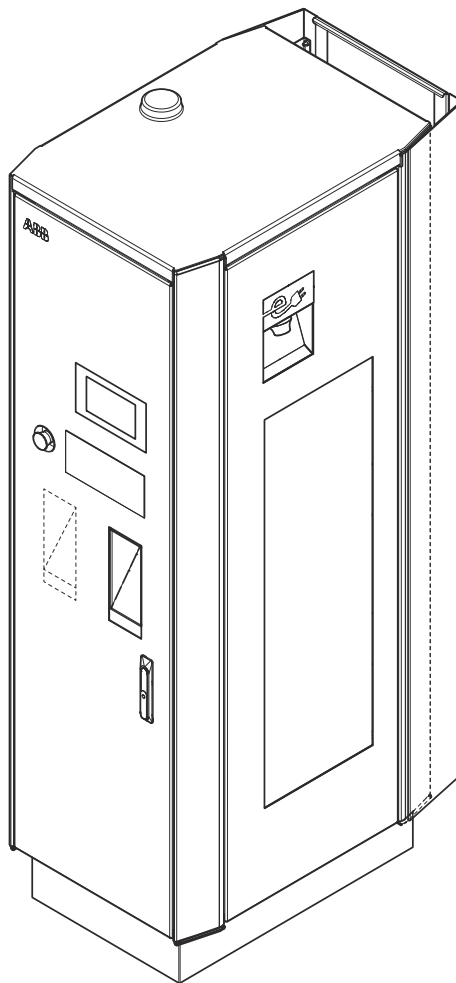

User manual

Terra 94/124/184



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1 About this document

1.1 Function of this document

The document is only applicable for this EVSE (Terra x4), including the variants and options listed in section [7.1](#).

The document gives the information that is necessary to do these tasks:

- Use the EVSE
- Do basic maintenance tasks



Note: "Terra x4": This is a generic name for the EVSE to address the three main types of the EVSE.

1.2 Target group

The document is intended for the owner of the EVSE.

For a description of the responsibilities of the owner, refer to section [3.3](#).

1.3 Revision history

Version	Date	Description
001	April 2020	Initial version

1.4 Language

The original instructions of this document are in English (EN-US). All other language versions are translations of the original instructions.

1.5 Illustrations

It is not always possible to show the configuration of your EVSE. The illustrations in this document show a typical setup. They are for instruction and description only.

1.6 Units of measurement

SI units of measurement (metric system) are used. If necessary, the document shows other units between parentheses () or in separate columns in tables.









1.7 Typographical conventions



The lists and steps in procedures have numbers (123) or letters (abc) if the sequence is important.

1.8 How to use this document

1. Make sure that you know the structure and contents of this document.
2. Read the safety chapter and make sure that you know all the instructions.
3. Do the steps in the procedures fully and in the correct sequence.
4. Keep the document in a safe location that you can easily access. This document is a part of the EVSE.

1.9 General symbols and signal words

Signal word	Description	Symbol
Danger	If you do not obey the instruction, this can cause injury or death.	Refer to section 1.10 .
Warning	If you do not obey the instruction, this can cause injury.	Refer to section 1.10 .
Caution	If you do not obey the instruction, this can cause damage to the EVSE or to property.	
Note	A note gives more data, to make it easier to do the steps, for example.	
-	Information about the condition of the EVSE before you start the procedure.	
-	Requirements for personnel for a procedure.	
-	General safety instructions for a procedure.	
-	Information about spare parts that are necessary for a procedure.	
-	Information about support equipment that is necessary for a procedure.	
-	Information about supplies (consumables) that are necessary for a procedure.	





Signal word	Description	Symbol
-	Make sure that the power supply to the EVSE is disconnected.	
-	Electrotechnical expertise is required, according to the local rules.	



Note: It is possible that not all symbols or signal words are present in this document.

1.10

Special symbols for warnings and dangers

Symbol	Risk type
	General risk
	Hazardous voltage that gives risk of electrocution
	Risk of pinching or crushing of body parts
	Rotating parts that can cause a risk of entrapment



Note: It is possible that not all symbols are present in this document.

1.11

Related documents

Document name	Target group
Product data sheet	All target groups
Installation manual	Qualified installation engineer
User manual	Owner
Service manual	Qualified service engineer
Declaration of conformity (CE)	All target groups

1.12 Manufacturer and contact data

Manufacturer

ABB EV Infrastructure
Heertjeslaan 6
2629 JG Delft
The Netherlands

Contact data

The local representative of the manufacturer can give you support on the EVSE. You can find the contact data here: <https://new.abb.com/>

1.13 Abbreviations

Abbreviation	Definition
AC	Alternating current
CAN	Controller area network
CPU	Central processing unit
DC	Direct current
EMC	Electromagnetic compatibility
EV	Electric vehicle
EVSE	Electric vehicle supply equipment
MiD	Measuring Instruments Directive
NFC	Near field communication
NoBo	Notified body
OCPP	Open charge point protocol
PE	Protective earth
PPE	Personal protective equipment
RFID	Radio-frequency identification



Note: It is possible that not all abbreviations are present in this document.

1.14 Terminology

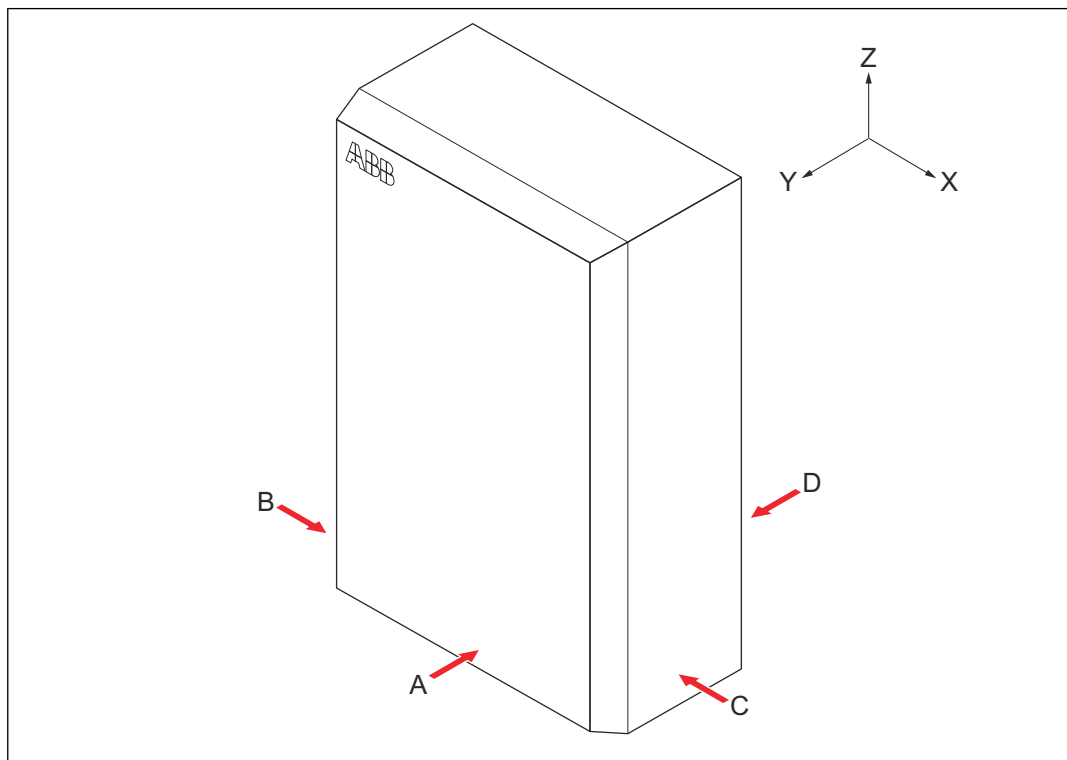
Term	Definition
Network operating center of the manufacturer	Facility of the manufacturer to do a remote check on the correct operation of the EVSE
Cabinet	Enclosure of the EVSE, including the components on the inside
CHAdeMO	Japanese DC fast charging method for electric vehicles
Contractor	Third party that the owner or site operator hires to do engineering, civil and electrical installation work

Term	Definition
Grid provider	Company that is responsible for the transport and distribution of electricity
Local rules	All rules that apply to the EVSE during the entire lifecycle of the EVSE. The local rules also include the national laws and regulations.
Open charge point protocol	Open standard for communication with charge stations
Owner	Legal owner of the EVSE
Site operator	Entity that is responsible for the day-to-day control of the EVSE. The site operator does not have to be the owner.
User	Owner of an EV, who uses the EVSE to charge the EV



Note: It is possible that not all terms are present in this document.

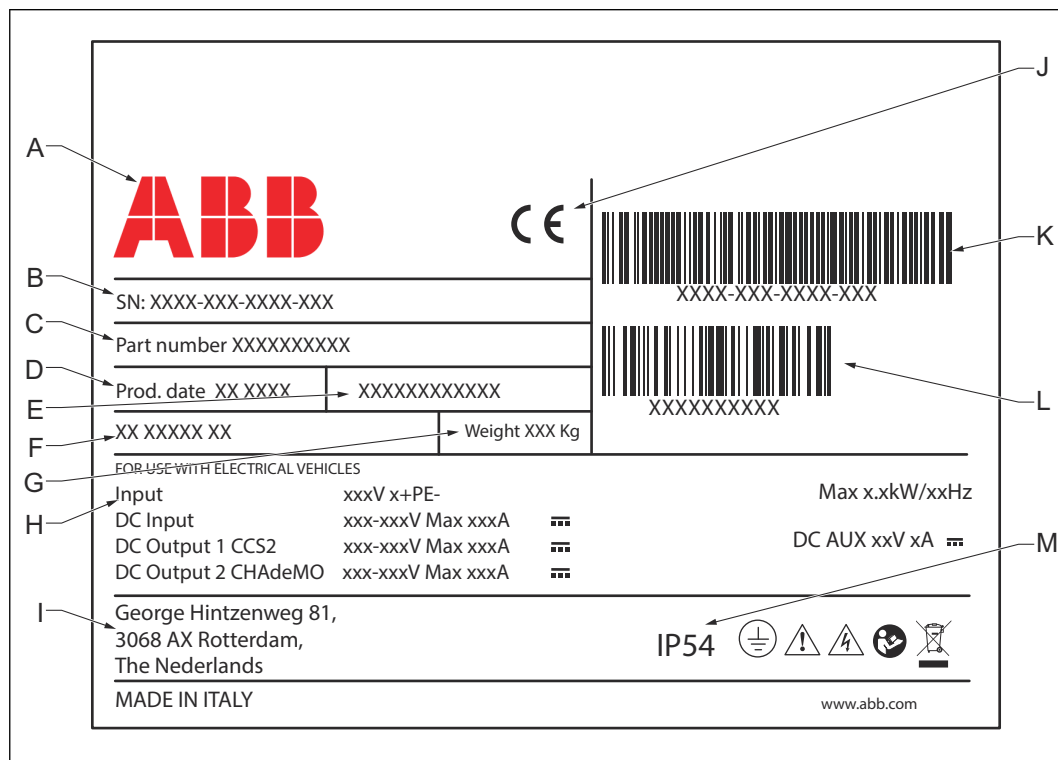
1.15 Orientation agreements



- | | | | |
|---|--|---|--|
| A | Front side: face forward to the EVSE during normal use | X | X-direction (positive is to the right) |
| B | Left side | Y | Y-direction (positive is rearward) |
| C | Right side | Z | Z-direction (positive is upward) |
| D | Rear side | | |

2 Description

2.1 Type plate



A	Manufacturer	H	EVSE rating
B	Serial number	I	Address of the manufacturer
C	Part number of the EVSE	J	CE mark
D	Production date	K	Barcode with the serial number of the EVSE
E	Internal product code (for the manufacturer)	L	Barcode with the part number of the EVSE
F	Full EVSE type	M	Additional EVSE rating data
G	EVSE mass		



Note: Find the type plate on your EVSE to see the applicable data. Refer to section [2.3.2](#).

2.2 Intended use

The EVSE is intended for the DC charging of EVs. The EVSE is intended for indoor or outdoor use.

The properties of the electrical grid, the ambient conditions and the EV must comply with the technical data of the EVSE. Refer to chapter [7](#).

Only use the EVSE with accessories that the manufacturer provides and that obey the local rules.



Danger:

General risk

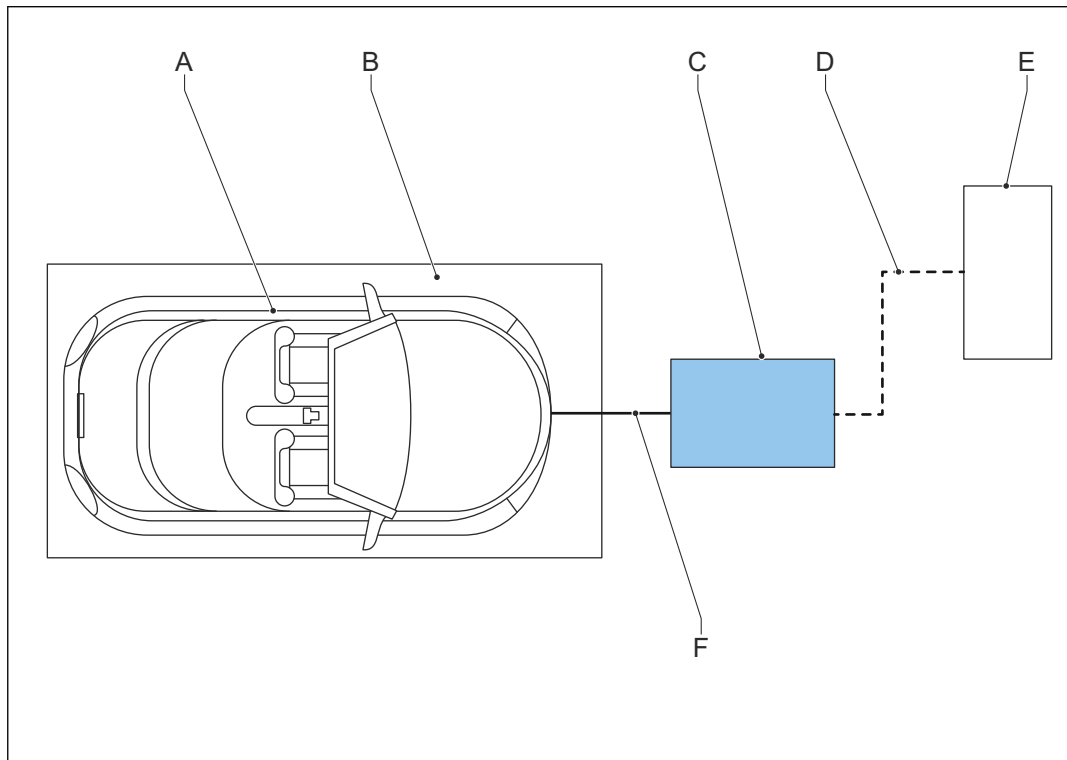
- If you use the EVSE in any other way than described in the related documents, you can cause death, injury and damage.
- Use the EVSE only as intended.

2.3

Overview

2.3.1

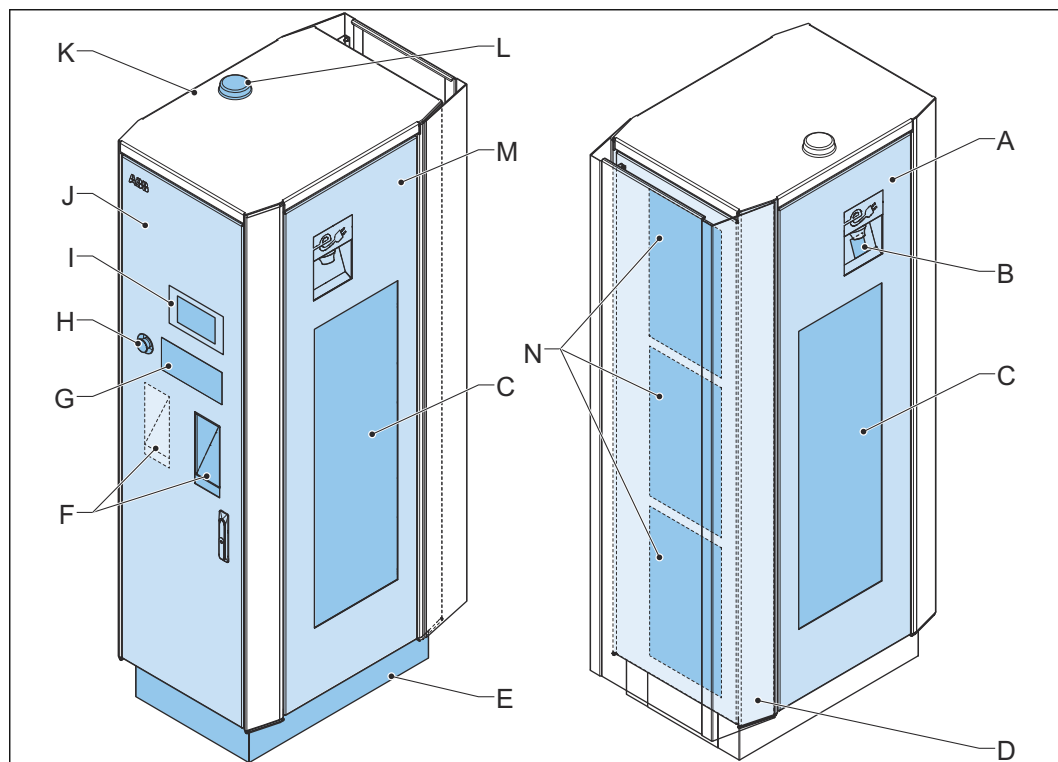
Overview of the system



- | | | | |
|---|---------------|---|--------------------------|
| A | EV | D | AC input cable |
| B | Parking space | E | Power distribution board |
| C | EVSE | F | EV charge cable |

Part	Function
EV	The EV of which the batteries need to be charged
EVSE	Refer to section 2.3.2 .
Parking space	Location for the EV during the charge session
AC input cable	To supply the electrical energy to the EVSE
Power distribution board	To connect the EVSE to the AC grid input
EV charge cable	To conduct the charge from the EVSE to the EV

2.3.2 Overview of the EVSE, outside

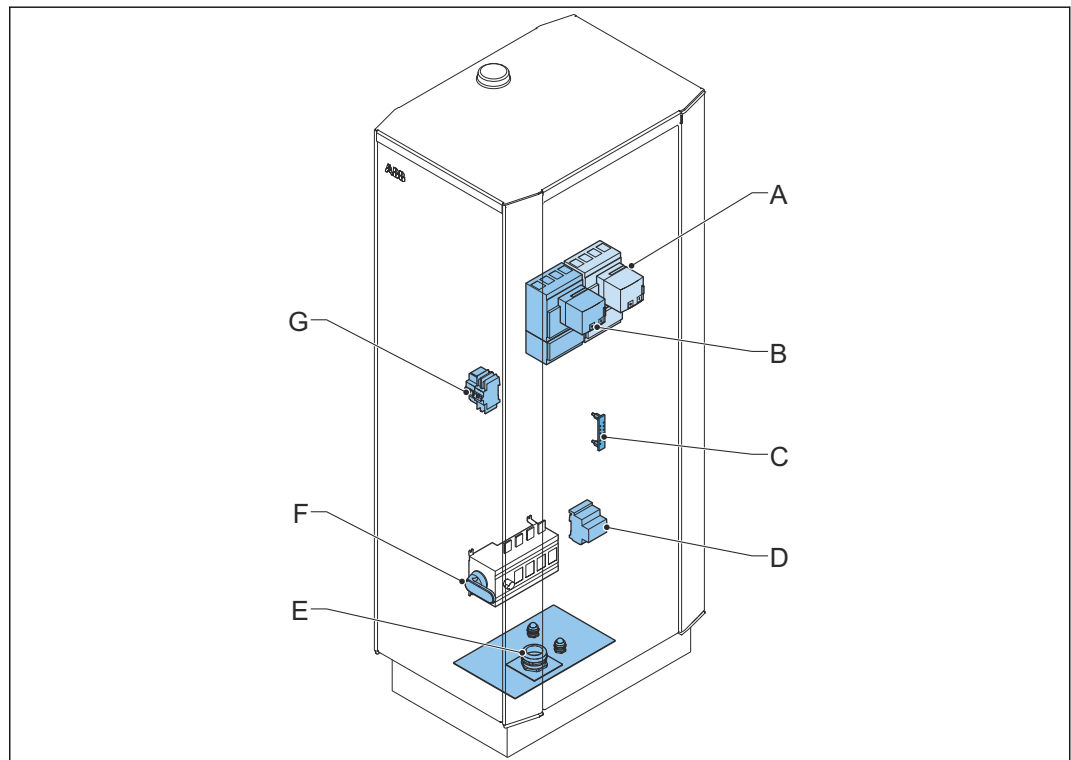


A	Left door	H	Emergency stop button
B	Type plate	I	Touchscreen
C	Air inlet	J	Front door
D	Cover on the air outlet	K	Enclosure
E	Border cover	L	Antenna
F	EV charge cable outlet and holder (1x or 2x)	M	Right door
G	Plate over the RFID reader and the integrated payment terminal	N	Air outlet

Part	Function
Front, left and right door	To give authorized personnel access to the inside of the EVSE
Type plate	To show the identification data of the EVSE. Refer to section 2.1 .
Air inlet and outlet	To let cooling air in and out. The airflow makes sure that the parts on the inside of the EVSE do not become too hot.
Cover on the air outlet	To prevent a blockage of the air outlet
Border cover	To cover the lower part of the EVSE
EV charge cable outlet and holder	To connect and hold the EV charge cable. Refer to section 2.7 .
RFID reader	To read the information from an RFID card
Payment terminal	To pay for the charge session
Emergency stop button	To stop the EVSE when there is an emergency
Touchscreen	To control and monitor the charge session

Part	Function
Enclosure	To reduce the accessibility of unqualified persons to the inside of the EVSE
Antenna	To send and receive wireless 2G, 3G and 4G signals

2.3.3 Overview of the EVSE, inside



- | | | | |
|---|--------------------------------|---|--------------------------------|
| A | Main breaker 2 | E | Cable gland plate |
| B | Main breaker 1 | F | Manual switch |
| C | PE busbar | G | Auxiliary power supply breaker |
| D | Surge protection device switch | | |

Part	Function
Main breaker 2	To connect or disconnect the power modules group 2
Main breaker 1	To connect or disconnect the power modules group 1
PE busbar	To connect the PE cable
Surge protection device switch	Breaker to protect the surge protection device, always in the on position
Cable gland plate	Plate with openings for the AC input cable and the control signal cables
Manual switch	To connect or disconnect the AC power input
Auxiliary power supply breaker	To connect or disconnect the AC power input to or from the auxiliary power for the control circuit

2.4 Authorization to charge

It is possible to use the EVSE with or without authorization.

An authorization can be based on RFID, a personal identification number, or a mobile authentication method. Authorization requires a subscription to a back office. Authorization can be a standard solution from the manufacturer, or from an external company that offers authorization solutions via OCPP.

2.5 Payment terminal

The touchscreen guides the user how to use the payment terminal.

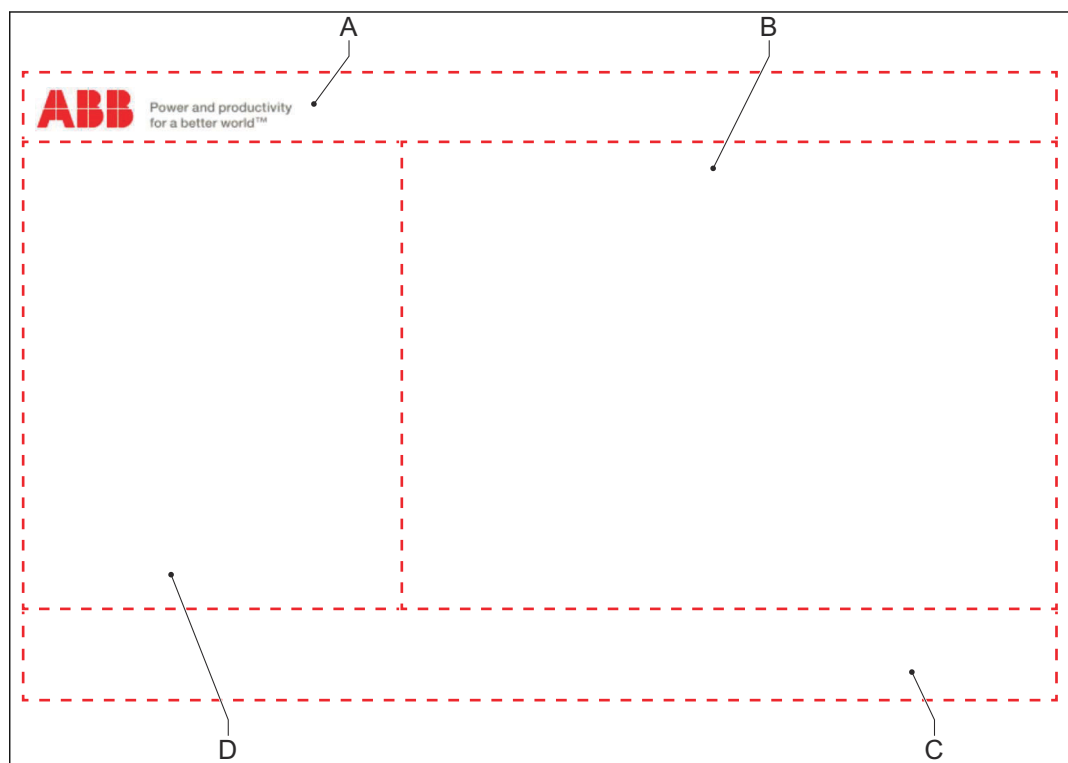


Note:

- To use and adjust the settings of the payment terminal, you require the ABB Payment Web tool.
- The standard payment terminal is from manufacturers *CCV* or *Nayax*. If you need more information about different options for payment terminals, ask ABB EV Infrastructure.

2.6 Description of the touchscreen

2.6.1 General description of the layout









A Company logo

B Main display area

C Touchscreen control bar

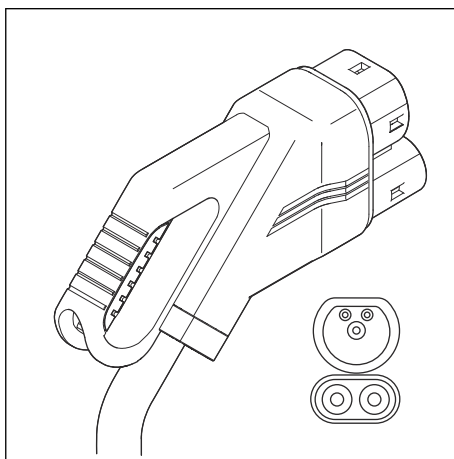
D Available connectors on the EVSE

2.6.2 General description of the buttons

Button	Name	Description
	<i>Connector</i>	To select the connector. <ul style="list-style-type: none"> • X = Charge power • Y = Connector location • Z = Type of connector
	<i>Information</i>	To show more information about the EVSE
	<i>Help</i>	To show help information on the current status of the EVSE
	<i>Language</i>	To change the language on the touchscreen
	<i>Start</i>	To start the charge session
	<i>Stop</i>	To stop the charge session

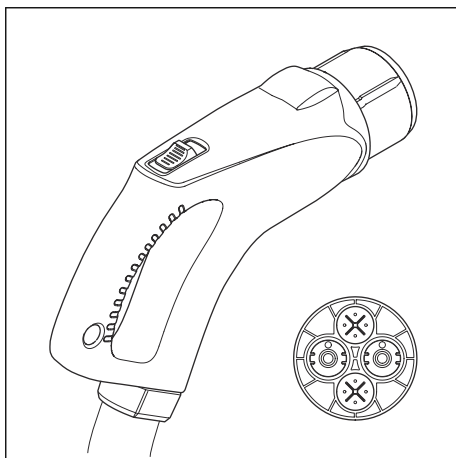
2.7 Options

2.7.1 EV charge cable, Combo 2



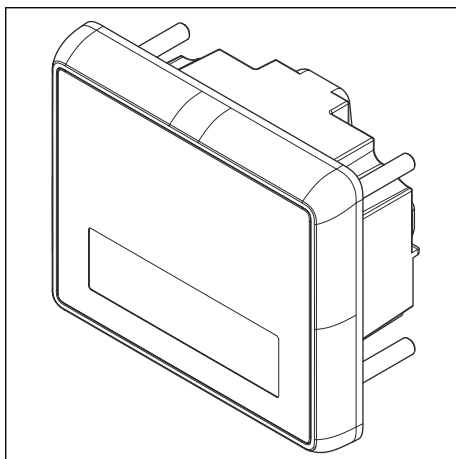
A EV charge cable

2.7.2 EV charge cable, CHAdeMO

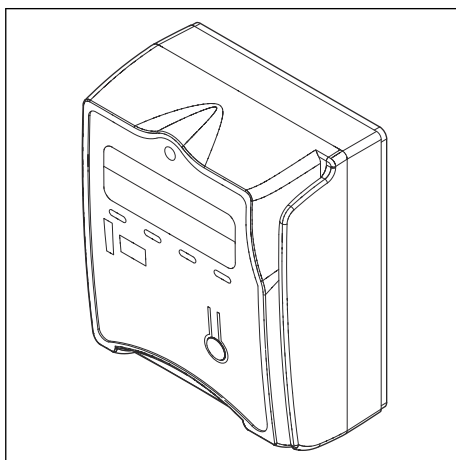


A EV charge cable

2.7.3 Integrated payment terminal - CCV



2.7.4 Integrated payment terminal - Nayax



3 Safety

3.1 Liability

The manufacturer is not liable to the purchaser of the EVSE or to third parties for damages, losses, costs or expenses incurred by the purchaser or third parties if any target group mentioned in the related documents does not obey the rules below:

- Obey the instructions in the related documents. Refer to section [1.11](#).
- Do not misuse or abuse the EVSE.
- Only make changes to the EVSE, if the manufacturer approves in writing of the changes.

This EVSE is designed to be connected to and to communicate information and data via a network interface. It is the sole responsibility of the owner to provide and continuously ensure a secure connection between the EVSE and the network of the owner or any other network.

The owner shall establish and maintain any appropriate measures (such as - but not limited to - the installation of firewalls, application of authentication measures, encryption of data and installation of anti-virus programs) to protect the EVSE, the network, its system and the interface against any kind of security breaches, unauthorized access, interference, intrusion, leakage and/or theft of data or information.

The manufacturer is not liable for damages and/or losses related to such security breaches, any unauthorized access, interference, intrusion, leakage and/or theft of data or information.

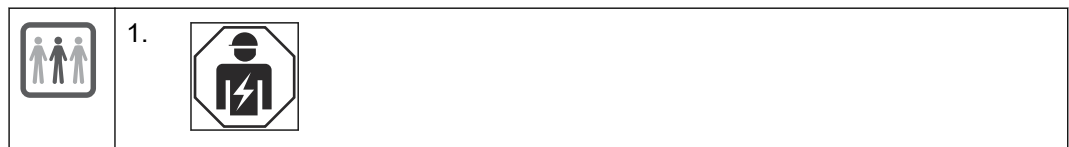
3.2 General safety instructions

- This document, the related documents and the warnings included do not replace your responsibility to use your common sense when you do work on the EVSE.
- Only do the procedures that the related documents show and that you are qualified for.
- Obey the local rules and the instructions in this manual. If the local rules contradict the instructions in this manual, the local rules will apply.

If and to the extent permitted by law, in case of inconsistency or contradiction, between any requirements or procedure contained in this document and any such local rules, obey the stricter between the requirements and procedures specified in this document and the local rules.

3.3 Responsibilities for the owner





Preliminary requirements



The owner is the person who runs the EVSE for commercial or business purposes for itself or leaves it to a third party for use. During operation he bears legal responsibility for the protection of the user, other employees or third parties. The owner must obey these instructions:

- Know and implement the local rules.
- Identify the hazards (in terms of a risk assessment), resulting from the working conditions on the site.
- Operate the EVSE with the protective devices installed.
- Make sure that all protective devices are installed after installation or maintenance work.
- Make an emergency plan that instructs people what to do in case of an emergency.
- Make sure that all employees and third parties are qualified to work on high-voltage and high-current electrical installations.
- Make sure that there is sufficient space around the EVSE to safely do maintenance and installation work.
- Identify a site operator who is responsible for the safe operation of the EVSE and for the coordination of all work, if the owner does not do these tasks.

3.4 Personal protective equipment

Symbol	Description
	Protective clothing
	Safety gloves
	Safety shoes
	Safety glasses

3.5 Safety instructions for use

- In the situations that follow, do not use the EVSE and immediately contact the manufacturer:
 - An enclosure has damage.
 - An EV charge cable or connector has damage.
 - Lightning struck the EVSE.
 - There was an accident or a fire at or near the EVSE.
 - Water has entered the EVSE.

3.6 Safety instructions during cleaning or maintenance

Preliminary requirements





- Keep unauthorized personnel at a safe distance during cleaning or maintenance.
- If for cleaning or maintenance it is necessary to remove safety devices, immediately install the safety devices after the work.
- Put on the correct personal protective equipment. Refer to section [3.4](#).

3.7 Safety instructions for earthing

- Make sure that the EVSE is connected to an earthed, metal, permanent electrical system. Alternatively, install an equipment-earthing conductor with circuit conductors. Connect this earthing conductor to an equipment-earthing terminal or lead on battery charger.
- Make sure that the connections to the EVSE comply with all applicable local rules.

3.8 Signs on the EVSE

Symbol	Risk type
	General risk
	Hazardous voltage that gives risk of electrocution
	Risk of pinching or crushing of body parts
	Rotating parts can cause a risk of entrapment
	PE

Symbol	Risk type
	Sign that means that you must read the manual before you install the EVSE
	Waste from electrical and electronic equipment



Note: It is possible that not all symbols are present on the EVSE.

3.9

Discard parts or the EVSE

- Obey the local rules to discard parts, packaging material or the EVSE.

4 Operation

4.1 Prepare before use

1. Appoint a site operator and an installation engineer, if these are other persons than you.
2. Make sure that the EVSE is installed according to the instructions in the installation manual.
3. Make an emergency plan that instructs people what to do in case of an emergency.
4. Give these instructions to each end user:
 - Emergency stop. Refer to section [4.2](#).
 - Charge session. Refer to section [4.4](#).
5. Make sure that the manufacturer commissions the EVSE. Contact the manufacturer when the EVSE is ready for commissioning. Refer to section [1.12](#).

Danger:



General risk

- Make sure that you have approval of the manufacturer to use the EVSE after commissioning. After approval, do not move the EVSE.
6. Make sure that the space around the EVSE cannot get blocked. Think of snow or other objects. Refer to the floor space requirements. Refer to section [.7.6](#).
 7. Make sure that maintenance is done on the EVSE. Refer to section [4.8.1](#).
 8. If the EVSE is de-energized for more than two hours, activate the internal heater to remove condensation from the cabinet. Refer to section [4.7](#).

Caution: Remove condensation before use, to prevent damage to the EVSE.



4.2 Stop the EVSE if there is an emergency

1. If there is an emergency, push the *emergency stop* button.
 - The EVSE stops all charge sessions.
 - The touchscreen shows a message.
2. Do not start the EVSE until the situation is safe.

4.3 Reset the EVSE after an emergency

1. Make sure that the situation is safe again.
2. Turn the emergency button clockwise to release it.
 - The EVSE starts.
 - The message disappears from the touchscreen.
 - The EVSE resumes the normal operation.

4.4 Charge session

4.4.1 Charge an EV

1. Park an EV in the parking space. Make sure that the connector of the EV charge cable can reach the connector on the EV.
2. De-energize the EV.
3. Start the charge session. Refer to section [4.4.2](#).
4. Stop the charge session. Refer to section [4.4.3](#).

4.4.2 Start a charge session

1. On the touchscreen, select the applicable *connector* button.



Note: If you skip this step, the EVSE selects the correct connector automatically when you connect the EV charge cable to the EV.

2. Remove the EV charge cable from the EVSE.
3. Connect the EV charge cable to the connector on the EV.
4. On the touchscreen, press the *Start* button.
5. If the touchscreen shows a message to authorize the charge session, do the instruction that the touchscreen shows.

The EVSE charges the EV and shows the progress on the touchscreen.

4.4.3 Stop a charge session

1. On the touchscreen, press the *stop* button.



Note: When the battery is full, the charge session stops automatically.

2. If the touchscreen shows a message to authorize the charge session, do the instruction that the touchscreen shows.
3. Disconnect the EV charge cable from the EV.



Note: In some cases, the EV locks the connector to the EV. To unlock the connector, obey the instructions for the EV.

4. Install the EV charge cable on the EVSE.

4.5 Energize the EVSE

1. Open the front door. Refer to section [6.1](#).
2. Set the manual switch to the 1 position (vertical).

Warning:



General hazard


- Be careful and use both your hands to turn the manual switch. You need some force to turn the switch.

3. Close the front door. Refer to section [6.2](#).
The EVSE starts. The display shows a message when the EVSE is ready for operation.

4.6 De-energize the EVSE

4.6.1 De-energize the EVSE - general procedure

Preliminary requirements

	1.			<ul style="list-style-type: none"> • Voltage tester
--	----	--	--	--

Procedure

1. Open the front door and right doors. Refer to section [6.1](#).
2. Set the manual switch to the 0 position (horizontal).

Warning:






General hazard

- Be careful and use both your hands to turn the manual switch. The manual switch turns quite arduous.

3. Wait until all the power modules are off:
 - All the LEDs of the power modules are off.
 - The fans stopped.
4. Measure the AC voltage. Refer to section [4.6.2](#).
5. Make sure that all the measured voltages are 0 V.
6. Measure the DC voltage. Refer to section [4.6.3](#).
7. Make sure that all the measured voltages are 0 V.
8. Close the doors. Refer to section [6.2](#).

4.6.2 Measure the AC voltage

Preliminary requirements

	1.			<ul style="list-style-type: none"> • Only do this procedure if a different procedure refers to this procedure.
---	----	---	---	---

	<ul style="list-style-type: none"> • Voltage tester 		
---	--	--	--

Procedure

1. Measure the AC voltage between the terminals on the surge protection device switch:

- *R, S* and *T* to *N*
- *R* to *S*
- *R* to *T*
- *S* to *T*

Use the voltage tester.







Note: The surge protection device switch shows the indications *R, S, T* and *N*.

4.6.3

Measure the DC voltage

Preliminary requirements

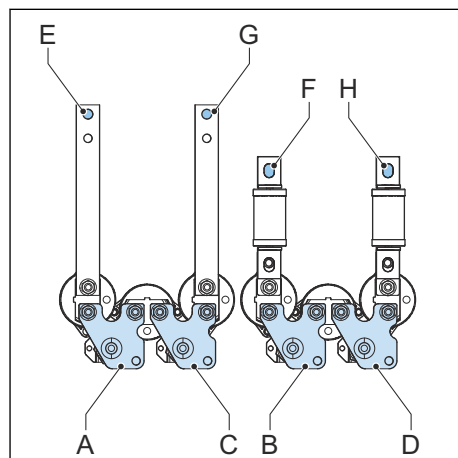
	<p>1. </p>		<ul style="list-style-type: none"> • Only do this procedure if a different procedure refers to this procedure.
	<ul style="list-style-type: none"> • Voltage tester 		

Procedure

1. Measure the DC voltage between the output terminals:

- Power module group output 1- (A) to power module group output 1+ (B)
- Power module group output 2- (C) to power module group output 2+ (D)
- EV charge cable 1 output - (E) to EV charge cable 1 output + (F)
- EV charge cable 2 output - (G) to EV charge cable 2 output + (H)

Use the voltage tester.



4.7

Remove condensation from the cabinet

If the EVSE is off for more than two hours, condensation can occur.



Note:

1. Open the front and right doors. Refer to section [6.1](#).
2. Set the main breakers 1 and 2 to the off position:
 - a. Set the main breakers from the *Auto* to the *Manual* position.
 - b. Set the main breakers from the *Manual* to the *Off* position.
3. Energize the EVSE. Refer to section [4.5](#).
4. Close the doors. Refer to section [6.2](#).
5. Wait four hours.
The internal heater of the cabinet heats the inside of the cabinet and lets the condensation evaporate.
6. Open the front and right doors. Refer to section [6.1](#).
7. Set the main breakers 1 and 2 to the on position.
 - a. Set the main breakers from the *Off* to the *Manual* position.
 - b. Set the main breakers from the *Manual* to the *Auto* position.
8. Close the doors. Refer to section [6.2](#).


4.8 Maintenance and cleaning

4.8.1 Maintenance schedule

Task	Frequency	Procedure
Clean the cabinet.	4 months	Refer to section 4.8.2 .
Do a check for damage on the EV charge cables and the connectors.	3 months	Refer to section 4.8.3 .
Do a check for damage on the cabinet.	6 months	Refer to section 4.8.3 .
Replace the filters for the air inlets.	1 year	Refer to section 4.8.4 .
Make sure that the manufacturer does maintenance on the EVSE.	1 year	Ask the manufacturer to do the task. Refer to section 1.12 . For the complete maintenance schedule refer to section 7.3 . For the required spare parts refer to section 7.4 .
Replace the filters for the air outlets.	After the first year, then 2 years	Refer to section 4.8.5 .

4.8.2 Clean the cabinet

Preliminary requirements

	<ul style="list-style-type: none"> • Cleaning agent. Refer to section 7.5. • Non-abrasive tool. Refer to section 7.5.
---	---



Danger:

Hazardous voltage

- Do not apply high-pressure water jets. Water can leak into the cabinet.



Note: When the EVSE is put in a corrosion sensitive environment, superficial rust is possible on welding points. This rust is only visual. There is no risk for the integrity of the cabinet. The procedure below removes the rust.

Procedure

1. Rinse with low-pressure tap water to remove rough dirt.
2. Apply a solution of cleaning agent to the cabinet and let it soak.
3. Manually remove dirt. Use the non-abrasive tool.



Caution: Do not use abrasive tools.

4. Rinse with low-pressure tap water.
5. If necessary, apply wax on the front for extra protection and gloss.
6. If there was rust and you want it not to appear again, apply a rust-preventive primer. Ask the manufacturer for specifications and instructions.

4.8.3

Do a check on the cabinet

1. Do a check for damage on these parts:

Part	Damage
EV charge cables and connectors	Cracks or ruptures Internal wires of the cable are visible
Touchscreen	Cracks Touch screen does not work
Coating of the cabinet	Cracks or ruptures
Cabinet	Signs of rust that cause ingress of water

2. If you see damage, contact the manufacturer. Refer to section [1.12](#).

4.8.4

Replace the air inlet filter

Preliminary requirements

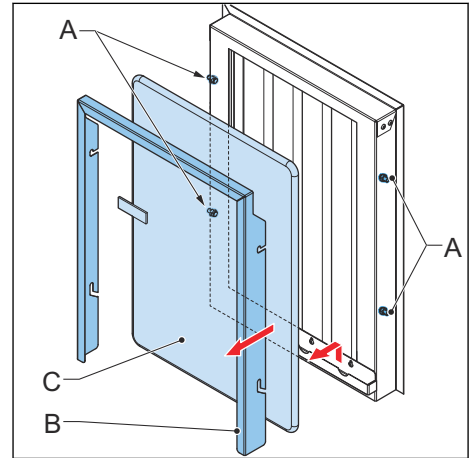
	<ul style="list-style-type: none"> • Spanner 		<ul style="list-style-type: none"> • Air inlet filters. Refer to section 7.4.
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Procedure

1. De-energize the EVSE. Refer to section [4.6](#).
2. Open the left and right doors. Refer to section [6.1](#).
3. Loosen the nuts (A).
Use the spanner.
4. Carefully remove these parts:
 1. Cover (B)
 2. Air inlet filter (C)



Caution: Prevent contamination of other parts of the EVSE. Make sure that contamination on the filter does not come off.



5. Install the new air inlet filter. Make sure that the air flow direction that is indicated on the air inlet filter corresponds with the air flow.
6. Install these parts:
 1. Clean air inlet filter
 2. Cover
7. Tighten the nuts.
8. Do the steps 3 to 7 again for the other air inlet filters.
9. Close the doors. Refer to section [6.2](#).

4.8.5

Replace the air outlet filter

Preliminary requirements

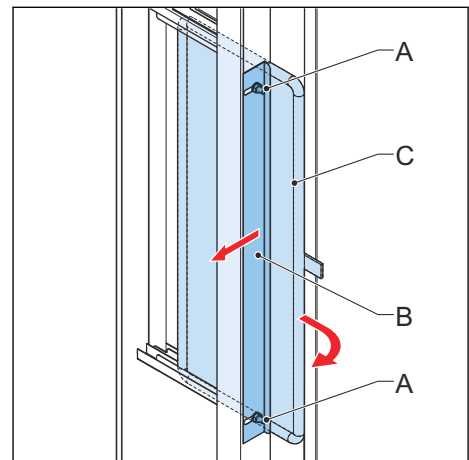
	• Spanner		• Air outlet filters. Refer to section 7.4 .
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Procedure

1. De-energize the EVSE. Refer to section [4.6.1](#).
2. Open the right door. Refer to section [6.1](#).
3. Loosen the nuts (A).
Use the spanner.
4. Pull the cover (B) to the front.
5. Carefully pull and remove the outlet filter (C).



Caution: Prevent contamination of other parts of the EVSE. Make sure that contamination on the filter does not come off.



6. Install the new air outlet filter. Make sure that the air flow direction that is indicated on the air outlet filter corresponds with the air flow.
7. Push the cover to the rear.
8. Tighten the nuts.

9. Do the steps 3 to 8 again for the other air outlet filters.
10. Close the doors. Refer to section [6.2](#).

5 Troubleshooting

5.1 Troubleshooting procedure

1. Try to find a solution for the problem with the aid of the information in this document.
2. If you cannot find a solution for the problem, contact your local representative of the manufacturer. Refer to section [1.12](#).

5.2 Troubleshooting table

Problem	Possible cause	Possible solution
The touchscreen is black and it does not light up when you touch it.	There is a problem with the AC input power supply.	<ol style="list-style-type: none"> 1. De-energize the EVSE. Refer to section 4.6. 2. Energize the EVSE. Refer to section 4.5.
The touchscreen is white and it does not show any message.	The EVSE is in continuous operation for more than 24 hours.	<ol style="list-style-type: none"> 1. De-energize the EVSE. Refer to section 4.6. 2. Energize the EVSE. Refer to section 4.5.
The touchscreen shows this message: <i>Unable to lock the connector.</i>	The EV charge cable is not connected correctly to the EV.	Connect the EV charge cable to the EV correctly.
	You are not authorized for the charge session.	Make sure that you have authorization to charge the EV.
The touchscreen shows this message: <i>Unable to unlock the connector from car.</i>	A dangerous voltage is present on the EV charge cable.	<ol style="list-style-type: none"> 1. Wait 5 minutes. 2. Start the charge session again. Refer to section 4.4.2.
The touchscreen shows this message: <i>Insulation detection error.</i>	There is an insulation problem on the EV or the EVSE.	<ol style="list-style-type: none"> 1. Try another EVSE to charge the EV. 2. Contact your local representative of the manufacturer. Refer to section 1.12.
The touchscreen shows this message: <i>The vehicle misbehaved.</i>	There is a communication problem between the EV and the EVSE.	Contact your local representative of the manufacturer. Refer to section 1.12 .

6 Access to parts

6.1 Open the doors

Preliminary requirements



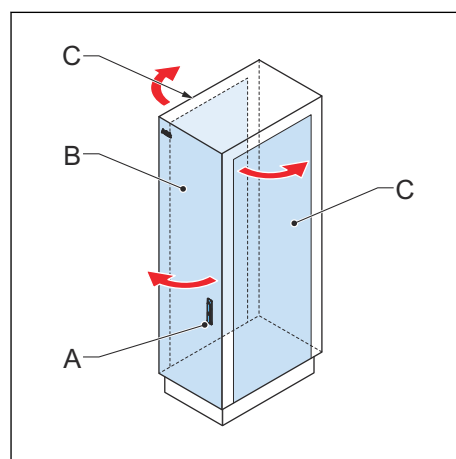
- Door key



Note: There is one unique door key for each cabinet.

Procedure

1. Unlock the lock (A) of the front door (B).
Use the door key.
2. Open the front door.
3. If necessary, open the left or right doors (C) through the opening of the front door.



6.2 Close the doors

Preliminary requirements



- Door key



Danger:

Hazardous voltage

- Make sure that only qualified persons have access to the door key.

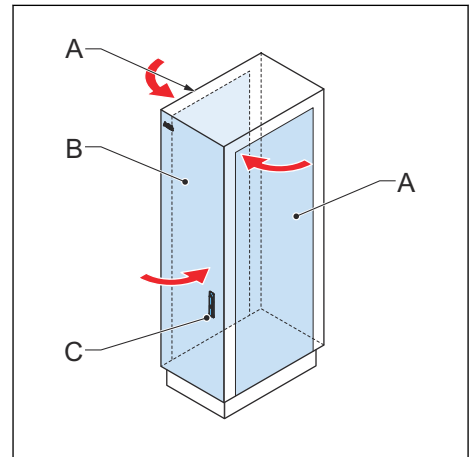


Note: There is one unique door key for each cabinet.

Access to parts

Procedure

1. If the left or right doors (A) are open, close the doors through the opening of the front door.
2. Close the front door (B).
3. Lock the lock (C) of the front door. Use the door key.



7 Technical data

7.1 EVSE type

The EVSE type is a code.

The code is made out of 4 parts: T UV W

Code part	Description	Value	Meaning of the value
T	Brand	Terra	-
U	Power rating	9	90 kW
		12	120 kW
		18	180 kW
V	Design generation	4	Fourth generation
W	EV charge cable connection	C	One CCS connection
		CC	Two CCS connections
		CJ	One CCS connection and one ChadeMo connection

Example

Terra 94 C:

- T = Terra, Brand = Terra
- U = 9, Power rating = 90 kW
- V = 4, Design generation = fourth generation
- W = C, EV charge cable connection = one CCS connection

7.2 General specifications

Parameter	Specification
Compliance and safety	CE
	CHAdeMO 1.2
IP rating	The type plate shows the specification. Refer to section 2.1 .
IK rating according to IEC 62262: enclosure	IK10
IK rating according to IEC 62262: touchscreen	IK08
EMC rating	Class B

7.3 Maintenance schedule for the service engineer

Part name	Years after startup															
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Filter inlet kit	-	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Filter outlet kit	-	R	I	R	I	R	I	R	I	R	I	R	I	R	I	R
Fan cabinet	-	I	I	I	I	R	I	I	I	I	R	I	I	I	I	R
Power module	-	I	I	I	I	I	I	I	I	I	R	I	I	I	I	I
DC fuse 200 A	-	I	I	I	I	R	I	I	I	I	R	I	I	I	I	R
CPI Combo CCS	-	I	I	I	I	I	I	I	I	I	I	I	I	I	I	R
CPI CHAdeMO	-	I	I	I	I	I	I	I	I	I	I	I	I	I	I	R
Touchscreen/ CPU	-	I	I	I	I	I	I	I	I	I	I	I	I	I	I	R
DC outlet contac- tor	-	I	I	I	I	I	I	I	I	I	I	I	I	I	I	R
Power supply	-	I	I	I	I	R	I	I	I	I	R	I	I	I	I	R
CCS connector and cable	-	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
CHAdeMO con- nector and cable	-	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Gun holders	-	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I

- 'I' = Inspection or other procedure
- 'R' = Replacement

7.4 Spare parts

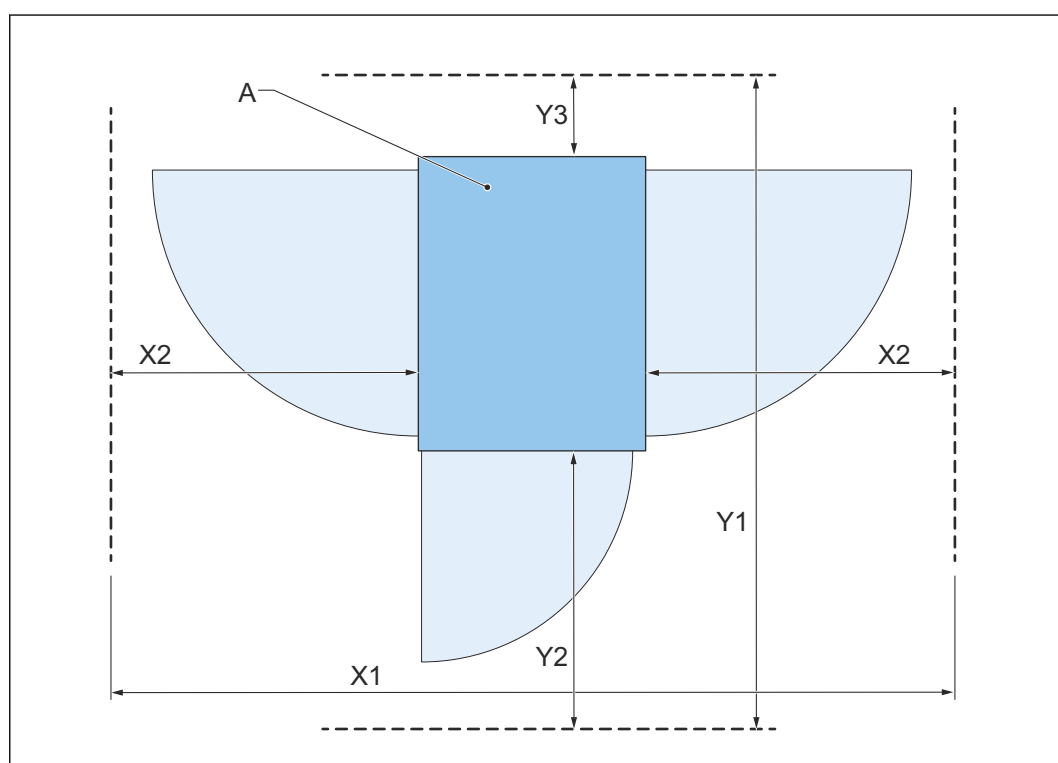
Part Name	Part number	Quantity
Air inlet filter	XUF.N0001.0	4
Air outlet filter	XUF.N0002.0	3
Cooling fan	ZFV.V2N00.0	1
Power module	YPA.00267	3 x Terra 94 4 x Terra 124 6 x Terra 184
DC fuse 500 A	ZEG.00132	1 x Terra x4 C 2 x Terra x4 CC/CJ/JJ
CPI Combo CCS	YVD.V39A3.0	1 x Terra x4 C/CJ 2 x Terra x4 CC
CPI CHAdeMO	YVD.V39A6.0	1 x Terra x4 CJ 2 x Terra x4 JJ
Touchscreen/CPU	YVD.V2N11.0	1
DC outlet contactor	ZEQQ.00104	1 x Terra x4 C 2 x Terra x4 CC/CJ/JJ
Interlink contactor	ZEQ.00124	2 x Terra x4 CC/CJ/JJ

Part Name	Part number	Quantity
Auxiliary power supply	YPA.00205	1
CCS connector and cable	ZLH.01085	1 x Terra x4 C/CJ 2 x Terra x4 CC
CHAdemo connector and cable	YVD.V3G25.0	1 x Terra x4 CJ 2 x Terra x4 JJ
Gun holder	XAB.V2N21.0	1 x for CCS type 1 UL connection
	XAB.V2N17.0	1 x for CCS type 2 CE connection
	XAB.V2N18.0	1 x for ChadeMo connection
Rain cap for the gun holder	XEE.V2N50.0	1 x for CCS type 1 UL connection
	XEE.V2N49.0	1 x for CCS type 2 CE connection
	XEE.V2N51.0	1 x for ChadeMo connection

7.5 Cleaning specifications

Parameter	Specification
Cleaning agent	pH value between 6 and 8
Non-abrasive tool	Non-woven nylon hand pad

7.6 Floor space requirements



A	Cabinet	Y1	Total depth
X1	Total width	Y2	Space to open the front door
X2	Space for air inlet and to open the left and right doors	Y3	Space for air outlet

Parameter	Specification [mm]
X1	1550
X2	510
Y1	1460
Y2	600
Y3	100

7.7 Ambient conditions

Parameter	Specification
Environment, general	Indoor and outdoor
Storage temperature	-40°C to +70°C
Temperature during use	-35°C to +50°C
Maximum altitude above sea level	2500 m
Temperature derating	40°C

7.8 Noise level

Noise level	Specification
Maximum noise level	< 62 dB(A)

7.9 Logic interface specifications

General specifications

Parameter	Specification
RFID standard	ISO 14443 A+ B to part 4 and ISO/IEC 15693
RFID-supported applications	Mifare, NFC, Calypso, Ultralight, PayPass, HID and other
Network connection	3G/4G modem 10/100 Base-T Ethernet

Ethernet cable

Parameter	Specification
Ethernet type	RJ45
Cable type	8P + PE, shielded
Example of a cable for distance of 75 m or less	HELUKAT 600E

Parameter	Specification
Bandwidth, upload	Minimum 128 kbit/s
Bandwidth, download	Minimum 4 Mbit/s
Availability	99.9%

7.10 DC output specifications

7.10.1 General specifications

Parameter	Specification
DC output voltage range, CCS	150-920 V DC
DC output voltage range, CHAdeMO	150-500 V DC
Minimum DC output current	15 A
Connection standard	CHAdeMO 1.2 CCS

7.10.2 Terra 94

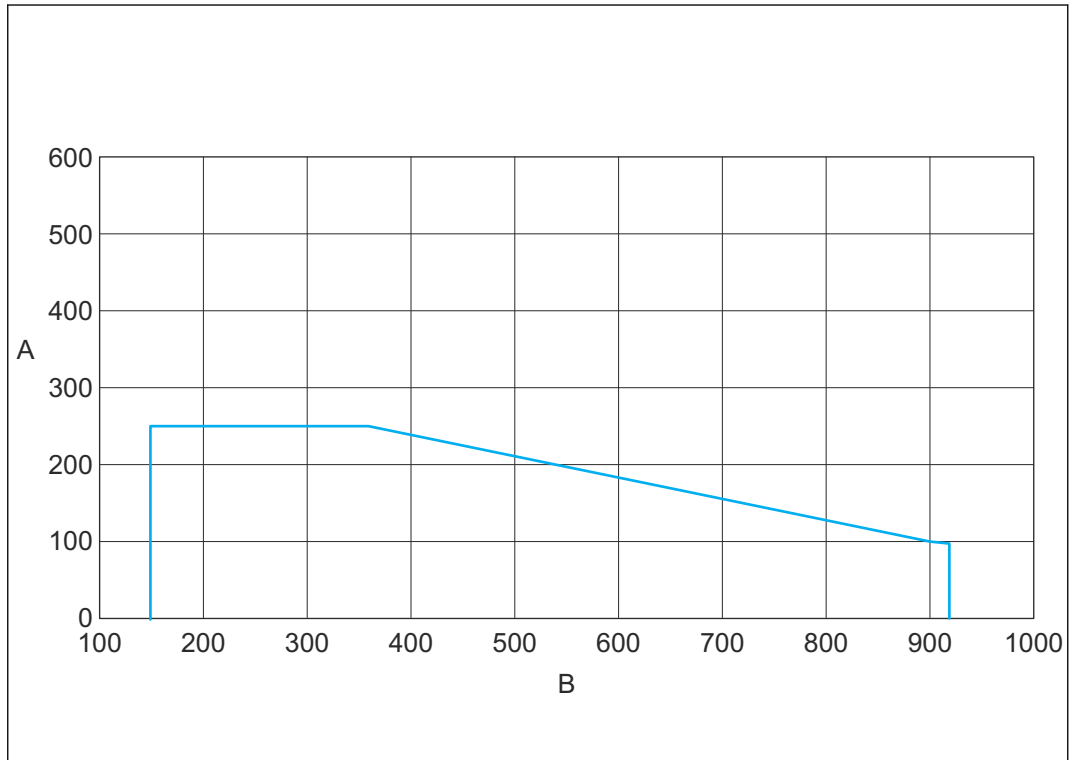
Parameter	Specification
DC output power, mode 1, continuously on one EV charge cable	Maximum 90 kW
Simultaneous DC on two outlets	No. One DC output operates at a time.
Maximum DC output current, CCS or CHAdeMO	200 A



Note:

- You can upgrade the EVSE to deliver 120 kW or 180 kW and enable parallel charging on two EVs.
- You can install a different EV charge cable to increase the output current.

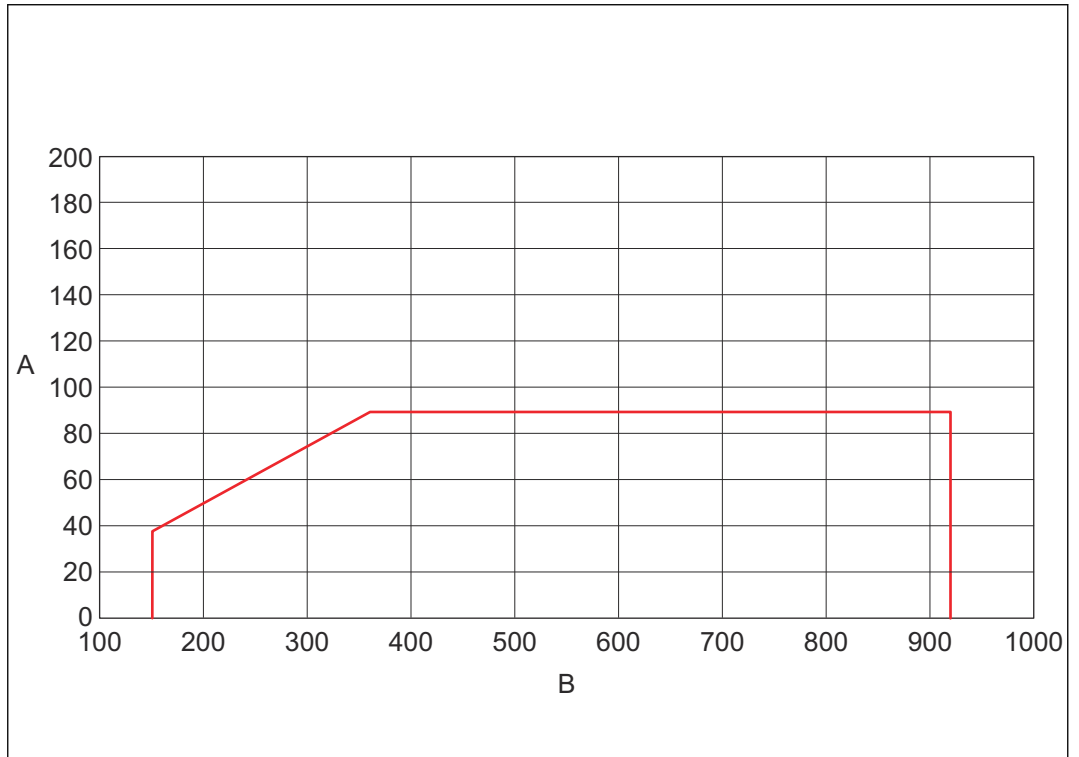
Output current in function of output voltage



A Output current [A]

B Output voltage [V]

Output power in function of output voltage



A Output power [kW]

B Output voltage [V]

7.10.3

Terra 124

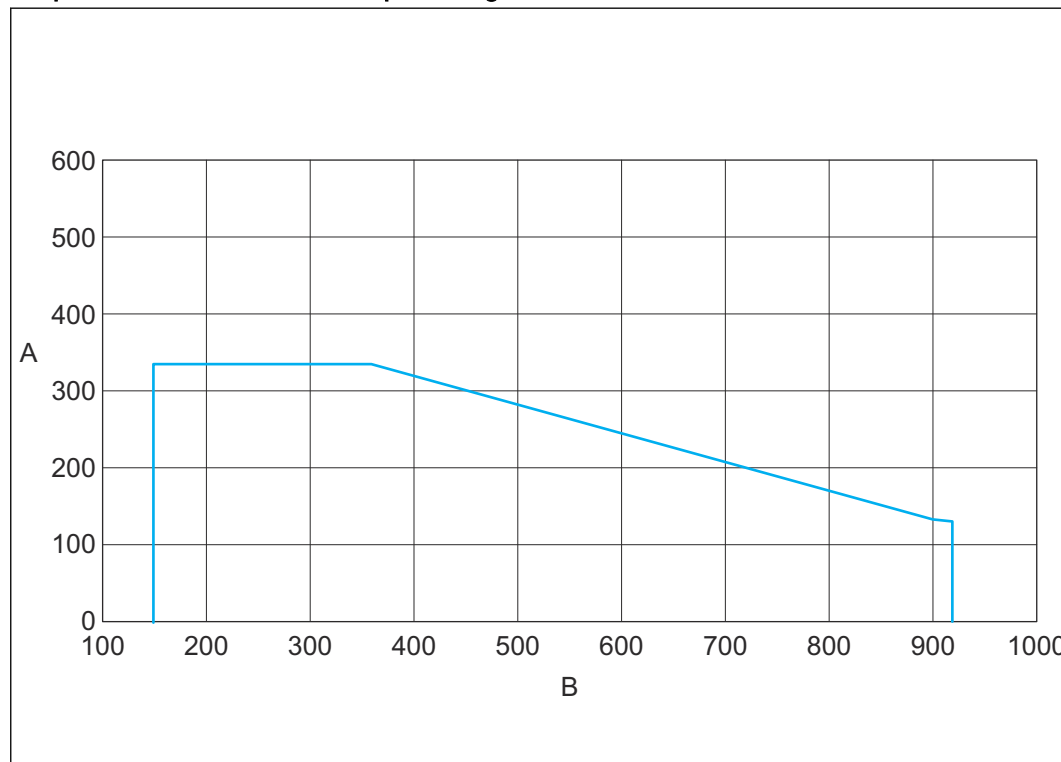
Parameter	Specification
DC output power, mode 1, continuously on one EV charge cable	Maximum 120 kW
DC output power, mode 2, continuously on two EV charge cables	Maximum 60 kW
Simultaneous DC on two outlets	Yes. Two DC outputs operate in parallel.
Maximum DC output current CCS or CHAdeMO	200 A
Maximum DC output current Cooled cable (option)	300 A



Note:

- The user can select mode 1 or 2.
- You can install a cooled cable on a standard EVSE.

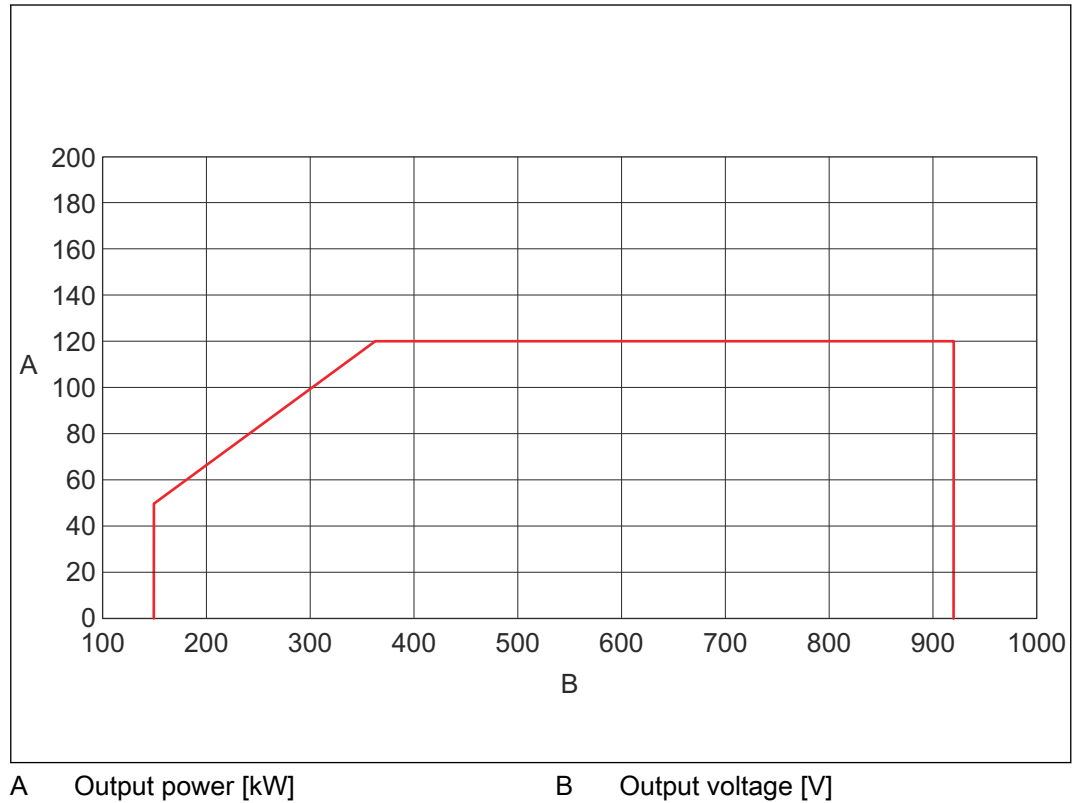
Output current in function of output voltage



A Output current [A]

B Output voltage [V]

Output power in function of output voltage



7.10.4

Terra 184

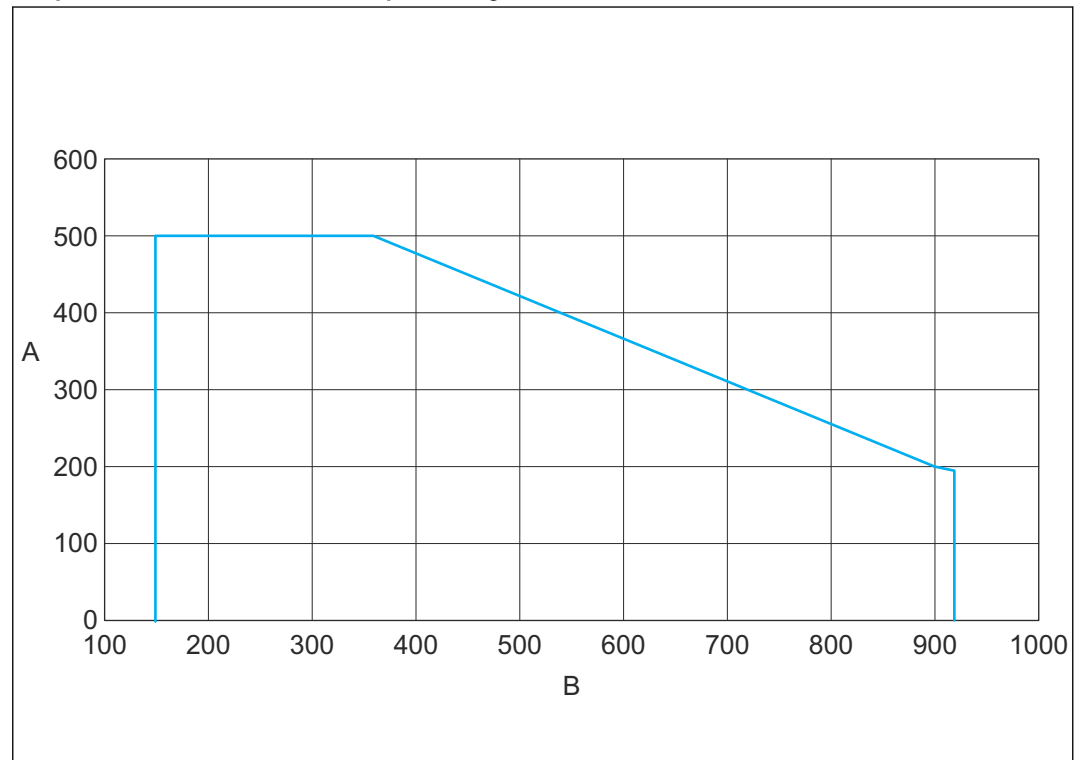
Parameter	Specification
DC output power, mode 1, continuously on one EV charge cable	Maximum 180 kW
DC output power, mode 2, continuously on two EV charge cables	Maximum 90 kW
Simultaneous DC on 2 outlets	Yes. Two DC outputs operate in parallel.
Maximum DC output current CCS or CHAdeMO	200 A
Maximum DC output current Cooled cable (option)	300 A



Note:

- The user can select mode 1 or 2.
- You can install a cooled cable on a standard EVSE.

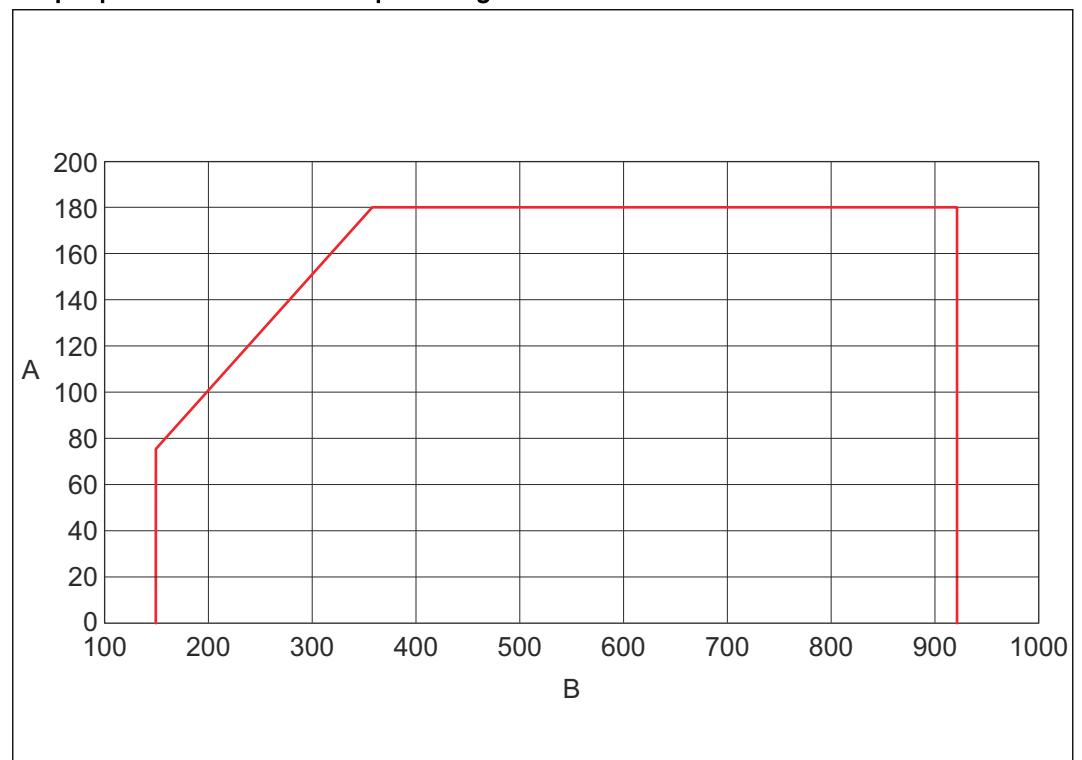
Output current in function of output voltage



A Output current [A]

B Output voltage [V]

Output power in function of output voltage



A Output power [kW]

B Output voltage [V]

7.11 Power consumption

7.11.1 General specifications

Parameter	Specification
Standby power	80 W, excluding the heater



Note: The heater will operate daily when the outside air reaches the dew point, to avoid condensation inside the cabinet. When the heater operates, the heater will use most of the required standby power.

7.11.2 Terra 94

Parameter	Specification [kVA]
Power consumption during normal operation	5.4

7.11.3 Terra 124

Parameter	Specification [kVA]
Power consumption during normal operation	7.2

7.11.4 Terra 184

Parameter	Specification (kVA)
Power consumption during normal operation	10.8

ABB