



# CHARGING STATION «WALL COMPLEX»



USER MANUAL

Version 4.0

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## SAFETY PRECAUTIONS

This Operating Instruction contains the necessary sections for technical data, technical maintenance rules, as well as safety instructions and recommendations for operating the Charging Station.

Before starting the work, you should carefully study all the rules and recommendations in the Instruction and follow them during operation. This will ensure the reliable operation of the product and the safety of its use.

When working with the Charging Station (ChS), the safety recommendations in this Manual, as well as the applicable local safety regulations and general safety regulations, should be observed.

Before starting any work on the Charging Station, make sure that the Instruction, in particular the Safety section and the corresponding safety regulations, have been fully read by your personnel and fully understood.

Important safety instructions in this Manual are indicated by symbols. These safety instructions must be strictly followed. You should always pay attention to them and follow the safety requirements in order to avoid accidents, personal injury, or property damage.

### WARNING!



Risk of injury or death.

This symbol indicates instructions that must be followed to avoid injury, trauma, or death.

### ATTENTION!



Risk of property damage.

This symbol indicates instructions which, if not followed, may result in property damage, functional failure, and/or damage to the Station or the vehicle connected to it.

### WARNING!



Electric shock hazard.

This symbol warns of potentially hazardous situations involving electrical current. Failure to follow safety instructions increases the risk of serious injury or death. Care should be taken, especially during maintenance and repair.



### ATTENTION!

This symbol indicates tips and information that should be followed to ensure an efficient and trouble-free operation of the Station.

Strict adherence to the safety precautions outlined in these Operating Instructions and extreme care when using the equipment are essential to prevent and to reduce the likelihood of injury or damage to the equipment.

The Manufacturer shall not be responsible for any direct or indirect damages resulting from the use or the work with the electrical circuits of the equipment or the software described in this Manual.

The Manufacturer shall not be responsible for damage and/or malfunction caused by non-compliance with the requirements of the Manual.

The Manufacturer shall not be responsible for any personal injury or property damage, whether indirect or specific in nature, consequential damages, loss of business profit, interruption in work or loss of business information as a result of using the equipment described in the Manual.

Due to continuous improvement, the Developer shall reserve the right to make changes to the design of the equipment described in the Manual without prior notice.

#### RULES FOR EXTINGUISHING THE CHARGING STATION IN FIRE:

1. Press the emergency stop button.
2. Ensure the safety of yourself and others.
3. Call emergency services that specialize in firefighting.
4. Disconnect the power supply from the station.
5. It is possible to carry out independent fire extinguishing only when the power supply is turned off in compliance with all safety rules.

## 1. GENERAL INFORMATION

### 1.1. APPLICATION

WALL COMPLEX – charging station designed for safe and efficient charging of electric vehicles in specially prepared places (parking lots, offices, shopping centers, etc.). It can be installed inside or outside the building. The charging station (depending on the configuration) can simultaneously charge three electric cars with alternating current and three electric cars with direct current.

The charging station is equipped with an intelligent control system that maintains communication between the station and the electric vehicle. Control and security functions are constantly working in the system.

The station is available in several configurations. All station configurations have one to five wires with Type 1 / Type 2 / GB/T AC / CHAdeMO / CCS Type 1 / CCS Type 2 / GB/T DC connectors in various combinations.

### 1.2. TECHNICAL CHARACTERISTICS

Charging mode (IEC 61851-1)	Mode 3, Mode 4
Display	<ul style="list-style-type: none"> <li>• LCD-display (20×2 characters)</li> <li>• LED-7" color touch screen</li> </ul>
Number of connectors	1...5*
Execution in a single case	+
Case material	Steel with anti-corrosion coating
Mechanical protection class (IEC 62262)	IK10
Enclosure rating (IEC 60529)	IP54
Mechanical emergency shutdown button	+
Bottom power cable entry	+
Mounting type	<ul style="list-style-type: none"> <li>• Wall</li> <li>• Pedestal</li> </ul>
User-defined interface management	Menu functions are controlled via the app
Indication of the consumed electricity amount	+
Ability to adjust the charge current	+
Online monitoring of device operation	+
The possibility of setting a tariff	+
Operational capabilities of the Station	Autonomous work; RFID card (IEC 14443-1); Mobile app; Chip tag (optional)

Ambient temperature	-35°C...+50°C
Relative humidity	no more than 95% without moisture condensation
Weight (maximum configuration), kg	240*
Dimensions (H×W×D), mm	1065×1063×311
Dimensions with pedestal (H×W×D), mm	2126×1063×630

Output parameters:

Nominal input voltage ( $\pm 10\%$ ), V	400
The number of phases	3
Type of electrical network	TN-S
Rated supply frequency ( $\pm 0,2$ ), Hz	50/60
Maximum input current, A	130...330*
Maximum power, kW	60...204*

Communication and protocols:

2G	GSM GPRS Class 12, Quad-band: 850/900/1800/1900 MHz
3G/4G (LTE)	LTE Cat 1, LTE-FDD: B1/B3/B7/B8/B20/B28A
RFID	ISO 14443(A) (Mifare)
Ethernet	IEEE 802.3
wifi	802.11a/b/g/n
OCPP	OCPP 1.6

Compliance with standards

EN IEC 61851-1:2019, EN 61851-23:2014, EN 61439-1:2011, EN 61439-2:2011, EN 60439-1:1999, EN 61000-6-1:2007, EN 61000-6-3:2007, IEC 61851-21-2:2018, EN 55011:2016

\* Depends on the configuration of the station.

1.3. APPEARANCE AND DIMENSIONS OF THE STATION

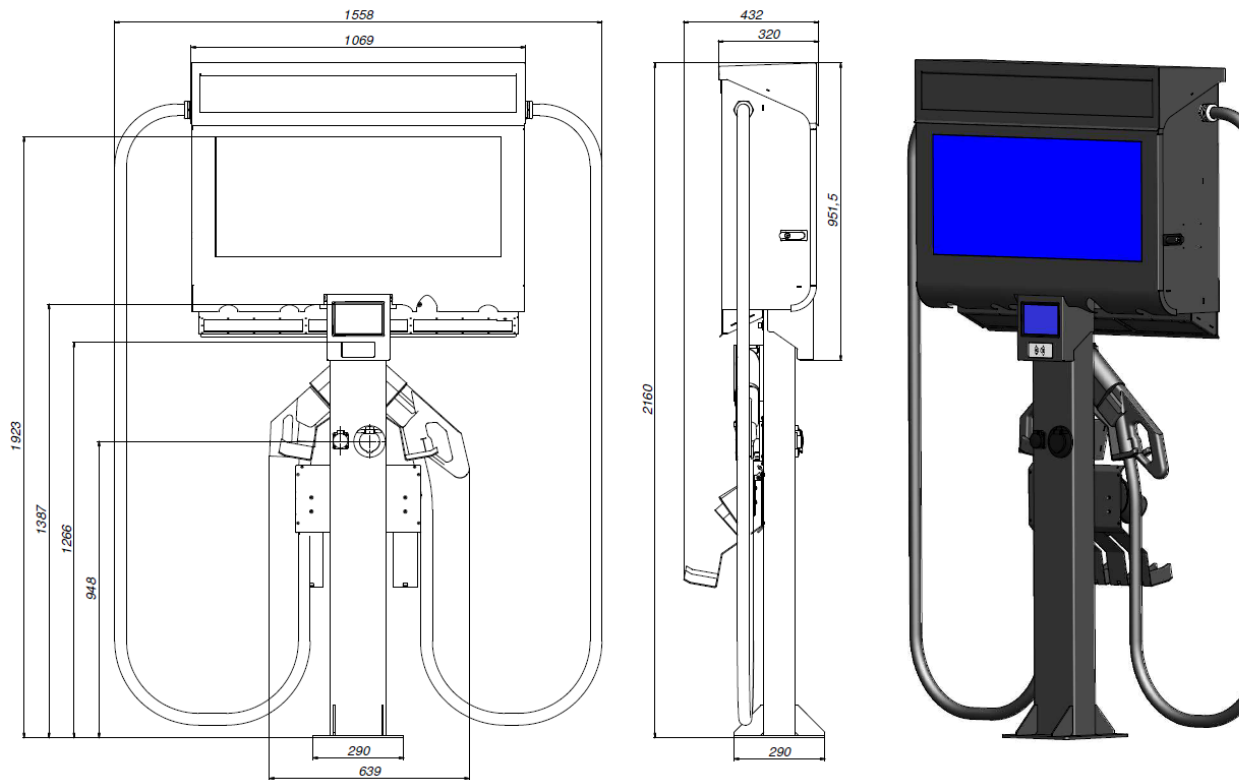


Figure 1.1. Appearance and dimensions of the Wall Complex station



## 1.4. CONNECTORS CHARACTERISTICS

### AC CONNECTORS

Charging station connector	Description	
Type 1		
Maximum output power	9,2 kW	18,4 kW
Maximum charging current	40A	80A
Maximum charging voltage	230V	
Cable length	6,5 m	
Type 2		
Maximum output power	22 kW	43 kW
Maximum charging current	3×32A	3×63A
Maximum charging voltage	400 V	
Cable length	6,5 m	
GB/T AC		
Maximum output power	22 kW	43 kW
Maximum charging current	3×32A	3×63A
Maximum charging voltage	400 V	
Cable length	6,5 m	
Type 2 Socket		
Maximum output power	22 kW	
Maximum charging current	3×32 A	
Maximum charging voltage	400 V	
Cable length	6,5 m	

DC CONNECTORS

Charging station connector	Description	
CHAdeMO		
Maximum output power	90 kW	
Maximum charging current	200A	
Maximum charging voltage	500V	
Cable length	5,5 m	
CCS Type 1		
Maximum output power	120 kW	200 kW
Maximum charging current	250A	
Maximum charging voltage	500V	1000V
Cable length	5,5 m	
CCS Type 2		
Maximum output power	120 kW	240 kW
Maximum charging current	300A	
Maximum charging voltage	500V	1000V
Cable length	5,5 m	
GB/T DC		
Maximum output power	120 kW	200 kW
Maximum charging current	250A	
Maximum charging voltage	500V	1000V
Cable length	5,5 m	

## 1.5. CHARGING STATION MODIFICATIONS

The charging station is produced in various configurations, the shape of which depends on the presence of connectors and the power modules used, which determine the output power of the direct current station (150-180-210-240 kW or 160-200-240-280-320).

The power value of the charging station, depending on the configuration, is indicated in Table 1.1. In Table 1.1,  $P_{Type2} = P_{GB/T AC}$  with similar characteristics of the connector, that is, in the case of modification, 2xType 2 (44 kW), Type 2 can be included (22 kW) + GB/T AC (22 kW) or 2xGB/T AC with a total power of 44 kW.

Table 1.1. Power and input current of the charging station (maximum values).

$P_{DC}$		$P_{DC} = 150 \text{ kW}$					$P_{DC} = 160 \text{ kW}$				
$P_{Type1}$											
Brak Typ 1	150 (255 A)	172 (282 A)	194 (319 A)	193 (318 A)	236 (381 A)	160 (265 A)	182 (297 A)	204 (329 A)	203 (328 A)	246 (391 A)	
1xTyp 1 (9,2 kW)	159,2 (295 A)	181,2 (287 A)	—	202,2 (358 A)	—	169,2 (305 A)	191,2 (337 A)	—	212,2 (368 A)	—	
2xTyp 1 (18,4 kW)	168,4 (335 A)	—	—	—	—	178,4 (345 A)	—	—	—	—	
1xTyp 1 (18,4 kW)	168,4 (335 A)	190,4 (367 A)	—	211,4 (398 A)	—	178,4 (345 A)	200,4 (377 A)	—	221,4 (408 A)	—	
2xTyp 1 (36,8 kW)	186,8 (415 A)	—	—	—	—	196,8 (425 A)	—	—	—	—	
$P_{Type1}$ $P_{Type2}$	Brak Typ 2	1xTyp 2 (22 kW)	2xTyp 2 (44 kW)	1xTyp 2 (43 kW)	2xTyp 2 (86 kW)	Brak Typ 2	1xTyp 2 (22 kW)	2xTyp 2 (44 kW)	1xTyp 2 (43 kW)	2xTyp 2 (86 kW)	

$P_{DC}$		$P_{DC} = 180 \text{ kW}$					$P_{DC} = 200 \text{ kW}$				
$P_{Type1}$											
Brak Typ 1	180 (305 A)	202 (337 A)	224 (369 A)	223 (368 A)	266 (431 A)	200 (330 A)	222 (362 A)	244 (394 A)	243 (393 A)	286 (456 A)	
1xTyp 1 (9,2 kW)	189,2 (345 A)	211,2 (377 A)	—	232,2 (408 A)	—	209,2 (370 A)	231,2 (402 A)	—	252,2 (433 A)	—	
2xTyp 1 (18,4 kW)	198,4 (385 A)	—	—	—	—	218,4 (410 A)	—	—	—	—	
1xTyp 1 (18,4 kW)	198,4 (385 A)	220,4 (417 A)	—	241,4 (448 A)	—	218,4 (410 A)	240,4 (442 A)	—	261,4 (473 A)	—	
2xTyp 1 (36,8 kW)	216,8 (465 A)	—	—	—	—	236,8 (490 A)	—	—	—	—	
$P_{Type1}$ $P_{Type2}$	Brak Typ 2	1xTyp 2 (22 kW)	2xTyp 2 (44 kW)	1xTyp 2 (43 kW)	2xTyp 2 (86 kW)	Brak Typ 2	1xTyp 2 (22 kW)	2xTyp 2 (44 kW)	1xTyp 2 (43 kW)	2xTyp 2 (86 kW)	

Continuation of table 1.1.

P <sub>Type1</sub> \ P <sub>DC</sub>	P <sub>DC</sub> = 210 kW					P <sub>DC</sub> = 240 kW				
	Brak Typ 1	210 (355 A)	232 (387 A)	254 (419 A)	253 (418 A)	296 (481 A)	240 (405 A)	262 (437 A)	264 (469 A)	263 (468 A)
1xTyp 1 (9,2 kW)	219,2 (395 A)	241,2 (427 A)	—	262,2 (458 A)	—	249,2 (445 A)	271,2 (477 A)	—	272,2 (508 A)	—
2xTyp 1 (18,4 kW)	228,4 (435 A)	—	—	—	—	258,4 (485 A)	—	—	—	—
1xTyp 1 (18,4 kW)	228,4 (435 A)	250,4 (467 A)	—	271,4 (498 A)	—	258,4 (485 A)	280,4 (517)	—	281,4 (548 A)	—
2xTyp 1 (36,8 kW)	246,8 (515 A)	—	—	—	—	276,8 (565 A)	—	—	—	—
P <sub>Type1</sub> \ P <sub>Type2</sub>	Brak Typ 2	1xTyp 2 (22 kW)	2xTyp 2 (44 kW)	1xTyp 2 (43 kW)	2xTyp 2 (86 kW)	Brak Typ 2	1xTyp 2 (22 kW)	2xTyp 2 (44 kW)	1xTyp 2 (43 kW)	2xTyp 2 (86 kW)

P <sub>Type1</sub> \ P <sub>DC</sub>	P <sub>DC</sub> = 280 kW					P <sub>DC</sub> = 320 kW				
	Brak Typ 1	280 (460 A)	302 (492 A)	304 (524 A)	303 (523 A)	366 (586 A)	320 (525 A)	342 (557 A)	344 (589 A)	343 (588 A)
1xTyp 1 (9,2 kW)	289,2 (500 A)	311,2 (532 A)	—	312,2 (563 A)	—	329,2 (565 A)	351,2 (597 A)	—	352,2 (628 A)	—
2xTyp 1 (18,4 kW)	298,4 (540 A)	—	—	—	—	338,4 (605 A)	—	—	—	—
1xTyp 1 (18,4 kW)	298,4 (540 A)	320,4 (572 A)	—	321,4 (603 A)	—	338,4 (605 A)	360,4 (637 A)	—	—	—
2xTyp 1 (36,8 kW)	316,8 (620 A)	—	—	—	—	—	—	—	—	—
P <sub>Type1</sub> \ P <sub>Type2</sub>	Brak Typ 2	1xTyp 2 (22 kW)	2xTyp 2 (44 kW)	1xTyp 2 (43 kW)	2xTyp 2 (86 kW)	Brak Typ 2	1xTyp 2 (22 kW)	2xTyp 2 (44 kW)	1xTyp 2 (43 kW)	2xTyp 2 (86 kW)

## 2. PACKAGE

Charging station Wall Complex with pedestal	1
Charger module *	1-5
User manual	1
Metal insert**	1
Nut M16**	4
Metal washer 16**	4

\* Upon agreement with the customer, charging modules can be installed at the station. The number of modules in a station depends on its configuration.

\*\* Upon agreement with the customer.

### 3. MARKING

Information about the name and model of the station, basic technical parameters and serial number can be found on the plate located on the back of the station case.

Decoding the configuration.

Model: CW BBB CCDDDE CCDDDE CCDDDE CCDDDE CCDDDE CCDDDE FFF G

where: CW – Charging station “Wall Complex”

BBB – the maximum power of the station;

CC – connector type;

DDD – the maximum current of the connector;

E – maximum connector voltage;

FFF – modem configuration;

G – display configuration.

Otherwise, CCDDDE = 000000 – the connector is missing.

CC:

CH – CHAdeMO;

C1 – CCS Type 1;

C2 – CCS Type 2;

EB – E-Bike;

GA – GB/T AC;

GD – GB/T DC;

T1 – Type 1;

T2 – Type 2;

S2 – Type 2 socket.

E:

1 – 1000 V;

2 – 230 V;

4 – 400 V;

5 – 500 V.

FFF:

2G0 – 2G-modem;

4G0 – 4G-modem;

4GE – 4G-modem with

Ethernet.

G:

1 – LCD–

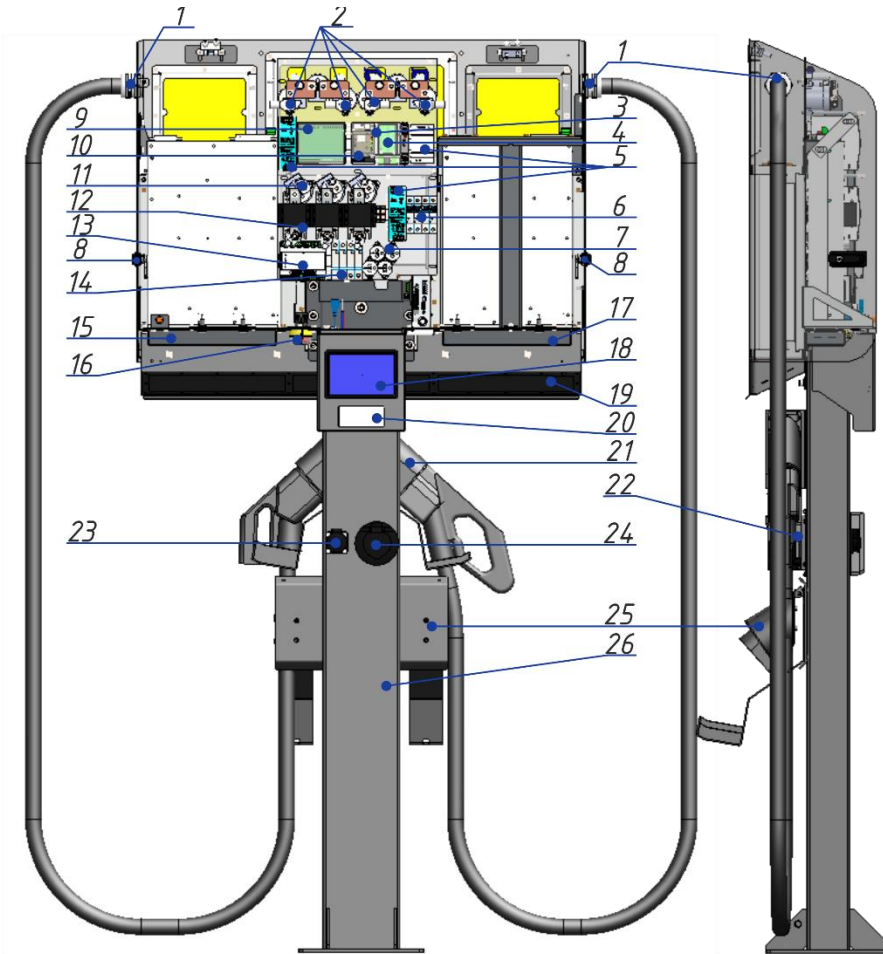
display(20x2  
symbols);

2 – 7" – display;

3 – 17" – display.

## 4. STRUCTURE OF THE STATION

### 4.1. STRUCTURE OF THE CHARGING STATION



- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>1. Connector output</li> <li>2. DC contactors</li> <li>3. Battery for backup power supply</li> <li>4. CCS Controller</li> <li>5. 12V power adapters</li> <li>6. Electrical switches</li> <li>7. Output contactors</li> <li>8. Castle</li> <li>9. CHAdeMO controller</li> <li>10. EVCC-4G modem</li> <li>11. Input contactors</li> <li>12. Input current transformers</li> <li>13. AC controller</li> </ul> | <ul style="list-style-type: none"> <li>14. Surge protector</li> <li>15. Inverter filter 5</li> <li>16. Emergency stop button (EMO)</li> <li>17. Filter for the inverter 4</li> <li>18. Screen</li> <li>19. Filter for inverters 1-3</li> <li>20. RFID reader</li> <li>21. Connector holder</li> <li>22. Electronics fan with filter</li> <li>23. E-bike socket</li> <li>24. Socket Type 2</li> <li>25. Adapter panel</li> <li>26. Pedestal</li> </ul> |
|---|---|

Figure 4.1. Structure of the station

## 4.2. FUNCTIONAL DIAGRAM OF THE CHARGING STATION SECURITY SYSTEM

The main safety components of the station are shown on the functional diagram (Figure 4.2).

The charging station for the AC section has type B RSD (protective shutdown device) leakage sensors with a 30mA trigger output. At the customer's request, a leakage measurement system for the entire A type RSD station can be added to the charging station. The leakage measurement system is implemented in a device based on the AC charging controller EVCC-AC.

Insulation control on DC connectors is carried out by CHAdeMO or CCS charge controllers.

A protective device is installed to control voltage drops and filter impulse interference.

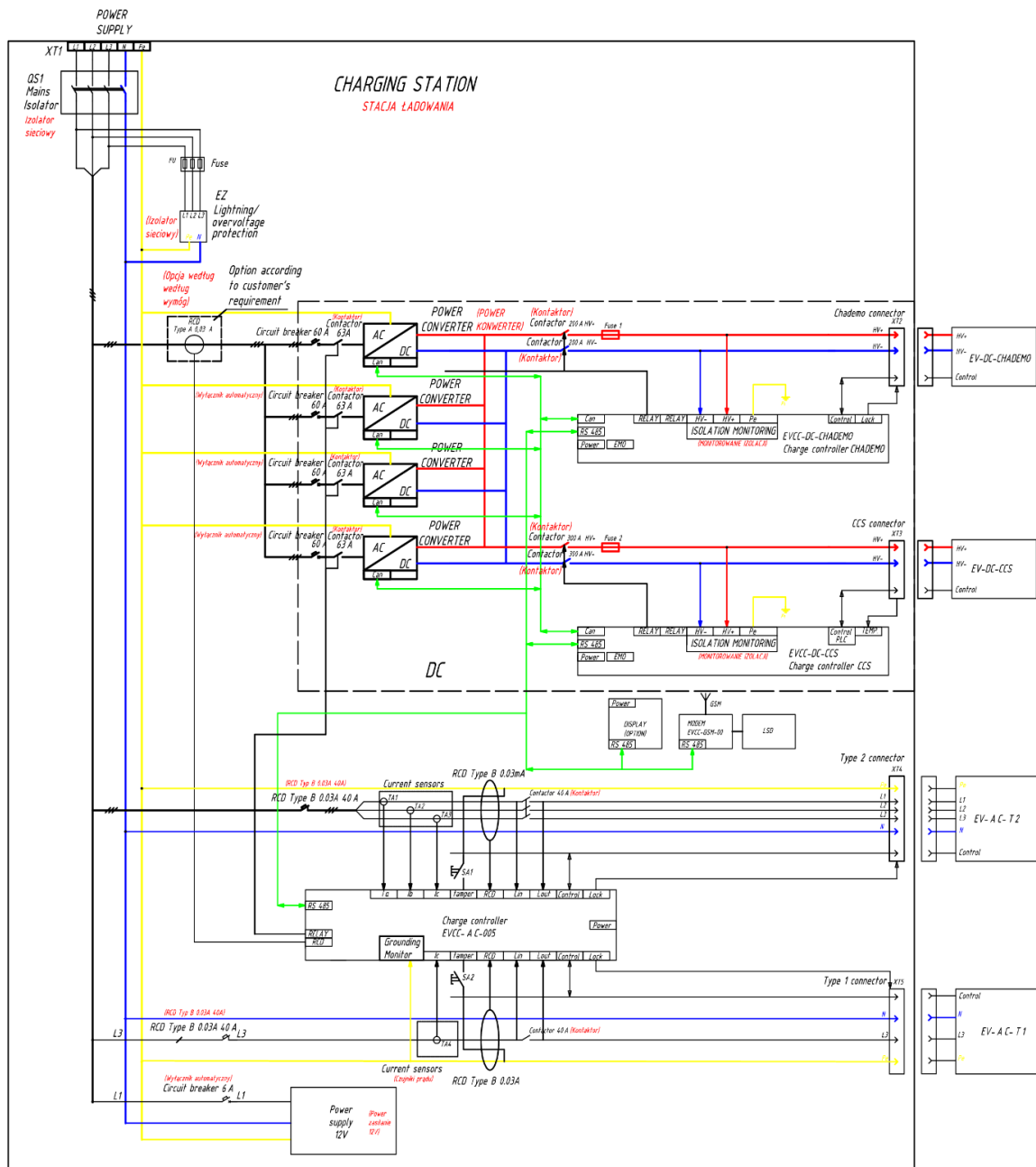


Figure 4.2. Electrical diagram of safety elements

## 5. INSTALLATION

### 5.1. OPERATING LIMITATIONS



The charging station is designed only for charging electric vehicles.

Charging only compatible electric vehicles.

Failure to comply with the requirements for operation, maintenance and repair, described in this manual, excludes any liability of the manufacturer in the event of malfunctions in the operation of the station.

The installation altitude of the charging station above sea level should not exceed 2000 m.

Follow the safety regulations to avoid injury and material damage when working with the station.

Before the station installation, you should review this manual carefully and consult with a licensed electrician, contractor, and trained installation expert to insure compliance with local building codes, safety standards and wiring regulations.

### 5.2. INSTALLATION OF THE STATION

Make sure the installation site has adequate GSM or 4G (LTE) cellular coverage. Cellular repeaters may be required to ensure good signal strength in underground garages or other enclosed parking lots.

It is recommended to place the station under a canopy to protect it from direct exposure to atmospheric precipitation and sunlight.

For wall-mounted charging stations, prepare a place to attach the bracket.

When choosing a place to place the station, it should be taken into account that there should be a distance of at least 1 meter from any obstacles to the left and right of the station body. Anchor bolt holes should be located as shown in Figure 5.1.

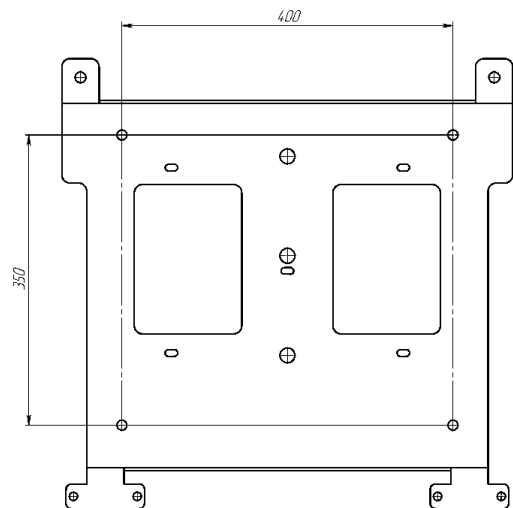


Figure 5.1. Mounting plate

For pedestal-mounted charging stations, prepare the installation site in advance by following the instructions below.



When choosing a place for a charging station, the following conditions must be observed: the distance between the housing of the charging station and a wall or an obstacle must be at least 1 meter. There must be sufficient service space in front and behind the charging station.

The station is installed on a foundation (prepared concrete base) measuring 1300×1300×500 mm. There should be no underground communications in the foundation area.

The foundation is poured into a well-rammed base with a pre-laid cable duct and a placed metal insert. For the base, it is necessary to use a mixture of crushed stone with cement at least M400. The surface of the foundation must be carefully leveled to avoid distortion of the station during installation.

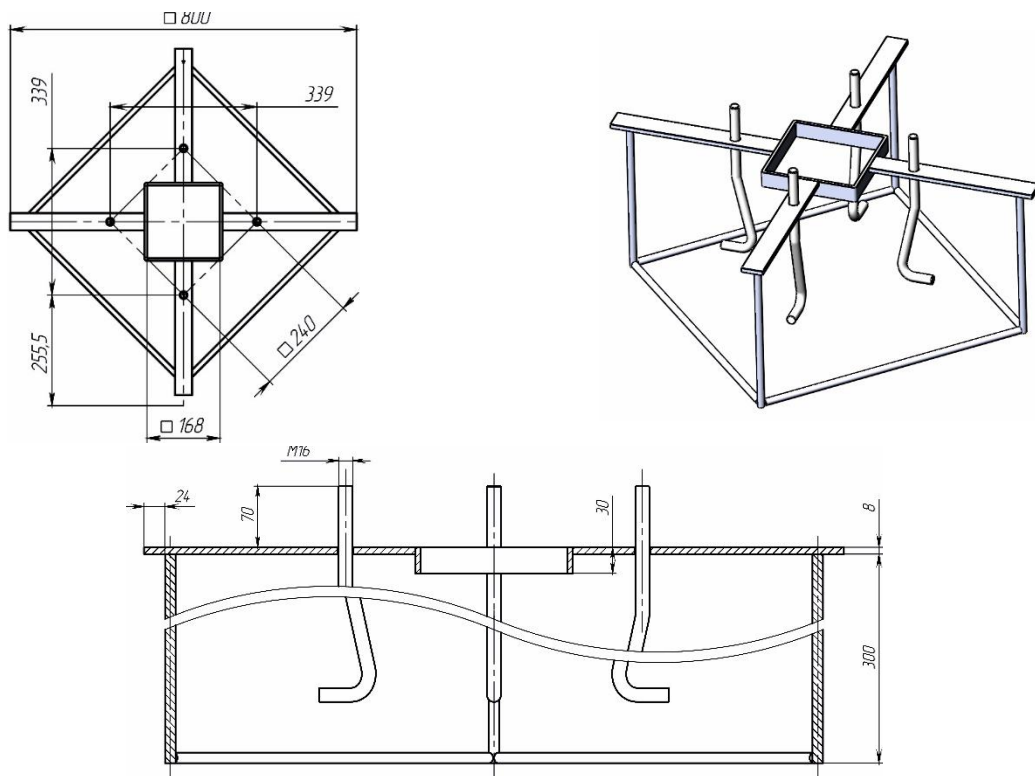


Figure 5.2. The appearance and dimensions of the metal insert

The dimensions of the pedestal base are shown in Figure 5.3, the plate thickness is 8 mm.

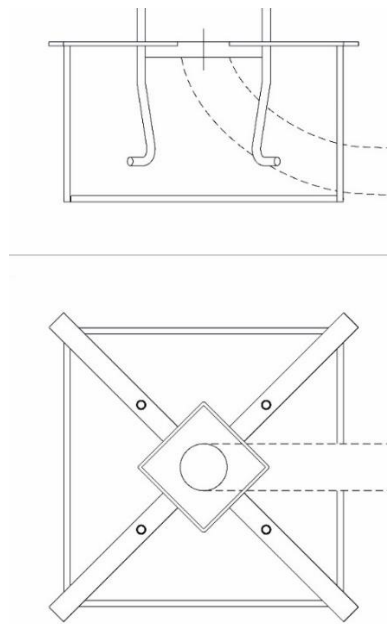
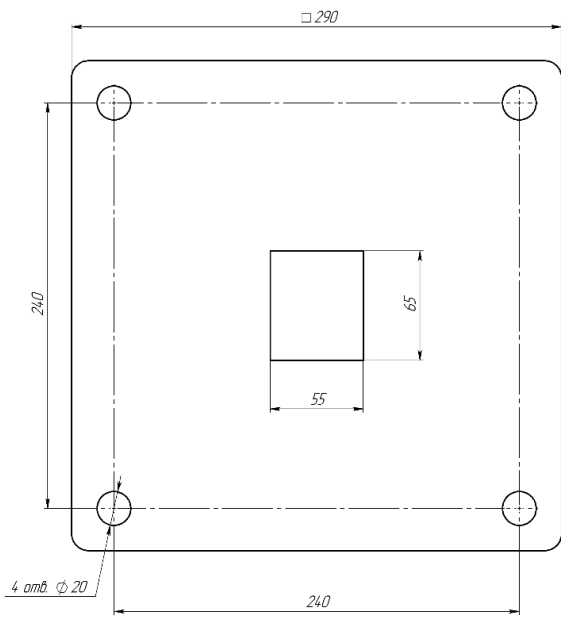


Figure 5.3. Pedestal base (bottom view)

Figure 5.4. The foundation of the station

Along with the preparation of the foundation, it is necessary to ensure the laying of an electric power cable (not included in the delivery set). The required cable length above the foundation is at least 1.7 meters.



**WARNING!**

Only qualified personnel should connect the power cable to the AC mains..

It is recommended to select the cross-section of the power cable based on the power of the station.

Before connecting the complex to the power supply, it is recommended to install an AC circuit breaker between the complex and the power supply network. It is necessary for the further maintenance of the complex. Depending on the power of the station, it is recommended to use a 3-pole circuit breaker in the range from 120 A to 350 A.

Table 5.1. Recommended cross-section of the power cable (underground laying).

Input current per phase, A (cable in the air)	Input current per phase, A (cable in the ground)	Cross-section of the power cable, mm <sup>2</sup>
78	94	5×16
104	123	5×25
127	146	5×35
155	173	5×50
196	214	5×70
242	259	5×95
280	294	5×120

### 5.3. STATION CONNECTING

After transporting the charging station, before installation, make sure that all internal elements are properly fixed and there are no mechanical damages.

Check the quality of wire, loop, and connector connections. Check the tightening torque of terminals, bolts, screws, and switchgear.

Before you connect the charger, make sure that:

- The mains power cable is de-energized by external tripping devices.
- The mains input has a TN-S connection scheme: 3 phases with separate neutral (N) and grounding (PE) conductors. Network type – TN-S.
- In the case of a 4-wire connection, perform protective grounding with a separate conductor.

Connecting the complex to the electric circuit:

- Route the power cable through the entry hole on the pole at the bottom.
- Tighten the M16 nuts for fixing the pedestal.
- Install the lugs on the input cable (the brand of the lugs depends on the cross-section of the cable; the diameter of the bolt connection depends on the power of the station: if it is more than 80 kW - used M10, if it is less than 80 kW - M8).
- Connect the power supply cable to the corresponding input busbars (as shown in Figure 5.5). In the case of connection with a 4-conductor cable, external grounding should be performed with a wire with a cross section of at least 25 mm<sup>2</sup>, using an M10 bolt connection with the inscription "RE" located in the terminal compartment.



#### GROUNDING REQUIREMENT!

The resistance of the ground circuit of the charging station should not exceed 4Ω. It is not allowed to connect additional devices to the ground circuit of the charging station.



#### ATTENTION!

THE FIRST CONNECTION THAT MUST BE MADE IS THE GROUND WIRE TO THE GROUND BUSBAR MARKED «PE».

DO NOT SWITCH ON THE CHARGER WITHOUT A CONNECTED GROUNDING!

Failure to comply with this requirement may lead to voltage supply to the Charging Station case, electric shock to service personnel and consumers, as well as to the Charging Station failure.

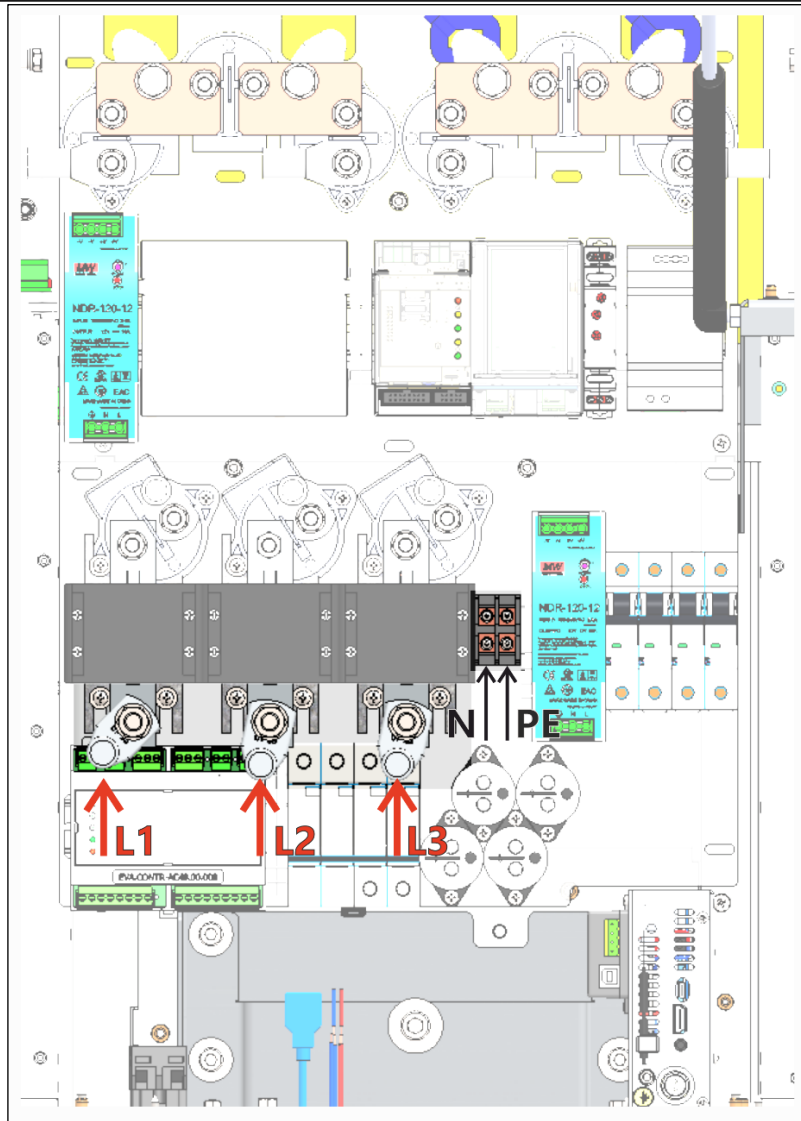


Figure 5.5. Power cable connection diagram

Then install the charging modules.

### 5.3.1. INSTALLATION OF CHARGING MODULES

Charging modules are installed at the station, as shown in Figure 5.6 (bottom view)

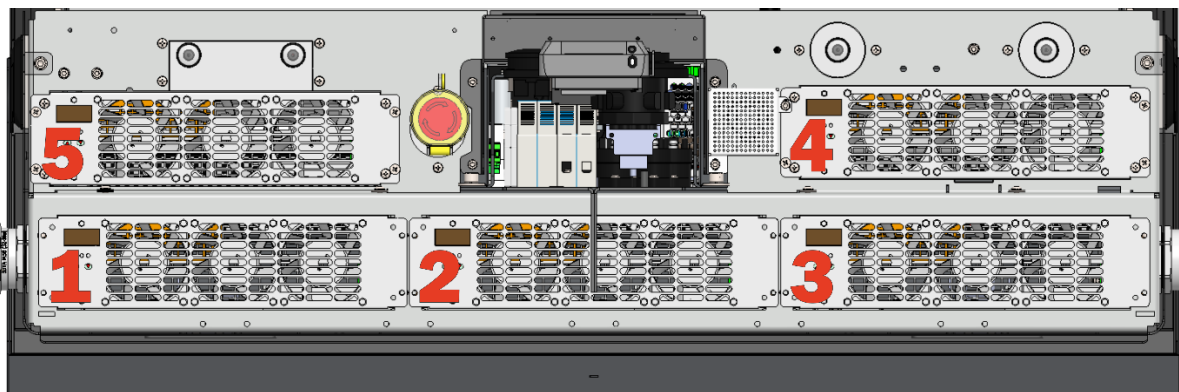


Figure 5.6. Location of modules in the station (bottom view)

1. Unpack the charging modules (Fig. 5.7).
2. Remove the handles from the module.
3. Installation of modules.

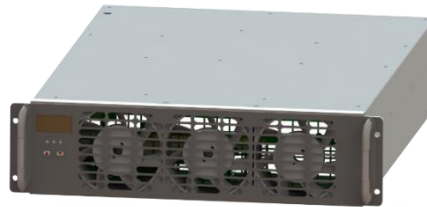
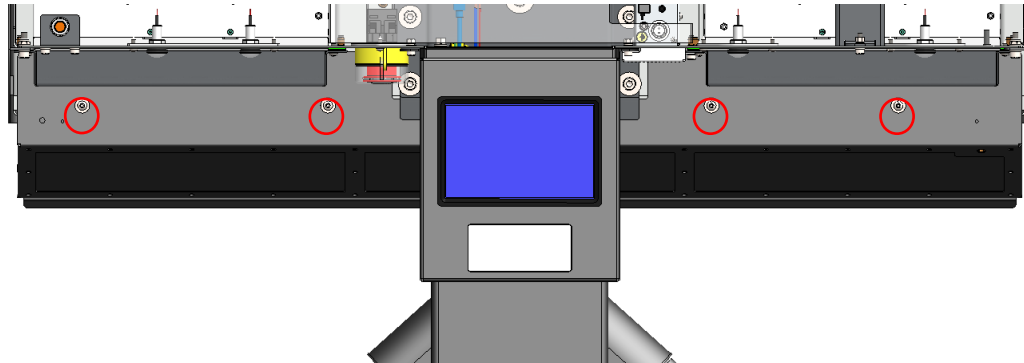


Figure 5.7. Power module

Modules 1-3:



1. Remove 4 screws from the front of the station (Fig. 5.8).

Figure 5.8. Location of screws on the front of the station

2. Remove the screw on the back of the station (Fig. 5.9) and remove the filter housing downward.

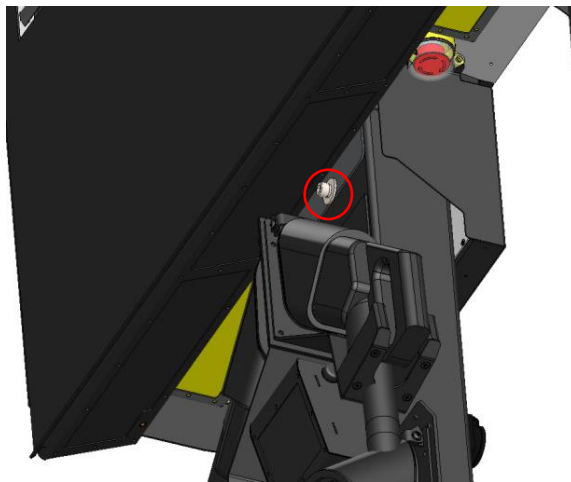


Figure 5.9. Location of the screw on the back of the station

3. Install the module into the station frame (Fig. 5.10). It is better to install the modules together, smoothly from bottom to top, so that the module screen is located closer to the front of the device.
4. Secure with screws 6 (Fig. 5.10).

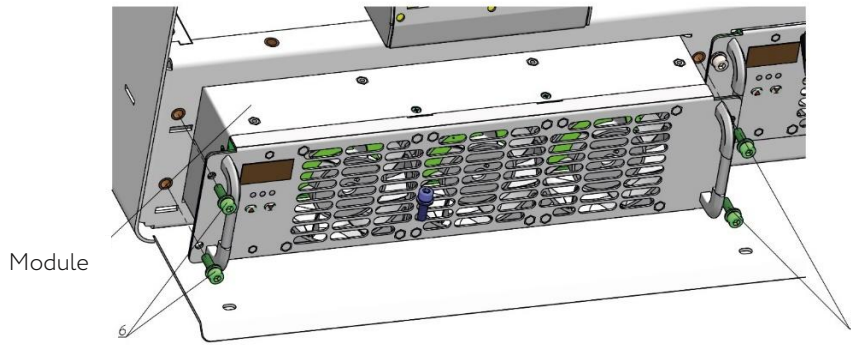


Figure 5.10 Installation location of the module in the station (6 – M5 screw)

### Modules 4-5

1. Remove 4 screws from the filter housing (Fig. 5.11) and remove the filter case.

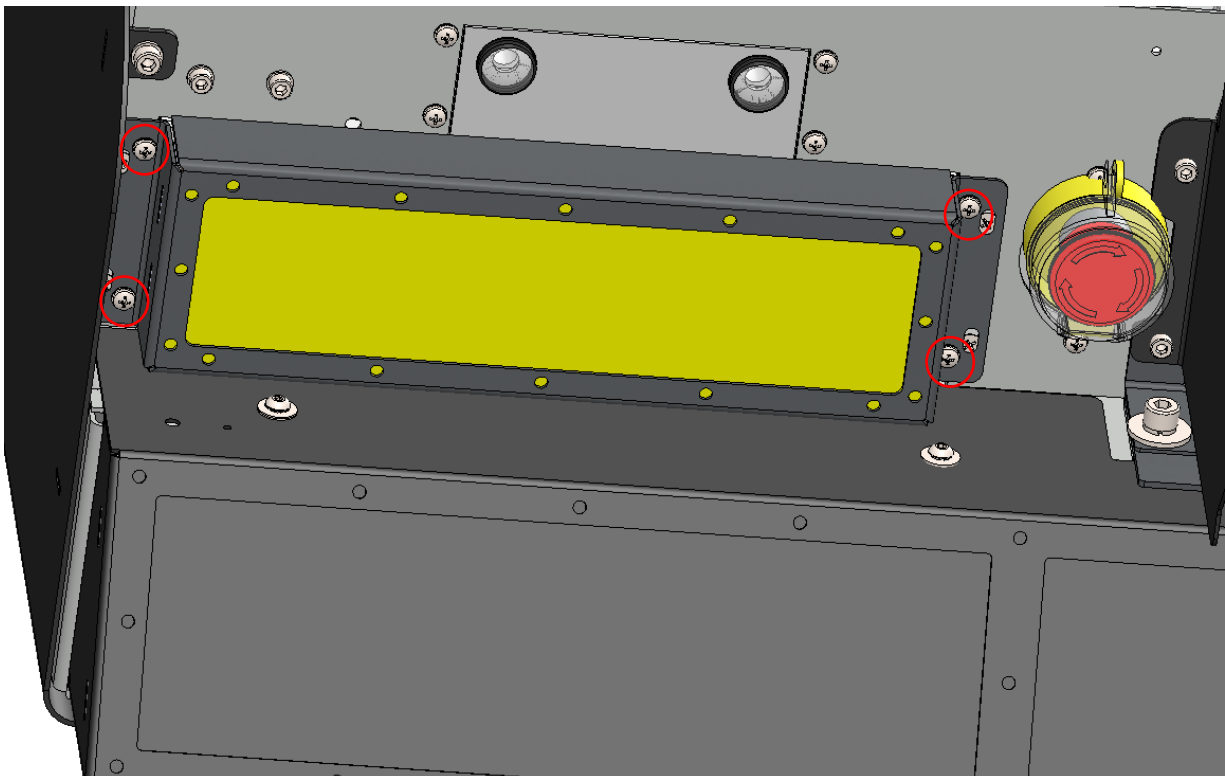


Figure 5.11. Location of screws on the filter housing

2. Install the modules into the station in the same way as modules 1-3 and secure them with screws.
3. Install the filter in reverse order.

### 5.3.2. SETTING THE ADDRESSES OF POWER MODULES

For the correct operation of the charging station, it is necessary to configure the addresses of the charging modules:

1. Turn on the station - Turn the circuit breakers to the “ON” position.
2. Wait for the module to start operating – “SLP” indication.
3. Use the down button to select the parameter that needs to be set.
4. When selecting parameter “A00”, you must hold down the “down” button until you enter edit mode (the value flashes).

5. Change the module address using the up/down buttons (Fig. 5.12). Addresses in modules cannot have the same meaning (Fig. 5.13).



Figure 5.12. Menu control buttons



Figure 5.13. Module address on display

6. After setting the parameter, press and hold the down button until the parameter stops flashing. This action will save the changes to the settings.
7. Turn off the station.
8. Repeat steps 1-7 to set the address for each module separately. If you did not have time to assign an address, turn off the station and start from step 1.

### 5.3.3. TURNING ON THE CHARGING COMPLEX



#### ATTENTION!

Before turning on the station, contact technical support to activate the SIM-card.

1. Remove the protective screen.
2. Install a SIM card from your mobile network operator (if you are using an external SIM card) (fig. 5.14):
  - a. removes the modem cover;
  - b. installs a SIM card;
  - c. installs back the modem cover.
3. Install a protective screen.
4. Move the circuit breaker on the distribution board to the operating position (up).
5. Move the circuit breakers to the operating position (up).

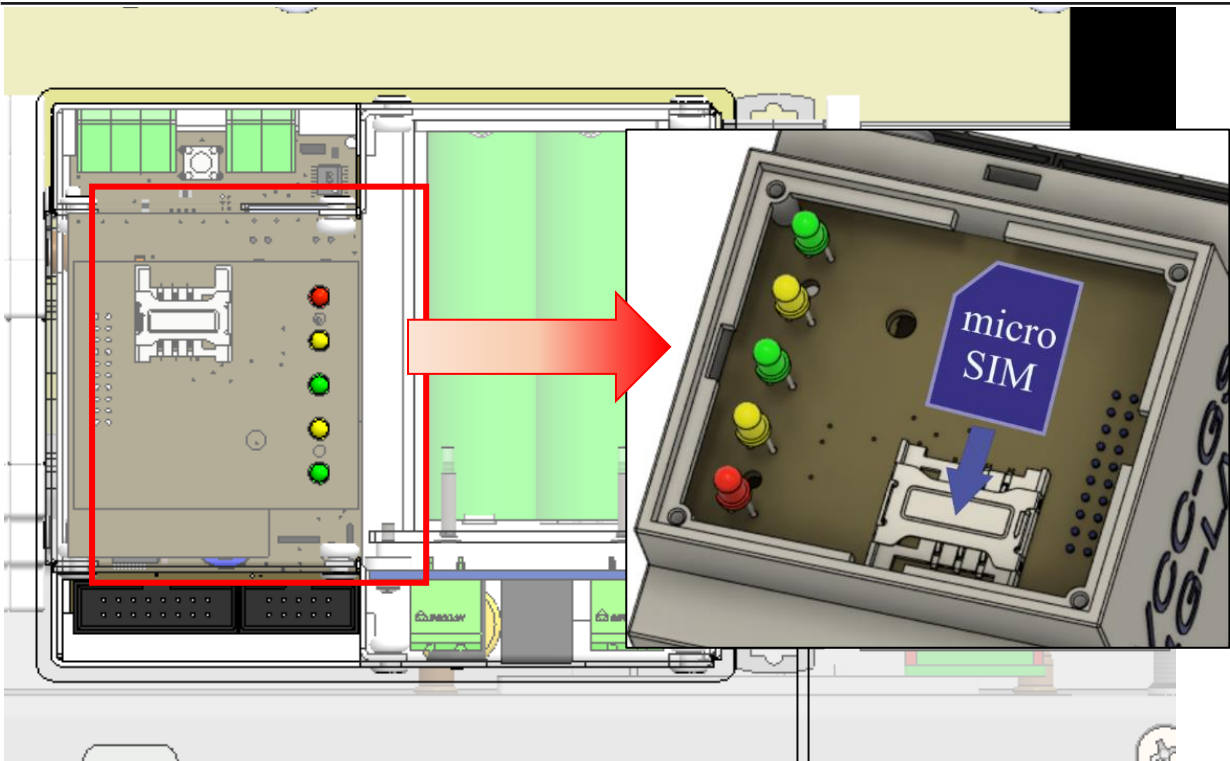


Figure 5.14. Installing a SIM-card into the GSM-module

#### 5.3.4. TURNING OFF THE CHARGING COMPLEX

Turn the circuit breakers to the "off" (down) position, then turn the external switch in the switchboard to the "off" (down) position.



## 6. OPERATION

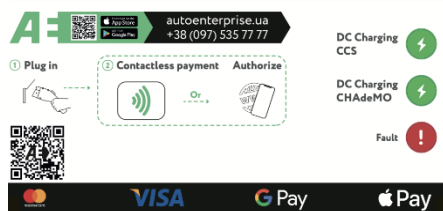
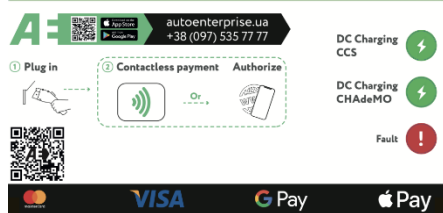
### 6.1. OPERATING MODES AND ELECTRIC VEHICLE CHARGING PROCESS

Information about the operating modes of the charging station (connector status and charging parameters) is displayed on the display.

The information shown on the display depends on the software version and may differ slightly.

The charging station "Wall Complex" can be equipped with a two-line LCD display (20 × 2 characters) or a touch screen 7".

#### 6.1.1. LCD-DISPLAY



After the supply voltage is applied, the station display shows information about the software version and the serial number of the modem.

In case of malfunctions in the operation of the charging station, you must inform the serial number of the modem to the service center for diagnostics and restoration of work.

In standby mode, the display shows information about the status of the connectors.

In car charging mode, the LCD display shows information about charging parameters: charging time, voltage level, current amperage, etc.

When charging the vehicle in DC modes "CHAdEMO" and "CCS", the "DC Charging" indicator flashes green frequently.

## 6.1.2. TOUCH SCREEN 7"

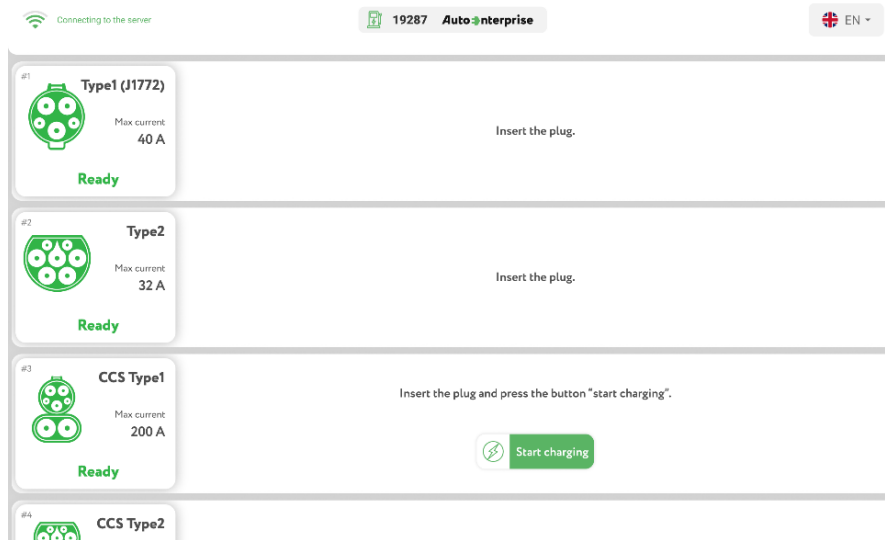


Figure 6.1. Appearance of the screen

The station is ready for operation (Figure 6.1). The top line is general information about the status of the station: indication of communication with the server, station number and name of the network of the charging station, interface language. This bar stays at the top of the screen when you scroll down.

Below is an indication of the installed connectors (depending on the configuration from 1 to 6) and their status. In Figure 6.1, all connectors have the Ready status - the connector is in a working (software) state and can be used to charge an electric vehicle. Nearby there is a hint for the user - "Insert the plug - connect the connector".

When the user inserts the connector, its color on the display changes to blue: the user is authorized (Figure 6.2), and then the charging process: the color of the plug changes to yellow, the status changes to Charging (Figure 6.2 and 6.3).

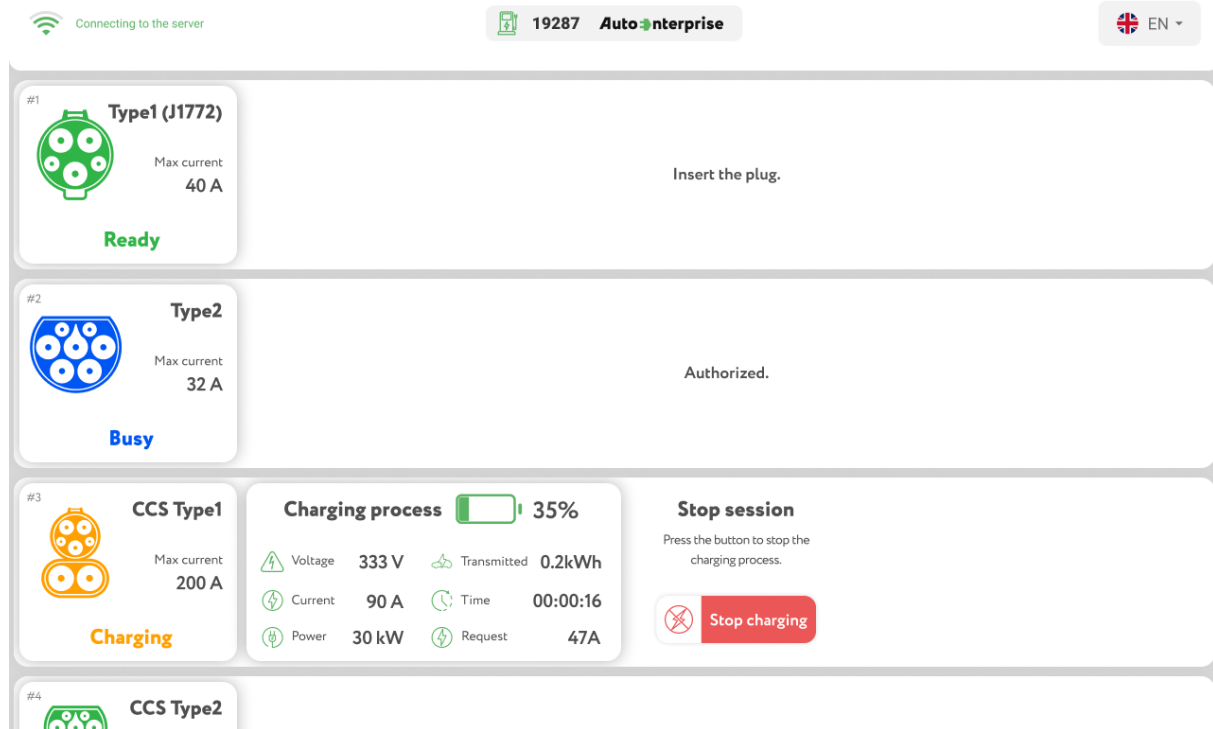


Figure 6.2. Changing the user interface

During charging, the current parameters of the charging process are displayed on the screen: voltage, current and capacity of the connector, the current requested by the electric vehicle, the charging time and the amount of energy received in kWh.

When the battery of the electric car is fully charged, the charging process ends automatically. If the connector is not removed immediately after that, the parking time will begin (Fig. 6.3). The parking fee is set by the owner (operator) of the station.

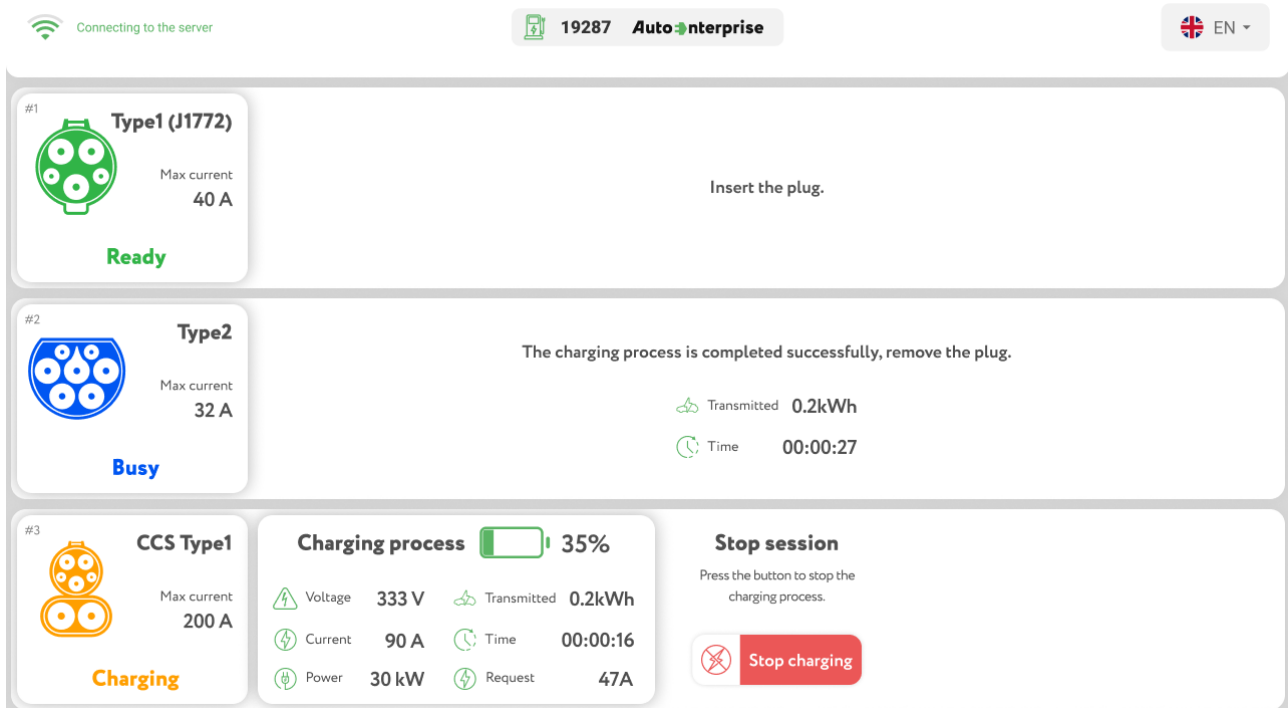


Figure 6.3. Changing the user interface

Figures 6.5 and 6.6 show possible screen displays when a CCS connector error occurs and when the emergency stop button is pressed.

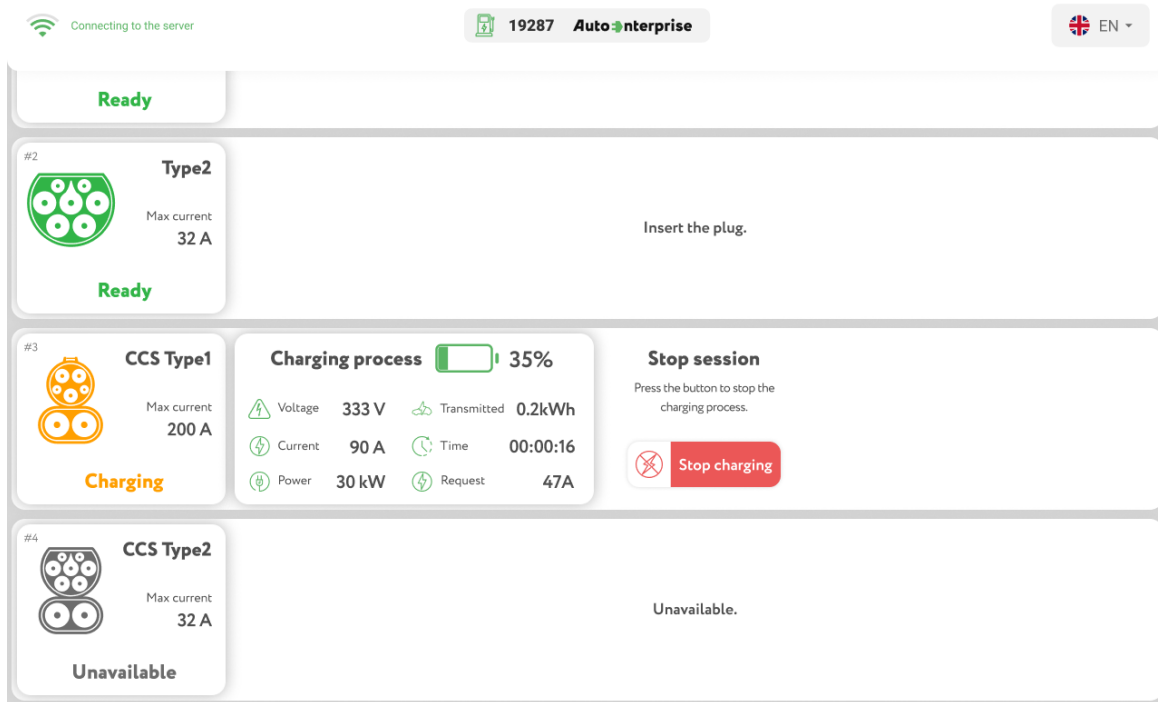


Figure 6.4. Error display

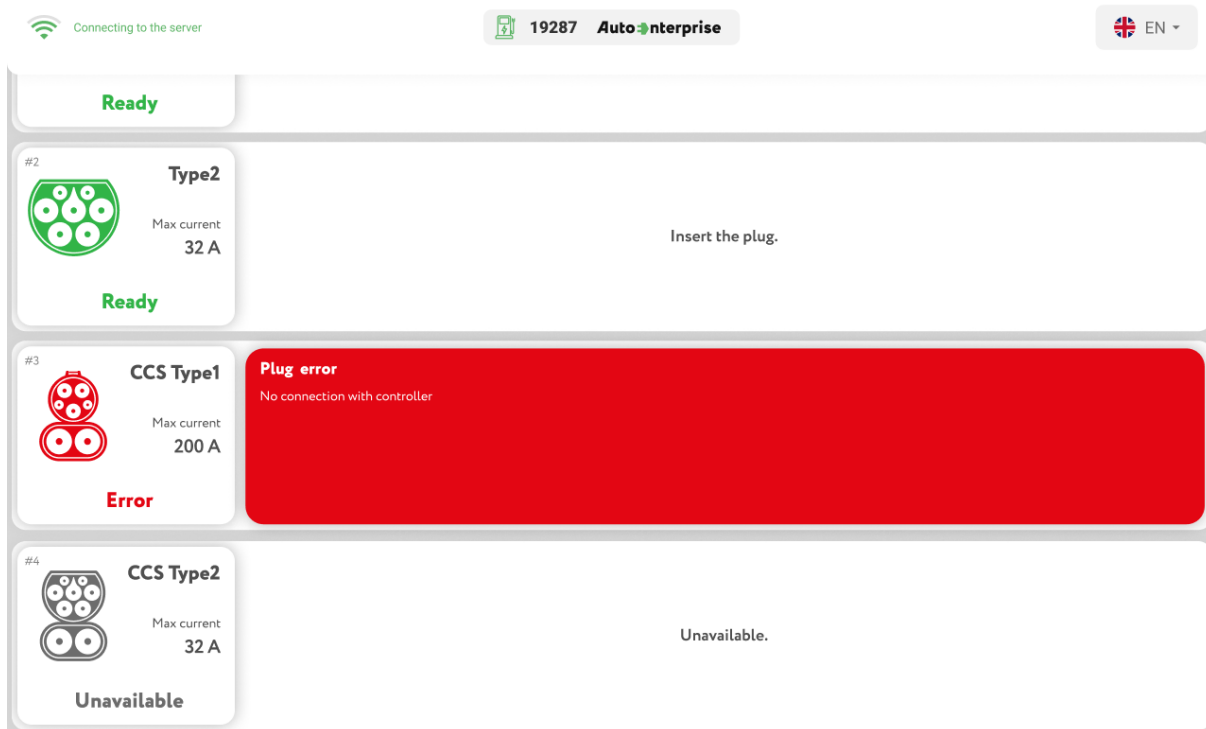


Figure 6.5. Error display





<p>#1</p>  <p><b>Type1 (J1772)</b></p> <p>Max current 40 A</p> <p><b>Ready</b></p>	<p>Insert the plug.</p>
<p>#2</p>  <p><b>Type2</b></p> <p>Max current 32 A</p> <p><b>Busy</b></p>	<p>Authorized.</p>
<p>#3</p>  <p><b>CCS Type1</b></p> <p>Max current 200 A</p> <p><b>Error</b></p>	 <p><b>Emergency stop button is pressed. If there are no visual faults, turn the button clockwise and release it.</b></p>

Figure 6.6. The emergency stop button is pressed

Table 6.1. Symbols on the station screen




















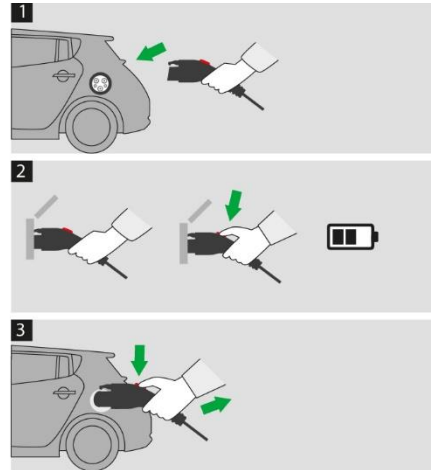
	Server connection connected/not connected.
	The number of the charging station in the network of charging stations, the name of the network
	Selection of interface language
	Start charging
	Stop charging
	Battery charge level of electric vehicles
 voltage	Current voltage
 at the moment	Current at the moment
 power	Power at the moment
 Submitted	Charged battery capacity
 time	Charging time
 current request	Current required by an electric car at the moment.
	Type 1 connector in various states (see table 6.2)
	Type 2 connector in various states (see table 6.2)
	GB/T AC connector in different states (see table 6.2)
	CHAdeMO connector in different states (see table 6.2)
	CCS Type 1 connector in different states (see table 6.2)
	CCS Type 2 connector in various states (see table 6.2)
	GB/T DC connector in different states (see table 6.2)

Table 6.2. Connector status

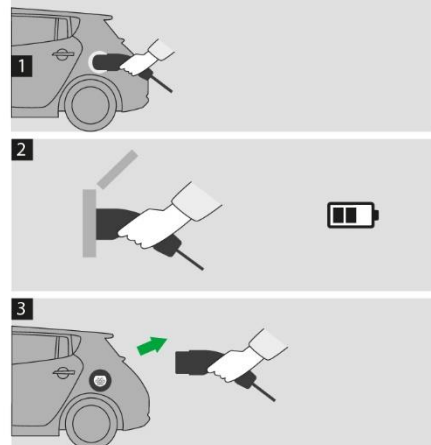
Status	Color	Explanation
Ready	Green	The status "Ready" means that the connector is free (the electric car is not charging at the moment) and is available for charging the electric car.
Busy	Blue	The status "Busy" means that the connector is already connected to the electric vehicle and indicates several modes: <ul style="list-style-type: none"> <li>- the station is preparing to start charging. This may include checking the connection between the charging connector and the electric vehicle and the compatibility of the charging parameters;</li> <li>- the charging session has ended, but the connector has not yet been disconnected. Parking time is taken into account (the parking fee is set by the station owner);</li> <li>- the download is temporarily suspended. This can be for various reasons, for example, if the owner of the vehicle decided to manually suspend the charging, or due to technical problems.</li> </ul>
Charging	Yellow	The status "Charging" means that the electric vehicle is connected to the charging station and is being charged. In this mode, information about the charging speed and the amount of transferred energy is displayed.
Error	Red	The "Error" status means that the connector is not available for use for some reason. The reasons could be technical faults, pressing the emergency stop button, connector reset, or the need for regular maintenance or repair. An "error" is accompanied by an appropriate textual and/or graphical explanation (for example, an error code).
Unavailable	Gray	The status "Unavailable" means that the connector is not available for charging. This can happen during station startup/reboot when the system cannot determine the current state of the connector, or when the DC connectors are in "OR" mode and one of them is charging.

6.2. CONNECTING THE VEHICLE

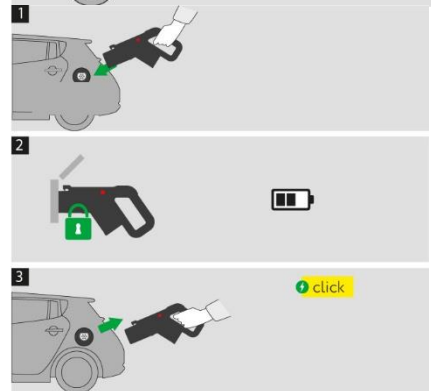
Type 1 connector



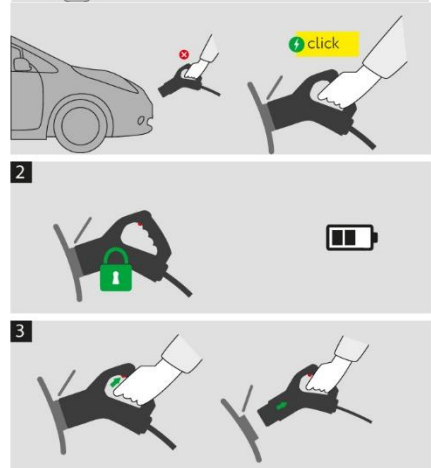
Type 2 connector



GB/T AC connector

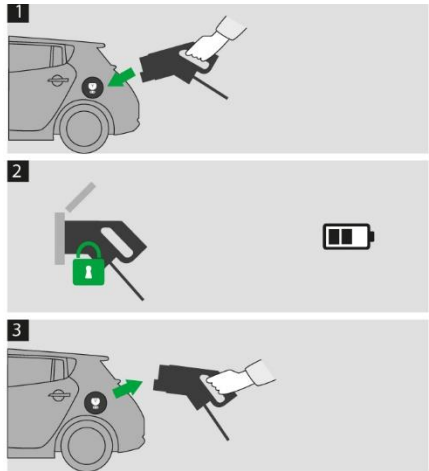


CHAdeMO connector

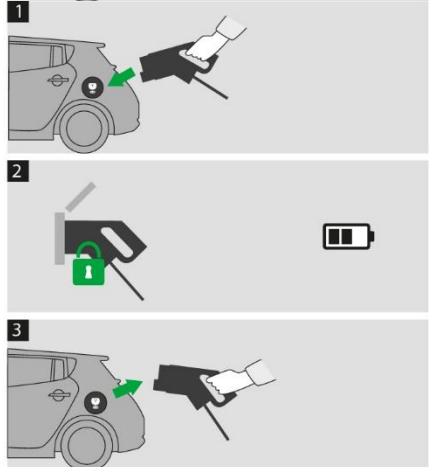




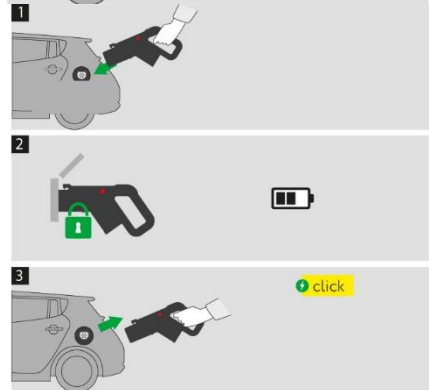
CCS Type 1 connector



CCS Type 2 connector



GB/T DC connector



## 7. MAINTENANCE



### ATTENTION!

All maintenance work must be performed by the manufacturer's representative or a qualified technician. Do not attempt to perform routine maintenance yourself; this may result in electric shock and/or loss of functionality of the charging station.

Improper maintenance may result in serious injury or equipment damage. For this reason, this work should only be performed by authorized, trained personnel who are familiar with the operating principles of the plant and strictly follow all safety instructions.

The use of explosive or flammable cleaning products poses a risk of fire or explosion.

Do not store flammable or explosive liquids near the charging station.



### WARNING!

Before carrying out any maintenance work, ensure that the charging station is de-energized.



### INFORMATION

To ensure maximum service life of the charging station, it is recommended that the interior be kept clean regularly.

Scheduled maintenance of the station must be carried out once a year and includes the following types of work:

- Visual inspection for overheating of the device; checking, tightening of connections;
- Cleaning the station from dust and dirt;
- Check the integrity of charging cables, connectors and cable holders;
- Filter replacement;
- Detection of damaged parts, components, their repair and replacement.

If the station operates in a dusty environment, maintenance should be carried out every 6 (or 3) months.

In addition to the actions described above, every 6 months it is recommended to check the resistance of the earth loop, which must comply with local standards.

The safety monitoring system works automatically when the charging station is switched on and before each charging of the electric vehicle. If a problem occurs, an error message will appear on the station screen. For example, Ground Failure is a malfunction of the grounding circuit.

Before performing any maintenance or cleaning work on the charging station, or working on any circuits connected to the charging station, authorized service personnel must disconnect all AC power from the charging station to reduce the risk of electric shock.

After disconnecting the charging station from power grid, thoroughly clean its case, contacts and ventilation holes from dust and dirt, and also check the quality of the cable attachment. The screws of the terminal block and the ends of the wires must be tight, and the insulation must not be damaged. Every 6 months, it is recommended to check the tightening torque of the screws of the contactors (3-5 N·m), automatic switches (3-5 N·m) and the terminal box of the station inputs (M12 - 40-50). N·m; M8 - 10-11, 9N·m).

All signs, stickers and pictograms placed on the charging station must be visible and legible. Signs, labels or pictograms that are damaged or unreadable must be replaced immediately. Please contact the manufacturer to discuss such issues.

It is strictly prohibited to modify or make changes to the design of the charging station in any way without the written consent of the manufacturer!

## 7.1. REPLACEMENT OF FILTERS

### 7.1.1. REPLACING FILTERS OF MODULES 1-3

1. Remove the screw on the back side of the ChS (Fig. 7.1).

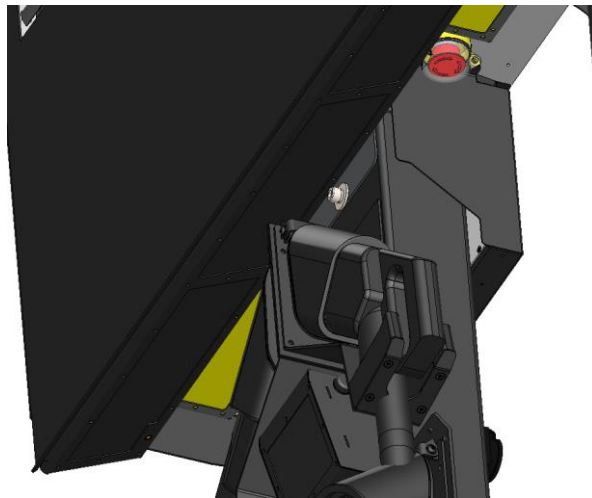


Figure 7.1. Location of the screw on the rear side of the device

2. Remove screws 1-4 (Fig. 7.2). Remove the filter case.

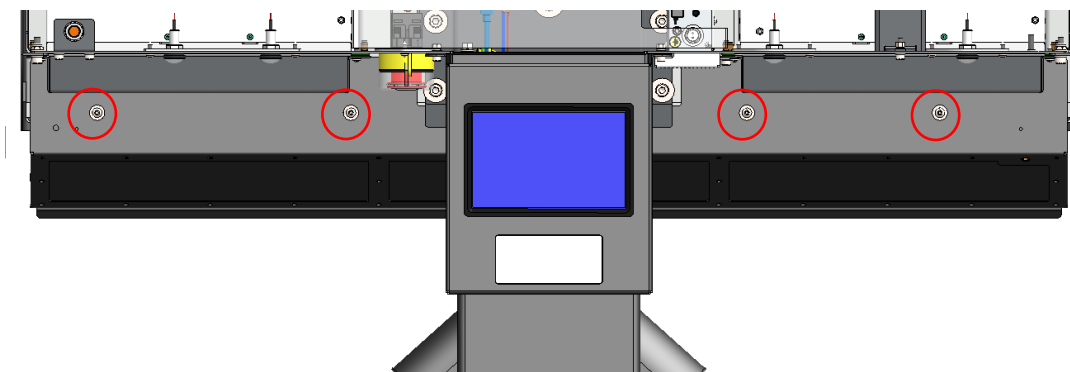


Figure 7.2. Location of screws on the front side of the station

3. Remove screws 1 in the filter housing, remove plate 2, remove grille 3, remove filter element 4 (Figure 7.3).

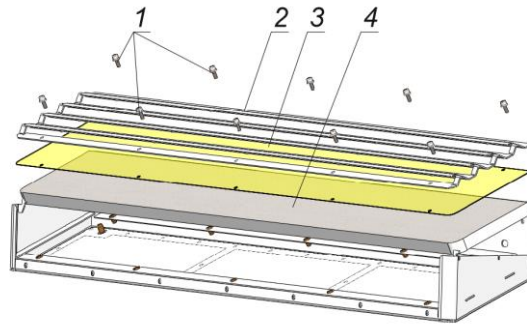


Figure 7.3. Filter case

We recommend using G3 series filter material with a thickness of 15-20 mm. The drawing of the filter element is shown below.

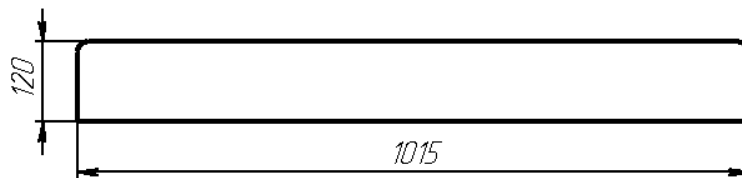


Figure 7.4. Filter element drawing

4. Reassemble in reverse order.

### 7.1.2. REPLACING THE FILTER OF MODULE 4 and 5

1. Remove screws 1 (Fig. 7.6).
2. Remove cover 2 (Fig. 7.6).
3. Remove filter element 3 (Fig. 7.6).

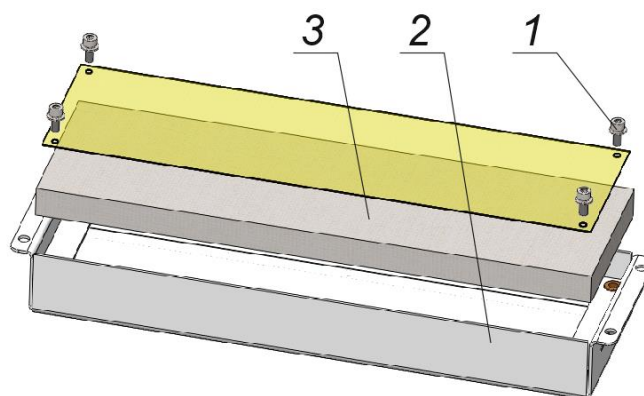


Figure 7.6. Filter case

A drawing of the filter element is shown below.

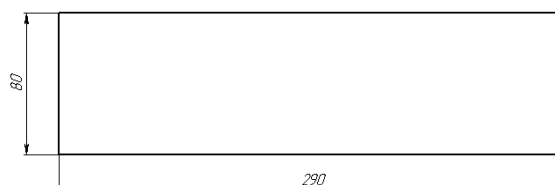


Figure 7.7. Filter element drawing

4. Reassemble in reverse order.

### 7.13. REPLACING THE ELECTRONIC FAN FILTER

The electronic fan is located in the support (Fig. 7.8). The disassembled fan housing is shown in Figure 7.9.

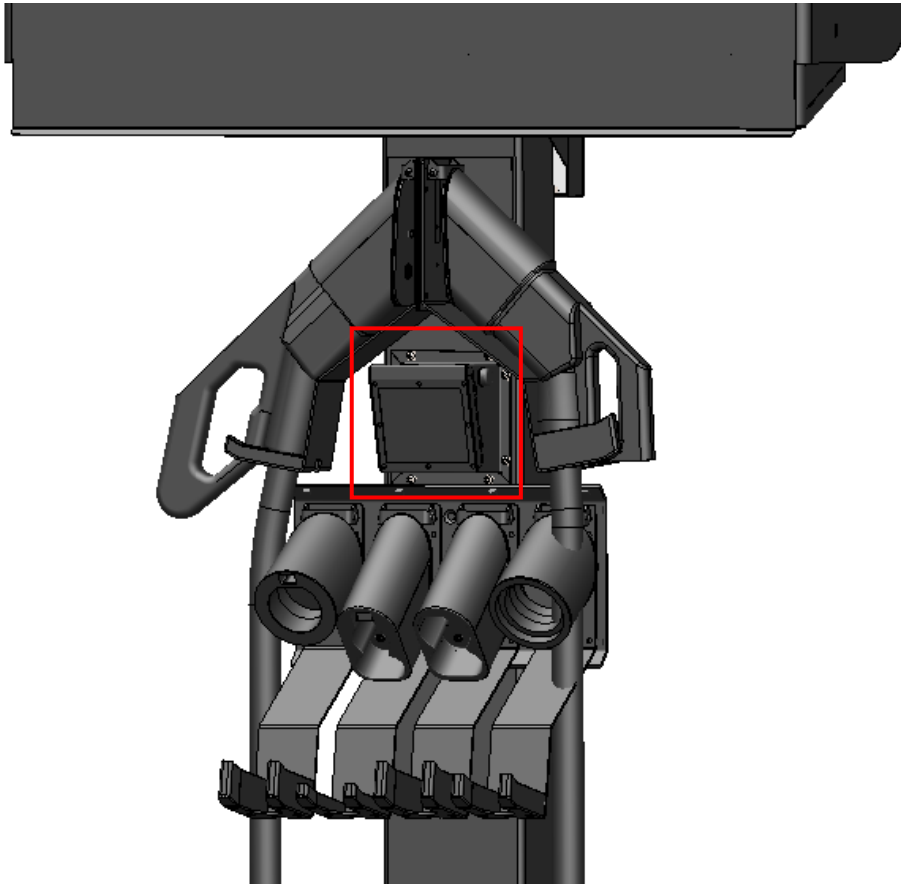


Figure 7.8. Electronic fan location

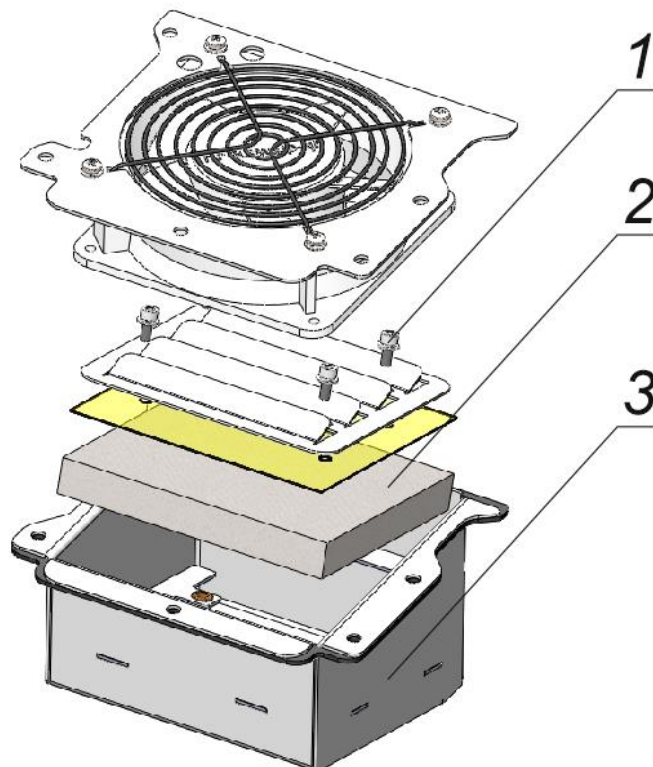


Figure 7.9. Fan case

1. Remove screws 1.
2. Remove cover 2.
3. Remove filter element 3.

A drawing of the filter element is shown below.

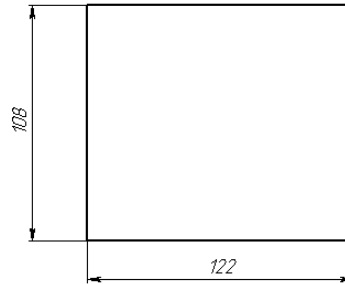


Figure 7.10. Filter element drawing

4. Reassemble in reverse order.

## 7.2. SETTING THE TWILIGHT SWITCH

Configuration is carried out by the following elements:

- DELAY – response time setting;
- LEVEL – sensitivity adjustment.



Figure 7.11. Twilight Switch

## 7.3. REPLACING POWER MODULES

The procedure for installing modules into the station is discussed in Chapter 5.3.1. To replace them, the modules must first be removed from the station.

1. Make sure that the station is de-energized.
2. Remove the filters (unscrew the screws that attach the filter to the AP body).
3. Remove the faulty filter.
4. Install the new module and secure it with screws.
5. Install the filters in reverse order.

## 8. TROUBLESHOOTING

### 8.1. COMMON ERRORS

Error	Description of the error	Remedy
Contactor failure	Contactor error.	Replace the output contactor.
CP error	Signal transmission error in SR between the charging station and the vehicle.	<ol style="list-style-type: none"> <li>1. The connector is inserted incorrectly. Reconnect to the vehicle.</li> <li>2. The connector or cable is broken, the SR line is broken. Replace the connector and cable.</li> </ol>
Malfunction of the current sensor	Output contactor stuck.	Replace the output contactor.
EEPROM error	EEPROM error.	Replace the EEPROM chip in the EVCC-4G.
EMO pressed	The emergency stop button is pressed.	Press the emergency stop button.
Unable to work	The connector is not available.	<ol style="list-style-type: none"> <li>1. The charge controller has entered Unavailable mode because the inverters are busy with another controller.</li> <li>2. The charge controller is disabled.</li> </ol>
No input voltage	There is no voltage at the input of the charging station.	Apply voltage to the input.
Counter not found	The controller is not connected to the meter.	When using an internal meter, check the RS485 connection between the EVCC-4G and the charge controller.
Overcurrent	Current limit exceeded	Additional diagnostics are required. Contact your technical support operator.
Malfunction of the power supply system	Loader (inverter) error.	<ol style="list-style-type: none"> <li>1. Check the power modules.</li> <li>2. Check the CAN line from the controllers to the power modules.</li> </ol>
SIM card failure	SIM card error.	Wipe the card contacts or replace the card.
The vehicle is defective	Car error.	Charging stopped on the vehicle side due to a vehicle malfunction.

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Error	Description of the error	Remedy
The voltage is too high	High voltage input.	Provide the required input voltage.
The voltage is too low	Low voltage input.	Provide the required input voltage.
Internal error	Internal driver error.	Replace the driver.
Battery overvoltage	High voltage car battery.	The charging station does not support the voltage of the car battery.
CAN error	CAN line error between the car and the charging station.	<ol style="list-style-type: none"> <li>1. The connector is inserted incorrectly. Reconnect to the vehicle.</li> <li>2. The CAN cable between the charging station and the car is damaged. Replace the connector and cable.</li> <li>3. The driver is damaged. Replace the charge controller.</li> </ol>
Charger error	Charging station error.	Replace the charge controller.
Current deviation	Incorrect current supplied by the inverters at the request of the car.	<ol style="list-style-type: none"> <li>1. Check the inverters.</li> <li>2. Check that the DC output wires between the inverter and the contactors are securely connected.</li> </ol>
Deauthorized	Authorization error.	Check the connection to the server.
Failure to ground	Ground fault.	Make sure the charging station is well grounded.
Overvoltage detected	Overvoltage at the connector.	May occur when high current charging stops or indicates a malfunction in the power modules or battery of the electric vehicle. Additional diagnostics are required. Contact your technical support operator.
PLC session error	PLC modem error.	May occur in CCS controllers. Communication error between vehicle and CCS controller via PLC modem. Replace the PLC modem in the CCS controller. The signal level of the car does



Error	Description of the error	Remedy
		not match the signal level of the charging station.
Power module error	Inverter error.	The controller cannot find the inverters. 1. Check the operation of the inverters. 2. Check whether the power source is connected to the inverters 3. Check the input contactors of the inverter. Check the switching device of the contactor.
RCD error	An error in the current leak measurement system.	Current leakage detected. Repair the leak.
Stopped with an error	Download stopped in error.	Replace the charge controller. Check the inverters.
Tamper error	Door opening error.	Close the charging station door.
Car battery error	Car battery error.	Contact a car service.
Malfunction of the contactor of the car	Vehicle contactor error.	Contact a car service.
Normal car stop	Vehicle charge error.	1. Turn off the car before charging. 2. Contact a car service.
VehicleError	Car error.	Contact a car service.
No connection	Modem failure / SIM card failed. Poor cellular network signal strength / GSM modem antenna failure / Location of the station outside the cellular network coverage area.	Replacing the GSM modem or checking the status of the SIM card. Replacing the antenna with a more powerful one.
Vehicle system malfunction	Vehicle charging system error.	Contact a car service.
Voltage deviation	Incorrect output voltage from the inverters required by the vehicle.	Check the inverters.

## 8.2. EMERGENCY STOP BUTTON

The DC charging emergency stop button is located on the left panel of the connector (side panel of the station to the left of the display).

If you press the emergency stop button in DC charging mode, the electric current used to charge the EV battery is automatically turned off. At the same time, the message "The emergency stop button was pressed" appears. If there are no visual defects, turn the knob clockwise and release it." (Figure 8.1).

To continue operation of the station, it is necessary to manually return the emergency stop button to the initial state (turn to the right).

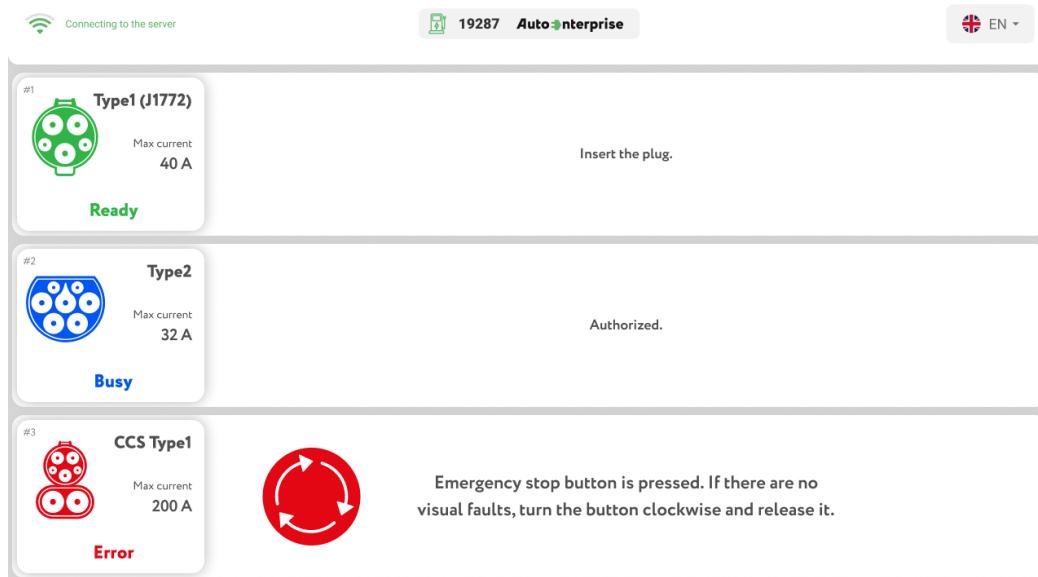


Figure 8.1. The emergency stop button is pressed

## 8.3. TECHNICAL SUPPORT

You can write an email or call to the tech support using the contact page on our web-site:

[evachargers.com](http://evachargers.com)

For a quick solution to the problem, report the station modem number or the station number to EVA CHARGERS support.

## 9. STORAGE

The charging station is supplied in individual factory packaging. Remove all packaging before installing the station.

STORAGE CONDITIONS:

- Charging station must be stored in its original packaging.
- Charging station should be stored in dry heated rooms, free of dust, corrosive and oily materials.
- Keep the charging station in the warehouse with the appropriate weather protection.
- Keep away any sharp object from the charging station, cords or plugs/connectors.
- During storage, the charging station must be protected from shocks.
- Avoid extreme temperature fluctuations.

- Storage temperature range: 5 °C to +40 °C (41 °F to 104 °F).
- Humidity: < 75%.

## 10. TRANSPORTATION

Charging stations must be transported in transport packaging by rail, road and air transport without limiting the transportation distance, taking into account the rules for the transportation of goods in force for these types of transport.

When transporting, consider the center of gravity of the charging station to minimize the risk of tipping over.

During transportation, the charging station must be reliably protected from movement inside the vehicle. To securely fasten the station, straps and soft inserts should be used, and measures must be taken to protect the station from damage by other transported objects.

## 11. DISPOSAL



### ATTENTION!

The symbol with the crossed-out waste container means that electrical and electronic devices including their accessories must not be disposed in the household garbage!

Please observe the regulations regarding disposal of electric appliances and electronic devices!

Electronic components of the charging station must be disposed in accordance with the current legislation regarding the disposal of electronic and electrical waste.

## 12. FAT CERTIFICATE

### THE CHARGING STATION

<small>PRODUCT NAME</small>	
<b>WALL COMPLEX</b>	<b>XXXXXXXXXX</b>
<small>MODEL</small>	<small>SERIAL NUMBER</small>
manufactured and accepted in accordance with the requirements of <b>EN 61851-1, EN 61851-23</b> and recognized as fit for use	
<small>STANDART</small>	

Head of Quality Control Department

LS

\_\_\_\_\_  
SIGNATURE

\_\_\_\_\_  
FULL NAME

\_\_\_\_\_  
DATE

## 13. MANUFACTURER'S WARRANTY

This Limited Product Warranty ("Warranty") applies to the charging station WALL COMPLEX ("Station") purchased from manufacturer or one of its authorized distributors.

Subject to the exclusions set forth below, manufacturer warrants that the Station will be free from defects for a period of one (1) year after the date of delivery manufacturer's warehouse ("Warranty Period"), unless manufacturer and its direct customer ("Customer") explicitly agree otherwise in writing.

Customer may transfer the Warranty to its customers ("Station's Owner" or "Owner").

### WARRANTY SERVICE

Within the Warranty Period, upon verification of a warranty claim, manufacturer will, at its sole discretion, repair or replace broken component (that was damaged in normal use) at no charge to Owner for material and/or labour. Owner pays any transportation costs associated with the replacement / repair of components (to the manufacturer factory or any other repair location indicated by manufacturer).

If the repair issue cannot be resolved remotely, Owner shall, at its own expense, ship the Product(s) to a Repair Centre, after receipt of respective instructions.

To obtain the necessary instructions you must contact to Customer Service at [evachargers.com](http://evachargers.com).

Owner assumes risk of any shipping related loss or damage.

If the fault is covered by this Warranty, manufacturer will repair or replace the Product(s) and ship it back to the Owner via ground transportation at manufacturer's cost.

The out-of-warranty Station or station ineligible for warranty service will be repaired or replaced at Owner's request according to the preliminary agreement on payment and shipped back at Owners expense.

All replaced parts are the property of manufacturer.

The warranty does not apply to equipment damaged as a result of:

- incorrect electrical, mechanical connection;
- misuse or Station usage beyond its intended purpose;
- modification or changes in the design of the product without written manufacturer approval;
- incorrect installation, assembly/disassembly or relocation of the Station unless performed by manufacturer or authorized service personnel;
- maintenance and repair of product performed by an unauthorized or unqualified personnel;
- failures from the grid;
- external damages (including physical damage from being struck by a vehicle) or violation of the rules of transportation and storage;

- use of interfaces or parts not provided by manufacturer;
- accidents, acts of nature or other causes beyond manufacturer's control;
- vandalism.

The manufacturer is not responsible for the possible costs associated with the installation and removal (dismantling) of the warranty equipment, as well as for damage caused to other equipment in the possession of the consumer, as a result of malfunctions (or defects) arising during the Warranty period. Furthermore, damage to the electrical vehicle itself is never covered by this Warranty.

Manufacturer or its authorized distributors will not be liable for any indirect, incidental, special, punitive or consequential damages, even if manufacturer knew or should have known of the possibility of such damages.

The cumulative liability of manufacturer or its authorized distributors for all claims whatsoever related to this station or the service will not exceed the price of this station.

#### ADDITIONAL INFORMATION

Owner is responsible for the proper installation and maintenance of the Station.

This Limited Product Warranty is not transferable by the Station's Owner to anyone else.

PC "Eva Chargers" reserves the right to update any information, illustrations, sheets, specifications and diagrams contained in these Manual at any time without prior notice in respect of technical developments.

All inquiries or claims made under this Limited Product Warranty must be address as follows: [evachargers.com](http://evachargers.com)