User manual
Obsidian CE

Copyright

Contents

1 About this document 5

1.1 Function of this document 5
1.2 Target group 5
1.3 Revision history 5
1.4 Language 5
1.5 Illustrations 5
1.6 Units of measurement 5
1.7 Typographical conventions 5
1.8 How to use this document 5
1.9 Special symbols for warnings and dangers 6
1.10 Related documents 6
1.11 Manufacturer and contact data 6
1.12 Abbreviations 7
1.13 Terminology 7
1.14 Orientation agreements 8

2 Description 9

2.1 Short description 9
2.2 Intended use 9
2.3 Product label 9
2.4 Overview 10
2.4.1 Overview of the application 10
2.4.2 Overview of the product(outside) 11
2.4.3 Overview of the product(inside) 12
2.5 LED indicators 12

3 Safety 14

3.1 Liability 14
3.2 Responsibilities of the owner 14
3.3 Personal protective equipment 14
3.4 General safety instructions 15
3.5 Safety instructions for use 15
3.6 Safety instructions during cleaning or maintenance 15
3.7 Signs on the EVSE 15
3.8 Discard the EVSE or parts of the EVSE 16

4 Operation 17

4.1 Prepare before use 17
4.2 Energy the EVSE 17
4.3 Start a charge session 17
4.4 Stop a charge session 17
4.5 Wrap the EV charge cable around the enclosure 18

5 Maintenance and cleaning 19

5.1 Maintenance schedule 19
5.2 Clean the cabinet 19
5.3 Do a check on the cabinet 19

6 Troubleshooting 20

6.1 Troubleshooting procedure 20
6.2 Troubleshooting table 20
6.3 De-energize the EVSE 21

7 Technical data 22

7.1 EVSE Type 22
7.2 General specifications 22
7.3 Ambient conditions 23
7.4 Noise level 23
7.5 Dimension 23
7.6 Space requirements for installation 24
7.7 AC EVSE specifications 24
7.7.1 General specifications 24
7.7.2 AC input/output specifications 25
7.8 Cleaning specifications 25

1 About this document

1.1 Function of this document

The document is only applicable for this EVSE (Obsidian CE), 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

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 3.2.

1.3 Revision history

Version	Date	Description
003	April 2026	Update Manufacturer

1.4 Language

The original instructions of this document are in English (EN). 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 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

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

1.10 Related documents

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

1.11 Manufacturer and contact data

Manufacturer
Chargedot Shanghai New Energy Technology Co., Ltd.

1.12 Abbreviations

Abbreviation	Definition
AC	Alternating current
DC	Direct current
EMC	Electromagnetic compatibility
EV	Electric vehicle
EVSE	Electric vehicle supply equipment
NFC	Near field communication
NoBo	Notified body
OCPP	Open charge point protocol
PE	Protective earth
RFID	Radio-frequency identification

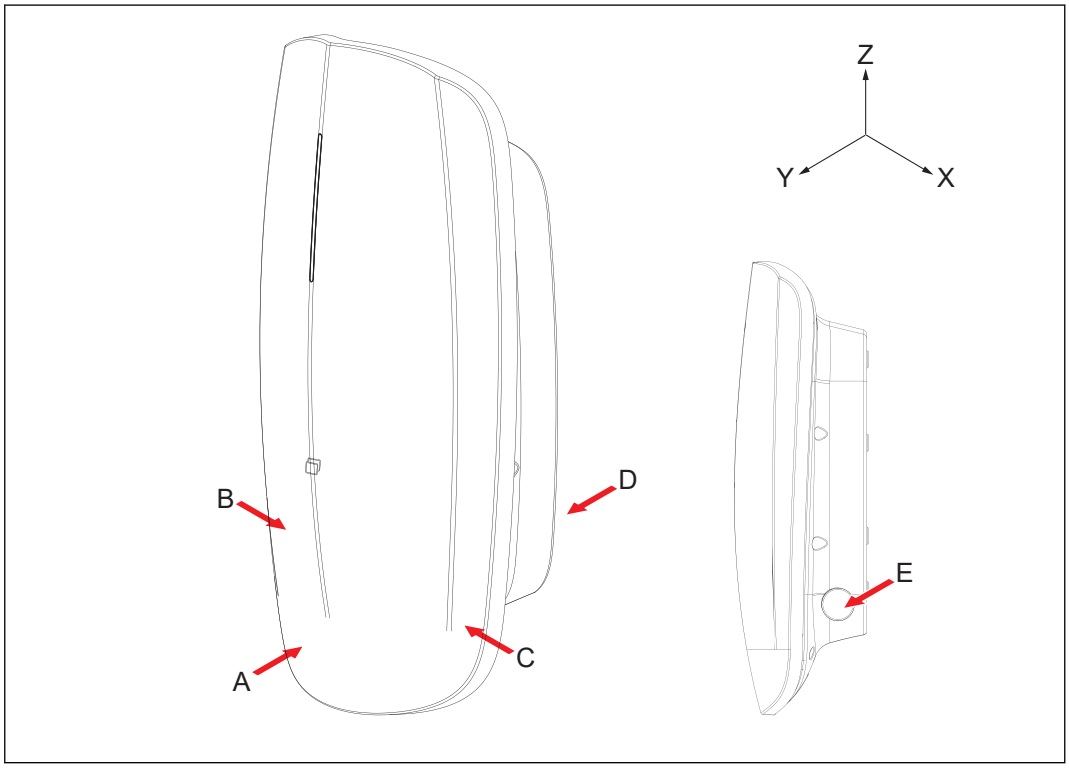
Note: It is possible that not all abbreviations are present in this document.

1.13 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
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 station
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.

1.14 Orientation agreements



A	Front side: face forward to the EVSE	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		
E	Emergency Stop		

2 Description

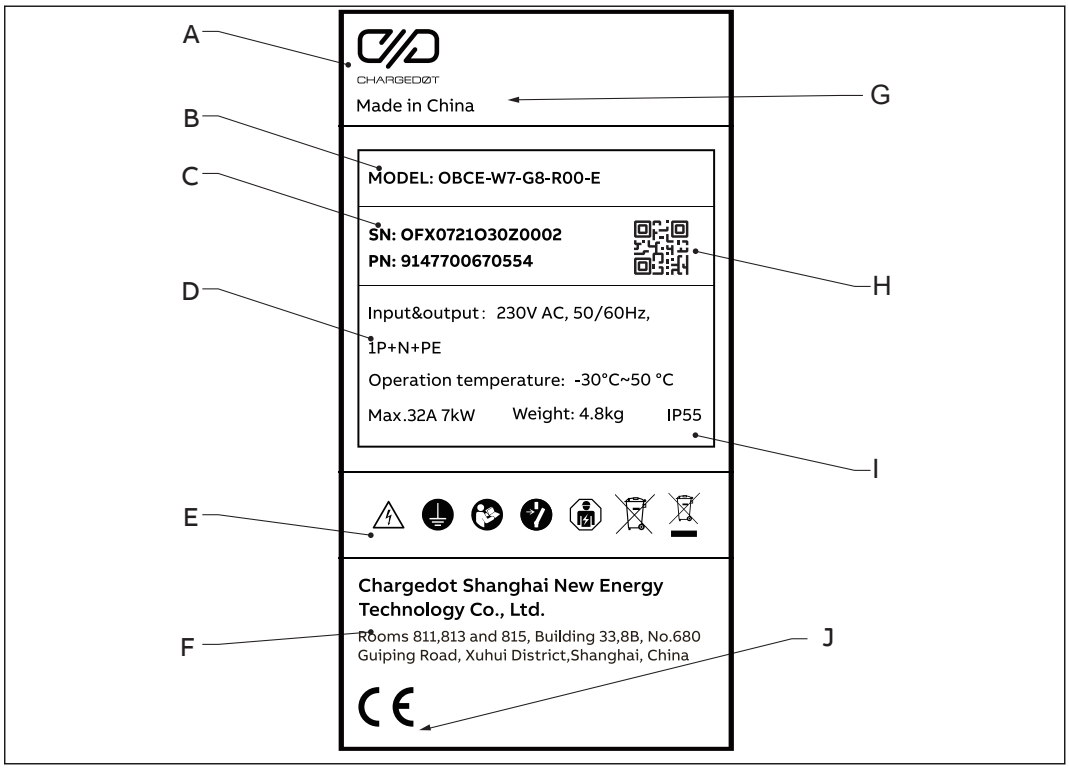
2.1 Short description

The EVSE (Obsidian CE) is an AC charging station that you can use to supply electricity to an EV. The EVSE offers tailor-made, intelligent and network charging solutions for your company or home.

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 7.
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.

2.3 Product label

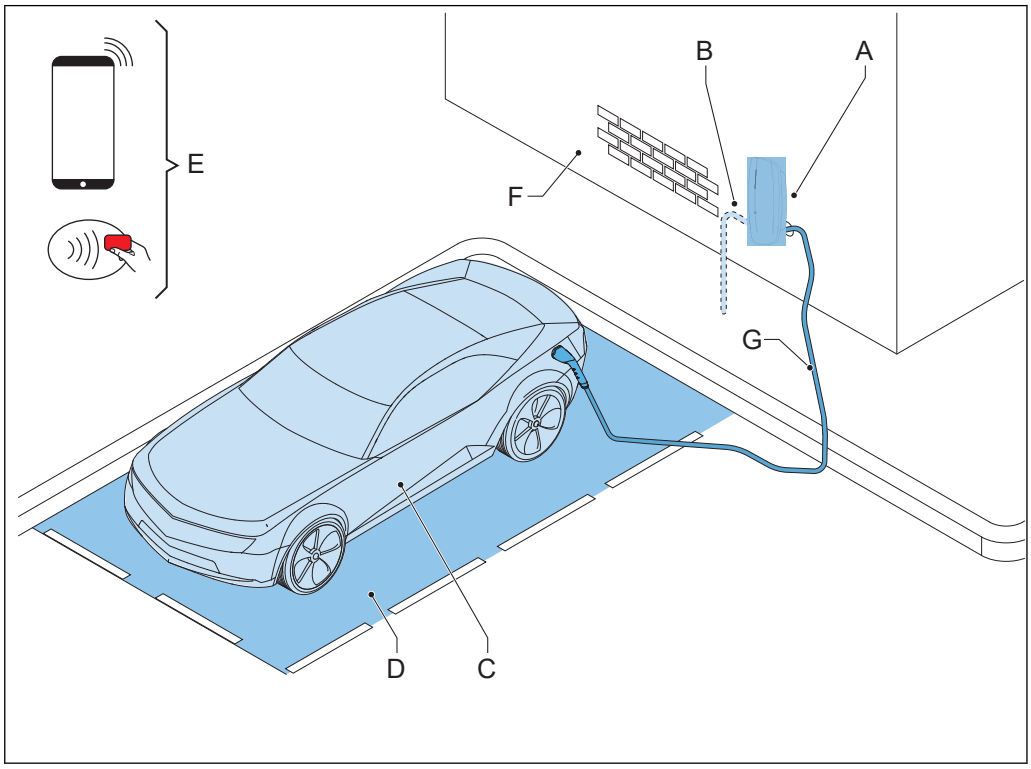


A	Brand	F	Address of the manufacturer
B	Product model name	G	Country of manufacture
C	Serial number	H	Part number
D	Power rating of the EVSE	I	Ingress protection rating
E	Reference to the manual	J	CE mark

Note: The data presented in the figure merely serves as an illustration. For the specific data, please consult the actual figures.

2.4 Overview

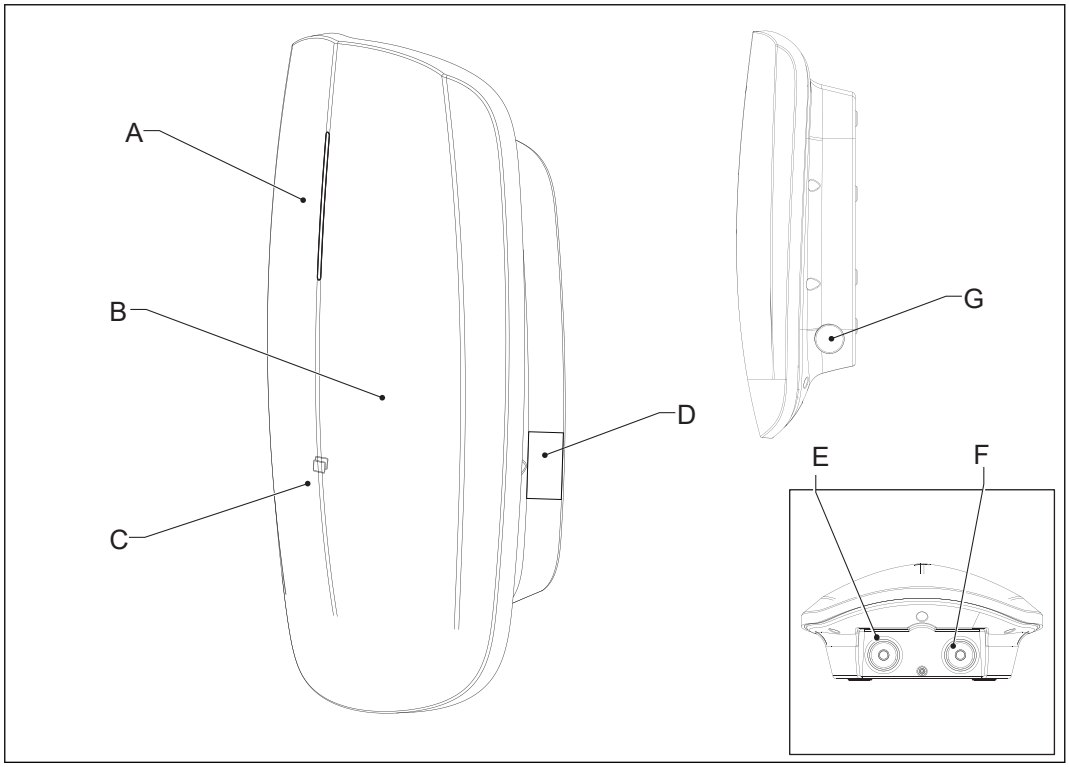
2.4.1 Overview of the application



A EVSE
B AC grid input
C EV
D Parking space
E RFID card or smartphone
F Structure to install the EVSE on
G EV charge cable

Part	Function
EVSE	Refer to section 2.2.
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
RFID card or smartphone	To authorize the user to use the EVSE

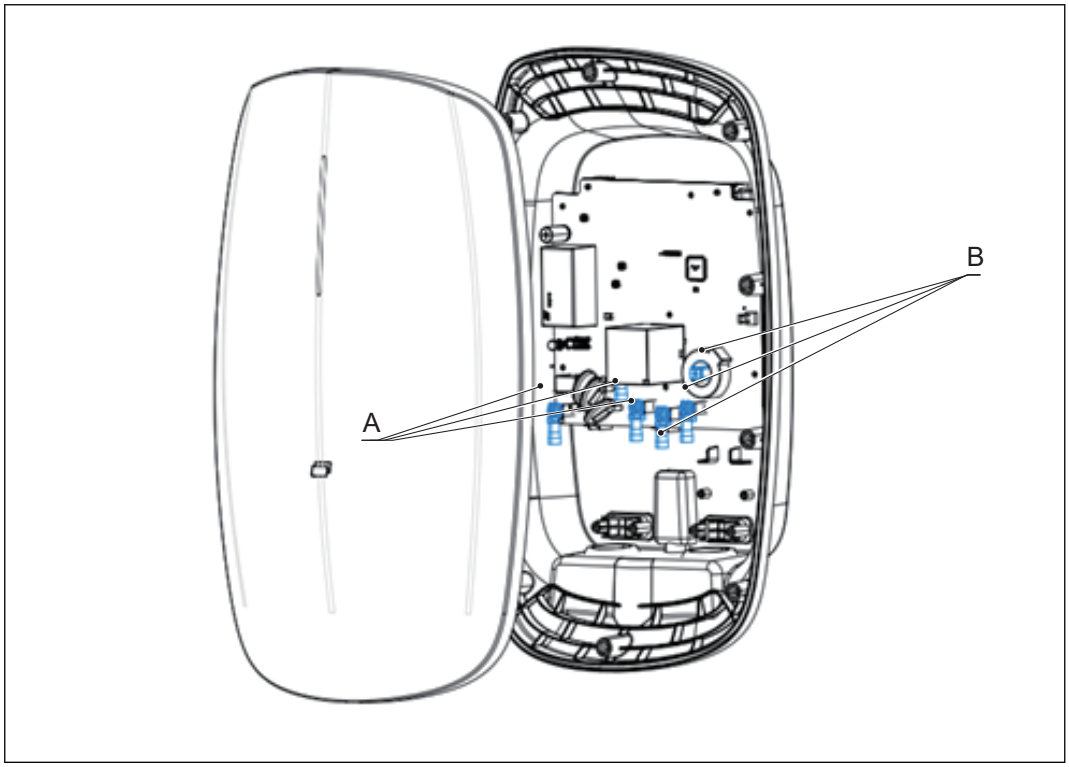
2.4.2 Overview of the product(outside)



A LED light bar
B Front cover
C RFID reader
D Product label
E Opening for the AC input
F Opening for the charge cable
G Emergency Stop

Part	Function
Connection for the EV charge cable	To connect the EV charge cable
Opening	Openings for the cables that go into the EVSE
LED light bar	To show the status of the EVSE and the charge session. Refer to section 2.5
Front cover	To prevent a user to access the installation and maintenance parts of the EVSE
RFID reader	To authorize the start or stop of a charging session with an RFID card
Product label	To show the identification data of the EVSE. Refer to section 2.3

2.4.3 Overview of the product (inside)

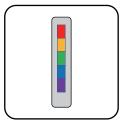
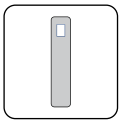


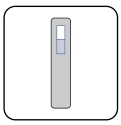
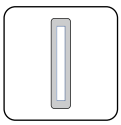
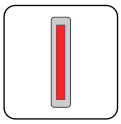
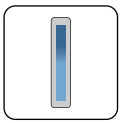
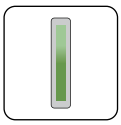
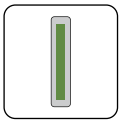
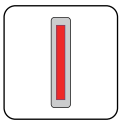
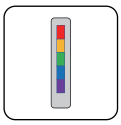
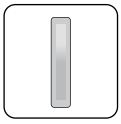
A Terminal block for AC input

B Terminal block for the EV charge cable

Part	Function
Terminal block for the AC input	To connect the AC input cable from the grid
Terminal block for the EV charge cable	To connect the EV charge cable

2.5 LED indicators

Mode	Status	Indicators
Standby mode		
	Power on	Colorful light up (3 seconds)
	No network, standby	Top white LED light constant brightness

Mode	Status	Indicators
Standby mode		
	Networking	Top white LED light constant brightness, second LED blinking
	Networked, standby	All LED lights (7 pcs) constant brightness
	Fault	All Red LED lights constant brightness
Charging session mode		
	EV connected	Waiting for EV response, blue running lights from bottom to top
	Charging session	Green running lights from top to bottom
	End of charging	All green LED lights constant brightness
	Fault	All Red LED lights constant brightness
Software upgrading mode		
	Power on	Colorful lights constant brightness
	Upgrading	White running lights from top to bottom

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.

3.2 Responsibilities of 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 Personal protective equipment

Symbol	Description
	Protective clothing
	Safety gloves

Symbol	Description
	Safety shoes
	Safety glasses

3.4 General safety instruction

- 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.

3.5 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.

3.6 Safety instructions during cleaning or maintenance

- 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 3.3.

3.7 Signs on the EVSE

Symbol	Risk type
	General risk

Symbol	Risk type
	Hazardous voltage that gives risk of electrocution
	Risk of pinching or crushing of body parts
	PE
	Sign that means that you must read the manual before you install the EVSE
	Make sure that the power supply to the EVSE is disconnected
	Electrotechnical expertise is required, according to the local rules
	WEEE recycling logo
	Waste from electrical and electronic equipment

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

3.8 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.
- 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 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 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 7.6
5. Make sure that maintenance is done on the equipment. Refer to 5.

4.2 Energy the EVSE

Close the breaker that supplies the power to the EVSE, 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 problems, the error LED light on.

4.3 Start a charge session

Caution: During the charge session, do not disconnect the EV charge cable from the connection on the EV. There is a risk of damage of the connector of the EV.

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

1. Take the EV charge cable from the socket.
2. Use your RFID card or APP (customized) to authorize the use of the EVSE.

   The authorization of the connection to the EV start.
3. Connect the EV charge cable to connector of the EV, then charge start.

4.4 Stop a charge session

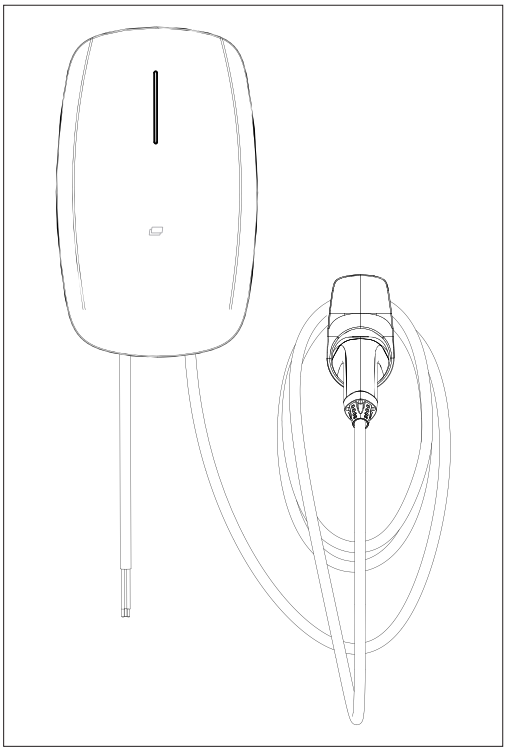
Caution: During the charge session, do not disconnect the EV charge cable from the connection on the EV. There is a risk of damage of the connector of the EV.

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.
   - Authorize the ending of the use of the EVSE with your RFID card or the apps(customized).
2. Disconnect the EV charge cable from the EV.
3. Wrap the EV charge cable around the socket. Refer to section 4.5.

4.5 Wrap the EV charge cable around the socket

Wrap the EV charge cable around the socket.



5 Maintenance and cleaning

5.1 Maintenance schedule

Task	Frequency	Procedure
Clean the enclosure of the EVSE	4-6 months	Refer to section 7.7.
Do a visual check for damage on the enclosure	Before each use	Refer to section 5.2.
Do a visual check for damage on the EV charge cable	Before each use	Refer to section 5.2.

5.2 Clean the cabinet

Caution:

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

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.
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.

5.3 Do a check on the cabinet

1. Do a check for damage on these parts:

Part	Damage
Charge cable	Cracks or ruptures
	Internal wires of the cable are visible
Coating of the EVSE	Cracks or ruptures

2. If you see damage, contact the manufacturer. Refer to section 1.11.

6 Troubleshooting

6.1 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 1.11.

6.2 Troubleshooting table

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.	1. De-energize the EVSE. Refer to section 6.4. 2. Contact your local representative of the manufacturer or a qualified electrical contractor. Refer to section 1.11.
PE missing or swap neutral and phase (0x0004)	The EVSE is not earthed correctly or neutral and phase wires are swapped.	Contact your local representative of the manufacturer or a qualified electrical contractor. Refer to section 1.11.
Over voltage (0x0008)	The maximum voltage on the power input is too high.	Contact your local representative of the manufacturer or a qualified electrical contractor. Refer to section 1.11.
Under voltage (0x0010)	The voltage on the power input is not sufficient.	Contact your local representative of the manufacturer or a qualified electrical contractor. Refer to section 1.11.
Over current (0x0020)	There is an overload on the EV side.	Contact your local representative of the manufacturer or a qualified electrical contractor. Refer to section 1.11.
Severe over current (0x0040)	There is an overload on the EV side.	Contact your local representative of the manufacturer or a qualified electrical contractor. Refer to section 1.11.

Error code	Possible cause	Possible solution
Over temperature (0x0080)	The internal temperature is out of range.	1. Do a check of the operation temperature on the product label. If the ambient temperature is too high, the EVSE will de-rating. 2. If you can not solve the issue, do not use the EVSE. Contact your local representative of the manufacturer or a qualified electrical contractor. Refer to section 1.11.
Relay fault (0x0400)	The relay contact is detected in wrong state or damaged.	1. Examine the relay contact. 2. Contact your local representative of the manufacturer or a qualified electrical contractor. Refer to section 1.11.

6.3 De-energize the EVSE

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

7 Technical data

7.1 EVSE Type

The EVSE type is a code.
The code has following parts: A1-A9.

Code part	Description	Value	Meaning
A1	Brand name	OBCE	Obsidian CE Version
A2	Installation type	W	Wall mount
		P	Pedestal
A3	Power output	1-7 (integral number)	≤7 kW
A4	Cable type	A-Z	G: Type 2 cable
A5	Cable length	1-8 (integral number)	≤8 (8=7.5m)
A6	RFID	R	Yes
		0	No
A7	4G	C	Yes
		0	No
A8	WiFi	W	Yes
		0	No
A9	E-Stop	E	Yes
		0	No
A10	Customized Requirements	1-12 Capital letter(s) or Arabic numeral(s) from A to Z or 0-9	For any customized requirements

Example

OBCE-W7-G5-R00-0

- A1 = Brand name = Obsidian CE
- A2 = Installation type = wall mount
- A3 = Power output = 7 kW
- A4 = Cable type = Type 2
- A5 = Cable length = 5 m
- A6 = Authorization = RFID
- A7 = No 4G = 0
- A8 = No WiFi = 0
- A9 = No E-Stop = 0
- The '0' is an empty field.

7.2 General specifications

Parameter	Specification
Safety standards	• IEC/EN 61851-1,IEC/EN 61851-21-2, IEC 61008-1, IEC 62955, ETSI EN 301 489,IEC /EN 62311, EN 50385, ETSI EN 300 328, ETSI EN 300 330

Parameter	Specification
Certification	• Single phase • Single phase with WiFi
IP rating	The product label shows the specification. Refer to section 2.3.
IK rating according to IEC 62262	IK10
Power consumption (standby mode)	≤ 5 W

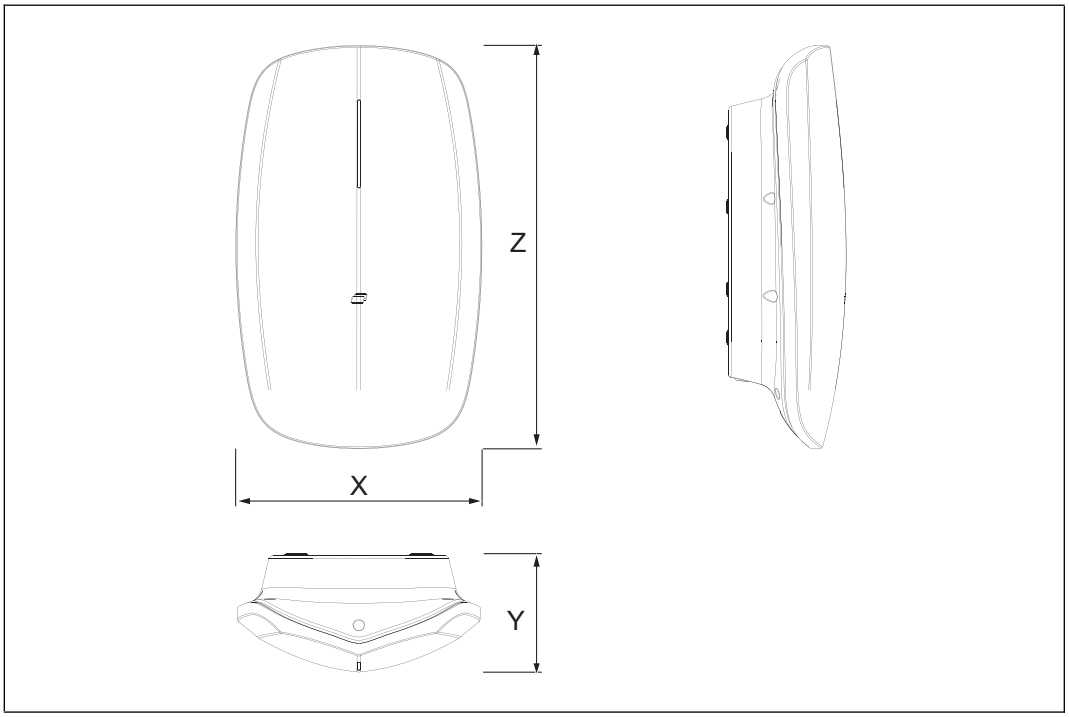
7.3 Ambient conditions

Parameter	Specification
Operation temperature	-30°C to +50°C
Storage temperature	-40°C to +85°C
Storage conditions	Indoor, dry
Relative humidity	5~95%, non-condensing

7.4 Noise level

Parameter	Specification
Noise level	Less than 55dB

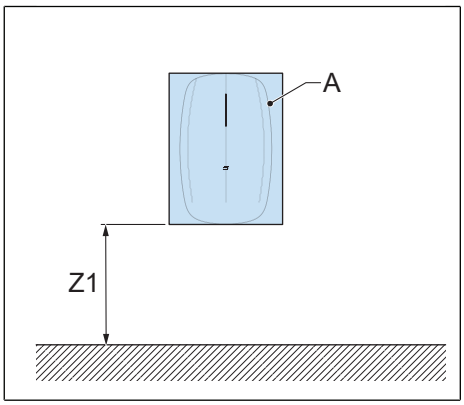
7.5 Dimension



X Width of the EVSE
Y Depth of the EVSE
Z Height of the EVSE

Parameter	Specification [mm]
X	252
Y	122.4
Z	412.6

7.6 Space requirements for installation



A EVSE

Parameter	Specification	
	[mm]	[in]
Z1	0.5 to 1.5	1.64 to 4.92

7.7 AC EVSE specifications

7.7.1 General specifications

Parameter	Specification
Earthing systems	TT
	TN
Frequency	North east region: 50Hz, Philippines: 60Hz
Overvoltage category	OVC III
Protection	Earth fault, including DC leakage protection
	Lightning surge protection
	Overtemperature protection
	Overload protection
	Overvoltage protection
	Undervoltage protection

7.7.2 AC input/output specifications

Parameter	Specification
Input AC power connection	Single phase (1 phase)
Input voltage (1 phase)	230 V
Standby power consumption	≤ 5 W
Residual current protect	Type A + 6 mA dc
AC output voltage range(1 phase)	230Vac
Maximum output power (1 phase)	7 kW (32 A)

7.8 Cleaning specifications

Parameter	Specification
Detergent	pH value between 6 and 8
Scrub tool	Non-woven nylon pad