Operation Instructions and Installation Guide

JUICE ULTRA (75kW – 300kW)

ultra-fast charging system for electric vehicles

Version 1-3A | 3.0

IMPORTANT:

Read this manual before you start using the device!

Failure to comply with these instructions may result in injury or death, damage to the device and harm to the environment.
Keep the manual in a safe place for future reference.

Operation Instructions and Installation Guide

Version

Version 1-3A of operation instructions and installation guide, 25th January 2019

Original English version

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Attention

If the installation instructions described in this document are not adhered to, any warranty claim will be void.

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1. Safety instructions

This chapter contains the safety instruction which must be considered at installation, operation and maintenance of the JUICE ULTRA ultra-fast charging system for electric vehicles. Incorrect operation as a result of non-compliance with the operation instructions may lead to severe injuries or damages. This safety operation must be read carefully before the installation, operation and maintenance of the JUICE ULTRA ultra-fast charging system.

1.1. Designated use

The JUICE ULTRA ultra-fast charging system for electric vehicles is intended to be used both in indoor and outdoor environments for performing ultra-fast charging for electric vehicles.

Attention

The charging station is designed for a stationary installation in an ambient with pollution degree class 3.

For the connection between the electric vehicle supply equipment (EVSE) and electric vehicle (EV), no additional cables are required besides from the one provided with the JUICE ULTRA. A charging cord should not be altered to extend or divide the cable range.

No adapters may be used which are not approved by the vehicle manufacturer.

Depending on a socket or vehicle coupling the JUICE ULTRA may only changer a single vehicle. Y-cables or similar are not allowed.

1.2. Users

These operation instructions and installation guide are intended for persons who are responsible to install, operate, service and maintain the JUICE ULTRA ultra-fast charging system for electric vehicles. These persons should have at least a basic knowledge of electrical high-power systems and electric vehicles. Prior to carrying out any work the operator and the responsible technical personnel must carefully read these instructions.

1.3. Safety instructions for installation and maintenance

This warnings and instructions apply to all activities of installation, service and maintenance on the JUICE ULTRA.

Attention

Disregards from these instructions can lead to serious or fatal personal injury, as well as serious damage to property.

Attention

Installation and maintenance of the JUICE ULTRA ultra-fast charging system for electric vehicles must only be carried out by qualified personnel.

Before putting the system into operation, check the correct state of the installation and all connections.

Electrostatic discharge

The control cabinet contains components and circuit boards that are sensitive to electrostatic discharge. During assembly and maintenance, sufficient ESD measures should be taken to protect the electronic components (for example, wearing a grounding wristband).

Warnings

Warning of hazardous electrical voltage

Installation and maintenance of the JUICE ULTRA must be carried out only when power is removed. Before performing any installation, disassembly, repair or replacement of components, switch off the external group switch and the main switch in the JUICE ULTRA cabinet and do a voltage check to make sure that the electrical power is disconnected from the system.

Inside the JUICE ULTRA cabinet, hazardous electrical voltages are present (up to 1000Vdc) even if all circuit breakers are switched off, do not allow unqualified persons to go near it.

Only JUICE ULTRA certified technicians are permitted to install, disassembly, repair or replace components on the JUICE ULTRA. The JUICE ULTRA cabinet doors has to be locked after installation, service or repair operations.

Warning of hot surface

Some cabinet internal components of the JUICE ULTRA like power-stack housings, cooling system, and conductors can remain hot long after the power supply has been disconnected.

Prior to performing disassembly, repair or replacement of components activities make sure that all components have cooled down.

Heavy weight

Please note that the individual components of the device can be very heavy, for example the power-stacks.

Crushing

Please take care when assembling and disassembling components that they do not squeeze a human body or body part.

Hints

	Pushing the (optionally installed) Stop button (see 2.1.2) on the front door stops charging/disables charging. The JUICE ULTRA power-stacks will be turned off.
	To turn off the JUICE ULTRA, one can find the main switch (see Figure 28) in the cabinet, rotate the handle to position ‘0’. This will turn off all internal components of the JUICE ULTRA.

2. Product description

For the JUICE ULTRA charging stations product family two different housings are available, which can be equipped with various options shown in the following table:

Model	**Options**	
	DC-Power (see chapter 2.2)	**Charging Interfaces** (see chapter 2.3)
double slot version	- 1 power-stack -> 75kW - 2 power-stacks -> 150kW	- 1 DC charging cable - 2 DC charging cables - AC socket with shutter
quadruple slot version	- 1 power-stack -> 75kW - 2 power-stacks -> 150kW - 3 power-stacks -> 225kW - 4 power-stacks -> 300kW	- 1 DC charging cable - 2 DC charging cables - 3 DC charging cables - 4 DC charging cables - AC socket

Table 1: Overview DC power and options JUICE ULTRA product family

As shown in the following picture the double slot version can be equipped with one or two power-stacks:

Figure 1: double slot version with one (left) and two (right) power-stacks

The double slot version can be equipped with up to two DC charging cables and one 22kW AC socket:

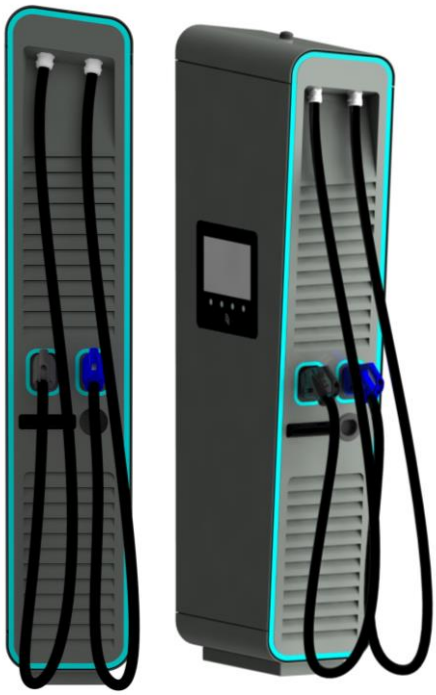


Figure 2: double slot version with two DC charging cables and one AC socket

As shown in the following picture the quadruple slot version can be equipped with one, two, three or four power-stacks:

Figure 3: quadruple slot version with one, two, three and four power-stacks

The quadruple slot version can be equipped with up to four DC charging cables and one 22kW AC socket:

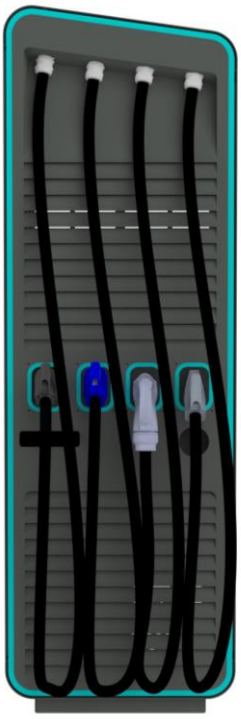


Figure 4: quadruple slot version with four DC charging cables and one AC socket

The different cable combinations for DC charging are described in section 2.2 and 2.3.

2.1. Additional Options

2.1.1. Barrier-free JUICE ULTRA

The JUICE ULTRA product line products are optionally available in a barrier-free version which is designed to be disabled-friendly.

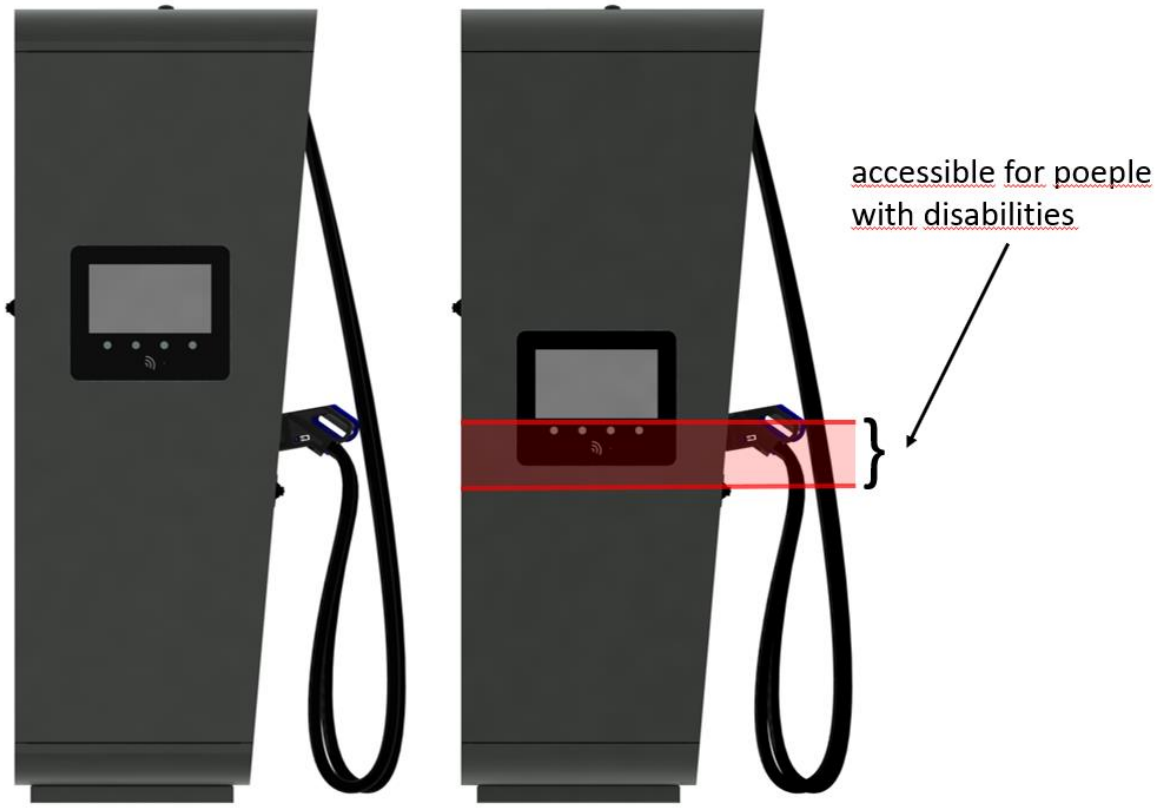


Figure 5: Standard JUICE ULTRA and barrier-free version

2.1.2. Emergency stop button

The emergency stop button was a mandatory requirement of the CHAdeMO 1.0 standard. With the CHAdeMO 1.1 (June 2016) standard it isn't anymore a mandatory requirement and the standard JUICE ULTRA is not equipped with an emergency stop button. The emergency stop button can be ordered optionally.

2.1.3. Door contact switches

In order to be able to recognize, when the JUICE ULTRA doors are open, there is the possibility to optionally order door contact switches integrated in the system.

2.1.4. JUICE ULTRA colors

As standard, the JUICE ULTRA is delivered with the housing color Noire 2100 and the reflector strips on the door have the standard color Pantone 3115 C.
The customer can choose any RAL housing color as well as any RAL reflector strip color as an option.

2.2. DC-Power

75kW JUICE ULTRA power-stacks are used to supply the DC-charging cables installed on the JUICE ULTRA. One power-stack can supply only one DC-charging cable at the same time.
The JUICE ULTRA power-stacks can be switched in parallel mode to increase the power conducted via one DC-charging cable.

Hint

The usable DC-Power on a DC-outlet is limited by the maximum current of the used DC-charging cable.

The following picture shows the DC-Power characteristic with one, two, three and four JUICE ULTRA power-stacks and different cable types (CCS2 HPC liquid cooled cable, 250A not liquid cooled GB/T cable, 200A not liquid cooled CCS1 and CCS2 cable, 125A not liquid cooled CHAdeMO cable)

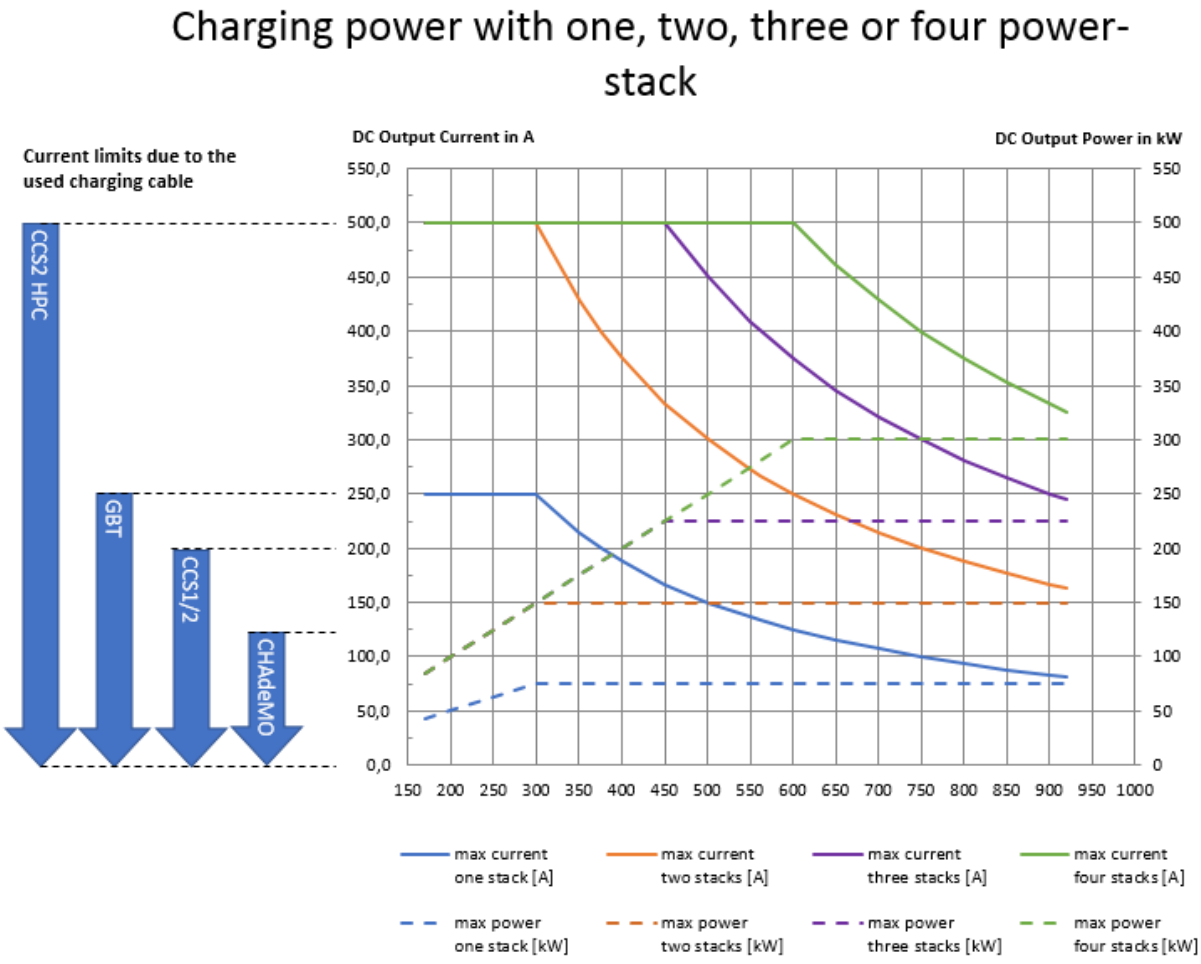


Figure 6: DC-Power characteristic with one, two, three and four JUICE ULTRA power-stacks and different cable types

2.3. Charging interfaces

The following charging interfaces can be selected for the JUICE ULTRA in various combinations:

Charging interfaces		
Charging interface	**Max. Voltage capability [V]**	**Max. current capability [A]**
CCS Combo 2 (not liquid cooled cable)	1.000V DC	200A DC
CCS Combo 2 HPC (liquid cooled cable)	1.000V DC	500A DC
CHAdeMO (not liquid cooled cable)	500V DC	125A DC
CCS 1 US (not liquid cooled cable)*	1.000V DC	200A DC
GB/T China (not liquid cooled cable)*	750V DC	250A DC
22kW AC Socket Type 2 (with shutter)	400V 3~	32A AC

Table 2: Charging interfaces

Attention

The total performance of the double slot version is limited to a 250A grid connection.
The total performance of the quadruple slot version is limited to a 500A grid connection.

Hint

*The CCS 1 and GB/T options are special options for the automotive industry.

2.4. Nameplate

Depending on the configuration of the charging station, the nameplate may be located on the device.

2.5. Exterior view

The following figure shows the different connections of the device from the outside.

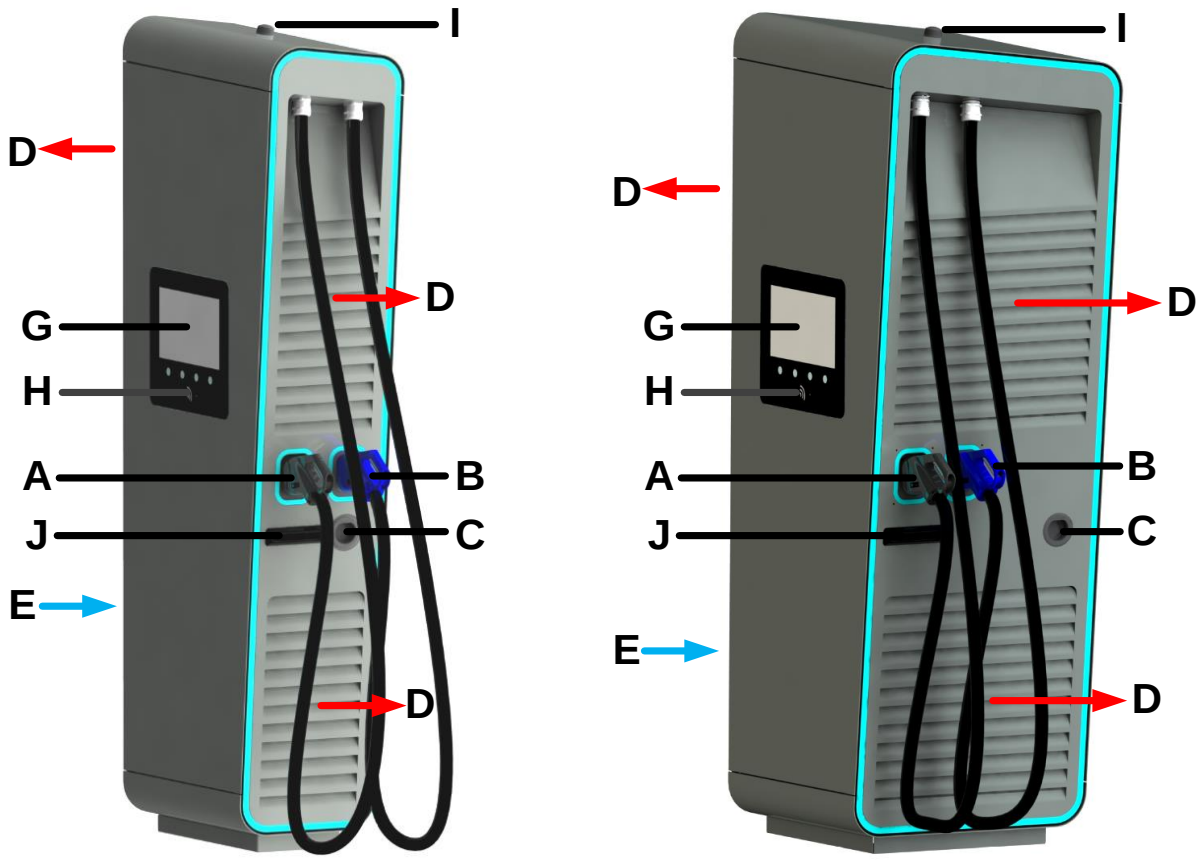


Figure 7: Elements of the charging station

A DC charge outlet 1
B DC charge outlet 2 (optional)
C AC charge socket (optional)
D air outlet
E air inlet
G Display / HMI
H RFID card reader
I GSM / LTE antenna
J door handle

2.6. Opening of the JUICE ULTRA

The JUICE ULTRA has three doors which allow access to the inside of the device. The service door and charging cable door are equipped with a locking cylinder to lock the device.

The cylinder is a ‘10/30 mm profile half cylinder’ which can be replaced by a customer-owned one.

Attention

When opening the display door, make sure that the service door is open before (see the following figure).
Otherwise there is a risk to damage the reflector stripe of the service door.

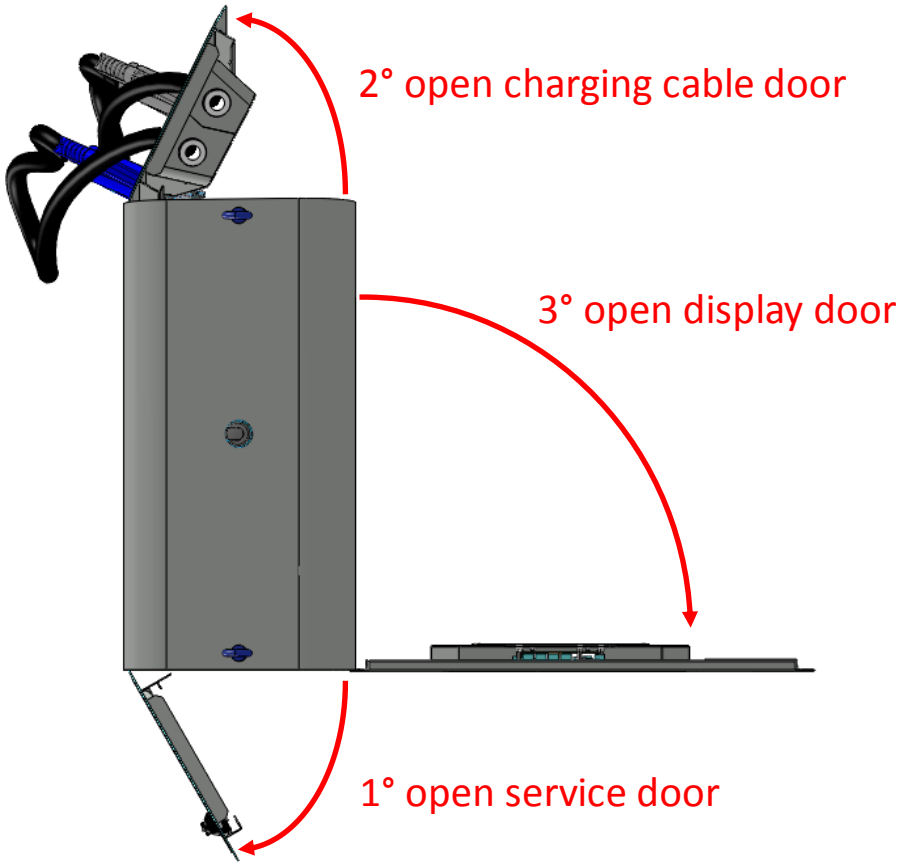


Figure 8: Order for opening the JUICE ULTRA doors

The display door can be opened with the release of the locking mechanism behind the charging cable door, see following picture.

Figure 9: Locking mechanism for the display door

2.7. Internal view

2.7.1. double slot version internal view

The following figure shows the JUICE BOOSTER's internal view for the double slot version.

Figure 10: Internal view JUICE ULTRA double slot version (service-, display-, charging cable - side)

The following table describes the single components highlighted in the figures above:

Identifier	Description
-BC1	DC fault current monitoring for AC charging (optional, only when AC-socket is present)
-BE3	AC meter
-BX1.1, -BX2.1	DC-outlet 1 isolation monitoring device
-BX2.2, -BX1.2	DC-outlet 1 isolation monitoring device (optional, only when DC-outlet 2 is present)
-EP1	Cooling unit for cooled charging cable (optional, only with cooled charging cable)
-FB1	32A circuit breaker with fault current monitoring AC charging / 4P
-FB2	16A circuit breaker for auxiliary 230Vac / 4P
-KF1, -KF2	CTRL_COM_HD control board, CTRL_COM Display
-KF3	CTRL_IO control board
-QA1, -QA2	125A circuit breaker / 3P / 16kA

Identifier	Description
-QB1	250A main switch / 4P
-QB2, -QB3, -QB4	Contactors for DC charging
-QB7	Contactors for AC charging (optional, only when AC-socket is present)
-TB1	Auxiliary 24V power supply
-TB2, -TB3	JUICE ULTRA power-stacks
-TF1	Antenna (3G, LTE or WLAN)
-XD1	Mains input busbars
-XD2	Power socket 230Vac for service
-XD3	DC-busbar for vehicle cable connection XD5 (DC-outlet 1)
-XD4	DC-busbar for vehicle cable connection XD6 (optional, only when DC-outlet 2 is present)
-XD5	DC charge outlet 1
-XD6	DC charge outlet 2 (optional)
-XD7	AC socket (optional, only when AC-socket is present)
-XF1	RJ45 ethernet network-socket

Table 3: JUICE ULTRA double slot version cabinet components

The following figure shows the DC-output switchgear of the double slot version:

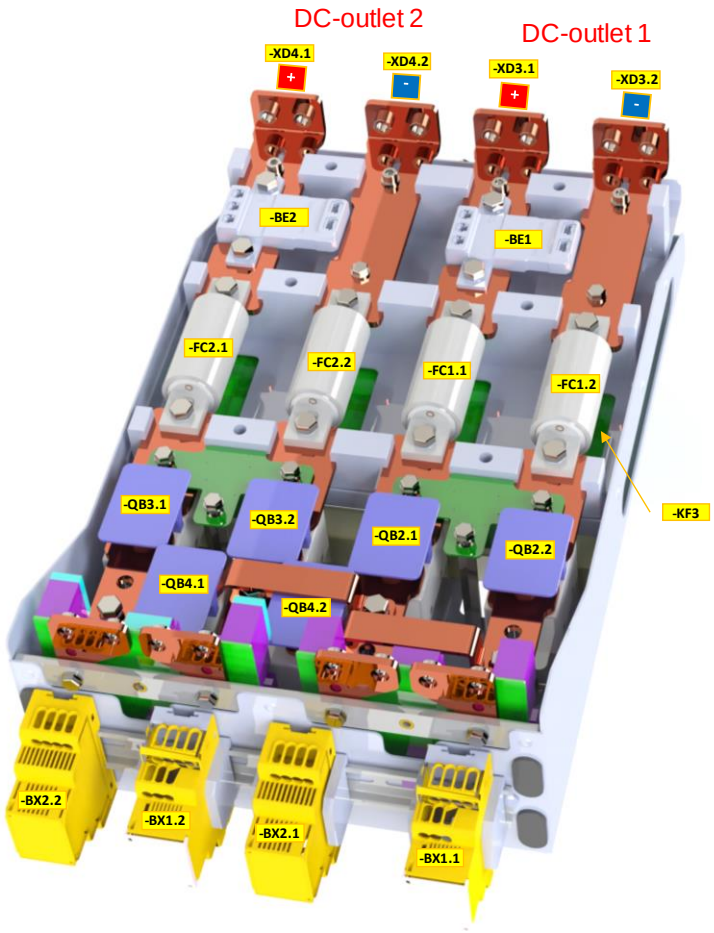


Figure 11: DC output switchgear of the double slot version (bottom view)

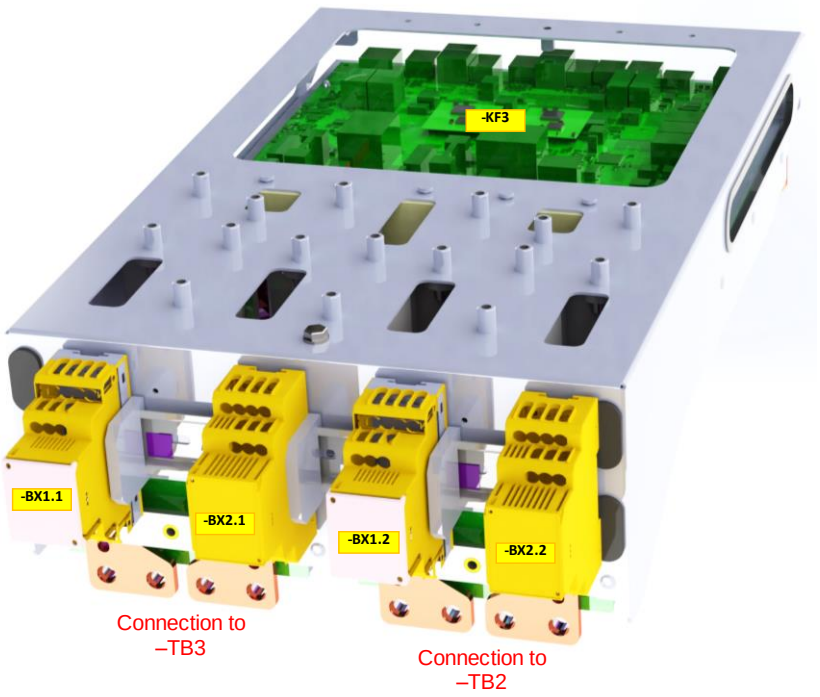


Figure 12: DC output switchgear of the double slot version (top view)

The following table describes the single components highlighted in the table above:

Identifier	Description
-BC1	DC fault current monitoring for AC charging (optional, only when AC-socket is present)
-BE1	DC-meter for DC-outlet 1
-BE2	DC-meter for DC-outlet 2 (optional)
-BE3	AC meter
-BX1.1, -BX2.1	DC-outlet 1 isolation monitoring device
-BX2.2, -BX1.2	DC-outlet 1 isolation monitoring device (optional, only when DC-outlet 2 is present)
-FC1.1, FC1.2	DC-outlet 1 fuses
-FC2.1, FC2.2	DC-outlet 2 fuses
-KF3	CTRL_IO control board
-QB2.1, -QB2.2	DC-outlet 1 contactors
-QB3.1, -QB3.2	DC-outlet 2 contactors (optional, only when DC-outlet 2 is present)
-QB4.1, -QB4.2	DC-link contactors
-QB7	Contactors for AC charging (optional, only when AC-socket is present)
-XD3.1	DC-busbar + pole for vehicle cable connection XD5 (DC-outlet 1)
-XD3.2	DC-busbar – pole for vehicle cable connection XD5 (DC-outlet 1)
-XD4.1	DC-busbar + pole for vehicle cable connection XD6 (DC-outlet 2)
-XD4.2	DC-busbar – pole for vehicle cable connection XD6 (DC-outlet 2)

Table 4: DC output switchgear components for JUICE ULTRA double slot version

The following figure shows the AC input switchgear of the double slot version:

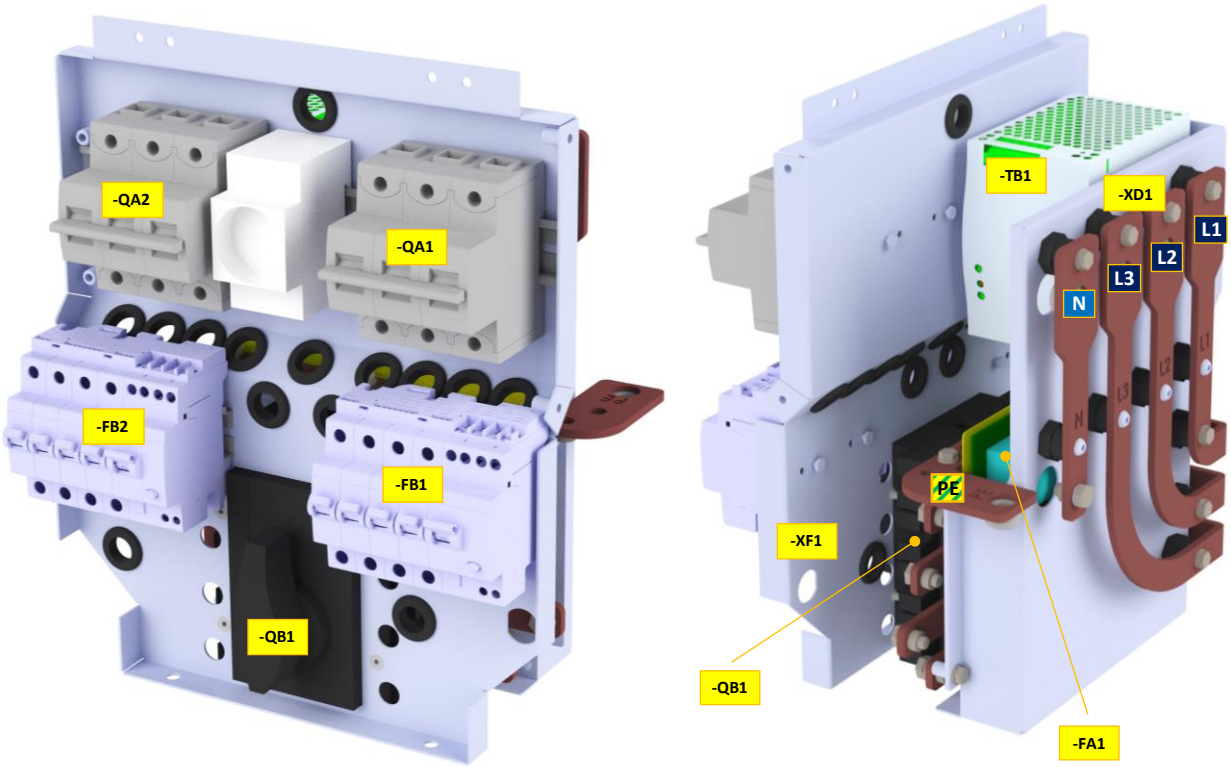


Figure 13: AC input switchgear of the double slot version

The following table describes the single components highlighted in the figure above:

Identifier	Description
-FA1	Lightning protection and EMI filter device
-FB1	32A circuit breaker with fault current monitoring AC charging / 4P
-FB2	16A circuit breaker with fault current monitoring for auxiliary 230Vac / 4P
-QA1, -QA2	125A circuit breaker / 3P / 16kA
-QB1	250A main switch / 4P
-TB1	Auxiliary 24V power supply
-XD1	Mains input busbars
-XF1	RJ45 ethernet network socket

Table 5: AC input switchgear components for JUICE ULTRA double slot version

2.7.2. quadruple slot version internal view

The following figure shows the JUICE ULTRA internal view for the quadruple slot version:

Figure 14: Internal view JUICE ULTRA quadruple slot version (service-, display- and charging-cable-side)

The following table describes the single components highlighted in the figures above:

Identifier	Description
-BC1	DC fault current monitoring for AC charging (optional, only when AC-socket is present)
-BE3	AC meter
-BX1.1, -BX2.1	DC-outlet 1 isolation monitoring device
-BX2.2, -BX1.2	DC-outlet 1 isolation monitoring device (optional, only when DC-outlet 2 is present)

Identifier	Description
-EP1	Cooling unit for cooled charging cable (optional, only with cooled charging cable)
-FB1	32A circuit breaker with fault current monitoring AC charging / 4P
-FB2	16A circuit breaker for auxiliary 230Vac / 4P
-KF1, -KF2	CTRL_COM_HD control board, CTRL_COM Display
-KF3	CTRL_IO control board
-QA1, -QA2, -QA3, -QA4	125A circuit breaker / 3P / 16kA
-QB1	500A main switch / 4P
-QB2, -QB3	DC-outlet contactors
-QB4, -QB5, -QB6	Contactors for internal DC link
-QB7	Contactors for AC charging (optional, only when AC-socket is present)
-TB1	Auxiliary 24V power supply
-TB2, -TB3, -TB4, -TB5	JUICE ULTRA power-stacks
-TF1	Antenna (3G, LTE or WLAN)
-XD1	Mains input busbars
-XD2	Power socket 230Vac for service
-XD3	DC-busbar for vehicle cable connection XD5 (DC-outlet 1)
-XD4	DC-busbar for vehicle cable connection XD6 (optional, only when DC-outlet 2 is present)
-XD5	AC socket (optional, only when AC-socket is present)
-XD6	DC charge outlet 1
-XD7	DC charge outlet 2 (optional)
-XF1	Ethernet network-dose RJ45

Table 6: JUICE ULTRA quadruple slot version cabinet components

The following figure shows the DC-output switchgear of the quadruple slot version:

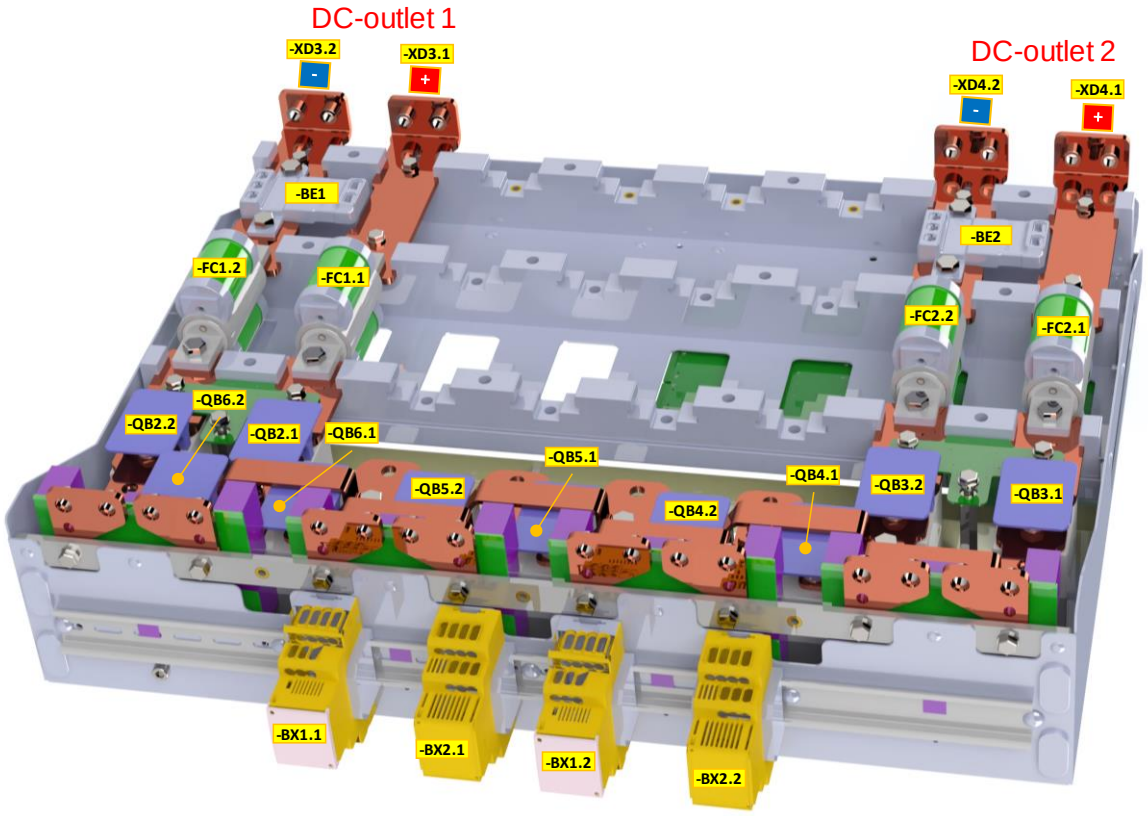


Figure 15: DC output switchgear of the quadruple slot version (bottom view)

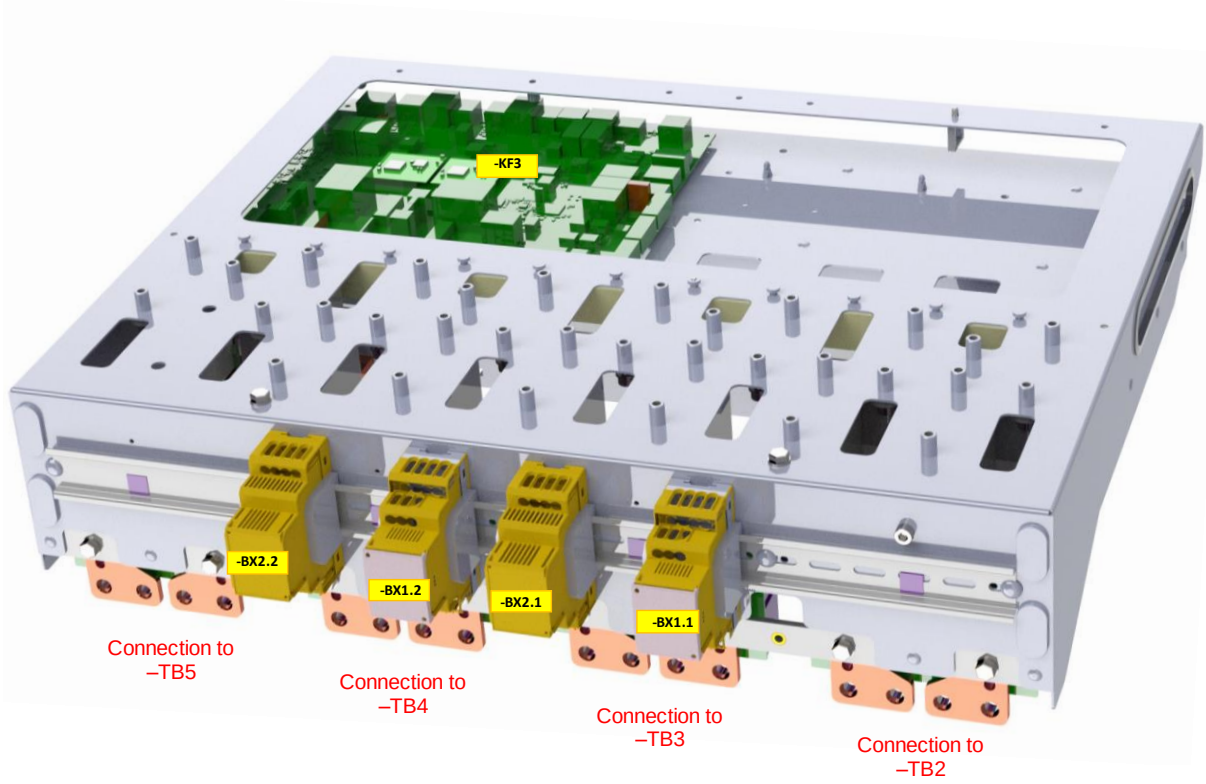


Figure 16: DC output switchgear of the quadruple slot version (top view)

The following table describes the single components highlighted in the table above:

Identifier	Description
-BC1	DC fault current monitoring for AC charging (optional, only when AC-socket is present)
-BE1	DC-meter for DC-outlet 1
-BE2	DC-meter for DC-outlet 2 (optional)
-BE3	AC meter
-BX1.1, -BX2.1	DC-outlet 1 isolation monitoring device
-BX2.2, -BX1.2	DC-outlet 1 isolation monitoring device (optional, only when DC-outlet 2 is present)
-FC1.1, FC1.2	DC-outlet 1 fuses
-FC2.1, FC2.2	DC-outlet 2 fuses
-KF3	CTRL_IO control board
-QB2.1, -QB2.2	DC-outlet 1 contactors
-QB3.1, -QB3.2	DC-outlet 2 contactors (optional, only when DC-outlet 2 is present)
-QB4.1, -QB4.2 -QB5.1, -QB5.2 -QB6.1, -QB5.2	DC-link contactors
-QB7	Contactors for AC charging (optional, only when AC-socket is present)
-XD3.1	DC-busbar + pole for vehicle cable connection XD5 (DC-outlet 1)
-XD3.2	DC-busbar – pole for vehicle cable connection XD5 (DC-outlet 1)
-XD4.1	DC-busbar + pole for vehicle cable connection XD6 (DC-outlet 2)
-XD4.2	DC-busbar – pole for vehicle cable connection XD6 (DC-outlet 2)

Table 7: DC output switchgear components for JUICE ULTRA quadruple slot version

The following figure shows the AC input switchgear of the quadruple slot version:

Figure 17: AC input switchgear of the quadruple slot version

The following table describes the single components highlighted in the figure above:

Identifier	Description
-FA1	Lightning protection and EMI filter device

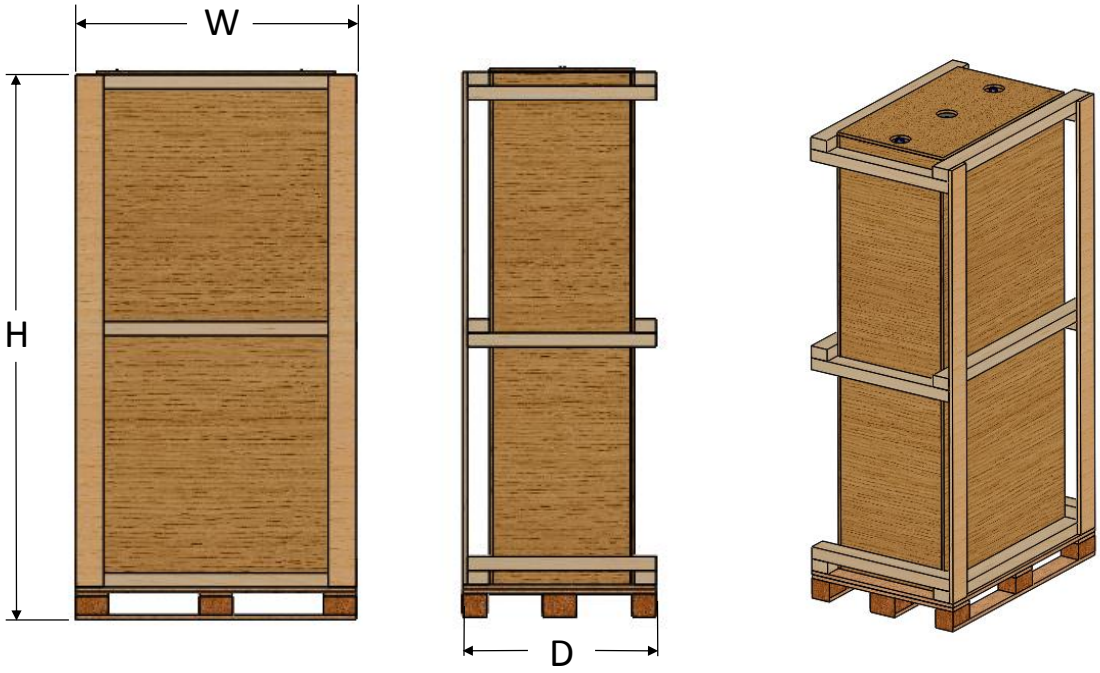
Identifier	Description
-FB1	32A circuit breaker with fault current monitoring AC charging / 4P
-FB2	16A circuit breaker with fault current monitoring for auxiliary 230Vac / 4P
-QA1, -QA2, -QA3, -QA4	125A circuit breaker / 3P / 16kA
-QB1	500A main switch / 4P
-TB1	Auxiliary 24V power supply
-XD1	Mains input busbars
-XF1	RJ45 ethernet network socket

Table 8: AC input switchgear components for JUICE ULTRA quadruple slot version

3. Transport, storage, unpacking and handling

3.1. Packaging

The JUICE ULTRA is delivered in a specialized wood packaging. The following figure shows the packaging, and size information for the two charger types.



Type	W [mm]	D [mm]	H [mm]
double slot version	1200	800	2340
quadruple slot version	1200	1120	2340

Table 9: Dimension of the packaging

The following table contains the weight indication for JUICE ULTRA types:

Type	Weight JUICE ULTRA [kg]	Weight packaging [kg]	Threat size for eyebolts
double slot version s… number of power-stacks c… number of charging interfaces	~ 200+s*95+c*30 <450	100	2xM12
quadruple slot version s… number of power-stacks c… number of charging interfaces	~ 250+s*95+c*30 <750	100	4xM12

Table 10: Maximum weight and threat size for eyebolts for different JUICE ULTRA product types

3.2. Transport, handling and storage

In its wood packaging, the JUICE ULTRA must be transported vertically.

Figure 18: Vertical transport with pallet truck or forklift

In addition to the transport with a pallet truck or a forklift, the JUICE ULTRA can be moved using the two (double slot version housing) or four (quadruple slot version housing) crane eyelets which are located on top of the packaging.

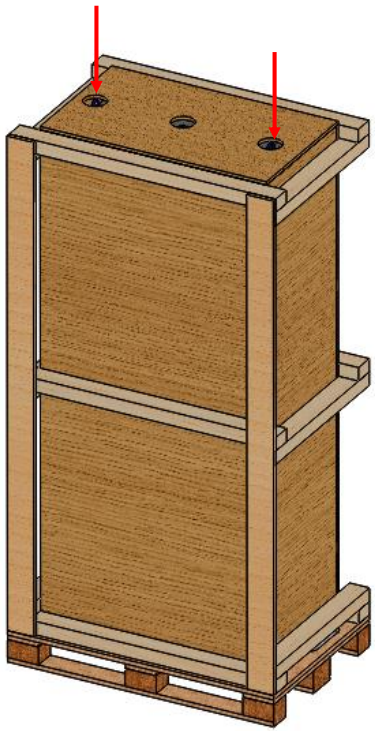


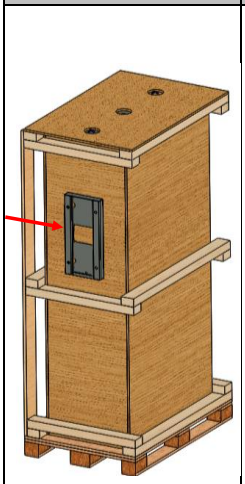
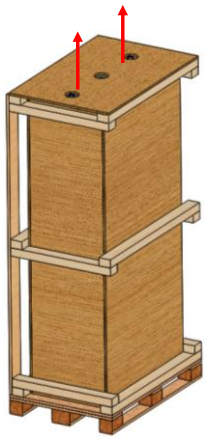
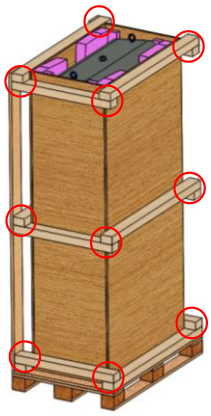
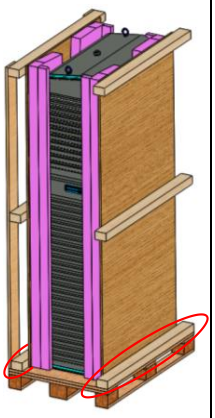
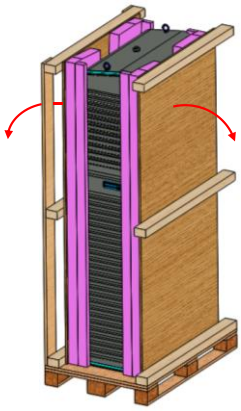
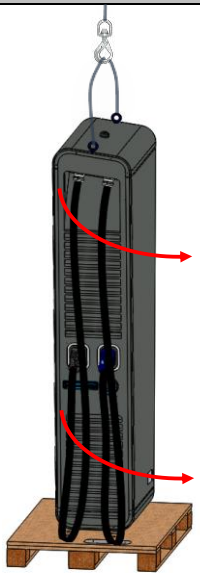
Figure 19: Crane eyelets on top of the packaging

Attention

The JUICE ULTRA must be stored in its original packaging in a dry environment from -40°C to +55°C.

3.3. Unpacking

It is recommended to transport the JUICE ULTRA to its final destination in its original packaging and unpack it there. The following illustrations show the sequence how to unpack the JUICE ULTRA:

Unpacking the JUICE ULTRA				
1	**2**	**3**	**4**	**5**
				
Remove the JUICE ULTRA-base	Remove screws on top cover and lift top cover	Remove screws on all edges and remove side panels	Remove screws on front and rear panel	Remove front and rear panel
6	**7**	**8**	**9**	**10**
				
Remove the packaging materials	Open service door	*Remove screws on the base plate of the JUICE ULTRA	Open charging cable door	Open display door

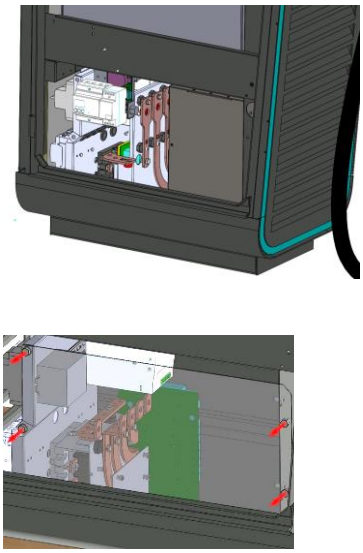
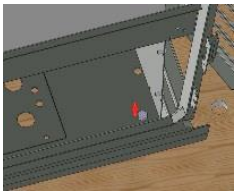
11	12	13
	 	
Remove cover / remove the water-cooling unit if mounted	*Remove screws on the base plate of the JUICE ULTRA	Close all doors, lift the JUICE ULTRA with a crane and remove the pallet

Figure 20: Unpacking the JUICE ULTRA

The outer packaging is made of 100% recyclable wood, the inner packaging is made of plastic and must be disposed separately.

***Attention**

Before loosening the mounting screws between the JUICE ULTRA and the pallet, the JUICE ULTRA must be protected against overturning. This protection must be maintained until final mounting to the foundation.

4. JUICE ULTRA installation

This chapter describes the mechanical and the electrical installation of the JUICE ULTRA.

It is recommended to install the JUICE ULTRA according the following steps and related chapter in the following sections:

- Site configuration (see chapter 4.1.3)
- JUICE ULTRA base positioning (see chapter 4.1.4)
- Preparation of the mains power-supply cables (see chapter 4.2.3)
- Lift the JUICE ULTRA with a crane on the JUICE ULTRA base
- Screw the JUICE ULTRA via 4x M12x30 screws and 32mm washers together to the JUICE ULTRA-base. The screws are to be tightened with a torque of 90Nm.
- Connect the mains power-supply (see chapter 4.2.4)

4.1. JUICE ULTRA mechanical installation

4.1.1. Relevant components for JUICE ULTRA installation

The mounting of the JUICE ULTRA must be performed on a solid ground, this can be a concrete foundation or a concrete floor. When dimensioning the foundation, it's recommended to perform a static load capacity analysis according to relevant norms.
The following figure defines the naming of relevant components for the mechanical installation:

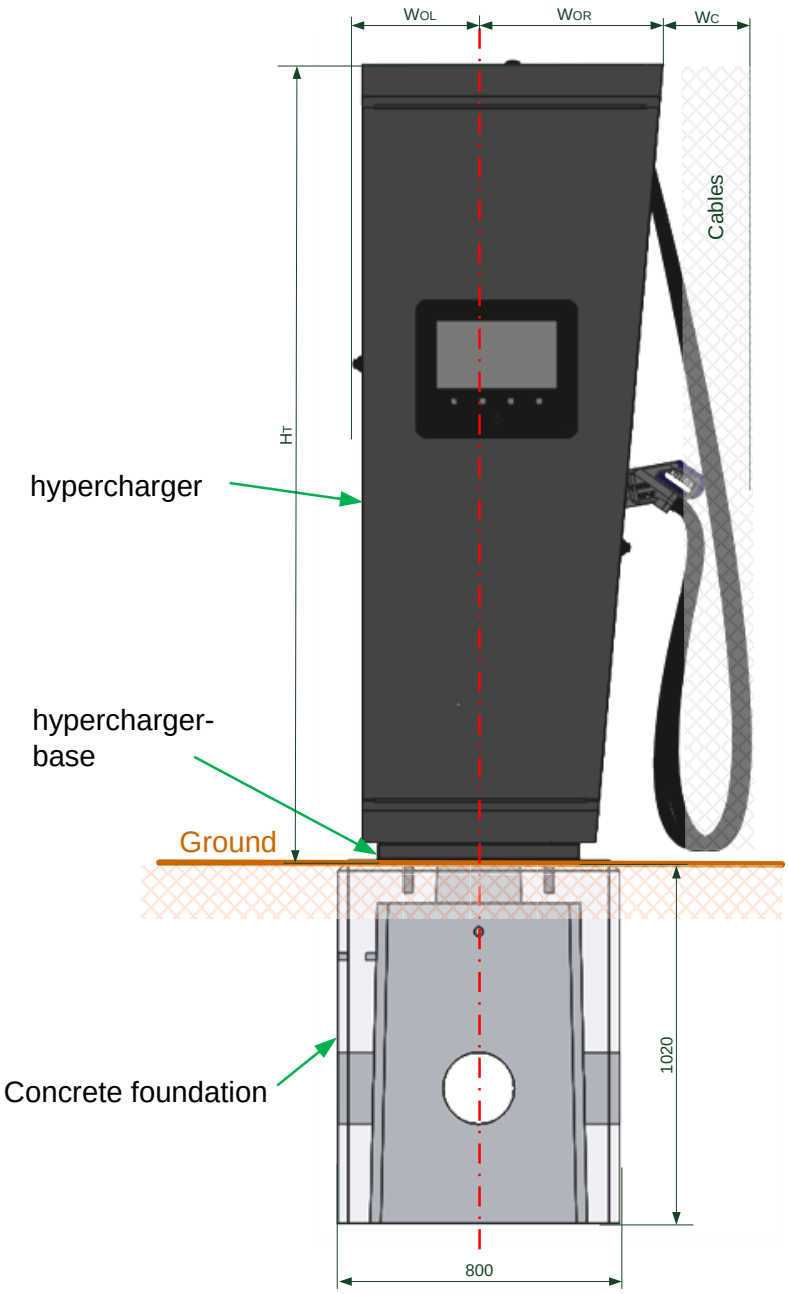


Figure 21: Relevant components for the mechanical installation of the JUICE ULTRA

The mains power-supply cables for connecting the JUICE ULTRA to the grid are guided from the ground over the foundation to the JUICE ULTRA.
The JUICE ULTRA base is an installation plate which is mounted in the first installation step

on the concrete foundation or the concrete floor and builds the mechanical base for the JUICE ULTRA installation and fixes the connection of the mains-side supply cables into the JUICE ULTRA with cable glands.

Attention

	Before installation, compliance with all legal requirements for the installation site (for example, stability against tipping, impact protection, effects of frost, etc.) must be checked.
	Each outlet or each vehicle clutch must be arranged in consideration of the ergonomics and mechanical impact protection, as close as possible to the car park to be supplied.

4.1.2. Cable reach

In its default configuration, the JUICE ULTRA comes with a cable length of 350cm. The following figure shows the operating radius (3m) of the cables for the two DC outlets of the JUICE ULTRA.

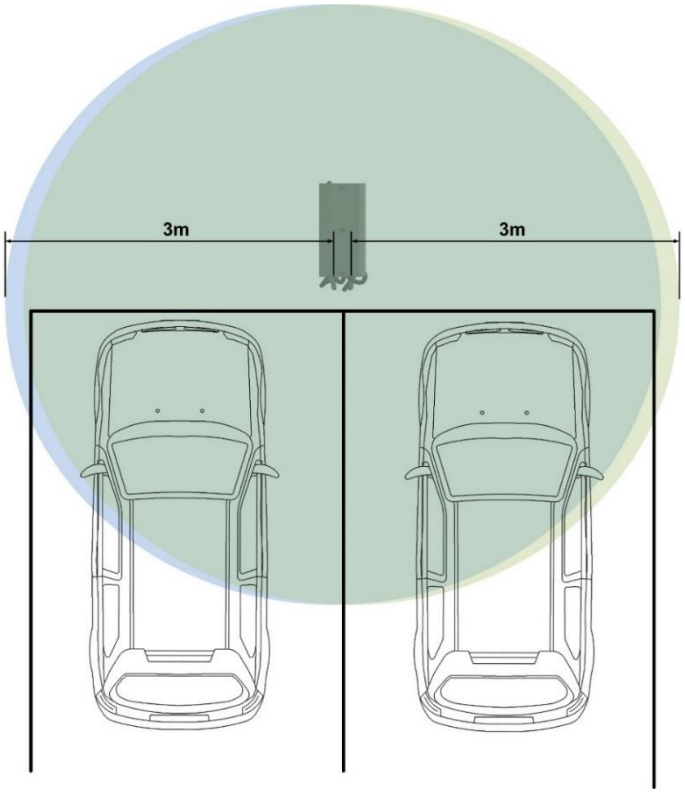


Figure 22: Cable reach for the two DC outlets of the JUICE ULTRA

4.1.3. Site configuration

When installing the JUICE ULTRA, it must be ensured to maintain a minimum distance from possible objects around the JUICE ULTRA, to allow adequate airflow, and space for possible service or maintenance operations.

Attention

A mechanical ramming protection with enough stability should be provided to protect the charging station.

The following figure shows the recommended minimum distances which should be kept free during installation on site:

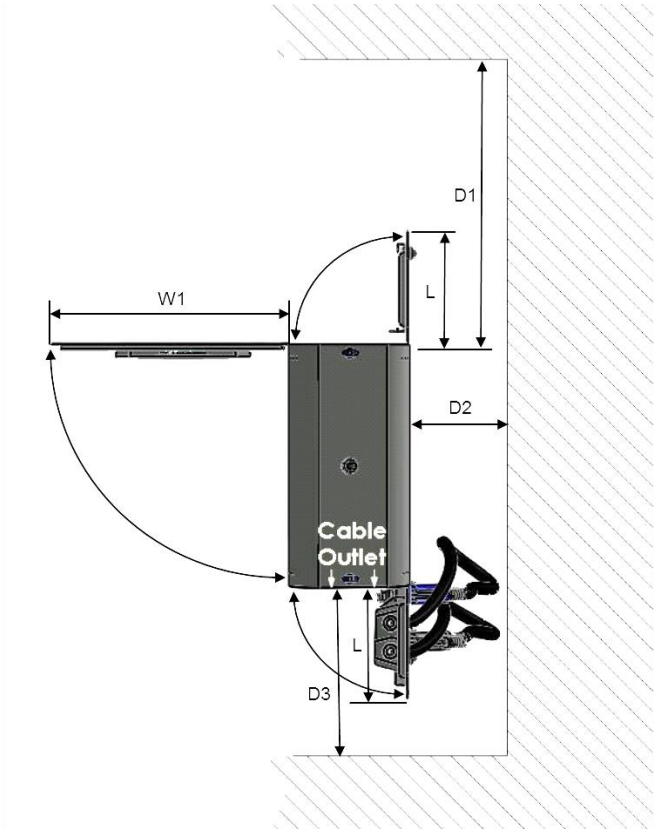


Figure 23: Recommended distances for site configuration

The figure above shows the JUICE ULTRA housing for the double slot version, the distances for the both housings can be found in the following table.

Type	W1 [mm]	D1 [mm]	D2 [mm]	D3[mm]	L [mm]
double slot version	854	1100	350	1000	420
quadruple slot version	854	1100	350	1000	732

Table 11: Distances to keep free for service

Attention

The legal minimum widths for escape routes must be respected in any case.

To allow easy replacement of the power-stacks, a clearance of at least 110cm must be available on the left side (see D1).

At least a distance of 1100mm (D1) and 1000mm (D3) must be maintained in front of the ventilation grilles to not impair the circulation of the supply and exhaust air. It must also be prevented that the exhaust air is reintroduced into the supply air circuit.

Impairments to the air circulation may lead to a derating of the charging station.

4.1.4. JUICE ULTRA base positioning

Once the position of the JUICE ULTRA is defined on the installation site according to 4.1.3 the position of the JUICE ULTRA base and the cable entries from the foundation have to be defined:

The JUICE ULTRA base is to be arranged eccentrically to the charging station. The outer dimensions related to the center of the base plate are shown in Figure 24 for the double slot version.

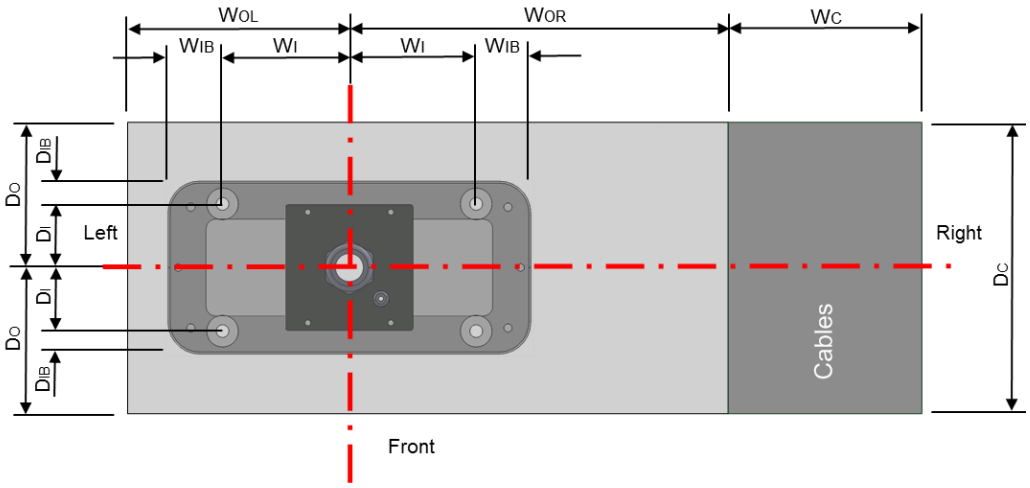


Figure 24: Distances between base plate and outer dimensions of charging station on the concrete foundation double slot version (display/top view)

The outer dimensions related to the center of the base plate are shown in Figure 25 for the quadruple slot version:

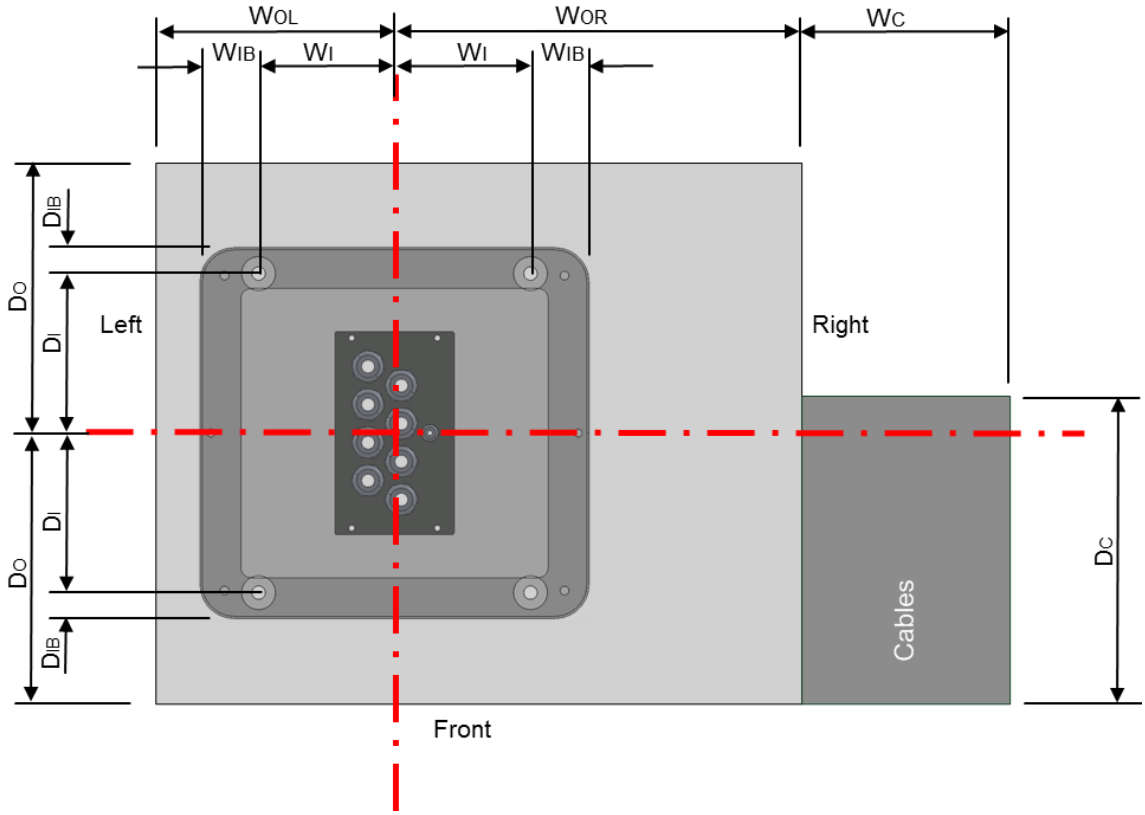


Figure 25: Distances between base plate and outer dimensions of charging station on the concrete foundation quadruple slot version (display/top view)

Distance	double slot version	quadruple slot version
D_C	420 mm	420 mm
D_I	100 mm	235 mm
D_{IB}	36 mm (± 3 mm)	36 mm (± 3 mm)
D_O	210 mm (± 3 mm)	366 mm (± 3 mm)
HT	2250 mm (± 3 mm)	2250 mm (± 3 mm)
W_C	300 mm	300 mm
W_I	200 mm	200 mm
W_{IB}	86 mm (± 3 mm)	86 mm (± 3 mm)
W_{OL}	357 mm (± 3 mm)	357 mm (± 3 mm)
W_{OR}	519 mm (± 3 mm)	516 mm (± 3 mm)

Table 12: Distances between base plate and outer dimensions of charging station

The JUICE ULTRA base includes cable entry plate for the cable glands which must be defended at the order.

4.1.5. JUICE ULTRA base

The following figure shows the JUICE ULTRA-base for the double slot version:

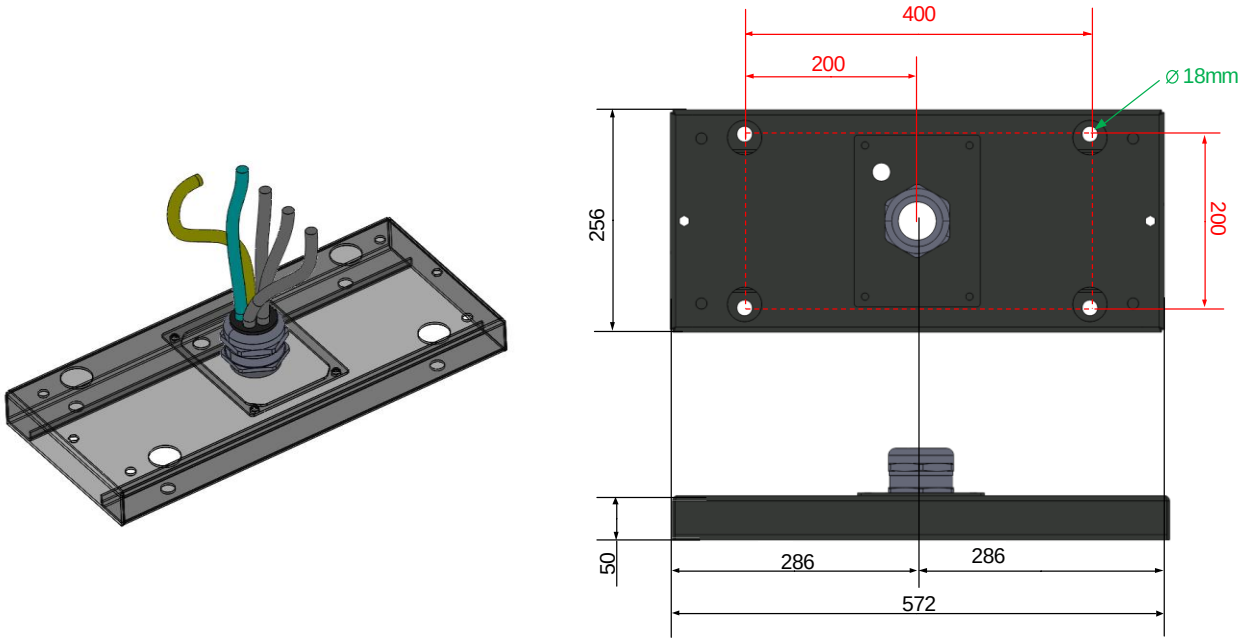


Figure 26: JUICE ULTRA-base for the double slot version

The following figure shows the JUICE ULTRA-base for the quadruple slot version:

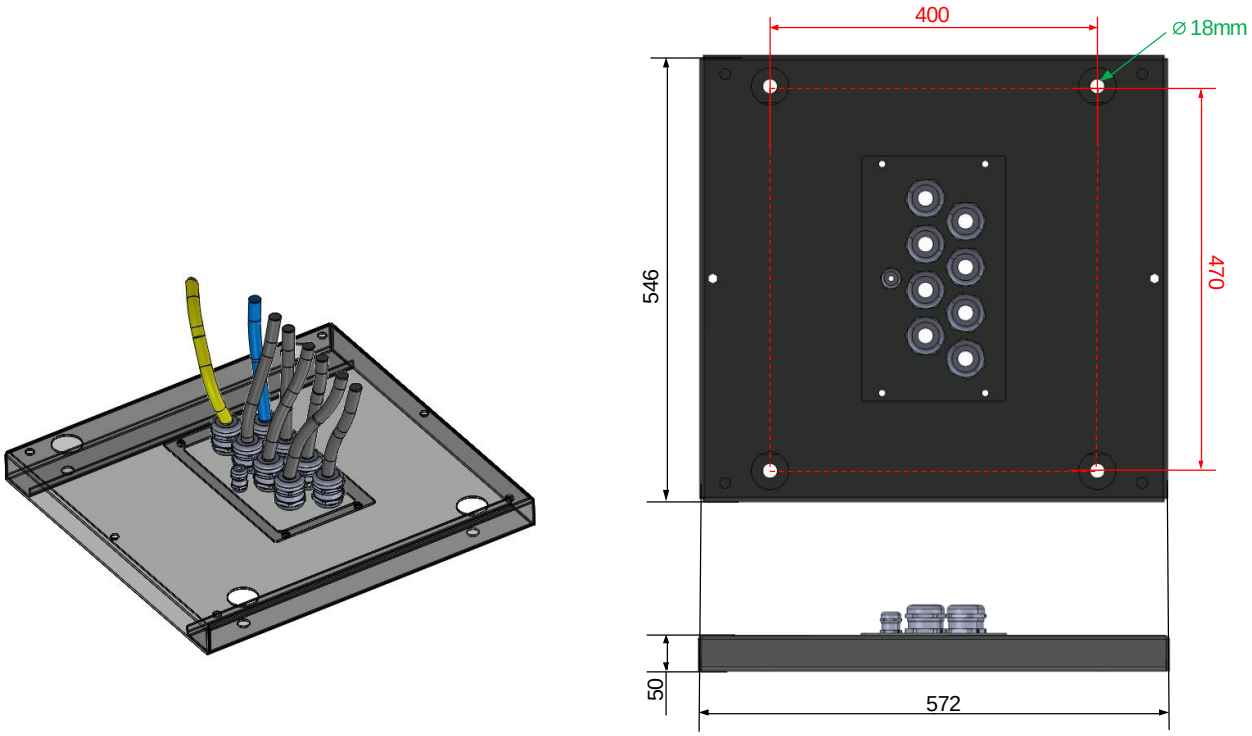


Figure 27: JUICE ULTRA-base for the quadruple slot version

The JUICE ULTRA base has to be screwed together with the concrete foundation by min. 4x M12x30 screws and washers (M12 x 32mm / delivered together with the JUICE ULTRA). The screws are to be tightened with a torque of 90Nm.

For the hypercharge-base different cable entry plate are available to enable different mains power-supply cables (details in chapter 4.2.3).

Attention

The use of the cable entry plate when mounting the JUICE ULTRA mains supply cables is mandatory. If the adaptor-plate not used it can happen that the JUICE ULTRA draws dust which can destroy the device.

4.2. Electrical installation

The dimensioning of the cables and the protection devices outside the JUICE ULTRA are to be done according the local regulations and in order to respect the technical specification of the JUICE ULTRA stated in chapter 8.

4.2.1. JUICE ULTRA schematic for the double slot version

The following figure shows the schematic of the JUICE ULTRA for the double slot version:

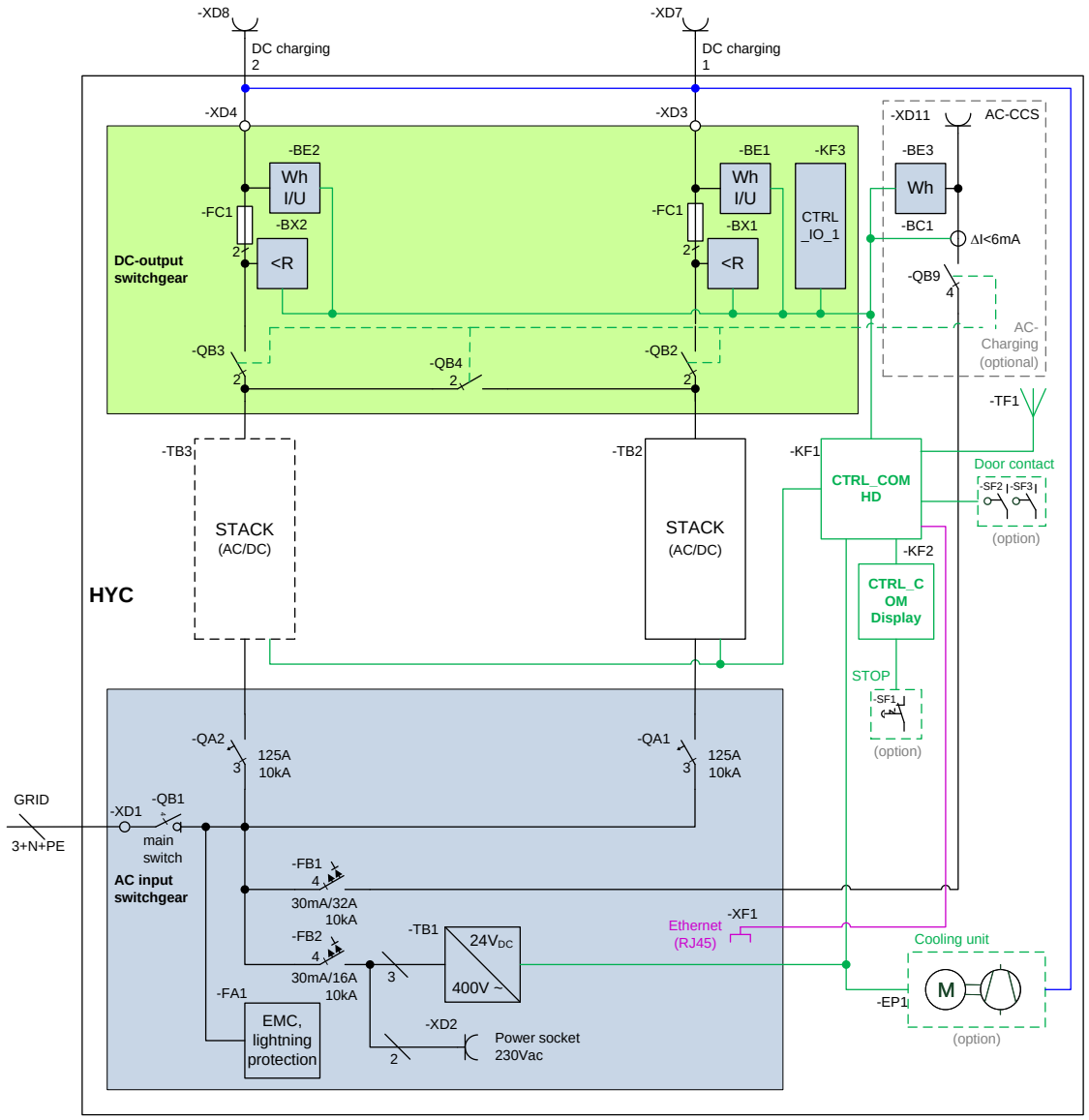


Figure 28: JUICE ULTRA schematic for the double slot version

4.2.2. JUICE ULTRA schematic for the quadruple slot version

The following figure shows the schematic of the JUICE ULTRA for the quadruple slot version:

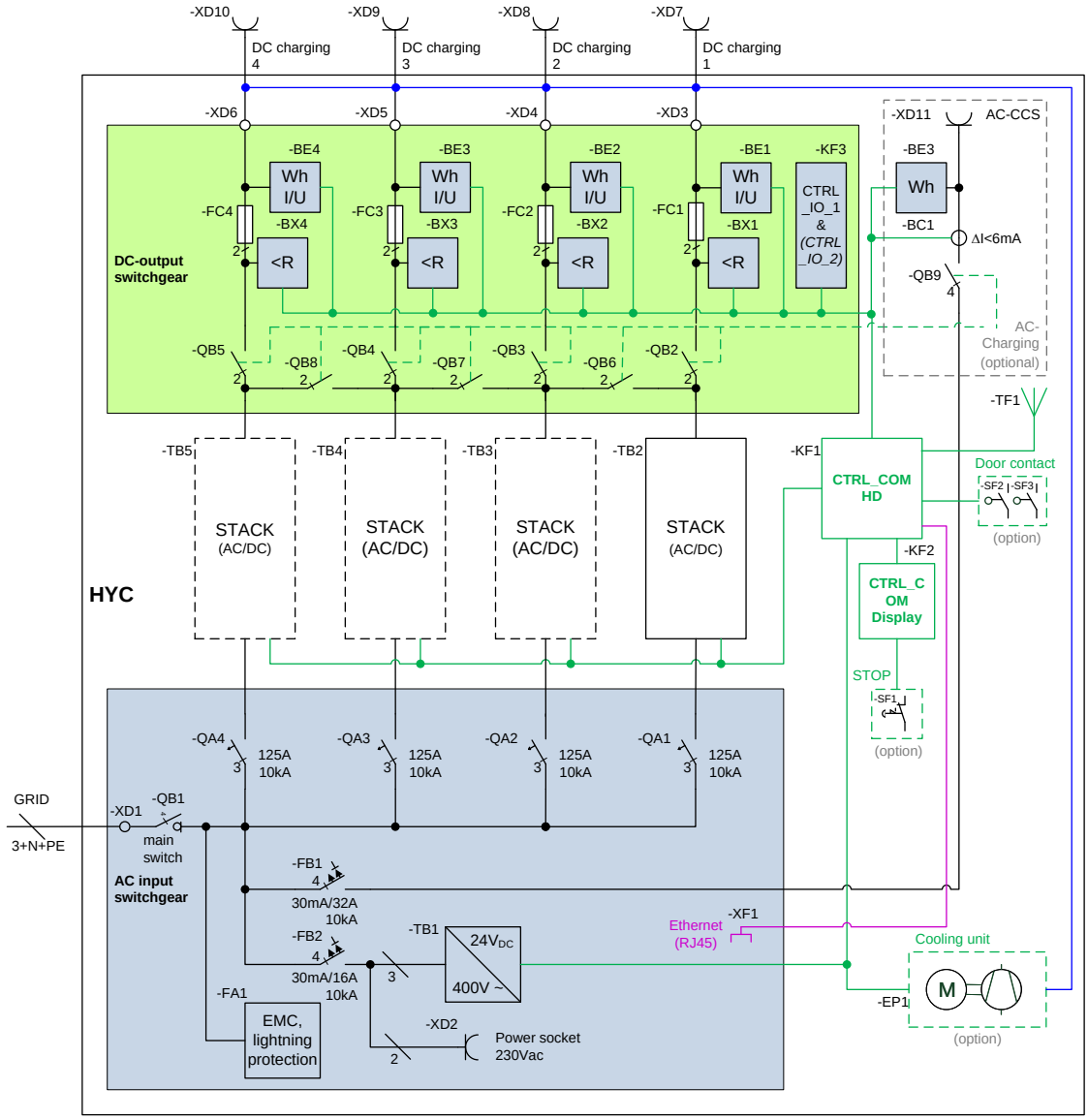


Figure 29: JUICE ULTRA schematic for the quadruple slot version

4.2.3. Preparation mains power-supply cables

After the JUICE ULTRA base is mounted (see chapter 4.1.5), the mains-side cables should be conducted through foundation and JUICE ULTRA-base. Then the mains-side cables should be fixed by tightening the cable gland.
For the hypercharge-base different cable entry plates are available to enable different mains power-supply cable types:

	Single supply cable	**Multiple supply cable**
double slot version	1 x M63 Hole for 3 different cable glands with a clamping range of: 27-39mm 34-45mm 44-55mm 1 x M20 Hole for a cable gland with a clamping range of: 7-13mm	*5 x M40 Hole for cable glands with a clamping range of:* *19-28mm* *1 x M20 Hole for cable glands with a clamping range of:* *7-13mm*
quadruple slot version	N/A	8-10 x M40 Hole for cable glands with a clamping range of: 19-28mm 0-1 x M25 Hole for cable glands with a clamping range of: 11-17mm 0-1 x M20 Hole for cable glands with a clamping range of: 7-13mm

Table 13: Available cable entry plates for JUICE ULTRA-base

The necessary cable entry plate depends on the used mains power-supply cable and should be defined during the ordering of the JUICE ULTRA.
Afterwards M12 - M16 (preferable M16 - to facilitate the connection) cable lugs can be mounted on the positions defined in Figure 30.

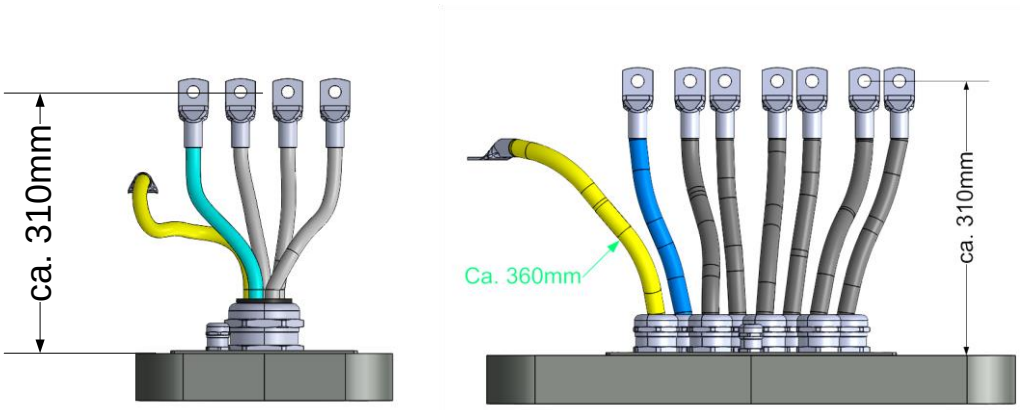


Figure 30: Cable inlet and connection lengths for double slot version and quadruple slot version

4.2.4. Grid Connection

The JUICE ULTRA charging stations can be used in supply networks of the type TT and TN-S.

Attention

	The necessary protective measures against electric shock and other country-specific requirements must be taken into account.
	This product has been designed for environment A. Use of this product in environment B may cause unwanted electromagnetic disturbances in which case the user may be required to take adequate mitigation measures.
	Depending on the configuration of the JUICE ULTRA and the EMC measures, the protective conductor current can cause protective conductor currents up to 1A. Please take this into account when designing the protective earthing and protective measures.

After the JUICE ULTRA is mechanically installed (**Fehler! Verweisquelle konnte nicht gefunden werden.**), the main-side supply cables can be connected to the JUICE ULTRA input Busbars:

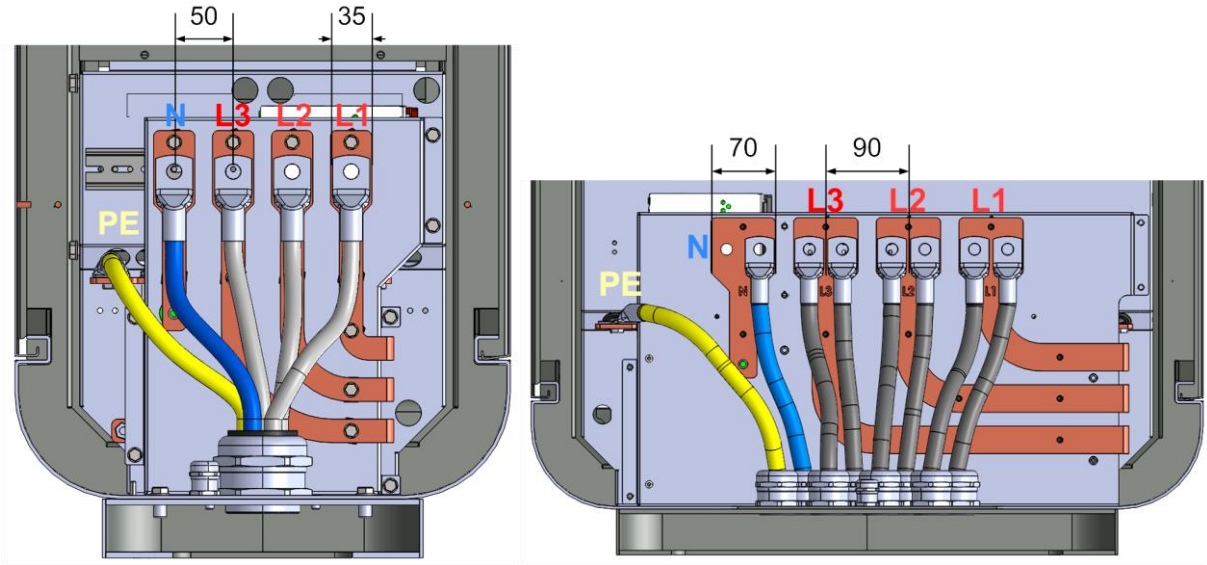


Figure 31: Connecting of the input Busbars (double slot version left, quadruple slot version right)

The screws M12x25 should be tightening with a torque of 35Nm.

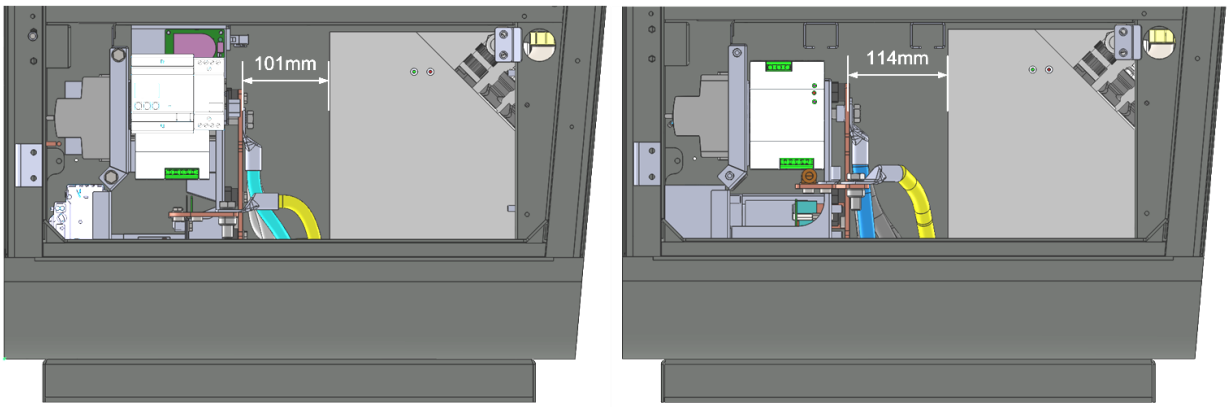


Figure 32: Sideview of the input Busbars (double slot version left, quadruple slot version right)

If an active cooled Cable is used (option), the cooling unit for cooled charging cable should be removed during grid connection (see 7.3.).

4.2.5. Checks before initial startup

The operation of this charging station must be carried out taking into account the test and maintenance instructions described below. All instructions listed below are considered mandatory and must be carried out by the operator of the charging station.

After transport and installation, check the following points:

Check	Execution
Mechanical visual inspection	Mechanically perfect condition of all installed devices (no visible breakages)
Screw connections, tight fit	Random or complete testing of tightening torques at terminals and mechanical screw connections. Check the terminals and equipment for tightness. The transport may have released the screws.
Earthing system	Checking the earthing taking into account the site-specific conditions as well as the valid standards.
Upstream protection device	Checking of the supplied charging station regarding the upstream protective device according to ISO 61439-2/-7 as well as deviating country-specific standards and directives
Selectivity	Checking the selectivity taking into account the safety elements used and upstream of the control cabinet in accordance with ISO 61439-2 as well as other country-specific standards
Operating conditions	Consideration of the operating conditions at the installation site (e.g. mechanical, chemical, corrosive stress) according to ISO 61439-2/-7 as well as deviating country-specific standards
Protection cover	If the protective cover of the control cabinet has been re-installed after connecting the main supply line, the contact protection is provided.
Residual current protection device	Checking whether a residual current circuit breaker is required for operation, taking into account the site-specific conditions and the valid standards, and whether the residual current protection device is available
Short circuit resistance	Rated current and short-circuit resistance of the main busbar system taking into account the upstream protective device according to ISO 61439-2/-7
Automatic shutdown of the power supply	the requirements of IEC 60364-4-41, section 411 must be met

Table 14: Checks to be carried out before commissioning

5. Diagnosis and parameterization

After successful mechanical and electrical installation of the charging station, the correct functioning of the device can be checked by means of a diagnostic and parameterization tool. The diagnostic interface can be loaded via any browser at the default IP address as shown in Table 15.

Default IP address	192.168.1.100

Table 15: Default Charging Station IP address

5.1. User interface

On the first connection to the web interface, one can find a prompt for the username and the password, like presented in Figure 33.

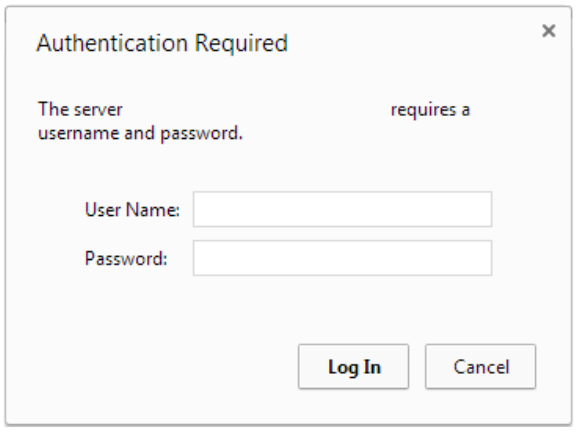


Figure 33: Credentials form shown at first connection with web interface

Type the default username and password, as shows in Table 16. Please note that for security reasons, **it is important to change the username and password.**

Default Credentials	
Username	admin
Password	admin123

Table 16: Default Credentials to web interface

Figure 34 shows the home page. There are six links to other pages. The Diagnostics and Parameterization options are both present on this same page.

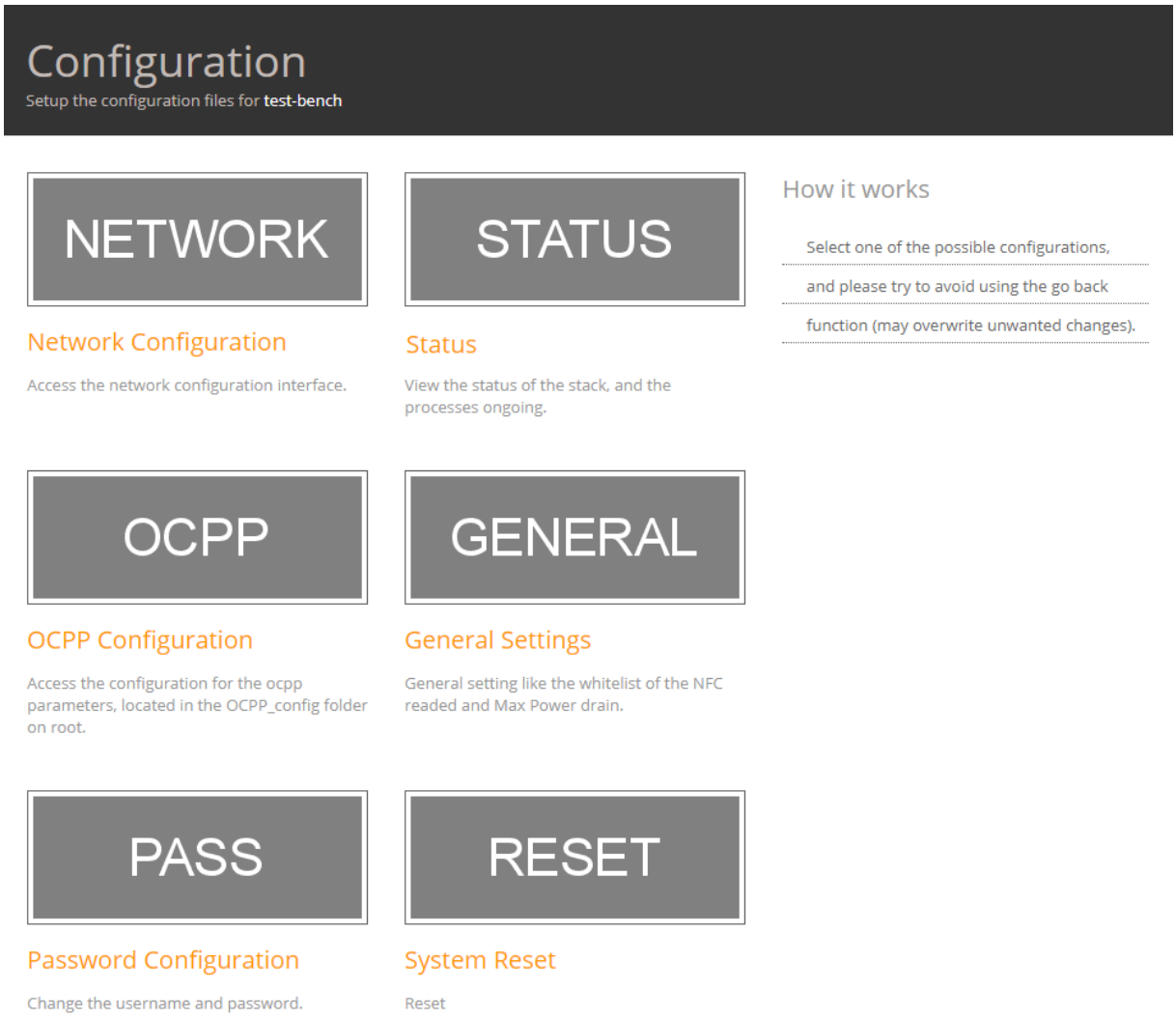


Figure 34: Home screen of web interface

Here is a list of all functionalities of the web interface and where they are found in their corresponding menus.

Links for Diagnosis category:

- To check the SIM Signal, you can navigate to ‘NETWORK’ from the main menu and then following the top menu ‘SIM’ to the menu ‘Signal’ can be found.
- To check the currently running processes, you can navigate to ‘STATUS’ from the main menu and then following the top menu ‘Processes View’ can be found.
- To check the status of the Stop Button, you can navigate to ‘STATUS’ from the main menu and then following the top menu ‘Stop Button’ can be found.
- To check the status of the JUICE ULTRA power-stacks, you can navigate to ‘STATUS’ from the main menu and then following the top menu ‘Stacks’ can be found.
- To check the number of cycles for each charging cable, you can navigate to

‘STATUS’ from the main menu and then following the top menu ‘Connectors’ can be found.

- To check the software version running the charging station, you can navigate to ‘STATUS’ from the main menu and then following the top menu ‘Software Version’ can be found.

Links for Parameterization category:

- To edit the boot.ini options, you can navigate to ‘OCPP’ from the main menu and then following the top menu ‘BOOT’ can be found.
- To edit the OCPP configuration, you can navigate to ‘OCPP’ from the main menu.
- To edit the Ethernet IP address, you can navigate to ‘NETWORK’ from the main menu and then following the top menu ‘Ethernet Configuration’ can be found.
- To edit the SIM configuration, you can navigate to ‘NETWORK’ from the main menu and then following the top menu ‘SIM’ and following the submenu ‘APN Configuration’ can be found.
- To edit the SIM network configuration, you can navigate to ‘NETWORK’ from the main menu and the following the top menu ‘SIM’ and following the submenu ‘Network Configuration’ can be found.
- To edit the OpenVPN configuration click on ‘NETWORK’ from the main menu and following the top menu ‘OpenVPN’ can be found.
- To edit the NFC tags in the charging station’s whitelist, you can navigate to ‘GENERAL’ from the main menu and then following the top menu ‘WhiteList NFC’ can be found.
- To edit the Max Power drain for the mains power supply, you can navigate to ‘GENERAL’ from the main menu and then following the top menu ‘Max Power’ can be found.
- To edit the GUI visibility options, you can navigate to ‘GENERAL’ from the main menu and then following the top menu ‘GUI’ can be found.

To download the Charging Station’s manual, you can navigate to ‘GENERAL’ from the main menu and then following the top menu ‘Manual’ can be found.

‘PASS’ is found on the main menu, it is used to change the username and password for this web interface.

‘RESET’ is found on the main menu, it is used to perform soft and hard resets on the charging station.

5.2. Diagnosis

There are currently three-diagnosis options for the charging station.

SIM Signal
The menu SIM signal allows one to check the strength of the connection using the GSM modem as connection method to the backend server.

Location:
Click on 'NETWORK' from the main menu and then following the top menu 'SIM' to the menu 'Signal' can be found.

There are three possible views for the signal webpage, whether the modem is turned off (example shown in Figure 35), whether the modem is not connected by GSM, and when the modem is turned on and there exists a GSM connection.

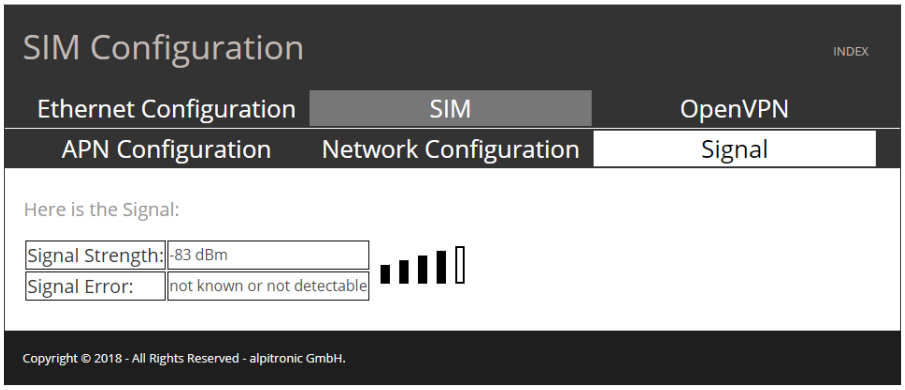


Figure 35: Example of SIM Signal webpage

Processes View
The menu processes views is a webpage where the status of the critical processes of the charging station are shown. For each process there are two options 'Running' or 'Not Running'.

Location:
Click on 'STATUS' from the main menu and following the top menu click on 'Processes View'.

Figure 36 is an example of the Processes View webpage, note that the webpage automatically refreshes and has a timestamp.

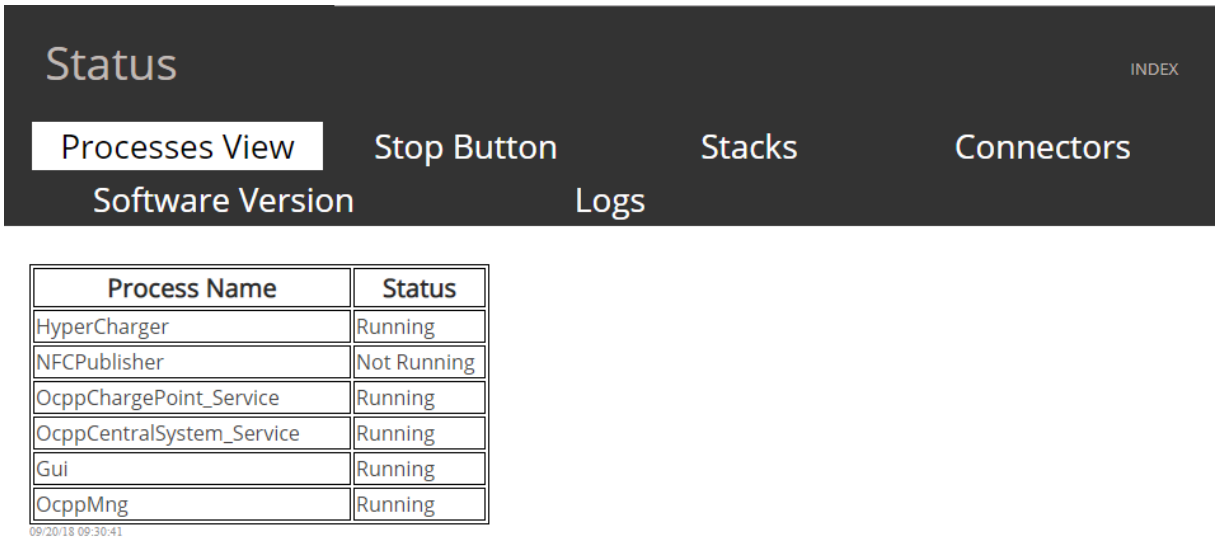


Figure 36: Example of Process View webpage

Stop Button

The menu stop button shows whether the Stop button is currently clicked.

Location:
Click on 'STATUS' from the main menu and following the top menu click on 'Stop Button'.

There are two possible options 'PRESSED' or 'OK'. This feature is important to troubleshoot if the charging station stops being able to charge a vehicle. It is also important to note at not all Charging Stations have the Stop button feature, if so the webpage will be disabled.

Attention

Attention

The option 'Reset Stop Button' will force a restart within the inner hardware of the charging station to reset the Stop Button. It is important to do a reset only when the charging station is idle and the stop button has been manually disengaged.

Figure 37 is an example of the webpage, please note there is also a 'Reset Stop Button', this allows to reset the hardware stack, please do this only when there are no cars plugged in. This feature is optional and many not be present in all Charging Stations.

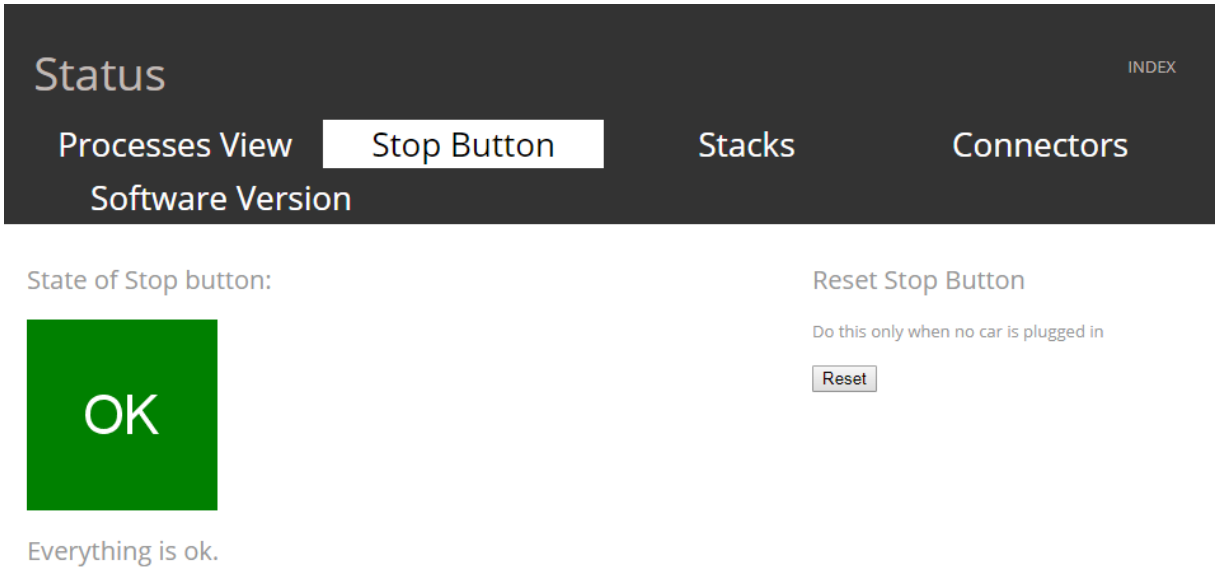


Figure 37: Example of Stop Button webpage

Connector Cycles
The menu connector cycles shows the number of cycles for each connector of the charging station. A cycle is counted every time there a car is plugged in and out of a cable, even if no charging occurred.

Location:
Click on ‘STATUS’ from the main menu and following the top menu click on ‘Connectors’.

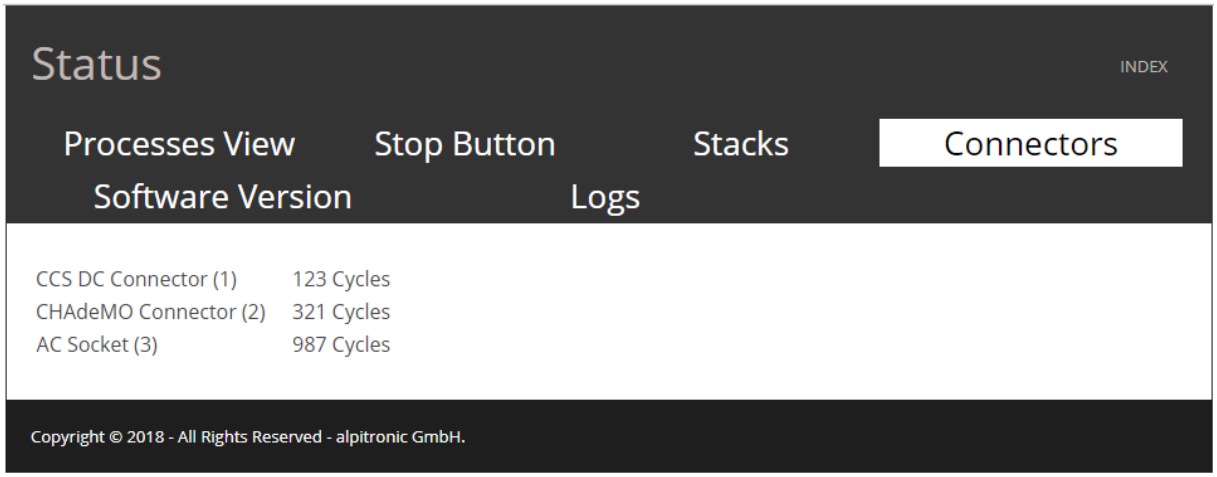


Figure 38: Example of connector cycles webpage

Stack Status

The menu stack status shows the CAN-bus interface of each power-stack in the charging station, this is display information regarding the input currents, output currents, temperatures and technical operational data.

Location:
Click on 'STATUS' from the main menu and following the top menu click on 'Stacks', beneath appears another menu with the list of stacks present.

Figure 39: Example of the Stack webpage

Software Version

The menu software version shows the current version of the binaries running in the charging station.

Location:
Click on ‘STATUS’ from the main menu and following the top menu click on ‘Software Version’.

Figure 40: Example of the Software Version webpage

5.3. Parameterization

BOOT
The menu boot is used to set up the main running parameters for the charging station. They are required to be inserted manually. Click ‘Save Configuration’ when all parameters are typed.

Location:
Click on ‘OCPP’ from the main menu and following the top menu click on ‘BOOT’.

Figure 41 is an example of the webpage, please not that not all options are editable. When some has been edited from the original configuration, it is marked with a light-blue background.

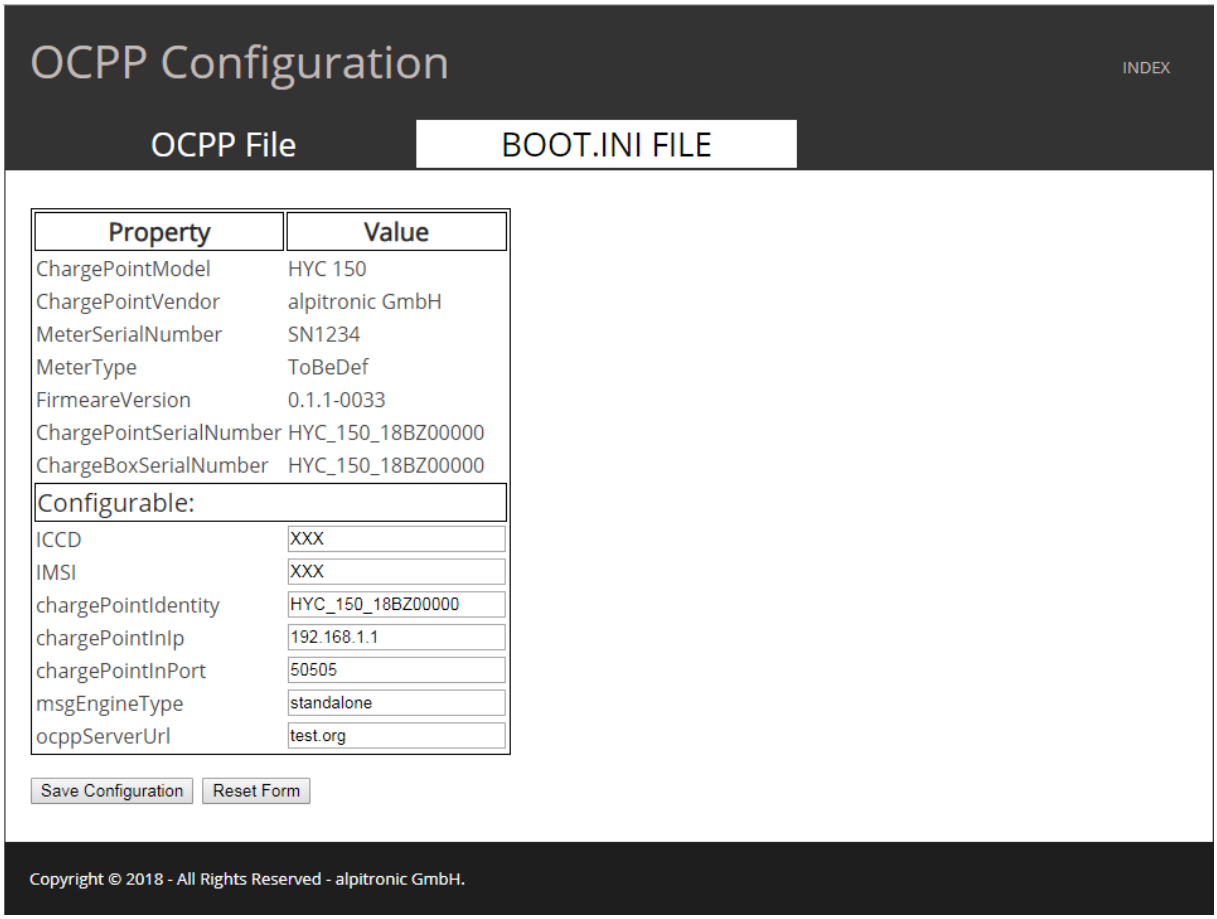
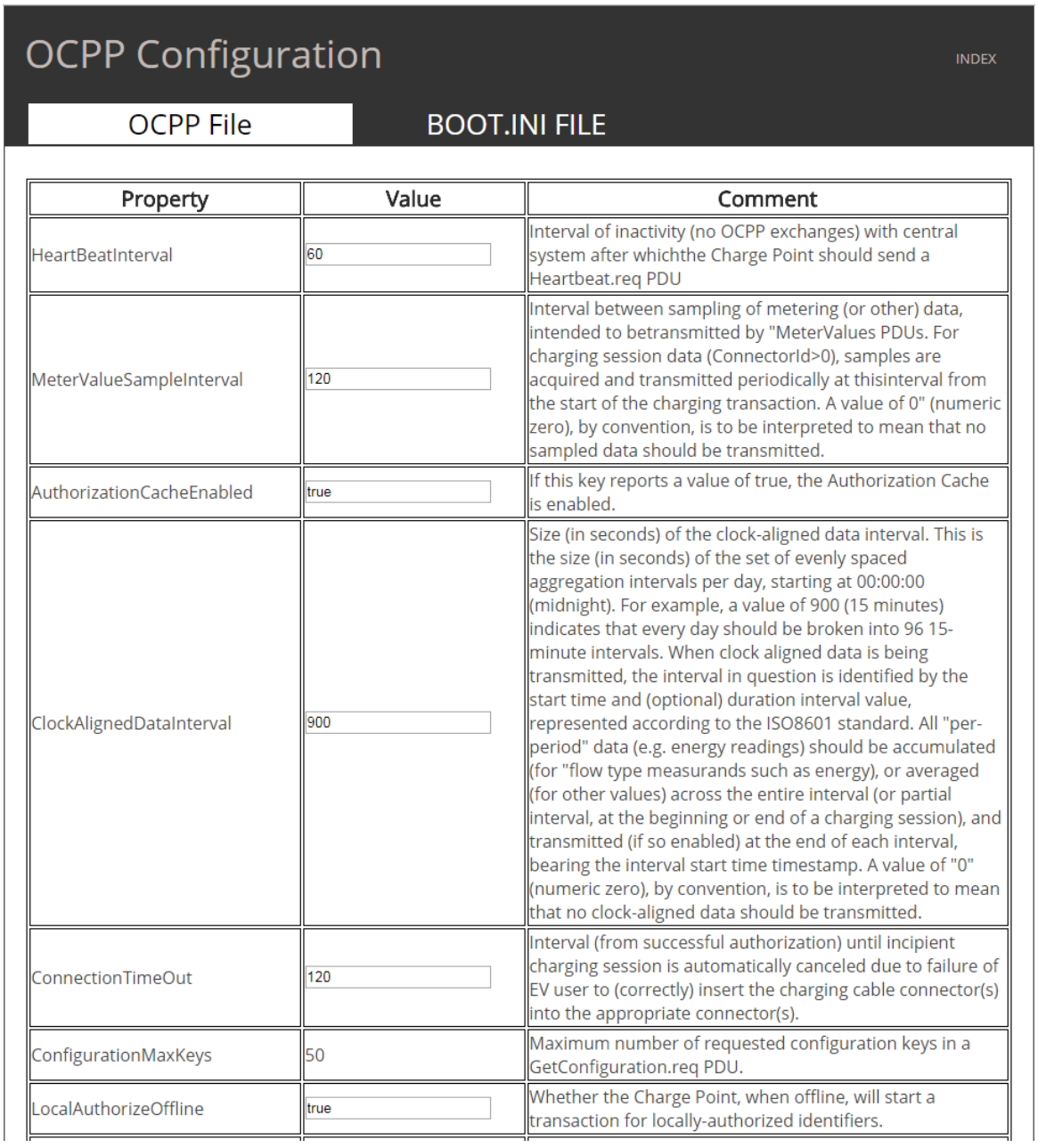


Figure 41: Example of BOOT Configuration webpage

OCPP
This menu is used to set up the OCPP parameters for the charging station. They are required to be inserted manually. Click ‘Save Configuration’ when all parameters are typed.

Location:
Click on ‘OCPP’ from the main menu.

Figure 42 is an example of the webpage where the OCPP configurations are shown, there is also a comment next to each option.



Property	Value	Comment
HeartBeatInterval	60	Interval of inactivity (no OCPP exchanges) with central system after whichthe Charge Point should send a Heartbeat.req PDU
MeterValueSampleInterval	120	Interval between sampling of metering (or other) data, intended to betransmitted by "MeterValues PDUs. For charging session data (ConnectorId>0), samples are acquired and transmitted periodically at thisinterval from the start of the charging transaction. A value of 0" (numeric zero), by convention, is to be interpreted to mean that no sampled data should be transmitted.
AuthorizationCacheEnabled	true	If this key reports a value of true, the Authorization Cache is enabled.
ClockAlignedDataInterval	900	Size (in seconds) of the clock-aligned data interval. This is the size (in seconds) of the set of evenly spaced aggregation intervals per day, starting at 00:00:00 (midnight). For example, a value of 900 (15 minutes) indicates that every day should be broken into 96 15-minute intervals. When clock aligned data is being transmitted, the interval in question is identified by the start time and (optional) duration interval value, represented according to the ISO8601 standard. All "per-period" data (e.g. energy readings) should be accumulated (for "flow type measurands such as energy), or averaged (for other values) across the entire interval (or partial interval, at the beginning or end of a charging session), and transmitted (if so enabled) at the end of each interval, bearing the interval start time timestamp. A value of "0" (numeric zero), by convention, is to be interpreted to mean that no clock-aligned data should be transmitted.
ConnectionTimeOut	120	Interval (from successful authorization) until incipient charging session is automatically canceled due to failure of EV user to (correctly) insert the charging cable connector(s) into the appropriate connector(s).
ConfigurationMaxKeys	50	Maximum number of requested configuration keys in a GetConfiguration.req PDU.
LocalAuthorizeOffline	true	Whether the Charge Point, when offline, will start a transaction for locally-authorized identifiers.

Figure 42: Example of OCPP Configuration webpage

GUI
The gui menu allows to edit the visible portions of the user GUI, here there are options to select what to view or hide in the GUI of the charging station.

Location:
Click on ‘GUI’ from the main menu.

Figure 43 is an example of the webpage, please note that the options for each feature is either ‘true’ or ‘false’ selectable from a dropdown menu.

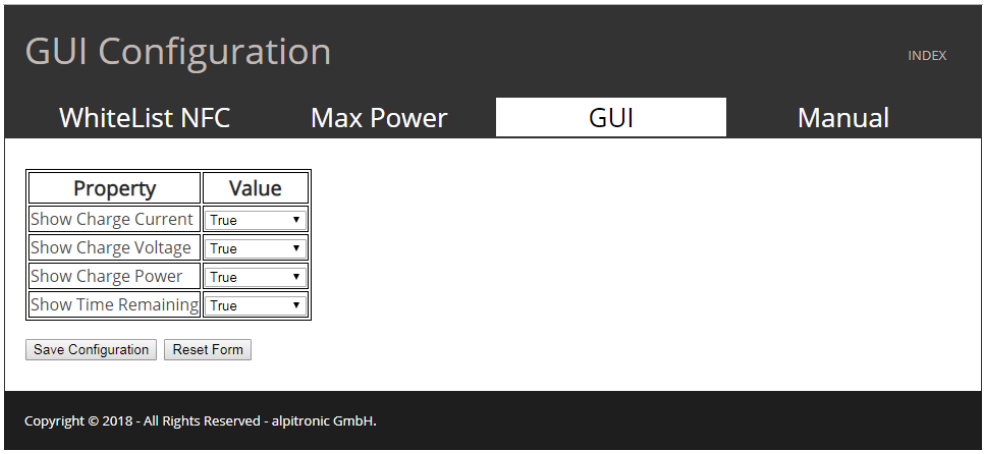


Figure 43: Example of GUI Configuration webpage

Ethernet Configuration
Used to select between ‘dhcp’ (automatic) or manual IP configuration for the cabled backend connection. If the ethernet connection is not required to connect to the backend (for example through a GSM connection), one can disregard this setup menu.

Location:
Click on ‘NETWORK’ from the main menu and following the top menu click on ‘Ethernet Configuration’.

Figure 44 is an example of the webpage, please write only number and ‘.’ in the input fields otherwise a wrong configuration could be loaded. At the top of the page you can see the current IP address of the charging station.

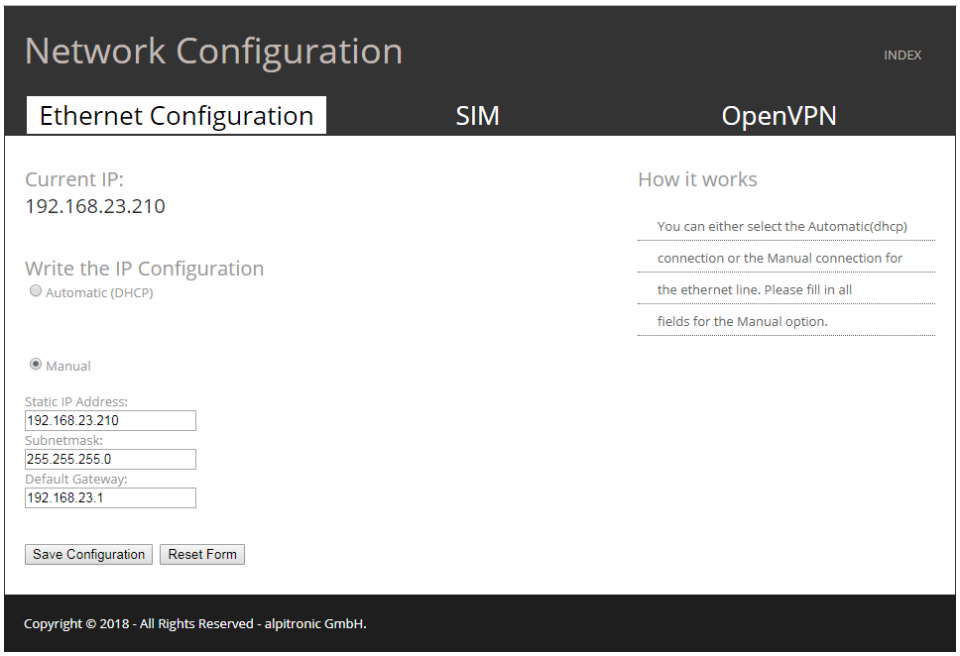


Figure 44: Example of Ethernet Configuration webpage

APN Configuration

This menu allows to setup the connectivity to the backend through the GSM modem incorporated in the charging station.

Location:
Click on ‘NETWORK’ from the main menu and then following the top menu ‘SIM’ and following the submenu ‘APN Configuration’ can be found.

Figure 45 is an example of the webpage showing the APN configuration, please write the PIN of the SIM card and the APN of the SIM, which will be used to connect to the network, make sure the PIN is only inserted if there is one.
Consequently, there is also the opportunity to write the credentials of the APN which may be required for certain mobile network connections.

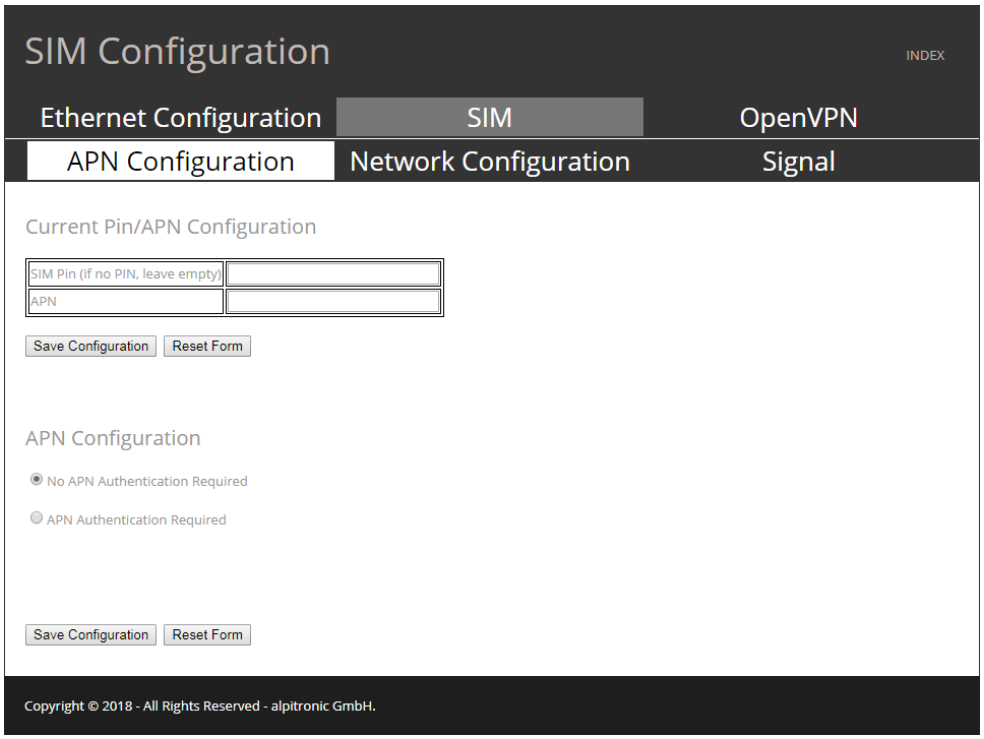


Figure 45: Example of SIM Configuration webpage

SIM Network Configuration
The menu SIM network configuration is used to select which network the modem should connect to, otherwise it is automatic. The loading time is very extended on this webpage as the modem takes more than 30 seconds to load all possible networks.

Location:
Click on ‘NETWORK’ from the main menu and the following the top menu ‘SIM’ and following the submenu ‘Network Configuration’ can be found.

You can find the currently connected network at the top of the webpage. Following is a dropdown of all possible networks the Sim card can connect to and where there is a good enough signal for a connection. Lastly one can decide to turn off the network connection.

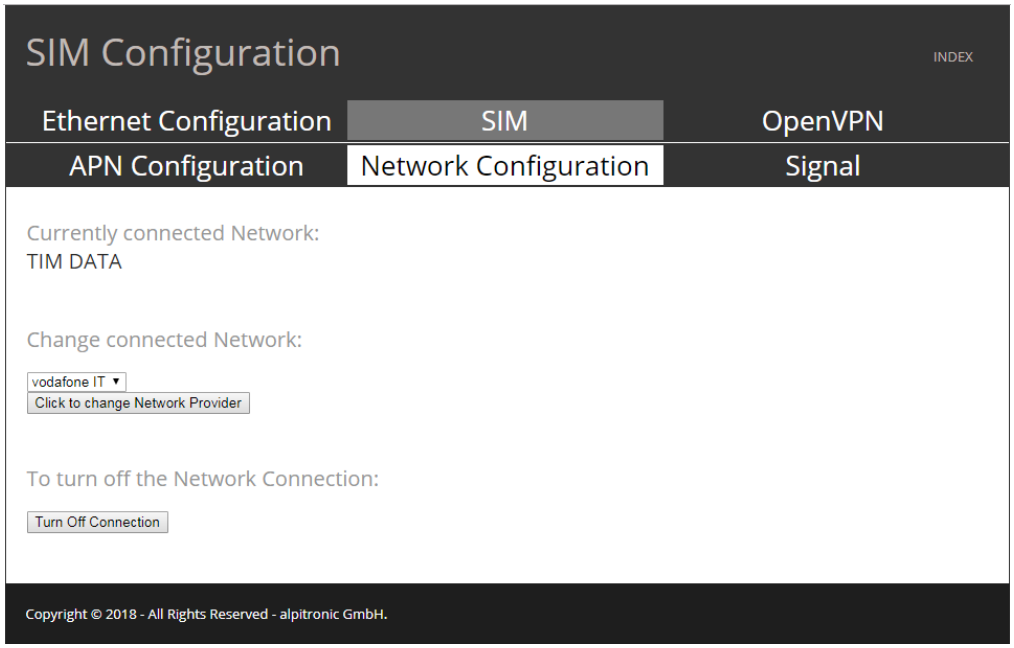


Figure 46: Example of the Sim Network Configuration webpage

OpenVPN Configuration
Used to edit the VPN settings to connect to backend servers, using OpenVPN. This is a configuration interface, it does not control the OpenVPN client behaviour (cannot test the connection). The configuration files are required to comply to the OpenVPN configuration rules, which can be found here:
https://openvpn.net/index.php/open-source/documentation/howto.html

Location:
Click on 'NETWORK' from the main menu and following the top menu click on 'OpenVPN'.

Figure 47 is an example of the webpage showing the OpenVPN configuration, there is an option to enable and disable the VPN, also the ability to write the IP address the client will receive from the OpenVPN server, so to configure it in the OCPP configuration. With 'Update' button one can upload the configuration files to the charging station, please make sure the files follow the naming schema presented in the table.

File name	Description
client.conf	Client configuration
ca.crt	OpenVPN Server CA Certificate
ta.key	OpenVPN Server TA Key
client.key	Client Key
client.crt	Client Certificate

Table 17: Naming schema for uploaded files

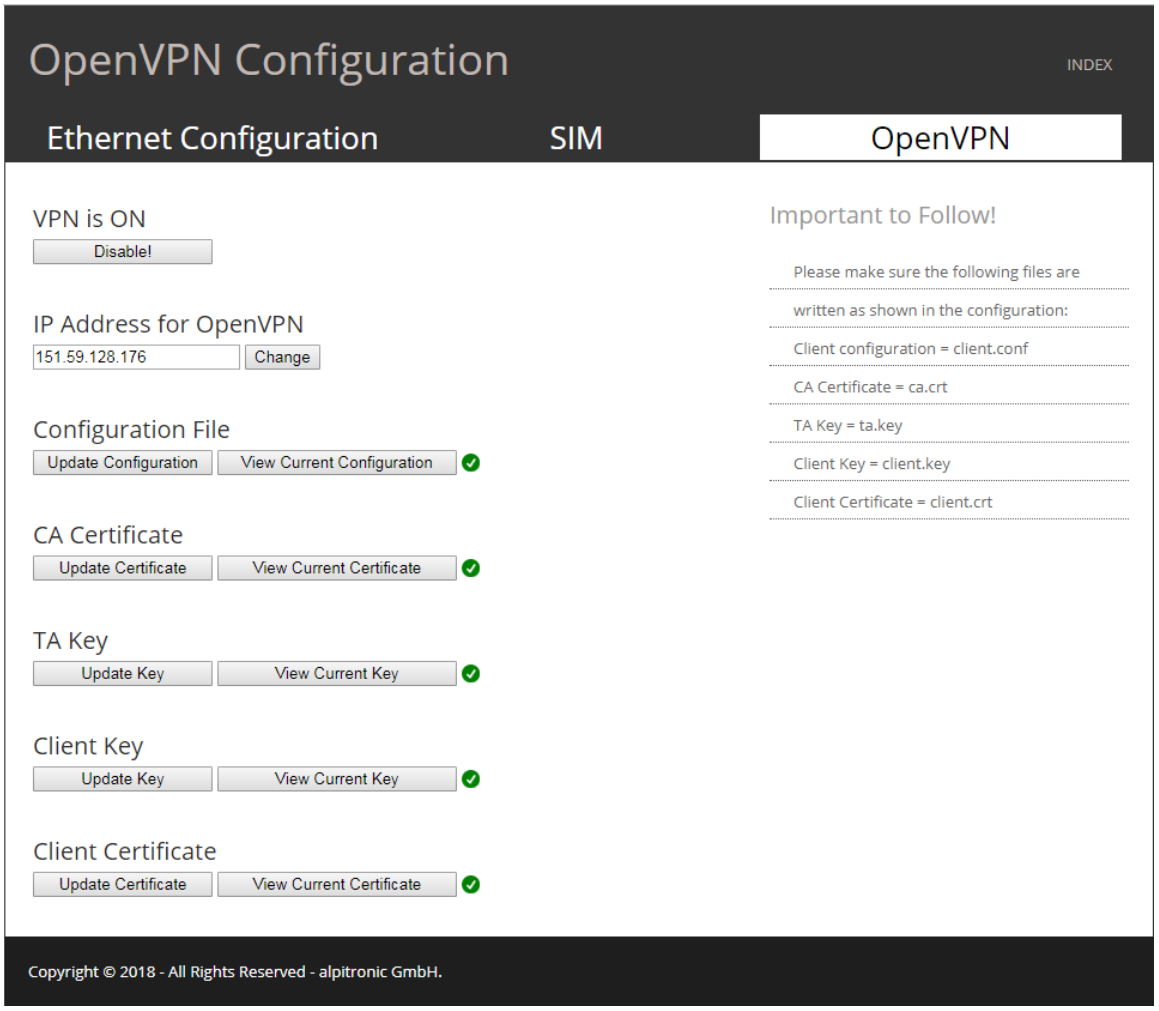


Figure 47: Example of the OpenVPN Configuration webpage

Max Power Configuration

This menu allows to set the max power drain from the mains power supply. One can see what was already present and edit it, it is set up in Watts (W). Please note, if there is no limit in power drain from the mains power supply, leave the value to 173000 (W) to allow best charging results.

Location:
Click on ‘GENERAL’ from the main menu, and ‘Max Power’ following the top menu.

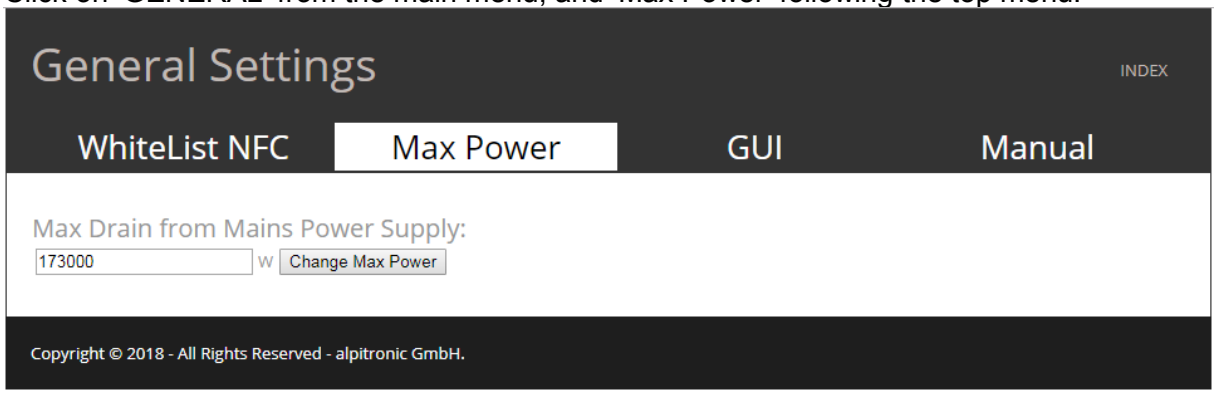


Figure 48: Example of the Max Power Configuration webpage

NFC WhiteList Configuration

The NFC whitelist configuration menu allows to set up the NFC tags which are allowed to charge an electric vehicle without confirmation from the backend server.

Location:
Click on 'GENERAL' from the main menu, and 'WhiteList NFC' following the top menu.

Figure 40 is an example of the WhiteList NFC. There are four parts to this configuration, the first part displays the NFC tags currently whitelisted in the charging station and for each NFC-id one can delete it. The second part allows adding a new NFC tag directly by tapping the card on the NFC reader of the charging station. The third allows adding new NFC tag by writing it in the text box. The last part allows to fully deleting the entire list of NFC cards stored in the charging station.

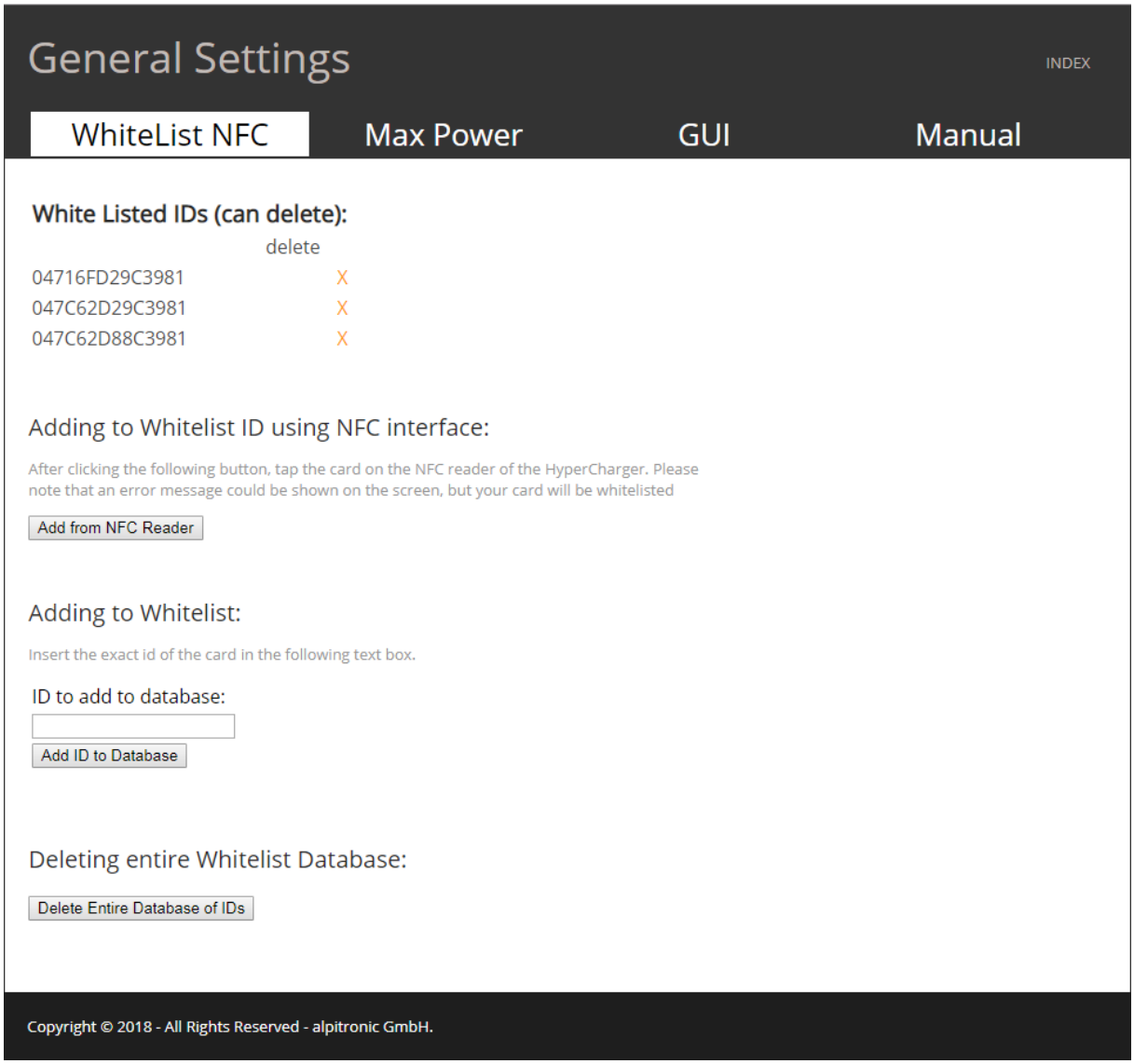


Figure 49: Example of the NFC WhiteList webpage

Password Configuration

The password configuration menu is used to change the password to access the web interface. Credentials should be changed after first login.

Location:
Click on 'PASS' from the main menu.

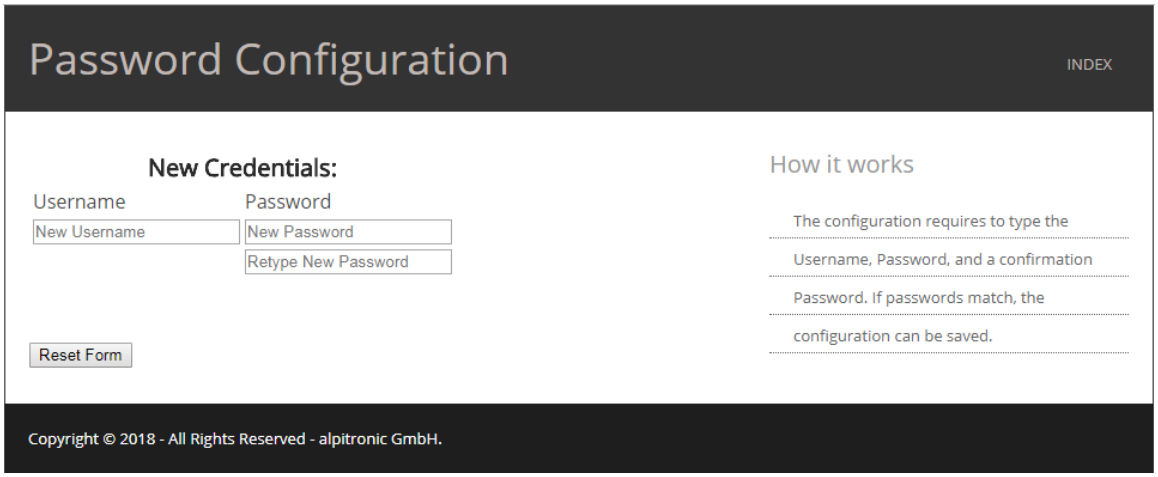


Figure 50: Example of the Password Configuration webpage

Charging Station Reset

Used to perform a soft and hard reset on the charging station.

Location:
Click on 'RESET' from the main menu.

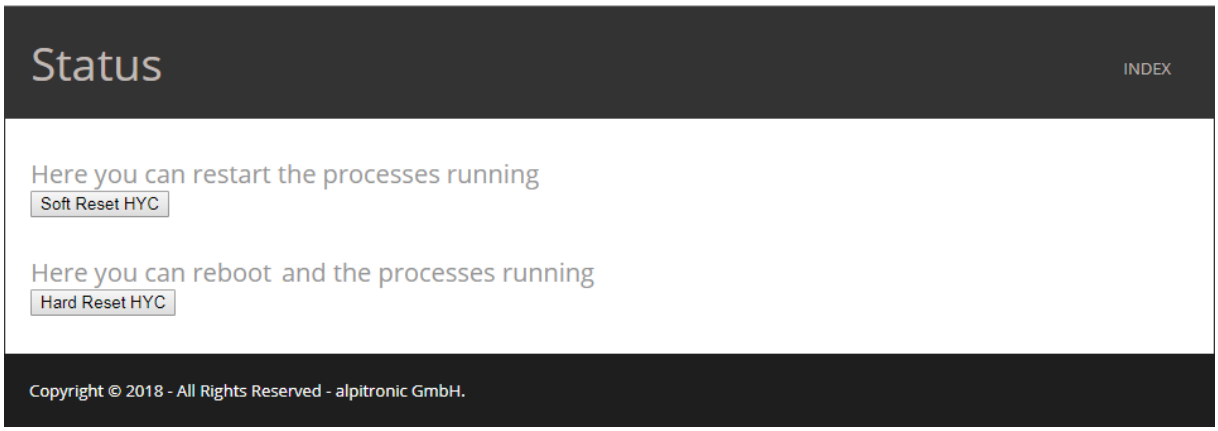


Figure 51: Example of the JUICE ULTRA Status

Attention

Attention

Before resetting make sure no cars are currently plugged into the charging station

6. Error description and removal

Attention

Attention

Observe all hazard warnings in chapter 1.3

Error Description	Possible error cause	Troubleshooting
Display stays dark	No power supply	Check if circuit breakers are switched on
Power-stack cannot be turned on	The circuit breaker (-QB1, -FB2) of the power-stack is switched off	Turn on the circuit breaker
No communication to the backend	No connection via Ethernet or mobile network	Check connection of the Ethernet network (-XF1) or/and antenna (-TF1) Boot the charging station in diagnostics mode and use the diagnostic tool for further fault localization
No charge possible	Error in the configuration of the charging station	Boot the charging station in diagnostics mode and use the diagnostic tool for further fault localization

Table 18: Error description and troubleshooting

7. Maintenance

Attention

Attention

Observe all hazard warnings in chapter 1.3

7.1. Overview of maintenance work

For the safe operation of the charging station, regular maintenance or control of the safety equipment is required. All the points listed below are considered mandatory and must be carried out by the operator of the switchgear at the intervals described.
Table 19 gives an overview of the intended maintenance work. Depending on the individual conditions of use of the control cabinet, maintenance work may still be necessary so that the list cannot be considered complete.

Maintenance work	Execution	Interval
Charging cable set	Replacement of the complete charging cable set	After 10000 charging cycles
Residual current devices	Function test of residual current circuit breaker	Yearly
Main switch, voltage release switch	Verify the correct function	Yearly
Verification of protective measures	With the charging station switched off, check the resistance between the ground of the supply plug and all externally accessible, non-insulated cabinet parts (housing, add-on parts, screws)	Yearly
Check for cleanliness and condensation	Check if the interior of the control cabinet is clean and has no traces of condensation.	Yearly
Screw	Random or complete testing of tightening torques at terminals and mechanical screw connections.	Yearly
Overvoltage protection	Check the surge arrester for full function	Yearly
Ventilation filters	Changing the filter mats	Yearly
Level of cooling liquid	Check the cooling liquid level (fill level indicator)	Yearly
Concentration of cooling liquid	Check the concentration (test with refractometer) of the coolant liquid. If the concentration is below 50%, this can be remedied by adding coolant concentrate.	Yearly
pH of cooling liquid	Check the pH (optimal value - pH between 8…9) of the coolant liquid. If the pH is below pH 7.7, replace the coolant liquid. In this case, no complete replacement is necessary, the change of the majority is sufficient to ensure protection again.	Yearly

Table 19: Periodic maintenance work

7.2. Replacing a JUICE ULTRA power-stack

Figure 52 shows the order of steps for changing a power-stack. To install the new power-stack, perform the steps in reverse order.

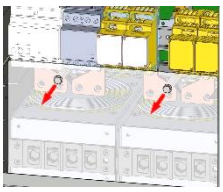
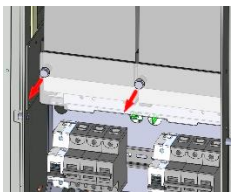
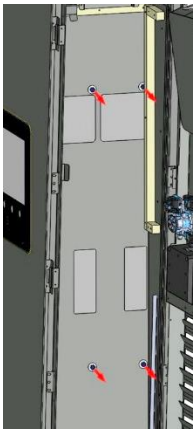
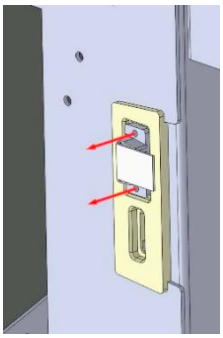
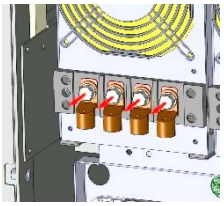
1	2	3	4	5
				
Open service door	Remove cover (upper side)	Remove cover (lower side)	Remove the strives	Open charging cable door
6	**7**	**8**	**9**	
				
Remove screws	Disconnect signal connector	Remove screws supply and output terminal Stack	Pull out power-stack and remove. Attention! Use a lifting tool for the replacement	

Figure 52: Replacing a Power-Stack

Attention

A power-stack weights up to 95kg. Use a lifting tool for the replacement.

7.3. Cooling unit for cooled charging cable (optional)

If an active cooled Cable is used (see 2.3) the cooling unit for cooled charging cable is needed.

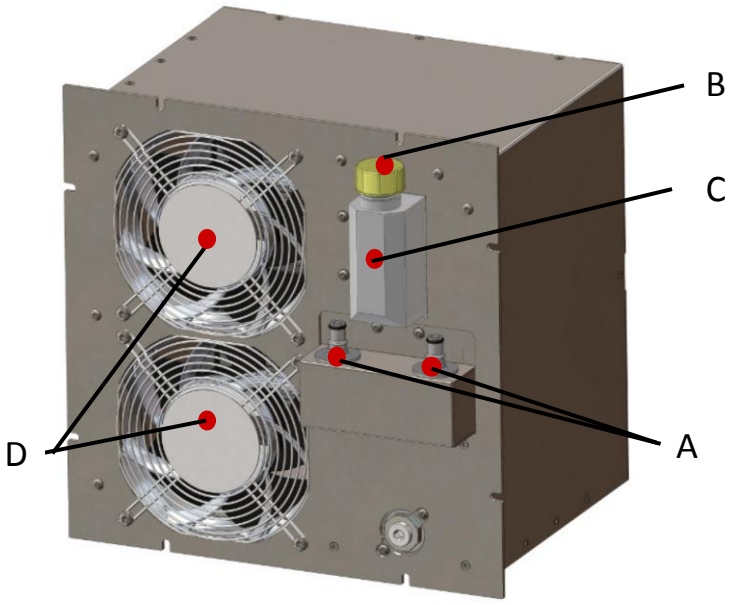


Figure 53: Cooling unit for cooled charging cable (option)

A connection cooling liquid
B filler neck
C fill level indicator
D cooling fans

To facilitate the electrical installation of the JUICE ULTRA, the cooling unit can be removed during grid connection (see 4.2.4)

Cooling liquid
The coolant to use is 'innovatek Protect PRO Konzentrat' from innovatek OS GmbH. The coolant is delivered together with the JUICE ULTRA in a default concentration of 52% with an antifreeze protection till -40°C.

When filling the system, make sure that there are no air cushions in the cooling system that reduce the cooling capacity.

8. Technical specifications

General technical data:

Parameter	Nominal value
Degree of protection	IP54
Mounting	Indoors and outdoors
Humidity transport or storage range	0 – 95% rel. (not fogging)
Humidity operational range	0 – 95% rel.
Pollution degree	pollution degree class 3
Storage temperature range	-40°C – +55°C
Operating temperature range	-30°C – +40°C (+55°C with derating)

Table 20: Technical data (general)

Type	Wide [mm]	Large [mm]	Height [mm]	Weight [kg]
double slot version	854	420	2250	see Table 10 in chapter 3.1
quadruple slot version	854	732	2250	

Table 21: Mechanical data

Electrical connection data depending on the configuration:

double slot version

Parameter	Nominal value
Operating voltage	400Vac +N +PE (±10%)
Frequency	50Hz (±5%)
Nominal current	max. 250A
Connection terminals cross section	connecting bolt 12mm
Rated peak withstand current I_{pk}	17kA (peak)
Rated short-time withstand current I_{cw}	4kA (rms)

Table 22: Electrical connection for double slot version

quadruple slot version

Parameter	Nominal value
Operating voltage	400Vac +N +PE (±10%)
Frequency	50Hz (±5%)
Nominal current	max. 500A
Connection terminals cross section	connecting bolt 2x12mm
Rated peak withstand current I_{pk}	17kA (peak)
Rated short-time withstand current I_{cw}	4kA (rms)

Table 23: Electrical connection for quadruple slot version

9. Declaration of Conformity

CE

CE KONFORMITÄTSERKLÄRUNG
DICHIARAIZIONE DI CONFORMITÀ CE
CE DECLARATION OF CONFORMITY

alpitronic

Niederspannungs-Schaltgerätekombinationen nach ICE EN 61439-7	**Quadri elettrici per bassa tensione secondo ICE EN 61439-7**	**Low voltage switchgears and controlgear assemblies in compliance with the Standard ICE EN 61439-7**

Hersteller: Costruttore: Manufacturer:	alpitronic GmbH – srl Via di Mezzo ai Piani 33 I-39100 Bolzano	Tel. +39 0471 096 450 Fax: +39 0471 096 451 info@alpitronic.it
Schaltgerätekombination / Ladestation: Quadro elettrico / colonnina: Switchgear assembly / charging station: Anlage: Impianto: Plant:	Ladestation für DC-Laden Colonnina DC Charger EV Charging Station HYPERCHARGER	
Typ-Nr.: N°. tipo: Type no.:	HYC_75, HYC_150, HYC_225, HYC_300	
Jahr der Anbringung der Kennzeichnung: Anno di apposizione della marcatura CE: Year of affixing CE marking:	2018	

Die Firma **alpitronic GmbH** mit Sitz in I-39100 Bozen, Hersteller der oben beschriebenen Schaltgerätekombination (Ladesäule) erklärt aus eigener Verantwortung, dass die Schaltgerätekombination Konformität mit den Bestimmungen der folgenden gemeinschaftlichen Richtlinien aufweist, wie auch mit der entsprechenden nationalen Gesetzgebung	La dita **alpitronic srl** con sede a I-39100 Bolzano, costruttrice del quadro elettrico (colonnina) sopra descritto, dichiara sotto la propria responsabilità che il quadro elettrico risulta conforme con quanto previsto dalle seguenti direttive comunitarie, nonché alla relativa legislazione nazionale di recepimento	The company **alpitronic srl** located in I-39100 Bolzano, manufacturer of the above mentioned switchgear assembly (charging station), declares under its own responsibility that the switchgear assembly conforms to what is foreseen by the following European Community directives, as well as to the relative national implementation legislation
Bezug	**Riferimento**	**Reference**
Die Richtlinie 2014/35/EU Niederspannungs-Richtlinie	La direttiva 2014/35/EU Direttiva bassa tensione	Directive 2014/35/EU Low Voltage Directive
Die Richtlinie EMV 2014/30/EU Richtlinie zur elektromagnetischen Verträglichkeit	La direttiva EMC 2014/30/EU Direttiva compatibilità elettromagnetica	Directive EMC 2014/30/EU Electromagnetic Compatibility Directive
und dass die folgende harmonisierte Norm angewendet wurde	e che sono stati applicata la seguente norme armonizzate	and that the following harmonized Standard has been applied
Norm Code	**Codice norma**	**Standard code**
IEC EN 61439-1: 2011 Niederspannungs-Schaltgerätekombinationen (NS-SK) Teil 1: Allgemeine Festlegungen	IEC EN 61439-1: 2011 Apparecchiature assiemate di protezione e manovra per bassa tensione (quadri BT) Parte 1: Regole Generali	IEC EN 61439-1: 2011 Low voltage switchgear and control gear assemblies Part 1: General Rules
IEC EN 61439-2: 2011 Niederspannungs-Schaltgerätekombinationen Teil 2: Energie-Schaltgerätekombinationen	IEC EN 61439-2: 2011 Apparecchiature assiemate di protezione e manovra per bassa tensione Parte 2: Quadro di potenza	IEC EN 61439-2: 2011 Low voltage switchgear and control gear assemblies Part 2: Power switchgear and control gear assemblies
IEC EN 61439-7: 2016 Niederspannungs-Schaltgerätekombinationen Teil 7: Schaltgerätekombinationen für bestimmte Anwendung wie Marinas, Campingplätze, Marktplätze, Ladestationen für Elektrofahrzeuge	IEC EN 61439-7: 2016 Apparecchiature assiemate di protezione e manovra per bassa tensione Parte 7: Applicazioni speciali per porti di marina, campeggi, piazze di mercato, colonnine per ricarica di veicoli stradali elettrici	IEC EN 61439-7: 2016 Low voltage switchgear and control gear assemblies Part 7: Assemblies for specific applications such as marinas, camping sites, market squares, electrical vehicles charging station

Datum:
Data: 28.05.2018
Date:

Unterschrift:
Firma:
Signature:

CE

Niederspannungs-Schaltgerätekombinationen nach ICE EN 61439-7

CE KONFORMITÄTSERKLÄRUNG
DICHIARAIZIONE DI CONFORMITÀ CE
CE DECLARATION OF CONFORMITY

Quadri elettrici per bassa tensione secondo ICE EN 61439-7

alpitronic

Low voltage switchgears and controlgear assemblies in compliance with the Standard ICE EN 61439-7

IEC EN 61851-1: 2013 Elektrische Ausrüstung von Elektrofahrzeugen – Konduktive Ladesysteme für Elektrofahrzeuge Teil 1: Allgemeine Anforderungen	IEC EN 61851-1: 2013 Equipaggiamento elettrico per veicoli elettrici – Sistemi conduttivi di ricarica Parte 1: Requisiti Generali	IEC EN 61851-1: 2013 Electric vehicle conducting charging system Part 1: General requirements
IEC EN 61851-21-2: 2018 Konduktive Ladesysteme für Elektrofahrzeuge Teil 21-2: EMV-Anforderungen an externe Ladesysteme für Elektrofahrzeuge	IEC EN 61851-21-2: 2018 Sistemi conduttivi di ricarica per veicoli elettrici Parte 21-2: Requisiti EMV per sistemi esterni di ricarica per veicoli elettrici	IEC EN 61851-21-2: 2018 Electric vehicle conductive charging system Part 21-2: EMC requirements for OFF board electric vehicle charging systems
IEC EN 61851-23: 2016 Konduktive Ladesysteme für Elektrofahrzeuge Teil 23: Gleichstromladestationen für Elektrofahrzeuge	IEC EN 61851-23: 2016 Sistemi conduttivi di ricarica per veicoli elettrici Parte 23: Sistemi di ricarica in DC per veicoli elettrici	IEC EN 61851-23: 2016 Electric vehicle conductive charging system Part 23: DC electric vehicle charging station
IEC EN 61851-24: 2014 Konduktive Ladesysteme für Elektrofahrzeuge Teil 24: Digitale Kommunikation zwischen einer Gleichstromladestation für Elektrofahrzeuge und dem Elektrofahrzeug zur Steuerung des Gleichstromladevorgangs	IEC EN 61851-24: 2014 Sistemi conduttivi di ricarica per veicoli stradali elettrici Parte 24: Communicazione digitale tra la colonnina d.c. charge e il veicolo elettrico per il controllo della carica in d.c.	IEC EN 61851-24: 2014 Electric vehicle conductive charging system Part 24: Digital communication between a d.c. EV charging station and an electric vehicle for control of d.c. charging
CISPR 11 (2015) CISPR 25 (2008) CISPR 32 (2015) IEC 61000-6-4 (2006) +A1 (2010) IEC 61000-4-2 (2008) IEC 61000-4-3 (2006) +A1 (2007) +A2 (2010) IEC 61000-4-6 (2013) IEC 61000-4-4 (2012) IEC 61000-4-5 (2014) IEC 61000-4-8 (2009)	CISPR 11 (2015) CISPR 25 (2008) CISPR 32 (2015) IEC 61000-6-4 (2006) +A1 (2010) IEC 61000-4-2 (2008) IEC 61000-4-3 (2006) +A1 (2007) +A2 (2010) IEC 61000-4-6 (2013) IEC 61000-4-4 (2012) IEC 61000-4-5 (2014) IEC 61000-4-8 (2009)	CISPR 11 (2015) CISPR 25 (2008) CISPR 32 (2015) IEC 61000-6-4 (2006) +A1 (2010) IEC 61000-4-2 (2008) IEC 61000-4-3 (2006) +A1 (2007) +A2 (2010) IEC 61000-4-6 (2013) IEC 61000-4-4 (2012) IEC 61000-4-5 (2014) IEC 61000-4-8 (2009)
Der Hersteller erklärt unter der eigenen Verantwortung, dass die oben beschriebene Schaltgerätekombination (Ladesäule) fachgerecht und entsprechend aller Spezifikationen, die in der Norm IEC EN 61439 und IEC EN 61851 vorgesehen sind, realisiert worden ist.	La ditta costruttrice dichiara sotto la propria responsabilità, che il quadro elettrico (colonnina) sopra descritto è stato realizzato a regola d'arte e conformemente a tutte le specifiche previste dalla Norma IEC EN 61439 e IEC EN 61851.	The manufacturer declares, under its own responsibility, that the above mentioned switchgear assembly (charging system) has been constructed according to the state of the art and in compliance with all the specifications provided by the Standard IEC 61439 and IEC EN 61851.
Er erklärt außerdem, CE-zertifizierte Komponenten verwendet zu haben, die Auswahlkriterien und die Montageanleitungen beachtet zu haben, die in den entsprechenden Katalogen und Datenblättern angegeben sind, und während der Montage oder durch Umbau die Leistungen des verwendeten Materials, die in den schon genannten Katalogen erklärt werden, auf keinerlei Weise gefährdet zu haben.	Dichiara inoltre di avere utilizzato componenti certificati CE, di avere rispettato i criteri di scelta e le istruzioni di montaggio indicate sui relativi cataloghi e fogli istruzione e di non avere compromesso in alcun modo, durante il montaggio o attraverso modifiche, le prestazioni del materiale utilizzato dichiarate sui già citati cataloghi.	Also declares that CE certificated components have been used, and the assembly instructions reported in the relevant catalogues and on the instruction sheets has been followed, and that the performances of the material used declared in the above-mentioned catalogues have in no way been jeopardized during assembling or by any modification.
Diese Leistungen und die ausgeführten Nachweise gestatten es daher, die Konformität der genannten Schaltgerätekombination mit den folgenden Anforderungen der Norm zu erklären:	Tali prestazioni e le verifiche effettuate consentono quindi di dichiarare la conformità del quadro in questione alle seguenti richieste della norma:	These performances and the verifications carried out therefore allow us to declare conformity of the switchgear assembly under consideration of the following requirements of the Standard.

Datum:
Data: 28.05.2018
Date:

Unterschrift:
Firma:
Signature:

CE

CE KONFORMITÄTSERKLÄRUNG
DICHIARAIZIONE DI CONFORMITÀ CE
CE DECLARATION OF CONFORMITY

alpitronic

Niederspannungs-Schaltgerätekombinationen nach ICE EN 61439-7	**Quadri elettrici per bassa tensione secondo ICE EN 61439-7**	**Low voltage switchgears and controlgear assemblies in compliance with the Standard ICE EN 61439-7**
Bauanforderungen: - Festigkeit von Werkstoffen und Teilen der Schaltgerätekombination	**Richieste di Costruzione:** - Robustezza dei materiali e delle parti del quadro	**Constructional requirements:** - Strength of materials and parts of the assembly
- Schutzart - Luft- und Kriechstrecken - Schutz gegen elektrischen Schlag - Einbau von Schaltgeräten und Bauteilen - Innere Stromkreise und Verbindungen - Anschlüsse für von außen eingeführte Leiter	- Grado di protezione degli involucri - Distanze d'isolamento in aria e superficiali - Protezione contro la scossa elettrica ed integrità dei circuiti di protezione - Installazione degli apparecchi di manovra e dei componenti - Circuiti elettrici interni e collegamenti - Terminali per conduttori esterni	- Degree of protection - Clearances and creepage distances - Protection against electric shock - Incorporation of switching devices and components - Internal electrical circuits and connections - Terminals for external conductions
Leistungsanforderungen: - Isolationseigenschaften - Erwärmung - Kurzschlussfestigkeit - Elektromagnetische Verträglichkeit (EMV) - Mechanische Funktion	**Richieste di prestazioni:** - Proprietà dielettriche - Sovratemperatura - Capacità di tenuta al cortocircuito - Compatibilità Elettromagnetica (EMC) - Funzionamento meccanico	**Performance requirements:** - Dielectric properties - Temperature-rise limits - Short-circuit withstand strength - Electromagnetic compatibility (EMC) - Mechanical operation
Wir erklären schließlich unter unserer Verantwortung, alle Stücknachweise, die von der Norm vorgesehen sind, mit positivem Ausgang ausgeführt zu haben, und zwar:	Dichiariamo infine, sotto la nostra responsabilità, di aver effettuato con risultato positivo tutte le prove individuali previste dalla norma e precisamente:	Finally, declares, under its own responsibility that all the routine verifications prescribed by the Standard have been carried out successfully and precisely:
Bauanforderungen: - Schutzgrad der Umhüllung - Luft- und Kriechstrecken - Schutz gegen elektrischen Schlag und die Durchgängigkeit von Schutzleiterkreisen, Einbau von Schaltgeräten und Komponenten - Innere Stromkreise und Verbindungen - Anschlüsse für von außen eingeführte Leiter - Mechanische Funktion	**Specifiche di costruzione:** - Grado di protezione degli involucri - Distanze di isolamento in aria e superficiali - Protezione contro la scossa elettrica ed integrità dei circuiti di protezione - Installazione dei componenti - Circuiti elettrici interni e collegamenti - Termali per conduttore esterni - Funzionamento meccanico	**Design specifications:** - Degree of protection of the enclosure - Clearances and creepage distances - Protection against electric shock an integrity of protective circuits - Incorporation of switching devices components - Internal electrical circuits and connections - Terminals for external conductors - Mechanical operation
Leistungsanforderungen: - Isolationseigenschaften - Verdrahtung, Leistungen bei Betriebsbedingungen und Funktionalität	**Specifiche di prestazione:** - Proprietà dielettriche - Cablaggio, prestazione di condizioni operative e funzionalità	**Performance specifications:** - Dielectric properties - Wiring, operational performance and function

Datum:
Data: 28.05.2018
Date:

Unterschrift:
Firma:
Signature: