



Installation manual

Obsidian CE

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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 11.1.

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

- Installation
- Commissioning

1.2 Target group

The document is intended for qualified installation engineers.

For a description of the required qualifications, 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.

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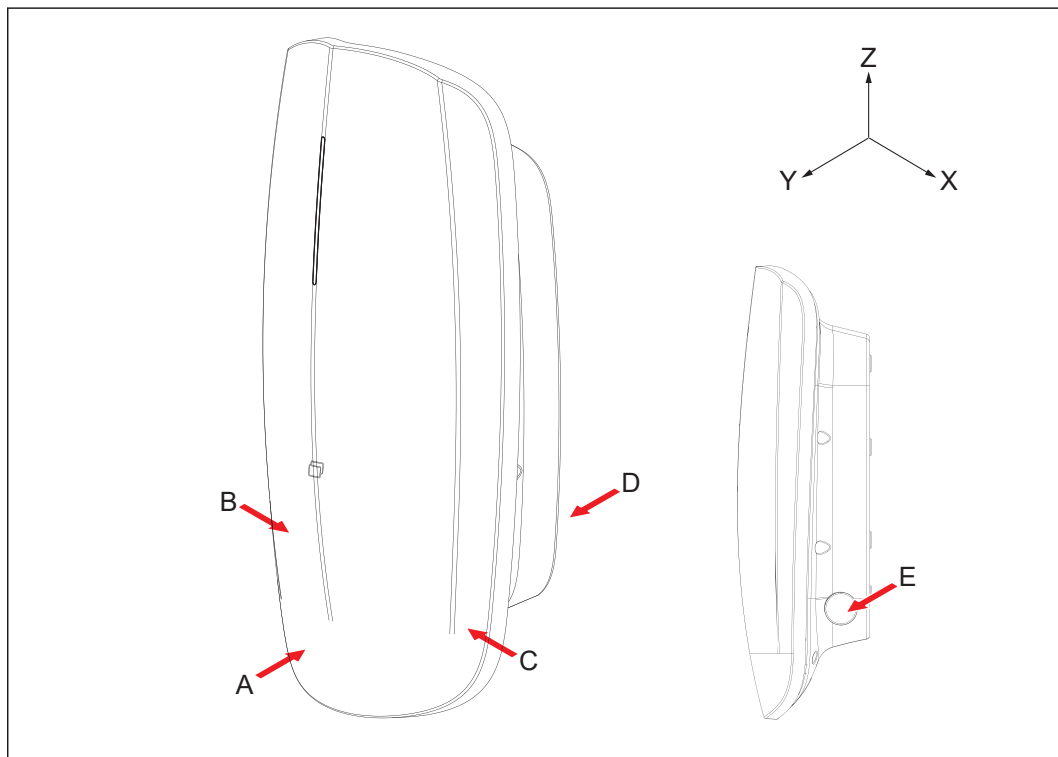
Terminology

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.

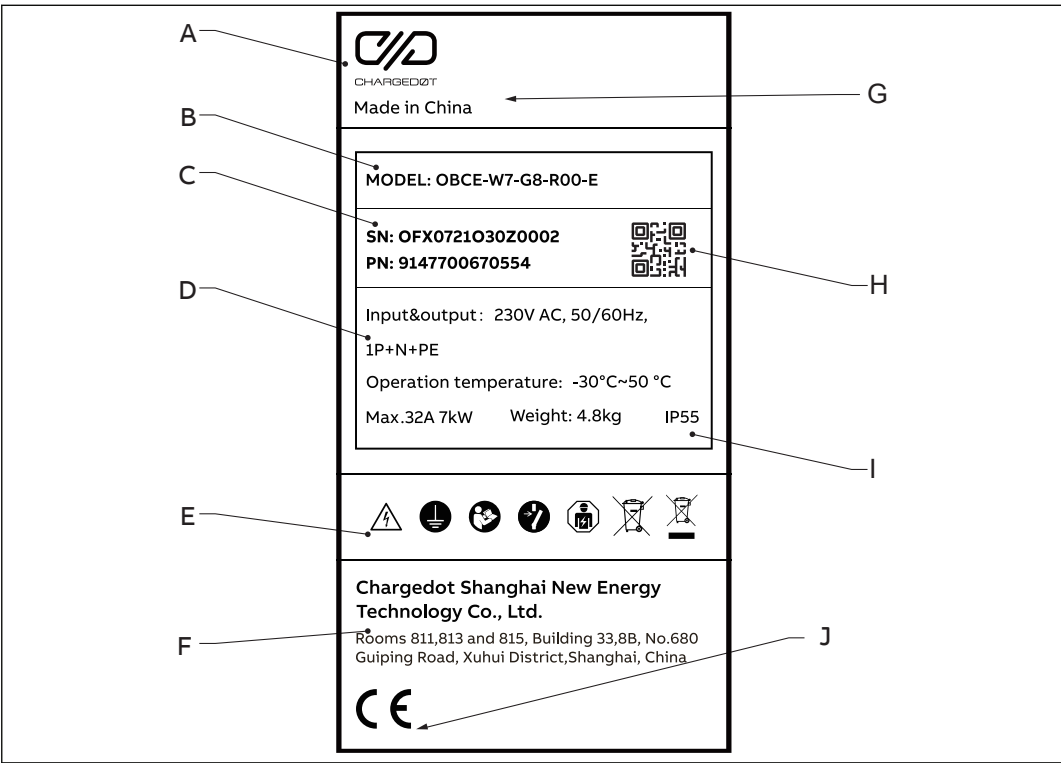
The EVSE AC input is intended for a hardwired installation that complies with the applicable national regulations.



Cautions:

- 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 Product label



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

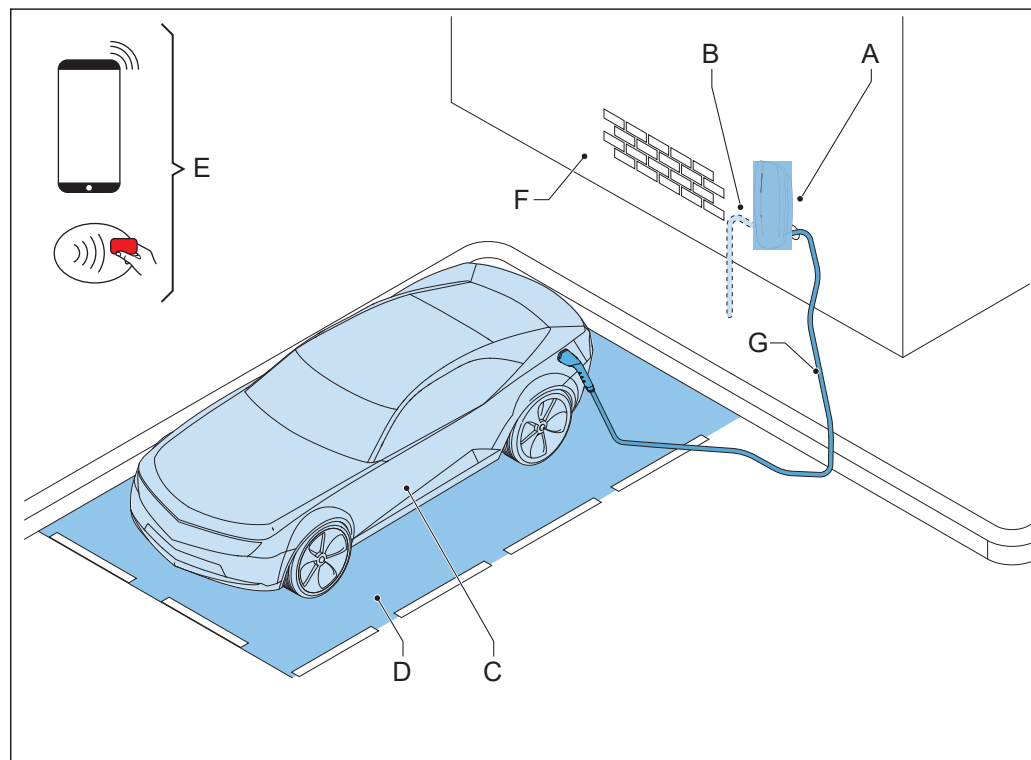
A	Brand	F	Address of the manufacturer
B	Product model name	G	Country of manufacture
C	Serial number	H	Part number
D	Power rating of the EVSE	I	Ingress protection rating
E	Reference to the manual	J	CE mark

2.4

Overview

2.4.1

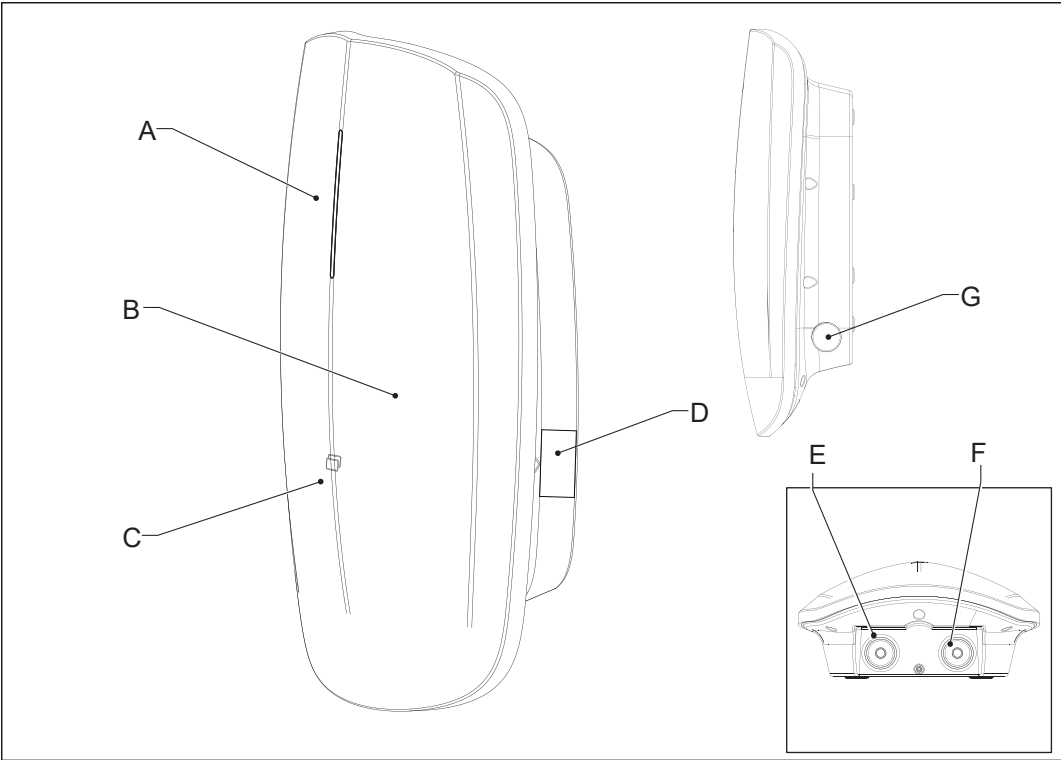
Overview of the application



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

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

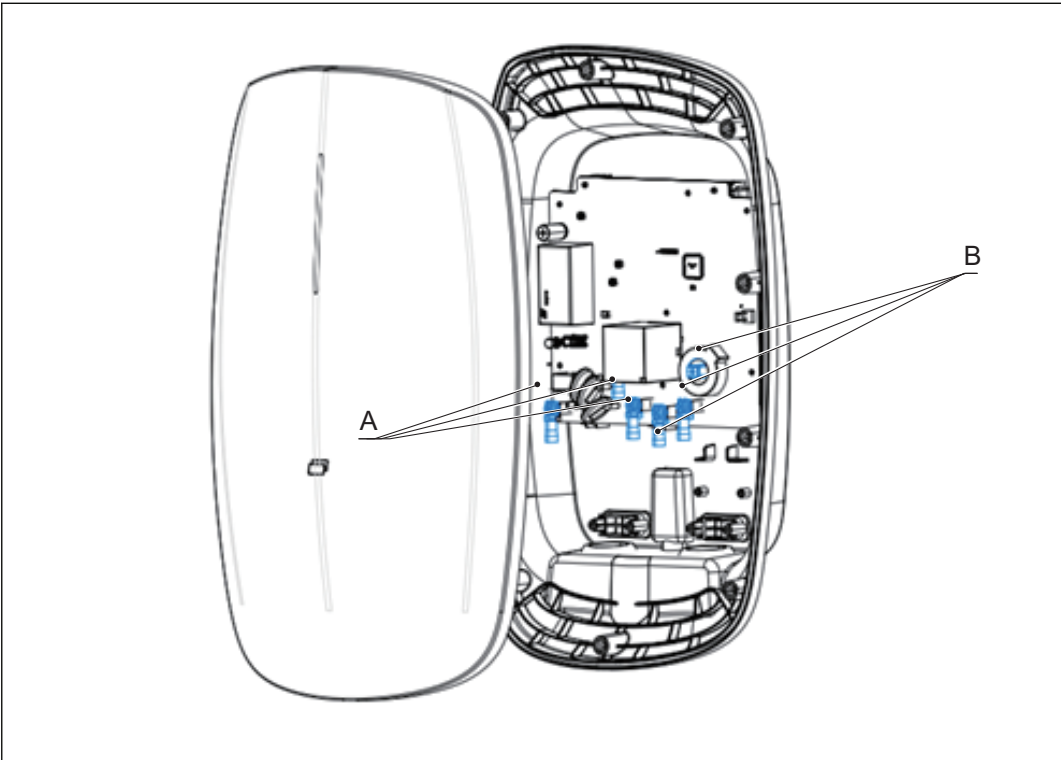
Opening for the AC input
- F

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

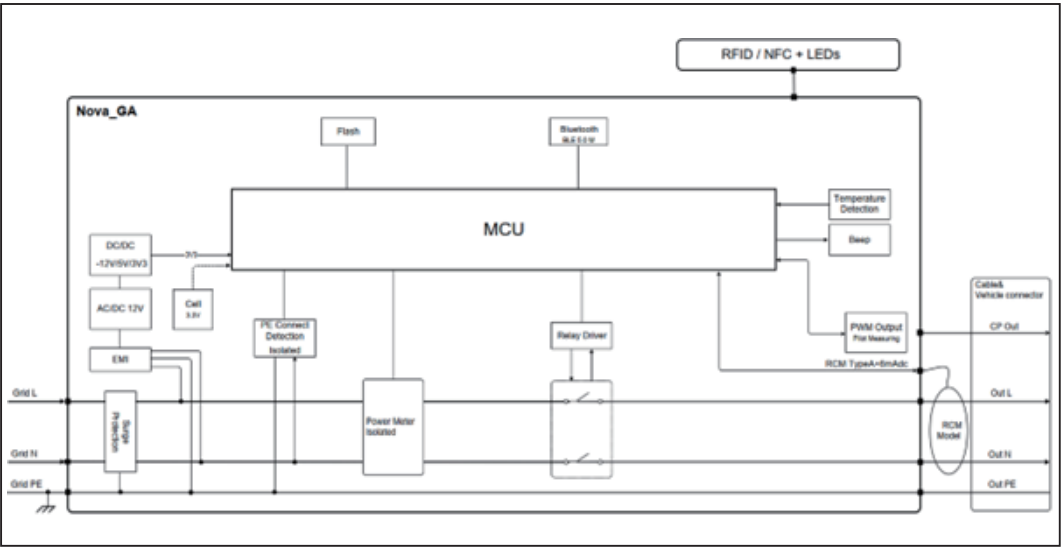
2.4.3 Overview of the product (inside)



A Terminal block for AC input B Terminal block for the EV charge cable

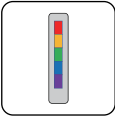
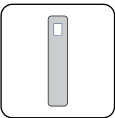
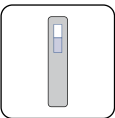
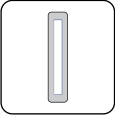
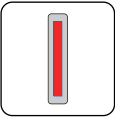
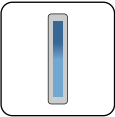
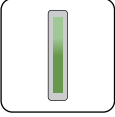
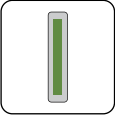
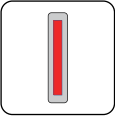
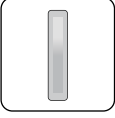
Part	Function
Terminal block for the AC input	To connect the AC input cable from the grid
Terminal block for the EV charge cable	To connect the EV charge cable

2.5 Working principle



2.6

LED indicators

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

3.9

Safety instructions for earthing

- 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.

4 Installation

4.1 General installation procedure

Preliminary requirements

	1. All required permits to agree with the local rules are granted. 2. The AC input cable is available.		• There is no voltage on the AC input cable during the complete installation procedure.
	• Tools for installation. Refer to section 11.5.		

Procedure

1. Unpack the EVSE. Refer to section 4.2.
2. Prepare the site. Refer to chapter 5.
3. Do the mechanical installation. Refer to chapter 6.
4. Do the electrical installation. Refer to chapter 7.
5. 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 3.8.
5. Make sure that all parts are delivered according to the order. Refer to the order and section 11.4.
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 manufacture. Refer to section 1.12.

5 Site preparation

5.1 Site environment

The environment should fully consider the following items:

1. The length of the charge cable and users' convenience.
2. Do not install the EVSE in places with violent shocks.
3. Do not install the EVSE in low-lying or water accumulate areas.
4. Do install the EVSE in a clean and well-ventilated area.
5. No other equipment or goods in 50cm above and below the wall.
6. The EVSE should be installed on a concrete base of 500*500*300mm.
7. The detail installation conditions are as following:

Parts	Description
Installation environment	Indoor/outdoor
Atmospheric pressure	55kpa~110kpa
Operation temperature	-30°C~50°C
Cooling method	Nature cooling
Wall flatness	< 0.25
Wall inclination	< 5°
The vertical tile of EVSE	< 5°
The height between EVSE bottom to ground	> 110cm
The strength of the concrete	At least 30#

5.2 Select the site



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.

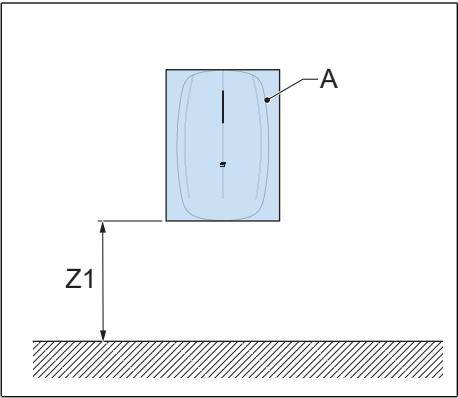
6 Mechanical installation

6.1 Precaution

Please read all instructions carefully before installation. Pay attention to the following:

- 1. Due to the complexity and extensive nature of the installation process, a professional technician is needed.
- 2. Do not install the charging post right away if the location where it is to be installed is under construction. Construction materials, dust, paint, etc. can cause damage to the EVSE. It is recommended to install the charging post after the construction is completed.
- 3. The EVSE should use a dedicated power supply or interface, and must be well grounded, L,N wiring is strictly prohibited to reverse. Before wiring, please switch off the power supply and take appropriate measures to prevent the power switch from closing automatically.
- 4. Do wear protective gloves when installing. To prevent the metal parts of the EVSE from hurting your hands.
- 5. When installing the expansion bolts, their fit with the wall holes must be tight. It is strictly forbidden to drill the holes too big, so as to avoid the expansion bolts loosening and causing the EVSE to fall down accidentally.
- 6. Please keep the EVSE as level as possible during installation.

6.2 Space requirements for installation



A EVSE

Parameter	Specification	
	[m]	[in]
Z1	0.5 to 1.5	16.4 to 49.2

6.3 Wall mount

6.3.1 General mechanical installation procedure

The followings have to be prepared before mounting and the recommended parameters are as follows:

Items	Quantity
Cross recessed self-tapping screws ST6*60	3
Torx head pan head screws M4*35	1
Charge gun fixed screws	2
Installation of position paper	1

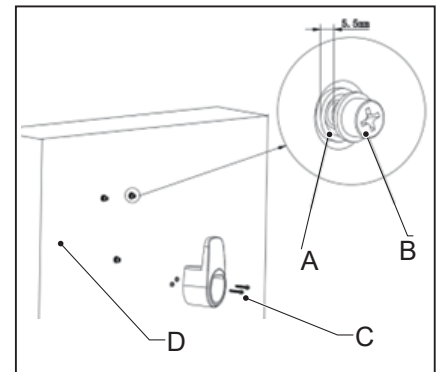
6.3.2 Prepare the holes and install the mounting screws

Preliminary requirements

- Level
- Pneumatic drill
- Electric screwdrivers

Procedure

1. Hold the installation paper against the wall.
2. Make sure that the installation is horizontal. Use the level.
3. Mark the location for the mounting holes.
4. Drill three mounting holes.
5. Insert the expansion tubes into the holes, make sure that a length of the screws stays out of the expansion tube (about 5mm).
6. Insert the screws(ST6*60) into the tubes.
7. For the socket, the right side of screw (ST5.5*60_H_C) need to be inserted firstly, then insert the left side of screw.



- A 3-φ10 expansion tube
B ST6*60

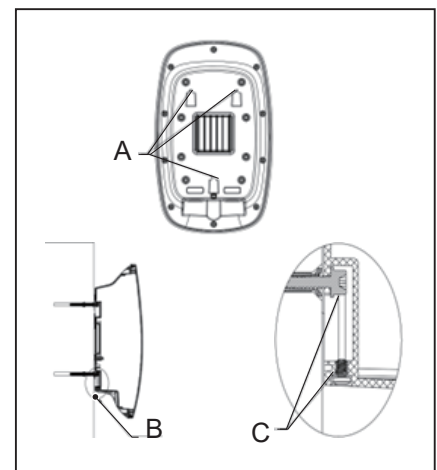
- C ST5.5*60_H_C
D Wall

6.3.3 Install the EVSE on the wall

Procedure

1. Lift the EVSE, let the holes on the rear cover of the EVSE align to the screws. The screws will support the EVSE.
2. Make sure there is no tight fit between the EVSE and the wall.
3. Fix the EVSE by using one M4*35 screw.

- A Slot
B Locked status
C M4*35 screw



6.4 Pedestal

6.4.1 General mechanical installation procedure

The followings have to be prepared before mounting and the recommended parameters are as follows:

Items	Quantity
Cross recessed cylindrical head screws M6*25	3
Torx head pan head screws M4*35	1
Expansion screws M10*80	4
Crossed pan head screws	2

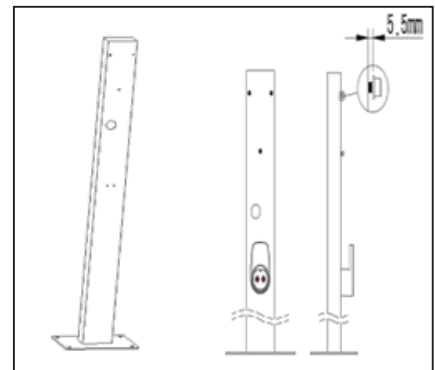
6.4.2 Prepare the holes and fixing the pedestal

Preliminary requirements

- Level
- Pneumatic drill
- Electric screwdrivers

Procedure

1. Prepare the holes to fix the pedestal according to the screw holes on the basement of pedestal.
2. Thread the power supply cable into the cable hole in the column (hollow).
3. Install the M10*80*4pcs screws for fixing pedestal on the concrete base.
4. Insert the expansion tubes into the holes, make sure that a length of the screws stays out of the expansion tube (about 5mm, refer to section 6.2).
5. Install the M6*25*3pcs screws on the pedestal, and M5*12*2pcs screws to fix the socket(refer to section 6.2).



6.4.3 Install the EVSE on the pedestal

Procedure

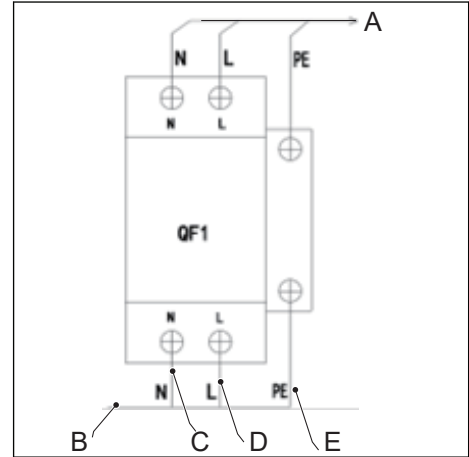
Refer to section 6.2.

7 Electrical installation

7.1 General electrical installation procedure

Procedure

1. Connect the 0.8m power cable and user inlet cable on the MCB.
2. Connect the L, N and PE connector according to the corresponding position of the MCB.
3. The specification of the cable refer to section 11.
4. The MCB is required to be installed at the front end, the suggested specification of MCB should be rated-current: 40A.
5. The MCB shall comply with IEC 60898-1 or IEC 60947-2 or IEC 61009-1.



Caution

1. The adaptors or conversion adapters are not allowed to be used except specifically designated and approved by the vehicle manufacturer.
2. The cord extension sets are not allowed to be used.

A	Customer's inlet cable	D	Red wire - L wire
B	The 0.8m power cable from EVSE	E	Yellow-green wire – PE wire
C	Blue wire – N wire		

8 Commissioning

8.1 General commissioning procedure



Warning: Only use this commissioning procedure for domestic use of the EVSE and commissioning with the customized app. For all other methods of commissioning, do not do the commissioning. Contact your local representative of the manufacturer. Refer to section 1.12.

Preliminary requirements

1. Download the customized app.
2. Energize the EVSE. Refer to section 8.2.
3. Set up the EVSE. Refer to section 8.3.

8.2 General specifications

1. Close the breaker that supplies the power to the EVSE.
 - Be careful when you work with electricity.
2. Start power supply.
3. Initiate series of self-tests, to ensure that the EVSE operated correctly and safely.
4. If an issue has been detected, the error light will illuminate.

8.3 Set up the EVSE

Procedure

1. Open the customized app and Bluetooth.
2. Enter the PIN.
3. Update the product firmware. Do this step again until the app does not detect newer firmware.

9 Access to parts

9.1 Remove the front cover

Remove these parts:

- Screws
- Front cover
- Rear cover

9.2 Install the rear cover

Install screws from the rear cover:

- Screws
- Rear cover
- Front cover

10 Troubleshooting

10.1 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.

10.2 Troubleshooting table

No.	Abnormal phenomenon	Possible cause	Possible solution
1	LED doesn't work	Power cable not connected	Installer wiring inspection
		MCB break	Reset MCB
2	No response after swiping card	RFID card far away from EVSE	Re-swap the card, do not move it upside down
		Failed or damaged card	Please contact with manufacture
3	Charge fail	Charging gun not well plugged in	Re-plug in the charging gun
		EV issue	Go to a 4S stores for inspection

10.3 De-energize the EVSE

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

11 Technical data

11.1 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.

11.2 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
Certification	• Single phase • Single phase with WiFi

Parameter	Specification
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

11.3 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

11.4 Packing list

Items	Remark
EVSE (include charge gun)	
Socket	145.9 * 83.9 * 60.7 (mm)
RFID card * 2 pcs	85 * 54 * 2 (mm)
Cross recessed self-tapping screws * 3 pcs	ST 6 * 60
Torx head pan head screws * 1 pce	M4 * 35
Charge gun fixed screws * 2 pcs	ST 5.5 * 60 _ H _ C
Installation of position paper * 1 pce	A4 297 * 210 (mm)
Product manual * 1 pce	
Qualified certificate *1 pce	

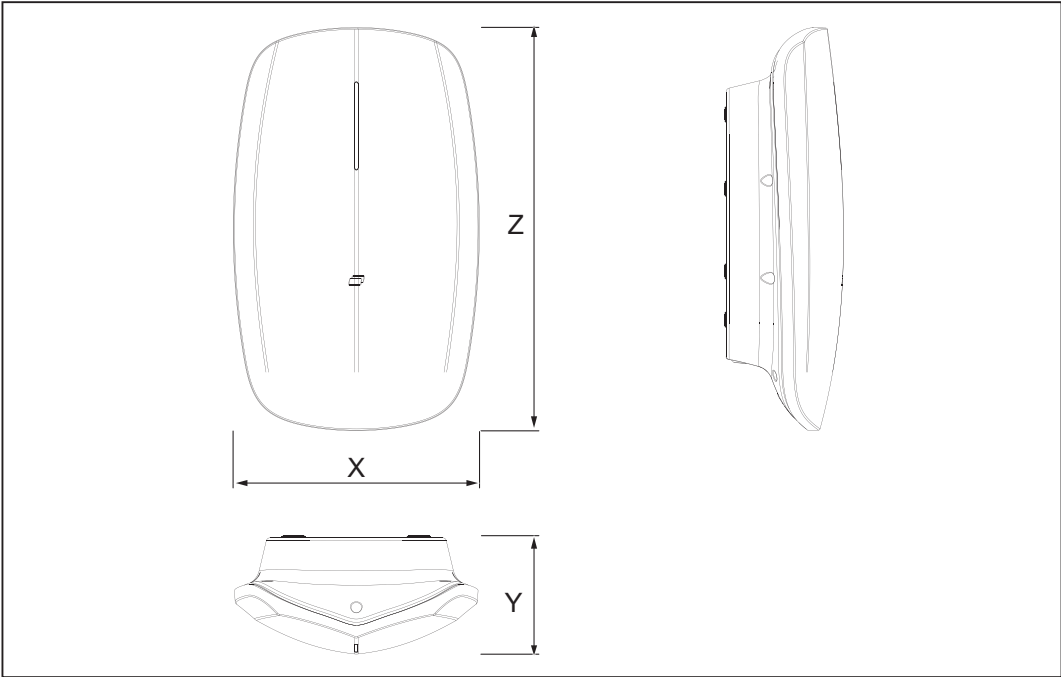
11.5 Required tools for installation

Items	Remark
Pneumatic drill	Driller $\phi 6$ * 1pce $\phi 10$ * 1pce
PVC insulate tape	
Tape rule	5m
Wire crimper	
Level	
Phillips screwdriver	T20
Wire stripper	
Adjustable spanner	
Electrician's gloves	
Hammer	
Allen spanner	M6

11.6 Noise level

Parameter	Specification
Noise level	Less than 55dB

11.7 Dimension



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

Parameter	Specification [mm]
X	252
Y	122.4
Z	412.6

11.8 Cable specification

11.8.1 General electrical installation procedure

Parameter	Specification
Earthing systems	TT
	TN
Frequency	50 Hz ~ 60 Hz
Overvoltage category	OVC III

Parameter	Specification
Protection	Earth fault, including DC leakage protection
	Lightning surge protection
	Overtemperature protection
	Overload protection
	Overvoltage protection
	Undervoltage protection

11.8.2 AC input specification

Parameter	Specification
Input AC power connection	1 phase
Input voltage	230 V AC
Standby power consumption	≤ 5 W
Earth fault protection	30mA AC, Type A + 6 mA dc
Maximum input power	7 kW (32 A)

11.8.3 General logic interface specifications

Parameter	Specification
Bluetooth	1 phase
RFID	ISO/IEC 14443A, MIFARE™ Classic, 1K memory

11.9 Cable specification

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
Diameter of the phase conductors	Refer to the local rules.
Diameter of the PE conductor	The same as the diameter of the phase conductors

- 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.

11.10 Torque specification

Parameter	Specification
	[Nm]
Terminal block for the AC input	1.16
Mounting screws	4.0
Terminal for the charge cable	1.16
MCB/RCBO	2.5