

REPOWER

CHARGING ELECTRIC VEHICLES

installation, operation and maintenance manual



 CONTENTS

1	ABOUT THIS DOCUMENT.....	6
1.1	Function of this document.....	6
1.2	Target group.....	6
1.3	Revision history.....	6
1.4	Language.....	6
1.5	Illustrations.....	6
1.6	Units of measurement.....	6
1.7	Typographical conventions.....	6
1.8	How to use this document.....	7
1.9	General symbols and signal words.....	7
1.10	Special symbols for warnings and dangers.....	8
1.11	Related documents.....	8
1.12	Manufacturer and contact data.....	9
1.13	Abbreviations.....	9
1.14	Terminology.....	9
1.15	Orientation agreements.....	10
2	DESCRIPTION.....	11
2.1	Short description.....	11
2.2	Intended use.....	11
2.3	Type plate (IEC portfolio).....	12
2.4	Working principle.....	13
2.5	Overview.....	14
2.5.1	Overview of the system.....	14
2.5.2	Overview of the EVSE, outside.....	15
2.5.3	Overview of the EVSE, inside.....	16
2.6	Options.....	17
2.6.1	4G Communication.....	17
2.7	Control elements.....	17
2.7.1	LED indicators.....	17
2.8	TerraConfig app to do the commissioning	18
3	SAFETY.....	19
3.1	Liability.....	19
3.2	Responsibilities for the owner.....	19
3.3	Required qualifications for the installation engineer.....	20
3.4	Approved operator.....	20
3.5	Personal protective equipment.....	20
3.6	General safety instructions.....	20
3.7	Safety instructions for earthing.....	21
3.8	Safety instructions during installation.....	21
3.9	Safety instructions for use.....	21
3.10	Safety instructions during cleaning or maintenance.....	22
3.11	Signs on the EVSE.....	22
3.12	Discard the EVSE or parts of the EVSE.....	23
4	INSTALLATION.....	24
4.1	General installation procedure.....	24
4.2	Unpack the EVSE.....	24

5	SITE PREPARATION.....	25
5.1	Select the site	25
5.2	Prepare the site.....	25
6	MECHANICAL INSTALLATION.....	26
6.1	General mechanical installation procedure.....	26
6.2	Prepare the holes for the mounting screws.....	26
6.3	Install the EVSE on the wall.....	27
6.4	Install the socket.....	27
6.5	Install the drain pipe.....	28
7	ELECTRICAL INSTALLATION.....	29
7.1	General electrical installation procedure.....	29
7.2	Insert the AC input cable.....	29
7.3	Connect the AC input cable.....	30
7.3.1	Connect the AC input cable, 3 phase.....	30
7.3.2	Connect the AC input cable, 1 phase.....	30
7.3.3	Secure the cables.....	31
7.4	Communication connections.....	31
7.4.1	General procedure.....	31
7.4.2	Insert the Ethernet cable.....	32
7.4.3	Connect the Ethernet cable.....	32
7.4.4	Insert the wires for the smart meter communication.....	33
7.4.5	Connect the wires for the smart meter communication.....	33
8	COMMISSIONING.....	35
8.1	General commissioning procedure.....	35
8.2	Set up the EVSE.....	35
9	OPERATION.....	36
9.1	Prepare before use.....	36
9.2	Energize the EVSE.....	36
9.3	Start a charge session.....	36
9.3.1	EVSE with a socket.....	36
9.4	Wake up the EV when it is unavailable.....	37
9.4.1	Wake up the EV (EVSE without display).....	37
9.4.2	Wake up the EV (EVSE with display).....	37
9.5	Stop a charge session.....	37
9.5.1	EVSE with a socket.....	37
10	MAINTENANCE AND CLEANING.....	38
10.1	Maintenance schedule.....	38
10.2	Clean the cabinet.....	38
10.3	Do a check on the cabinet.....	39
11	TROUBLESHOOTING.....	40
11.1	Access to parts.....	40
11.2	Troubleshooting procedure.....	40
11.3	Remove the maintenance cover.....	40
11.4	Troubleshooting table.....	41

11.4.1	Remove the cabinet cover.....	44
11.4.2	Install the cabinet cover.....	44
11.4.3	Install the maintenance cover.....	44
11.5	De-energize the EVSE.....	45
12	TECHNICAL DATA.....	46
12.1	EVSE Type.....	46
12.2	General specifications.....	46
12.3	Ambient conditions.....	47
12.4	Mass	47
12.5	Protective device compliance.....	48
12.6	Parts included in the delivery.....	48
12.7	Required tools for installation.....	48
12.8	Requirements for the wall.....	49
12.9	Noise level.....	49
12.10	Dimensions.....	50
12.11	Space requirements for installation.....	51
12.12	AC input specifications.....	51
12.12.1	General specifications.....	51
12.12.2	400 VAC 3-phase with neutral (TT, TN).....	52
12.12.3	AC input specifications.....	52
12.13	General logic interface specifications.....	52
12.14	Cable specifications.....	53
12.14.1	AC input cable.....	53
12.14.2	Ethernet cable specifications.....	53
12.14.3	Dry contacts input.....	53
12.15	RS485 cable specifications.....	54
12.16	Dry contacts output.....	54
12.17	AC output specifications.....	55
12.17.1	AC output specifications.....	55
12.18	Torque specifications.....	55
12.19	Cleaning specifications.....	55
13	APPENDIX.....	56
13.1	RePower Quick Guide.....	56

1 ABOUT THIS DOCUMENT

1.1 Function of this document

The document is only applicable for this Electric Vehicle Supply Equipment (Symbiosis), including the variants and options listed in section [12.1](#). The Electric Vehicle Supply Equipment (Symbiosis) from here on in the document is referred to as the EVSE. The document gives the information that is necessary to do these tasks:

- Installation
- Commissioning
- Operation
- Operator maintenance

1.2 Target group

The document is intended for two target audiences:

1. Installation and commissioning: qualified installation engineers. For a description of the required qualifications, refer to section [3.3](#).
2. Operation and operator maintenance: operator or owner. For a description of the approved operator, refer to section [3.4](#).

1.3 Revision history

Version	Date	Description
001	March 2022	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.	
-	Make sure that the power supply to the EVSE is disconnected.	

Signal word	Description	Symbol
-	Electrotechnical expertise is required, according to the local rules.	
-	Alternating current supply	



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
	Hot surface that gives risk of burn injuries



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
Repower Quick guide. Refer to section 13.1 .	All target groups
Declaration of conformity (CE)	All target groups

You can find all related documents here: <http://go.repower.com/helpSymbiosis>.

1.12 Manufacturer and contact data

Manufacturer

ABB E-Mobility B.V.
Heertjeslaan 6
2629 JG Delft
The Netherlands

Contact data for support

Repower Infrastructure in your country can give you support on the EVSE.
Customer service: servizio.clienti@repower.com

1.13 Abbreviations

Abbreviation	Definition
AC	Alternating current
BESS	Battery energy storage system
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

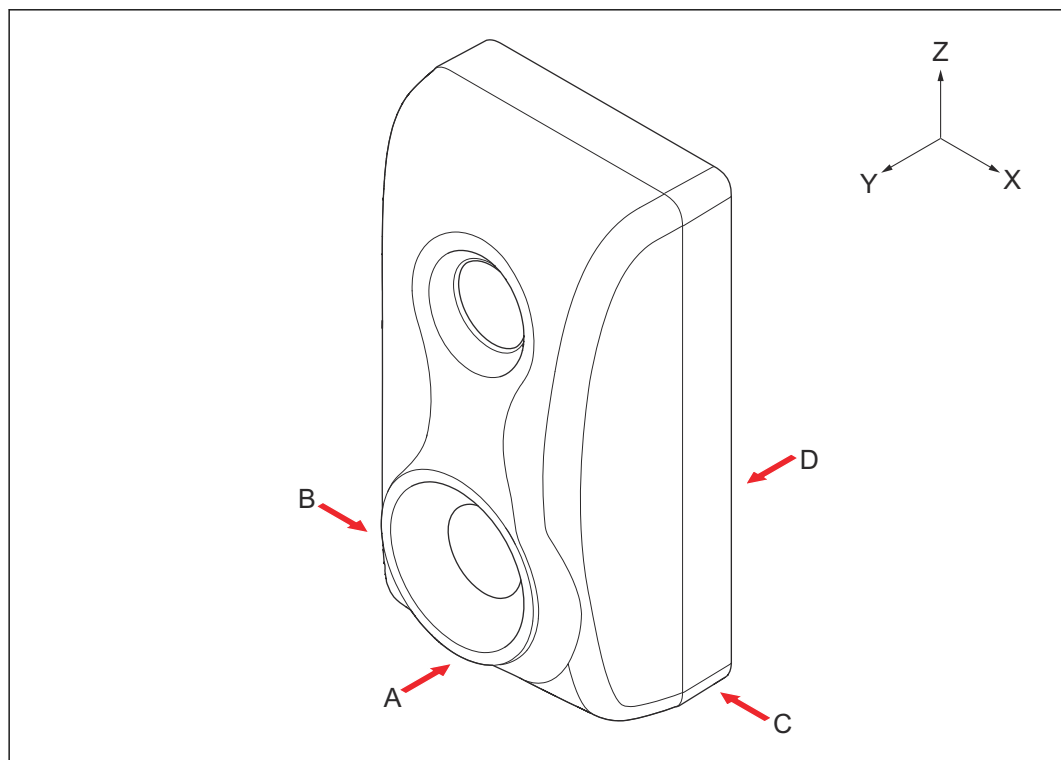
Term	Definition
Network operating center of the manufacturer	Facility of the manufacturer to do a remote check on the correct operation of the EVSE
Cabinet	Enclosure of the EVSE, including the components on the inside
Contractor	Third party that the owner or site operator hires to do engineering, civil 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 Short description

The EVSE is an AC charging station that you can use to supply electricity to an EV. The EVSE can be connected to the internet.



Note:

The EVSE can be installed horizontally or vertically.

2.2 Intended use

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

The technical data of the EVSE must comply with the properties of the electrical grid, the ambient conditions and the EV. Refer to chapter [12](#).

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

The EVSE AC input is intended for a hardwired installation that complies with the applicable national regulations.

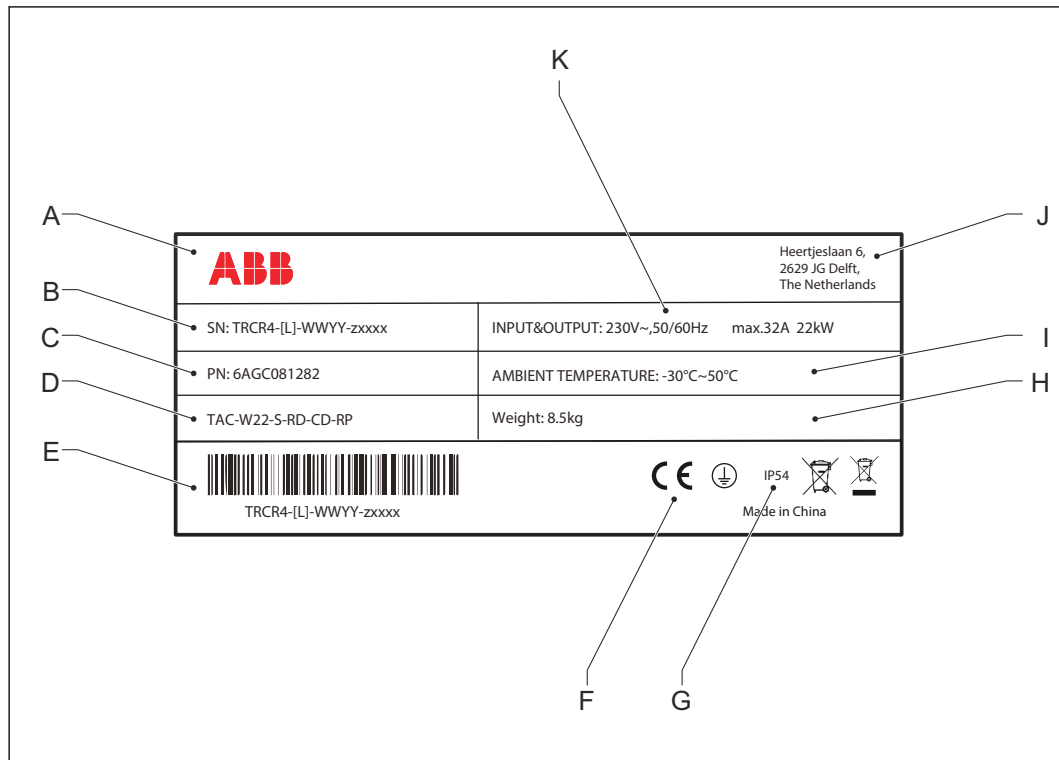


Danger:

General risk

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

2.3 Type plate (IEC portfolio)

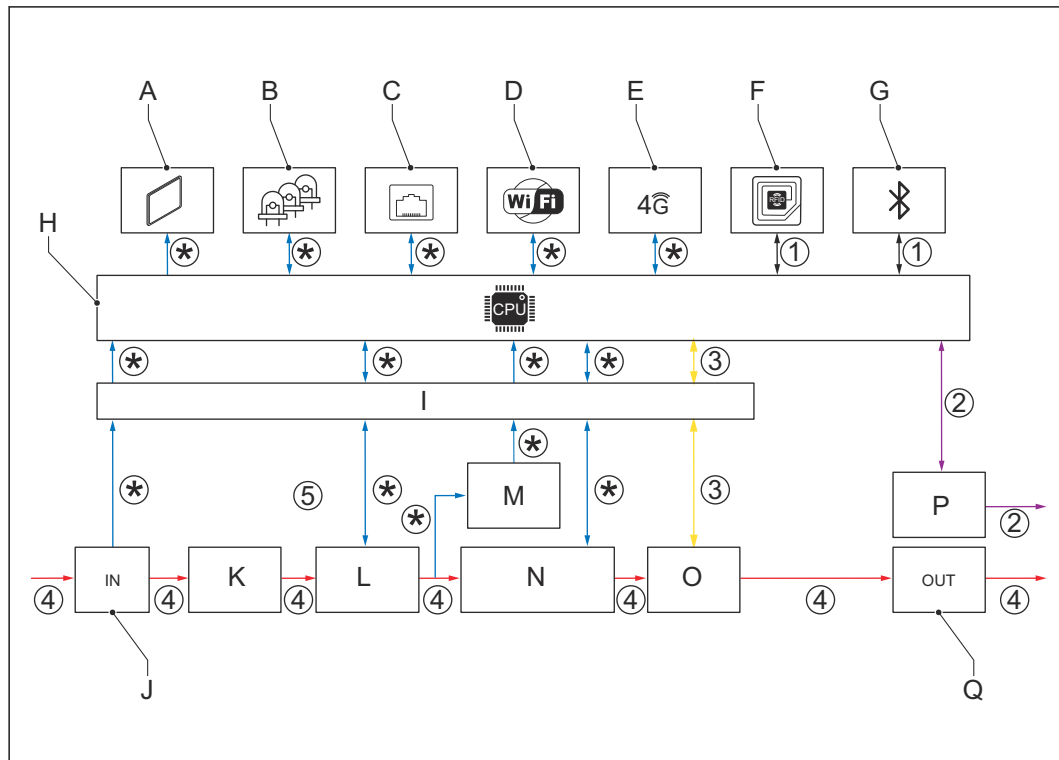


- | | | | |
|---|--|---|-----------------------------|
| A | Manufacturer | G | Additional EVSE rating data |
| B | Serial number | H | EVSE mass |
| C | Part number of the EVSE | I | EVSE ambient temperature |
| D | Product model number | J | Address of the manufacturer |
| E | Barcode with the serial number of the EVSE | K | EVSE rating |
| F | CE mark | | |



Note: The data in the illustration is only an example. Find the type plate on your EVSE to see the applicable data. Refer to section [2.5.2](#).

2.4 Working principle



A	Display	J	AC/DC power supply
B	LEDs	K	AC input
C	Ethernet	L	Surge protection
D	WiFi	M	Earth(ground) fault protection
E	4G	N	AC input metering
F	RFID	O	AC isolation relay
G	Bluetooth	P	Control pilot
H	CPU system	Q	AC output
I	Isolation		

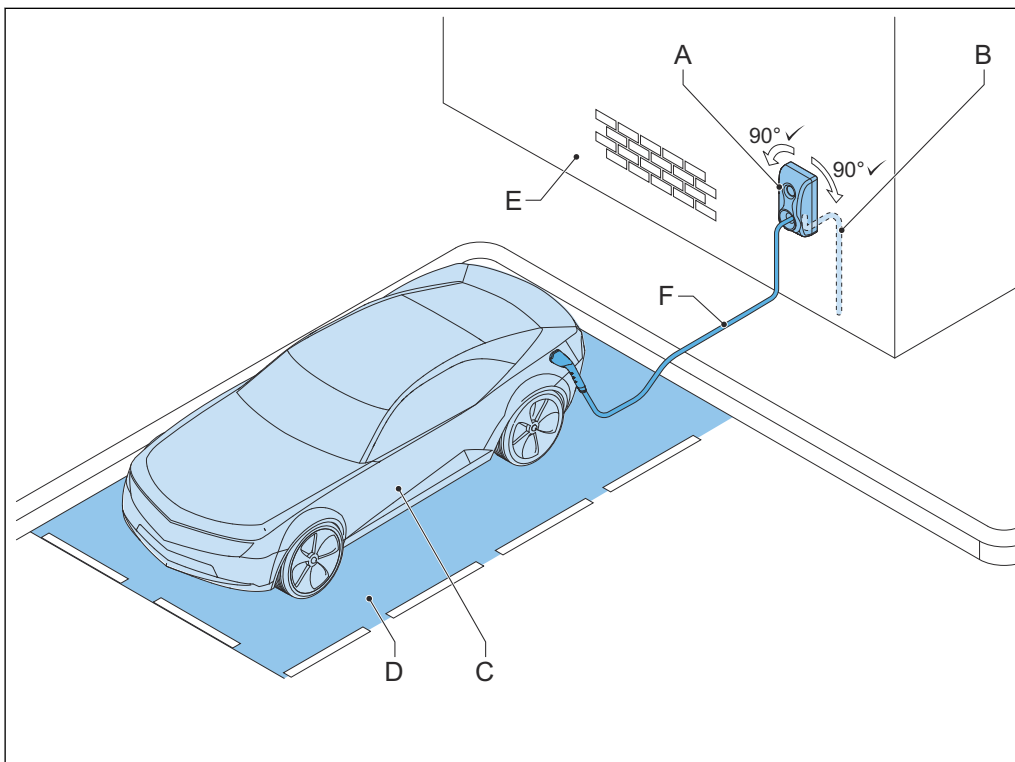
The colored lines show the process of the charge session.

1. The user initiates a charge session request (black lines).
2. The EVSE verifies the status of the EV (purple lines).
3. The EVSE goes on and AC power goes to the EV (yellow lines).
4. The charge session starts. AC power flows from the power grid to the EV (red lines).
5. The electrical interfaces of the EVSE communicate with the on-board computer (blue lines).

(*): Connections between parts of the EVSE and the CPU system. The arrow shows the direction of the input and output signals.

2.5 Overview

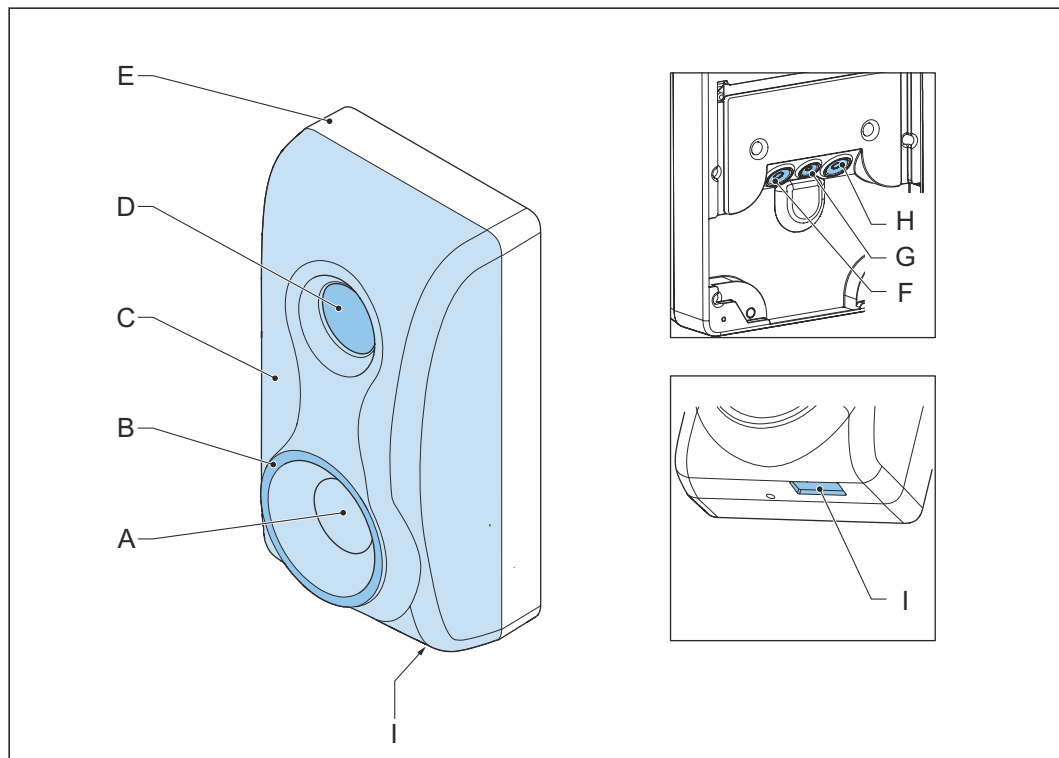
2.5.1 Overview of the system



- A EVSE
- B AC grid input
- C EV
- D Parking space
- E Structure to install the EVSE on
- F EV charge cable

Part	Function
EVSE	Refer to section 2.2. The EVSE can be installed horizontally or vertically.
Structure	To install the EVSE on and to keep the EVSE in position.
AC grid input	To supply the electricity to the EVSE
EV charge cable	To conduct the current from the EVSE to the EV
EV	The EV of which the batteries need to be charged
Parking space	Location for the EV during the charge session

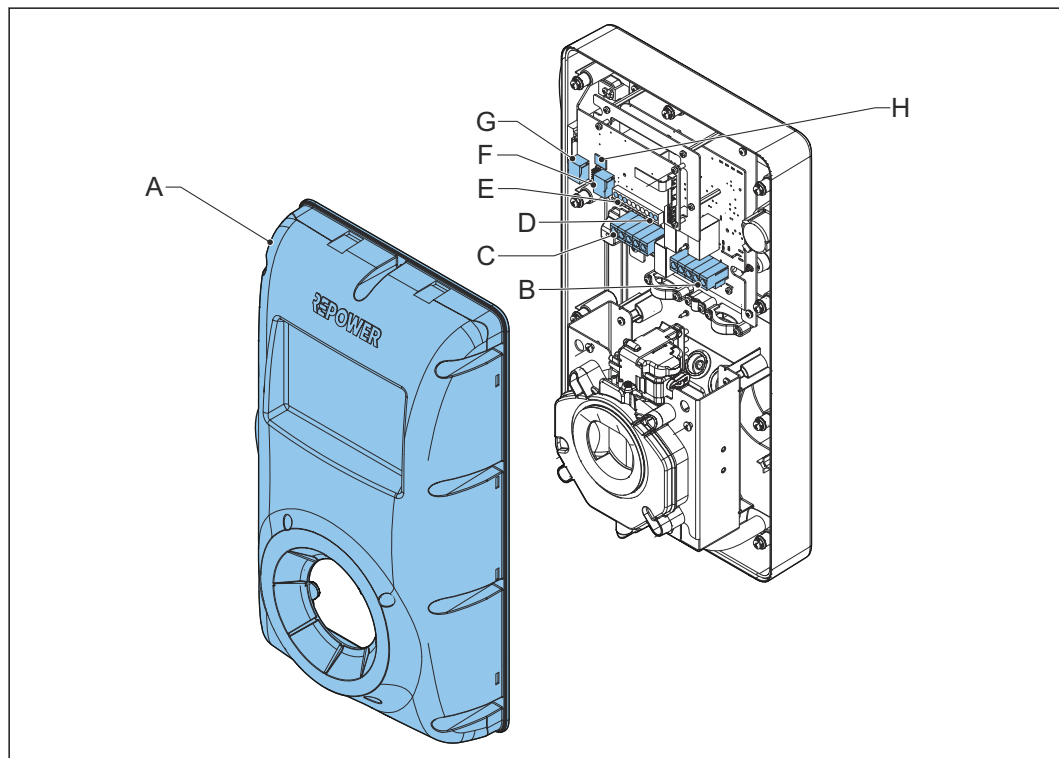
2.5.2 Overview of the EVSE, outside



A	Connection for the EV charge cable	F	Opening for the smart meter connections
B	LED indicator	G	Opening for the Ethernet cable
C	Cabinet cover	H	Opening for the AC input cable
D	Display	I	Type plate
E	Enclosure		

Part	Function
Connection for the EV charge cable	To connect the EV charge cable
LED indicator	To show the status of the EVSE and the charge session. Refer to section 2.7.1 .
Cabinet cover	To prevent a user to access the installation and maintenance parts of the EVSE
Display	To control and monitor the charge session
Enclosure	To reduce the accessibility of unqualified persons to the inside of the EVSE
Openings	Openings for the cables that go into the EVSE
Type plate	To show the identification data of the EVSE. Refer to section 2.3 .

2.5.3 Overview of the EVSE, inside



- | | | | |
|---|--|---|--------------------------------|
| A | Maintenance cover | E | Smart meter connection |
| B | Terminal block for the EV charge cable or the socket | F | Secondary Ethernet connection |
| C | Terminal block for the AC input | G | Primary Ethernet connection |
| D | Terminal block for dry contacts input and output | H | Socket for a Nano-M2M SIM card |

Part	Function
Maintenance cover	To prevent access to the electrical components of the EVSE
Terminal block for the EV charge cable	To connect the EV charge cable or the socket outlet
Terminal block for the AC input	To connect the AC input cable from the grid
Terminal block for dry contacts input and output	Not used
Smart meter connection	To connect the cables for Modbus RTU - RS485
Secondary Ethernet connection	To use one Ethernet cable connection for multiple EVSEs. There is no communication between the EVSEs.
Primary Ethernet connection	To connect the Ethernet cable
Socket for a Nano-M2M SIM card	To connect the EVSE to the internet 4G

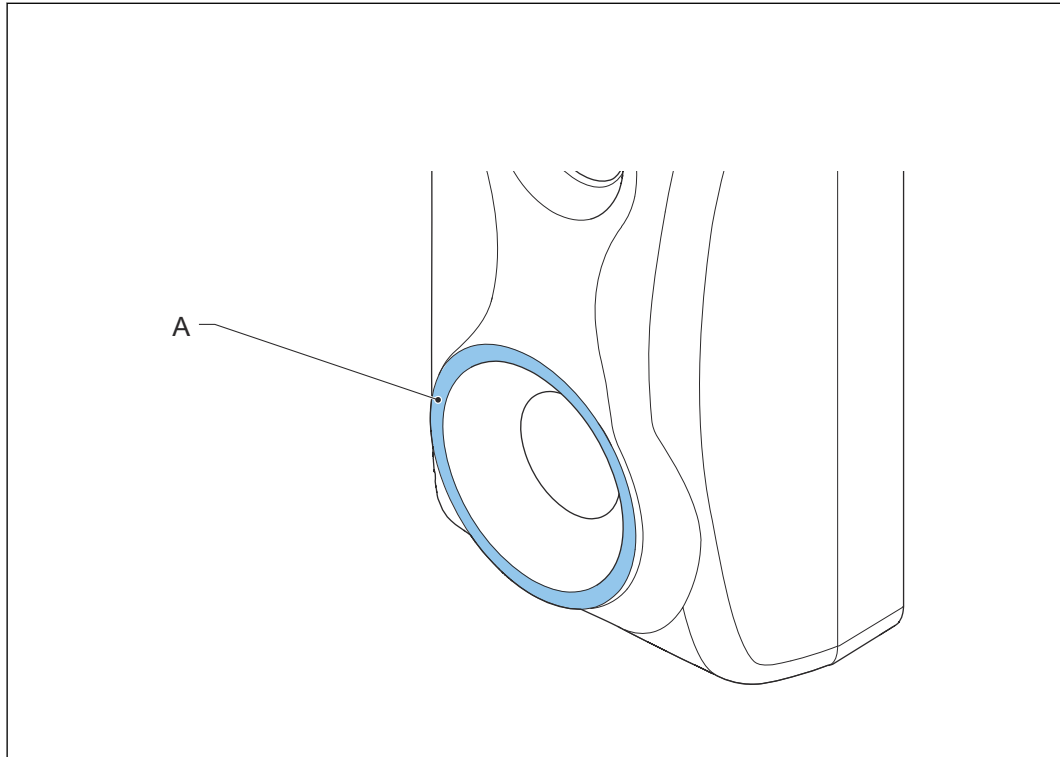
2.6 Options

2.6.1 4G Communication

You can connect to a 4G network.

2.7 Control elements

2.7.1 LED indicators



A LED ring

Color of the LED ring	Status of the LED ring	Status of the EVSE
Green	On	The EVSE is on
		The EVSE is idle
	Flashing	The charge cable of the EV is connected to the inlet of the EV and to the socket of the EVSE.
Blue	Flashing	The EVSE is waiting for charging
	Moving	The EVSE is charging
	Flashing	The charging is finished
Red	On	The EVSE has an error
Yellow	Flashing	The EVSE is reserved

2.8 TerraConfig app to do the commissioning

The *TerraConfig* app is available on the *Apple Store* and on the *Google Play Store*.
The app is necessary to do the commissioning.

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 Responsibilities for the owner



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 the owner bears legal responsibility for the protection of the user, other employees or third parties. The owner has the responsibilities that follow:

- To know and implement the local rules
- To identify the hazards (in terms of a risk assessment), resulting from the working conditions on the site
- To operate the EVSE with the protective devices installed
- To make sure that all protective devices are installed after installation or maintenance work
- To make an emergency plan that instructs people what to do in case of an emergency
- To make sure that all employees and third parties are qualified according to the applicable local rules to do the work
- To make sure that there is sufficient space around the EVSE to safely do maintenance and installation work
- To 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

3.3 Required qualifications for the installation engineer







- The qualified installation engineer fully knows the EVSE and its safe installation.
- The installation engineer is qualified according to the applicable local rules to do the work.
- The qualified installation engineer obeys all local rules and the instructions in the installation manual.
- It is the responsibility of the owner of the EVSE to make sure that all qualified installation engineers obey the local rules, the installation instructions, and the specifications of the EVSE.

3.4 Approved operator

- The approved operator is a person that fully knows the machine and its safe operation.
- Approved operators obey all applicable safety rules.

3.5 Personal protective equipment

Symbol	Description
	Protective clothing
	Safety gloves
	Safety shoes
	Safety glasses

3.6 General safety instructions

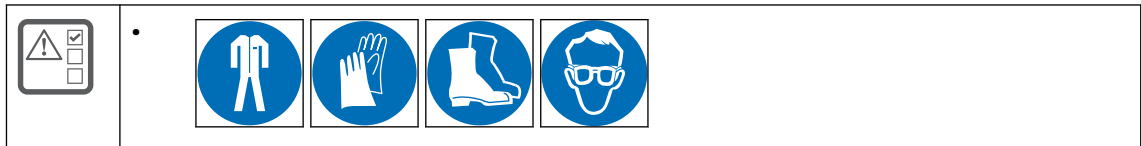
- This document, the related documents and the warnings included do not replace your responsibility to use your common sense when you do work on the EVSE.
- Only do the procedures that the related documents show and that you are qualified for.
- Obey the local rules and the instructions in this manual.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

3.7 Safety instructions for earthing

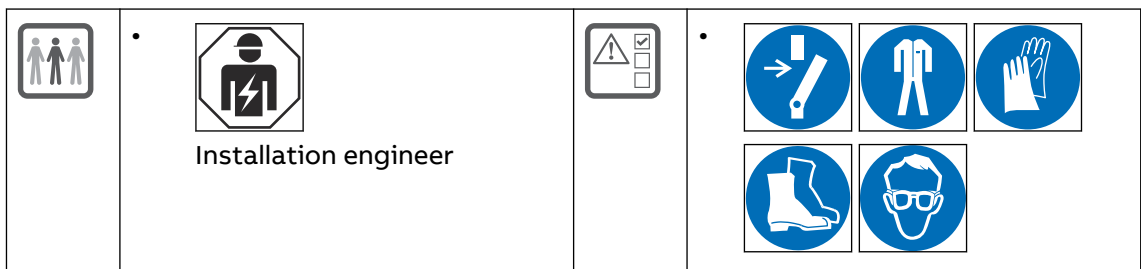
Preliminary requirements



- Make sure that the EVSE is connected to a grounded, metal, permanent wiring system, or an equipment-grounding conductor must be run with the circuit conductors and connected to the equipment grounding terminal or lead on the product.
- Make sure that the connections to the EVSE comply with all applicable local rules.

3.8 Safety instructions during installation

Preliminary requirements



- Make sure that there is no voltage on the AC input cables during the complete installation procedure.
- Keep unqualified personnel at a safe distance during installation.
- Only use electrical wires of sufficient gauge and insulation to handle the rated current and voltage demand.
- Make sure that the load capacity of the grid is in accordance with the EVSE.
- Earth the EVSE correctly. Refer to section [3.7](#).
- Make sure that the wiring inside the EVSE is protected from damage and cannot get trapped when you open or close the cabinet.
- Make sure that water cannot enter the cabinet.
- Protect the EVSE with safety devices and measures that the local rules specify.
- If 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 [3.5](#).

3.9 Safety instructions for use

- In these situations, 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.

3.10 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 [3.5](#).

3.11 Signs on the EVSE

Symbol	Description
	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
	Hot surface that gives risk of burn injuries
	Appliance class 1
	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.

3.12 Discard the EVSE or parts of the EVSE




Incorrect waste handling can have a negative effect on the environment and human health due to potential hazardous substances. With the correct disposal of this product, you contribute to reuse and recycling of materials and protection of the environment.

- Obey the local rules to discard parts, packaging material or the EVSE.
- Discard electrical and electronic equipment separately in compliance with the WEEE - 2012/19/EU Directive on waste of electrical and electronic equipment.
- As the symbol of the crossed out wheeled-bin on your EVSE indicates, do not mix or dispose the EVSE with your household waste, at the end of use. Instead, hand the EVSE over to your local community waste collection point for recycling.
- For more information, contact the Government Waste-Disposal department in your country.

4 INSTALLATION

4.1 General installation procedure

Preliminary requirements

	<ul style="list-style-type: none"> All required permits to agree with the local rules are granted. The AC input cable is available. 		<ul style="list-style-type: none"> There is no voltage on the AC input cable during the complete installation procedure.
	<ul style="list-style-type: none"> Tools for installation. Refer to section 12.7. 		

Procedure

1. Unpack the EVSE. Refer to section [4.2](#).
2. Prepare the site. Refer to chapter [5.2](#).
3. Remove the cabinet cover. Refer to section [11.4.1](#).
4. Remove the maintenance cover. Refer to section [11.3](#).
5. Do the mechanical installation. Refer to section [6.1](#).
6. Do the electrical installation. Refer to section [7.1](#).
7. Install the maintenance cover. Refer to section [11.4.3](#).
8. Install the cabinet cover. Refer to section [11.4.2](#).
9. Do the commissioning procedure. Refer to section [8.1](#).

4.2 Unpack the EVSE

1. Open the box.
2. Remove the EVSE from the box.
3. Remove all packaging material from the EVSE.
4. Discard the packaging material. Refer to section [3.12](#).
5. Make sure that all parts are delivered according to the order. Refer to the order and section [12.6](#).
6. Do an inspection of the EVSE and the parts for installation for damage.
7. If you find damage or the parts are not according to the order, contact the local representative of the manufacturer (ABB E-Mobility B.V.). Refer to section [1.12](#).

5 SITE PREPARATION

5.1 Select the site

1. Find a suitable site on a wall or on a pole (not included). For the specifications of the wall, refer to section [12.8](#).
2. Make sure that the correct power supply is available. For the power supply specifications, refer to section [12.12](#).
3. Obey the space requirements. Refer to section [12.11](#).

5.2 Prepare the site

Preliminary requirements



- The site must be suitable to install the EVSE. Refer to section [5.1](#).

Procedure

1. Make sure that the space and the airflow around the EVSE are sufficient. Refer to section [12.11](#).
2. Make sure that the correct cables are available at the site.
 - AC input cable. Refer to section [12.14](#).
 - RS485 cable. Refer to section [12.14](#).
 - Ethernet cable. Refer to section [12.14](#).

6 MECHANICAL INSTALLATION

6.1 General mechanical installation procedure



Note: The mounting screws and plugs that are included in the delivery are serviceable for a brick wall. If you want to mount the EVSE on a different type of wall, contact the manufacturer (ABB E-Mobility B.V.). Refer to section [1.12](#).

1. Make a decision if you want to install the EVSE horizontally or vertically.



Note:

The installation procedures show a vertical installation.

2. Prepare the holes for the mounting screws. Refer to section [6.2](#).
3. Install the EVSE on the site. Refer to section [6.3](#).
4. Install the socket. Refer to section [6.4](#).
5. Install the drain pipe. Refer to section [6.5](#).

6.2 Prepare the holes for the mounting screws

Preliminary requirements



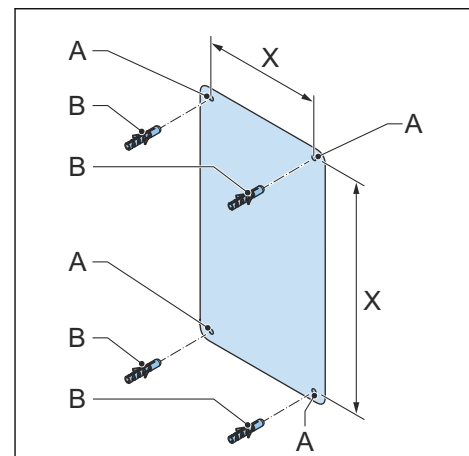
- Spirit level
- Drill



- Plugs for the mounting holes. Refer to section [12.6](#)



Procedure

1. Make sure that the installation is level. Use the spirit level.
2. Mark the location for the mounting holes (A).
For the required dimensions (X) for installation, refer to section [12.11](#).
3. Drill the mounting holes.
For the diameter of the holes, refer to the plugs for the mounting holes.
4. Insert the plugs (B) for the mounting holes.



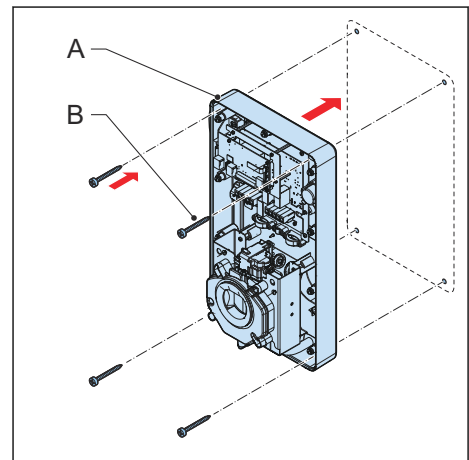
6.3 Install the EVSE on the wall

Preliminary requirements

	<ul style="list-style-type: none"> The plugs for the mounting screws are installed. The cabinet cover is removed. Refer to section 11.4.1. The maintenance cover is removed. Refer to section 11.3. 		<ul style="list-style-type: none"> Mounting screws. Refer to section 12.6.
---	--	---	---




Procedure

- Put the EVSE (A) on the wall.
- Install the mounting screws (B). For the torque specifications, refer to section [12.18](#).



6.4 Install the socket

Preliminary requirements

	<ul style="list-style-type: none"> The EVSE is installed on the wall. 		<ul style="list-style-type: none"> Mounting screws. Refer to section 12.6.
	<ul style="list-style-type: none"> Screwdriver 		

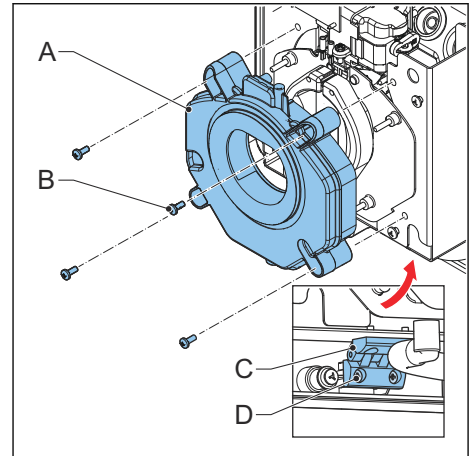
Procedure

1. Put the socket (A) on the EVSE in the same direction as the installation orientation.

**Note:**

By default, the EVSE is installed vertically. If the EVSE is installed horizontally, you have to put the socket on the EVSE horizontally and vice versa.

2. Install the screws (B). For the torque specifications, refer to section [12.18](#).
3. Install the lock (C).
4. Install the screws (D). For the torque specifications, refer to section [12.18](#).



6.5 Install the drain pipe

Preliminary requirements

	<ul style="list-style-type: none"> • The EVSE is installed on the wall. 		<ul style="list-style-type: none"> • Drill • Screwdriver
--	--	--	--

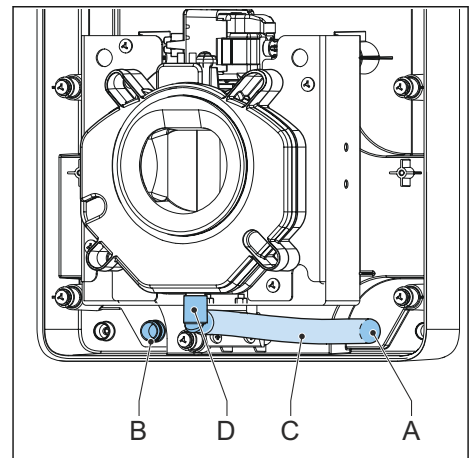
Procedure

1. Make sure that the EVSE is level.
2. Based on the direction of the socket, drill a hole (A) or a hole (B) for the drain pipe.

**Caution:**

Only drill one hole for the drain pipe. If there are two holes, there is a risk of electric shock in case of rain.



3. Insert the drain pipe (C) in the hole.
4. Connect the drain pipe to the socket (D).



7 ELECTRICAL INSTALLATION

7.1 General electrical installation procedure

Preliminary requirements







	•				•	
---	---	---	--	---	---	---

Procedure

1. Install the AC input cable.
 - Insert the AC input cable. Refer to section [7.2](#).
 - Connect the AC input cable. Refer to section [7.3](#).
2. Install the communication connections.
 - Insert the Ethernet cable. Refer to section [7.4.2](#).
 - Connect the Ethernet cable. Refer to section [7.4.3](#).
 - Insert the cables for smart meter communication. Refer to section [7.4.4](#).
 - Connect the cables for smart meter communication. Refer to section [7.4.5](#).

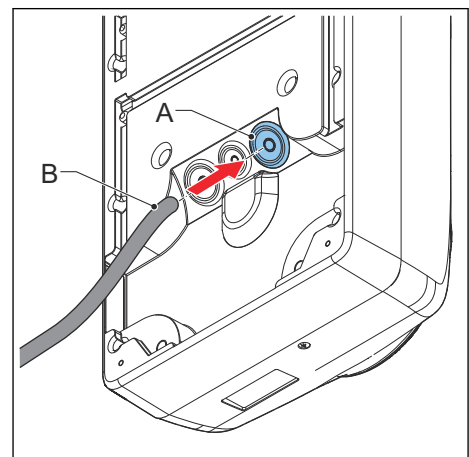
7.2 Insert the AC input cable

Preliminary requirements

	•			• Screwdriver
	•			• AC input cable

Procedure







1. Remove the grommet (A) from the EVSE.
2. Make a hole in the center of the grommet.
3. Install the grommet.
4. Strip the wires. For the specification, refer to section [12.14](#).
5. Push the wires through the grommet.
6. Put the AC input cable (B) through the inlet hole.



7.3 Connect the AC input cable

7.3.1 Connect the AC input cable, 3 phase

Preliminary requirements

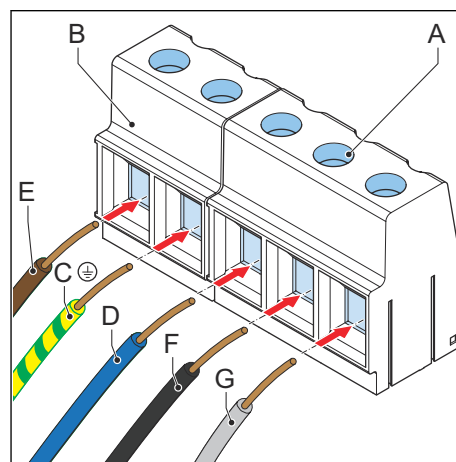
	• 		• Torque screwdriver
	• 		• AC input cable (3 phase, TN, TT networks)

Procedure

1. Loosen the screws (A).
2. Insert the cable connector into the terminal block (B).
3. Connect these wires:
 1. Earthing wire (C)
 2. Neutral wire (D)
 3. L1 (E)
 4. L2 (F)
 5. L3 (G)







For the cable specifications, refer to section [12.14](#).

4. Tighten the screws (A) to the correct torque. For the specification, refer to section [12.18](#).



7.3.2 Connect the AC input cable, 1 phase

Preliminary requirements

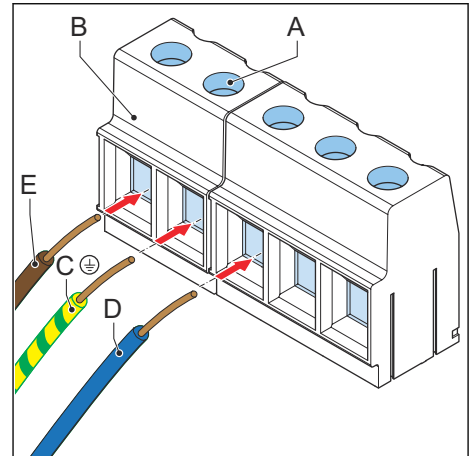
	• 		• Torque screwdriver
	• 		• AC input cable (1 phase)

Procedure

1. Loosen the screws (A).
2. Insert the cable connector into the terminal block (B).
3. Connect the below wires:
 1. Earthing wire (C)
 2. Neutral wire (D)
 3. AC input wire (E)

For the cable specifications, refer to section [12.14](#).

4. Tighten the screws (A) to the correct torque. For the specification, refer to section [12.18](#).



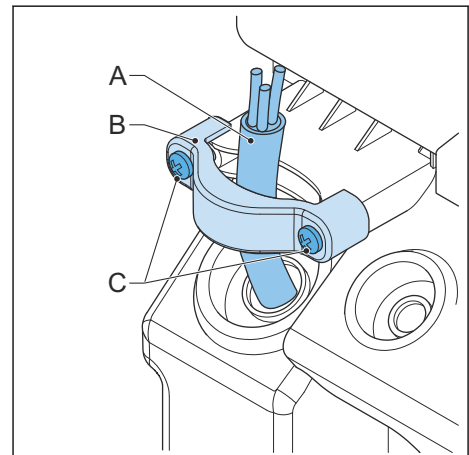
7.3.3 Secure the cables

Preliminary requirements

	• Torque screwdriver		• Strain relief for the cable
--	----------------------	--	-------------------------------

Procedure

1. Secure the cables (A) with the strain relief (B).
2. Install the two screws (C) of the strain relief.



7.4 Communication connections





7.4.1 General procedure

The EVSE has a Nano SIM card that is set as the default communication mode.

1. If you want to connect the EVSE to the Ethernet, do these steps:
 - a. Insert the Ethernet cable. Refer to section [7.4.2](#)
 - b. Connect the Ethernet cable. Refer to section [7.4.3](#)
2. If you want to connect the EVSE to a smart meter, do these steps:
 - a. Insert the wires for the smart meter communication. Refer to section [7.4.4](#)
 - b. Connect the wires for the smart meter communication. Refer to section [7.4.5](#)

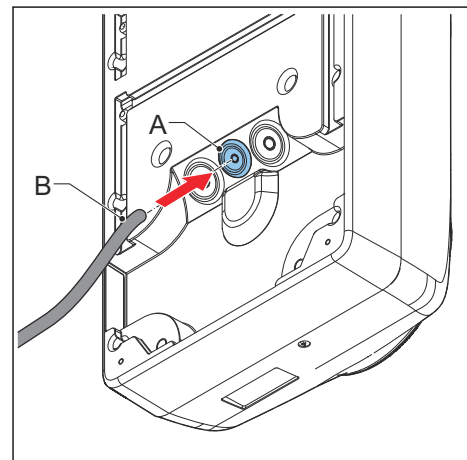
7.4.2 Insert the Ethernet cable

Preliminary requirements

	<ul style="list-style-type: none"> The cabinet cover is removed. Refer to section 11.4.1. The maintenance cover is removed. Refer to section 11.3. 		<ul style="list-style-type: none"> 
			





Procedure

1. Remove the grommet (A) from the EVSE.
2. Make a hole in the center of the grommet.
3. Install the grommet.
4. Put the Ethernet cable (B) through the cable inlet hole.



7.4.3 Connect the Ethernet cable

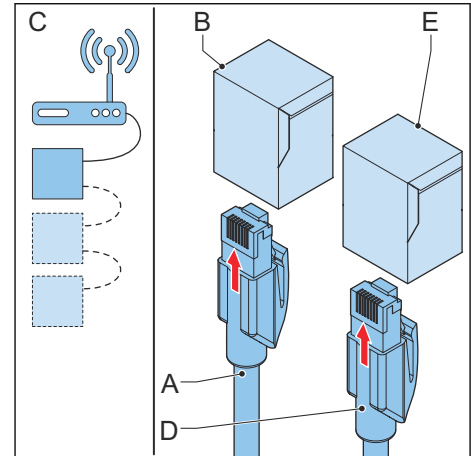
Preliminary requirements

	<ul style="list-style-type: none"> The Ethernet cable is inserted. Refer to section 7.4.2. 		<ul style="list-style-type: none"> 
			

If your EVSE has two Ethernet connections, it is possible to connect multiple EVSEs in a chain. Only the first EVSE is connected to the PC, router or gateway. Only the Ethernet connection is shared, there is no communication between the EVSEs.

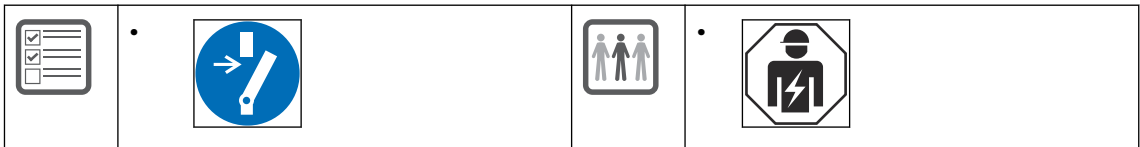
Procedure

1. Put the RJ45 plug (A) of the Ethernet cable in the primary Ethernet RJ45 socket (B).
2. Connect the Ethernet cable either to a PC, router, or gateway or to the previous EVSE in a chain (C).
3. If you connect EVSEs in a chain, put the RJ45 plug of the Ethernet cable to the next EVSE (D) in the secondary Ethernet RJ45 socket (E).



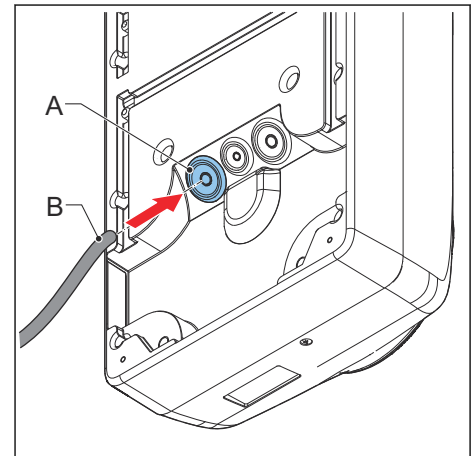
7.4.4 Insert the wires for the smart meter communication

Preliminary requirements



Procedure

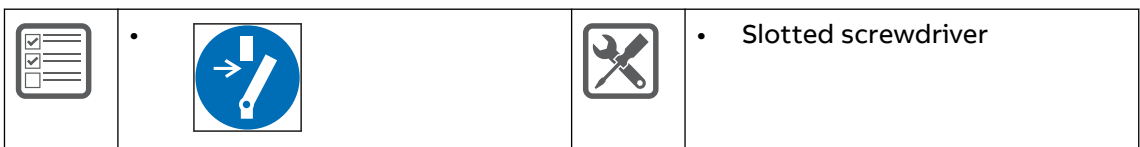
1. Remove the grommet (A) from the EVSE.
2. Make a hole in the center of the grommet.
3. Install the grommet.
4. If it is necessary, strip the cable to the correct length. Refer to section [12.14](#).
5. Push the wires through the grommet.
6. Put the cable (B) through the inlet hole.






7.4.5 Connect the wires for the smart meter communication

Connect the smart meter with ModBus RTU (RS485) to the EVSE.

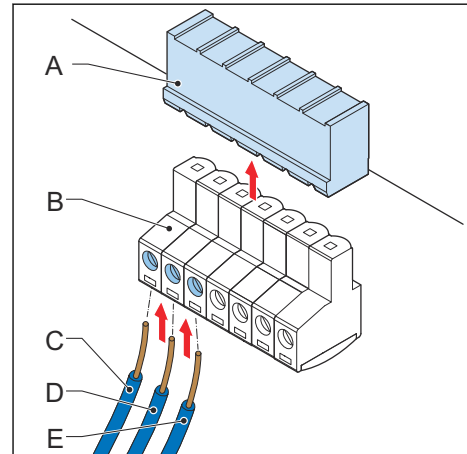
Preliminary requirements



	• 		<ul style="list-style-type: none">• Smart meter with ModBus RTU interface• Wire for RS485. Refer to section 12.15. Obey the local rules for the correct wire insulation rating.
---	---	---	--

Procedure




1. Remove the plug (A) from the terminal block (B) of the smart meter connection.
2. Connect the wires:
 - a. Connect the positive wire (C).
 - b. Connect the negative wire (D).
 - c. If the smart meter has a common isolated ground for shielded wire, connect the wire (E).
3. Tighten the screws to the correct torque. For the specification, refer to section [12.18](#).
4. Install the plug on the terminal block.



8 COMMISSIONING

8.1 General commissioning procedure

Preliminary requirements

	•				• Mobile device
---	---	---	--	---	-----------------



Warning: Only use this commissioning procedure for domestic use of the EVSE and commissioning with the *TerraConfig* app. For all other methods of commissioning, do not do the commissioning. Contact the manufacturer (ABB E-Mobility B.V.). Refer to section [1.12](#).



Note: Refer to section [1.12](#).

Procedure

1. Download the *TerraConfig* app.
 - For an Android OS mobile device, go to Google Play Store.
 - For an iOS mobile device, go to Apple Store.
2. Energize the EVSE. Refer to section [9.2](#).
3. Set up the EVSE. Refer to section [8.2](#).
4. If you need commissioning assistance, contact the customer service at least three days in advance. Mention in the request the date and time of installation that you agreed with the installer. Refer to section [1.12](#).



Note: Information can also be found in the quick guide. Refer to section [13.1](#).

8.2 Set up the EVSE

Preliminary requirements

	• Mobile device with the <i>TerraConfig</i> app		• Label with PIN. Refer to section 12.6 .
---	---	---	---

Procedure

1. Open the *TerraConfig* app.
2. Enter the PIN.
3. Do these steps, on the *TerraConfig* app:
 - a. Update the product firmware. Do this step again until the *TerraConfig* app does not detect newer firmware.
 - b. Adjust the parameter settings for your EVSE configuration.

9 OPERATION

9.1 Prepare before use

1. Appoint a site operator and an installation engineer, if these are other persons than you.
2. Make sure that the equipment is installed and commissioned 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. Make sure that the space around the equipment cannot get blocked. Think of snow or other objects. Refer to the space requirements. Refer to section [12.11](#).
5. Make sure that maintenance is done on the equipment. Refer to section [10](#).

9.2 Energize the EVSE

1. Close the breaker that supplies the power to the EVSE.



Warning:

Hazardous voltage

- Be careful when you work with electricity.
- The power supply comes on.
- A series of self-checks start, to make sure that the EVSE works correctly and safely.
- If the EVSE detects a problem, the error LED comes on. The *ChargerSync* app shows the description of the error.

9.3 Start a charge session

9.3.1 EVSE with a socket



Caution: During the charge session, do not disconnect the EV charge cable. There is a risk of damage of the socket of the EVSE or the connector of the EV.



Note: The LEDs show the status of the charge session.

1. Connect your EV charge cable to the connection on your EV.
2. Use your RFID card or *ChargerSync* app to authorize for use of the EVSE.
The authorization of the connection to the EV starts.
3. Connect the EV charge cable to the socket of the EVSE.
The EVSE charges the EV.

9.4 Wake up the EV when it is unavailable

9.4.1 Wake up the EV (EVSE without display)

Preliminary requirements



- The *ChargerSync* app shows 'waiting for EV'.

Procedure

1. Disconnect the EV charge cable from the EV.
2. Connect the EV charge cable to the EV again.

9.4.2 Wake up the EV (EVSE with display)

Preliminary requirements



- The display shows that the EV is not ready for the charge session.

Procedure

1. Disconnect the EV charge cable from the EV.
2. Connect the EV charge cable to the EV again.

9.5 Stop a charge session

9.5.1 EVSE with a socket



Caution: During the charge session, do not disconnect the EV charge cable. There is a risk of damage of the socket of the EVSE or the connector of the EV.



Note: If you disconnect the EV charge cable during the charge session, the EVSE automatically disconnects the power supply. This stops all charging operations.

1. Select one of the two ways to end the charge session.
 - Wait until the charge session is completed.
 - The *ChargerSync* app shows that the charge session is completed
 - The charging LED is on.
 - If your EVSE has a display, the display shows that the charge session is completed.

When the charge session is completed, the EVSE disconnects the power supply automatically.

- Authorize the ending of the use of the EVSE with your RFID card or the *ChargerSync* app. The authorization of the disconnection to the EV starts.
2. Disconnect the EV charge cable from the socket of the EVSE.
 3. Disconnect the EV charge cable from the connector on the EV.

10 MAINTENANCE AND CLEANING

10.1 Maintenance schedule

Task	Frequency	Procedure
Clean the cabinet cover and the enclosure of the EVSE.	4 months	Refer to section 10.2 .
Do a visual check for damage on the cabinet.	Before each use	Refer to section 10.3 .
Do a visual check for damage on the EV charge cables or outlet and the connectors.	Before each use	Refer to section 10.3 .

10.2 Clean the cabinet

Preliminary requirements

	<ul style="list-style-type: none"> Owner 		<ul style="list-style-type: none"> Cleaning agent and a non-abrasive tool. Refer to section 12.19.
---	---	---	---



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

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



Caution: Do not use abrasive tools. There is a risk of damage to the finish of the EVSE, that can cause deep corrosion and structural damages.

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

10.3 Do a check on the cabinet

1. Do a check for damage on these parts:

Part	Damage
Charge cables, outlets and connectors	Cracks or ruptures
	Internal wires of the cable are visible
Display	Cracks
Coating of the cabinet	Cracks or ruptures

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

11 TROUBLESHOOTING

11.1 Access to parts

11.2 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](#).

11.3 Remove the maintenance cover

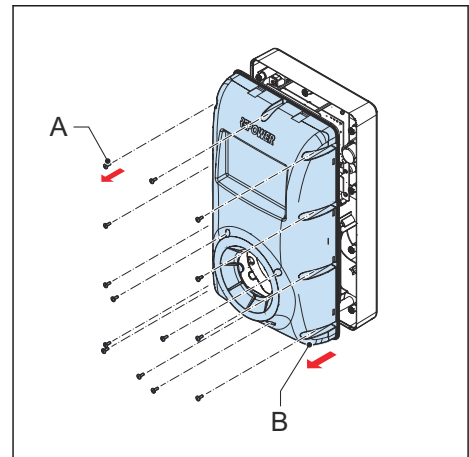
Preliminary requirements



- The cabinet cover is removed.

Procedure

1. Remove these parts:
 - Screws (A)
 - Maintenance cover (B)



11.4 Troubleshooting table

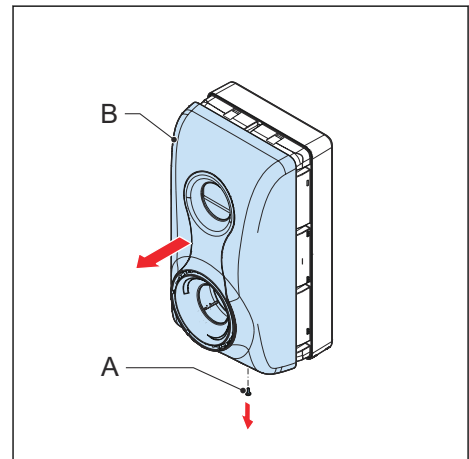
Problem (error code)	Possible cause	Possible solution
Residual current detected (0x0002)	There is residual current (30mA AC or 6mA DC) in the charge circuit. Current leaks into the ground.	<ol style="list-style-type: none"> 1. De-energize the EVSE. Refer to section 11.5. 2. Contact your local representative of the manufacturer or a qualified electrical contractor. Refer to section 1.12.
PE missing or swap neutral and phase (0x0004)	The EVSE is not earthed correctly.	<ol style="list-style-type: none"> 1. Do a check of the protective earth line of the connector of the AC input. 2. Install the protective earth conductor.
	The neutral and phase wires are swapped.	<ol style="list-style-type: none"> 1. Examine the electrical connections. 2. Make sure that the connection of the phase and line and neutral wires is correct. 3. If necessary, adjust the electrical connections. Refer to chapter 7.
Over voltage (0x0008)	The maximum voltage on the power input is too high.	Make sure that the voltage from the grid is not more than specified.
Under voltage (0x0010)	The voltage on the power input is not sufficient.	Make sure that the voltage from the grid is not less than specified.
Over current (0x0020)	There is an overload on the EV side.	<ol style="list-style-type: none"> 1. Examine the EV charge cable connection. 2. Connect the EV charge cable correctly.
Severe over current (0x0040)	There is an overload on the EV side.	<ol style="list-style-type: none"> 1. Examine the EV charge cable connection. 2. Connect the EV charge cable correctly.

Problem (error code)	Possible cause	Possible solution
Over temperature (0x0080)	The internal temperature is too high.	<ol style="list-style-type: none"> 1. Do a check of the operation temperature on the type plate. If the ambient temperature is too high, the EVSE will decrease the output current automatically. 2. If it is necessary, install the EVSE in an environment with a lower ambient temperature. 3. Make sure that the voltage from the grid is not more than specified. 4. If you can not solve the problem, do not use the EVSE. Contact your local company representative or a qualified electrical contractor. Refer to section 1.12.
Power relay fault (0x0400)	The relay contact is detected in wrong state or has damage.	<ol style="list-style-type: none"> 1. Examine the relay contact. 2. If necessary, adjust the current. 3. If necessary, replace the relay contact.
Internal communication failure (0x0800)	The printed circuit boards of the EVSE fail to communicate with each other.	<ol style="list-style-type: none"> 1. Do a check on the connection between the P board and the C board. 2. Do a check on the connection between the C board and the B board.
E-Lock failure (0x1000)	Error to lock / unlock the charge connector.	<ol style="list-style-type: none"> 1. Examine the connection of the EV charge cable. 2. If necessary, connect the EV charge cable.
Missing phase (0x2000)	B and C phase are missing.	<ol style="list-style-type: none"> 1. Examine the electrical connections. 2. Make sure that the connection of the phase and line and neutral wires is correct. 3. If necessary, adjust the electrical connections. Refer to chapter 7.

Problem (error code)	Possible cause	Possible solution
Modbus communication lost (0x4000)	The Modbus communication is lost.	<ol style="list-style-type: none"> 1. Do a check on the connection of the wires and the polarity. 2. Do a check if all addresses are unique. 3. Do a check if the baud rate is the same as the other device or meter. 4. Do a check if the parity value of the other device or meter agrees with the EVSE 'None'. 5. Do a check if the stop bit and data bit are the same on the other device or meter.
The EV is not charged	There is a problem with the EVSE	<ol style="list-style-type: none"> 1. Make sure that the power supply to the EVSE is on. 2. Examine the EVSE to find if is working correctly. 3. Examine the LED to make sure that the charging session is authorized. 4. Start the charging session.
	The EV charge cable is defective.	<ol style="list-style-type: none"> 1. Examine the EV charge cable. 2. If the standard supplied EV charge cable is defective, replace the EV charge cable. Contact your local company representative or a qualified electrical contractor. Refer to section 1.12.
The EV connection or authorization process fails	The EV charge cable is defective.	<ol style="list-style-type: none"> 1. Examine the EV charge cable. 2. If the standard supplied EV charge cable is defective, replace the EV charge cable. Contact your local company representative or a qualified electrical contractor. Refer to section 1.12.
	The EV charge cable is not connected correctly.	<ol style="list-style-type: none"> 1. Examine the connection of the EV charge cable. 2. If necessary, connect the EV charge cable.

11.4.1 Remove the cabinet cover

1. Remove these parts:
 - Screw (A)
 - Cabinet cover (B)



11.4.2 Install the cabinet cover

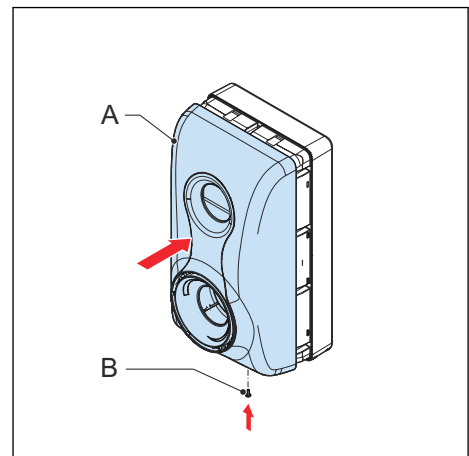
Preliminary requirements



- The maintenance cover is installed.

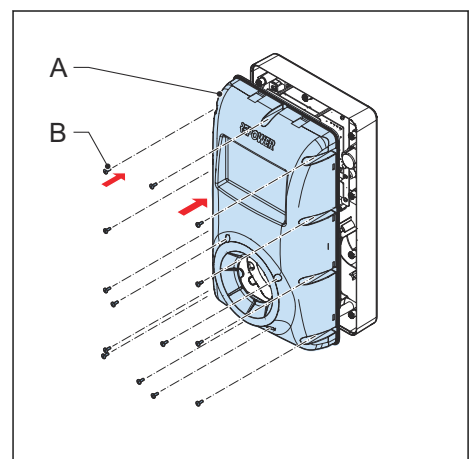
Procedure

1. Install these parts:
 - Cabinet cover (A)
 - Screw (B)



11.4.3 Install the maintenance cover

1. Install these parts:
 - Maintenance cover (A)
 - Screws (B)



11.5 De-energize the EVSE

1. Open the breaker that supplies the power to the EVSE.
2. Wait for minimum 1 minute.

12 TECHNICAL DATA

12.1 EVSE Type

The EVSE type is a code.
The code has 10 parts: A1 - A10.

Code part	Description	Value	Meaning of the value
A1	Brand name	Repower	-
A2	Type	W	Wallbox
A3	Power output	22	22 kW
A4	Socket	S	Type 2 socket with shutter
A5	Cable length	-	No cable
A6	Authorization	R	RFID enabled
A7	Display	D	Yes
A8	Metering	-	Not certified for MID
A9	SIM slot	C	Yes
		-	No
A10	Ethernet	D	Daisy-chain

Example

Repower C W22-S-RD-CD-RP

- A1 = Brand name = Repower
- A2 = Type = wallbox
- A3 = 22, Power output = 22 kW
- A4 = Socket = Type 2 socket with shutter
- A6 = authorization = RFID enabled
- A7 = Display = yes
- A9 = SIM slot = applicable
- A10 = Ethernet = daisy-chain

'RP' means RePower.

12.2 General specifications

Parameter	Specification
Safety standards	<ul style="list-style-type: none"> • IEC/EN 61851-1 • IEC/EN 62311 • IEC/EN 62479 • IEC/EN 62955
Certification	Three phase
IP or NEMA rating	The type plate shows the specification. Refer to section 2.3 .

Parameter	Specification
IK rating according to IEC 62262 (enclosure and display)	IK10 IK8+ for an operation temperature between -35 and -30 °C
Codes and standards	<ul style="list-style-type: none"> • IEC 61851-21-2 • EN 61000-6-1 • EN 61000-6-2 • EN 61000-6-3 • EN 61000-6-4 • EN 61000-3-2 • EN 61000-3-3 • EN 61000-3-11 • EN 61000-3-12 • CE RED- WLAN / RFID / E-UTRA: EN 300 328 V2.1.1 • EN 300 330 V2.1.1 • EN 301 908-1 V11.1.2 • EN 301 908-13 EN 50470-1 • EN 50470-3 FCC Part 15 Class B
Power consumption, in stand-by mode	4 W

12.3 Ambient conditions



Parameter	Specification
Operation temperature	-35°C ¹ to +50°C
Storage temperature	-40°C to +80°C
Storage conditions	Indoor, dry
Relative humidity	<95%, non-condensing

12.4 Mass

EVSE type	Mass [kg]
Symbiosis (IEC portfolio)	8.5

¹ Based on manufacturer test results

12.5 Protective device compliance

Requirements	Specifications
Dedicated upstream protection device(s)	Options: <ul style="list-style-type: none"> RCD (Type A minimum) + MCB RCBO (Type A minimum), (for example: ABB model PN: DS201 C40 A30)
Upstream overcurrent protection breaker (for example: RCBO or MCB).  Note: The breaker value depends on the diameter and the length of the cable, the EVSE rating, and the environmental parameters (for the electrician to decide). The breaker serves as the main disconnect switch to the EVSE.	Breaker rating: <ul style="list-style-type: none"> 40 A for a 32 A rated EVSE 20 A for a 16 A rated EVSE Tripping characteristics: type C
Upstream residual-current device (RCD)	Minimum Type A, with a rated residual operation current of maximum 30 mA  Note: Internal to EVSE is DC fault current monitoring > 6 mA

12.6 Parts included in the delivery

Parameter	Specification
EVSE	Refer to the type plate. Refer to section 2.3 .
Mounting screws for the EVSE	M6 x 60
Plugs for the mounting screws (servicable for a brick wall)	8 x 60 mm
Mounting screws for the socket	M4 x 8
Mounting screws for the socket lock	M4 x 8
Label with PIN	To log in to the <i>TerraConfig</i> app.

12.7 Required tools for installation

Parameter	Specifications
Spirit level	-
Drill	-
Torque screwdriver, cross	-
Torque screwdriver, slotted	For terminal blocks and plugs with 5 mm pitch

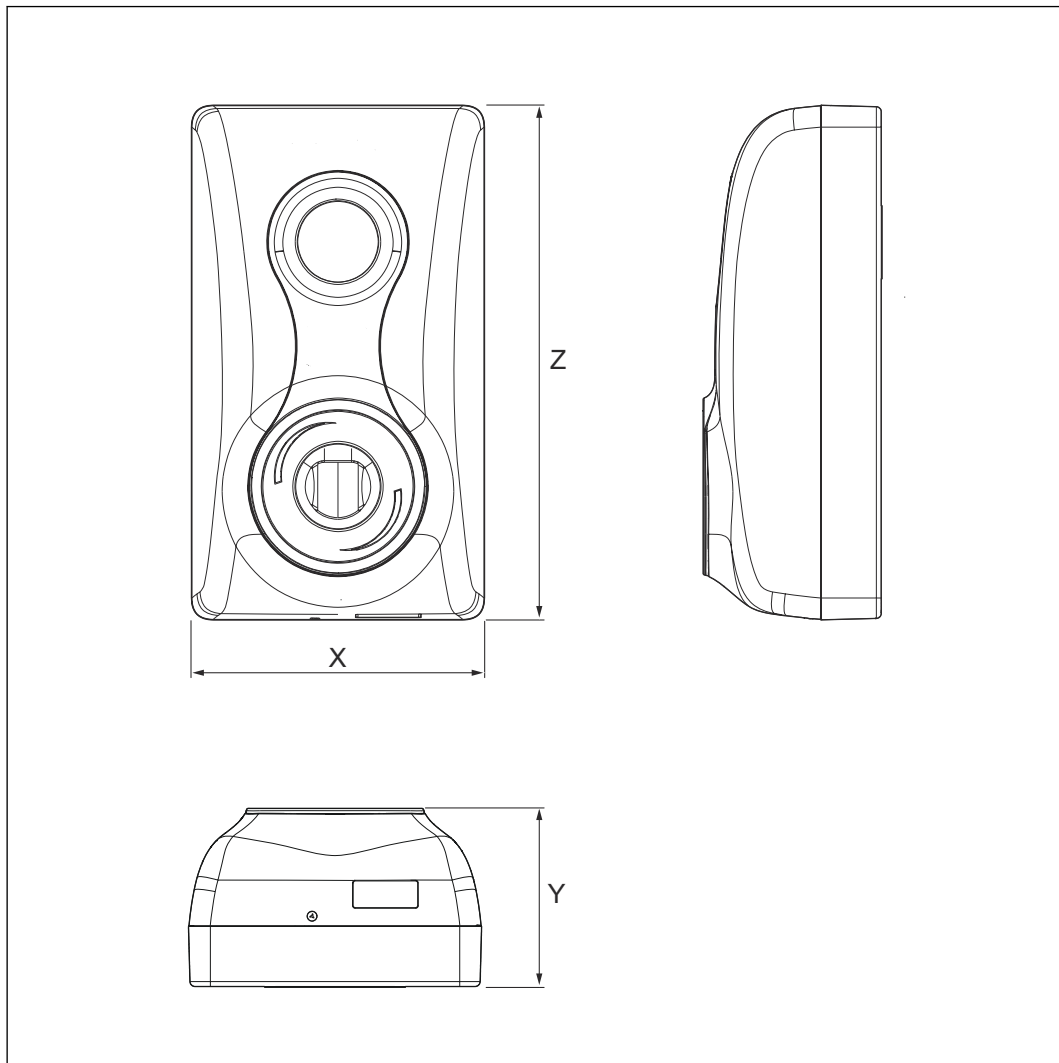
12.8 Requirements for the wall

Parameter	Specifications
Wall thickness	Minimum @89 mm
Wall strength	The wall must be serviceable for the items listed below: <ol style="list-style-type: none">1. The weight of the EVSE. Refer to section 12.4.2. The torque for the mounting screws. Refer to section 12.18.
Wall material	The mounting surface must be flat and stable, for example a finished, brick or concrete wall.

12.9 Noise level

Parameter	Specification
Noise level	Less than 35 dB(A)

12.10 Dimensions

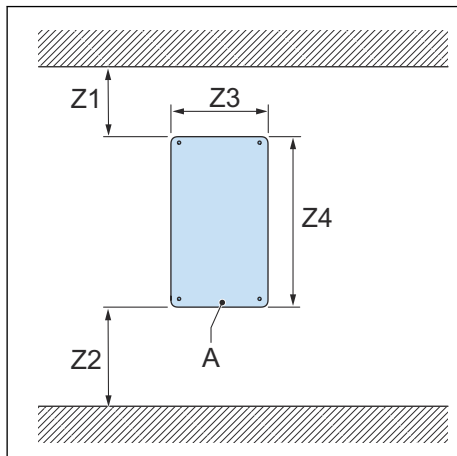


X Width of the EVSE
Y Depth of the EVSE

Z Height of the EVSE

Parameter	Specification [mm]
X	288
Y	177
Z	508

12.11 Space requirements for installation



A EVSE

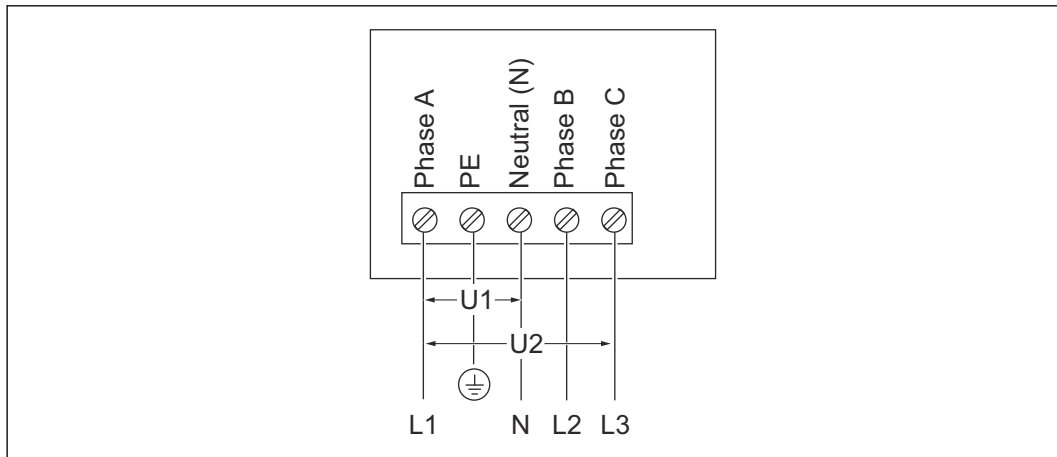
Parameter	Specification [mm]
Z1	> 200
Z2 (indoor use)	450 to 1200
Z2 (outdoor use)	600 to 1200
Z3	240
Z4	470

12.12 AC input specifications

12.12.1 General specifications

Parameter	Specification
Earthing systems	TT
	TN-S
	TN-C-S
Frequency	50 Hz or 60 Hz
Overvoltage category	Category III
Protection	Overcurrent
	Overvoltage
	Undervoltage
	Earth fault, including DC leakage protection
	Integrated surge protection

12.12.2 400 VAC 3-phase with neutral (TT, TN)



U1 230 VAC, maximum 264 VAC

U2 400 VAC, maximum 460 VAC

12.12.3 AC input specifications

Parameter	Specification
Input AC power connection	3 phase
Input voltage	400 V AC
Standby power consumption	4.6 W
Earth (ground) fault protection	30mA AC, 6 mA DC
Maximum input power	11 kW (16 A)
	22 kW (32 A)

12.13 General logic interface specifications

Parameter	Specification
Connectivity	Mobile communication with Nano-SIM socket type M2M (Machine To Machine): 4G (LTE)
Smart meter communication	Modbus RTU (RS485)
Local controller communication	Modbus TCP/IP (secondary)
Ethernet	1x 10/100 BaseT, RJ45 Socket
Extra ethernet (daisy chain)	1x 10/100 BaseT, RJ45 Socket
WiFi (WAN)	IEEE 802.11 b/g/n, 2.4 GHz
Bluetooth	BLE 5.0
Compatible mobile device operating systems	<ul style="list-style-type: none"> Android 4.4 or higher iOS8 or higher

12.14 Cable specifications

12.14.1 AC input cable

Parameter	Specification
EV charger station connection type	Terminal block and screw
Wire size for the terminal block (allowed)	Cross section: 10 to 2.5 mm ²
Wire size for the terminal block (recommended for 32A EV Charger stations)	Minimum cross-section 6 mm ²
Wire size for the terminal block (recommended for 16A EV Charger stations)	Minimum cross-section 2.5 mm ²
Strip length	10 mm
Cable shielding (optional)	The local rules require shielded cables. The cable shielding must be connected to the PE rail at the two ends of the cable.
Diameter of the phase conductors	Refer to the local rules.
Diameter of the PE conductor	The same as the diameter of the phase conductors
<ul style="list-style-type: none"> Consult your local electrical codes for the correct wire size, based on the environment, the conductor type and the rating of the EVSE. The wire cross-sectional area is based on the copper wire type. 	

12.14.2 Ethernet cable specifications

Parameter	Specification
EVSE connector type	RJ45 Modular jack
Cable type	Category 5 (Cat 5)

12.14.3 Dry contacts input

The dry contacts input is the single contact provided by the user.

Parameter	Specifications
EVSE connector type	Terminal block plug and screws
Wire size for the terminal block plug (allowed maximum)	0.5 to 2.5 mm ²
Wire size for the terminal block plug (recommended)	0.5 mm ² minimum
Required torque	0.5 Nm
Strip length	5 mm
Terminal connections	<ul style="list-style-type: none"> PE/Shield: Contact input terminal 1 or 2 Configuration input: Contact input terminal 2 or 1

Wire AWG and cross section: based on a copper wire type

12.15 RS485 cable specifications

The RS485 cable specifications apply to smart meter ModBus RTU communication.

Parameter	Specification
Connector type for the EV charging station	Terminal block plug and screws
Conductor type	Twisted pair, shielded cable (recommended)
Conductor size for the terminal block plug (allowed)	IEC portfolio: cross-sectional area: 0.5 mm ² to 2.5 mm ²
	UL portfolio: 12 AWG to 30 AWG
Conductor size for the terminal block plug (recommended)	Minimum 24 AWG (0.5 mm ²)
Strip length	5 mm
Terminal connections	485A: RS485 Positive/A/D0
	485B: RS485 Negative/B/D1
	Common isolated ground for shielded cable
ModBus RTU baud rate	9600 bps standard, with <i>TerraConfig</i> app configurable to 4800, 9600, 19200, 38400, 57600 and 115200 bps
ModBus RTU bus primary/secondary	EVSE is Modulus primary/secondary configurable via <i>TerraConfig</i> app
	<ul style="list-style-type: none"> Consult your local electrical codes and the wiring requirements of your smart meter device for the correct wire size. The wire AWG and cross-sectional area are based on the copper wire type.

12.16 Dry contacts output

The dry contacts input is the single contact in the EVSE.

Parameter	Specifications
EVSE connector type	Terminal block plug and screws
Wire size for the terminal block plug (allowed maximum)	0.5 to 2.5 mm ²
Wire size for the terminal block plug (recommended)	0.75 mm ² minimum
Required torque	0.5 Nm
Strip length	5 mm
Terminal connections	<ul style="list-style-type: none"> Configuration output dry contact 1: Contact output terminal 1 Configuration output dry contact 2: Contact output terminal 2
Contact rated load	250 VAC/30VDC at 3A

The wire AWG and cross section are based on a copper wire type.

12.17 AC output specifications

12.17.1 AC output specifications

Parameter	Specification
AC output voltage range	400 V AC
Connection standard	Type 2 socket with shutter According to IEC 62196-1, IEC 62196-2

12.18 Torque specifications

Parameter	Specification [Nm]
Terminal block for the AC input	1.2
Terminal block for the communication wires and the smart meter connections	0.5
Terminal block for the EV charge cable	1.2
Mounting screws for the EVSE	4.4
Mounting screws for the socket	2
Mounting screws for the socket lock	2

12.19 Cleaning specifications

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


13 APPENDIX

13.1 RePower Quick Guide

EVSE INDICATORS STATUS
Symbiosis


Charging

- Step 1 Connect the EVSE
Connect the EV to the EVSE,when your EV is detected the LED Ring indicator will flash green.




LED Ring Indicator——Flashing green

- Step 2 Authorization
When the EVSE is authorized via APP,the LED Ring indicator will flash blue.




LED Ring Indicator——Flashing blue

- Step 3 Charging
When the charging start the LED Ring indicator will rotate blue.



LED Ring Indicator——Rotating blue


- Step 4 Charging Complete
When the charging complete the LED Ring indicator will flash blue.




LED Ring Indicator——Flashing blue

Error


When the EVSE is error status,the LED Ring indicator will light up red.




LED Ring Indicator——light up red



Scan QR Code
for more information
Installation Manual



Scan QR Code to download APP
If use TerraConfigure, please
contact Repower for PINCODE.


EVSE indicators status

V1.0

GUIDE TO COMMISSIONING

Symbiosis

- Make sure that the Vodafone 4G signal is present at the Symbiosis installation site.
- Contact a qualified technician for:
 - Electrical and civil pre-arrangement works
 - Installation of Symbiosis
 - Commissioning

Provide the installer with the installation manual available in the packaging or under this link <http://go.repower.com/manualSymbiosis>

If necessary, Repower can provide the installation and commissioning service.

- SBy choosing a qualified technician, make sure that this person refers to the installation and use manual of Symbiosis.
In particular, for installation and commissioning, refer to section 4,5,6 and 7. It is advisable to use the accessories supplied with Symbiosis and keep them for future needs.
- Remote commissioning assistance service is operational. To use it, just contact the customer service indicating at least **three days** in advance the date and time of installation agreed with the installer.
- It is now possible to use Symbiosis. To do this, you can always consult the recharge guide available at this link <http://go.repower.com/helpSymbiosis>
- In case of malfunctions, it is possible to contact Repower customer service, also by email servizio.clienti@repower.com



Guide to commissioning

V1.0



REPOWER

CHARGING ELECTRIC VEHICLES
