module and communicates with the Satellite stations via a data communication cable. It is required to use a SFTP (Shielded Foiled Twisted Pair) Category 5 or higher. These data cables are attached to the communication ports of the Satellites. The attachment differs depending on the type of station. These diagrams should help locate these communication ports in the different stations.

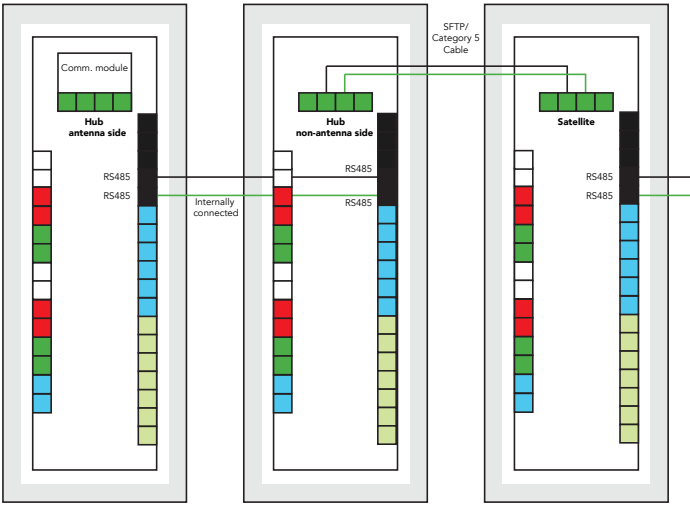
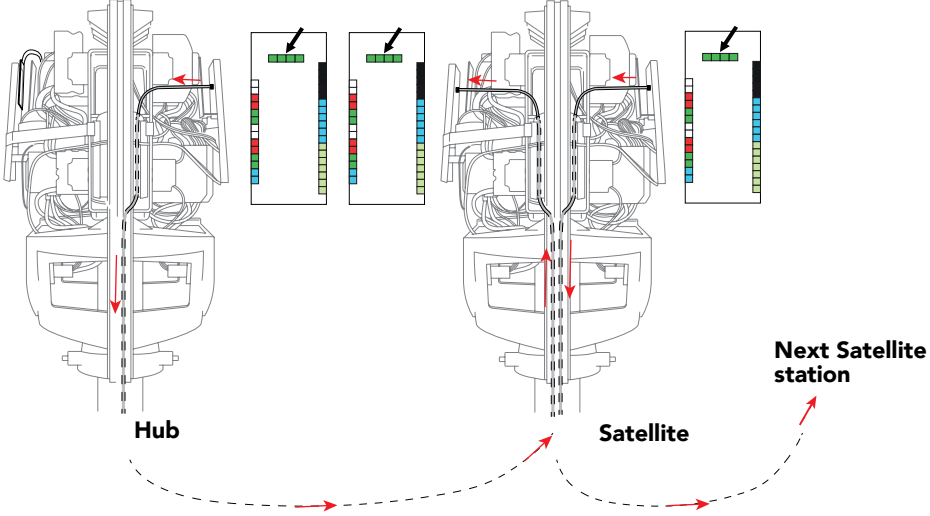
- Use a green 4-pole plug on the Satellite "S" side and a black 2-pole plug on the Hub side of the controller. These are available as a separate set (part no. 470040).
- Make the connection below. The network must be set up with a cable suited to the RS485 protocol (SFTP Category 5 cable).
- The maximum number of sockets that may be connected to a single communication module is 20.
- The network must be closed off with a terminal resistor of 120 Ω at terminals 28/29 or 34/35 when more than 6 sockets (3 double charging stations) are installed. The terminator resistor is available as a separate set (part no. 470041).
- In the case of a Star or T network, reflections can occur in the cable. This method of installation is not possible for this use.

BusinessLine Single



8. Configure Hub-Satellite

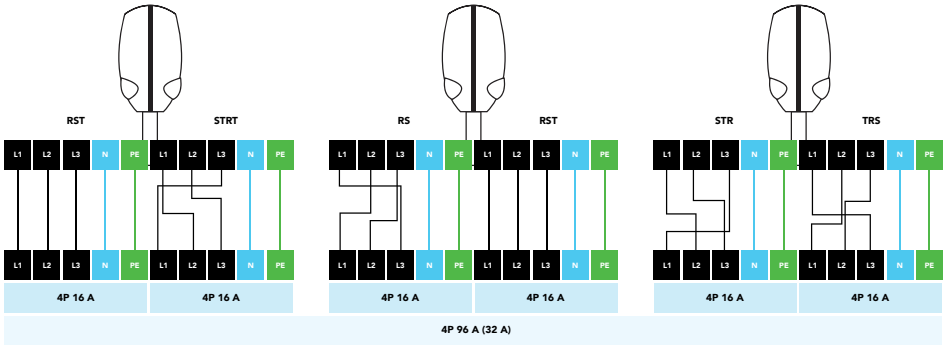
BusinessLine
Double



8. Configure Hub-Satellite

8.4 Consult phase rotation diagram

To avoid overloading the 1st phase with one phase electric vehicles, we suggest rotating the phases as described in the diagram below.



9. Operate station

9.1 Charge with RFID card

Start charging

1. Use your charging cable to connect the EVBox station to your vehicle.

2. Present your charge card (RFID card) to the card reader. The charging station will react with a tone. This indicates your card is being validated. It is possible that the LED status indicator will flash yellow for a couple of seconds.

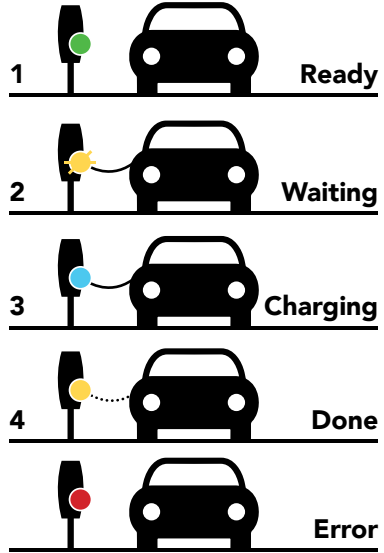
3. The transaction will start automatically (LED status indicator becomes blue).

Stop charging

1. Present your charge card (RFID card) to the card reader.

2. The charging session stops (LED status indicator will be green or off).

3. Unplug the charging cable from the charging station and your vehicle.



9.2 Charge without RFID card

Autostart models do not require RFID card
Follow the instructions below.

Start charging








Plug the charging cable into the vehicle and the charging station to start the transaction.

Stop charging

Unplug the charging cable from the vehicle to stop the transaction.

9. Operate station

9.3 LED status indicator chart

What you see	What it means	What to do
 LED ring off or green	BusinessLine is ready for use.	Plug BusinessLine charging cable into the car.
 LED ring green flashing	RFID card is being verified.	Wait until LED ring turns blue.
 LED ring yellow	The car is fully charged.	Unplug BusinessLine charging cable from the car and place the cable back into Elvi cable holder.
 LED ring yellow flashing	Charging session is in queue, optionally in Smart Charging environment	When power becomes available, charging will start or resume, and the LED ring will turn blue.
 LED ring blue	BusinessLine is charging the car.	The car is charging.
 LED ring red	BusinessLine is experiencing an error.	Check the troubleshooting chapter in this manual for solutions. If this does not solve the issue, contact your installer or supplier of BusinessLine, or message us at support@evbox.com .
 LED ring red flashing	RFID card is not authorized to charge.	Contact your RFID card service operator.

Note 1:

A flashing yellow LED status indicator (once every second) indicates a paused charging session. This is only possible in a Hub-Satellite configuration (see Chapter 8). Charging automatically resumes when power becomes available. For charging stations that don't operate with an RFID card, the LED status indicator is off in standby mode. For RFID card-operated charging stations, the LED status indicator is green in standby mode.

Note 2:

Once the installation has been done, the LED status indicator can be tested with the appropriate test equipment or with a service card. These are available as an option.

10. Troubleshooting

EVBox highly recommends the installation work to be done by a qualified electrician or an EVBox installation partner.

Problem	Possible cause	Solution
Charging station does not react	No power to charging station	<ul style="list-style-type: none"> • Are the residual current device and circuit breaker in the meter cabinet on? (Check by user.) • Is the main switch in the charging station on? (If installed, must be done by electrician.) • Is the supply cable entering the charging station live? • Turn the charging station on again.
Charging station does not emit clear tone when it is turned on	<ul style="list-style-type: none"> • Control current circuit breaker (C6) is off • 12 V is not on (check that light on 12 V supply is off) • Small plugs on the controller are not fully pushed in 	<ul style="list-style-type: none"> • Is the control current circuit breaker (C6) on? There is a clear tone when the circuit breaker is switched on. • Is there 230V on the input terminals of the power supply? If this is not the case, check the circuit breaker. • Is there 12V on the output terminals of the power supply? If this is not the case, switch off the C6 circuit breaker and wait two minutes before switching on again. If there is still not 12 V DC on the output, the power supply should be replaced. • Snugly fit all plug connections, particular to the controller unit.
Residual current device trips constantly	<ul style="list-style-type: none"> • Grounding error in the charging station • Special ground resistance is needed for the vehicle • Fault in the vehicle or defective charging cable 	<ul style="list-style-type: none"> • Check electrical wiring for damage. • Replace damaged wiring. • Moisture or condensation on electrical connections. Dry the connections if necessary. • Replace the charging cable. • Measure the grounding resistance and compare it with the resistance required by the supplier of the vehicle, e.g. Renault Zoe < 150 Ohm.
Red LED ring starts flashing immediately after the card is held against the reader	<ul style="list-style-type: none"> • Charging card is not authorized for charging at this charging station • There is no communication with the backend 	<ul style="list-style-type: none"> • Check that the charging card is registered correctly (authorized for use on public charging stations) (Check by user.) • Check the settings of your charging station in your online account. (Check by user.) • Check whether the communication module is in contact with the cellular network.

See next page for more troubleshooting instructions.

10. Troubleshooting

Problem	Possible cause	Solution
LED ring lights up red constantly	<ul style="list-style-type: none"> Residual current device and/or circuit breaker are off 	<ul style="list-style-type: none"> Switch on residual current device and/or circuit breaker.
One or more LED ring(s) continues to flash red in Hub / Satellite configuration	<ul style="list-style-type: none"> Crossover in Hub-Satellite connection Communication module cannot be located 	<ul style="list-style-type: none"> Check RS485 cabling 1:1. Press communication module firmly into position. Check 12 V power supply status to the Hub (charging station with the communication module).
LED ring continues to light up yellow	<ul style="list-style-type: none"> Charging station waiting for the vehicle Vehicle is fully charged Faulty charging cable Grounding resistance too high, with certain vehicles this must be < 150 Ohm Vehicle is on a timer 	<ul style="list-style-type: none"> Are the plugs properly inserted in the vehicle and charging station? (Check by user.) Is the grounding resistance correct? (Grounding measurement by electrician.) Replace the charging cable (have fixed cable replaced by an electrician). Change the setting of the timer in the vehicle. (Check by user.)
LED ring lights up blue for a few seconds, then turns yellow	<ul style="list-style-type: none"> Vehicle refuses to charge 	<ul style="list-style-type: none"> Check that the minimum current accepted by the car is not higher than the minimum current supplied by the station. (Check by user.) Check line-to-line and neutral-to-line voltages at various spots on the power circuit(s). (Check by electrician.) Is the ground resistance correct? (Check by electrician.)
Charging station does not start charging, LED ring flashes green for 30 seconds, followed by 10 times red. Then LED ring turns green or off.	<ul style="list-style-type: none"> Plug not locked Vehicle not connected Lock in charging station is blocked 	<ul style="list-style-type: none"> Is the plug pushed far enough into the charging station? (Check by user.) Is the plug properly inserted in the vehicle? (Check by user.) Check the plug for damage or bent pins. (Check by user.) Check whether there is something in the socket. (Check by user.) Check whether the wiring harness is blocking the cable locking mechanism. (Check by electrician)
Plug does not come out of charging station	<ul style="list-style-type: none"> Incorrect card used to stop charging (LED ring flashes purple briefly) Unlocking pin will not lift 	<ul style="list-style-type: none"> Use the same card to stop charging as to start charging. Push the plug further into the charging station and hold the card against the card reader again. Turn power in the meter cabinet off and then on again after two minutes. The handle on the lock can be manually turned upwards by an electrician to unlock.

11. Warranty

11.1 EVBox warrants to Customer on delivery and for a period of three (3) years thereafter that the Products are free from material defects in material and workmanship and conform in all material aspects with the specifications as explicitly listed in the Documentation, except for charging cables, their connectors and software, for which the warranty is limited to three (3) months from delivery. Except as stated in this clause 11.1, EVBox provides no warranties of any kind in respect of the Products.

11.2 Subject to clause 11.3, EVBox shall, at its option, repair or replace defective Products, or refund the price of defective Products if:

- (a) Customer gives notice in writing during the warranty period within a period of fourteen (14) days after the Customer has discovered or should reasonably have discovered that some or all of the Products do not comply with the warranty as set out in clause 11.1;
- (b) Customer returns such Products to EVBox (at the location specified by EVBox) at Customer's cost and following the RMA (return merchandise authorization) instructions from EVBox, if the nature of the Product allows such return; and
- (c) EVBox is given a reasonable opportunity of examining such Products and provided by Customer with all information it may reasonably require to proceed to such examination.

With respect to repair, EVBox is entitled to apply problem avoiding restrictions and/or Workarounds.

11.3 EVBox shall not be liable for the Products' failure to comply with the warranty in clause 11.1 if:

- (a) Customer makes any further use of such Products after giving a notice in accordance with or failed to provide notification within fourteen (14) days as set out in clause 11.2;
- (b) The Error arises because Customer failed to follow EVBox's oral or written instructions as to the storage, installation, commissioning, use or maintenance of the Products or (if there are none) good trade practice (such as but not limited to use of the Products with parts, accessories or software not provided or approved by EVBox);
- (c) The Error arises as a result of EVBox following any customisation or Product specification supplied by Customer;
- (d) Repairs or other interventions on the Products are performed by persons not trained for this purpose, against EVBox's oral or written instructions, or with parts not supplied or approved by EVBox; or
- (e) The Error arises as a result of fair wear and tear, wilful damage or negligence by Customer and/or a third party, or abnormal working conditions (such as but not limited to damages resulting from vandalism, animals, high-pressure cleaners, or Error in connected vehicles).

11.4 In all cases, the following are excluded from the coverage of the warranty:

- (a) Travel costs and labour costs of repair, including time spent on preliminary work or on disassembly and reassembly, if the repair of the Products is to take place at the installation site due to the nature of the Products;
- (b) Cleaning, routine maintenance and preventative maintenance operations of the Products as defined in the Documentation, as well as the supply of products necessary for these operations;
- (c) Restarting operations after the Product has been secured, for example by circuit breakers, ground fault circuit interrupters (GFCIs), fuses or emergency stops; and
- (d) In general, all operations on site, especially if no parts need to be replaced.

11.5 The Agreement shall apply to any repaired or replacement Products supplied by EVBox.

This warranty statement is provided for information purposes only, please check your agreement with EVBox to know exact terms and conditions applicable to your product.

12. Declaration of conformity

MANUFACTURER'S DECLARATION

(in accordance with Appendix II-B of the Machinery Directive)

EVBox B.V.,

NL registration KvK 32165082_000018683428

Fred. Roeskestraat 115, 1076 EE Amsterdam, The Netherlands declares under its' sole responsibility that the following products:

Article B116X-XXXX: EVBox Charging station 1-phase 16A

Article B132X-XXXX: EVBox Charging station, 1-phase 32A

Article B316X-XXXX: EVBox Charging station, 3-phase 16A

Article B332X-XXXX: EVBox Charging station, 3-phase 32A

Provided that they are installed, maintained and used in the applications for which they were designed, in accordance with professional practices, relevant installation standards and manufacturer's instructions for use and installation, are CE certified and comply with the essential requirements of EMC Directive 2014/30/EU and Low Voltage Directive 2014/35/EU in accordance with the following standards:

EN/IEC61000-3-2 (2014)

EN/IEC61000-3-3 (2013)

EN/IEC 61000-6-2 (2016)

EN/IEC61000-6-3 (2007) + A1 (2011)

EN/IEC 60335-1 (2012) +A13 (2017)

EN/IEC 60364-4-41 (2017)

EN/IEC60529-1 (1989) +A1 (1999) + A2 (2013)

EN/IEC60950-1 (2005) + A1 (2009) + A2 (2013)

EN/IEC60950-22 (2017)

EN/IEC61851-1 (2017)

EN/IEC61851-22 (2002)

EN/IEC62196-1 (2014)

EN/IEC62196-2(2017)

Amsterdam, January 5th 2018



A. van Rooijen
Chief Technical Officer

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EVBox strives to manufacture products of the highest quality. EVBox products are fully CE certified and compliant with the essential requirements of EMC Directive 2014/30/EU and Low Voltage Directive 2014/35/EU. More details can be found at evbox.com or in this installation manual.

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