Owner`s Manual

sospeso&charge

Content

ⓘ Safety Instructions

This document provides instructions for the sospeso&charge charger and should not be used for any other product. Before installation or use of this product, you should review this manual carefully and consult with a licensed contractor, licensed electrician, or trained installation expert to make sure of compliance with local building codes and safety standards.

General safety instructions

The device is tested and approved in accordance with the standard for the charging infrastructure of electric vehicles (IEC 61851-1).

Do not operate the system with any kind of plug extension to prolong the charging cable. Refrain from using non certified adapters for the vehicle charging.

READ THIS MANUAL THOROUGHLY PRIOR TO INSTALLATION AND ENERGIZING THE EQUIPMENT. HANDLING, TRANSPORT AND INSTALLATION SHOULD BE PERFORMED IN ACCORDANCE WITH THE OPERATING PROCEDURES DETAILED IN THIS MANUAL

THE PURPOSE OF THIS MANUAL IS TO PROVIDE YOU WITH INFORMATION NECESSARY TO SAFELY HANDLE, TRANSPORT, AND INSTALL THIS EQUIPMENT. KEEP THIS MANUAL FOR FUTURE REFERENCE.

THE INFORMATION CONTAINED IN THIS MANUAL IS SUBJECT TO CHANGE WITHOUT NOTICE.

This manual does not cover instructions on operation, maintenance and troubleshooting. Instead, please refer to the corresponding manuals.

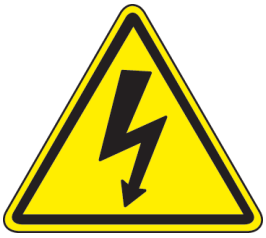
WARNING ELECTRICAL

THIS EQUIPMENT SHOULD BE INSTALLED, ADJUSTED, AND SERVICED BY QUALIFIED ELECTRICAL PERSONNEL FAMILIAR WITH THE CONSTRUCTION AND OPERATION OF THIS TYPE OF EQUIPMENT AND THE HAZARDS INVOLVED. FAILURE TO OBSERVE THIS PRECAUTION COULD RESULT IN DEATH OR SEVERE INJURY

DO NOT USE THIS PRODUCT IF THE EV CABLE IS FRAYED, HAS DAMAGED INSULATION OR ANY OTHER SIGN OF DAMAGE.

DO NOT USE THIS PRODUCT IF THE ENCLOSURE OR THE EV CONNECTOR IS BROKEN, CRACKED, OPEN, OR SHOW ANY OTHER INDICATION OF DAMAGE.

PREMISE VENTILATION NOT REQUIRED.



Definitions - Symbols

WARNING ELECTRICAL
THIS SYMBOL INDICATES HIGH VOLTAGE. IT CALLS YOUR ATTENTION TO ITEMS OR OPERATIONS THAT COULD BE DANGEROUS TO YOU AND OTHER PERSONS OPERATING THIS EQUIPMENT. READ THE MESSAGE AND FOLLOW THE INSTRUCTIONS CAREFULLY.

WARNING
INDICATES A POTENTIALLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, CAN RESULT IN SERIOUS INJURY OR DEATH.

Note that even an item or procedure identified with “CAUTION” may, in some situations, lead to a serious injury. Every item or procedure is essential and should be followed.

CAUTION
INDICATES A POTENTIAL HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, CAN RESULT IN MINOR TO MODERATE INJURY, OR SERIOUS DAMAGE TO THE EQUIPMENT. THE SITUATION DESCRIBED IN THE CAUTION MAY, IF NOT AVOIDED, LEAD TO SERIOUS RESULTS. IMPORTANT SAFETY MEASURES ARE DESCRIBED IN CAUTION (AS WELL AS WARNING).

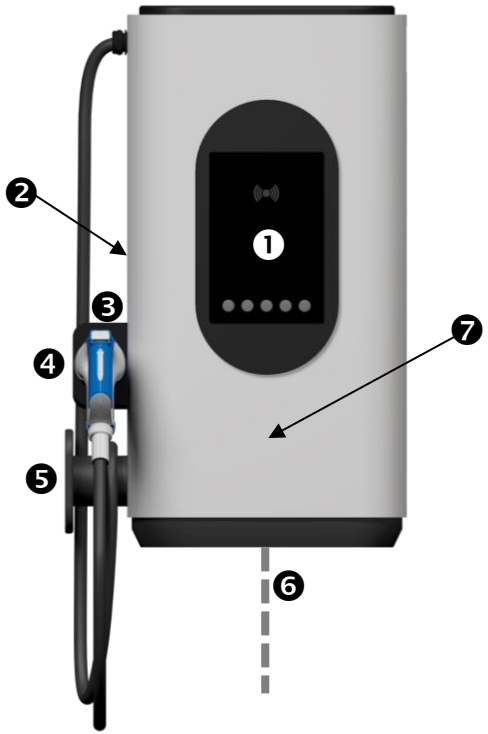
IMPORTANT
INDICATES A PARTICULAR ITEM OR INSTRUCTION THIS IS IMPORTANT TO CONSIDER.

ATTENTION
INDICATES AN ACTION OR OPERATION TO ENSURE USER SAFETY.

PROHIBITED
INDICATES AN ACTION OR PROCEDURE THAT IS NOT ALLOWED.

View of the device

sospeso&charge CHAdeMO

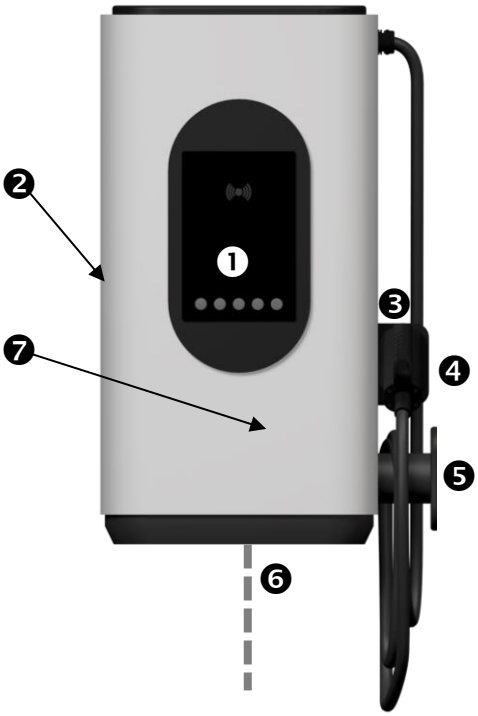


❶ Operating panel, ❷ Emergency stop switch, ❸ Plug holder
❹ CHAdeMO plug (DC quick charger plug for your electric vehicle.
❺ Cable holder, ❻ Grid connection, ❼ Front cover

Vehicle inlet with the following identifier is compatible with CHAdeMO charging. (P. 19)

❹ M

sospeso&charge Combo2

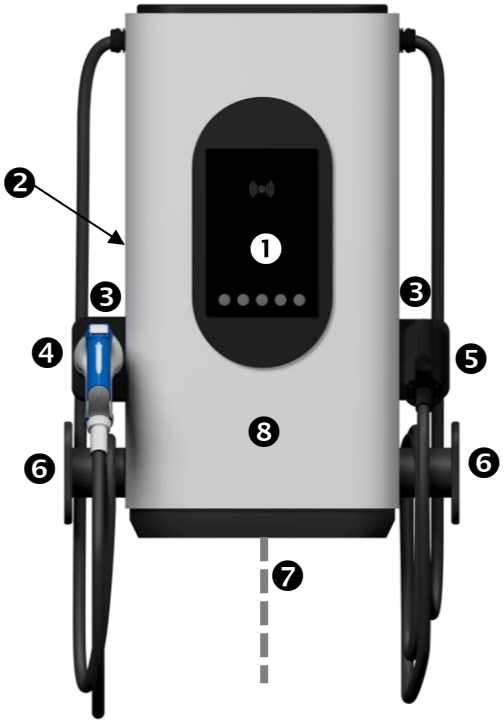


❶ Operating panel, ❷ Emergency stop switch, ❸ Plug holder
❹ CCS plug (DC quick charger plug for your electric vehicle),
❺ Cable holder, ❻ Grid connection, ❼ Front cover

Vehicle inlet with the following identifier is compatible with CCS charging. (P. 17)

❺ K

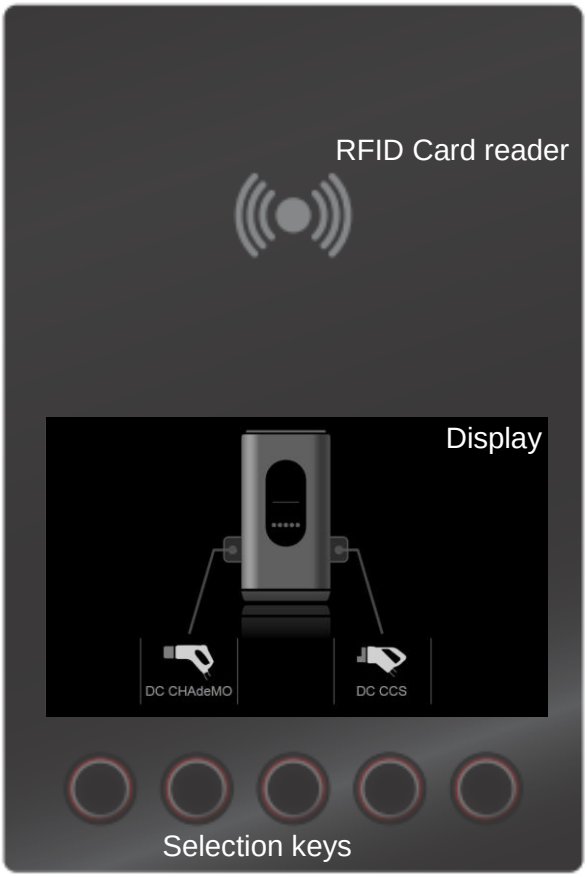
sospeso&charge 2in1



❶ Operating panel, ❷ Emergency stop switch, ❸ Plug holder
❹ CHAdeMO plug (DC quick charger plug for your electric vehicle,
❺ CCS plug , ❻ Cable holder ❼ Grid connection, ❽ Front cover

Vehicle inlet with the following identifier is compatible with CHAdeMO charging. (P. 19) ❹ M	Vehicle inlet with the following identifier is compatible with CCS charging. (P. 17) ❺ K

Operating panel



On the main screen the plug overview is being displayed as shown in the picture above (the display may vary slightly depending on the version of the device or if other cars are connected).

Start-up

- When unpacking, check if the device is damaged. If in doubt, consult the manufacturer or distributor of the device. Do not use the device if it is damaged.
- Remove all the packaging materials before use.
- If any installation or maintenance work is required to connect the device, this must be done by a qualified installer or another qualified individual.

  A CEE 32A connector (IEC 60309-2, 400 V AC, 50 Hz) is sufficient to operate the charging station.

Use

- The components inside the device are always live when the device is in use. Under no circumstances should you open the device when it is connected to the network/mains. Furthermore, all plugs must be unplugged and stored on the cable holders (CCS, CHAdeMO).
- Do not unplug the device from the mains socket whilst it is charging.
- Never use the device if the power cord, charging cable, plug, control panel or the housing of the device is damaged.
- Only press the Emergency stop button in an emergency! To end a normal charging session see section “Charging process” → p. 24.
- People (including children) who are unable to use this device safely, due to their lack of experience or knowledge, or due to their

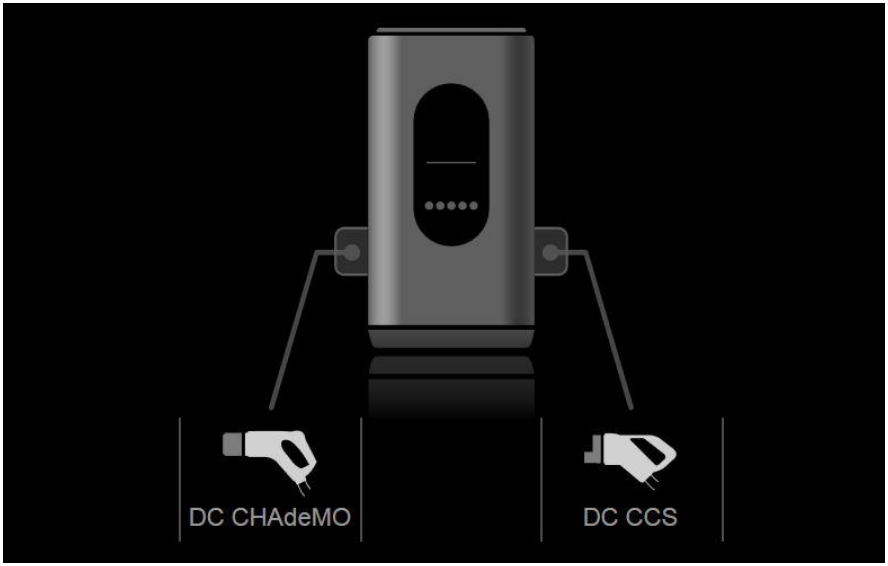
physical or mental ability, should not use this device without the supervision or instruction of a responsible person.

Check System Working

Power on the Charger. Now it takes about 1min until the system is ready. You can verify correct startup by looking at the display:

- All plugs should be available after 1min.
- No error should be displayed.

The display should look similar to the following picture (the display may vary slightly depending on the version of the device or if other cars are connected):



Main screen (multi-standard charger)

You are now in the main screen and can carry out a “Charging process” p. 11.

If nothing appears on the display, check whether the mains voltage is on. If there is an error message on the display, you can find help in the section “Troubleshooting” p. 20.

Charging process

Select Language

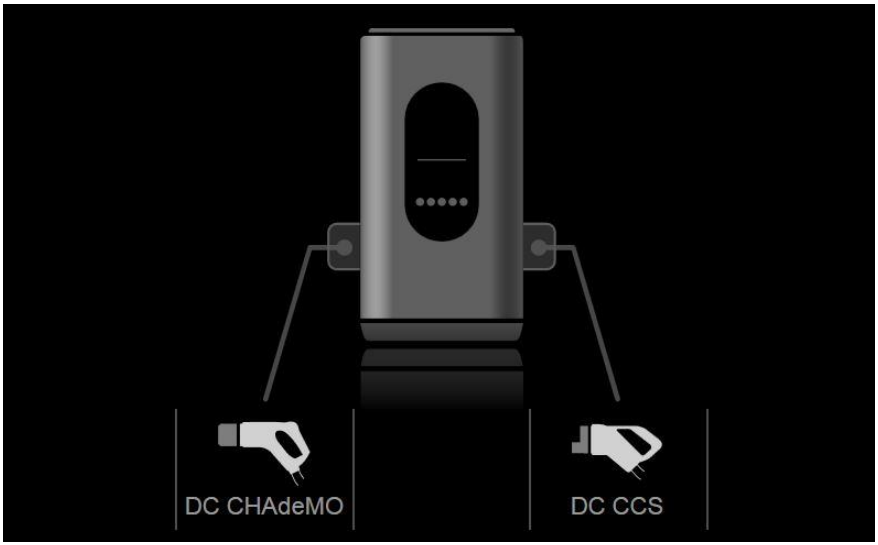
The device language may be selected by the operator of the charging station.

By clicking the “Languages” button in the main menu the user can select the language individually for each charging progress.

Select charging technology (plug selection)

ⓘ	Please note that charging from 80% to 100% can take longer than the quick charging process from 0% to 80% (to protect the vehicle batteries against overloading).

Depending on which version of the charging station you have, you can choose between one or two charging technologies.



1. a.) Use the selection keys to select the charging technology when the plug is already connected to the vehicle or

   b.) when nothing is connected.

2. Scan your card to start the charging process (if the authentication is enabled for this device).

Start DC CCS V2X charging operation

With the DC CCS V2X process, the batteries of your vehicle are charged and discharged with direct current (DC). The quick charging process charges the batteries of your vehicle up to 100%. The charging operation can also be terminated manually before it is completed.

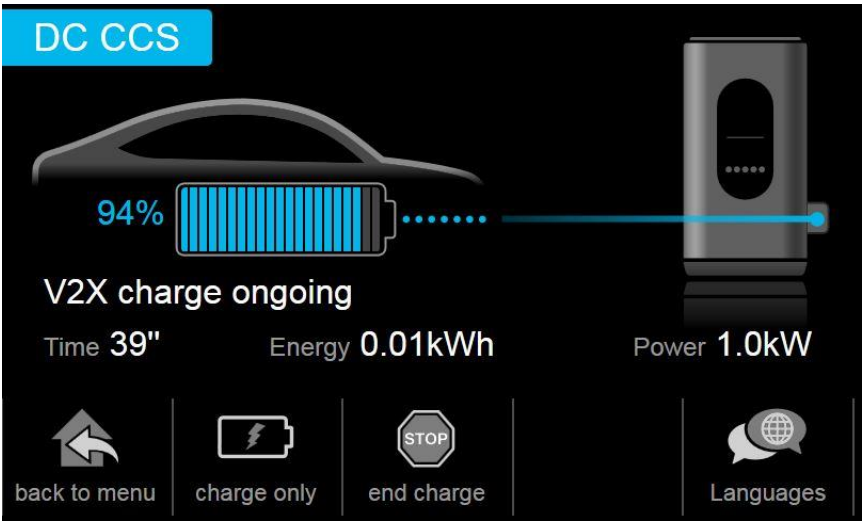
1. Make sure that the charging station is prepared as described in the section "Start-up" ← p. 10 and that you have selected the DC CCS charging technology ← p. 16.

2. Set your vehicle to Charging mode (follow the instructions in the user manual of your vehicle for this purpose).

3. Insert the CCS plug into the corresponding quick charging socket of your vehicle.

4. Scan your card to start the charging process (if the authentication is enabled for this device).

5. The charging station checks the connection and establishes a communication line with your vehicle. This takes about 25 seconds. A display similar to the following one will appear:



The bidirectional charging process will now start. The V2X charging progress is being displayed. Depending on the temperature conditions and vehicle configuration, the cooling system in your vehicle, and the one in the charging station, will start running.

Start DC CHAdeMO V2X charging operation

With the DC CHAdeMO V2X charging process, the batteries of your vehicle are charged with DC. The quick charging process charges the batteries of your vehicle up to 80%.

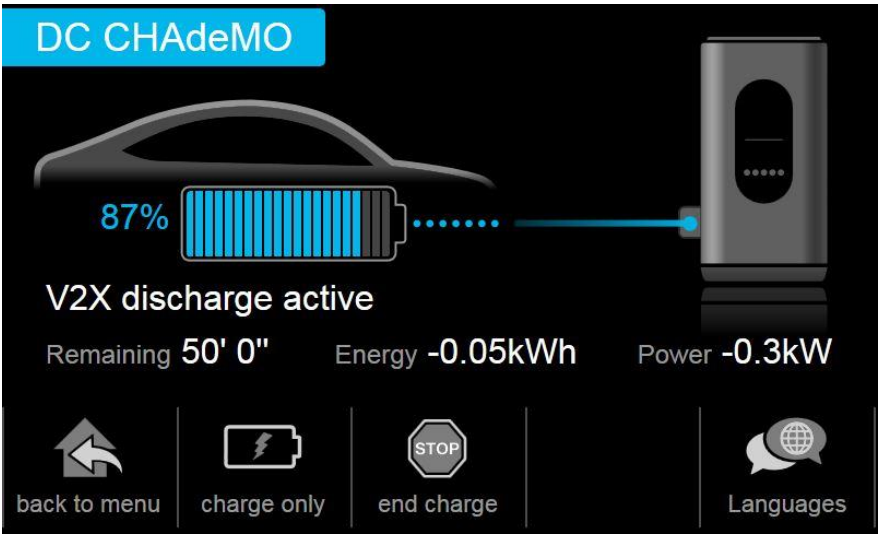
1. Make sure that the charging station is prepared as described in the section "Start-up" ← p. 10 and that you have selected the DC CHAdeMO charging technology ← p. 18.

2. Set your vehicle to charging mode (follow the instructions in the user manual of your vehicle for this purpose).

3. Insert the CHAdeMO plug into the corresponding quick charging socket of your vehicle. To do this, put the CHAdeMO plug directly in the charging socket of your vehicle until a click is heard.

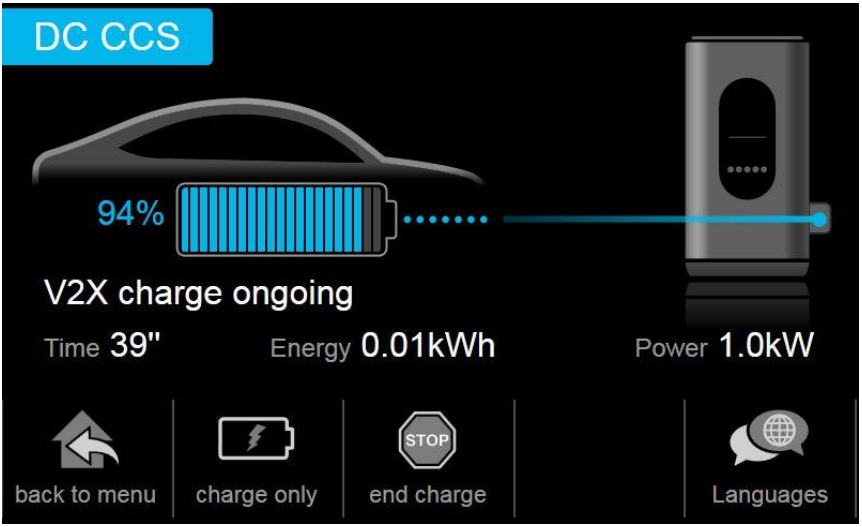
4. Scan your card to start the charging process (if the authentication is enabled for this device).

5. The charging station checks the connection and establishes a communication line with your vehicle. This takes about 25 seconds. A display similar to the following one will appear:



The bidirectional charging process will now start. The V2X charging progress is being displayed. Depending on the temperature conditions and vehicle configuration, the cooling system in your vehicle, and the one in the charging station, will start running.

Explanations of the display in V2X DC charging mode



«Time» (in the example «39‘‘») indicates in hours, minutes and seconds of the elapsed time since starting the V2X charging process.

«Energy» (in the example «0.01kWh») indicates how many kilowatt hours have already been charged or discharged (when negative) from the battery of your vehicle during the current V2X charging process.

«Power» (in the example «1.0kW») indicates how much power the batteries of your vehicle are currently taking up.

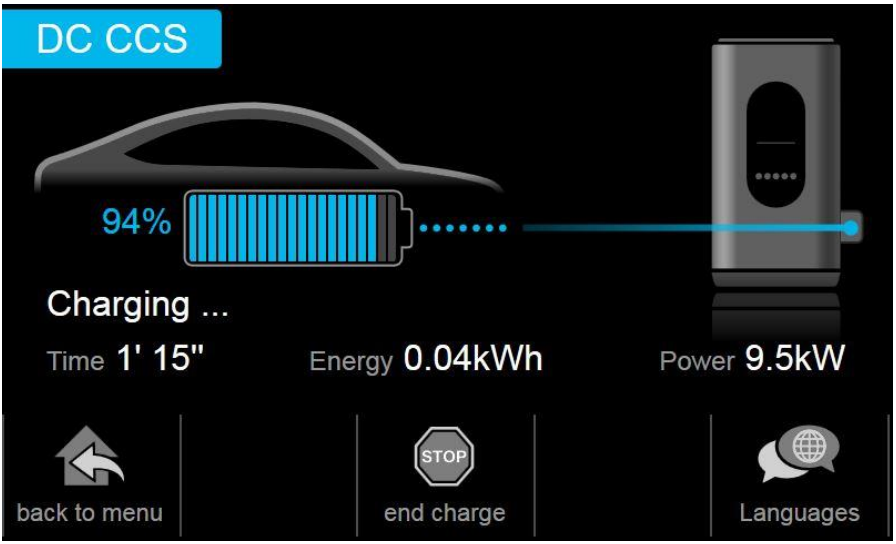
ⓘ	The charge power adjusts itself depending on the charging phase, cooling capacity and the power consumption of the vehicle batteries that is currently possible.

Switch to charging only from the V2X charging process

The V2X charging process may be changed by the operator of the charging station.

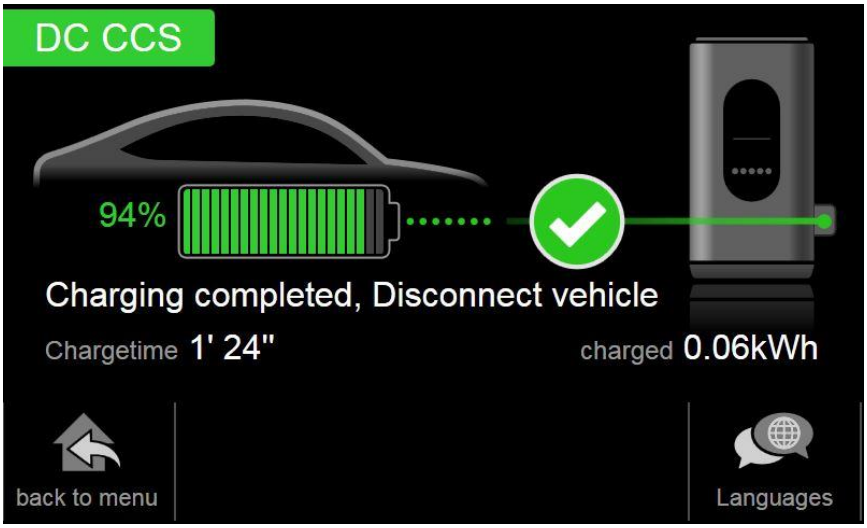
By clicking the “charge only” button in the main menu the user can select to switch to a solely unidirectional charging process.

Then a display similar to the following one will appear:



Complete the charging process or end it before it is completed

After the charging period has finished, the charging station automatically stops charging. Then a display similar to the following one will appear:



To end (when completed)…

a. ... the DC CCS charging process, remove the CCS plug from your vehicle. Insert the CCS plug into the plug holder.

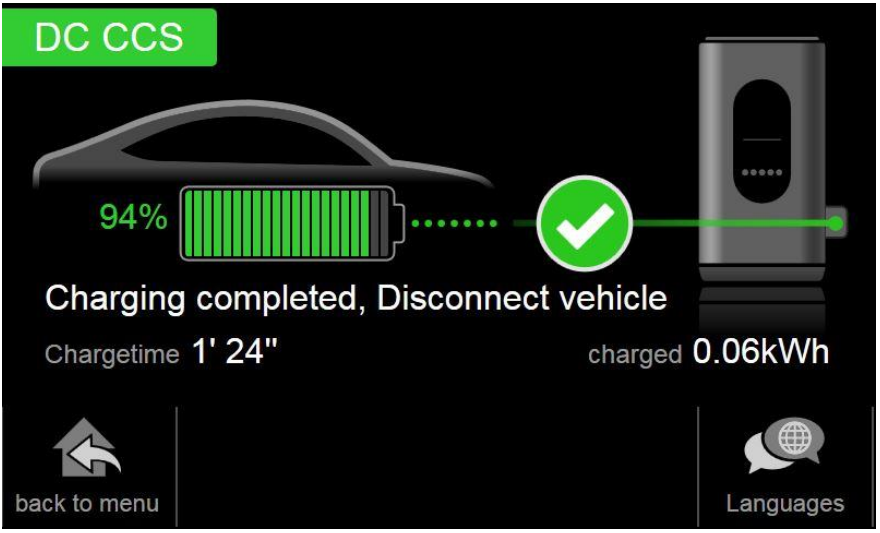
b. ... the DC CHAdeMO charging process, remove the CHAdeMO plug from your vehicle, by pressing the release button at the top of the CHAdeMO plug and carefully pull the plug out of the socket. Insert the CHAdeMO plug into the plug holder.

When not completed

If you want to stop an active charging process before it has fully completed, then follow the steps below:

1. Select the charging technology that you want to stop,
2. Select Charging Technology (plug selection)“ ← p. 10.
3. Press the selection key *End Charge*.
4. Scan your card to stop the charging process (if the authentication is enabled for this device).
5. The summary of the charging process will appear on the display after the disconnection process (after approx. 5 seconds).

A display similar to the following one will appear:



Troubleshooting

In the following chapter you will find assistance for troubleshooting if the display shows an error.

To trouble shoot the plug of the involved charging technology has to be disconnected from the car.

Error description

Display text	Error description / action
ERROR 0000000001 POWER UNIT MISSING Contact service	Internal error in communication with power unit ›› Disconnect all plugs from vehicle; disconnect device from grid; wait 30 seconds; reconnect. If the same error occurs again: call service
ERROR 0000000002 CONNECTOR LOCK Check plug connectn	Error plug interlock ›› Disconnect all plugs from vehicle; disconnect device from grid; wait 30 seconds; reconnect. If the same error occurs again: call service
ERROR 0000000004 TESTVOLTAGE N REACHD Powerunit error Contact service	Test voltage not reached during system check ›› Check vehicle and connection cable; note vehicle errors. If the same error occurs again: call service.
ERROR 0000000008 SWITCH HV OFF A TEST Contact service	Error while switching off High Voltage after system check. ›› Disconnect all plugs from vehicle; disconnect device from grid; wait 30 seconds; reconnect. If the same error occurs again: call service
ERROR 0000000010 PU OCCUPIED Powerunit reserved	Internal error ›› Disconnect all plugs from vehicle; disconnect device from grid; wait 30 seconds; reconnect. If the same error occurs again: call service

ERROR 0000000020 HV SHORT CIRCUIT Contact service	Short circuit of High Voltage wires ›› Check vehicle and connection cable; note vehicle errors. If the same error occurs again: call service.
ERROR 0000000040 HV GROUND FAULT Contact service	Ground fault: resistance between High Voltage system and Ground is too small ›› Check vehicle and connection cable; note vehicle errors. If the same error occurs again: call service.
ERROR 0000000080 TIMEOUT CUR SHUTDOWN Check vehicle status	Communication error: timeout while waiting for vehicle desired current ›› Check vehicle; note vehicle errors.
ERROR 0000000100 MAINS LOW HIGH Check grid conn.	Mains under voltage ›› Operate device on more stable grid or reduce charging power.
ERROR 0000000200 HV UNDER OVERVOLTAGE Check vehicle status	High Voltage system under or over voltage ›› Disconnect device from grid; call service.
ERROR 0000000400 RCDOCP POWER CIRCUIT Switch on RCDOCP	Power unit RCD/OCP tripped ›› Check if charging device has optical damages; If no damages are visible reactivate RCD/OCP
ERROR 0000000800 RCDOCP CTRL CIRCUIT Switch on RCDOCP	Control circuit RCD/OCP tripped ›› Check if charging device has optical damages; If no damages are visible reactivate RCD/OCP

ERROR 0000001000 SIGNAL SUPPLY EV Check vehicle status	Error signal supply on vehicle side ›› Disconnect all plugs from vehicle; disconnect device from grid; wait 30 seconds; reconnect. If the same error occurs again: call service
ERROR 0000002000 PLUG TEMPERATURE SEN Contact service	Plug temperature detected above threshold ›› Disconnect all plugs from vehicle; disconnect device from grid; wait 30 seconds; reconnect. If the same error occurs again: call service
ERROR 0000004000 LOW LEVEL COM.ERROR Check vehicle status	Communication error with vehicle ›› Disconnect all plugs from vehicle; wait 30 seconds; reconnect. If the same error occurs again: call service
ERROR 0000008000 MEASUREMENT UNIT Contact service	Internal error at measurement unit ›› Disconnect all plugs from vehicle; disconnect device from grid; wait 30 seconds; reconnect. If the same error occurs again: call service
ERROR 0000010000 HIGHLEVEL COM.ERROR Contact service	Communication error with vehicle ›› Disconnect all plugs from vehicle; wait 30 seconds; reconnect. If the same error occurs again: call service
ERROR 0000020000 EMERGENCY STOP ACTIV Contact service	Release emergency button

ERROR 0000040000 NO CAN COMMUNICATION Check plug connectn	No response from vehicle ›› Check CHAdeMO plug on vehicle side; check vehicle state using vehicle's user manual.
ERROR 0000080000 TARGET VOLT MAX BAT Check vehicle status	Erroneous data from vehicle (Target Battery Voltage > Maximum Battery Voltage) ›› Check vehicle.
ERROR 0000100000 TARGET VOLT UNAVAILB Check vehicle status	Erroneous data from vehicle (Target Battery Voltage > Voltage Value of Charger-Side Circuit) ›› Check vehicle.
ERROR 0000200000 PERMISSION TIMEOUT Check vehicle status	Timeout while waiting for charging permission from vehicle ›› Check vehicle.
ERROR 0000400000 VEHICLE RELAY CLOSED Check vehicle status	Vehicle High Voltage battery illegally powered up ›› Check vehicle.
ERROR 0000800000 SWITCH EV BATTERY ON Check vehicle status	Vehicle High Voltage battery cannot be powered up ›› Check vehicle.
ERROR 0001000000 TIMEOUT CURRENT CMD Check vehicle status	Timeout while waiting for desired current command from vehicle ›› Check vehicle.
ERROR 0002000000 TIMEOUT EV SHUTDOWN Check vehicle status	High Voltage system shutdown error after charging process ›› Check vehicle.

ERROR 0004000000 EV CONTROL COMMUNIC. Check vehicle status	Message from vehicle: communication error ›› Check EV cables; Check vehicle
ERROR 0008000000 EV CHARGING PERMISSN Check vehicle status	Message from vehicle: charging permission denied ›› Check EV cables; Check vehicle
ERROR 0010000000 EV CAN FAULT FLAGS Check vehicle status	Message from vehicle: internal error ›› Check EV cables; Check vehicle
ERROR 0020000000 EV CAN CURRENT RANGE Check vehicle status	Vehicle desired current exceeds maximum charger current ›› Check vehicle.
ERROR 0040000000 EV CAN VOLTAGE RANGE Check vehicle status	Vehicle's voltage range exceeds charger's ›› Check vehicle.
ERROR 0080000000 EV CAN SHIFT LEVER Vehicle not in P	Message from vehicle: gear lever not in «P» ›› Put gear lever into «P»; consult vehicle's user manual.
ERROR 0100000000 TIMEOUT SHUTDOWN Contact service	›› Disconnect all plugs from vehicle; disconnect device from grid; wait 30 seconds; reconnect. If the same error occurs again: call service
ERROR 0200000000 UNEXP SESSION STOP EV Sequence Error	›› Check vehicle.

ERROR 0400000000 PP RESISTOR WRONG Check cable	›› Check charging cable; Replace cable if needed.
ERROR 0800000000 AUX RELAIS ERROR No connection...	›› Disconnect all plugs from vehicle; wait 30 seconds; reconnect. If the same error occurs again: call service

Technical Specifications

General

Operating temperature	-25°C to +40°C (with derating above +40°C)
Storage temperature	-40°C to +85°C
Relative humidity	5% to 95% (without condensation)
Protection	IP54 (indoor / outdoor use)
Dimensions (D x W x H)	435 x 266 x 859 mm
Mass	39kg

Specifications

Electrical safety		IEC 61851-1, IEC 61439-2	CE
EMC		EN 61000-6-1,-2, -3, 4 EN 61000-3-2	
CHAdeMO		Rev 0.9.1 (certified), Rev 1.0.1 (compatible)	
Combined Charging System		DIN 70121, ISO 15118	
Input AC	Grid connection	AC 3-phase	
	Input voltage range	400 V_{AC} ± 10%	
	Nominal input current	3x 16A_{AC}	
	Input frequency	50 Hz	
DC Output	DC Plugs:	Plug 1 Combined Charging System (CCS): IEC 62196-3	Plug 2 CHAdeMO: JEVS G105
	Max. DC output power	10kW	
	DC Output voltage range	150-500 V_{DC}	
	Max. DC output current	3 A_{DC} - 30 A_{DC}	
	Power factor (50% load)	> 0.99	
	Efficiency	95% at full load	
	Safety	Short circuit protected output Overcurrent circuit breaker Overvoltage protection Low-voltage protection Isolation & Earth monitoring	

Support

EVTEG AG
Phone: +41 41 260 88 38
E-Mail: evtec@evtec.ch

For service or maintenance requests:

EVTEC Support
Phone: +41 41 322 23 86
E-Mail: support@evtec.ch
Online Support: support.evtec.ch

Address:

EVTEC AG
Rengglochstrasse 19
6012 Kriens-Obernau
Switzerland

www.evtec.ch

Instructions for disposal

Recycling the charging station

The charging station is made out of different materials, but most importantly, it contains electro-mechanical and electronic components. It must therefore be disposed in accordance with the regulations for the individual materials. If you have any questions, please contact your local council office.