



Eve Single Pro-line & S-line



EV Charging Stations

User Manual



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1.1 Disclaimer

This document has been subjected to rigorous technical review before being published. It is revised at regular intervals, and any modifications and amendments are included in the subsequent issues. Although Alfen has made its best efforts to keep the document as precise and up-to-date as possible, Alfen does not assume any liability for defects and damage which results from the use of the information contained herein.

NOTE

This manual is subject to updates and changes. Errors and omissions excepted.

Any deviation to the products as assembled by Alfen including, but not limited to, customer-specific modifications to the product such as the placement of stickers, SIM cards or the usage of different colors (all referred to as 'Customization') may affect the final product, its experience, appearance, quality and / or lifespan (the Customized Product). Alfen is not liable for any damage to, or caused by, the Customized Product if this damage is caused by this applied Customization.

Alfen shall not be liable in any way, for any kind of damage, and the (B2B) warranty for the product and the accessories shall not apply in the following cases:

- Failure to comply with the instructions in this manual in general and with the operating conditions specifically.
- Improper use.
- External damage.
- Installation, commissioning or faulty repair or maintenance by unqualified persons.
- Failures from the grid or the GPS / mobile connectivity provider.
- Modification or configuration of the product or accessories without the knowledge of Alfen.
- Use of spare parts not approved or manufactured by Alfen.
- The charging station is used outside its operating conditions as stated in this manual.
- Situations have occurred that are beyond the control of Alfen (force majeure).
- Malfunction of an (Open Charge Point Protocol) back office.
- Damage to the electrical vehicle.

1.2 Copyright

The reproduction, distribution and utilization of this document, as well as the communication of its contents to other parties without explicit authorization by Alfen N.V. or one of its affiliates, is strictly prohibited. © Alfen N.V.

1.3 Trademarks

Eve®, ICU®, Alfen® are trademarks by Alfen N.V.. Any unauthorized use of the trademarks is therefore illegal.

1.4 Languages

The English version of this document is the original source. Documents in other languages are translations of this source.

1.5 Purpose and intended audience

This manual applies to the Eve Single Pro-line and Eve Single S-line (in this document also indicated as Eve Single, Pro-line, S-line or "charging station") produced by Alfen ICU B.V., Hefbrugweg 79, 1332 AM Almere, the Netherlands, reg.no. 64998363 ("Alfen").

This manual is intended for the operator and owner (electrotechnical layman) of the charging station(s). It gives instructions for safe operation and useful information.

1.6 Explanation of text instructions used

Safety warnings and precautions are indicated in this document as follows:

DANGER

"Danger" is the signal word that indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury.

WARNING

"Warning" is the signal word that indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury.

CAUTION

"Caution" is the signal word that indicates a potentially hazardous situation that, if not avoided, could result in minor or moderate injury.

NOTE

"Note" is the signal word that provides additional information or information on possible product damage.

1.7 Service and warranty

If an error message is displayed, refer to the error codes list to take the appropriate measure. When contacting your charge point supplier, always have the serial number of your charging station available to facilitate quick support. Your charge point supplier provides support to you.

2. SAFETY AND USAGE INSTRUCTIONS

2.1 Responsibilities of the owner and/or operator

As an operator without specialist electrical training, you may only carry out activities on the charging station that do not require a qualified electrician. The operator is responsible for the proper and safe use of the charging station.

⚠ DANGER

Risk of injury and electrocution. Never open the charging station. Only a qualified electrician may open the charging station.

⚠ DANGER

Risk of injury and electrocution. Do not use the charging station if it is damaged or plugs and cables are defective. Contact a qualified electrician to repair the defects immediately.

- The operator is responsible for the safety of the charging cable.
- Prevent the charging cable from mechanical damage and handle them with care at all times.
- Inspect the charging cable on visual damage every time before using.
- Place the charging cable into the corresponding support or in your car after use.

Prior to installation of the charging station, the vicinity of the charging station shall be approved by the installer regarding certain criteria. However, as the surroundings of the charging station may change over time, the following safety advices apply at all times:

⚠ DANGER

Risk of injuries, explosion or fire. Do not use the charging station in the vicinity of explosive or highly flammable substances.

⚠ DANGER

Risk of injury and electrocution. Keep away children or individuals who are not able to assess the risks associated with using this product.

⚠ CAUTION

Risk of injury. Prevent pedestrians from tripping over cables.

⚠ CAUTION

Risk of injury. Prevent vehicles from driving over the charging cable.

ⓘ NOTE

Error messages are only displayed on the Pro-line model.

If the charging station displays an error message, refer to the error codes list in this document to take the appropriate measure.

2.2 Intended use

The Alfen charging station is intended exclusively for charging electric vehicles. The charging station is for use in private and semi-public areas, such as private property, company car parks or depots, access to which is limited. When installed correctly, it may be used by untrained individuals.

⚠ DANGER

Risk of injury and electrocution. Installation, (de)commissioning and maintenance of the charging station may only be performed by a qualified electrician.

It is essential that the qualified electro-technical technician has:

- Expertise on all relevant general and specific rules regarding safety and incident prevention.
- Comprehensive knowledge of applicable electrical regulations.
- The ability to identify risks and avoid potential hazards.
- Received and read the installation instructions and these operation instructions.

The Alfen charging station can be used as a single charging point for private use. In this case it is configured via the MyEve App or the ACE Service Installer by the installer of the charging station. The Alfen charging station can also be used in a group of several charging stations.

2.2.1 Operating conditions

Operating temperature -25 °C to +55 °C

Relative atmospheric humidity 5 to 95 %

Electrical safety class Class I

Degree of protection (casing) IP55

IK protection (mechanical impact) IK10

NOTE

The operating temperature stated is under the following conditions:

- A maximum charging power of 11 kW is only guaranteed at an ambient temperature above 40 °C and below the stated maximum operating temperature.
 - The effect of direct solar radiation on the charging station is excluded.
 - The effect of a front cover with another color than RAL9016 is excluded.
 - The effect of Customizations applied on the charging station is excluded.
 - The stated charging performance is solely applicable to the charging station itself, actual performance is dependent on the vehicle and the grid connection.
-

3. PRODUCT OVERVIEW

3.1 Exterior view

EN



No.	Description
1	S-line, model with socket
2	S-line, model with fixed charging cable

No.	Description
3	Pro-line, model with socket
4	Pro-line, model with fixed charging cable

3.2 Bottom view

Position of the identification label:



Figure 3.1: Bottom view of charging station

No.	Description
1	Identification label

3.3 Identification label

The identification label shows the following information:



No.	Description
1	OCPP charge point model name (consisting of the platform name and the last five digits of the article number)
2	Type / Article number
3	Object number (unique number per charging station)
4	Technical specifications (such as the number of phases, maximum charging current and voltage)

NOTE

When contacting your charge point supplier / operator, always have your type / article number and object number available to facilitate quick support.

3.4 User interface

3.4.1 About the Eve Connect app

The Eve Connect app is designed to be used by the end user of the charging station. Its purpose is to optimise charging with solar power, monitor sessions in real-time, manage charging history and facilitate reimbursements.

Download the Eve Connect app in Google Play Store or Apple App Store to your smartphone or tablet.

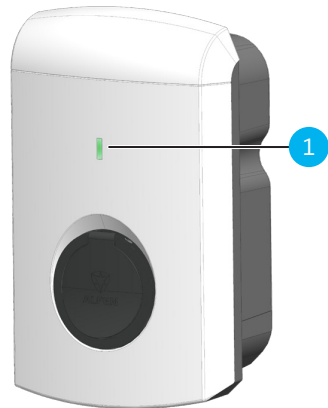


Google Play Store



Apple App Store

3.4.2 LED indications of the Eve Single S-line



No.	Description
1	LED indicator

The Eve Single S-line is equipped with a LED. See the table below for the meaning of the different color combination and flashing.

3. PRODUCT OVERVIEW

Status indications of the LED



Stand-by, ready to use



RFID card accepted or cable connected



Communicating with vehicle or charging complete



Active charging session

Status indicator symbols during smart EV charging (load balancing)



Load balancing OFF



Load balancing activated: reduced charging



Load balancing activated: charging paused



Load balancing activated: solar charging



Load balancing activated: partial solar charging

Status Indications for errors



The charging station detected an error. Contact your charge point operator.



The presented RFID card is not authorized for charging. Charging cable is connected but no charging occurs.

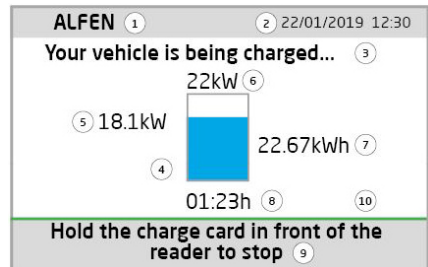
3.4.3 Display of the Eve Single Pro-line



Figure 3.2: Eve Single Pro-line

No. Description

- 1 Display



No. Description

- 1 Charge point ID: Identification is determined by the reseller or provider of the backoffice management system. This ID can be shared e.g. if support is needed.
- 2 Date and time: these are set automatically by a backoffice management system or during installation, using the MyEve app or the ACE Service Installer. If the charging station does not have a current time, this field is invisible.
- 3 Status information
- 4 Status indicator (symbols)
- 5 Current charging capacity to the connected vehicle
- 6 Maximum charging capacity of the charge point
- 7 Energy consumed during the current charging session
- 8 Duration of the current charging session
- 9 Usage instructions. In this field, instructions are displayed. If an error occurs, an error code and instruction will also be shown in this field.

3.4.3.1 Status indicator symbols



RFID card accepted or cable connected



Warning. Notification with error code



Communicating with vehicle or charging complete



Error. Notification with error code



Charging session active, with charging speed indication



Progress bar



Solar charging session active, with charging speed indication



Partial solar charging session active, with charging speed indication

3.4.4 Access control for local authorization (RFID cards)

To control local user access to an Alfen charging station, install a RFID card as the 'Master key'. With this Master Key, you can grant access to other RFID cards for using your charging station.

NOTE

Your charging station must be configured correctly in order to accept Master Keys.

3.4.4.1 Installing the Master Key

1. Select a RFID card, like the included Alfen RFID card.
2. Hold the RFID card in front of the RFID reader for 10 seconds.
3. After 10 seconds, the RFID card will be registered as the Master Key. The following icon appears on the screen:



NOTE

The charging station does not recognize the RFID card and will give a warning first. Ignore the warning.

NOTE

The charging station will only recognize one RFID card as the Master Key.

Once the Master Key is registered, it can be used to add or remove RFID cards from the local database.

3.4.4.2 Adding and removing RFID cards in the local database

For every RFID card held in front of the charging station, a sound signal will be given. Follow the on-screen instructions to manage access control:

3. PRODUCT OVERVIEW

NOTE

The Master Key cannot be used for charging. It is only used for access control of the charging station.

1. Hold the Master key in front of the RFID reader



2. Hold the RFID card you wish to add in front of the RFID reader. The following symbol is displayed:



3. Hold the RFID card you wish to remove in front of the RFID reader. The following symbol is displayed.



4. To close the database, hold the Master Key again in front of the RFID reader.
-

NOTE

If you have added or removed a RFID card in error, you can immediately hold it in front of the RFID reader to undo the action.

NOTE

To prevent the local database from being 'open' to access control, the menu will close automatically if no card has been detected or removed after 10 seconds. The symbol will disappear from the display.

3.4.4.3 Removing the Master Key

A Master key can only be removed using the MyEve app or the ACE Service Installer. If necessary, you can ask for help from one of our technicians. This might, however, incur costs. Therefore, always keep the Master key in a safe location.

4.1 Socket model: Start charging with RFID card

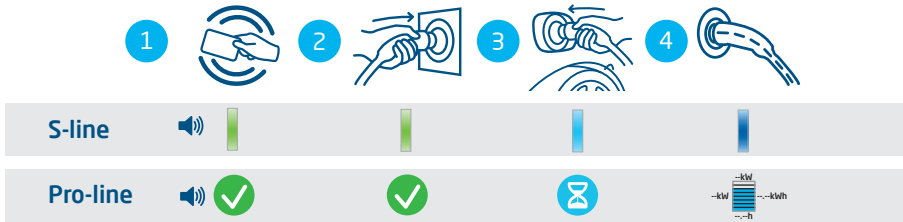


Figure 4.1: Starting the charging process with user authorization. Symbols shown on the user interface

No.	Description
1	Scan the RFID card on the charging stations RFID reader
2	Plug the charging cable into the socket
3	Plug the charging cable into the car
4	Charging in progress

4.2 Socket model: Stop charging with RFID card

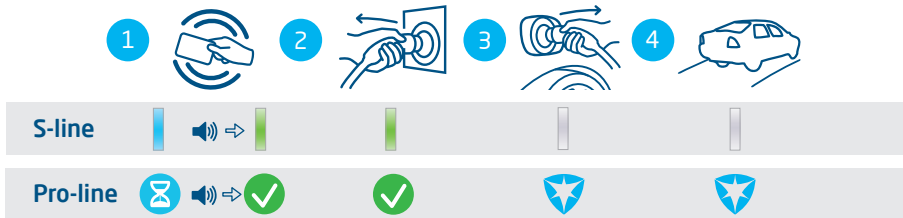


Figure 4.2: Stopping the charging process. Symbols shown on the user interface

No.	Description
1	Scan the RFID card on the charging stations RFID reader
2	Remove the charging cable from the socket
3	Remove the charging cable from the car
4	Leave the charging place

4. OPERATION

4.3 Socket model: Start charging with Plug&Charge

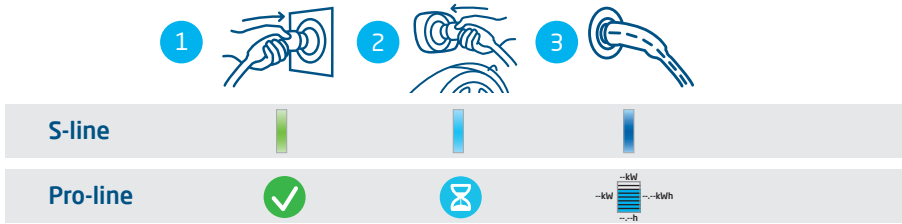


Figure 4.3: Starting the charging process without RFID card. Symbols shown on user interface

No.	Description
1	Plug the charging cable into the socket
2	Plug the charging cable into the car
3	Charging in progress

4.4 Socket model: Stop charging with Plug&Charge

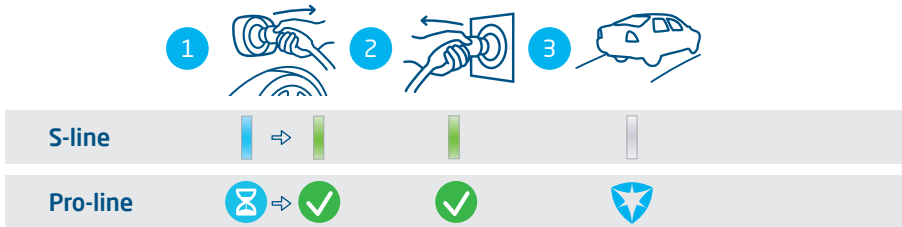


Figure 4.4: Stopping the charging process without RFID card. Symbols shown on user interface

No.	Description
1	Remove the charging cable from the car
2	Remove the charging cable from the socket
3	Leave the charging place

4.5 Fixed cable model: Start charging with RFID card

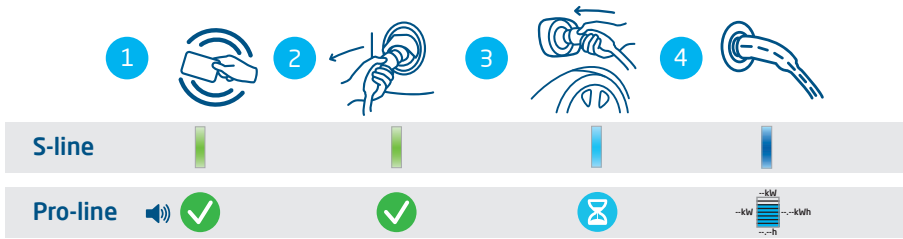


Figure 4.5: Starting the charging process with user authorization. Symbols shown on the user interface

No.	Description
1	Scan the RFID card on the charging stations RFID reader
2	Take the (fixed) charging cable out of the holder from the charging station
3	Plug the charging cable into the car
4	Charging in progress

4.6 Fixed cable model: Stop charging with RFID card

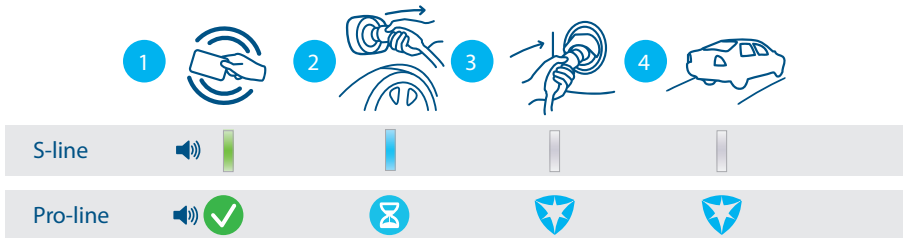


Figure 4.6: Stopping the charging process. Symbols shown on the user interface

No.	Description
1	Scan the RFID card on the charging stations RFID reader
2	Remove the charging cable from the car
3	Plug the (fixed) charging cable into the holder of the charging station
4	Leave the charging place

4. OPERATION

4.7 Fixed cable model: Start charging with Plug&Charge

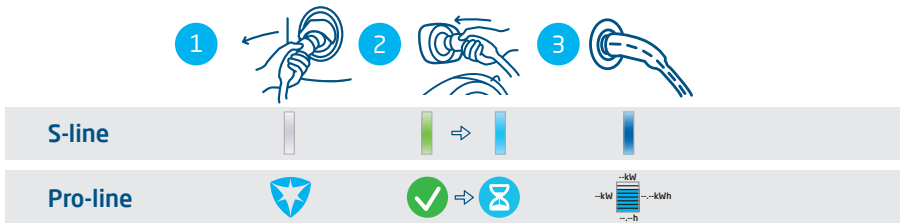


Figure 4.7: Starting the charging process without RFID card. Symbols shown on user interface

No.	Description
1	Remove the charging cable from the charging station
2	Plug the charging cable into the car
3	Charging in progress

4.8 Fixed cable model: Stop charging with Plug&Charge

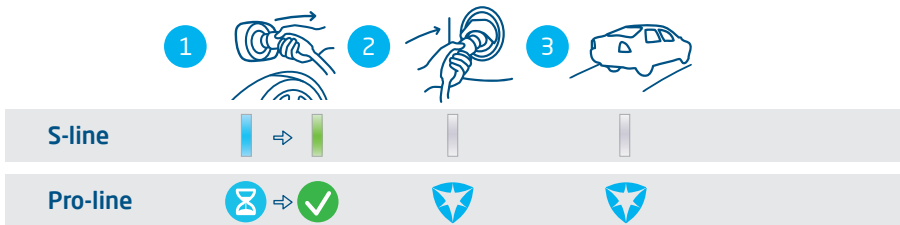


Figure 4.8: Stopping the charging process without RFID card. Symbols shown on user interface

No.	Description
1	Remove the charging cable from the car
2	Plug the charging cable into the charging station
3	Leave the charging place

5.1 Casing cleaning procedure

NOTE

The casing of the charging station can be damaged. Do not use any aggressive cleaning agents, high-pressure cleaner, scouring pads or similar.

1. Fully close the charging station as described in the instructions before any cleaning procedure.
2. Annual cleaning:
3. - Use water and mild soap to clean the casing of the charging station.
4. Annual polishing:
 - If applicable, polish metal parts of the charging station using wax suitable for cars. Be cautious not to damage the casing.

5.2 Display cleaning procedure

NOTE








Handle the display delicately to ensure proper drying and prevent damage and colour change. Do not use any aggressive cleaning agents, high-pressure cleaner or abrasive materials.

NOTE







Be cautious with cards, tags, keys, and jewellery to avoid damaging the display window. Do not use a chamois, squeegee, or cloth.

1. Fully close the charging station as described in the instructions before any cleaning procedure.
2. Use a gentle stream of air to blow off any dust or sand particles.
3. Rinse the surface with a generous amount of water or a mild detergent solution.
4. If the surface appears to be clean, let the remaining water evaporate.
5. If needed, gently remove any remaining dirt and water:
 - Use a clean, soft brush.
 - Brush from top to bottom.
 - Apply minimal force.
 - Avoid circular motions.








6. ERROR CODES AND TROUBLESHOOTING

Code	Error message displayed	Icon	Possible cause	Possible countermeasures
General error				
001	Not able to charge. Please call for support.		Unknown general error.	Contact the service department of your charge point supplier.
Charging station related error				
101	One moment please. Your charging session will resume shortly.		DC fault current (>6mA) detected by charging station.	<ul style="list-style-type: none"> • One specific vehicle: Contact your car dealership. • Multiple vehicles: Contact the service department of your charge point supplier.
102	Not able to charge. Please call for support.		Internal error. Unexpected or no voltage on output of power board.	<ul style="list-style-type: none"> • Contact the service department of your charge point supplier. • Check powerboard.
104	Not able to charge. Please call for support.		Internal error. Voltage too low on internal power supply (power board).	<ul style="list-style-type: none"> • Contact the service department of your charge point supplier. • Check powerboard.
105	Not able to charge. Please call for support.		Internal error. No communication with internal power meter.	<ul style="list-style-type: none"> • Contact the service department of your charge point supplier. • Check if internal power meter is configured correctly. • Check internal power meter.
106	Not able to charge. Please call for support.		Power interrupted by internal RCD.	<ul style="list-style-type: none"> • Contact your installation engineer. • Internal RCD (Type A: 30 mA AC) tripped.
108	Not displayed.	Not displayed.	Charging station configured as Plug & Charge authorization mode and Plug & Charge ID is not configured.	<ul style="list-style-type: none"> • Contact the service department of your charge point supplier. • Configure Plug & Charge ID.
109	Not displayed.	Not displayed.	No connection / connection lost to card reader.	<ul style="list-style-type: none"> • Contact the service department of your charge point supplier. • Check if the card reader is connected correctly.
Installation related error				
201	Error in installation. Please check installation or call for support.		Protective earth not connected or unstable.	<ul style="list-style-type: none"> • Contact your installation engineer. • Recommended earth resistance of the installation < 100 Ohm.


6. ERROR CODES AND TROUBLESHOOTING

Code	Error message displayed	Icon	Possible cause	Possible countermeasures
202	Input voltage too low, not able to charge. Please call your installer.		Supply voltage below 210 VAC.	Contact your installation engineer.
206	Temporary set to unavailable. Contact CPO or try again later.		Charging station is set to inoperative by the charge point operator / the charging station is updating.	Contact your charge point operator. <ul style="list-style-type: none"> Firmware update in progress.
208	Not displayed.	Not displayed.	Supply voltage above 275 VAC.	<ul style="list-style-type: none"> Contact the service department of your charge point supplier. Check voltage levels.
209	Not displayed.	Not displayed.	No connection / connection lost to DSMR4.x / SMR5.0 (P1) smart energy Meter.	<ul style="list-style-type: none"> Contact the service department of your charge point supplier. Check DSMR4.x / SMR5.0 (P1) smart energy Meter connection.
210	Not displayed.	Not displayed	No connection / connection lost to Modbus TCP/IP energy meter / energy management system.	<ul style="list-style-type: none"> Contact the service department of your charge point supplier. Check Modbus TCP/IP energy meter / energy management system.
211	Not able to lock cable. Please call for support.		Unable to move locking motor during build-in self-test.	<ul style="list-style-type: none"> Contact your installation engineer. Check if locking motor is connected correctly. Check if locking motor can move.
212	Error in installation. Please check installation or call for support.		Missing phase in installation.	<ul style="list-style-type: none"> Contact your installation engineer. Check voltage levels.
213	Not displayed.	Not displayed.	No connection / connection lost to TIC smart energy Meter.	<ul style="list-style-type: none"> Contact the service department of your charge point supplier. Check TIC smart energy Meter connection.
214	Not able to charge. Please call for support.		Tariffs not configured, required for ad-hoc payments with Eichrecht.	<ul style="list-style-type: none"> Contact your charge point operator. Tariffs not configured (StartPrice & EnergyPrice).
Vehicle related error				
301	One moment please your charging session will resume shortly.		Unknown error in communication with car.	<ul style="list-style-type: none"> Check car and charging cable. Otherwise contact the service department of your charge point supplier.

6. ERROR CODES AND TROUBLESHOOTING

Code	Error message displayed	Icon	Possible cause	Possible countermeasures
302	One moment please your charging session will resume shortly.		Safety measure, Vehicle draws more power than allowed / did not reduce power in time according to the IEC 61851 standard.	<ul style="list-style-type: none"> • One specific vehicle: Contact your car dealership. • All vehicles: Contact the service department of your charge point supplier.
303	One moment please your charging session will resume shortly.		Safety measure, vehicle has started and stopped charging to often within 1 minute.	<ul style="list-style-type: none"> • Check car and charging cable. • Otherwise contact the service department of your charge point supplier.
304	Charging not started yet to continue please reconnect cable.		Cable connected for more than 2 minutes without starting a charging session.	<ul style="list-style-type: none"> • Reconnect cable and start charging session within 2 minutes. • Otherwise contact the service department of your charge point supplier.
Ambient or equipment related error (user, plug, cable, weather conditions etc.)				
401	Inside temperature high. Charging will resume shortly.		Temperature inside the charge point above 70 degrees Celsius.	<p>Unexpected:</p> <ul style="list-style-type: none"> • Ambient temperature. • No EV charging. <p>Contact the service department of your charge point supplier.</p> <p>Expected:</p> <ul style="list-style-type: none"> • Ambient temperature. • Installed in direct sunlight. • EV charging. <p>Contact your installation engineer.</p>
402	Inside temperature low. Charging will resume shortly.		Temperature inside the charge point below -40 degrees Celsius.	<ul style="list-style-type: none"> • Unexpected ambient temperature. <p>Contact the service department of your charge point supplier.</p> <ul style="list-style-type: none"> • Expected ambient temperature.
404	Not able to lock cable. Please reconnect cable.		Unable to lock the charging cable.	<p>Contact the service department of your charge point supplier.</p> <ul style="list-style-type: none"> • Check socket and charging cable plug. • Check if the lock motor can move freely.
405	Cable not supported. Please try connecting your cable again.		Measure PP resistance of the charging cable is out of range according to the IEC 61851 standard.	<ul style="list-style-type: none"> • One specific cable: Issues with other charge points. <p>Cable broken</p> <ul style="list-style-type: none"> • All cables: No issue with other charge point. <p>Contact the service department of your charge point supplier.</p>

6. ERROR CODES AND TROUBLESHOOTING

Code	Error message displayed	Icon	Possible cause	Possible countermeasures
406	No communication with vehicle. Please check your charging cable.		Monitored CP voltage level is out of range according to the IEC 61851 standard.	<ul style="list-style-type: none">• One specific cable: Issues with other charge points.• Cable broken• All cables: No issue with other charge point. Contact the service department of your charge point supplier.
407	Not displayed.	Not displayed.		

7. WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT (WEEE)



Electrical and electronic equipment contains materials, components and substances that may be hazardous and present a risk to human health and the environment if not handled correctly.

Equipment marked with the illustrated crossed out wheeled bin is electrical and electronic equipment. The crossed out wheeled bin indicates that this waste must be collected separately and must not be discarded together with household waste.

Refer to your local authority for collection schemes under which residents can dispose waste electrical and electronic equipment at a recycling center or other collection points.

Contact

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