EnerCharge

ECC 320 Single   ECC 320 Dual

Maintenance Manual

DC Charging Station with Integrated AC/DC Modules and Direct Payment

ECC 320 Single/Dual

About this Document

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1. General

1.1 Safety Symbols

The following safety symbols must be observed:

⚠ DANGER **Nature, Source**

This symbol in conjunction with the signal word "Danger" signifies an immediate danger. Disregarding this safety notice can lead to serious injury or death.

- *This is a warning text with a known remedial action*

⚠ WARNING **Nature, Source**

This symbol in conjunction with the signal word "Warning" signifies a possibly dangerous situation. Disregarding this safety notice can lead to serious injury or death.

- *This is a warning text with a known remedial action*

⚠ CAUTION **Nature, Source**

This symbol in conjunction with the signal word "Careful!" signifies a possibly dangerous situation. Disregarding this safety notice can lead to minor or slight injuries.

- *This is a warning text with a known remedial action*

! ATTENTION

Passages marked with this symbol contain important notices or particular information necessary for successful operation. Actions marked with this symbol should be carried out as required.

1.2 Notes on Text Design

in the ❶ text body   dentifies or describes a specific component in the text body with numbered icons.

❶ ❷ ❸   Numbered icons: Identify or describe a specific component.

1 **2** **3**   Numbering: Identifies the action steps in the charging process.

!   Action steps with special attention during maintenance activities.

„Quotation marks"   Indicates text parts set off from the text body.

> **List**   Indicates lists assigned to a specific section.

☞ INFORMATION   Indicates information for special attention.

1.3   Contact Information

If technical faults cannot be rectified by your own means,
EnerCharge specialists can be contacted:

> **Contact/Manufacturer**
EnerCharge GmbH **I** Kötschach 66 **I** 9640 Kötschach-Mauthen **I** Austria **I**
Phone: +43 4715 22901 **I** E-Mail: info@enercharge.at **I** www.enercharge.at

1.4   List of Abbreviations

AC	>	Alternating Current
A	>	Ampere
DC	>	Direct Current
CCS/CCS Combo-2	>	Combined Charging System
CHAdeMO	>	CHAdeMO is the trade name for a charging standard founded in Japan
LAN	>	Local Area Network
LRM	>	Load Regulation Management
NFC	>	Near Field Communication
OCPP	>	Open Charge Point Protocol - communication standard for communication between charging station and e-vehicle.
PVC	>	Polyvinylchlorid (thermoplastic Polymer)
RFID	>	Radio-Frequency Identification (identification with the help of electromagnetic waves)
Type2	>	European plug type for charging e-vehicles with alternating current (AC).
WAN	>	Wide Area Network (a computer network that, unlike LAN, extends over a very large geographical area)

2. Layout and Function

2.1 Exterior Structure

The description of the components can be found on the next page.

Abb. 03: Connector CCS Combo-2

Fig. 02: Connector CHAdeMO
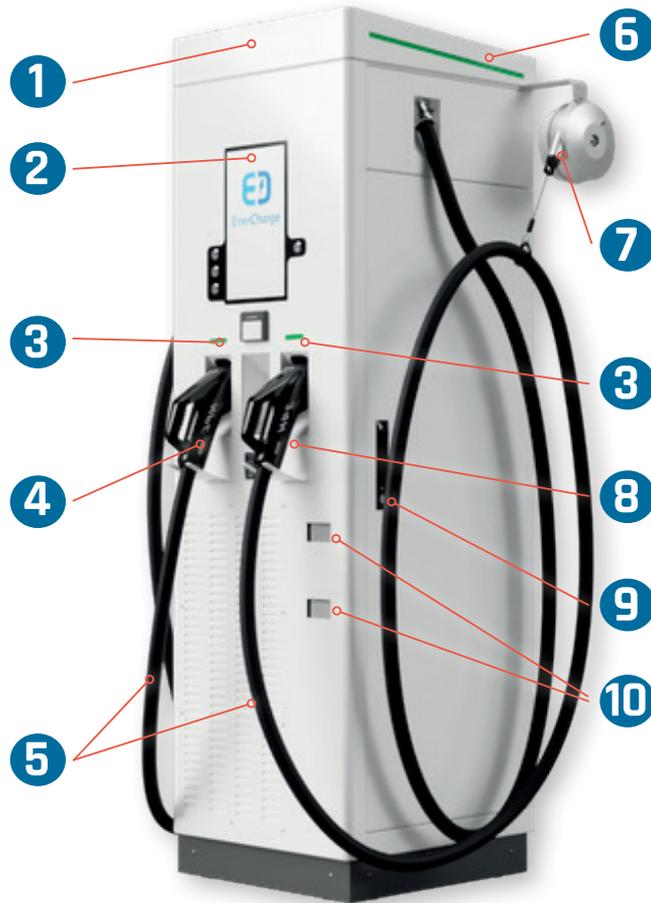
Fig. 01: Component Description of Charger ECC 320
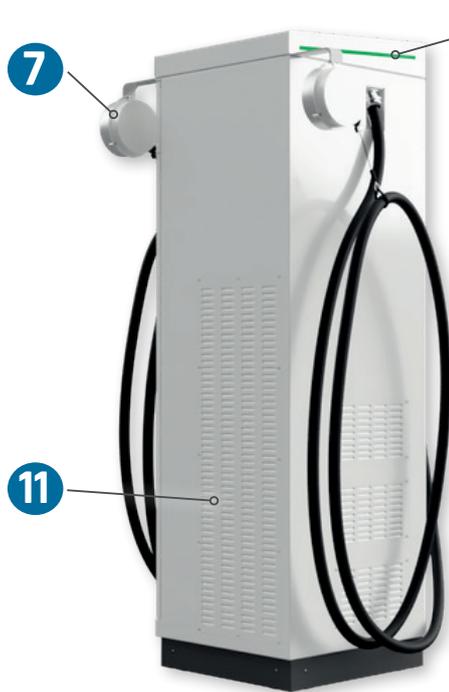
Fig. 04: Rear view left ECC 320

Fig. 05: Side view left ECC 320
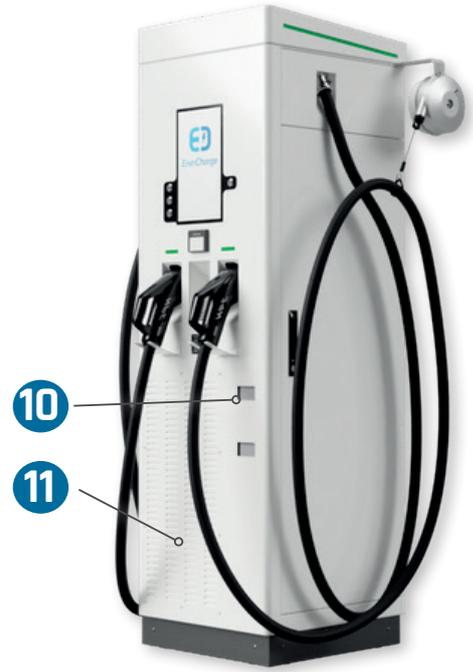
Fig. 06: Side view right ECC 320

❶ Housing	The housing of the ECC 320 charging station is made of high-quality stainless steel.
❷ 15.6 inch operating display	The 15.6-inch operating display offers a resolution of 1920x1080 pixels.
❸ LED Status of charge plugs	The LED lights charging connector (CCS/CCS or CCS/CHAdeMO) inform about the operating status of the respective charging point of the charging station. See „2.3 Status LEDs of Charger" on page 9.
❹ CCS Combo-2-connector	The CCS Combo-2 charging connector can be used for DC fast charging of e-vehicles with a CCS Combo-2 type charge plug.
❺ Charging cables CCS Combo-2 and CHAdeMO	The charging cable is not cooled and allows different charging currents depending on the version. The length of the charging cable is designed to prevent the risk of tripping when plugging in and unplugging.
❻ LED status for charger	The LED lights in the head area of the ECC 320 charging station (left and right side) provide information about the operating status of the ECC 320. See „2.3 Status LEDs of Charger" on page 9.
❼ Cable management	The optional cable management extends the usable cable length to 4.8 meters and allows a more flexible use of the charging park.
❽ CHAdeMO-connector	The CHAdeMO charging connector can be used for fast DC charging of e-vehicles with a CHAdeMO type charge plug.
❾ Service door key opening	The side service door provides access to the interior of the ECC 320. The service door is locked and may only be opened by authorized persons.
❿ Calibrated energy meter	The calibrated energy meter ensures accurate billing of the purchased power.
⓫ Air vents	The ventilation openings allow air circulation inside the ECC 320 charging station and for optimal cooling of the AC/DC modules.

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2.2   Interior Structure
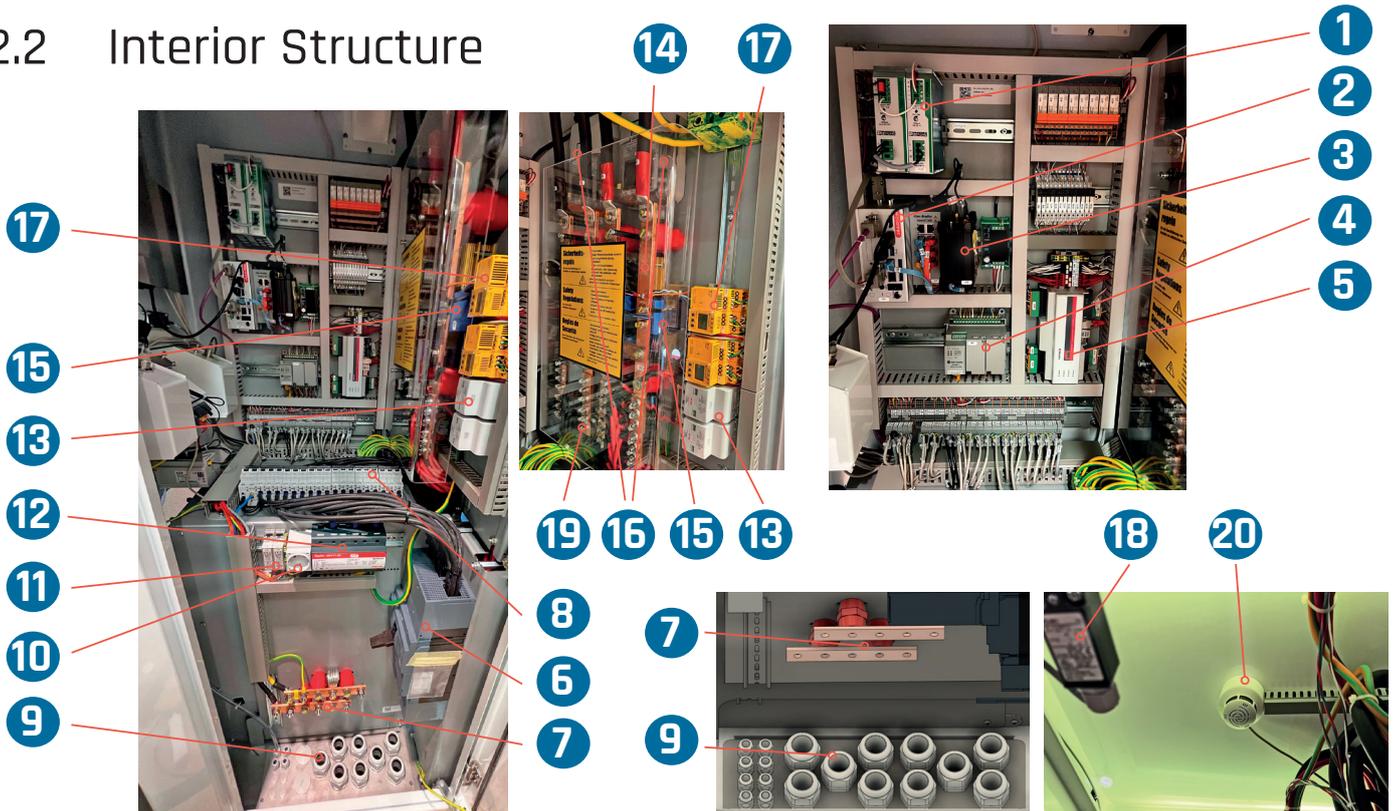
Fig. 07: Interior Structure ECC 320

#	Name	Description
1	**DC power supply units**	DC power supply units for control voltage.
2	**PC**	The PC controls the data exchange of the charging station.
3	**Modem/Router**	The modem/router establishes the Internet connection of the ECC 320.
4	**I/O-Modules**	The I/O modules (input/output) control the charging process.
5	**DC Charge Controller**	Control of fast charging of e-vehicle batteries according to IEC 61851-23.
6	**Fuse-Switch Disconnector**	Fuse-switch disconnector for main supply line 400 V.
7	**Connection Rails PE/N**	Connection rails for PE and N conductors of the AC main supply line (400 V).
8	**Line Circuit Breakers AC/DC-Modules, Conrol Voltage**	Circuit breaker for AC/DC modules and control voltage (230 V).
9	**Cable Entry Plate**	The cables are fed from the foundation into the housing via the cable entry plate.
10	**Service Socket**	The service socket 230 V is used for power supply during maintenance activities.
11	**Connection Communication**	Overcurrent protection device for connection communication Ethernet (RJ45).
12	**Surge Arrester AC**	Surge arresters limit dangerous overvoltages in electrical lines and devices.
13	**Surge Arrester DC**	
14	**Connection Rails DC**	Connection rails for DC lines CCS and/or CHAdeMO.
15	**DC Contacotrs**	The DC contactors provide arc-free interruption of the DC charging voltage.
16	**DC Meter**	The DC meters show the absolute consumption in kWh.
17	**Insulation Monitor**	The insulation monitors monitor the insulation resistance.
18	**Door Contact Switch**	The door contact switch is a safety device and interrupts the power supply in the event of an open or improperly closed service door.
19	**Contact Protection DC**	The contact protection prevents direct contact with live parts when the service door is open. This corresponds to IP1x according to IEC EN 60529 and corresponds to a dielectric strength of 32 kV per mm.
20	**Optical Smoke Detector**	The optical smoke switch detects smoldering fires and open fires with smoke development at an early stage.

2.3 Status LEDs of Charger

> **INFORMATION**
>
> *SINGLE: Charge 1 e-vehicle per charger (Outlets: 1x CCS Combo-2 and 1x CHAdeMO)
> **DUAL: Charge 2 e-vehicles simultaneously (Outlets: 2x CCS Combo-2)

2.3.1 Status LEDs ECC 320 SINGLE

Status LEDs in the head area and below the operating display inform about the operating status of the charging station.

> **ECC 320 SINGLE*:** All status LEDs simultaneously show the operating status during CCS Combo-2 or CHAdeMO charging.

> **Example 1:** During CCS charging **1**, **2**, **3a** and **3b** show the operating status of the CCS charging process (glows PURPLE). If CCS is active - CHAdeMO is not available at the same time*.

Functions of the LED colors and operating status:

> Glows **GREEN**:   The charging station is operational and ready for the charging process.

> Glows **BLUE**:   The charging station is reserved – the marked charge point is only available to the customer who made the reservation.

> Glows **PURPLE**:   The charging process is active - the vehicle is being charged.

> Glows **RED**:   System error.

> Glows **YELLOW**:   Maintenance mode active.
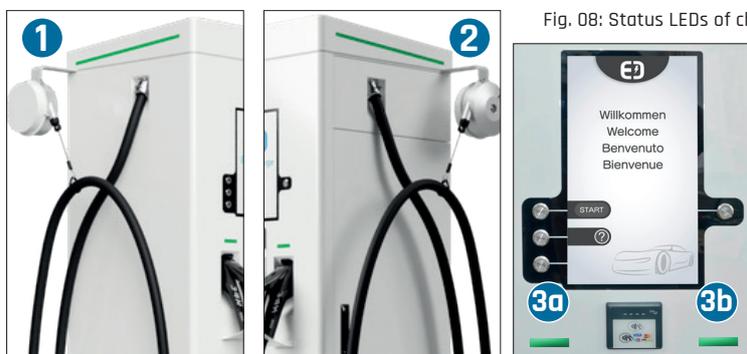
Fig. 08: Status LEDs of charger

1 Status LED: left head area
2 Status LED: right head area
3a Status LED: charge plug CCS
3b Status LED: charge plug CHAdeMO (SINGLE*)

2.3.2   Status LEDs ECC 320 DUAL

Status LEDs in the head area and below the operating display inform about the operating status of the charging station.

> **ECC 320 DUAL**:** The status LEDs in the header indicate the operating status simultaneously (left and right). The status LEDs below the operating display show the operating status of the respective charge point. If both charge points are busy, reserved or charging active, then the header LEDs on the left and right show the status of the respective charge point (Ex.3).

> **Ex 1:** CCS 1 occupied and CCS 2 available
> **3a** shows the operating status of the charging process at charge point CCS 1 (glows purple).
> **1**, **2** and **3b** show the operating status of charge point CCS 2 (glows green).

> **Ex 2:** CCS 1 available and CCS 2 reserved
> **1**, **2** and **3a** show the operating status of charge point CCS 1 (glows green).
> **3b** shows the operating status of charge point CCS 2 (glows blue).

> **Ex 3:** CCS 1 reserved and CCS 2 occupied
> **1**, **2** and **3a** show the operating status of charge point CCS 1 (glows blue).
> **3b** shows the operating status of charge point CCS 2 (glows purple).

Functions of the LED colors and operating status:

> Glows **GREEN**:   The charging station is operational and ready for the charging process.
> Glows **BLUE**:   The charging station is reserved – the marked charge point is only available to the customer who made the reservation.
> Glows **PURPLE**:   The charging process is active - the vehicle is being charged.
> Glows **RED**:   System error.
> Glows **YELLOW**:   Maintenance mode active.

Fig. 09: Status LEDs of charger
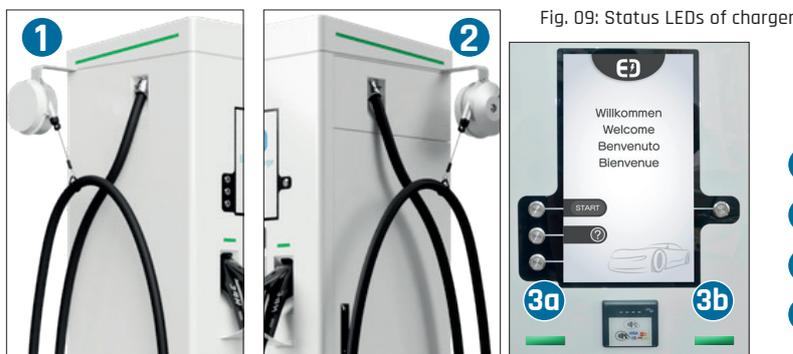
1 Status LED: left head area
2 Status LED: right head area
3a Status LED: charge plug CCS 1
3b Status LED: charge plug CCS 2 (DUAL**)

3. Operation

3.1 Opening and Closing the Charger

> ⚠ **CAUTION** **Unlocked service door**
>
> The service door has a 3-way lock. An unlocked service door represents a high safety risk, as unauthorized persons have access to the inside of the ECC 320. The consequences in the event of an unlocked service door could be life-threatening.
>
> • *Always lock the service door of the ECC 320.*
>
> • *The key must be accessible only to authorized persons.*

The ECC 320 has a PHZ multi-point lock on the right side (when viewed from the front).
For opening and closing, please note:

> Locate the key opening of the lock.
>> • Slide the cover of the lock upwards.
>> • Insert the key.

> Pull the charging cable in front of the service door to the side.

> To open the service door, turn the key 45 degrees clockwise.
>> • The lever detaches from the holder.
>> • Turn the lever counter-clockwise.

> To lock the service door, turn the lever counter-clockwise.
>> • Push the lever back into the holder.

> If the service door is opened by more than 90 degrees, the door lock is activated. This blocks the service door and prevents it from closing unintentionally.

> To release the lock, press the locking rail upwards. This can be done by hand or also by foot.

> After releasing the lock, the service door can be closed.
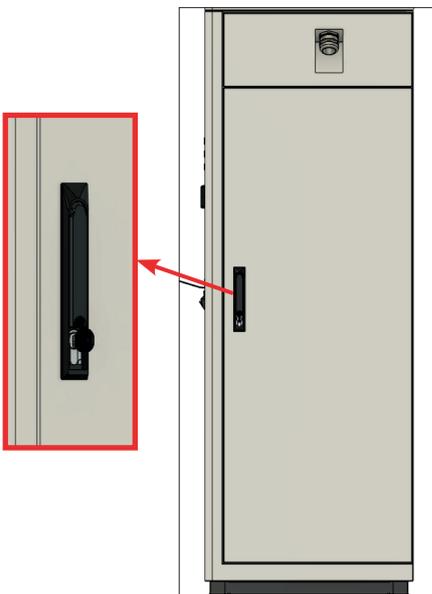
Fig. 10: Lock of service door

Fig. 11: Opened service door

Fig. 12: Unlocking the door latch

Fig. 13: Unlocked door latch

3.2 De-energizing the ECC 320

Before servicing, make sure that all line/earth leakage circuit breakers inside the ECC 320 are in the "OFF" position. Move the lever of the fuse switch disconnector to the "OFF" position. To do this, observe the following procedure:

1 Open the service door:
„3.1 Opening and Closing the Charger" on page 11.

2 Locate all line/fault current circuit breakers inside the ECC 320.

3 Switch all toggle levers of the line/fault current circuit breakers to the "OFF" position.

⚠ **DANGER** **Danger to life due to electric shock!**

If the fuse switch disconnector is not deactivated, the inside of the ECC 320 may be live. This can result in electric shock, burns or death.

- *Make sure that the lever of the fuse switch disconnector is in the "OFF" position.*

- *After turning off the fuse switch disconnector, wait at least 10 minutes until there are no more residual charges.*

4 Turn off the fuse switch disconnector:
- Move the lever of the fuse switch disconnector to the "OFF" position.

> ECC 320 successfully de-energized.
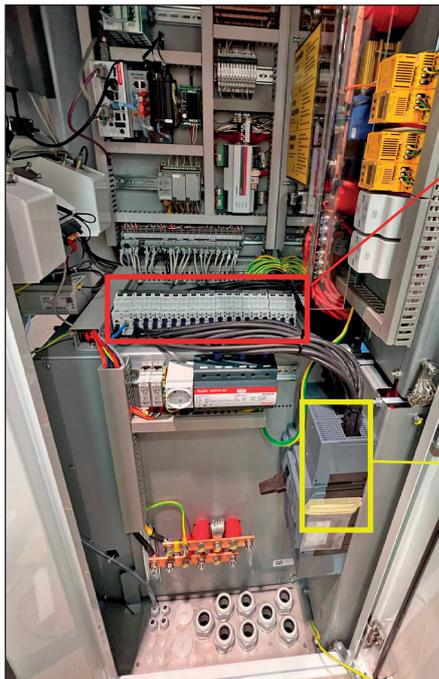
Fig. 14: Line/Fault-current circuit breaker

Fig. 15: Fuse switch disconnector
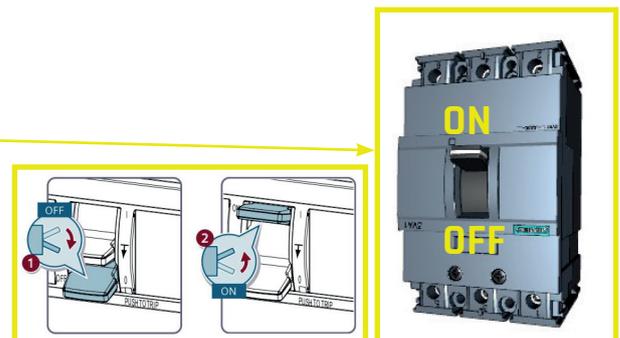
Fig. 16: Opened service door

4. Maintenance and Inspection

To ensure safe operation, the charging station must be maintained at regular intervals. It is recommended to conclude a maintenance contract with EnerCharge.

⚠ **DANGER** **Danger to life in the event of thunderstorms, rain, storms and/or hail**

In the event of thunderstorms, rain, storms and/or hail, there is a risk of fatal injury to persons carrying out work on the charging station.

- *Observe the regional weather forecast. Work on the charging station is not permitted during thunderstorms, storms and/or hail.*

- *In case of rain and snowfall, maintenance works are allowed only after taking the appropriate protective measure against rain and snow penetration.*

⚠ **DANGER** **Danger to life due to electrical voltage**

Touching live parts can result in serious injury or death.

- *Apply the 5 safety rules during maintenance work in the charging station.*

- *The busbars and other live parts in the charging station are live when the supply voltage is connected. Do not remove any covers and do not touch these rails and parts.*

- *Before working inside the charging station, the entire system must be completely de-energized.*

- *Deactivate the circuit breaker inside the charging station.*

- *Wait at least 10 minutes after switching off the ECC 320, until there are no more residual charges.*

4.1 Qualification of Staff

The activities for maintenance and testing may only be carried out by persons who have the necessary qualifications. This includes: Electrician with qualification certificate for work under voltage up to 1 kV.

> **Qualified electrician with proof of qualification for work under voltage up to 1 kV:** Based on their training, knowledge and experience, is able to independently perform work under voltage up to 1 kV on electrical components for installation, commissioning and maintenance in a professional and safe manner. The electrician knows the relevant standards and regulations.

4.2   Regular Maintenance Work

Observe the following for regular maintenance work:

> Contact the manufacturer if you have any questions about maintenance work and intervals.

> For maintenance work involving components from other manufacturers, refer to the documentation of the other manufacturer if necessary.

> Have maintenance work requiring specialist knowledge carried out by service personnel.

> The maintenance personnel must observe the country-specific (e.g. Chamber of Labor) and local regulations prior to maintenance work and check them with regard to necessary protective equipment and work materials (e.g. sun protection).

> The maintenance personnel must ensure that the interior and the surroundings of the charging station are adequately illuminated.

> Do not exceed the intervals specified in the maintenance plan. Depending on the ambient conditions, the intervals may also be shorter.

> Immediately remedy any safety-relevant defects!

> Only use original spare parts and accessories/approved tools approved by the manufacturer.

> Only use components that have the required specification.

> Record maintenance, damage, and repairs in record lists.

Before starting work, observe the following:

> Check for externally visible damage and defects. Report any changes that have occurred (including changes in operating behavior) to the responsible service personnel immediately. If necessary, immediately arrange for decommissioning.

> Check the completeness and functionality of all accessories. Worn parts or parts whose function is restricted must be replaced.

> Check completeness and legibility of all type and information plates as well as the operating manual. Replace missing or illegible plates and documents.

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4.3   Maintenance Plan

4.3.1   Maintenance interval: every work day

To maintain daily	
Part / Component	Maintainance Needed
Charging connectors and charging cables	Visually check the charging connectors and charging cables for damage (if damaged, shut off the charging station in question and contact EnerCharge).
	After 10 000 charging processes, renew the contacts of the charging connector (CCS Combo-2 and CHAdeMO). See „5.5.6 Lines 920 - 933" on page 40 on how to read out the plug cycles.
	After 10,000 charging processes or if damaged, replace the mating face of the charging connector (CCS Combo-2 and CHAdeMO). See „5.5.6 Lines 920 - 933" on page 40 on how to read out the plug cycles.

Table 1: Daily maintenance

4.3.2   Maintenance interval: monthly

To maintain 12x per year (monthly)	
Part / Component	Maintainance Needed
Housing of charger	Keep ventilation openings free of objects (e.g. objects, plants, snow) so that air flow and cooling function are not impaired.
Interior of charger	Clean the floor inside the charging station from dirt such as dust or similar.
Check charger interior for water penetration	See: „4.5.2 Check Interior for Water Penetration" on page 22.
Card reader	Clean the system's card reader. See: „4.4.2 Clean the Card Reader" on page 19.
Housing, display, PIN input field	Clean the housing, display and PIN in put field. See: „4.4.1 Cleaning and Care of the ECC 320" on page 18.
Sealing tape of service door	Visually check the sealing tape of the service door for damage (e.g. cracks or brittleness). Replace the sealing strip immediately if it is damaged.
Cable entries AC	Visually check the mechanical fastening of the AC cable bushings to the charging station. See: „4.5.5 Check Cable Entries to Charger" on page 25.
Check cable pull	Check the functionality of the cable pull and the condition of the rope and cable. See: „4.5.3 Check the Cable Pull" on page 23.

Table 2: Monthly maintenance

4.3.3 Maintenance interval: every six months

To maintain every 6 months (semi-annually)	
Part / Component	Maintainance Needed
Housing	Visual inspection for defects and damage.
	Check the lock of the service door for function: If necessary, clean, grease and/or adjust.
	Check the fastening on the foundation: Check the tightening torque of the foundation bolts.
	Clean. See: „4.4.1 Cleaning and Care of the ECC 320" on page 18
Charge plugs CCS Combo-2 and CHAdeMO	Clean and perform a visual inspection for defects and damage. See: „4.4.3 Clean the CCS Combo-2 Charge Plug" on page 19. See: „4.4.4 Clean the CHAdeMO Charge Plug" on page 20.
Function LED of charge plug and holder CCS / CHAdeMO	See: „4.5.7 Function Test of Charge Plug Holder" on page 26.
Check cable entries	See: „4.5.5 Check Cable Entries to Charger" on page 25.
Rubber plugs in head area	See: „4.5.8 Check Rubber Plugs in Head Area" on page 27.
Test charge	Perform a test charge after completing all maintenance work. See: „5.3 Start/Terminate Test Charge" on page 36.

Table 3: Semi-annual maintenance

4.3.4 Maintenance interval: annually

To maintain 1x per year (annually)	
Clamp connetions of connecting cables	Check plug connections and clamp connections for tight fit. Retighten screwed connections. Check the cable lugs and screw connections of the electrical components for discoloration. See: „4.5.9 Check Tightening Torque of 400V AC Main Supply Line Connection" on page 28).
System fans	Perform a visual inspection of the system fans.
Door limit switch	See: „4.4.5 Reinigung Türendschalter" auf Seite 20.
Line circuit breaker control voltage	See: „4.5.4 Function Test of Line/Fault-Current Circuit Breaker" on page 24.
Optical smoke switch	Check the optical smoke switch according to DIN 14677. See: „4.5.10 Function Test of Optical Smoke Switch" on page 29
DC overvoltage fuses	Check the status of the DC overvoltage fuses. See: „4.5.6 Check the DC Lines Inside the Charger" on page 25.
Lightning protection system	Check lightning protection system. Check the continuity of the protective conductor system.
Safety decals and warning labels	Check safety decals and warning labels for completeness and good visibility: Reorder and/or add as necessary.
Charger components	Check components for corrosion: Contact EnerCharge if there are signs of corrosion.
DC lines of charger	See: „4.5.6 Check the DC Lines Inside the Charger" on page 25.
Tightening torque of AC connections	See: „4.5.9 Check Tightening Torque of 400V AC Main Supply Line Connection" on page 28.
Test charge	Perform a test charge after completing all maintenance work. See: „5.3 Start/Terminate Test Charge" on page 36.

Table 4: Annual maintenance

4.3.5 Maintenance interval: every two years

To maintain every 2 years (biennially)	
Charger	Perform electrical inspection in accordance with local occupational safety regulations.
Exchange fan mat in rear cover	See: „4.5.12 Replacement of Fan Mat in Rear Cover" on page 31.
Exchange fan mat in front cover	See: „4.5.13 Replacement of Fan Mat in Front Cover" on page 32.

Table 5: Biennial maintenance

4.3.6 Maintenance interval: every eight years

To maintain every 8 years	
Optical smoke switch	Replace the optical smoke switch (Model: ORS 142, manufacturer: Hekatron).

Table 6: 8-year maintenance

4.4　Cleaning Work

4.4.1　Cleaning and Care of the ECC 320

Clean the ECC 320 charging station 12x per year (monthly)
as described below:

> **⚠ DANGER**　**Fatal electrocution due to wetness**
>
> The ECC 320 charging station must not be cleaned with a water or steam jet cleaner. Penetrating water can trigger a short circuit. Failure to observe this can result in fatal electric shocks.
>
> - *The ECC 320 charging station may only be cleaned with a damp cloth.*
>
> - *If water has penetrated: Do not operate the ECC 320 charging station under any circumstances. Contact your local sales partner from whom you purchased the charging station. This partner will ensure that the interior of the ECC 320 is cleaned and that it is put into operation.*

> **⚠ CAUTION**　**No liability for improper cleaning**
>
> The manufacturer accepts no liability for damage caused by improper cleaning. Make sure that the charging cable(s) is/are unplugged and the ECC 320 charging station is disconnected from the power supply before cleaning.
>
> - *Follow the instructions in the maintenance manual.*

1 Remove rough dirt in the area of the charging station with a broom.

2 Wipe the operating display, PIN keypad and controls with a dry cloth.

3 Damp wipe the outside of the charging station with a mild, non-corrosive cleaning agent and dry.

! Ensure that no water enters the interior of the device through the ventilation slots. Water penetration can damage the charging station.

> ECC 320 charging station successfully cleaned.

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4.4.2 Clean the Card Reader

Clean the card reader of the ECC 320 charging station at least 1x per month (monthly). Cleaning is performed using the enclosed cleaning card. In the case of a heavily frequented charging station or in an environment with heavy soiling, cleaning should be carried out weekly.

Please note the following:

> ℹ **INFORMATION** **Cleaning Card**
>
> Cleaning cards for card readers are available from specialist retailers.

1 Inserting the cleaning card is more difficult than with standard cards.

2 Move the cleaning card back and forth several times. The locking mechanism must not engage during this process.

3 To complete cleaning, snap the card once and then unlock it via a payment process.

> Card reader successfully cleaned.

4.4.3 Clean the CCS Combo-2 Charge Plug

Clean the CCS Combo-2 charging connector every 6 months (every six months). If the charging station is heavily frequented or in an environment with heavy soiling, cleaning should be carried out more frequently.

Please note the following:

1 Make sure that the AC supply of the charging station is de-energized.
See: „3.2 De-energizing the ECC 320" on page 12.
- Ensure that no e-vehicle is plugged in and no charging process is active.

2 Wipe the CCS Combo-2 charging connector and CCS Combo-2 charging cable with a damp cloth.

3 Lift the CCS Combo-2 charging connector out of the holder. Check the front of the charging connector for dirt and foreign objects. If necessary, remove foreign bodies from the plug contacts. (Fig. 17).

> Charge plug successfully cleaned.

Fig. 17: Charge plug CCS Combo-2

1 Signal contact: Control Pilot »CP«
2 Signal contact: Proximity Pilot »PP«
- »CP« and »PP« ensure secure connection and safe use.

3 Protective earth »PE«

4 Live contact: »DC+«
5 Live contact: »DC-«

4.4.4 Clean the CHAdeMO Charge Plug

Clean the CHAdeMO charging connector every 6 months. If the charging station is heavily frequented or in an environment with heavy pollution, cleaning should be performed more frequently.

Please note the following:

1 Make sure that the AC supply of the charging station is de-energized. See: „3.2 De-energizing the ECC 320" on page 12.
- Ensure that no e-vehicle is plugged in and no charging process is active.

2 Wipe the CHAdeMO charging connector and charging cable with a damp cloth.

3 Lift the CHAdeMO charging connector out of the holder. Check the front of the charging connector for dirt and foreign objects. If necessary, remove foreign bodies from the connector PINs. (Fig. 19).

4 Check the connector PINs of the signal contacts (1/2) and the PE protective conductor (3).
- The plug PINs must not be bent, dented or in any other way damaged. In the event of damage, contact customer service immediately and replace the charging connector.
- Put CHAdeMO out of operation.

> CHAdeMO charging connector successfully cleaned.

Fig. 19: Charge plug CHAdeMO

1 Signal contacts: 3 pcs
2 Signal contacts: 4 pcs
- The signal contacts ensure secure connection and safe use.

3 Protective Earth: »PE«

4 Live Contact: »DC+«
5 Live Contact: »DC-«

4.4.5 Clean the Door Limit Switch

Annually (1x per year) clean the door limit switch for proper function.

Please note the following:

1 Locate the door limit switch in the upper area inside the charging station (Fig. 18).

2 Check two M4 screws 1 for tightness. Tightening torque: 2 Nm.

3 Remove any dirt from the door contact pin with a dry and clean cloth.

> Door limit switch successfully cleaned.
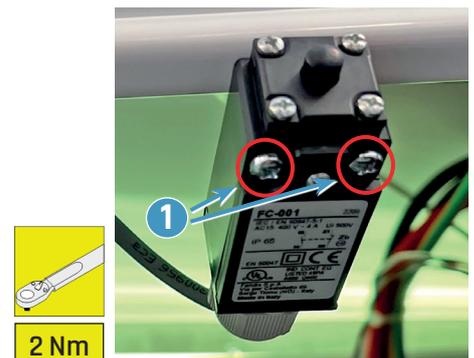
Fig. 18: Position of door limit switch

4.5   Checks and Inspections

4.5.1   Function Test of Door Limit Switch

Check the function of the door limit switch every 12 months (annually).

The following must be observed:

1   Make sure that no e-vehicle is plugged in and no charging process is active.

2   Check the functionality of the main display:
  - To do this, press any key - the main display should respond.

3   Open the service door. See:„3.1 Opening and Closing the Charger" on page 11.

4   Door limit switch functional:
  - The main display shows the "Out of Service" window (see **Fig. 20**).

5   Close the service door. See: „3.1 Opening and Closing the Charger" on page 11.

6   Door limit switch functional:
  - The main display shows the "Welcome" window (see **Fig. 21**).

>   Function test of door limit switch successfully performed.

Fig. 20: Display Out of Service

Fig. 21: Display Welcome

4.5.2   Check Interior for Water Penetration

Monthly (12x per year) the interior of the charging station (lower and upper area) must be checked for possible water penetration.

The following must be observed:

1 Make sure that the AC supply of the charging station is de-energized.
See: „3.2 De-energizing the ECC 320" on page 12.

• Ensure that no e-vehicle is plugged in and no charging process is active.

2 Open the service door:
See „3.1 Opening and Closing the Charger" on page 11.

3 Check the interior of the charging station for water penetration:

• Check the marked area in the head section: see Fig. 22.

• Check the marked area in the lower section: see Fig. 23.

! If water has penetrated, contact „6. Customer Service" on page 48 immediately.

• Immediately take the charging station out of service.

> Interior successfully checked for water penetration.

Fig. 23: Lower area inside charger
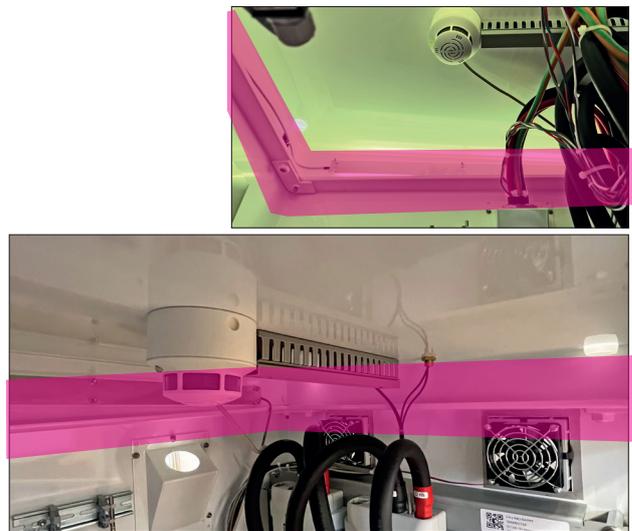
Fig. 22: Head area inside charger

ED EnerCharge

4.5.3 Check the Cable Pull

Monthly (12x per year) the cable pull and the condition of the rope must be checked.

The following must be observed:

> ☞ **INFORMATION**
>
> The maintenance specifications of the wire rope hoist manufacturer must be observed:
> www.brinkmann-info.de, Model: Tecna 9340NY.

1 Remove the charging connector from the holder and check the functionality of the cable pull.

- The movement of the rope must be smooth and there must be no unusual noises.
- If for any reason the rope does not wind up from the spring balancer, DO NOT intervene yourself. Notify the customer service immediately.
- Additionally, observe the maintenance specifications of the manufacturer www.brinkmann-info.de. (Model: Tecna 9340NY)

2 The spring balancer must be visually inspected. The condition of the suspensions and the hook must also be checked.

3 Check the condition of the rope:

- If the rope shows the damage shown in Fig. 24, it must be replaced immediately.

> Cable pull successfully checked.

ISO 4309
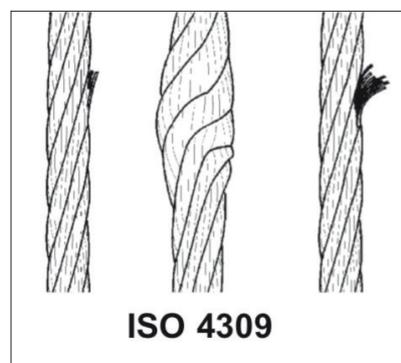
Fig. 24: State of the rope

4.5.4   Function Test of Line/Fault-Current Circuit Breaker

Annually (1x per year) check the functionality of the internal circuit breaker for a permanently safe operation.

The following must be observed:

1   Ensure that no e-vehicle is plugged in and no charging process is active.

2   Open the service door: See „3.1 Opening and Closing the Charger" on page 11.

3   Make sure that the fuse switch disconnector is turned on.

4   Locate all circuit breakers inside the ECC 320.
   • See Fig. 25 on page 24.

5   Switch all toggle levers of the circuit breakers to the "OFF" position.

6   Wait at least five seconds and switch the circuit breaker back on manually.
   • The respective circuit breaker must remain in the "ON" position.
   • If a circuit breaker automatically changes to the "OFF" position, there is a defect. In this case, immediately contact „6. Customer Service" on page 48.

7   Locate the residual current circuit breaker (RCD) inside the ECC 320.
   • See Fig. 25 on page 24.

8   Press the test button (TEST) of the residual current circuit breaker.
   • The residual current circuit breaker must react immediately.
   • In case of failure, contact „6. Customer Service" on page 48 immediately.

9   Switch on the residual current circuit breaker.

>   Line- and residual current circuit breaker checked successfully.
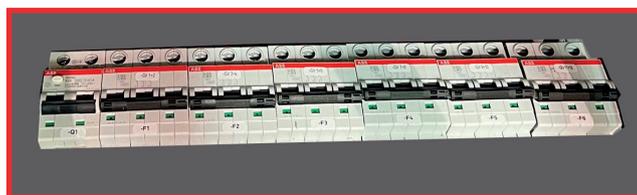
Fig. 25: Line/Fault-current circuit breaker

4.5.5 Check Cable Entries to Charger

Check the cable bushings between the foundation and the charging station for damage on a monthly basis (12x per year).

Please note the following:

1 Make sure that the AC supply of the charging station is de-energized.
See: „3.2 De-energizing the ECC 320" on page 12.

- Ensure that no e-vehicle is plugged in and no charging process is active.

2 Open the service door.
See: „3.1 Opening and Closing the Charger" on page 11.

3 Check cable bushings between foundation and charging station for tight fit and damage (Fig. 26).

- The screw connections must be correctly closed so that no moisture or animals, e.g. insects, can enter.
- Immediately replace a damaged cable bushing - contact „6. Kundendienst" auf Seite 48.

> Cable entries successfully checked.

Fig. 26: Cable entries

4.5.6 Check the DC Lines Inside the Charger

Annually (1x per year) check the DC cables (CCS and CHAdeMO) inside the charging station for obvious damage.

Please note the following:

1 Make sure that the AC supply of the charging station is de-energized.
See: „3.2 De-energizing the ECC 320" on page 12.

- Ensure that no e-vehicle is plugged in and no charging process is active.

2 Open the service door:
See: „3.1 Opening and Closing the Charger" on page 11.

3 Visually check DC cables (CCS and CHAdeMO) inside the charging station for damage (Fig. 27).

- Scuff marks, cuts, cracks or other damage are not permitted. Immediately contact „6. Customer Service" on page 48.
- Discoloration (see Fig. 34 as an example) indicates a faulty connection and/or increased temperature development. In case of discoloration, contact „6. Customer Service" on page 48 immediately.

4 Close and lock the service door of the charging station.

> DC lines inside the charger successfully checked.

Fig. 27: DC lines in charger

4.5.7   Function Test of Charge Plug Holder

Check the function LED of the charging connector holder for CCS Combo-2 and CHAdeMO every six months (2x per year).

Please note the following:

1 Make sure that the AC supply of the charging station is de-energized.
See: „3.2 De-energizing the ECC 320" on page 12.

- Ensure that no e-vehicle is plugged in and no charging process is active.

2 Open the charger.
See: „3.1 Opening and Closing the Charger" on page 11.

3 Locate function LED for bracket charging connector for CCS Combo-2 and CHAdeMO

> ☝ **INFORMATION**
> The ECC 320 DUAL charging station is equipped with two CCS Combo-2 charging connectors.

4 Remove the CHAdeMO charging connector from the charging station holder.

- Function LED must light up when charging connector is removed from the holder (Abb. 29).
- If the function LED does NOT light up when the charging connector is removed (Fig. 29): Contact the „Customer Service".

5 Remove the CCS Combo-2 charging connector from the charging station holder.

- Function LED must light up when the charging connector is removed from the holderd (Fig. 29).
- If the function LED does NOT light up when the charging connector is removed (Fig. 29): Contact „6. Customer Service" on page 48.

6 Close and lock the service door of the charging station.

> Charge plug holder successfully checked.
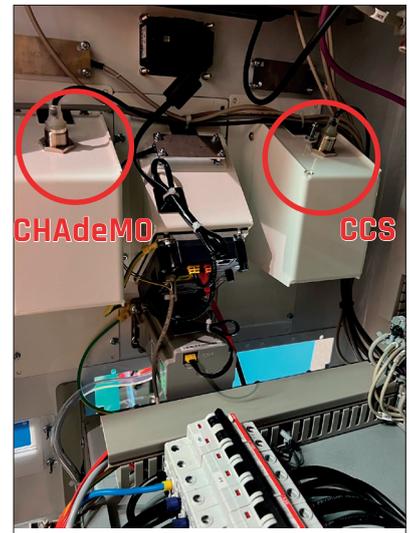
Fig. 28: Function LEDs of charge plug holder

Fig. 29: Charge plug removed from holder

Fig. 30: Function LEDs defective

4.5.8 Check Rubber Plugs in Head Area

Half-yearly (2x per year) check the rubber plugs of the charging station head area.

In doing so, it must be observed:

1 Visually inspect all four rubber plugs in the head area:
See Fig. 32 and Fig. 31.

- All four rubber plugs must lie flush.

- Check all four rubber plugs for brittleness and cracks.

- Replace damaged, brittle or torn rubber plugs immediately. To do this, contact the „6. Customer Service" on page 48.

> Rubber plug head area successfully checked.
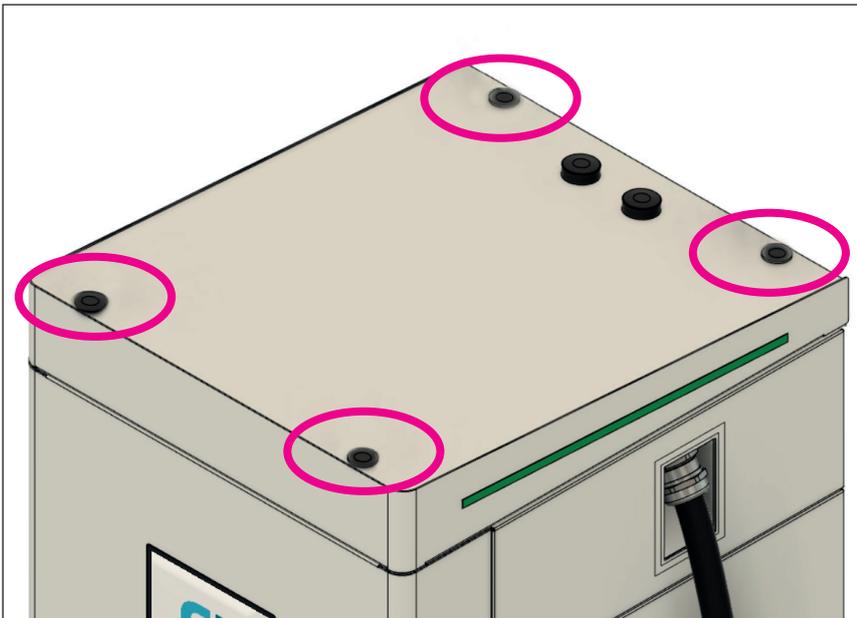
Fig. 32: Rubber plugs in charger head area 1
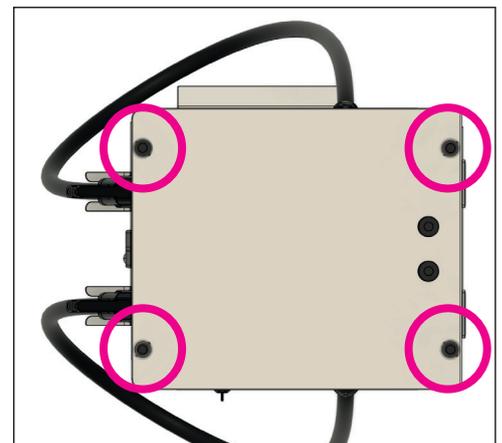
Fig. 31: Rubber plugs in charger head area 2

4.5.9 Check Tightening Torque of 400V AC Main Supply Line Connection

Annually (1x per year) check the tightening torque of the AC-PE and AC-N connection bars and the AC main supply line (400 V) inside the charging station.

The following must be observed:

> ☝ **INFORMATION**
>
> For this maintenance procedure, insulated tools must be used for working with voltage up to 1000 V!

> ⚠ **DANGER** **Danger to life due to electric shock!**
>
> If the residual current circuit breaker (RCD) in the main supply line 400 V is not de-activated, the inside of the load-break switch may be live. This can result in electric shock, burns or death.
>
> • *Deactivate all FI/LS (residual current circuit breakers and miniature circuit breakers) in the main supply line 400 V.*

1 Make sure that the AC supply of the charging station is de-energized.
See: „3.2 De-energizing the ECC 320" on page 12.

   • Make sure that no e-vehicle is plugged in and that no charging charging process is active.

   • Deactivate all FI/LS in the supply line!

2 Open the service door.
See: „3.1 Opening and Closing the Charger" on page 11.

3 Check connection of PE and N lines inside the charging station for correct tightening torque - see Fig. 33:

   • Tightening torque DC (+/-) = 32 Nm.

4 Check the AC-PE/AC-N connections for discoloration:

   • Discoloration (see Fig. 34 for an example) indicates a faulty connection faulty connection and/or increased temperature development.

   • In case of discoloration, contact „6. Customer Service" on page 48 immediately.

5 Check the connection of the AC supply line 400 V (L1/L2/L3) inside the charging station for correct tightening torque - see Fig. 35:

   • Loosen two screws and remove protective cover: see Fig. 35.

   • Tightening torque L1/L2/L3 (400 V) = 28 Nm.

   • Additionally observe the installation manual of the manufacturer Siemens.

7 Mount the protective cover of the fuse switch disconnector.

   • Tighten the two screws of the protective cover: see Fig. 35.

8 Close and lock the service door of the charging station.

> Tightening torque of connection for main supply line 400 V successfully checked.

Fig. 33: Connection main AC supply N/PE

Fig. 35: Connection main AC supply L1/L2/L3

Fig. 34: Example of a defective connection terminal, visible by discoloration.

4.5.10 Function Test of Optical Smoke Switch

A functional test of the optical smoke switch must be carried out annually (1x per year).

The following must be observed:

> ⚠️ **DANGER**   **Danger to life in the event of thunderstorms, rain, storms and/or hail**
>
> A defective smoke switch represents a high safety risk and can be life-threatening for persons who are in the vicinity of the ECC 320.
>
> • *Observe the maintenance instructions of the manufacturer "Hekatron, model ORS142" and the DIN 14677 standard.*
>
> • *Replace the smoke switch every eight years.*
>
> • *Replace the smoke switch immediately in case of "heavy contamination (see Fig. 36).*

1 Make sure that all hazard warnings on page Seite 13 have been noted.

2 Open the service door of the ECC320: See „3.1 Opening and Closing the Charger" on page 11.

3 Locate the optical smoke switch in the interior.
See: „2.2 Interior Structure" on page 8.

4 Check the LED status of the optical smoke switch:

  • For LED function see Fig. 36.

  • In addition, observe the manufacturer's maintenance instructions: www.hekatron.de. (Model: ORS 142)

5 Actions according to LED status:

  • LED glows GREEN: Smoke switch functional.

  • LED glows GREEN/YELLOW (slightly dirty): Smoke switch functional.

  • LED glows GREEN/YELLOW (very dirty): Contact customer service immediately.

  • LED glows RED/OFF: Alarm - Contact customer service immediately.

  • LED OFF: Smoke switch not functional - Contact customer service immediately

> Optical smoke switch successfully checked.

Signal, Frequenz	Farbe LED	Bedeutung
———————	grün	Betriebszustand
⊓_⊓_⊓_	grün/gelb	leicht verschmutzt
⊓⊓⊓⊓⊓	grün/gelb	stark verschmutzt
———————	gelb	Störung
———————	rot	Alarm
„Aus"	spannungslos

Fig. 36: LED status of smoke switch

Fig. 37: Position of smoke switch

4.5.11   Check DC Overvoltage Fuses

Check the DC overvoltage fuses annually (1x per year).

Please note the following:

1   Make sure that the AC supply of the charging station is de-energized. See: „3.2 De-energizing the ECC 320" on page 12.

- Ensure that no e-vehicle is plugged in and no charging process is active.

2   Open the service door:
See „3.1 Opening and Closing the Charger" on page 11.

3   Locate overvoltage fuses DC inside the ECC 320: see Fig. 38.

- Model: ProBloc B 1000 DC, Manufacturer: Raycap

4   Check status of sight glass - see Fig. 39:

- **Green bar** visible: Fuse is functional.
- **Red bar** visible: Contact customer service: 6 on page 48.

>   DC overvoltage fuses successfully checked.
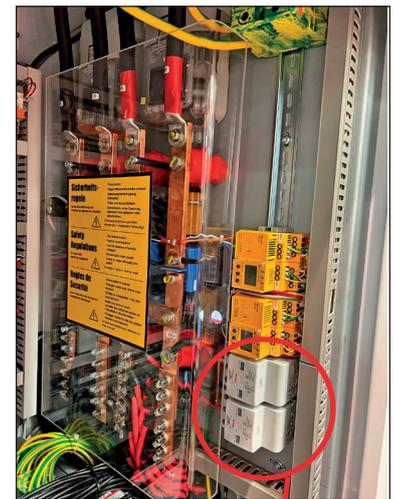
Fig. 38: DC overvoltage fuses

1 Status of sight glass: RED
2 Status of sight glass: GREEN
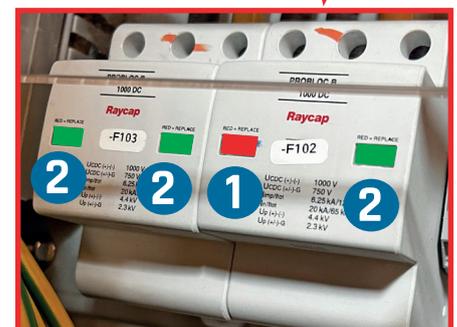
Fig. 39: Status window of DC overvoltage fuses

4.5.12 Replacement of Fan Mat in Rear Cover

Replace the fan mat every 24 months (every 2 years). Take the following steps:

1 Make sure that the AC supply to the charging station is de-energized. See „3.2 De-energizing the ECC 320" on page 12.

- Ensure that no e-vehicle is plugged in and no charging process is active.

2 Open the service door.
See: „3.1 Opening and Closing the Charger" on page 11.

3 Locate the rear cover. See: Fig. 40.

- Insert the key and unlock the door: Fig. 44 and Fig. 42.
- Remove the cover plate.

4 Remove the rear cover. See: Fig. 43.

- Disconnect the plug of the wiring for the fan.
- Slide the front cover upwards and remove it.

5 Loosen the screws of the rear cover. See: Fig. 41.

- Loosen all 10 screws and remove them - also see Fig. 45.

6 Remove fan mat and replace with new part.

- Contact „6. Customer Service" on page 48.

7 Mount the rear cover with 10 screws. See: Fig. 41.

- Tighten all 10 screws - also see Fig. 45.

8 Insert rear cover into housing and lock: Fig. 42.

- Connect the plug of the wiring for the fan: see Fig. 43.
- Insert the cover plate.

> Fan mat rear cover successfully replaced.

Fig. 40: Fan cover

Fig. 45: Detail: screw connection rear cover

Plug for wiring of fan

Fig. 44: Key for rear cover

Fig. 42: Unlock rear cover
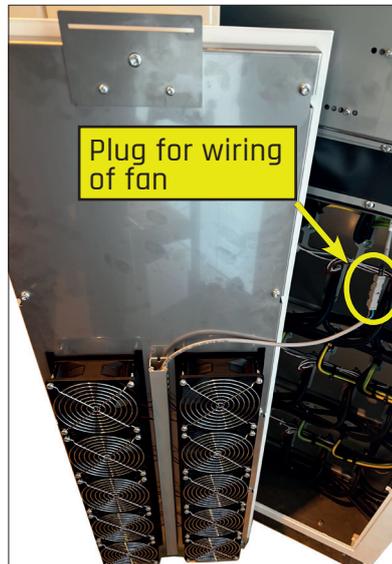
Fig. 43: Removed rear cover

Fig. 41: Screw connection of rear cover

4.5.13 Replacement of Fan Mat in Front Cover

Every 24 months (2-yearly), replace the fan mat of the front wall cover.
The following steps should be followed:

1 Make sure that the AC supply to the charging station is de-energized.
See: „3.2 De-energizing the ECC 320" on page 12.

- Ensure that no e-vehicle is plugged in and no charging process is active..

2 Open the service door:
See „3.1 Opening and Closing the Charger" on page 11.

3 Locate the wingnuts on the inside of the front wall cover: see Fig. 48.

- Loosen all 3 wingnuts and remove them.
- Remove the cover plate.

4 Remove front wall cover: see Fig. 47.

- Slide the front cover upwards and remove it.

5 Loosen the screw connection of the front wall cover: see Fig. 46.

- Loosen and remove all 10 screws.

6 Remove fan mat and replace with new part.

- Contact „6. Customer Service" on page 48.

7 Attach the front wall cover. See: Fig. 46.

- Tighten all 10 screws.

8 Insert the front panel cover into the housing and fix with wing nuts: see Fig. 47 and Fig. 48.

- Insert the cover plate.
- Tighten all 3 wingnuts hand-tight.

> Fan mat in front cover successfully replaced.
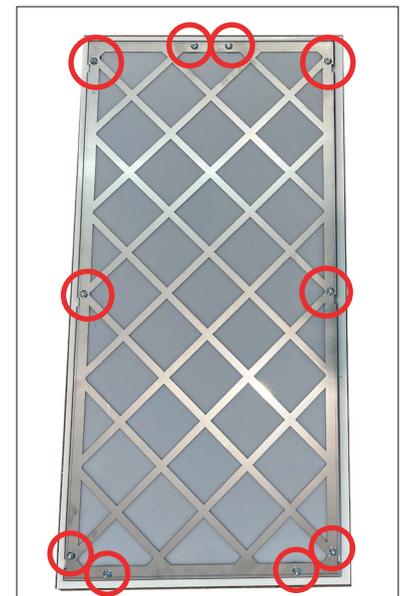
Fig. 46: Screw connection of front cover
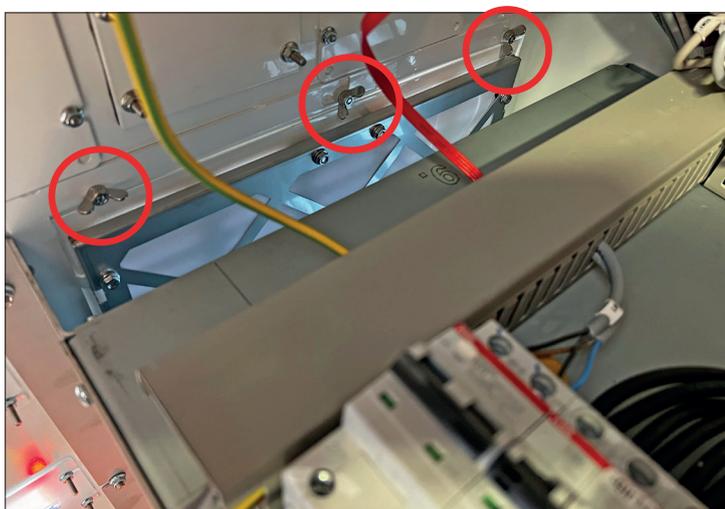
Fig. 48: Wingnuts front wall

Fig. 47: Front cover

4.6　Measures after Performed Maintenance Work

Perform the following steps after completing any maintenance work:

1　Ensure that all previously loosened screw connections are tightened.

2　Ensure that all previously removed guards and covers are properly reinstalled.

3　Ensure that all tools, materials and other equipment used have been removed from the work area.

4　Clean the work area and absorb any liquids that may have escaped. Remove cleaning material such as cleaning rags, etc. again.

5　Ensure that the charging station service door is properly locked.

6　Ensure that all safety devices are functioning properly.

4.7　Inspection List

The events and interventions listed below must be recorded in inspection lists. be recorded. The inspection lists must be kept electronically and/or in paper form:

> Inspections
> Wear and tear measurements
> Maintenance and repair work
> Damage
> Repairs

5. Maintenance Mode ECC 320

The maintenance mode is used to identify error codes and read out relevant data such as the number of mating cycles. Test loading with the service door open is also performed using maintenance mode.

⚠️ **DANGER** **Danger to life due to electrical voltage!**

In maintenance mode, the safety circuit of the door contact switch is deactivated. During a test charge in maintenance mode, the DC lines are live when the service door is open. Touching live parts can lead to serious injury or death.

- *Before activating the maintenance mode, make sure that the contact protection inside the charging station is properly mounted.*

- *Do not touch any components inside the charging station during a test charge.*

- *Make sure that there are no unauthorized persons in the area of the charging station.*

5.1 Activate Maintenance Mode

To activate the maintenance mode, perform the following steps:

1 Press all 4 operating keys simultaneously for at least 3 seconds (**Fig. 49**).

2 The display window shows the "Enter password" page (**Fig. 51**). The 7-digit password is entered using the operating keys:
∧ Select number/leter - up
∨ Select number/leter - down
> Select next space

3 The display window shows the "Maintenance Mode" page (**Fig. 50**).

- The status LEDs of the charger flash **YELLOW**.

> Maintenance mode successfully activated.

Fig. 49: Activate maintenance mode

Fig. 50: Maintenance mode active
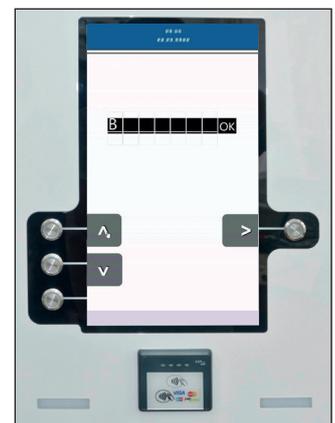
Fig. 51: Enter password

5.2 Maintenance Mode Levels

Several pages are available in the maintenance mode.

Page 1
"CP1"

Display and identification of error codes and readout of relevant data for CP1 (Charge Point 1). For a "SINGLE" charging station, this level affects the CCS and CHAdeMO charging connectors:

1 **The explanation** can be found in sections: „5.5 EV Error Messages" on page 37 und „5.6 Status Messages in Maintenance Mode" on page 42.

2 Operating keys "Start" and "Stop" for test charge: See „5.3 Start/Terminate Test Charge" on page 36.

3 Operating key "Next": change to next page.

4 Operating key "Exit": Exit maintenance mode. See: „5.4 Exit Maintenance Mode" on page 36.
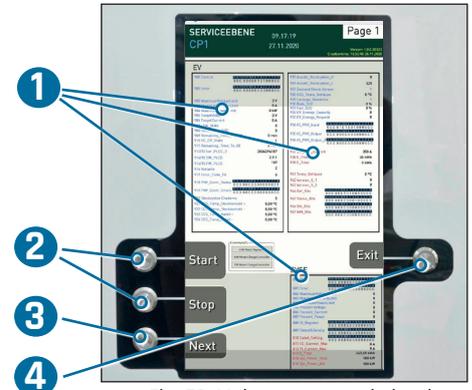
Fig. 52: Maintenance mode level page 1

Page 2
"CP2"

Display and identification of error codes and readout of relevant data for CP2 (Charge Point 2). Active for charging station "DUAL" (for "SINGLE", "Page 2 CP2" shows diamonds in all lines). The readout is analogous to level "Page 1".

> Operating key "Next": change to next page.

> Operating key "Exit": Exit maintenance mode. See: „5.4 Exit Maintenance Mode" on page 36.

Fig. 53: Maintenance mode level page 2

Page 3
"OCPP"

Display and idientification of error codes and readout of relevant data of the communication standard OCPP. (Open Charge Point Protocol). Display for CP1 and CP2 (CP2 only active with DUAL).

> Operating key "Next": change to next page.

> Operating key "Exit": Exit maintenance mode. See: „5.4 Exit Maintenance Mode" on page 36.

Fig. 54: Maintenance mode level page 3

Page 4
"SMs/WMs"

List of sum bits (SMs) and warning messages (WMs) of the charger. The list is sorted by date.

> **Datetime:** Date of error message.

> **Errorname:** Name of error message, e.g. "Door open"

> **Errordescription:** Description of error message, e.g. Door contact switch signals an open service door.

> Operating key "Next": change to next page.

> Operating key "Exit": Exit maintenance mode. See: „5.4 Exit Maintenance Mode" on page 36.

Fig. 55: Maintenance mode level page 4

5.3 Start/Terminate Test Charge

Carry out the following steps to start and stop the test charge:

1 Connect the e-vehicle to the CCS Combo-2 charging connector for test charging.

2 Make sure that the maintenance mode is activated.

- The status LEDs of the charger flash **YELLOW**.

3 Pressing operating key **1** starts the test charge.

4 Pressing operating key **2** terminates the test charge.

> Test charge performed successfully.
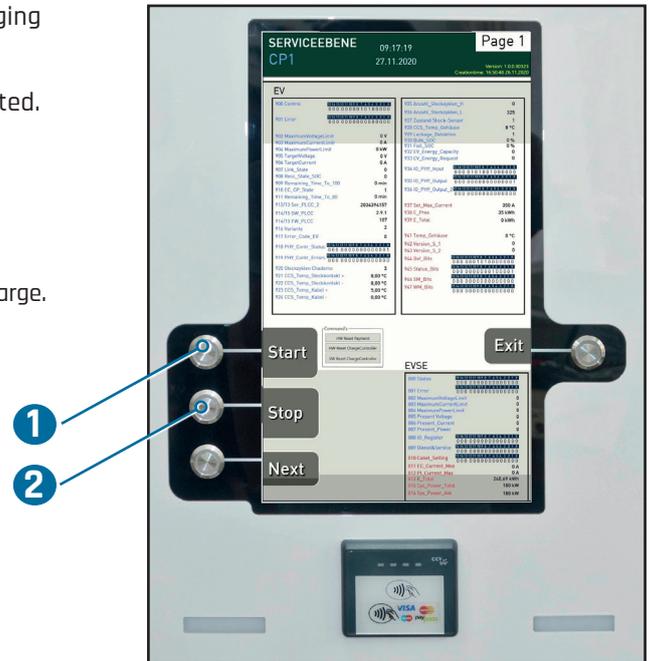
Fig. 56: Start/end test charge

5.4 Exit Maintenance Mode

To deactivate the maintenance mode, perform the following steps:

1 Press the "EXIT" control key for at least 3 seconds. Press (**Fig. 57**).

2 The operating screen shows the "Welcome" display (**Fig. 49**).

- The status LEDs of the charger glow **GREEN**.

> Maintenance mode deactivated successfully.

Fig. 57: Deactivate maintenance mode

5.5 EV Error Messages

5.5.1 Line 900 EV_Control

900 EV_Control (Signals from the charger to the AC/DC power unit)				
BIT	NAME	Error	Error Explanation	Description
0	DC_RELAIS_PLUS_ENABLE	-	-	Feedback DC+ contactor "ON"
1	DC_RELAIS_MINUS_ENABLE	-	-	Feedback DC- contactor "ON"
2	PRECHARGE_ENABLE	-	-	Pre-charge active
3	CHARGE_ENABLE	-	-	Charge active
4	EnableMessbox	-	-	N.A.
5	Dooropen	-	-	Door contact switch active
6	Smoke detector	-	-	Smoke detector active
7	Feedback_HPC-Cable	Bit "0" = Error Bit "1" = Good	If Bit=0 -> charging not possible	"Good": Circuit is closed (24Volt). "Error": No OK signal from cooled charging cable.
8	Free	-	-	-
9	Free	-	-	-
10	Free	-	-	-
11	Free	-	-	-
12	Free	-	-	-
13	Free	-	-	-
14	Free	-	-	-
15	Free	-	-	-

Table 7: Line 900

5.5.2 Line 901 EV_Error

901 EV_Error			-	
BIT	NAME	Error	Error Explanation	Description
0	Free	-	-	-
1	Free	-	-	-
2	Free	-	-	-
3	Free	-	-	-
4	Free	-	-	-
5	Free	-	-	-
6	Free	-	-	-
7	Free	-	-	-
8	Free	-	-	-
9	Free	-	-	-
10	Free	-	-	-
11	Free	-	-	-
12	Free	-	-	-
13	Free	-	-	-
14	Free	-	-	-
15	Free	-	-	-

Table 8: Line 901

5.5.3   Lines 902 - 917

Lines 902 to 917				
Line	**NAME**	**Factor**	**Value Explanation**	**Description**
902	EV_MaximumVoltageLimit	1	[V] e.g. 1 = 1,0V	Maximum voltage accepted by the e-vehicle
903	EV_MaximumCurrentLimit	1	[A] e.g. 1 = 1,0A	Maximum current accepted by the e-vehicle
904	EV_MaximumPowerLimit	1	[kW] e.g. 1 = 1,0kW	Maximum power (kW) accepted by the e-vehicle
905	EV_TargetVoltage	1	[V] e.g. 1 = 1,0V	Voltage requested by the e-vehicle
906	EV_TargetCurrent	1	[A] e.g. 1 = 1,0A	Power requested by the e-vehicle
907	EV_Link_State	-	-	State of the charging process (according to DIN SPEC 70121)
908	EV_Ress_State_SOC	1	[%] e.g. 1 = 1%	State of charge of the battery (SOC; value in %)
909	Remaining Time to 100%	1	[min] e.g. 1 = 1min	Remaining charge time to 100% battery capacity.
910	EV_CP_State	-	State of Control Pilot	When plugging in: number "2". Start command: number "6". Inactive charge: permanent number "1"
911	Remaining Time to 80%	1	[min] e.g. 1 = 1min	Remaining charge time to 80% battery capacity.
912/913	Seriennummer PLCC	-	-	e.g. 2034394157
914/915	Software PLCC / Firmware PLCC	-	e.g. 2.9.1 / e.g. 107	Software Version / Firmware Version
916	Varainte PLCC (Enercharge 1, Enercharge HPC2, B-Muster 3, B-Muster HPC4)	-	Variation: 1,2,3,4	Distinction of charger variations: "2" variation ECC 320 with HPC (cooling unit)
917	EV Error_Code_EV	-	Error >0	Error message from e-vehicle

Table 9: Lines 902 to 917
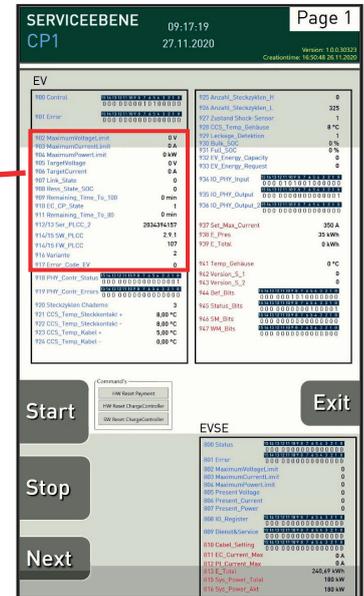
5.5.4   Line 918 Phoenix Controller Status

918 PHY_Contr_Status				
BIT	**NAME**	**Error**	**Error Explanation**	**Description**
0	Ready (PC)	Bit "0" = Error Bit "1" = Good	If Bit=0 -> Charge cannot be started	PLCC is operational (Bit=1), if: (1) PLC run mode = 1; (2) State GOOD Signal = 1; (3) Register 900 bit7 = 1; (4) Reg.919 bit3 = 0; (5) Reg.919 bit9 = 0; (6) Reg. 919 bit13 = 0; (7) Reg.919 bit14 = 0; (8) Collective error - function block "CHARGE_DC" = 0;
1	EV_READY	"TRUE" "FALSE"	TRUE = e-vehicle ready for charge FALSE = e-vehicle not ready for charge	Shows charging readiness of e-vehicle
2	EV_CHARGING_COMPLETE	-	-	Vehicle reports: charging process complete
3	Reserved	-	-	formerly CCS_Ready
4	Reserved	-	-	formerly CHAdeMO_Ready
5	Config_Error_Textdatei	Bit "0" = Good Bit "1" = Error	If Bit=1 -> Charging not possible	If there is an error in the syntax of the config file, bit=1 is set. Charging operation is not possible.
6	PLCC-Update_Error	-	-	-
7	Free	-	-	-
8	Free	-	-	-
9	Free	-	-	-
10	Free	-	-	-
11	Free	-	-	-
12	Free	-	-	-
13	Free	-	-	-
14	Free	-	-	-
15	Free	-	-	-

Table 10: Line 918

5.5.5 Line 919 Phoenix Controller Error

919 PHY_Contr_Errors				
BIT	NAME	Error	Error Explanation	Description
0	Error_Summe	Bit "0" = Good Bit "1" = Error	If Bit=1 -> 1 or multiple errors	Collective error message: If Bit=1 there is 1 one or more error of error bits "919 Bit_1" to "919 Bit_15". Line "900 Bit_7" is also linked.
1	Can_1 Error (CCS)	Bit "0" = Good Bit "1" = Error	If Bit=1 -> Charging not possible	There is an error in the CAN communication (CCS).
2	PP_Error (CCS)	Bit "0" = Good Bit "1" = Error	If Bit=1 -> Charging not possible	There is a fault with the proximity pin (CCS). In the HPC connector housing, the proximity pilot contact to the vehicle is checked by means of a sensor system. This bit is set if there is a permanent error in this sensor system.
3	CP_Error (CCS)	Bit "0" = Good Bit "1" = Error	If Bit=1 -> Charging not possible	There is an error at the CP pin (communication, PWM, voltage level)
4	Temp_1_Error (CCS)	Bit "0" = Good Bit "1" = Error	If Bit=1 -> Charging not possible	If plug contact DC+ >= 90°C, then error (bit=1); also applies to PT1000 for CCS 200A.
5	Temp_2_Error (CCS)	Bit "0" = Good Bit "1" = Error	If Bit=1 -> Charging not possible	If plug contact DC- >= 90°C, then error (bit=1); also applies to PT1000 for CCS 200A.
6	Temp_3_Error (CCS)	Bit "0" = Good Bit "1" = Error	If Bit=1 -> Charging not possible	If cable DC+ >= 90°C, then error (bit=1)
7	Temp_4_Error (CCS)	Bit "0" = Good Bit "1" = Error	If Bit=1 -> Charging not possible	If cable DC- >= 90°C, then error (Bit=1)
8	Can_2_Error	Bit "0" = Good Bit "1" = Error	If Bit=1 -> Charging not possible	There is an error in CAN communication (CHAdeMO) or in CHAdeMO charge initialization. Example: CAN bus is active - CHAdeMO bus is not.
9	Charging_Error_Chademo	Bit "0" = Good Bit "1" = Error	If Bit=1 -> Charging not possible	Bit is set if an error is reported by the vehicle during the charging process.
10	Shock_Error	Bit "0" = Good Bit "1" = Error	If Bit=1 -> Charging not possible	Bit is set if the acceleration of the connector is greater than 10 times (=warning level) or 50 times (=critical level) the gravitational acceleration (g=9.81m/s2). A sensor in the connector records the current g-value. If the measured value falls below the threshold values, the error is cleared.
11	Error_Umgebungstemperatur Steckergehäuse	Bit "0" = Good Bit "1" = Error	If Bit=1 -> Charging not possible	If housing temperature is greater than or equal to 60°C, then error (bit=1)
12	Error_Detektion Leckage	Bit "0" = Good Bit "1" = Error	If Bit=1 -> Charging not possible	If the measured humidity in the connector housing increases abruptly, bit=1 is set. A sensor detects the moisture in the connector housing. The sensor differentiates between increased humidity caused by weather and increased humidity caused by a leakage. The bit is set in case of leakage, direct water contact or damage of a cable. Messages: "warning level" and "critical level
13	EV voltage error precharge	Bit "0" = Good Bit "1" = Error	If Bit=1 -> Charging not possible	Voltage error of e-vehicle during precharge.
14	Unzulässiger Statuswechsel	Bit "0" = Good Bit "1" = Error	If Bit=1 -> Charging not possible	Bit is set, if the status sequence of the CP state is not adhered to. If the CP state changes from 7 "not according to specification" to CP state 1, this case is detected and reported as "impermissible status change". Other status changes (example from state "7" to "2") are not detected.
15	EV voltage error charging	Bit "0" = Good Bit "1" = Error	If Bit=1 -> Charging not possible	Voltage error of e-vehicle during charging operation.
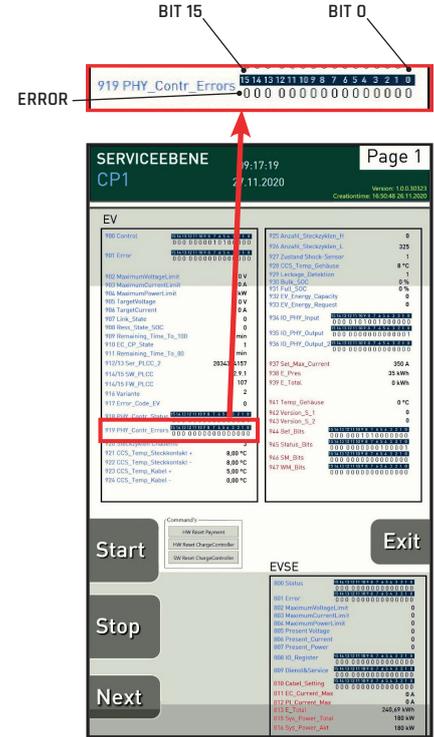
Table 11: Line 919

5.5.6   Lines 920 - 933

Lines 920 to 933				
Line	NAME	Factor	Value Explanation	Description
920	Anzahl Steckzyklen_CHAdeMO	1	e.g. 1 = 1 mating cycle	Number of mating cycles of the CHAdeMO connector
921	Temp_1_CCS_Steckerkontakt_plus	1	[K] e.g. 100 = 100 Kelvin	Current temperature at "Sensor 1 CCS" in Kelvin. Also the temperature (Kelvin) of DC+ of the PT1000 (CCS 200A) is displayed.
922	Temp_2_CCS_Steckerkontakt_minus	1	[K] e.g. 100 = 100 Kelvin	Current temperature at "Sensor 2 CCS" in Kelvin. Also the temperature (Kelvin) of DC- of the PT1000 (CCS 200A) is displayed.
923	Temp_3_CCS_Kabel_plus	1	[K] e.g. 100 = 100 Kelvin	Current temperature at "Sensor 3 CCS" in Kelvin.
924	Temp_4_CCS_Kabel_minus	1	[K] e.g. 100 = 100 Kelvin	Current temperature at "Sensor 4 CCS" in Kelvin.
925	Anzahl Steckzyklen_CCS_HPC	1	e.g. 1 = 1 mating cycle	Number of mating cycles of the CCS-HPC connector; a word variable (here Word_High) can count up to 65535.
926	Anzahl Steckzyklen_CCS	1	e.g. 1 = 1 mating cycle	Number of mating cycles of the CCS connector (not HPC); a word variable (here Word_Low) can count up to 65535.
927	Zustandswert Schock Sensor	-	-	Returns the state values of the shock sensor as integers.
928	Umgebungstemperatur Steckergehäuse	1	[K] e.g. 100 = 100 Kelvin	Current temperature at the surroundings of the sensor in Kelvin.
929	Detektion Leckage	1	-	The state of the sensor is reported back as a number.
930	BULK_SOC	1	1 = 1%	Value (in %) at which the vehicle considers fast charging to be finished.
931	FULL_SOC	1	1 = 1%	Value (in %) at which the vehicle considers the battery to be charged.
932	EV_ENERGY_CAPACITY	-	-	Maximum energy that can be used by the vehicle.
933	EV_ENERGY_REQUEST	-	-	Energy requested by the vehicle.

Table 12: Lines 920 to 933
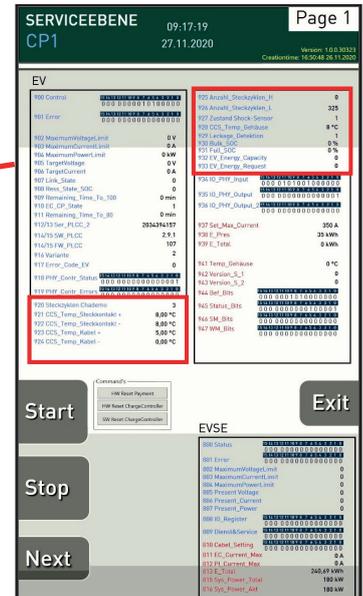
5.5.7   Line 934 IO_PHY_Input

934 Status_Bits_IO_1 (Digital Input from Phoenix Controller)				
BIT	NAME	Error	Error Explanation	Description
0	PLCC Input X10:1:5 - free	-	-	The current value of this input (High-Level = 1, Low-Level = 0)
1	PLCC Input X10:1:6 - feedback CCS	-	-	The current value of this input (High-Level = 1, Low-Level = 0)
2	PLCC Input X10:1:7 - feedback Chademo	-	-	The current value of this input (High-Level = 1, Low-Level = 0)
3	PLCC Input X10:1:8 - Chademo holding detection	-	-	The current value of this input (High-Level = 1, Low-Level = 0)
4	PLCC Input X10:1:9 - CCS holding detection	-	-	The current value of this input (High-Level = 1, Low-Level = 0)
5	PLCC Input X10:1:10 - quick stop button	-	-	The current value of this input (High-Level = 1, Low-Level = 0)
6	PLCC Input X10:1:11 - feedback Chademo latch lock	-	-	The current value of this input (High-Level = 1, Low-Level = 0)
7	PLCC Input X10:1:12 - charge approval	-	-	The current value of this input (High-Level = 1, Low-Level = 0)
8	PLCC Input X10:2:5 - charge approval measuring	-	-	The current value of this input (High-Level = 1, Low-Level = 0)
9	PLCC Input X10:2:6 - door open	-	-	The current value of this input (High-Level = 1, Low-Level = 0)
10	PLCC Input X10:2:7 - smoke detector	-	-	The current value of this input (High-Level = 1, Low-Level = 0)
11	PLCC Input X10:2:8 - feedback cooled cable	-	-	The current value of this input (High-Level = 1, Low-Level = 0)
12	PLCC Input X10:2:9 - free	-	-	The current value of this input (High-Level = 1, Low-Level = 0)
13	PLCC Input X10:2:10 - free	-	-	The current value of this input (High-Level = 1, Low-Level = 0)
14	PLCC Input X10:2:11 - free	-	-	The current value of this input (High-Level = 1, Low-Level = 0)
15	PLCC Input X10:2:12 - free	-	-	The current value of this input (High-Level = 1, Low-Level = 0)

Table 13: Line 934
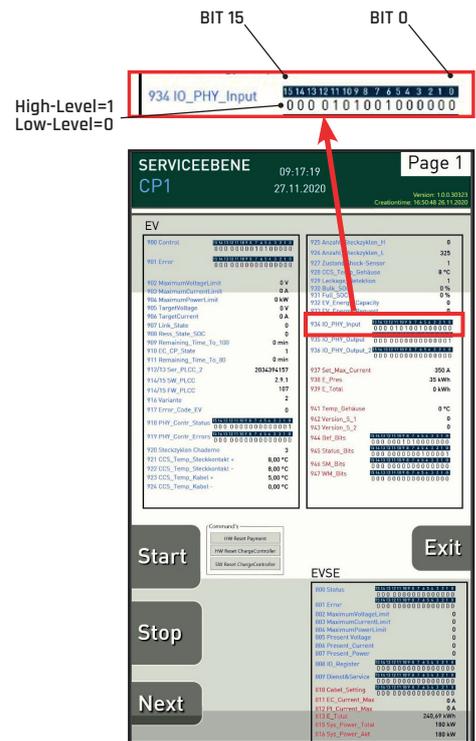
5.5.8 Line 935 IO_PHY_Output

BIT	NAME	Error	Error Explanation	Description
0	PLCC Output X11:1:5 - release circuit	-	-	The current value of this output (High-Level = 1, Low-Level = 0)
1	PLCC Output X11:1:6 - CCS relais shortcut Chademo	-	-	The current value of this output (High-Level = 1, Low-Level = 0)
2	PLCC Output X11:1:7 - control LED red	-	-	The current value of this output (High-Level = 1, Low-Level = 0)
3	PLCC Output X11:1:8 - control LED green	-	-	The current value of this output (High-Level = 1, Low-Level = 0)
4	PLCC Output X11:1:9 - control LED blue	-	-	The current value of this output (High-Level = 1, Low-Level = 0)
5	PLCC Output X11:1:10 - quick stop LED	-	-	The current value of this output (High-Level = 1, Low-Level = 0)
6	PLCC Output X11:1:11 - display light	-	-	The current value of this output (High-Level = 1, Low-Level = 0)
7	PLCC Output X11:1:12 - free	-	-	The current value of this output (High-Level = 1, Low-Level = 0)
8	PLCC Output X11:2:5 - approval CCS	-	-	The current value of this output (High-Level = 1, Low-Level = 0)
9	PLCC Output X11:2:6 - approval Chademo	-	-	The current value of this output (High-Level = 1, Low-Level = 0)
10	PLCC Output X11:2:7 - CHAdeMO d1	-	-	The current value of this output (High-Level = 1, Low-Level = 0)
11	PLCC Output X11:2:8 - CHAdeMO d2	-	-	The current value of this output (High-Level = 1, Low-Level = 0)
12	PLCC Output X11:2:9 - CHAdeMO latch lock	-	-	The current value of this output (High-Level = 1, Low-Level = 0)
13	PLCC Output X11:2:10 - free	-	-	The current value of this output (High-Level = 1, Low-Level = 0)
14	PLCC Output X11:2:11 - cooling fan	-	-	The current value of this output (High-Level = 1, Low-Level = 0)
15	PLCC Output X11:2:12 - cooling pump	-	-	The current value of this output (High-Level = 1, Low-Level = 0)

Table 14: Line 935

5.5.9 Line 936 IO_PHY_Output_2

BIT	NAME	Error	Error Explanation	Description
0	PLCC Output X9:1:1 - DC Laden freigegeben (CCS)	-	-	The current value of this output (High-Level = 1, Low-Level = 0) Closed contact is equal to "CP-State 7".
1	HPC_Cable	-	-	Bit "1": Config parameter on SD card is set; Bit "0": CCS "normally" configured (only 2xPT1000)
2	Free	-	-	The current value of this output (High-Level = 1, Low-Level = 0)
3	Free	-	-	The current value of this output (High-Level = 1, Low-Level = 0)
4	Free	-	-	The current value of this output (High-Level = 1, Low-Level = 0)
5	Free	-	-	The current value of this output (High-Level = 1, Low-Level = 0)
6	Free	-	-	The current value of this output (High-Level = 1, Low-Level = 0)
7	Free	-	-	The current value of this output (High-Level = 1, Low-Level = 0)
8	Free	-	-	The current value of this output (High-Level = 1, Low-Level = 0)
9	Free	-	-	The current value of this output (High-Level = 1, Low-Level = 0)
10	Free	-	-	The current value of this output (High-Level = 1, Low-Level = 0)
11	Free	-	-	The current value of this output (High-Level = 1, Low-Level = 0)
12	Free	-	-	The current value of this output (High-Level = 1, Low-Level = 0)
13	Free	-	-	The current value of this output (High-Level = 1, Low-Level = 0)
14	Free	-	-	The current value of this output (High-Level = 1, Low-Level = 0)
15	Free	-	-	The current value of this output (High-Level = 1, Low-Level = 0)

Table 15: Line 936

5.6   Status Messages in Maintenance Mode

5.6.1   Line 937 - 943

Lines 937 to 943 - Values from charger/EnerCharge			
Line	**NAME**	**Factor**	**Value Explanation**	**Description**
937	Set_Max Current_Freigegeben	UINT16	[A] e.g. 10 = 1,0A	Maximum voltage accepted by the e-vehicle.
938	E_Pres	UINT16	[kWh] e.g. 100 = 1kWh	Currently charged energy
939	E_Total_High	UINT32	[kWh] e.g. 100 = 1kWh	Maximum power (kW) accepted by the e-vehicle.
940	E_Total_Low	UINT32	[kWh] e.g. 100 = 1kWh	Minimum power (kW) accepted by the e-vehicle.
941	INNEN_Temp	INT16	[C°] e.g. 10 = 1,0C°	Current temperature inside the charger housing
942 Byte0	Version_Software	INT16	Number 1 to 9	Software Version: 1.x.x.x
942 Byte1	Version_Software	INT16	Number 1 to 9	Software Version: x.1.x.x
943 Byte0	Version_Software	INT16	Number 1 to 9	Software Version: x.x.1.x
943 Byte1	Version_Software	INT16	Number 1 to 9	Software Version: x.x.x.1

Table 16: Lines 937 to 943

5.6.2   Line 944 - Bef_Bits

944 Bef_Bits - Signals from charger to AC/DC-power unit			
BIT	**NAME**	**Value Explanation**		**Description**
0	Set_Charging_Enable_CCS	Bit "0" = when inactive Bit "1" = when active		Bit="1": when charging with CCS is started
1	Set_Charging_Enable_Chademo	Bit "0" = when inactive Bit "1" = when active		Bit="1": when charging with CHAdeMO is started
2	Set_Charging_Stop_CCS	Bit "0" = when inactive Bit "1" = when active		Bit="1": when charging with CCS is stopped
3	Set_Charging_Stop_Chademo	Bit "0" = when inactive Bit "1" = when active		Bit="1": when charging CHAdeMO is stopped
4	free	-	-	-
5	free	-	-	-
6	free	-	-	-
7	free	-	-	-
8	Free	-	-	-
9	Free	-	-	-
10	Free	-	-	-
11	Free	-	-	-
12	Free	-	-	-
13	Free	-	-	-
14	Free	-	-	-
15	free	-	-	-

Table 17: Line 944
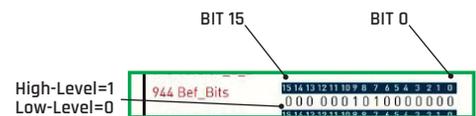
5.6.3   Line 945 - Status_Bits

945 Status_Bits				
BIT	**NAME**	**Error**	**Error Explanation**	**Description**
0	Charger_Ready	Bit "0" = Good Bit "1" = Error	Bit=1: charger not ready	Query whether charging station is ready for charging process.
1	Payment_Ready	Bit "0" = Good Bit "1" = Error	Bit=1: payment system not ready	Query whether payment system is ready.
2	Mech_CCS_use	Bit "0" = Good Bit "1" = Error	Bit=0: plug holder active Bit=1: plug holder inactive	Info on whether CCS plug is in holder
3	Mech_Chademo_use	Bit "0" = Good Bit "1" = Error	Bit=0: plug holder active Bit=1: plug holder inactive	Info on whether CHAdeMO plug is in holder
4	Door_Open	Bit "0" = Good Bit "1" = Error	Bit=0: door contact switch active Bit=1: door contact switch inactive	Info on whether door contact switch is active.
5	ChargeController_Ready	Bit "0" = Good Bit "1" = Error	Bit=0: Charge Controller active Bit=1: Charge Controller inactive	Query whether charge controller is active.
6	Free	-	-	-
7	Free	-	-	-
8	Free	-	-	-
9	Free	-	-	-
10	Free	-	-	-
11	Free	-	-	-
12	Free	-	-	-
13	Free	-	-	-
14	Free	-	-	-
15	Free	-	-	-

Table 18: Line 945
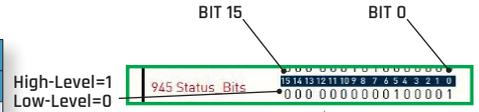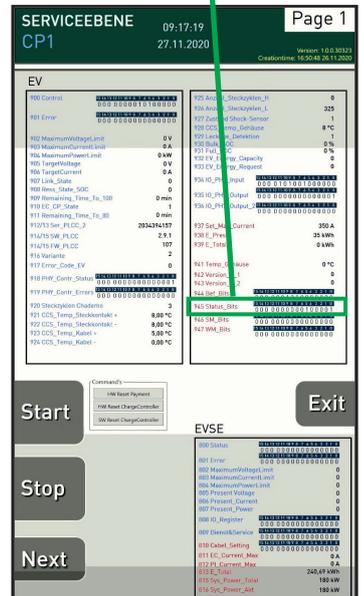
5.6.4   Line 946 - SM_Bits

946 SM_Bits (Sum bits)				
BIT	**NAME**	**Error**	**Error Explanation**	**Description**
0	SUM_SM_Ladesäule	Bit "0" = Good Bit "1" = Error	Bit=1: There is an error present	Indication of whether there is an error at the charging station.
1	Temp_to_High_Indoor	Bit "0" = Good Bit "1" = Error	Bit=1: Temperature inside charger too high	Info on whether the temperature inside the charger is too high.
2	Temp_to_High_Cable	Bit "0" = Good Bit "1" = Error	Bit=1: Temperature in plug housing to high	Info on whether the temperature inside the housing of the CCS charge plug is too high.
3	Coolingsystem_Error	Bit "0" = Good Bit "1" = Error	Bit=1: Error with HYDAC cooling unit	Info on whether there is an error with the HYDAC cooling unit.
4	Controller_EC_Error	Bit "0" = Good Bit "1" = Error	Bit=1: Error with PC inside charger	Info on whether there is an error with the PC inside the charging station.
5	Payment_Error	Bit "0" = Good Bit "1" = Error	Bit=1: Error with direct payment system	Indication of whether there is an error concerning the direct payment.
6	ChargeController_Error	Bit "0" = Good Bit "1" = Error	Bit=1: Error with charge controller	Info on whether there is an error with the charge controller (Phoenix Contact).
7	Free	-	-	-
8	Free	-	-	-
9	Free	-	-	-
10	Free	-	-	-
11	Free	-	-	-
12	Free	-	-	-
13	Free	-	-	-
14	Free	-	-	-
15	Free	-	-	-

Table 19: Line 946
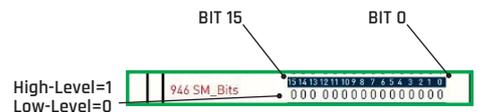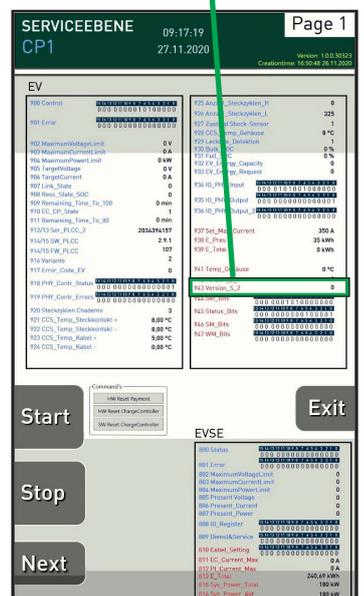
5.6.4.1 Line 947 - WM_Bits

947 WM_Bits (Warning messages)				
BIT	NAME	Error	Error Explanation	Description
0	SUM_WM_Ladesäule	Bit "0" = Good Bit "1" = Error	Bit=1: A sum warning is present	Display whether there is a general warning message at the charging station (sum warning message).
1	Temp_to_High_Indoor	Bit "0" = Good Bit "1" = Error	Bit=1: Warning message active	Display of warning message if the temperature inside the charging station is too high.
2	Temp_to_High_Cable	Bit "0" = Good Bit "1" = Error	Bit=1: Warning message active	Display of warning message if the temperature in the connector housing of the CCS charging connector is too high.
3	Door_Open	Bit "0" = Good Bit "1" = Error	Bit=1: Warning message active	Display of warning message whether door contact switch is engaged.
4	Free	-	-	-
5	Free	-	-	-
6	Free	-	-	-
7	Free	-	-	-
8	Free	-	-	-
9	Free	-	-	-
10	Free	-	-	-
11	Free	-	-	-
12	Free	-	-	-
13	Free	-	-	-
14	Free	-	-	-
15	Free	-	-	-

Table 20: Line 947
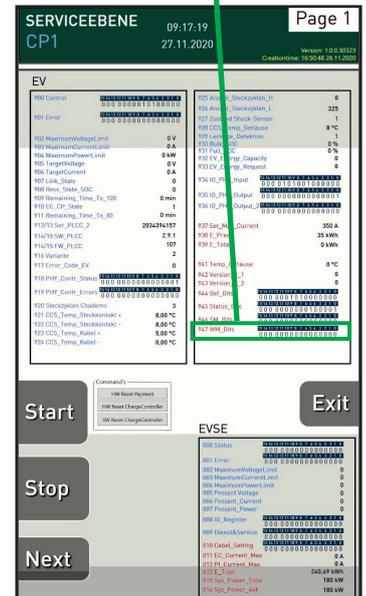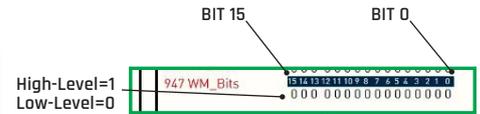
5.7 EVSE Error and Status Messages

5.7.1 Line 800 Status

BIT	NAME	Value Explanation	Description
800 Status (Signals from AC/DC power unit)
0	ISO_OK	Bit=1: Insulation OK.	ISO = The isolation is okay
1	ISO_FAIL	Bit=1: Insulation Error.	ISO = The isolation is not okay = error
2	ISO_Running	Bit=1: Insulation test active	ISO = Insulation test active. (AC/DC sends signal to charger and starts insulation test). After completion of the insulation test BIT 0 (Ok) or BIT 1 (Fail) is set.
3	ReadyToCharge CCS	Bit=1: CCS ready for charge	Signal that CCS is ready for charging process (See also 5.5.1 on page 37).
4	ReadyToCharge CHAdeMO	Bit=1: CHAdeMO ready for charge	Signal that CHAdeMO is ready for charging process (See also 5.5.1 on page 37).
5	free	-	-
6	PRECHARE	Bit=1: Precharge active	Signal for "Precharge" process.
7	CHARGE	Bit=1: Charge active	Signal for "Charge" process.
8	CP_SIGNAL_OPEN	-	-	Not used.
9	CP_SIGNAL_CLOSED	-	-	Not used.
10	REQUEST_SHUTDOWN	Bit=1: Charge being terminated	Signal for " Stop charging ". Charging station sends command to AC/DC power unit, which sends command back -> charging process is terminated.
11	Unlocking inhibitor	Bit=1: Unlocking inhibitor active	Only relevant for charging process with CHAdeMO. The unlocking inhibitor blocks the plug removal. With DC voltage present, the CHAdeMO plug cannot be removed from the e-vehicle.
12	Error case "voltage on vehicle inlet"	Bit "0" = Good Bit "1" = Error	If a high voltage is present at the DC contactor of the vehicle inlet outside the charging process (fault condition of the vehicle). Reasoning: A defective relay/contactor at the DC output of the e-vehicle is a fault of the e-vehicle (not of the charging station). The charging station must not lock in the event of this fault.
13	CP_Off_Quittieren	Bit "0" = Good Bit "1" = Error	If this bit is set, the PLCC receives the signal to resolve the error state "State F" (State F bit set to "0").
14	CP_Off_PYC	-	Permanently active: Causes the controller to set the CP signal to minus 12 volts.
15	Restart_PYC	Bit=1: Restart of charge controller	If this bit is set, the PhC controller restarts; 2sec. Active.

Table 21: Line 800
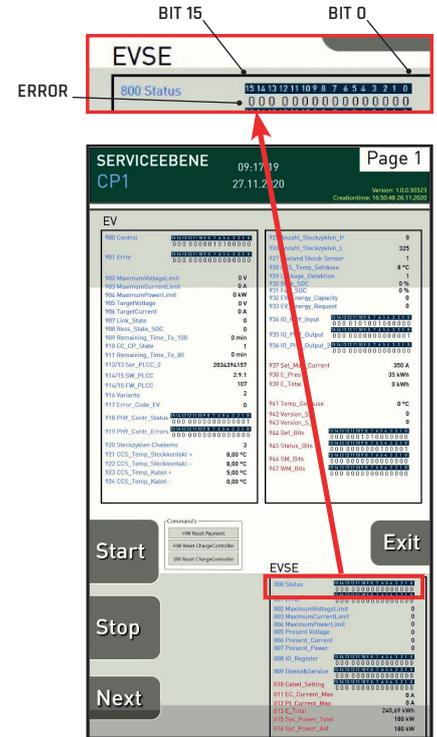
5.7.2 Line 801 EVSE_Error

BIT	NAME	Value Explanation	Description
801 EVSE_Error
0	QUICK_STOP_ACTIVATED	Bit "0" = Good Bit "1" = Emergency Stop active	Emergency Stop activated (Immediate disconnection of the DC charging voltage)
1	DC_PLUS_RELAIS_ERROR	Bit "0" = Good Bit "1" = Error	Error of DC+ contactors at AC/DC power unit
2	DC_MINUS_RELAIS_ERROR	Bit "0" = Good Bit "1" = Error	Error of DC- contactors at AC/DC power unit.
3	ISO_METER_ERROR	Bit "0" = Good Bit "1" = Error	Error of insulation measuring device in AC/DC power unit.
4	EVSE_MALFUNCTION	Bit "0" = Good Bit "1" = EVSE Error	Error of AC/DC power unit.
5	EVSE_NOT_READY	Bit "0" = Good Bit "1" = EVSE not ready	AC/DC power unit not ready.
6	Derating Level 1	Bit "0" = Good Bit "1" = Derating Level 1 active	The AC/DC power unit reduces the current supply by 50% when limit level 1 is reached.
7	Derating Level 2	Bit "0" = Good Bit "1" = Derating Level 2 active	The AC/DC power unit terminates the charging process (regular), due to a stage 2 overtemperature.
8	Free	-	-	-
9	Free	-	-	-
10	Free	-	-	-
11	Free	-	-	-
12	Free	-	-	-
13	Free	-	-	-
14	Free	-	-	-
15	Free	-	-	-

Table 22: Line 801
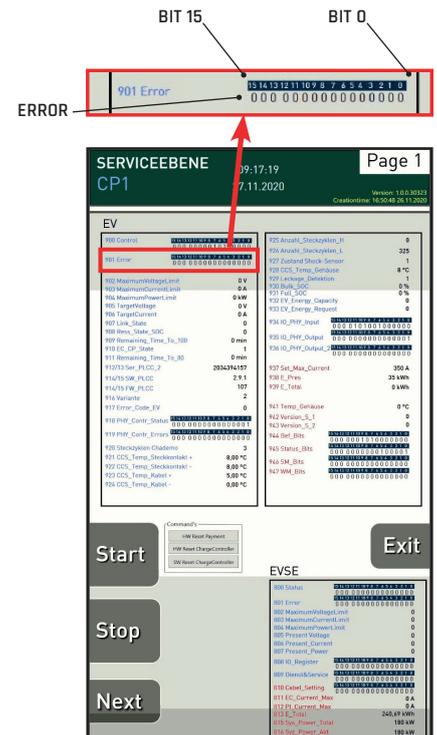
5.7.3   Lines 802 - 807

Lines 802 to 817				
Line	NAME	Factor	Value Explanation	Description
802	EVSE_MaximumVoltageLimit	1	[V] e.g. 1 = 1.0 V	Maximum voltage accepted by the e-vehicle.
803	EVSE_MaximumCurrentLimit	1	[A] e.g. 1 = 1.0 A	Maximum current accepted by the e-vehicle.
804	EVSE_MaximumPowerLimit	1	[kW] e.g. 1 = 1.0 kW	Maximum power accepted by the e-vehicle.
805	EVSE_PresentVoltage	1	[V] e.g. 1 = 1.0 V	Currently supplied voltage during charging process.
806	EVSE_PresentCurrent	1	[A] e.g. 1 = 1.0 A	Current supplied during charging process.
807	EVSE_PresentPower	1	[kW] e.g. 1 = 1.0 kW	Currently supplied power during charging process.

Table 23: Lines 802 to 807

5.7.4   Line 809 - Service

809 Service			
BIT	NAME	Value Explanation	Description
0	PLCC_Update start	Bit "1" = Connection being established	If this bit is set, a connection to the sharepoint for updates is established. If no connection can be established (timeout), an error bit (line 919/bit 15-see 5.5.5 on page 39) is set.
1	FTP-Dienst aktivieren	Bit "0" = Good Bit "1" = Error	Is realized by a FW service on the PLCC. This bit is set by the AC/DC power unit.
2	Free	-	-	-
3	Free	-	-	-
4	Free	-	-	-
5	Free	-	-	-
6	Free	-	-	-
7	Free	-	-	-
8	Free	-	-	-
9	Free	-	-	-
10	Free	-	-	-
11	Free	-	-	-
12	Free	-	-	-
13	Free	-	-	-
14	Free	-	-	-
15	Free	-	-	-

Table 24: Line 809

5.7.5   Lines 811 - 816

Lines 811 to 816				
Line	NAME	Factor	Value Explanation	Description
811	RM_EC_Max Current_Freigegeben	[A] e.g. 10 = 1.0 A	UINT16	Maximum enabled charging current: The same value (See line 937 5.6.1 on page 42) must appear in line.
812	RM_PI_Max Current_Freigegeben	[A] e.g. 10 = 1.0 A	UINT16	Currently not used
813	E_Total_High	[kWh] e.g. 100 = 1.00 kWh	UINT32	Meter readout of the charger
814	E_Total_Low	[kWh] e.g. 100 = 1.00 kWh	UINT32	Meter readout of the charger
815	System_Power	[kWh] e.g. 1 = 1.0 kWh	UINT16	AC/DC power unit: display of available power.
816	Available_Power	[kWh] e.g. 1 = 1.0 kWh	UINT16	AC/DC power unit: Display of the currently available DC power.

Table 25: Lines 811 to 816

6. Customer Service

The EnerCharge customer service is available during the regular business hours from
Monday to Thursday between 9am and 5pm (Fridays until 12pm).
Please note that this number is not intended for end customers.

You can reach the customer service at the following number: **+43 (0) 4715 22901 3339000**

6.1 Legal Notice

The manufacturer and distributor of the charger
and author of this manual is:

EnerCharge GmbH

Kötschach 66 | 9640 Kötschach-Mauthen | Austria |

Phone: +43 (0) 4715 22901 | E-Mail: info@enercharge.at

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#Be**EnerCharge**d

ED EnerCharge

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