EV Net COMPACT series

Type 3SLC, 3TLC

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OVERVIEW

OZEV Approved

SMART

Type 2 Connector

IP54 & IK10 Protection

The EV NET COMPACT series of EV chargers are smart AC level 2 charging stations, ideally suited for home and commerical installations.

Entirely designed and manufactured in the EU, COMPACT chargers offer up to 22 kW of charging power (7.6 kW for single-phase models) and multiple control and safety features for an easy and configurable charging experience.

This manual describes the COMPACT socketed and tethered models with RGB indication, their features, installation, and operation.

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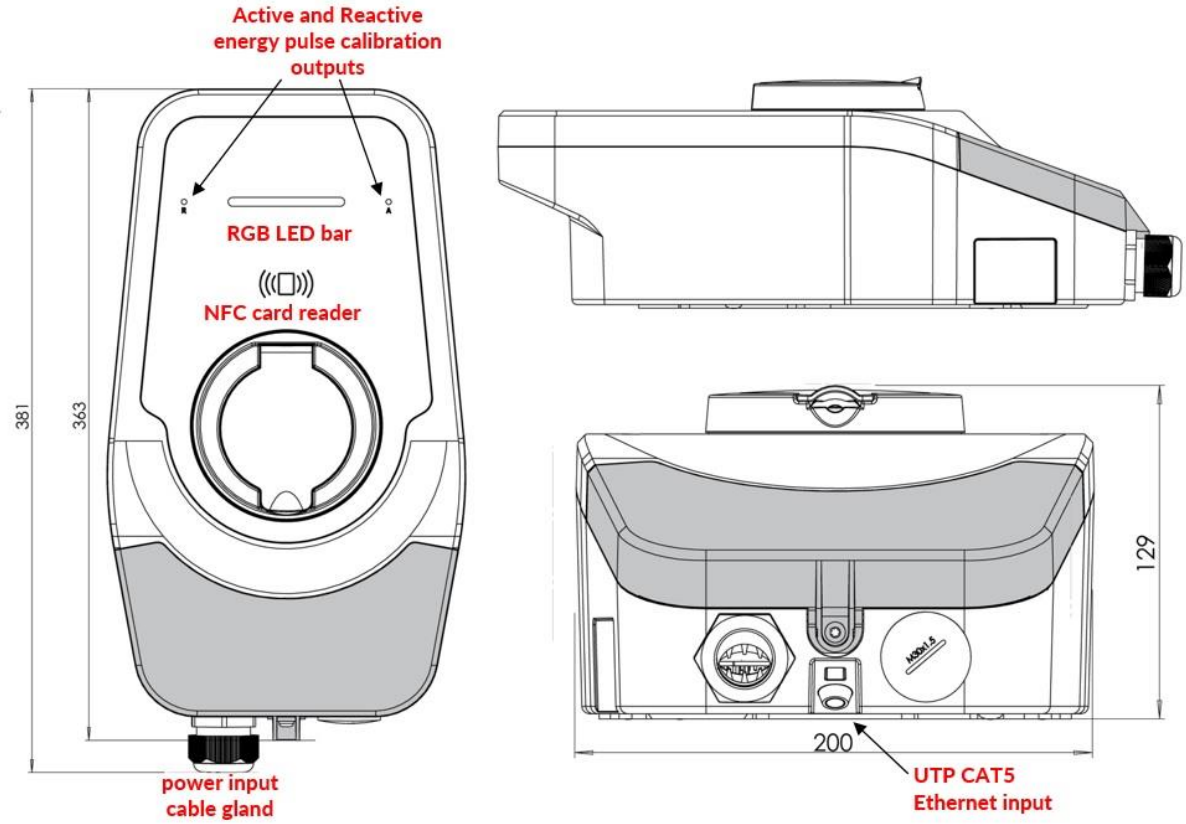
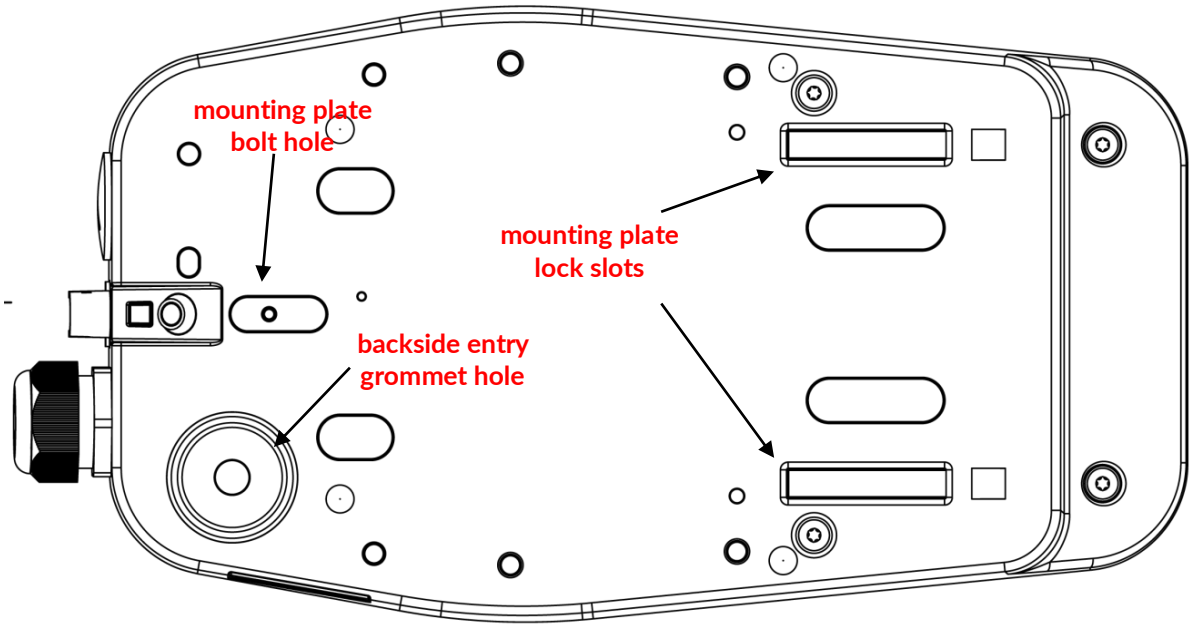
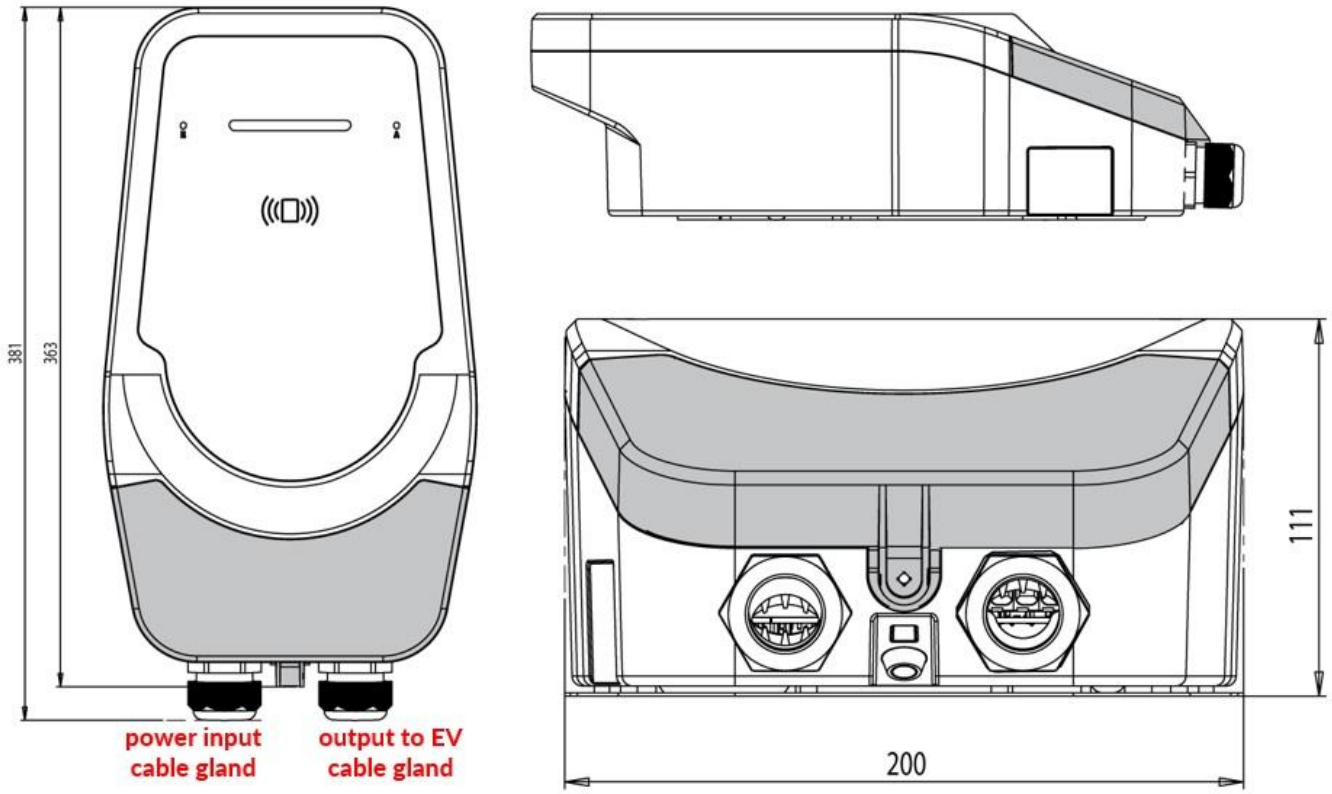


Socket model technical drawing with dimensions. All units in mm. Grey area denotes the service cover. This acts as a modular design allowing for quick access to the power and data cable section without accessing the rest of the unit.





Tethered model technical drawing with dimensions. All units in mm. Grey area denotes the service cover. Note the absence of a socket and the presence of a second power port for the tethered cable.

PRODUCT HIGHLIGHTS

- Configurable for 3-phase and 1-phase installations
- Compact and modular design allows for easy installation and servicing
- Integrated web client for setup and offline control
- OCPP 1.6 compatible for online control (via EVPoint app for iOS and Android)
- NFC-compatible authorization with card
- Electromechanical lock for socketed models for added safety
- All models feature RCD (AC + DC) protection, and PE-N fault detection
- Configurable accesories via RS-485: current monitoring or energy metering
- Dynamic load management via RS-485
- IP52-rated and impact resistant (IK08)

FEATURES AND DESCRIPTION

Smart and efficient charging

The COMPACT series belongs to a class of EVSE called smart chargers, because its entire functionality can be controlled remotely and automatically. This is enabled by the OCPP 1.6J protocol support embedded in the charger. This is a universally accepted control protocol for charging stations, meaning that any OCPP-based server can talk to, control, and remotely update the COMPACT, independent of service provider and other factors.

The main benefits of smart charging are the ease of use and flexibility it offers, because it enables the user to control the time, duration, and amount of charging that is delivered to their EVs. In locations where electricity rates are variable throughout the day, this translates into substantial energy bills savings, as the charger can be configured to take advantage of lower energy prices during off-peak periods. Additionally, the EV NET COMPACT has been designed to function with home solar installations. Thus, it can be set to provide charging only when excess energy is being generated, providing a very efficient utilization of energy resources. Smart charging also enables multiple chargers in a location to communicate with each other, and best utilize the available power to optimally charge several EVs.

The EV NET COMPACT requires an internet connection to execute its smart functions. It can be configured to support a primary and secondary network interface for redundancy. For example, it can maintain a wireless network connection, but fall back to GSM in case of poor connectivity. If no network connection can be established, the EV NET COMPACT is capable of operating in a configurable “offline plug-in charge” mode, whereby it works as a simple EVSE, providing maximum charging power when an EV is connected.

COMPACT series of chargers are fully configurable via a web interface client, which is accessible from any Wi-Fi-enabled device. An integrated BLE interface permits the user to provision the wireless access by setting the SSID and password from the EVPoint mobile app.

Access control

As the EV NET COMPACT range is intended for both residential and public applications, it has a number of access control functionalities, such as NFC (“smart card”) authorization, mobile app authorization, and full control by the OCPP server backend. Thus, a user can configure the access to their charger(s) from basic unrestricted, to higher levels of control, based on their application.

Rugged compact design

The EV NET COMPACT is designed to have a small footprint and to be easily installed in various locations, both indoors and outdoors. The COMPACT series is available in multiple variants that use the same enclosure, as a universal platform. Models are available as either socket- or tethered-type, giving clients flexibility in customizing their EV charging experience.

Built with safety in mind

The COMPACT series is designed with multiple safety interlocks in order to prevent the hazards associated with high-current, high-power devices, such as electrical shocks, fires, and equipment damage. The device can monitor the state of the electrical network and prevent installation overloads. All models in the range have a built-in AC/DC RCD, and will prevent leakage currents from causing damage to people and devices. The chargers utilize both sound and light signaling to report their state and possible faults, enabling quick and safe detection of problems. Socket-type COMPACT chargers come with a standard actuator locking mechanism, which prevents charging cable disconnection while powered, effectively minimizing the risk of arcing and related damage. All chargers are equipped with a tamper sensor, which can detect and report unauthorized opening of the charger body. Additional security features are implemented at the software and firmware level in order to safeguard the device from malicious code and external attacks.

Accessories enable dynamic load management (DLM) and external metering

Thanks to their OCPP compatibility, EV NET chargers can be configured in groups of 2 or more chargers sharing the same electrical infrastructure. By monitoring their individual and total consumption, the chargers can automatically balance the load they require from the mains supply to provide optimal charging capacity without straining the electrical network. Offline DLM can also be implemented via the COMPACT's RS-485 connectivity, permitting multiple chargers to comunicate together localy and allocate the appropriate charging power. Dynamic load management features are configurable and ideally suited for fleet and public applications.

External MID energy meters can also be connected simultaneously via RS-485 to the COMPACT series chargers in order to provide accurate energy metering in commerical and fleet installations with a billing system.

TECHNICAL SPECIFICATION

Main Features			
Electrical	Power	7.4 kW max	22 kW max
	Voltage	230 VAC, 50 Hz, 1-Phase	3 x 230 / 400 VAC, 50 Hz, 3-Phase
	Current	1 x 32 A max	3 x 32A max
	Power Level Control	6-32 A (software control)	
	Connector Type	IEC 62196 Type II	
	Standby power	<8 VA, 5.2 W	
	Protection	• RCD Type A (30 mA)/ DC (6 mA), IEC 61008-1 • Neutral voltage (70 V_{rms}) • Overcurrent (Overcurrent protection trip when I_L> 1.2 x I_{max}) • Temperature (limiting 72°C -78°C, fault at 79°C) • Undervoltage (software fault at 90% V_{nom} with configurable offset, hardware shutdown at 115 V_{rms} ±10 V_{rms}) • Overvoltage (software fault at 110% V_{nom} with configurable offset, hardware shutdown at 300 V_{rms} ±10 V_{rms}) • Reverse phase or phase-to-phase: the hardware can handle mains misconnection • Tamper sensor: detects unauthorized opening of the charger body	
	Certification	CE (IEC 61851-1, IEC 61851-2), see below for full list	
Mechanical	Material	PC Plastic (up to 100% recycled feedstock) V-2 UL94 Flame retardant	
	Lock mechanism	Servo-type actuator lock (socketed models)	
	Dimension (WxDxH)	200 x 129 x 350 mm (socketed) ; 200 x 108 x 350 mm (tethered)	
	Color	Matt Black	
	Weight, approx:	3.10 kg (tethered model w/ bracket, no cable) 3.50 kg (socketed model w/bracket) Package weight: 1.5 kg	3.20 kg (tethered model w/ bracket, no cable) 3.60 kg (socketed model w/ bracket) Package weight: 1.5 kg
	Installation Type	Hard-wired via 30 mm cable gland, 1x/3x 40A circuit rating	
	Mounting	Vertical Wall-mounted using included metal bracket	
Connectivity	Access Type	**Cellular**: dual-mode 2G/4G **WLAN**: 2.4 GHz (802.11 b/g/n/e/i) **Bluetooth LE**: for configuration of wireless access point	
	Protocol	OCPP 1.6 JSON	
	Wireless capabilities	**Access Point:** integrated web server for settings and diagnostics (web client) **Station:** for backend connectivity **Note:** Supports simultaneous Access point and Station functionality	
Authorization/ Status	Reader	Integrated NFC reader, 13.56 MHz, MIFARE compatible	
	App	EVPoint App Android & IOS	

Indicator	**LED**	RGB horizontal bar light (9 states)
Measurement	**Metering**	Internal: corresponds to accuracy class 2%
	CT Clamp	External current monitoring via dedicated current clamp device. Wired communication via RS-485 up to 30m.
	External MID meter compatibility	Yes, on request. Can be configured for operation with MODBUS RTU MID electricity meters via RS-485 wired communication up to 30m.

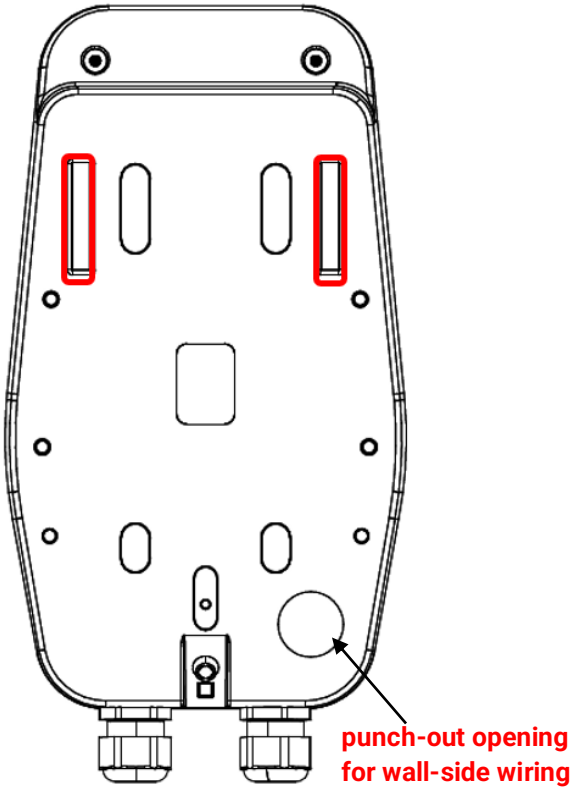
3TLC Features	
Built in Cable	Tethered cable; Type 2 plug
Cable	5m tethered cable

Remote Diagnostic and Management Features
Error detection and auto restore
Remote Reset
Remote Recalibration
Remote Firmware Update

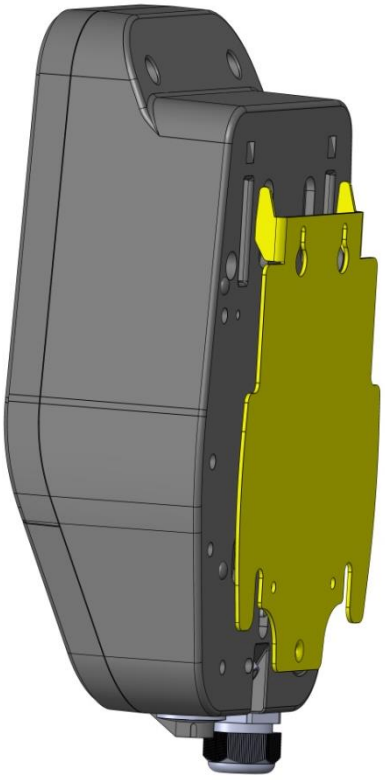
Compliance
General: IEC 61851-1:2017 Part 1, BS 7671:2018
EMC: Directive 2014/30/EU IEC 61851-21-2:2018 Part 21-2 (Emissions Class B, Immunity – Residential Environments); Class B for EN 55032:2015, EN 61000-3-2: 2014, EN 61000-3-3: 2013, EN 61000-4-2: 2009, EN 61000-4-4: 2004, EN 61000-4-5:2014; EN 61000-4-8: 2009, EN 61000-4-11: 2004
Safety: Directive 2014/35/EU IEC 60950-1:2005, IEC 61508, IEC61810-1 (contactors),EN 60947-2:2017/A1:2020, ISO 13849-1:2015, IEC60364-4-41, IEC 61008-1:2012 (RCD)
Radio equipment: Directive 2014/53/EU EN 62311:2008; GSM module - EN 60950-1:2006 & A11:2009 & A1:2010 & A12:2011 & A2:2013, ETSI EN 301 489-1 V2.2.0, EN 301 511 V12.5.1 (2017-03); WiFi module - EN 301 489-1 V2.2.0 (2017-03), EN 301 489-17 V3.2.0 (2017-03), EN 300 328 V2.1.1 (2016-11)

Working and Storage Environment	
Electrical	OVC III, PD2
IP Rating	IP54
IK Rating	IK08 (base model)
Temperature	Operational: -25°C ÷ +55°C(3K6) Transportation: -40°C ÷ +85°C (2K4 modified)
Cooling	Natural air cooling
Storage Temperature	-40°C to 70°C (1K5)
Humidity	10% ÷100% Relative humidity, non-condensing
Altitude	-50 to +2000 m

Compact Wall Mounting Plate



Back of unit



Unit resting on mounting plate (yellow)

What's in the box

No	Item	Quantity
1	COMPACT 3(S/T)LC with installed wall mounting bracket	1
2	NFC MIFARE card with printed CP credentials	1
3	Cable gland HSK-M30B	1
4	Kinglok grommet – KCGN-M32	1
5	Mounting screws ISO 14585 ST 4.8x50-C	4
6	Expansion plug UX-R FISCHER, Φ 8 x 50	4
7	User manual	1
8	Quick installation guide with drill holes template	1
9	EU Declaration of conformity	1
10	Warranty card	1

INSTALLATION GUIDE

1. Before installation: Pre-requisites

1.1. Safety and precautions

Intended use: This product is solely designed and approved for use as an Electric Vehicle Supply Equipment (EVSE), used to supply charging current to EVs and PHEVs that do not require ventilation. It is intended to be used within specifications and only with the appropriate auxiliary equipment and adequate wiring. It is not intended to be repurposed or reconfigured for any application or use not within its specification. Failure to operate the device as intended may result in severe damage to equipment and personnel and poses a fire and explosion hazard.

Risk of electric shock: This device utilizes voltages that pose an immediate threat to life. It shall be installed only by a licensed or experienced electrician. The device and auxiliary equipment shall be carefully inspected for signs of damage (cracked case, frayed or exposed conductors, and compromised insulation) before installation or use. Any installation or servicing activities shall be executed only after the mains supply has been disconnected from the main breaker or by physically disconnecting the supply conductors at the main distribution board.

This device is intended to be connected to a centrally grounded system. The PE conductor shall be adequately sized and grounded to earth at the service equipment. The EVSE has a built-in RCD, which protects the downstream conductors from earth leakage events. To protect upstream conductors, **a RCD Type A– AC: 30mA/ DC: 6mA must be used at the supply equipment.**

Risk of fire or explosion: This device handles high voltages and currents. Use of improperly rated conductors can result in excessive heating, leading to a risk of fire and damage to the mechanical integrity of the system. AC grid connection shall be made in accordance with the device technical requirements to ensure that the installation is sufficient to supply the rated maximum current and power. The product uses relays, which can cause arcs during switching. **The device shall be installed in a location free from flammable gases and liquids to avoid an explosion hazard.**

Mechanical: The product is intended for wall or panel mounting. It shall not be installed on ceilings, floors, or inclined walls. To avoid mechanical damage, the product shall be mounted as described in the installation guide, and using the specified tools and materials.

Proper Personal Protective Equipment is recommended, including but not limited to: eye protection, electrical shock protection, gloves, and other appropriate protection.

1.2. Tools and materials

1.2.1. Tools

- A set of Torx screwdrivers with insulated handles
- Torque limited drill or cordless screwdriver, drill bits for masonry (8 mm)
- Hammer drill and bits
- Electrician kit, including pliers, strippers, ferrule and RJ-45 crimping tools

1.2.2. Materials

- Conductors (insulated single-core or stranded), conduit, cable tie-downs, cable clamps
- Signal cables (UTP5 cable)
- Connectors (RJ-45) and ferrules
- Insulation materials
- Wall anchors for mounting the COMPACT body

1.3. Site survey and selection

The EV NET COMPACT can draw up to 32A per phase at 230VAC and **shall be installed on a dedicated circuit**(s). The entire building electrical installation must be adequately sized to accept this load under peak loading conditions. Ensure that all elements of the electrical installation, from the utility connection, through to the dedicated EV NETCOMPACT circuit are adequate for the rated power.

Ensure that the distribution panel has a position for a single or 3-pole circuit breaker (CB). Although the COMPACT has overcurrent protection, each phase **must** be protected by the CB. Details are provided in the following sections regarding its rating and possibilities to derate.

The COMPACT is designed for indoor and outdoor installation. To ensure a long service life, select a location that is not exposed to harsh elements, such as direct sunlight and rainfall, has proper ventilation and normal humidity.

Consideration about connectivity must also be made. For example, if the COMPACT is to be connected online via Wi-Fi, select a site within range of the wireless network to ensure a steady connection. Alternatively, select a site with easy access to mobile network coverage. Consider that CT clamps, which are installed at the main distribution panel, need a wired connection to the charger. If a MID meter is to be installed, allocate space which is compliant with the manufacturer's requirements.

ELECTRICAL CIRCUIT PROTECTION (UK Requirements):

A type 2 surge protection device should be installed according to the guidance on requirements in BS7671:2018 section 443.

All installations must comply with current wiring regulations (**18th Edition Wiring Regulations BS767) and be carried out by a qualified electrician**.

1.4. Electrical wiring and breaker requirements

Calculating circuit voltage drop and sizing circuit wiring and breaker

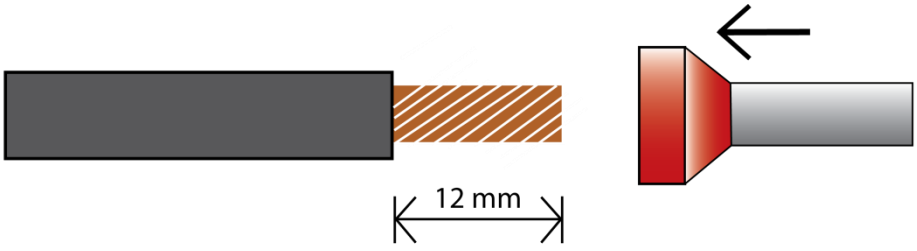
Installed length, m	Voltage drop in copper conductorat 40A, VAC			
	Area, mm^2			
	4*	6**	10	16
5	1.7	1.2	0.7	0.4
10	3.4	2.3	1.4	0.9
15	5.2	3.5	2.0	1.3
20	6.9	4.6	2.7	1.8
25	8.6	5.8	3.4	2.2
30	10.3	7.0	4.1	2.6
35	12.0	8.1	4.8	3.1

Note: Shaded areas indicate excessive voltage drop
***recommended minimal conductor area for 16A charging**
**** recommended minimal conductor area for 32A charging**

Installed length, m	Voltage drop in aluminium conductor at 40A, VAC			
	Area, mm^2			
	4	6*	10**	16
5	2.6	1.8	1.1	0.7
10	5.3	3.5	2.2	1.4
15	7.9	5.3	3.2	2.0
20	10.6	7.0	4.3	2.7
25	13.2	8.8	5.4	3.4
30	15.8	10.6	6.5	4.1
35	18.5	12.3	7.6	4.8

Note: Shaded areas indicate excessive voltage drop
***recommended minimal conductor area for 16A charging**
**** recommended minimal conductor area for 32A charging**

In order for the COMPACT to provide full charging power, it must be supplied through a dedicated circuit capable of handling the full 32A of **current per phase**with less than 10 VAC voltage drop. The circuit's nominal rating should be no less than 40A. The circuits can be implemented with solid or stranded copper wire, or copper-clad aluminum wire. Stranded conductors shall be connected to the device only after a ferrule is installed.



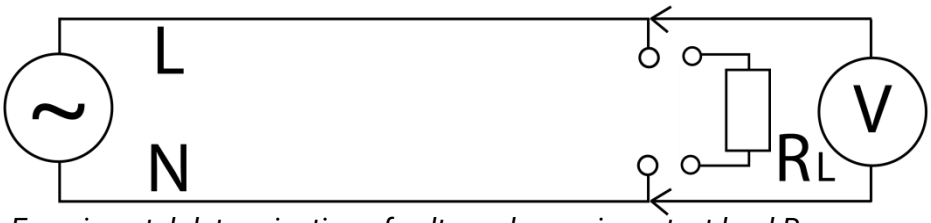
Ferrule installation for stranded power conductors

The tables above can be used to determine the approximate voltage drop at peak currents **per phase**. **The installed length is the running distance from the source panel to the EV NET COMPACT** (the table takes into account resistance in **both legs** of the circuit).

The following table can be used to determine the maximum power an existing circuit can provide, if there is no provision for a new installation:

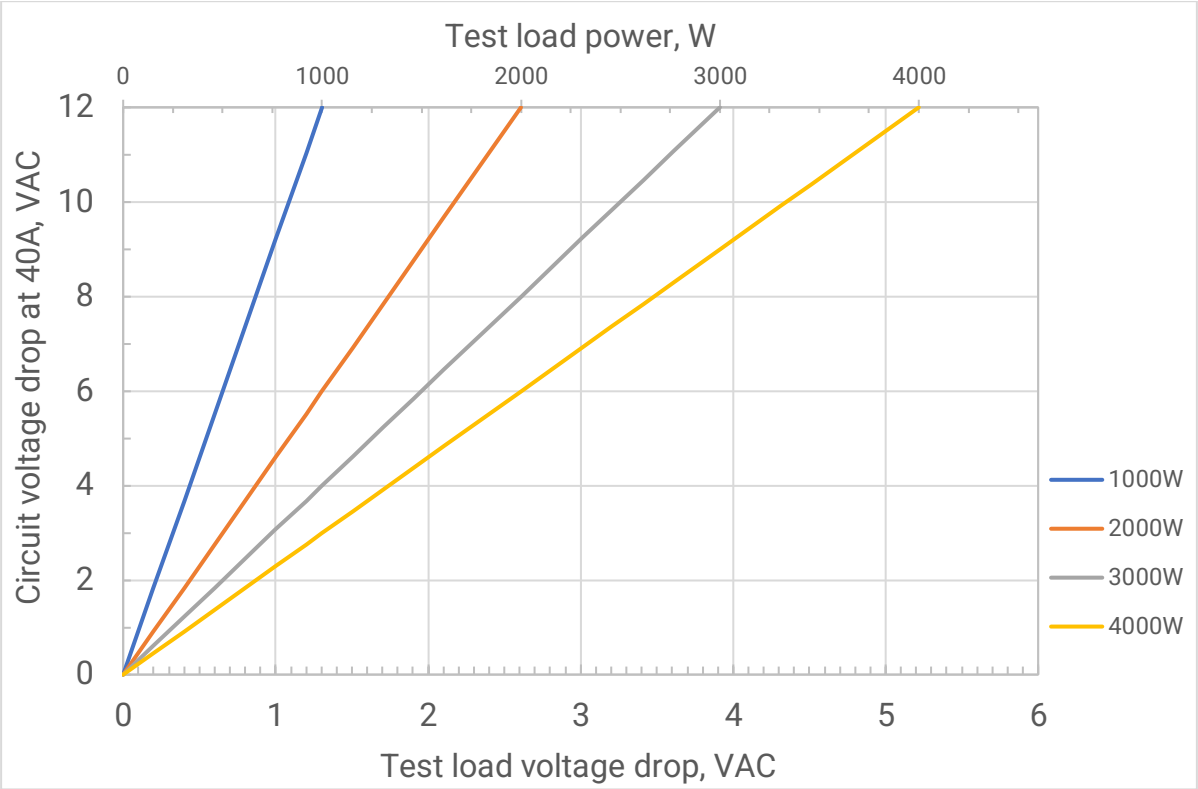
Derating guideline for single-phase charger*		
Circuit Capacity**, A	Max Charging Current, A	Max Delivered Power, kW
40	32	7.4
32	25	5.8
25	20	4.6
20	16	3.7
16	13	3.0
* also applies per-phase for 3-phase chargers ** C-curve rating of circuit breaker		

The circuit voltage drop at peak load can also be determined using a test load R_L of lower power rating. The voltage drop is calculated from the difference between the open-circuit and loaded voltage at the circuit load side: **Voltage drop = $V_{open\text{-}circuit}$ - V_{Load}**



Experimental determination of voltage drop using a test load R_L - measurement

The nomograph below can be used to calculate the circuit voltage losses at peak current. For a given test power load, a line can be drawn from the origin to the corresponding value on the upper horizontal axis. Then, the measured voltage drop can be matched to the corresponding peak current drop by reading out the left vertical axis. The nomograph includes sample plots for 1-4 kW test loads and assumes nominal 230V at which the test load is specified.



Calculation of voltage drop at 40A based on test load of known power

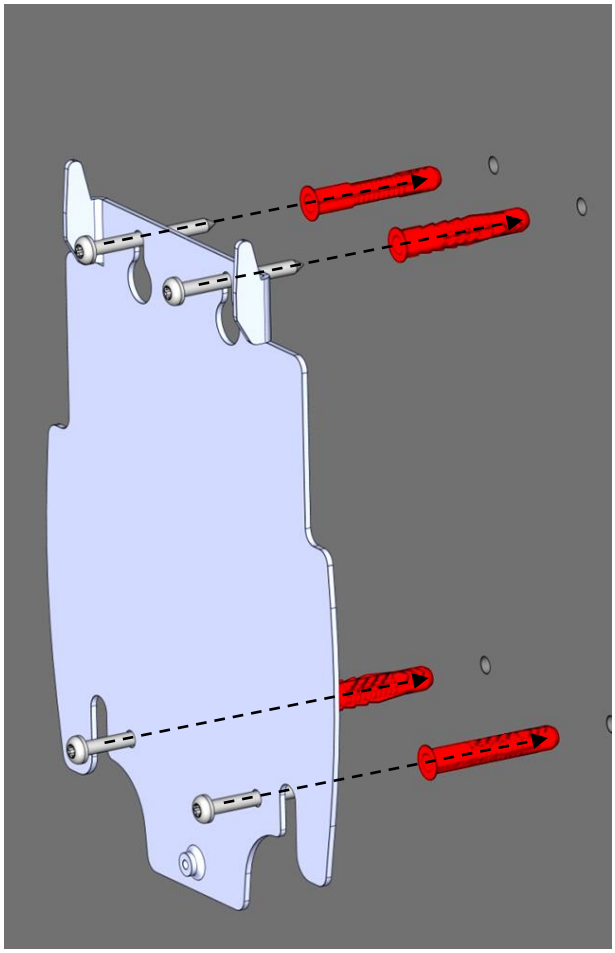
In circumstances where the supply installation is inadequate for the full charging output of the COMPACT, refer to the derating guideline and set the maximum output current accordingly when comissioning the charger.

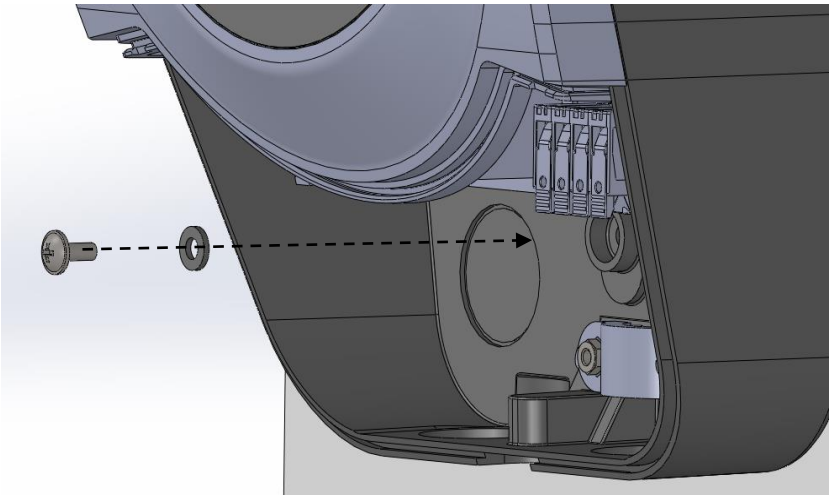
2. Mechanical installation: mounting plate

The EV NET COMPACT comes with a mounting accessory to facilitate installation and servicing. The charger locks into the mounting bracket and is secured with a single screw, located under the service hatch.

The bracket is wall-mounted via four anchor bolts provided in the kit. A drill template is available on the back of the quick installation manual, which can be used to correctly locate the holes for the anchoring bolts.

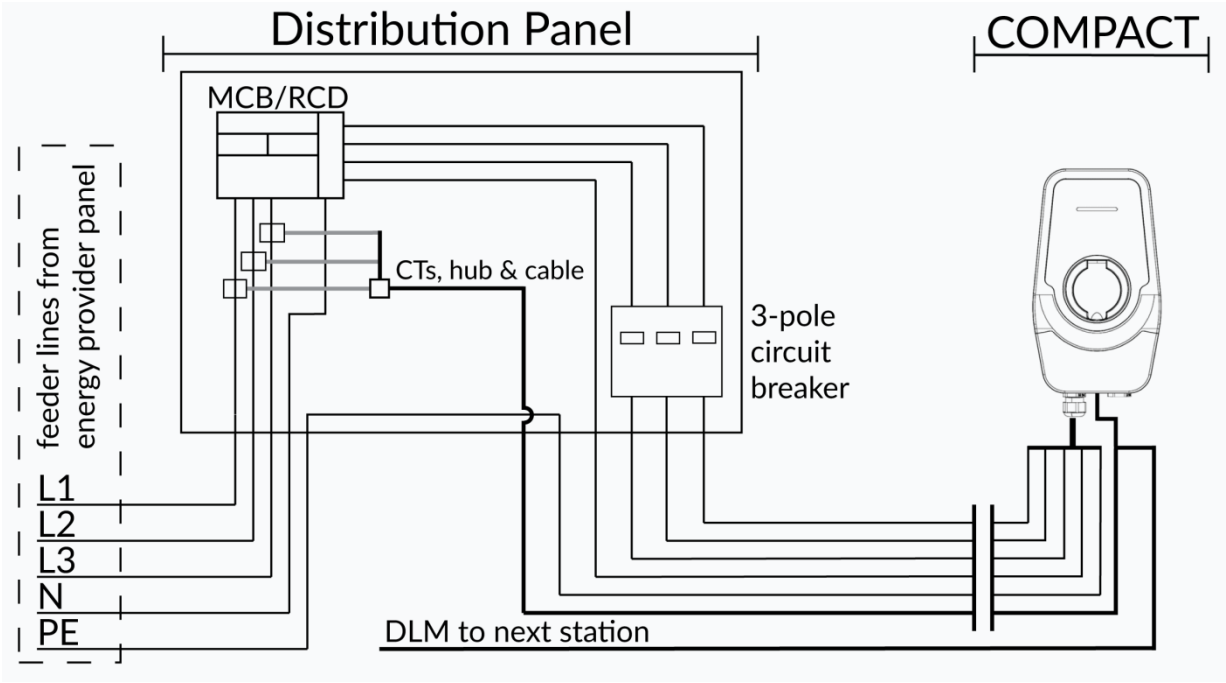
The COMPACT body is attached to the mounting plate by locking its upper side onto the metal hooks and then securing the bottom as shown below.

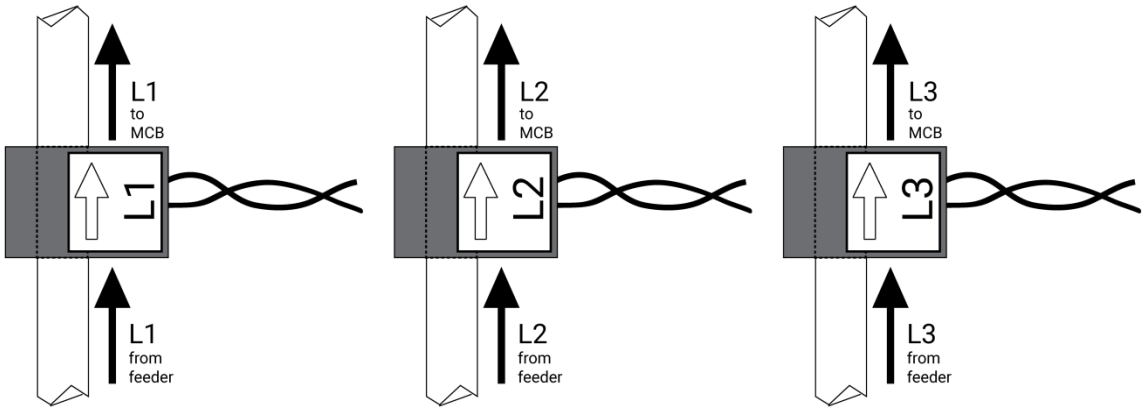




3. Installation: Electrical

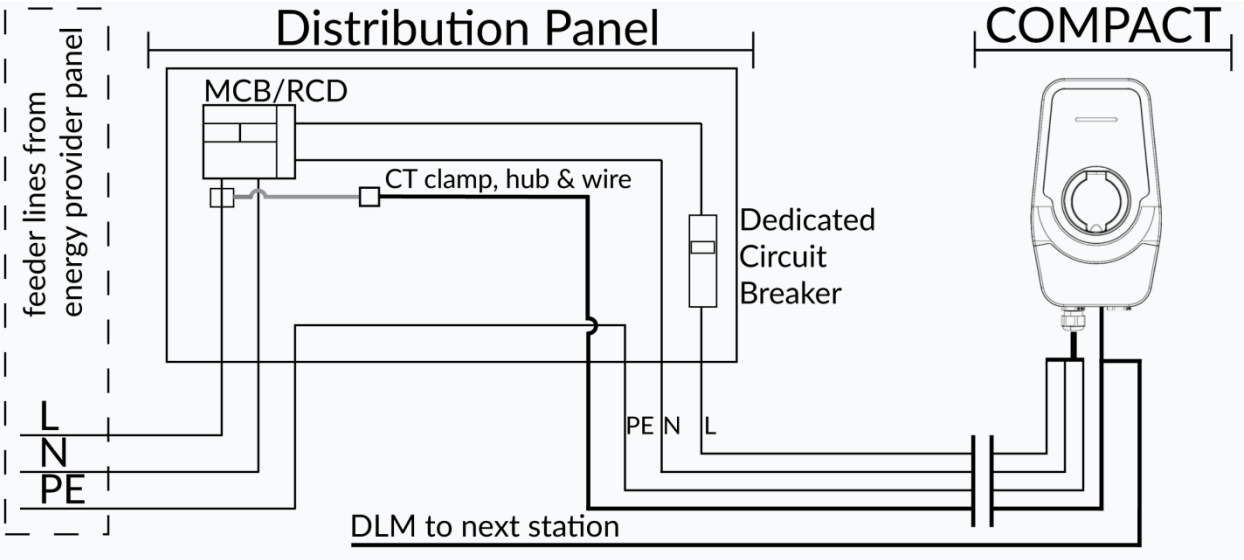
3.1. Overall system wiring diagram: 3-phase with CT clamps

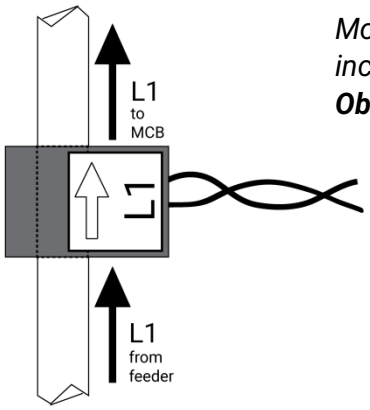




Mounting and orientation of current transformers (CTs) on the incoming supply cables of the electrical mains installation. ***Observe arrow directions and line markings!***

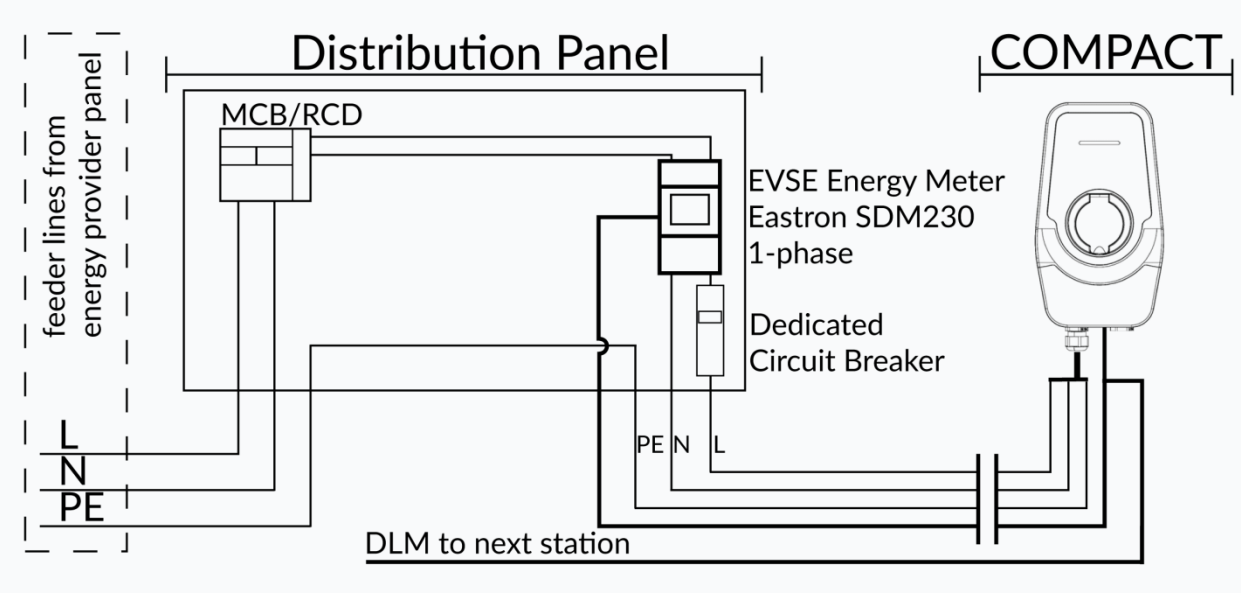
3.2. Overall system wiring diagram: 1-phase with CT clamp

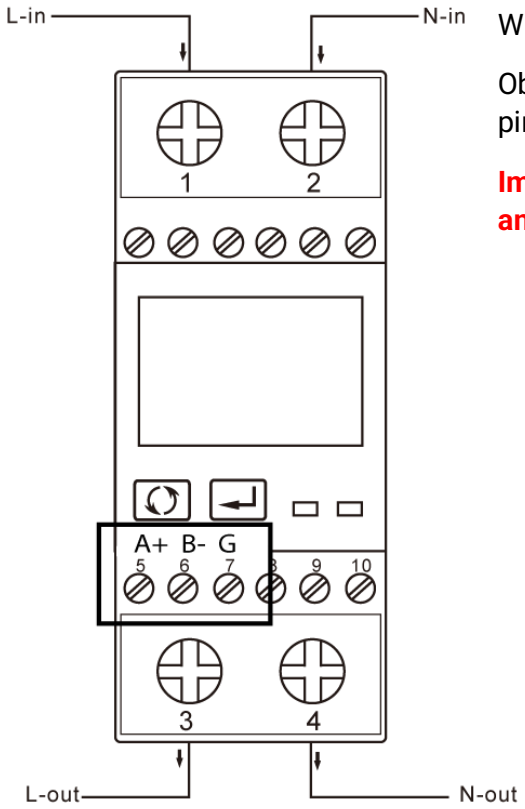




Mounting and orientation of current transformers (CTs) on the incoming supply cables of the electrical mains installation.
Observe arrow directions and line markings!

3.3. Overall system wiring diagram: 1-phase with MIDmeter



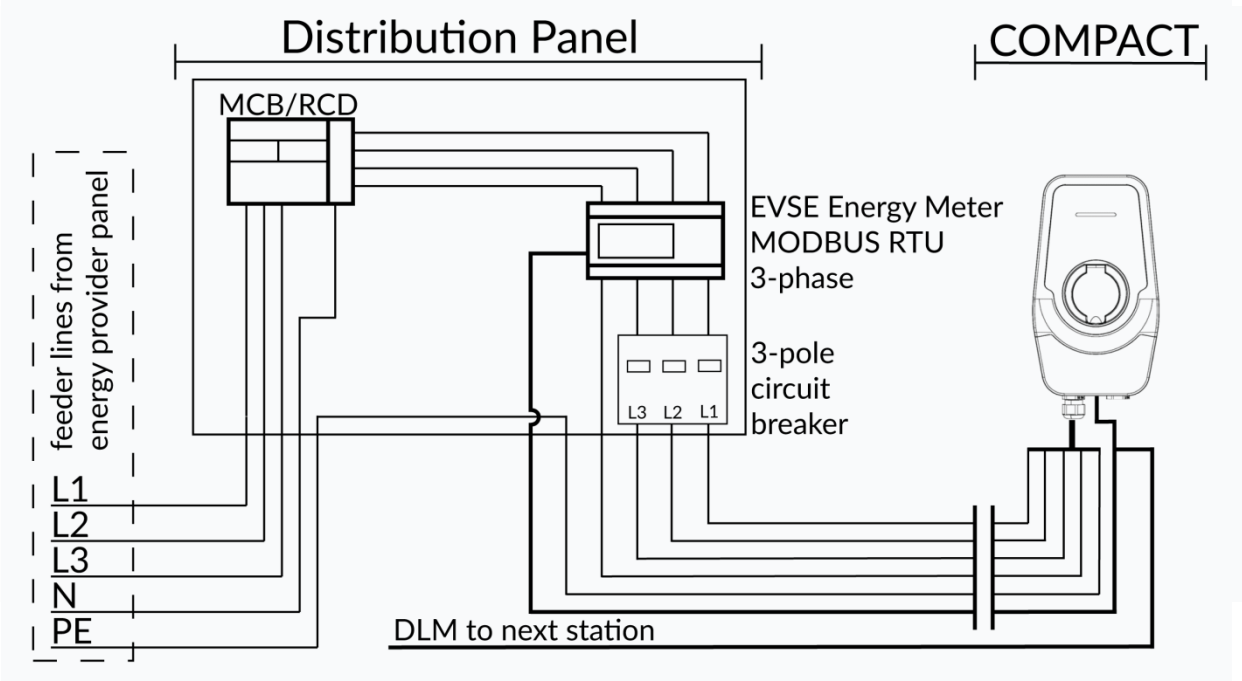


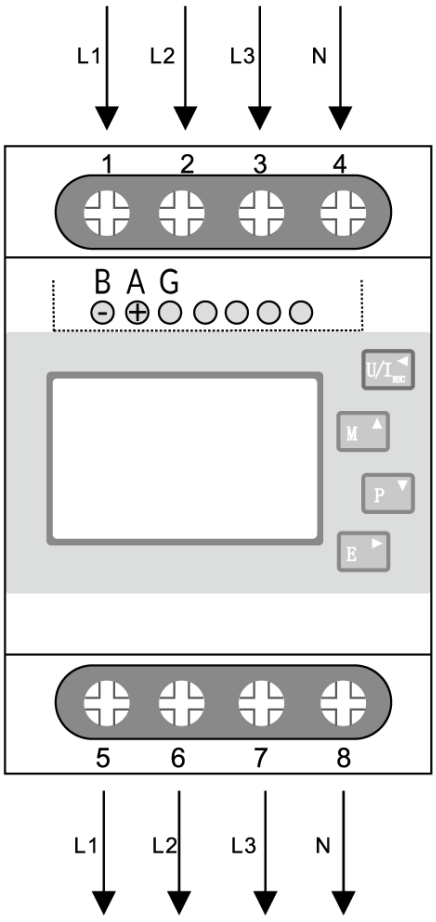
Wiring diagram for a 1-phase meter (**MODBUS RTU)**

Observe the direction of power line wiring and the pinout for the RS-485 communication bus (G=GND).

Improper connection may result in serious damage and/or injury hazards!

3.4. Overall system wiring diagram: 3-phase with MID meter

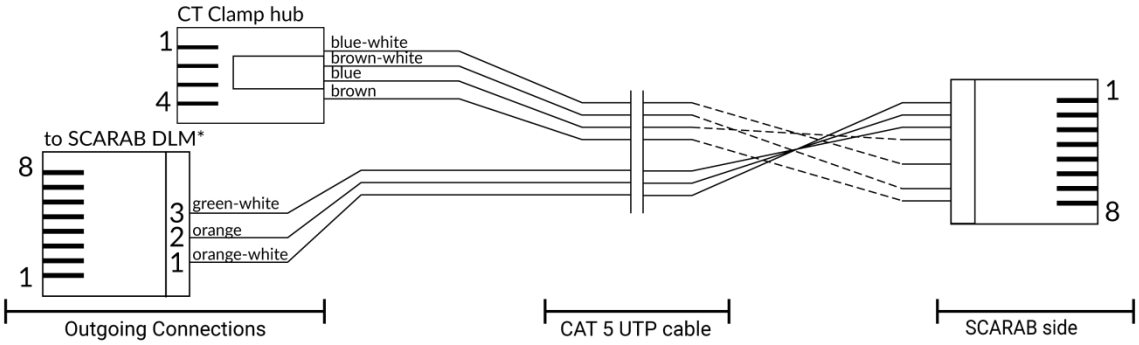




Wiring diagram for a 3-phase meter (**MODBUS RTU)**

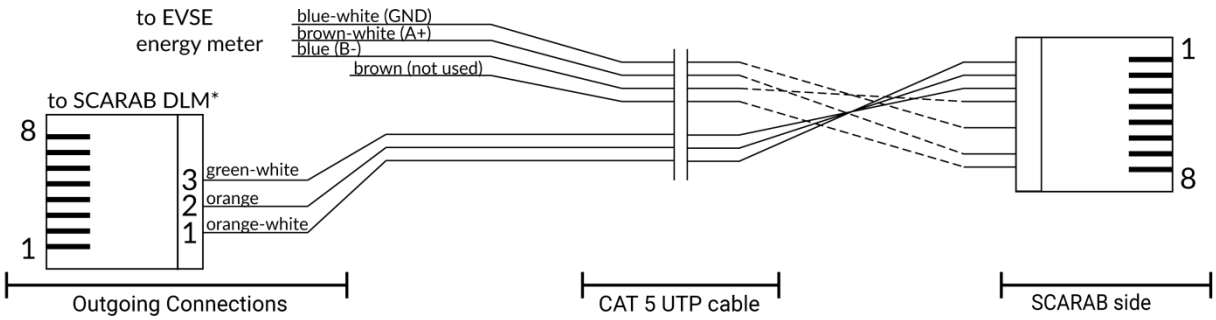
Observe the direction of power line wiring and the pinout for the RS-485 communication bus (G=GND).

Improper connection may result in serious damage and/or injury hazards!



Combined DLM and RS-485 cable pinout for CT clamp connection

For installations with 485 communication, the wiring connects to the COMPACT via the RJ-45 port on the device, which provides two isolated RS-485 channels, with ground connection and a 12V supply (15mA max) for the CT clamp supply. Since every installation will have custom lengths of cable runs, the installers will determine the appropriate lengths of signal cables to use (**up to 30 m for both DLM and CT clamp/energy meter connections**).



Combined DLM and RS-485 cable pinout for energy meter connection

Due to the universal availability of CAT5 UTP cable, it can be used as a combined cable for the DLM and CT clamp connections, avoiding a second run of signal wires. Two twisted pairs are used for the CT clamp or meter connection and one for the DLM feature, along with a single wire for GND. The following table summarizes a suggested connection scheme:

Interface		Interface Pin #	COMPACT RJ-45 Pin #	Wire Color
CH1: RS-485 CT/Emeter	GND	1	5	blue-white
	A+	2	7	brown-white
	B-	3	4	blue
	VCC 12V	4	8	brown
CH2: DLM Network*	RS-485 A+	1	1	orange-white
	RS-485 B-	2	2	orange
	DLM GND	3	3	green-white
	NC**	6	6	NC

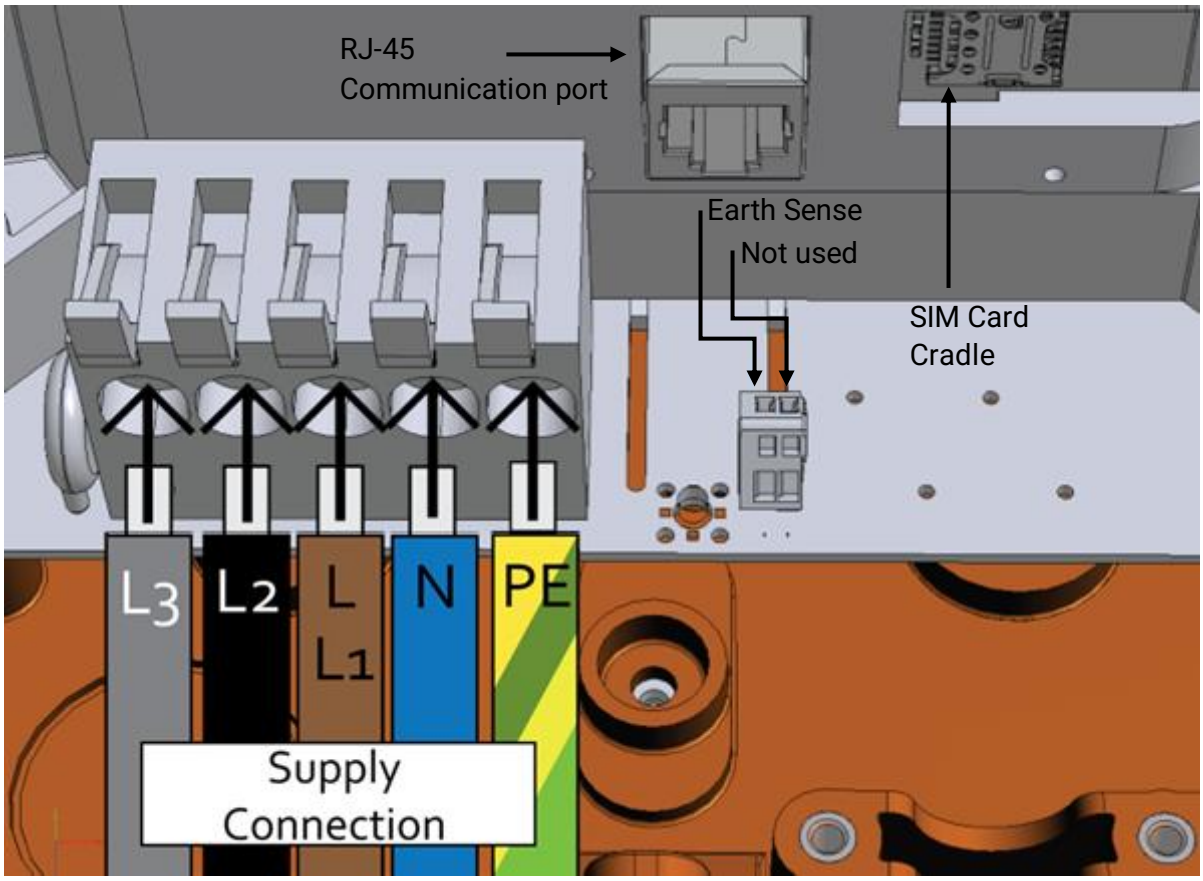
* Pins 4,5,7,8 can be connected for following charger's CT clamp or energy meter in DLM networks
** No connection

3.5. COMPACT wiring scheme

The power and signal conductors can be connected to the device after the COMPACT body has been mounted to the wall and the cable glands have been installed. The conductors are pulled through the gland with enough slack to make the connections without strain. The COMPACT uses lever terminal blocks for all connections except for the output PE terminal for tethered models, which requires a round cable terminal lug. COMPACT series 3SLC/3TLC can be configured as either single or three-phase models. Observe the respective wiring procedure and subsequent commissioning steps to ensure proper operation.

Safety note: before working with bare conductors, ensure that the power is disconnected and the circuit is not live!

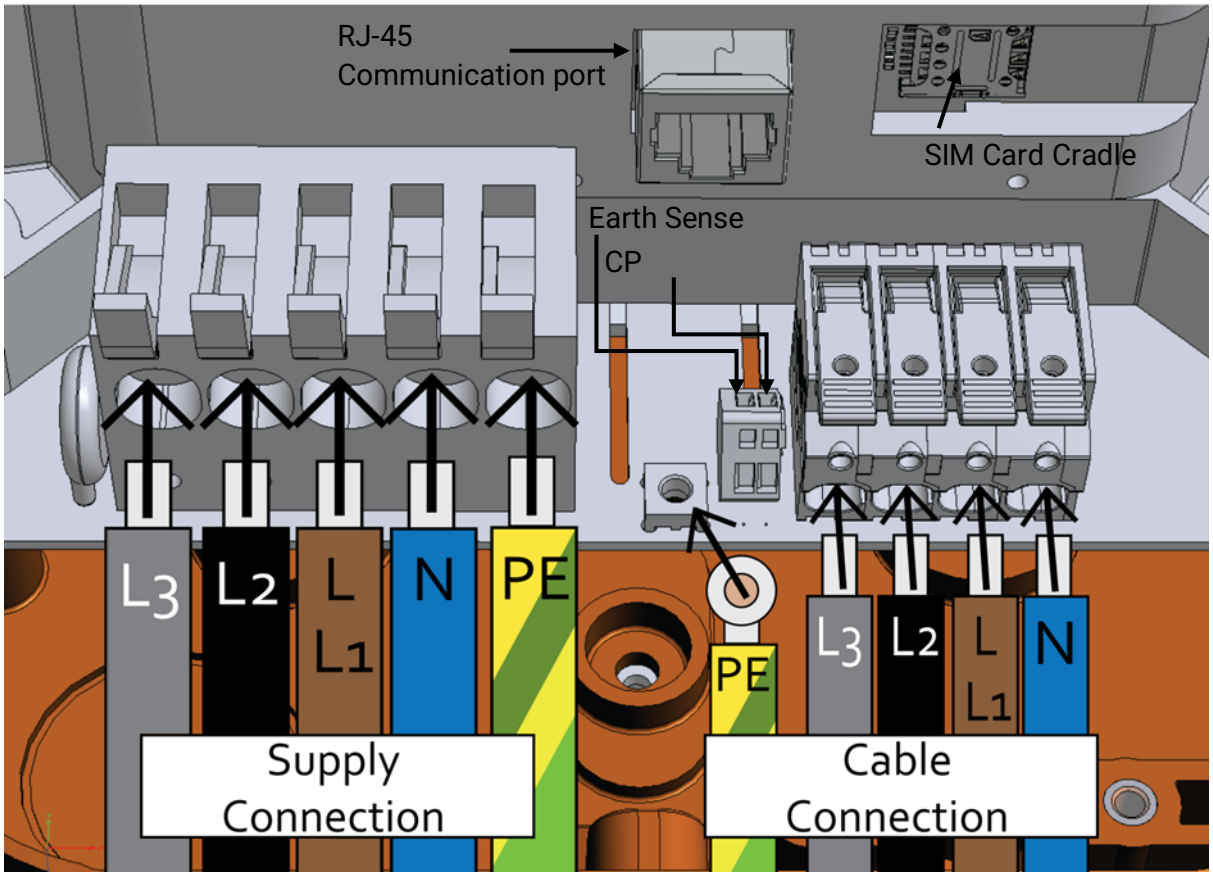
3.5.1. Socketed



Socketed COMPACT models need the following setup:

- Communication cable (RS-485 connections) – to RJ-45 Port
- SIM Card for network connection
- Power:
  - Single-phase models – L/N/PE connection from distribution board
  - Three-phase models – R/S/T (L1/L2/L3) + N + PE connection from distribution board
- Earth sense connection (for diagnostic use only, not configured in installations)

3.5.2. Tethered



Tethered COMPACT models need the following setup:

- Communication cable (RS-485 connections) – to RJ-45 Port
- SIM Card for network connection
- Power:
  - Single-phase models – L(L1)/N/PE connection from distribution board
  - Three-phase models – R/S/T (L1/L2/L3) + N + PE connection from distribution board
- Output:
  - Single-phase models – L(L1)/N/PE connection to tethered cable
  - Three-phase models – R/S/T (L1/L2/L3) + N + PE connection to tethered cable
  - CP connection from tethered cable
- Earth sense connection (for diagnostic use only, not configured in installations)

***Note:** the COMPACT tethered chargers use a dedicated PE output terminal. Connection to the terminal is made using a secure cable lug and M4 screw.*

3.6. Installation: RS-485 peripherals (CT clamp/E-meter)

The COMPACT series 3SLC/3TLC support 2 channels of peripheral devices via RS-485 (wired twisted pair connection extending up to 30m). Currently supported devices are CT clamps and Modbus RTU energy meters (e.g. Eastron "Modbus V2" series, #230 for single-phase and #630 for three-phase) on **Channel 1** and DLM (dynamic load management) on **Channel 2**. The COMPACT supports **one** device on the RS-485 bus Channel 1 and **multiple** devices (other COMPACT chargers in a DLM network) on Channel 2.

CT clamps are intended to be installed on the current-carrying live conductors ahead of the MCB. They monitor the total installation power (e.g., of an entire house or parking lot) and relay the values to the COMPACT unit, which can then regulate its output power to prevent the MCB from tripping.

CT clamp kits consist of a split-core current transformer hard-wired to a CT transmitter hub, which measures and converts the reading of the transformer into digital signals for the COMPACT.Ensure that the CT clamps are secured to their designated phase in three-phase installations. Failure to do so may result in incorrect current readings and charging malfunction. If a COMPACT is configured as a single-phase charger, it may use a single-phase CT clamp kit or a 3-phase kit where only the L1 current transformer is connected to the feeder line supplying the charger.

When an external MID energy meter is used on the RS-485 bus, the EVSE will obtain the voltage, current, and power measurements from the device and store them in its internal memory. The MID meter is intended to be installed immediately upstream of the COMPACT, so that it will only monitor and measure the power for charging EVs. As noted, the COMPACT series is guaranteed to work with Eastron Modbus DIN rail meters. Other meters that use the **Modbus RTU** protocol can be used, provided that the following required parameters are met:

- Baud rate: 9600bps.
- Start bit: 1
- Data bits: 8
- Parity: None
- Stop bits: 1
- MDBUS device address: 0x01

The following table provides the register set that must be implemented in a compatible MID meter (parameters marked with an asterix * are required for three-phase measurements):

Address (Register)	Parameter Number	Modbus Input Register Parameter	Units	Hi Byte Addr	Lo Byte Addr
30073	37	Total Import kWh	kWh	00	48
30075	38	Total Export kWh.	kWh	00	4A
30001	1	Phase 1 line to neutral volts	Volts	00	00
30003	2	Phase 2 line to neutral volts*	Volts	00	02
30005	3	Phase 3 line to neutral volts *	Volts	00	04
30007	4	Phase 1 current	Amps	00	06
30009	5	Phase 2 current *	Amps	00	08
30011	6	Phase 3 current *	Amps	00	0A
30013	7	Phase 1 power	Watts	00	0C
30015	8	Phase 2 power *	Watts	00	0E
30017	9	Phase 3 power *	Watts	00	10

4. Installation: Commissioning

Only commission the COMPACT after all electrical and mechanical prerequisites have been fulfilled.

Before switching on the power to the COMPACT circuit, ensure that all electrical connections have been made securely and that no conductors remain exposed or touching. Ensure that the two sections of the device have been firmly secured with the mounting bolts.

On power-up, the COMPACT will provide visual and sound indication. It will beep briefly and the RGB light ring will light in yellow. The device can then be configured via the web client. Until it is configured, it will remain in the same state, indicated by a constant yellow light. If the product has been preconfigured to connect to a backend server and has an accessible internet network, it will connect and indicate an available status by a constant green light.

4.1. Connecting the COMPACT to an OCPP backend

To function as a smart charger, the COMPACT must connect to the Internet and access an OCPP-based backend. It can achieve this via two physical interfaces: cellular (GSM) and WiFi. For uninterrupted operation, the device is able to switch between interfaces, automatically falling back to a functional connection. Internet connectivity is configured in the charger's web client or the installer's mobile app as further described in the commissioning steps. The following information must be considered:

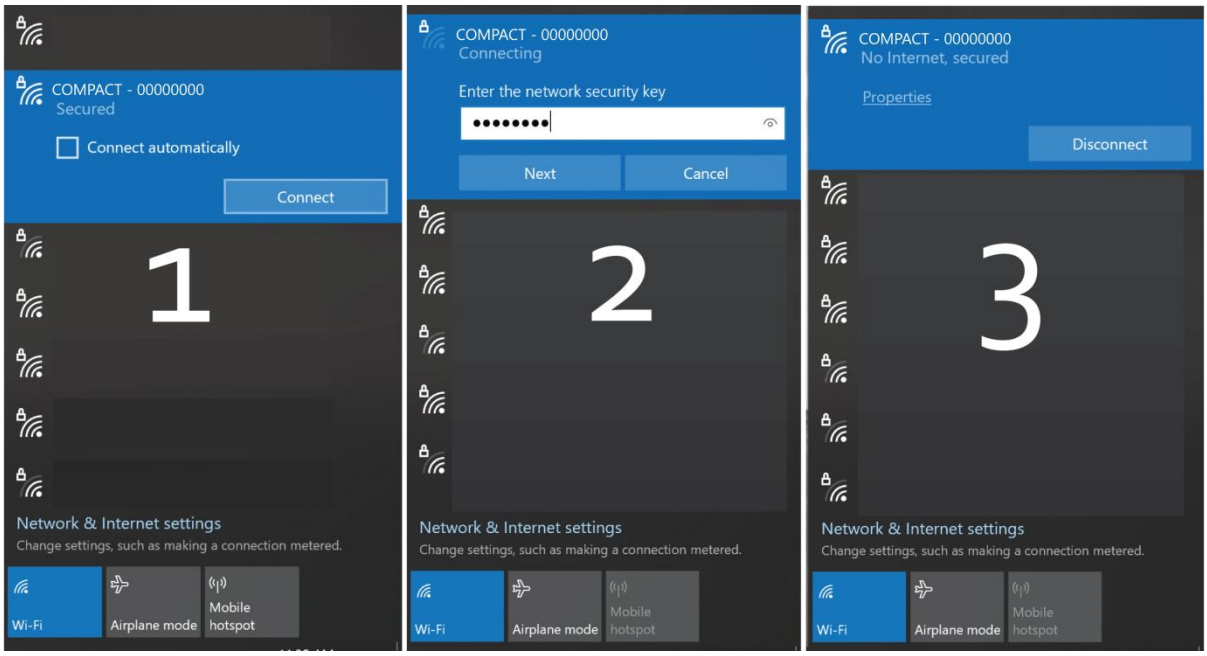
- **Cellular/GSM:** to enable as either a main or fallback interface, a SIM card (mini-SIM) **must**be installed! The SIM card cradle is located under the service cover as indicated in the electrical installation graphics. If the SIM card does not have the APN pre-loaded, it must be manually entered via the web client as explained below.
- **WiFi:** can only be enabled as a main interface. In the web client or installer's app, the relevant SSID and PSK (password) of the access point to be used, are entered.

  Note: *To ensure that the charger is correctly configured and connected to the internet, please check the "Network status" in "Device Status and Control" page from the charger's web client!*

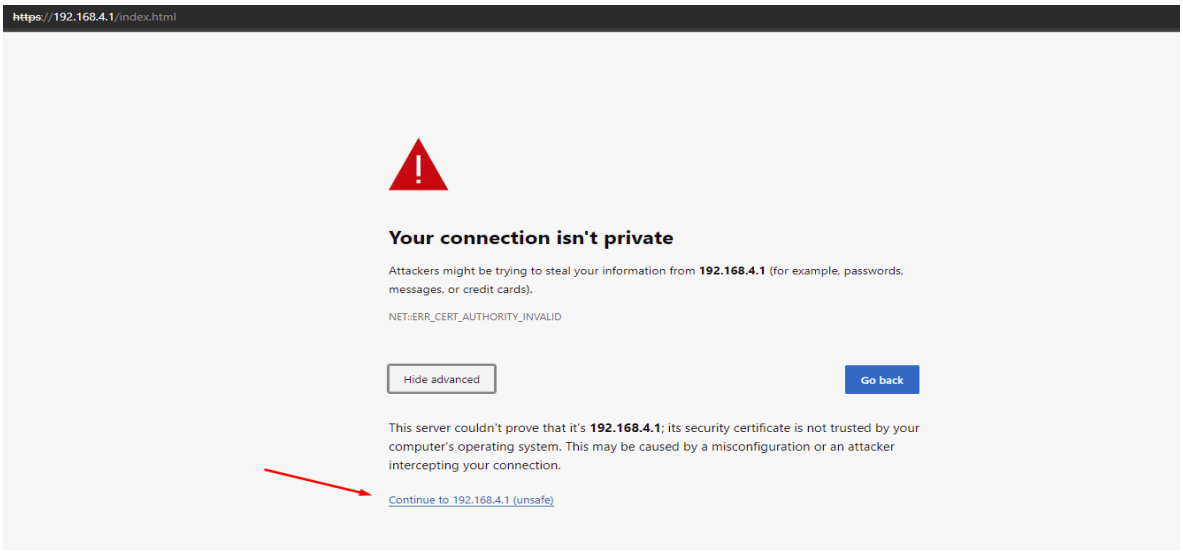
4.2. Accessing the web client (web UI) and configuration

The COMPACT has a backend that is accessible via a web interface. The web client can be accessed from any HTML browser on a Wi-Fi enabled device, such as a smartphone, tablet, or laptop.On startup, the COMPACT broadcasts its name and serial number as a Wi-Fi network (e.g., COMPACT-0000000). After entering its network pass code (credentials can be found on the factory NFC card supplied with the device), the device will be connected.

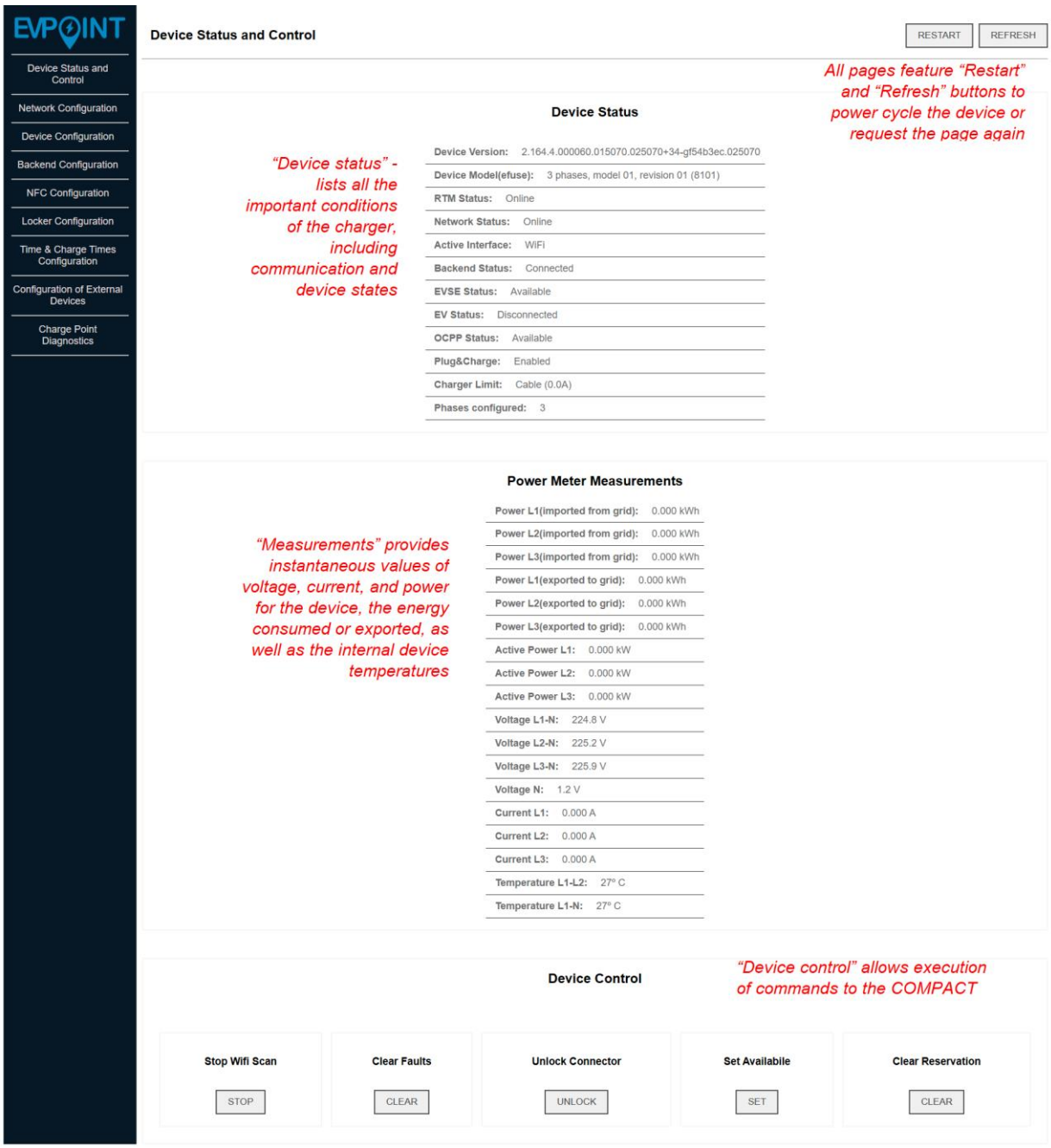
Note: some mobile devices may notify that they are connected to a network but have no internet access. Such warnings can be waived and the device allowed to go through with the connection.



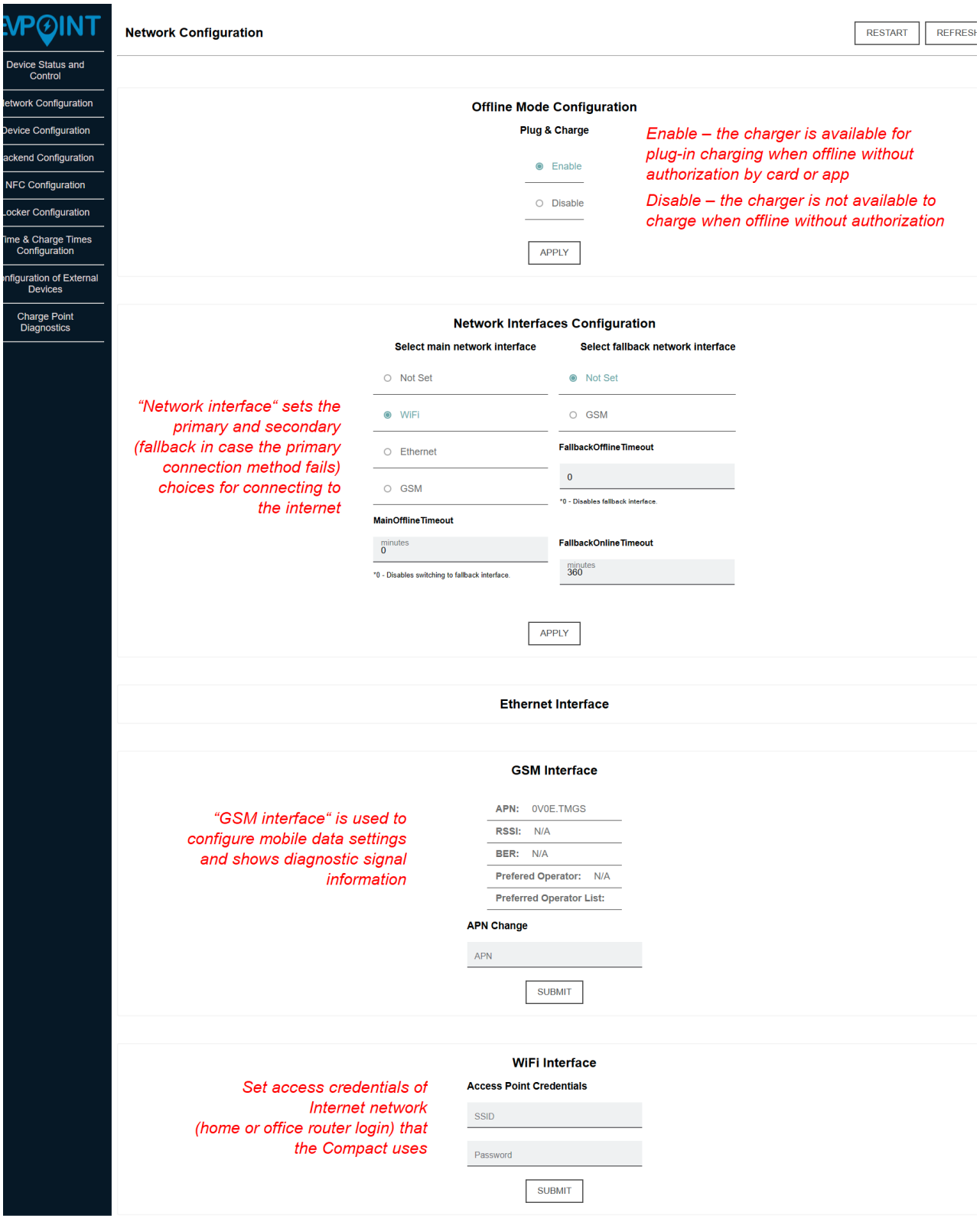
In a web browser, enter the index IP address (https://192.168.4.1/index.html). Ignore certificate warnings, if any arise; if certificate validation warnings persist, switch to a different browser (recommended – Firefox, Edge, Chrome, Safari):

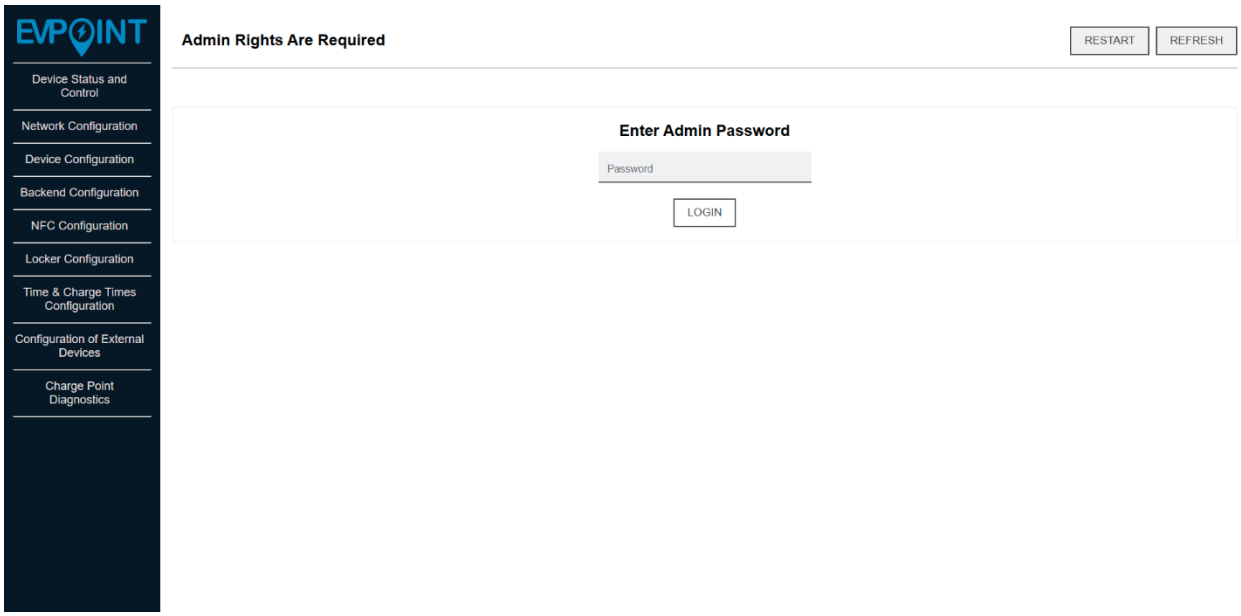


This will afford the main page of the EVSE web client - **Device Status and Control** – and a navigation bar on the left:



Network Configuration has important settings that are to be configured when deploying the COMPACT, such as the internet network interface and possible fallback (secondary) interfaces:

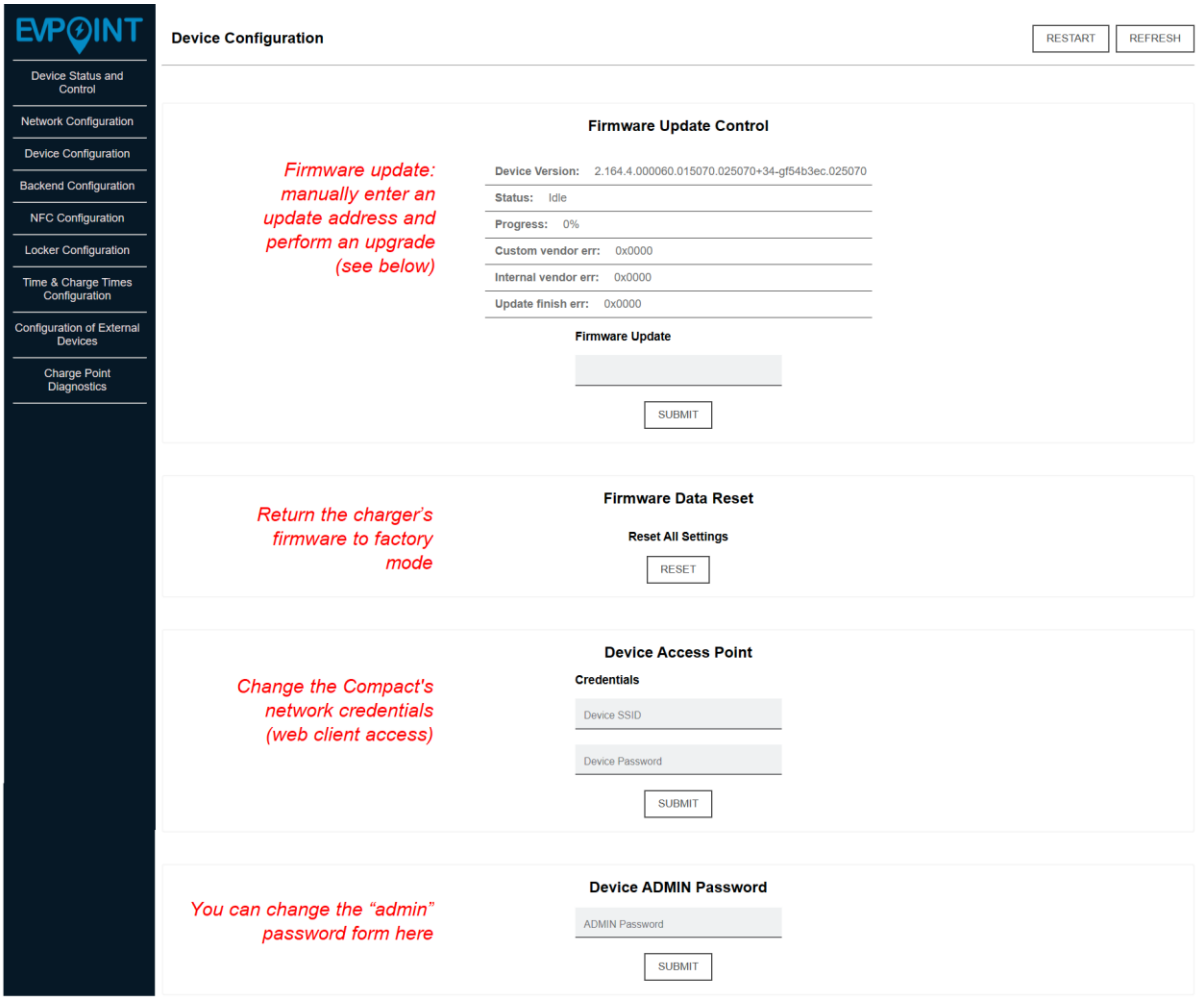




Further configuration:

All settings after the "Network Configuration" tab in the web UI require an administrator password to be accessed and set. The "admin" password can be found on the factory NFC card provided with the COMPACT. The devices comes preconfigured with default settings and parameters, some of which may have to be modified based on user requirements and installation specifics.

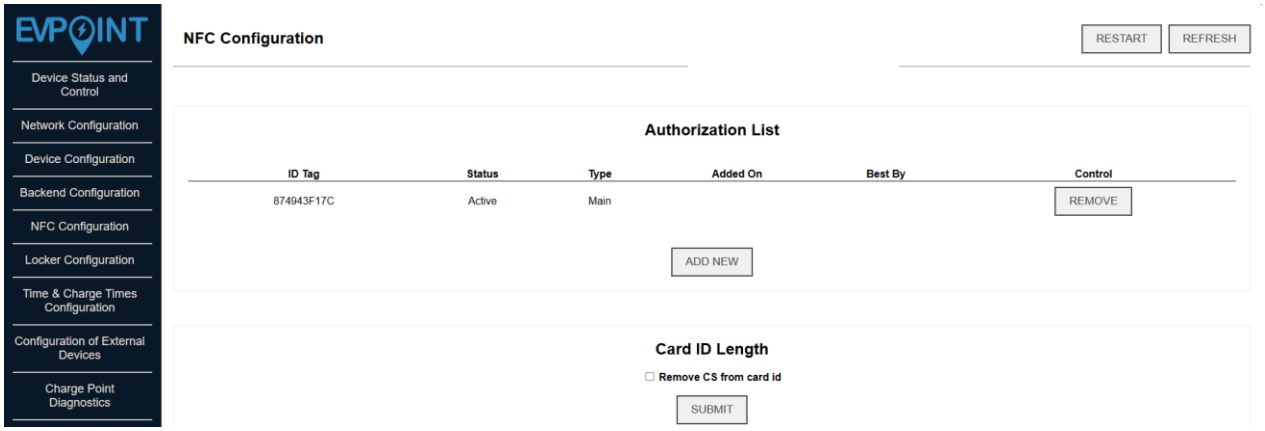
***Note:** it is **mandatory** to verify that the COMPACT is correctly configured for the available electrical installation, i.e., for single- or three-phase operation and whether a CT clamp or MID meter is installed. These settings are found in the "Configuration of external devices" menu and are further explained in the following pages. Incorrectly configured external devices and/or number of phases will result in a fault state and/or diminished charging capacity!*

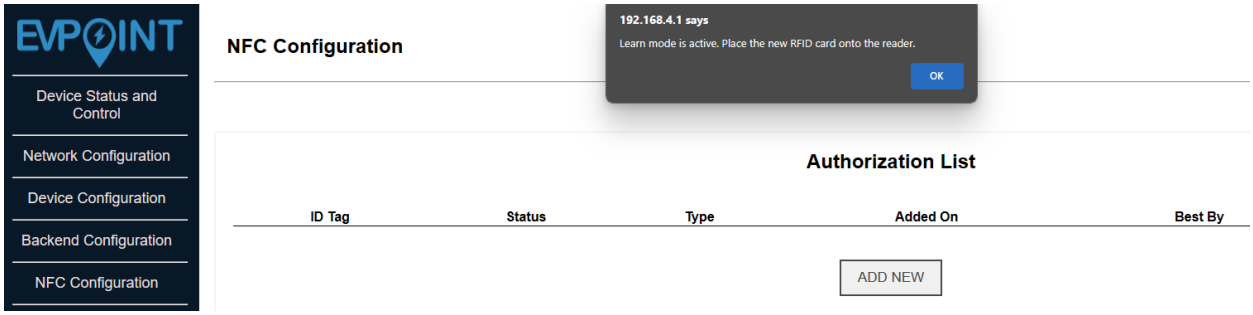


The "**Update**" section allows the configurator to set a firmware update via an Internet address pointing to a firmware update package. The address is set in the address text box and "Submit" is clicked. The update details are monitored above. Note that the COMPACT will enter one or more several reset states while the update is being executed and the web client may become unresponsive at these times. Updates are usually done remotely via the OCPP server but may need to be executed locally for troubleshooting and diagnostics.

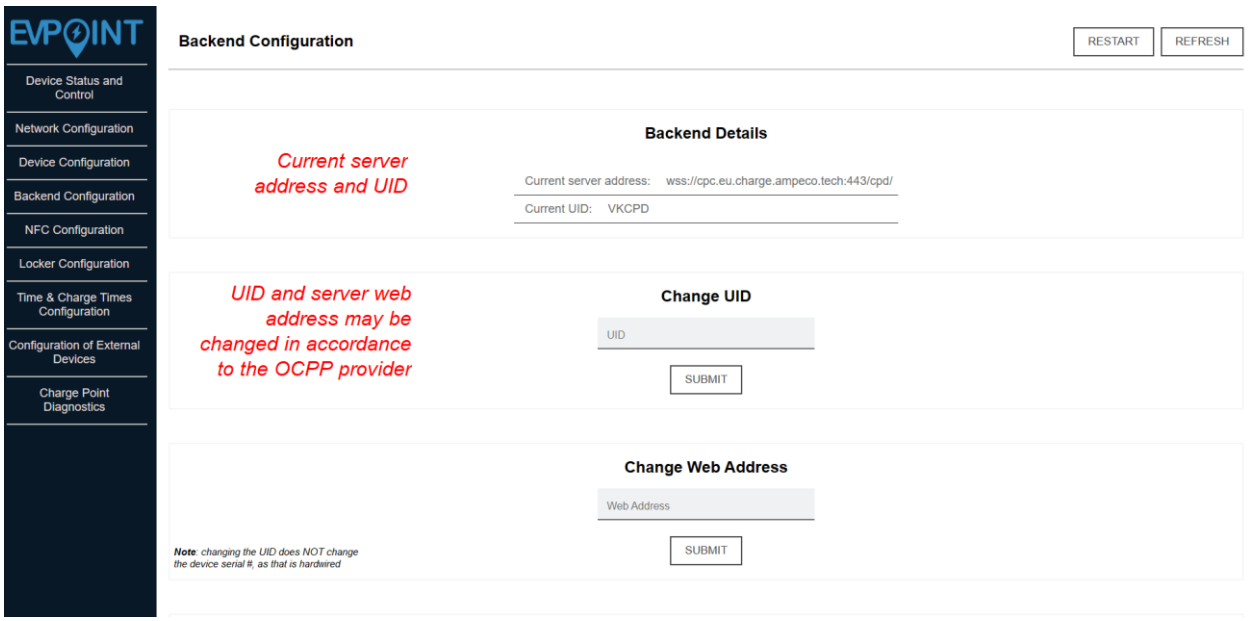
Hint: to verify that the firmware update URL is valid, it can be copied into an HTML browser and accessed, whereby a download should automatically begin of a ".bin" file type. If either the download does not begin or the downloaded file is not consistent with a firmware upgrade file, the user should verify that the address is valid and correct.

To add or removeNFC access cards, open the “**NFC Configuration**” tab. Here, the COMPACT can be set into a “Learn” mode via the “ADD NEW” button, whereby tapping an access card on the reader section of the device will cause it to be entered and memorized. Listed cards can be deleted from the "REMOVE" button.

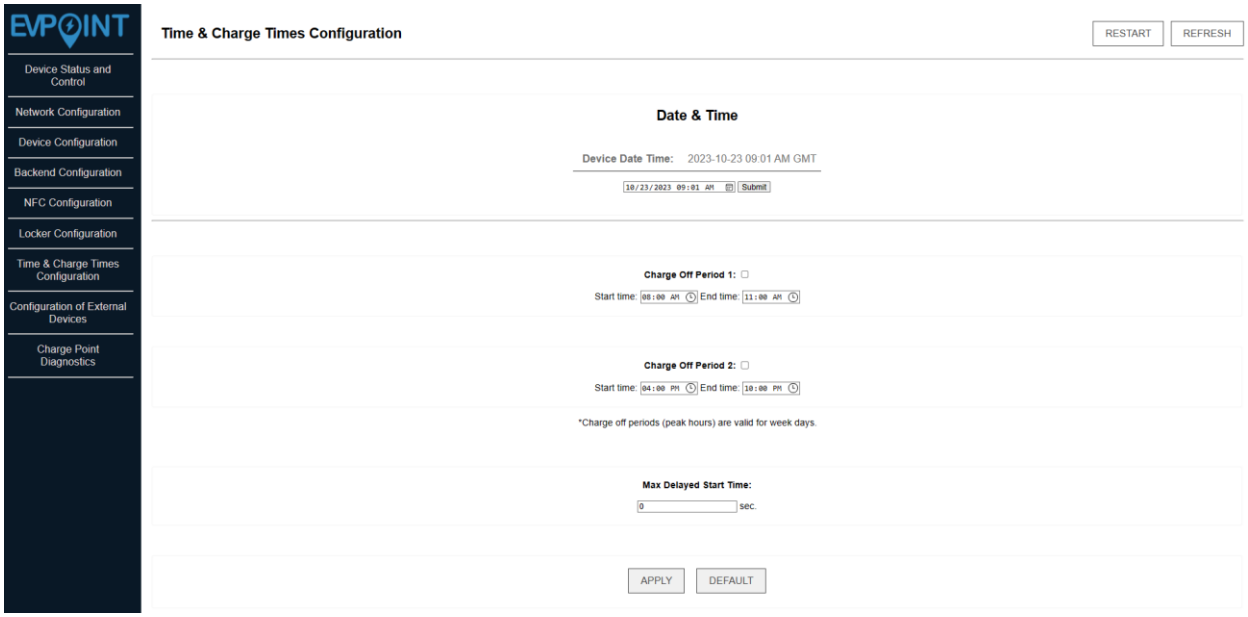




The COMPACTcomes with a preconfigured backend server address and UID, which can be found and, if necessary, changed, in the "**Backend Configuration**" tab:

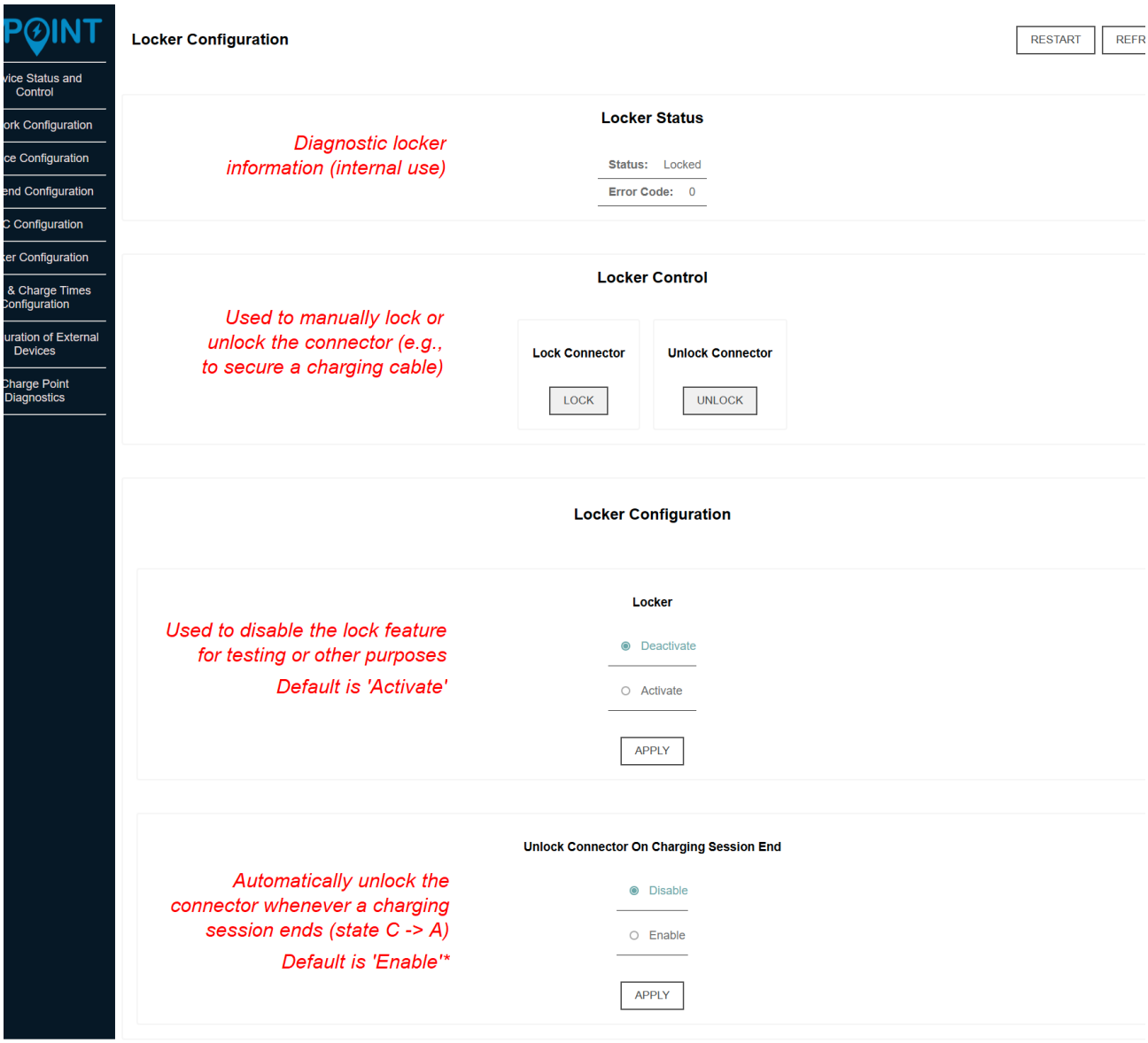


In the "**Date & Charge Times Configuration**" tab, the device local time can be adjusted, the default charging profile times can be set for offline use, and the randomized delay time value can be configured. Note that the COMPACT will automatically set its date and time when online:



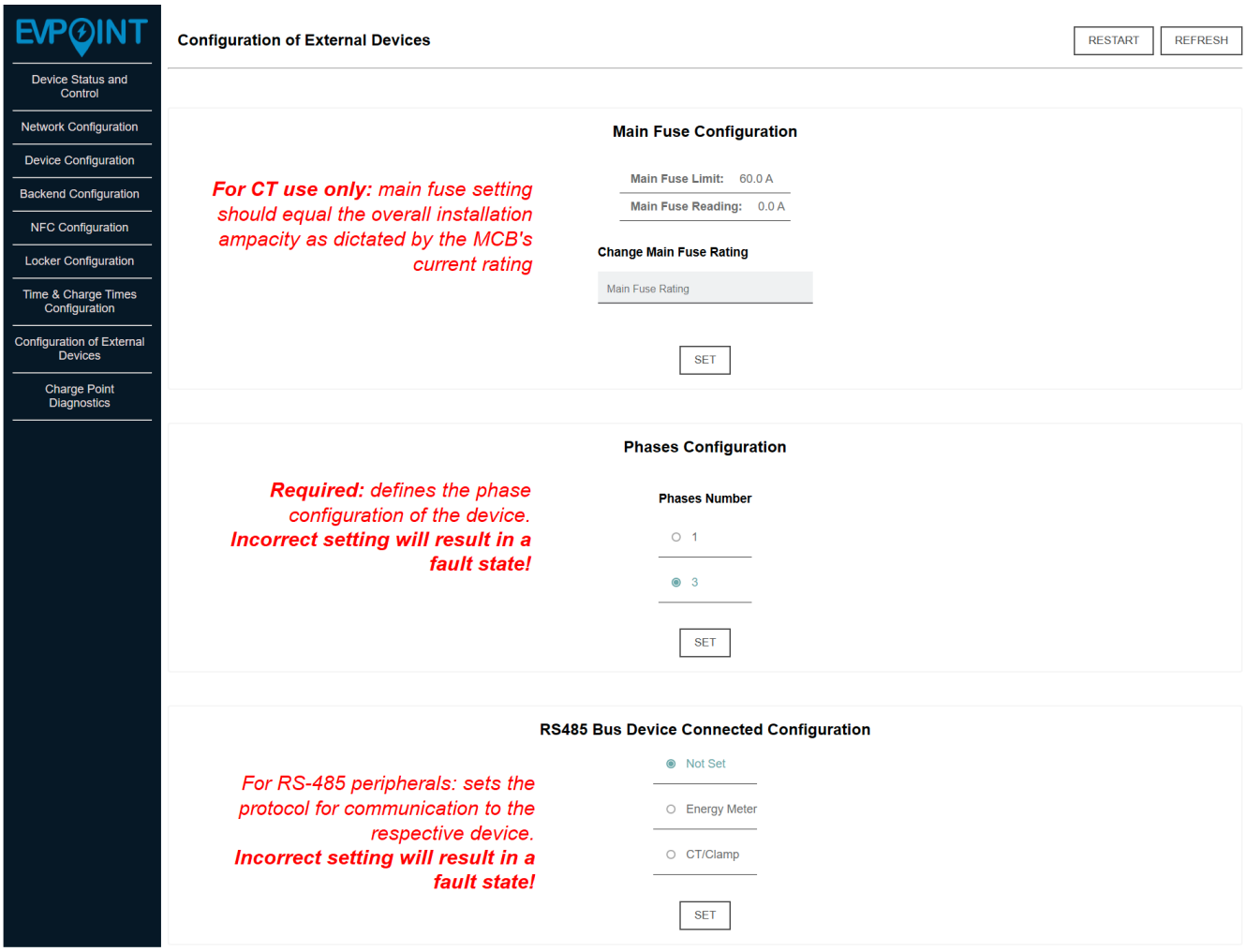
Important note: the COMPACT is compliant with the UK Electric Vehicles (Smart Charge Points) Regulations 2021 and includes the charging times and randomized delayed start (RDS) specifications of Pt. 2/art 10/p-ph 4(a)(b) and Pt. 2/art 11/p-ph 2(a). In its default configuration for UK clients, the charger will comply to those time profiles and will not permit charging as specified by the periods. Likewise, in offline mode, it will apply RDS. These features can be modified or disabled in the "Date and Charge Times Configuration" window.

All COMPACT models with socket connections come equipped with an electromechanical lock mechanism and the "**Locker Configuration**" tab is available for the lock status and settings:



Note: when enabled, the locker automatically disengages if the charger loses power. If a charging cord is to be permanently affixed, the recommended setting is 'Disable'. The user must then manually lock and unlock the cable via the EVPoint app.

To set-up RS-485 peripherals, such as CT clamps or energy meters, and to correctly set the COMPACT's power configuration use the **"Configuration of external devices"** tab:

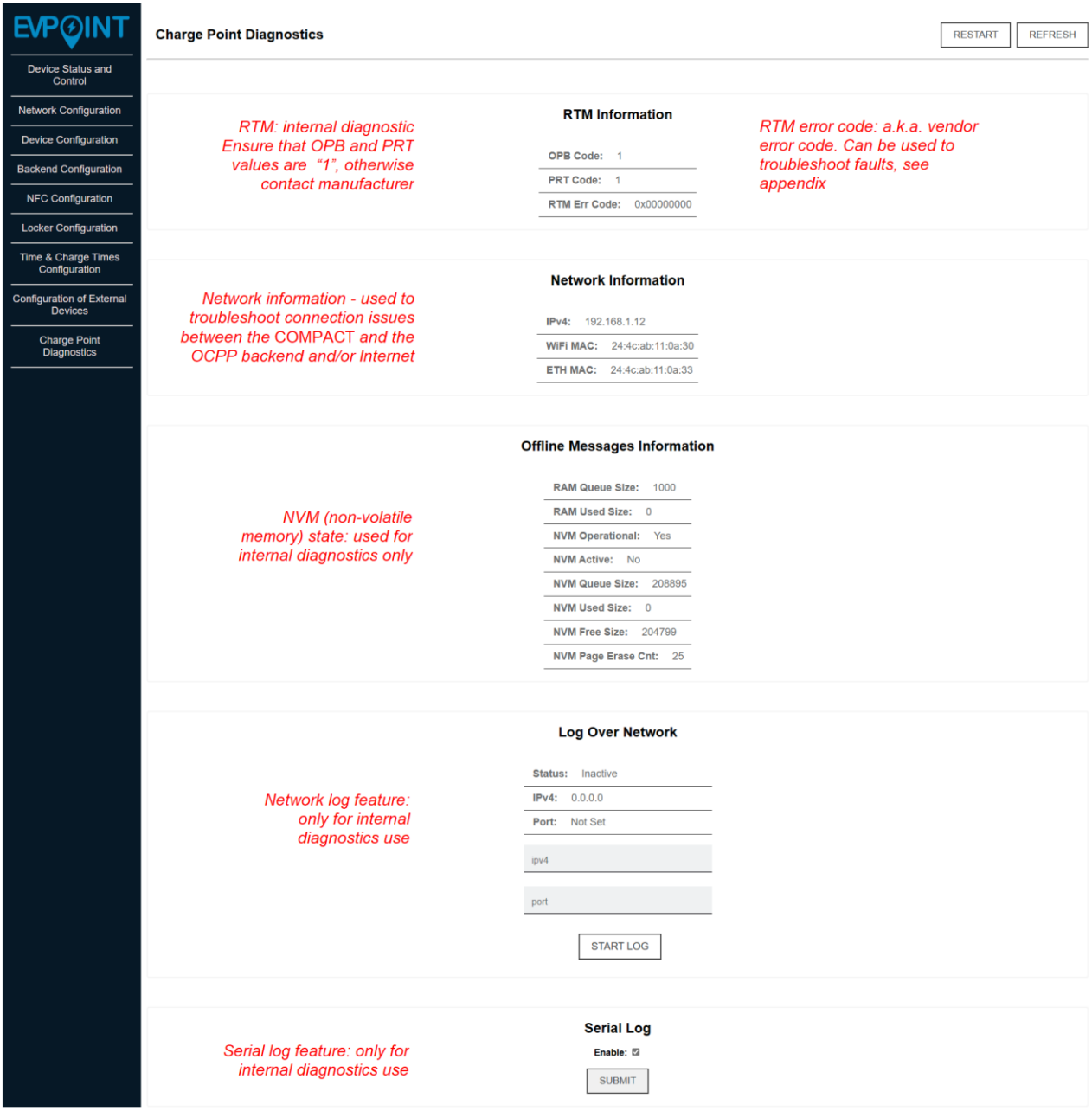


Important note: *If a CT clamp is used as a peripheral, the COMPACT will continuously monitor the RS-485 bus. If it loses connection with the clamp, charging will be automatically limited to* ***6A****. This applies both to single and three-phase configurations. A 3-phase CT clamp can be used with a single-phase charger, but not vice-versa!*

When an energy meter is used as peripheral, the COMPACT uses the meter's voltage, current, and power measurements to calculate and store energy. If communication between the meter and the EVSE is lost or a meter is not present, the charger will enter a fault state, which can be cleared by reconnecting or by disabling the RS-485 peripherals in the web UI.

With an energy meter in use, the COMPACT can no longer monitor the total installation consumption. ***Therefore, only a CT clamp peripheral should be used where power limiting may be necessary or desirable.***

The "**Charge Point Diagnostics**" tab contains useful troubleshooting information:



4.3. Installation: Troubleshooting

4.3.1. Verifying charger functionality:

At power on, the COMPACT has default settings and configuration, which allow it to work as a basic charger in the offline state. It is possible to verify its basic functionality by plugging in an EV and observing that the charger starts a charging session. ***The web client main page can be used to verify that the charger is properly measuring electrical values and is online and connected to an OCPP backend***.

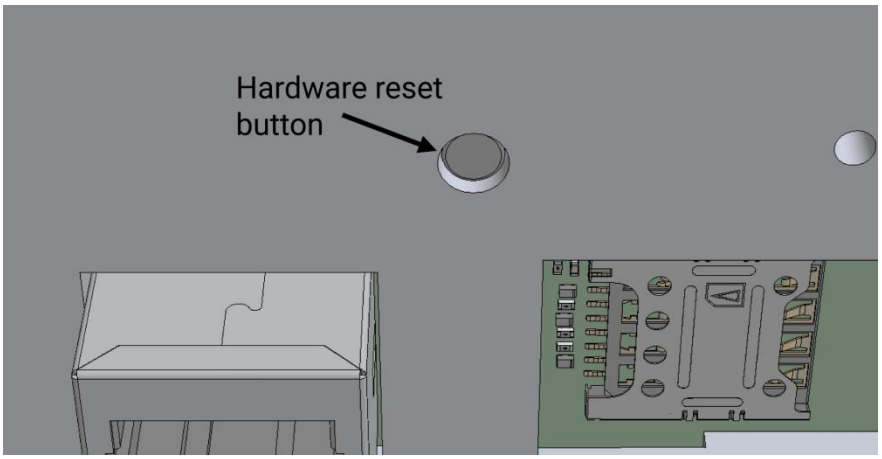
4.3.2. Common issues during commissioning:

1. No sound or light indication at power-on: the COMPACT is designed to always beep and light its RGB strip at power on, to indicate that all components of the device are functional. The most common cause of missing indication is that there is a bad connection along the circuit and the COMPACT's power terminals are not receiving mains voltage. Verify that the circuit is properly connected and that the "L" (L1) terminal is receiving 230VAC nominal from the phase conductor for single-phase devices and that all phases are properly connected for three-phase devices. Check that mains supply parameters are adequate regarding RMS voltage, voltage fluctuations, spikes and noise.
2. The LED bar lights up red/blinking red: The COMPACT is indicating a fault. This means that all components of the device are functional, but there is an issue that prevents the overall device from proper operation.
   a. The most common hardware cause of faults when commissioning is a phase reversal. The COMPACT is incorrectly connected to mains and the neutral, live, or earth conductors are switched. Verify that the COMPACT is correctly wired to the grid.
   b. Another common case is overvoltage due to incorrect supply wiring. In single-phase units on 3-phase installations, verify that the device is not across two phases of the grid, but between a phase and neutral. Verify that there are no excessive voltages present on the power line. Check the circuit voltage drop to verify that the voltage is within nominal range.
   c. Verify that the COMPACT is correctly set up for the respective mains and earthing system (number of phases, phase order, etc.). If RS-485 peripherals are used, check their connection and configuration. For socket-type devices, check that the plug is fully inserted and that there is no debris preventing the locker form operating.
   d. Any specific fault can be identified and reset via the web client's main and diagnostics pages. Note that clearing a fault without removing the underlying problem will result in the COMPACT to enter the same fault state after the reset.
   e. Software errors may be cleared by a power-cycle (hard reset) of the device. Disconnect it from power and after a short period, power it on again. Note that this does not work on every fault and is reserved as a simple troubleshooting step.
3. Connectivity problems may arise due to improper network setup. Ensure that the network interfaces are correctly configured.

   For cellular connections, check that the SIM card is correctly installed and the APN is configured. For WiFi connections, verify that the correct access point is selected and its SSID and PSK credentials are correctly entered and that the wireless network is not behind a proxy. If the LAN network is configured through a proxy, an exception for the chargers IP or MAC address can be configured in the network's settings. The MAC/IP can be found via the web client installer's mobile app.

4.4. Hardware reset

The configurator may determine that a factory reset of the device is necessary. A factory reset returns the device to its original software at the point of manufacture. Any firmware updates are not rolled back. The hardware reset button is located in a recessed hole between the SIM card cradle and the RJ-45 connector as indicated in the diagram below.



To reset the device, it must be connected to mains power and operating in idle state. Any vehicle connected to the device must be detached. The “reset” button is depressed for at least 10 seconds.

Only perform a hardware reset if so, instructed by customer support. As the COMPACT must be powered when resetting, take proper safety precautions when accessing the service panel to avoid electrical hazards.

4.5. Tamper sensor

Depending on the specific hardware configuration, the COMPACT comes equipped with either one or two tamper sensors, which are set to detect access to the charger's terminal panel (optional) and the main electronics compartment (included on all models). The device will alert the OCPP backend server via a status notification in the event that a tamper sensor is triggered.

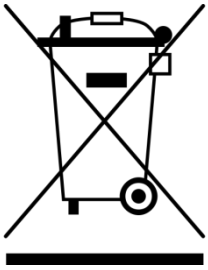
The normal procedures of installation and commissioning do not involve opening the COMPACT main body; thus, no tamper events are expected to be generated from the main body sensor (unauthorized access to the main electronics compartment may render the COMPACT warranty void!).

As the terminal block lid must be removed during installation and troubleshooting, models which include a terminal panel tamper sensor will generate a tamper event. This "soft" fault does not preclude the charger from operating and may be cleared via the web client or a power cycle (hard reset) of the COMPACT. Further tamper events will be reported to the OCPP backend at every occurrence.

5. Maintenance, decommissioning, and disposal

The COMPACT is designed to be maintenance-free during its lifetime. It is not indented to be repaired or serviced by the end user and any defects or issues should be addressed to the installers and manufacturer technicians.

The COMPACT should be regularly cleaned with a dry or damp cloth by wiping the surfaces. Do not use soaps or solvents, such as petroleum or methylated spirits, acetone, etc., to clean the surfaces, because they can damage the surface finish and compromise the structural integrity of the device. Do not use pressure or steam washers to clean the COMPACT, as it is not designed to withstand high-pressure water jets, which could result in water ingress and internal damage or short-circuits.



For disposal and decommissioning, the COMPACT is designated as electronics waste and must be properly handled and disposed of as per national, regional, and local regulations.

To prevent hazardous electric shocks and the risk of arcing and fire, before decommissioning, ensure that power to the device is disconnected and it is not wired to any active systems.

6. Appendix I: Light state description with error codes and light indication explained

COMPACT RGB Light Status Indicators					
Status	**Online Illumination**		**Offline Illumination**		**Description**
Available					Device is available to start a charging session. In the online state, it is connected to the OCPP backend. Offline, it may be set up as Plug-in Charge”
Preparing		OFF		OFF	The charger is preparing to start a charging session. Occurs when an EV is plugged in and the charger is waiting for authorization to being charging.
Charging					The COMPACT is charging the EV as per app settings.
SuspendedEV		OFF		OFF	The EV has caused the COMPACT to stop the charging session.
SuspendedEVSE					The COMPACT has stopped the charging session.
Finishing		OFF		OFF	The COMPACT is preparing to terminate the charging session.
Reserved		OFF		OFF	The COMPACT has been reserved for a user (public chargers)
Unavailable	OFF	OFF	OFF	OFF	The charger is not available. This may have been set by the OCPP backend for diagnostic or service purposes.
Faulted				OFF	The COMPACT has encountered a problem and is in a fault state. More information can be accessed via the web client (see 3.3.1).
Note: The two adjacent patches indicate whether the status lights are constantly lit (identical colors) or blinking - switching between the two different colors					

Temperature Current Limit Thresholds The COMPACT monitors its internal temperature at two locations. If the temperature exceeds values considered to be dangerous to the electronics and safety, the charger will first limit its maximum charging current to lower its power dissipation. If the temperature still increases beyond that set-point (79°C), the charger will stop the session and enter a “Fault” state.	
Temperature≤, °C	Current limit, A per phase
72	31.8
73	29.4
74	26.8
75	24
76	20.8
77	17
78	12
79	6

VendorID1 : EVSE Limits EVSE Limits are generated by the COMPACT to define the maximum permissible charging current. The device will offer charging current based on the lowest-value limit. 3-phase models have global current limits (i.e., the currents offered on the three phases are always identical).			
Code	**Name**	**Description**	**Detailed Description**
0	DeviceCurrentLimit	Max device limit	Default principal current limit, defined by the charger's hardware and set to 32A per phase
1	ProximityPilotLimit	Limit set due to cable's proximity pilot	Type II charging cables have a built-in resistor between the PE and PP terminals, which encodes the maximum current the cable can handle. The limit is enacted if the cable is rated for less than 32A charging current.
2	DeviceTemperatureLimit	Limit set due to high temperature	See "TemperatureCurrent Limits" above. The charger derates the current offered when its internal temperature reaches certain thresholds.
3	ExtTransformerCurrentLimit	Limit set by external transformer	Current limit set by the CT clamp(s) on the mains feeder line based on the rating of the installation's MCB.
4	OCPPGridLimit	Limit set by OCPP grid operator	The limit is enacted when a smart charging profile such as "Charge Point Max Current (A)" is sent by the backend.
5	FuseLimit	Limit set by fuse	The limit is defined by the current rating of the circuit breaker(s) for the charger's mains circuit. Enacted when the charger needs to be derated in installations which cannot provide 32A per phase.

VendorID2 :RTM Errors RTM errors are generated by the COMPACT when an error occurs and the charging is stopped. They can be found as "RTM err code" in the Diagnostics tab of the web client.			
Code	**Name**	**Description**	**Detailed Description**
0x0001	EVSE_FAULT_ RCD	RCD protection error	This error code is sent when the AC RCD protection is triggered. RCD or "Residual Current Device" is a fault current protection hardware used in chargers to protect the user from current leakage.
0x0002	EVSE_FAULT_ NEUTRAL	Neutral line error	This error code is sent when one of the following occurs:
			The line terminal and the N terminal are swapped
			There is more than 70VAC between the N line and the earth
			There is a missing earth or bad earth connection
0x0004	EVSE_FAULT_ OVERCURRENT	Overcurrent error	This error code is sent when the car decides to import higher current than charge point offers. If the current demand is 10% above the set current limit and lasts more than 6 seconds, the fault is generated. Note that the thresholdis 10% of the present current limit, not the absolute maximum.
			This fault can be cleared by power cycling the system, by unplugging the charging cable or via the web client
0x0010	EVSE_FAULTS_P OWER_RELAY	Output RELAYS state error	This fault can be cleared by system power cycle, by the charger's web client
0x0008	EVSE_FAULT_ RCD_DC	RCD DC protection error	This error code is sent when the DC RCD protection is triggered.
			Note that when the DC RCD is triggered the error code 0x0001 is also sent!
0x0020	EVSE_FAULT_ ACT_LOCK_FAUL T	Actuator lock malfunction	On models with a safety electromechanical lock, the COMPACT monitors the lock position. A fault occurs if the actuator fails to lock its pin when a command is sent
0x0040	EVSE_FAULT_AC T_UNLOCK_FAUL T	Actuator unlock malfunction	On models with a safety electromechanical lock, the COMPACT monitors the lock position. A fault occurs if the actuator fails to unlock its pin when a command is sent
0x0080	EVSE_FAULT_CP_ STATE	Control pilot error	
0x0100	EVSE_FAULT_ DIODE_UNPRESE NT	EV diode error - diode in EV not detected	EVs have a diode on the CP line as part of the charging standard. This error code is sent if the COMPACT cannot detect the diode in the EV. The fault is in a problematic EV diode and is cleared by removing the faulty device
0x0200	EVSE_FAULT_ PP_UNPRESENT	Proximity pilot not detected	This error code is sent when a charging cable is plugged in and an attempt is made to start a session, but the charging station cannot read the PP resistor of the charging cable. The charging session will not start.
0x0400	EVSE_FAULT_ MISSING_HOST	Internal host error	For internal use only
0x0800	EVSE_FAULT_ TEMPERATURE	Overheating error	This error code is sent when the temperature of the charging station reaches more than 79 degrees. At this point the charging station will stop charging at all. This fault is cleared when the charging station is power cycled or through the web client.
0x1000	EVSE_FAULT_	Overvoltage	This error code is sent when the power supply voltage

	OVERVOLTAGE	error	rises by more than 10% of nominal
0x2000	EVSE_FAULT_ UNDERVOLTAGE	Undervoltage error	This error code is sent when the power supply voltage drops by more than 10% of nominal
0x4000	EVSE_FAULTS_ AUTO_RECOVER Y	Auto Recovery	The COMPACT is designed to automatically recover from noncritical faults. This is an auto-recovery flag, sent together with another fault flag to indicate that the charger will attempt to recover from the fault. For example, in over/undervoltage situations, the COMPACT will recover once the supply voltage falls back within its nominal value.
0x8000	EVSE_FAULT_CA L	EVSE calibration data error	The RTM has calibration data such as Voltage, Current, Power, Energy and RCD as well as the device Serial Number. The fault indicates that the MCU cannot access these data. The fault may be cleared by an authorized technician by reloading the calibration data
0x10000	EVSE_FAULT_VN _OUT_OPEN	Power Relay	Stuck power relay fault: the charger monitors its relay contacts and has detected that the neutral contact has failed to open and remains closed
0x20000	EVSE_FAULT_VN _OUT_CLOSE	Power Relay	Stuck power relay fault: the neutral contact has failed to close and remains open
0x40000	EVSE_FAULT_VL_ OUT_OPEN	Power Relay	Stuck power relay fault: the line contact has failed to open and remains closed
0x80000	EVSE_FAULT_VL_ OUT_CLOSE	Power Relay	Stuck power relay fault: the line contact has failed to close and remains open
0x100000	EVSE_TAMPER_E VENT	Device open cover detected by tamper switch	This status flag is set to “1”, when the device detects the opening of the main cover. At time of detecting of this event the timestamp is recorded into NVM. The flag is cleared at power cycle.
0x200000	EVSE_FAULT_TA MPER2_EVENT	Service cover opening detected	It has been detected an event of opening the service cover. You can check the tamper event timestamp in the backend log.
0x400000	EVSE_FAULT_MIS SING_EXT_EMET ER	There is no connection with external meter	This error occurred because a loss of communication with an external meter was detected, while the charger is configured to use an external meter.

VendorID3 : Main MCU errors Debugging information related to the COMPACT's main CPU.			
Code	**Name**	**Description**	**Detailed Description**
0	CC_RST_UNKNOWN	Reset reason cannot be determined	The CPU cannot determine the cause of the reset.
1	CC_RST_POWERON	Reset due to power-on event	The CPU was reset by a power cycle situation.
2	CC_RST_EXT	Reset by external pin	The main CPU was reset by an external trigger, such as a debugging tool or another MCU in the Compact.
3	CC_RST_SW	Software reset via esp_restart	Reset triggered via an OCPP command (Soft Reset) or via the web client / installer's app. Reset can also be triggered following a firmware upgrade.
4	CC_RST_PANIC	Software reset due to exception/panic	Reset triggered by a critical error in the CPU (stack overflow, memory corruption, etc.).
5	CC_RST_INT_WDT	Reset (software or hardware) due to interrupt watchdog	Reset triggered by the watchdog timer due to a timeout at an interrupt.
6	CC_RST_TASK_WDT	Reset due to task watchdog	Reset triggered by the watchdog timer due to a hung task (timeout based on task's priority).
7	CC_RST_WDT	Reset due to other watchdogs	Reset triggered by a custom watchdog timers. For internal troubleshooting only.
8	CC_RST_DEEPSLEEP	Reset after exiting deep sleep mode	For internal use only.
9	CC_RST_BROWNOUT	Brownout reset (software or hardware)	Reset triggered by an UVLO event at the CPU core power supply.
10	CC_RST_SDIO	Reset over SDIO	Triggered by an internal system bus event.

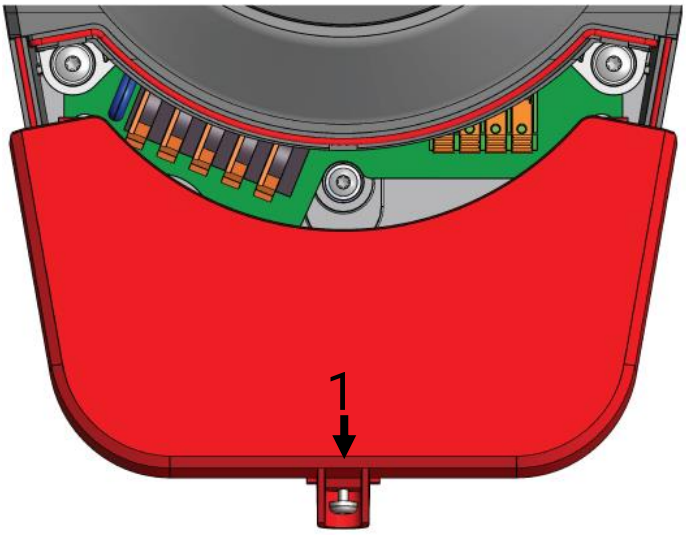
7. Appendix II: OCPP and Manufacturer Configuration Keys

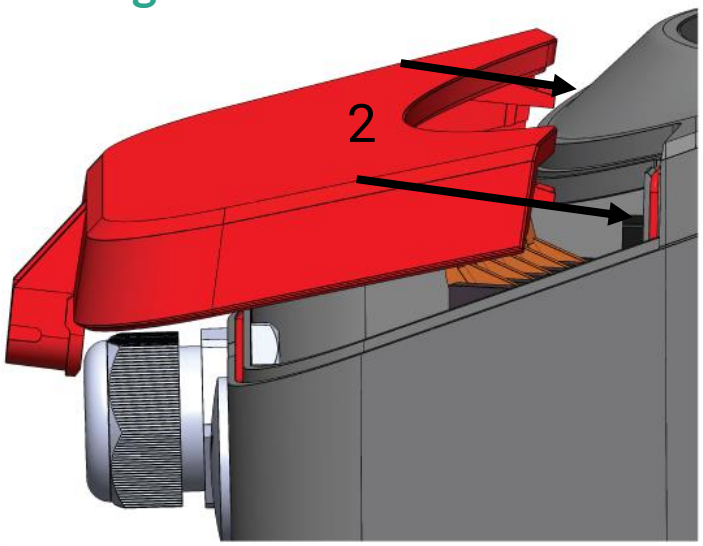
Configuration Key	Custom Key	In use	Example Value	Description
AllowOfflineTxForUnknownId		**yes**	TRUE	When offline, the device can be set to allow automatic authorization of any "unknown" identifiers that cannot be explicitly authorized by Local Authorization List or Authorization Cache entries.
AuthorizationEnabled			TRUE	
AuthorizeRemoteTxRequests			TRUE	
ChargeProfileMaxStackLevel			100	
ChargingScheduleAllowed ChargingRateUnit		**yes**	A,W	Configures the units of "charge power" to be used in a charging schedule.
ChargingScheduleMaxPeriods			60	
ClockAlignedDataInterval			0	
ConnectionTimeOut			90	Interval of time from status “Preparing” until the transaction is automatically canceled, due to failure of the EV driver to insert the charging cable into the charger or vehicle. The charger will revert to the original state.
ConnectorSwitch3to1PhaseSupported			FALSE	Configures the three phase chargers to work on a single-phase grid as single-phase charger.
c_ChargingVentilatedEnabled	**yes**	**yes**	FALSE	Allows the charger to offer charge when the vehicle enters in state "D"
c_DeviceLimit_I	**yes**	**yes**	320	Sets a hard limit on the maximum current the device will offer in 1/10ths of an ampere. The limit cannot be overridden by profiles.
c_MainFuseLimit	**yes**	**yes**	600	CT clamp current limit, fuse set in 1/10ths of an ampere
c_RCDProtectionType	**yes**	**yes**	0	Configures RCD protection type. Permitted states: 0 - Both AC + DC protection is on 2 - Only AC protection is on
c_VoltageProtectionOffset	**yes**	**yes**	0	Enables configuration of expanded voltage protection limits. The default range with the key

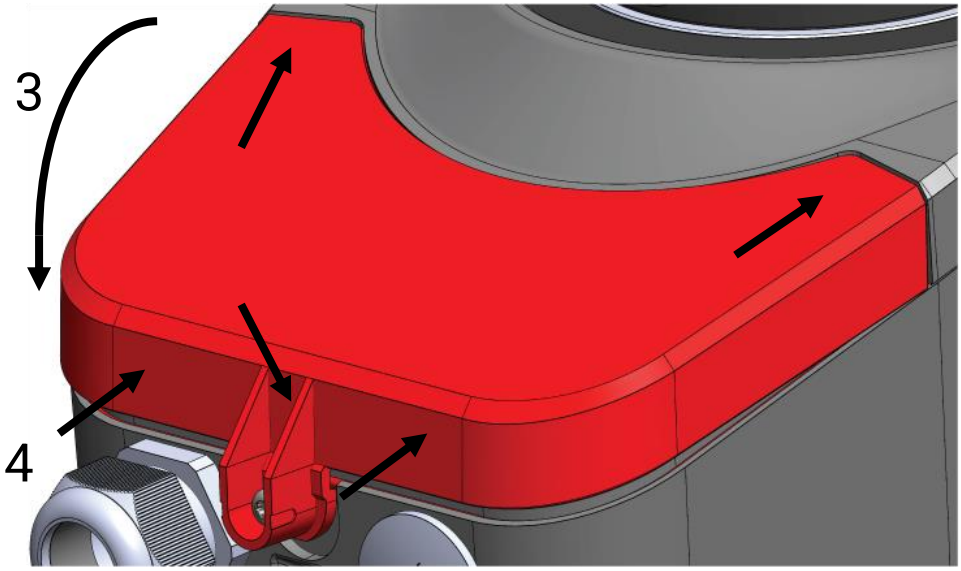
				set to "0" is +-10% of the nominal supply (207-253VAC). Values of 1-23 are allowed, which expand both lower and upper threshold by the respective amount in VAC.
GetConfigurationMaxKeys		**yes**	5	The number of OCPP configuration keys that can be acquired from a single get configuration command.
HeartbeatInterval		**yes**	60	The interval between each heartbeat PDU.
LightIntensity		**yes**	100	The light intensity of the LED ring of the charger in % of maximum.
LocalAuthListEnabled			FALSE	
LocalAuthListMaxLength			0	
LocalAuthorizeOffline			TRUE	
LocalPreAuthorize			FALSE	
MaxChargingProfilesInstalled			10	
MeterValueSampleInterval		**yes**	60	The time interval between each meter value during a session.
MeterValuesSampledData		**yes**	Voltage.L1-N,Voltage.N,Temperature,Current.Offered.L1,Current.Import.L1,Power.Active.Import.L1,Energy.Active.Import.Register.L1	A list of measurands sent for each meter value during a session.
NumberOfConnectors			1	
SendLocalListMaxLength			0	
StopTransactionOnEVSideDisconnect			TRUE	
StopTransactionOnInvalidId			TRUE	
UnlockConnectorOnEVSideDisconnect		**yes**	TRUE	When set to TRUE the Charge Point SHELL unlock the connector on Charge Point side when the cable is unplugged at the EV
c_MainOfflineTimeout	**yes**	**yes**	null	Defines the timeout value for the main communication network interface
c_FallbackOfflineTimeout	**yes**	**yes**	null	Defines the timeout value for the fallback communication network interface
c_FallbackOnlineTimeout	**yes**	**yes**	null	Defines the duration for which the fallback network interface is active before reverting to the main network interface
C_OCPPNetLog	**yes**	**yes**	FALSE	Configures whether

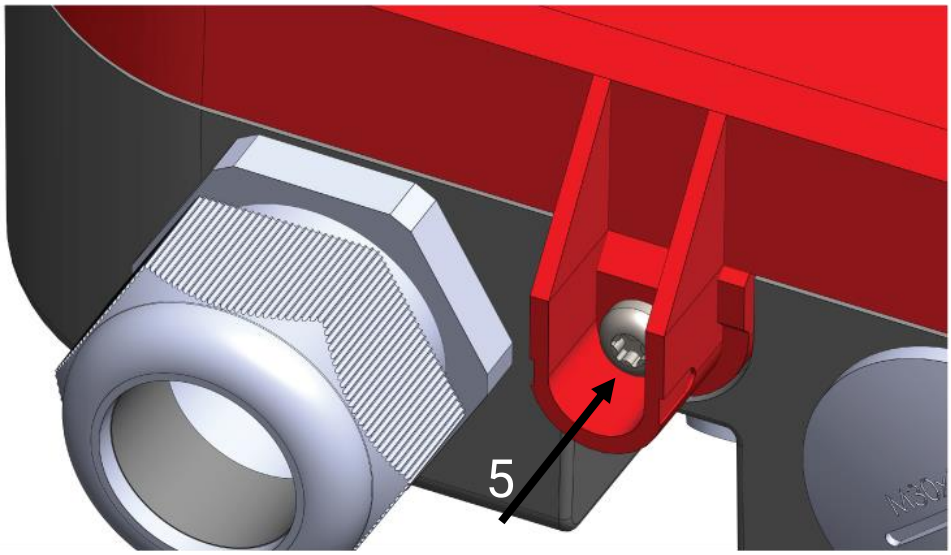
				diagnostic network data logs are sent via OCPP
c_ChargeOffPeriod1	**yes**	**yes**	enable,08:00,11:00	Defines the first standard period for offline charging
c_ChargeOffPeriod2	**yes**	**yes**	enable,16:00,22:00	Defines the second standard period for offline charging
c_MaxStartDelay	**yes**	**yes**	600	Defines the maximum value for the randomized delay functionality for offline charging
c_LockerDisengage	**yes**	**yes**	TRUE	Defines whether the built-in locker is enabled or disabled.
c_CTClamp	**yes**	**yes**	FALSE	Presence or absence of a CT clamp
c_CTClampValue	**yes**	**yes**	65535	Defines the value range of the CT clamp measurand data
c_MainNetworkInterface	**yes**	**yes**	0	Defines the main network interface
c_FallbackNetworkInterface	**yes**	**yes**	0	Defines the fallback network interface
c_APN	**yes**	**yes**	0	Sets or gets the APN used for cellular network interface

8. Appendix III: Installing/Removing the service hatch









1. Ensure that the panel captive screw is fully retracted into the hatch body.

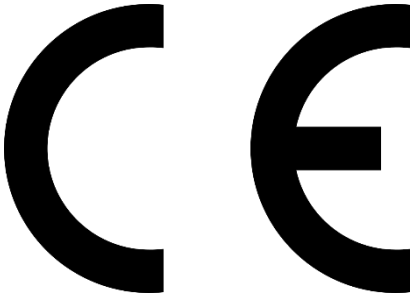
2. Place the cover on the main body by first guiding the upper rim and hooks into the Compact

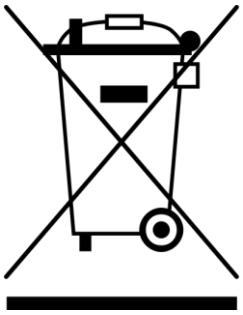
3. Swing the service hatch into position, ensuring that the sealing rim is correctly seated. A small gap will remain.

4. Push the lower edge of the service lid firmly forward and down until the lid locks into place with an audible click and the gap disappears.

5. Use a Torx screwdriver to fasten the panel captive screw and lock the service hatch in place.

6. To remove the service hatch, execute steps 1-5 in reverse order.



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