VESTEL
MOBILITY

ELECTRIC VEHICLE CHARGER
EVC08 LIVEO SERIES

Installation Guideline

CONTENTS

1 - SAFETY INFORMATION

CAUTION

RISK OF ELECTRIC SHOCK

CAUTION: ELECTRIC VEHICLE CHARGER DEVICE SHALL BE MOUNTED BY A LICENSED OR AN EXPERIENCED ELECTRICIAN AS PER ANY REGIONAL OR NATIONAL ELECTRIC REGULATIONS AND STANDARDS IN EFFECT.

CAUTION

AC grid connection and load planning of the electric vehicle charging device shall be reviewed and approved by authorities as specified by the regional or national electric regulations and standards in effect.

For multiple electric vehicle charger installations the load plan shall be established accordingly. The manufacturer shall not be held liable directly or indirectly for any reason whatsoever in the event of damages and risks that are borne of errors due to AC grid supply connection or load planning.

IMPORTANT - Please read these instructions fully before installing or operating

1.1 - SAFETY WARNINGS

- Keep this manual in a safe place. These safety and operating instructions must be kept in a safe place for future reference.
- Check that the voltage marked on the rating label and do not use charging station without appropriate mains voltage.
- Do not continue to operate the unit if you are in any doubt about it working normally, or if it is damaged in any way - switch off the mains supply circuit breakers (MCB and RCCB). Consult your local dealer.
- The ambient temperature range should be between –25 °C and +50 °C without direct sunlight and at a relative humidity of between 5 % and 95 %. Use the charging station only within these specified operating condition.
- The device location should be selected to avoid excessive heating of the charging station. High operating temperature caused by direct sunlight or heating sources, may cause reduction of charging current or temporary interruption of charging process.
- The charging station is intended for outdoor and indoor use. It can also be used in public places.
- To reduce the risk of fire, electric shock or product damage, do not expose this unit to severe rain, snow, electrical storm or other severe weathers. Moreover, the charging station shall not be exposed to spilled or splashed liquids.
- Do not touch end terminals, electric vehicle connector and other hazardous live parts of the charging station with sharp metallic objects.
- Avoid exposure to heat sources and place the unit away from flammable, explosive, harsh, or combustible materials, chemicals, or vapors.
- Risk of Explosion. This equipment has internal arcing or sparking parts which should not be exposed to flammable vapors. It should not be located in a recessed area or below floor level.

- This device is intended only for charging vehicles not requiring ventilation during charging.
- To prevent risk of explosion and electric shock, ensure that the specified Circuit Breaker and RCD are connected to building grid.
- The lowest part of the socket-outlet shall be located at a height between 0,5 m and 1,5 m above ground level.
- Adaptors or conversion adapters are not allowed to be used. Cable extension sets are not allowed to be used.

WARNING: Never let people (including children) with reduced physical, sensory or mental capabilities or lack of experience and or knowledge use electrical devices unsupervised.

CAUTION: This vehicle charger unit is intended only for charging electric vehicles not requiring ventilation during charging.

1.2 - GROUND CONNECTION WARNINGS

- Charging station must be connected to a centrally grounded system. The ground conductor entering the charging station must be connected to the equipment grounding lug inside the charger. This should be run with circuit conductors and connected to the equipment grounding bar or lead on the charging station. Connections to the charging station are the responsibility of the installer and purchaser.
- To reduce the risk of electrical shock, connect only to properly grounded outlets.
- **WARNING :** Make sure that during installing and using, the charging station is constantly and properly grounded.

1.3 - POWER CABLES, PLUGS and CHARGING CABLE WARNINGS

- Be sure that charging cable is Type 2 socket compatible on charging station side.
- A damaged charging cable can cause fire or give you an electric shock. Do not use this product if the flexible Charging cable or vehicle cable is frayed, has broken insulation, or shows any other signs of damage.
- Ensure that the charge cable is well positioned thus; it will not be stepped on, tripped over, or subjected to damage or stress.
- Do not forcefully pull the charge cable or damage it with sharp objects.
- Never touch the power cable/plug or vehicle cable with wet hands as this could cause a short circuit or electric shock.
- To avoid a risk of fire or electric shock, do not use this device with an extension cable. If the mains cable or vehicle cable is damaged it must be replaced by the manufacturer, its service agent, or similarly qualified persons in order to avoid a hazard.

1.4 - WALL MOUNTING WARNINGS

- Read the instructions before mounting your charging station on the wall.
- Do not install the charging station on a ceiling or inclined wall.
- Use the specified wall mounting screws and other accessories.
- This unit is rated for indoor or outdoor installation. If this unit is mounted outdoors, the hardware for connecting the conduits to the unit must be rated for outdoor installation and be installed properly to maintain the proper IP rating on the unit.

2 - DESCRIPTION

This product is intended to be used for charging electric vehicles having appropriate charging system according to IEC 61851-1 pilot signal standard. This document describes the specific functions and features of the relevant variants of charging stations and measurement devices for electrical energy in accordance with § 46 of the German Measures and Verification Ordinance (MessEV) including PTB-A 50.7 and PTB REA document 6-A.

Only the following models are certified according to MessEG and MessEV:

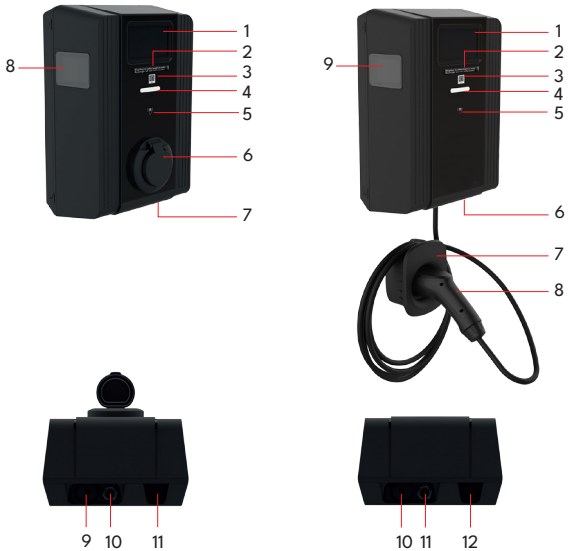
EVC08*-AC***EICH-*

The charging station can be used for billing by the kWh in accordance with German calibration law. You can see the German calibration law, which is described in **Chapter.20.**

Model Name	**MODEL DESCRIPTION: EVC08*-AC***EICH-*** EVC08 : Electric Vehicle AC Charger 1st Asterisk (*) : Cabinet Type 01 : Liveo 02 : Newnow 2nd Asterisk (*) : Rated Power 7 : 7.4 kW (1Phase Supply Equipment) 11 : 11 kW (3Phase Supply Equipment) 22 : 22 kW (3Phase Supply Equipment) 3rd Asterisk (*) can include combinations of the following communication module options. High Secure Smart Board with Ethernet Port, Wi-Fi, RFID and NFC reader are standard equipment for all of the model variants. L and 5G options cannot be selected simultaneously. L : LTE / 3G / 2G module 5G : 5G / LTE / 3G module P : ISO 15118 PLC module 4th Asterisk (*) can be one of the following: Blank : No Display D : 4.3" TFT color display 5th Asterisk (*) can be one of the following: EICH : Charging Unit with Eichrecht Conformity 6th Asterisk (*) can be one of the following: Blank : No PEN protection PEN : Broken PEN detection and disconnection function 7th Asterisk (*) can be one of the following: Blank : Case-B Connection with normal socket T2S : Case-B Connection with shuttered socket T2P : Case C Connection with Type-2 plug

3 - GENERAL INFORMATION

3.1 - INTRODUCTION OF THE PRODUCT COMPONENTS



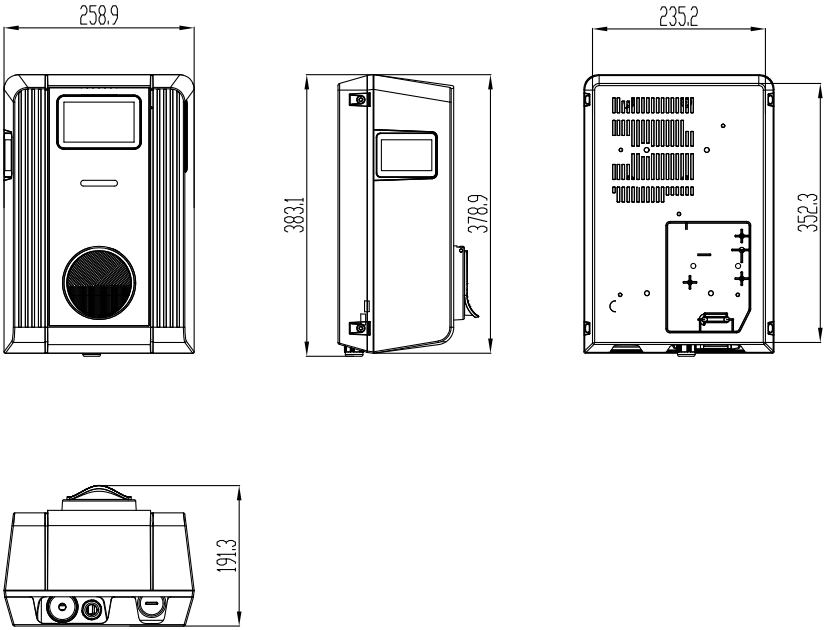
EN Socket Models

1- Information Display (optional)
2- Informative Display Label
3- User Manual QR Code Label
4- Status indicator LED
5- RFID Card Reader
6- Socket Outlet
7- Product Label
8- Calibration-compliant MID
9- Charging station connection cable union nut
10- Charging station Ethernet connection cable gland nut
11- Out of use

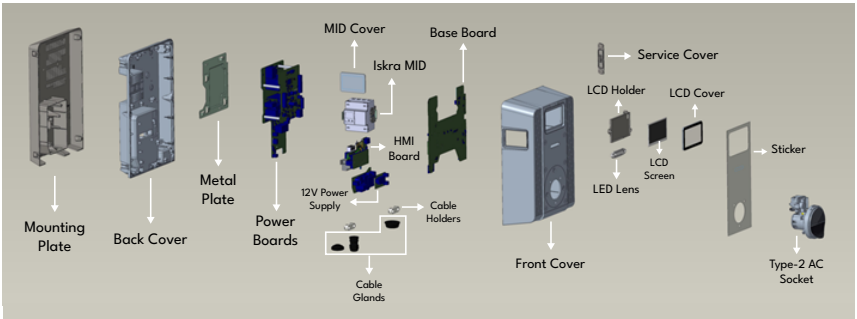
EN Tethered Cable Models

1- Information Display (optional)
2- Informative Display Label
3- User Manual QR Code Label
4- Status indicator LED
5- RFID Card Reader
6- Product Label
7- AC Plug Holder
8- Charging Plug
9- Calibration-compliant MID
10- Charging station connection cable union nut
11- Charging station Ethernet connection cable gland nut
12- Charging cable

3.2 - DIMENSIONAL DRAWINGS

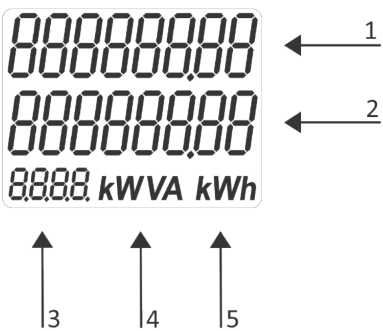


3.3 - OVERVIEW ILLUSTRATIONS OF CONSTRUCTION



3.4 - LCD DISPLAY

This display enables the various measured values and the associated units and registers to be shown in plain text.

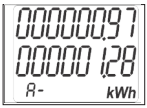


1	Total kWh import
2	User settable line
3	4 digit label
4	kWVA display
5	kWh display

The texts on the display scroll through cyclically. The next display appears every 8 seconds. While the meter is measuring a consumer, the display is continuously backlit and the scrolling of the display continues.

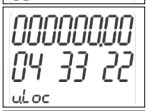
Start:

Display sequence in the display;

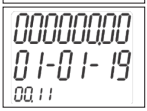


Export active energy counter

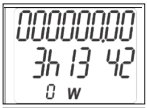
SW version



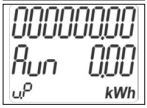
Time



Date



Duration



Energy consumption of charging

3.5 - TYPE PLATE

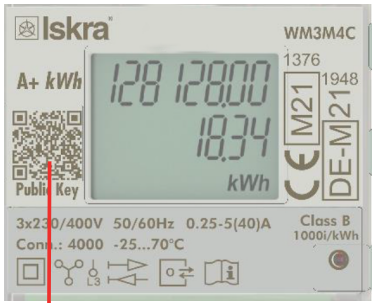
The type plate is located in the right-middle corner EV charger. It includes the CE marking, serial number and electrical properties of the charger. Read the instructions before first use.

Example of type plate for EVC08

3.6 - PUBLIC KEY

A QR code is printed on the front of the meter, which contains the public key in full format.

The signature can be verified by means of a public key.



Public Key Information

Public key (for the measurement capsule, imaged on the type plate of the meter of the charging station in the form of a QR code).

4 - REQUIRED EQUIPMENT, TOOLS and ACCESSORIES

		
Drill Bit 8mm	Impact Drill	PC or Mobile Phone
		
Volt Indicator	Torx T25 Security Screwdriver	Flathead Screwdriver (Tip width 2.00-2.5 mm)
		
Right Angle Screwdriver Adapter / Torx T20 Security Bit	Pointed Spudger	RJ45 Crimping Tool
		
Cat5e or cat6 ethernet cable		

5 - TECHNICAL SPECIFICATION

This product is compliant to IEC61851-1 (Ed3.0) and IEC61851-21-2 standard for Mode 3 use.

Model		EVC08-AC22 Series	EVC08-AC11 Series	EVC08-AC7 Series
IEC Protection class		Class - I		
Vehicle Interface	**Socket Model**	Socket TYPE 2 (IEC 62196)		
	Cable Model	Cable with TYPE 2 (IEC 62196) Female Plug		
Voltage and Current Rates		230/400V ~ 50 Hz - 3-Phase 32A	230/400V ~ 50 Hz - 3-Phase 16A	230 V ~ 50 Hz - 1-Phase 32A
Broken PEN Detection Voltage Range (Optional)		<208V , >254V Single/Three phase TN-C-S supplies only		
AC Maximum Charge Output		22kW	11kW	7.4kW
Built-in Residual Current Sensing module		6mA DC 4P- 40mA AC RCCB Type-A		
Required Circuit Breaker on AC Mains		4P-40A MCB Type-C	4P-20A MCB Type-C	2P-40A MCB Type-C
Required AC Mains Cable		5x 6 mm^2 (< 50 m) External Dimensions: Ø 18–25 mm	5x4 mm^2 (< 50 m) External Dimensions: Ø 18–25 mm	3x 6 mm^2 (< 50 m) External Dimensions: Ø 13-18 mm
Required AC Mains Cable (Optionaly only for France)		5 x 10 mm^2 (< 50 m) External Dimensions: Ø 18–25 mm	5 x 6 mm^2 (< 50 m) External Dimensions: Ø 18–25 mm	3 x 10 mm^2 (< 50 m) External Dimensions: Ø 13-18 mm

6 - CONNECTIVITY

Ethernet	10/100 Mbps Ethernet
Wi-Fi	Wi-Fi 802.11 a/b/g/n/ac
Cellular (Optional)	LTE: B1 (2100 MHz), B3 (1800 MHz), B7 (2600 MHz), B8 (900 MHz), B20 (800 MHz), B28A (700 MHz) WCDMA: B1 (2100 MHz), B8 (900 MHz) GSM: B3 (1800 MHz), B8 (900 MHz)

7 - OTHER FEATURES (Connected Models)

Diagnostics	Diagnostics over OCPP WebconfigUI
Software Update	Remote software update over OCPP WebconfigUI update Remote software update with server

8 - AUTHORIZATION

RFID	ISO-14443A/B and ISO-15693
PLUG & CHARGE (Optional)	ISO-15118-2

9 - MECHANICAL SPECIFICATIONS

Material	Plastic
Product size	260 mm (Width) x 350 mm (Height) x 158 mm (Depth)
Dimensions (with package)	365 mm (Width) x 495 mm (Height) x 320 mm (Depth) - (cable model) 365 mm x 495 mm x 295 mm - (socket model)
Product weight	5,5 kg for socket equipped model 9 kg for tethered cable model (3 phase) 7,5 kg for tethered cable model (1 phase)
Weight with package	7,6 kg for socket equipped model 12 kg for tethered cable model (3 phase) 10,5 kg for tethered cable model (1 phase)
AC Mains Cable Dimensions	For three-phase models Ø 18-25 mm For one-phase models Ø 13-18 mm
Cable Inlets	AC Mains / Ethernet / Modbus

10 - ENVIRONMENTAL TECHNICAL SPECIFICATIONS

Protection Class	Ingress Protection Impact Protection	IP54 IK10
Usage Conditions	Temperature Humidity Altitude	-25 °C to 50 °C 5% - 95% (relative humidity, without condensation) 0 - 3,000m

11 - TECHNICAL CHARACTERISTICS OF THE MEASURING CAPSULE

Dieses Produkt entspricht dem Standard IEC61851-1 (Ed3.0) für die Verwendung in Modus 3.

Model	WM3M4C
Manufacturer	ISKRA Electronic
Mark of type-examination certificate	DE MTP 20 B 011 M
Iref [A]	5
Imin [A]	0,25
Imax [A]	60
Meter constant [imp./kwh]	1000
Un [V]	3x 230/400V
Frequency [Hz]	50Hz
Temperature range	-25...+70˚C
Accuracy class	B
Firmware version	V2.05
Checksum of the firmware	EEC6 6478(Hex)

12 - INSTALLING CHARGING STATION

12.1 - SUPPLIED INSTALLATION EQUIPMENT AND ACCESSORIES

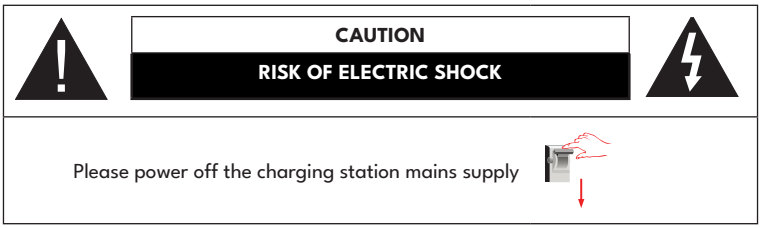
Accessory/Material Name	Use For	Quantity	Picture
Mounting Plate Cover	Cover for mounting plate	1	
Dowels (M8x50 Plastic Dowels)	Mounting charging station to the wall	7	
Torx T25 Security Screw (M6x50)	Mounting charging station to the wall	7	
Torx T20 Security L-Allen	IP for screws which are used for mounting charging station to the Wall.	1	
RJ45 Male Connector – Optional	LAN Cable connection	1	
Screw M6X50	Mounting the charging station to the pole	7	
Ferrite	Inserted onto the ethernet cable	2	
Ferrite	Inserted onto the AC mains cable	1	
Cable Gland	Cable gland for AC mains cables	1	
AC Plug Holder (optional)	This part is mounted on the wall or stand pole so that the cable is wound over it.	1	
SIM Card (Optional)	Product control with internet connection	1	
User RFID Card (Optional)	Start&Stop Charging	2	
Master RFID Card (Optional)	Adding & Removing the User RFID Cards to Local RFID List	1	
QSG	Quick Start Guide	1	

12.2 - PRODUCT INSTALLATION STEPS

CAUTION!

- Ensure that ground resistance of the installation less than 60ohms.
- Prior to mounting your charging station on the wall, read these instructions.
- Do not mount your charging station to the ceiling or an inclined wall.
- Use the wall mounting screws and other accessories specified.
- This charging station is classified as indoor and outdoor installation compatible. If the device is installed outside the building, the hardware that will be used to connect the cables to the charger shall be compatible with outdoor use and the charging station shall be mounted preserving the IP rate of the charger.

12.2.1 - WALL MOUNT INSTALLATION



Wall mount installation is common for all charging station models.

1- Remove 4 screws (2 on right, 2 on left side of the charger) of the mounting plate of the charger with torx T20 security L-Allen or screwdriver adapter using torx T20 security bit.

2- Place the mounting plate of the charging station to the wall and mark the drill bit holes with a pencil.

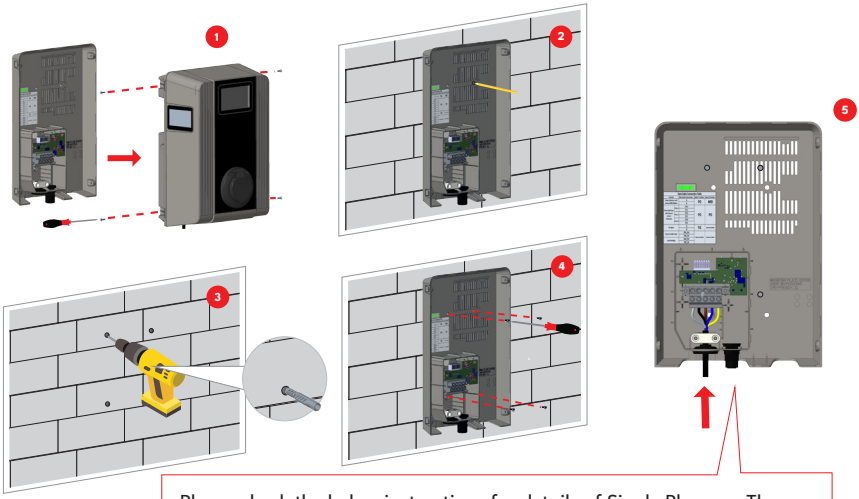
3- Drill the wall on the marked points using the impact drill (8mm drill bit). Place the dowels into the holes.

4- Tighten the security scews (6x50) of the mounting plate using torx T25 screwdriver.

5- Insert the AC mains cable into the mounting plate from the left cable gland which below the mounting plate. Follow the "AC Mains Connection Instructions" on the next pages, depending on the model of the charger. (Single/Three Phase)

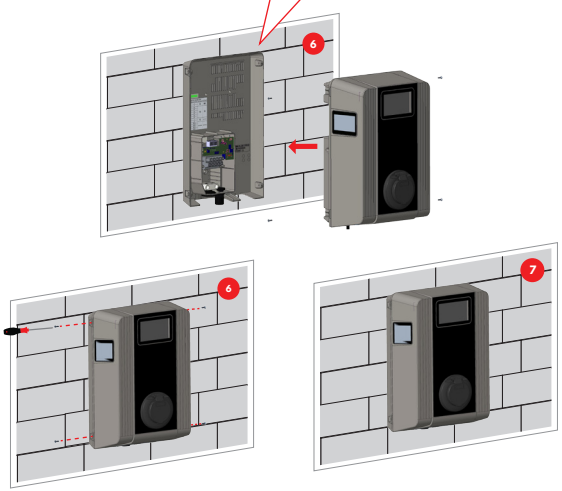
6- Place the charging station into the mounting plate and tighten the 4 screws (2 on right, 2 on left side of the charger) with Torx T20 security L-Allen or screwdriver adapter using torx T20 security bit. (Min:1.2Nm; Max:1.8Nm)

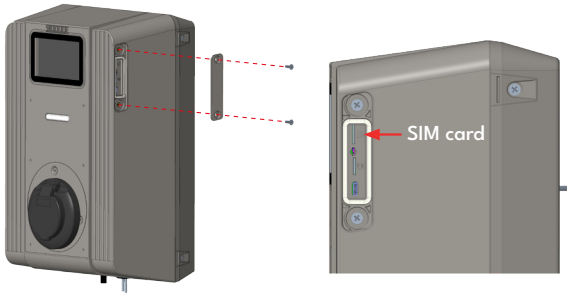
7- Mounting the charging station on the wall is finished.



Please check the below instructions for details of Single Phase or Three Phase cable connections.

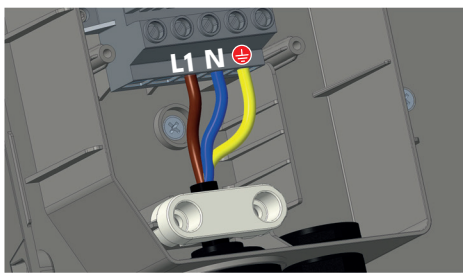
Before closing the cover of the charging station, check next instructions if any function related to these sections are used.





SIM card, Type C USB and SD card slots are placed under the service cover of the charger. Service cover is fixed with secure screws which can only be removed torx T20 security L-Allen or screwdriver adapter using torx T20 security bit.

12.2.2 - SINGLE PHASE CHARGING STATION AC MAINS CONNECTION

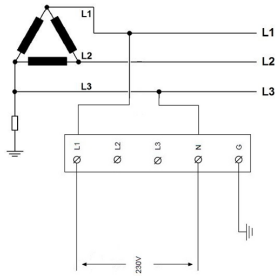


1- Insert the cables to the terminal block as shown in the image. Check the table below to match Electric Terminal number with AC Cable Color.

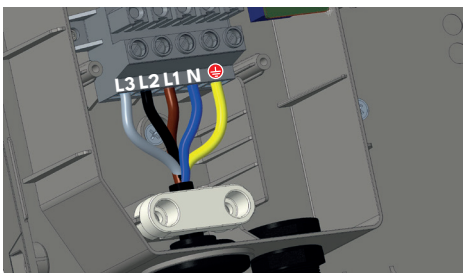
2- Tighten the screws on the terminal block as shown in the image with the tightening tourqe of 2 Nm.

Electric Terminal	AC Cable Color
L1	AC L1 (Brown)
N	AC Neutral (Blue)
⏚	Earth (Green-Yellow)

For single phase **IT Grid** installation, wiring diagram which is shown below should be used. Also grounding type should be set to “IT Grid” from the ”Installation settings” menu in web user interface.



12.2.3 - THREE PHASE CHARGING STATION AC MAINS CONNECTION



1- Insert the cables to the terminal block as shown in the image. Check the table below to match Electric Terminal number with AC Cable Color.

2- Tighten the screws on the terminal block as shown in the image with the tightening tourqe of 2Nm.

Electric Terminal	AC Cable Color
L3	AC L3 (Grey)
L2	AC L2 (Black)
L1	AC L1 (Brown)
N	AC Neutral (Blue)
⏚	Earth (Green-Yellow)

If you want to install the three-phase charging station in single-phase, the phase cable connection must be made on terminal L1 as shown in the figure in the SINGLE-PHASE CHARGING STATION AC MAINS CONNECTION section.

13 - DATA CABLE CONNECTION TABLE

Function		Data Socket Connections	Switch 1 Position	Switch 2 Position
Power Optimizer with External MID Modbus		A	PO	MID
		B		
Power Optimizer with External Current Trasformer	Phase 1	CT1+	PO	PO
		CT1-		
	Phase 2	CT2+		
		CT2-		
	Phase 3	CT3+		
		CT3-		
TIC Meter		I1	TIC	PO
		I2	does not matter	does not matter
External Inable Input		EN1_IN+		
		EN1_IN-		
Load Shedding		EN2_IN+		
		EN2_IN-		

14 - TERMINAL BOARD CONNECTIONS AND SETTINGS

1- Remove rubber cork from cable gland.

2- Insert cable through the cable holes. One hole is for ethernet cable, and second hole is for other data connection cables

3- Connect the ethernet cable to RJ45 port which is located at the bottom of the terminal board.

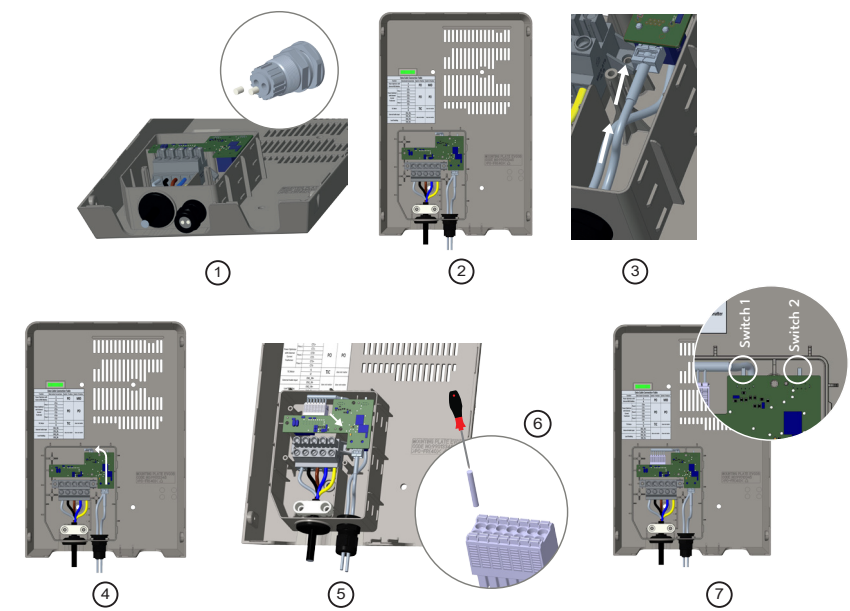
4- Route the data cable underneath the terminal board.

5- Remove the data connection socket on the terminal board. Connect data cables to data connection socket by pushing the top of the each connection point on the data socket with a small flat screw driver. Follow the "data connection table" for the correct order.

6- Connect the data connection socket back on the terminal board.

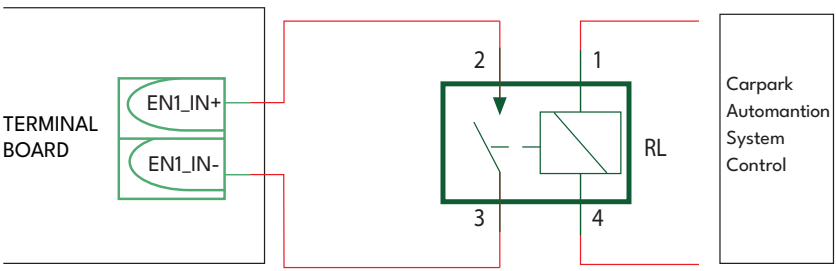
7- Set the "Switch 1" and "Switch 2" positions on the terminal board with respect to "data connection table".

NOTE : Below data connection cables can be inserted through the cable holes;
a. External enable input cable
b. External MID or TIC meter cables
c. External current transformer cables
d. Ethernet cable
e. Load shedding triggering signal cable
f. Shunt trip module control signal cable for welded relay contact failure



14.1 - EXTERNAL ENABLE INPUT FUNCTIONALITY

Your charging station has external potential free enable / disable functionality which can be used for integration of your charging station to an carpark automation systems, energy supplier ripple control devices, time switches, photovoltaic inverters, auxiliary load control switches, external key lock switches etc. Refer to "Data Cable Connection Table" for terminal board connection and setting details of externa enable input function. Externa enable input function can be enabled or disabled via web configuration interface. To activate the functionality please check web configuration interface.



If the external relay (RL) is in non-conducting (open), the charging station will not be not be able to charge the electric vehicle.

You can connect potential free input signals as shown in above circuitry (see figure).

14.2 - POWER OPTIMIZER (REQUIRES OPTIONAL ACCESSORIES)

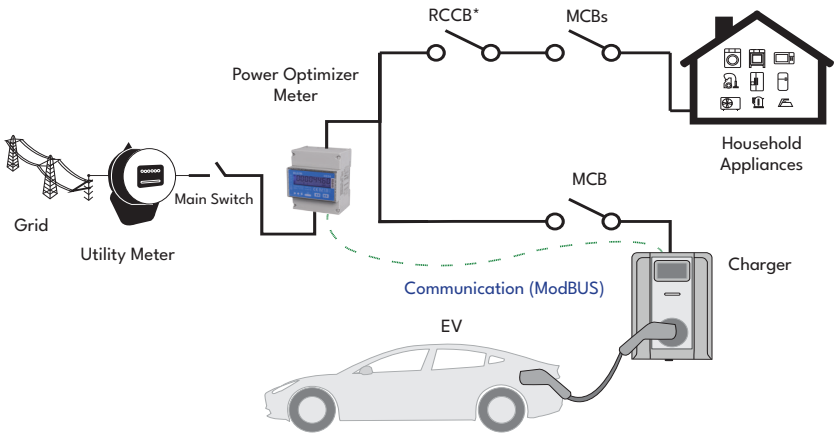
The EV charger has option to make single load balancing with different accessories.

1. Power Optimizer with External MID meter
2. Power Optimizer with External Current Transformer (CT)

To adjust the power optimizer, refer to "Data Cable Connection Table" for terminal board connection and setting details of power optimizer with current transformer or power optimizer with external MID. Power optimizer function can be enabled or disabled via web configuration interface. To activate the functionality please check web configuration interface.

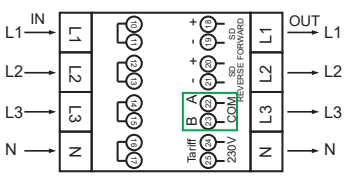
This feature is provided with an optional metering accessories which are sold separately. In power optimizer mode, the total current drawn from the main switch of the house by charging station and other household appliances is measured with current sensor integrated to the main power line. Current limit of the main power line of the system is set via web configuration interface. According to the limit set by the user, charging station adjusts its output charging current dynamically according to the measurement of main power line.

14.2.1 - POWER OPTIMIZER WITH EXTERNAL MID METER

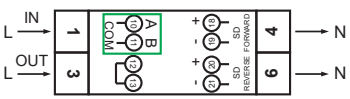


Power Optimizer Meter should be placed just after the main switch of the house as shown in the figure.
Power Optimizer Meter wiring connections can be made according to the information below.

Three Phase



Single Phase



- 22-23: A-B (COM) Modbus connection over RS485 for three phase charging station models.
- 10-11: A-B (COM) Modbus connection over RS485 for single phase charging station models.

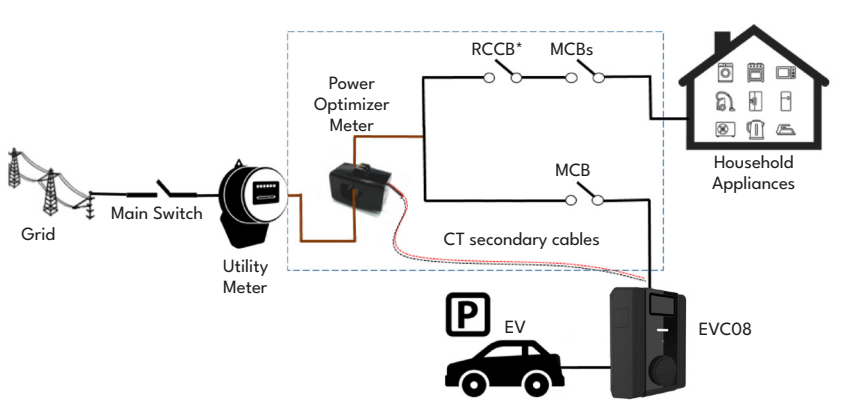
For the modbus cable connection and setting details on the terminal board, please refer to "Data Cable Connection Table"

14.2.2 - POWER OPTIMIZER WITH EXTERNAL CURRENT TRANSFORMER (CT) (Optional)

In external CT transformer usage; for Power Optimization (dynamic load management) to be used with household appliances and EV Charger together, 1 piece of External Current Transformer (FATS16L-100) is used for monophase EV Charging installation and 3 pieces of External Current Transformers are used for three-phase installation. In power optimizer mode, the total energy drawn from the main switch of the house by charging station and other household appliances is measured with the help of this current transformer installed to the main power line. The charging station regulates the charging power of the electric vehicle according to the load on main switch of the house.

To adjust the power optimizer with current transformer, refer to "Data Cable Connection Table" for terminal board connection and setting details of power optimizer with current transformer. also refer to web configuration interface for setup of the power optimizer with current trasformer.

The power optimizer with external CT should be placed as shown in the figure below.



14.3 - LOAD SHEDDING

This charging station supports load shedding functionality which provides immediate charging current reduction in case of limited supply. Load shedding functionality can be used in any mode including Standalone and OCPP connected modes. Load shedding triggering signal is a dry contact signal which must be provided externally and connected to the terminal board which is listed in "Data Cable Connection Table". Load shedding can be enabled or disabled via web configuration interface. When load shedding is activated by closing the contacts with an external device (Eg. ripple control receivers etc.) charging current reduces down to 8A. Limited charging current value can be reset via web configuration interface. When load shedding is deactivated by opening the contacts charging continues with maximum available current. In normal use case when there is no signal connected to the load shedding input (contacts open between terminal 3 and 4) charging station supplies maximum available current.

15 - FACTORY RESET

When the service cover is disassembled by removing the secure screws with torx T20 security L-Allen or screwdriver adapter using torx T20 security bit, the factory reset will be activated by pressing and releasing the tamper switch 5 times in a 20-second total time period, provided that the process starts from the position where the tamper switch is released. To press and release the tamper switch, service cover can be used.

16 - COMMISSIONING & OCPP CONNECTION

OCPP connection can be achieved via WIFI, ethernet or cellular network. WIFI and ethernet are standard for th EVC08 where cellular is an option.

16.1 - CONNECT OCPP OVER CELLULAR NETWORK (OPTIONAL)

Disassemble the service cover by removing the secure screws with torx T20 security L-Allen or screwdriver adapter using torx T20 security bit to access the micro SIM card slot. Insert the SIM card with respect to below figure. Then replace the service cover and tighten the security screws.

16.2 - COMMISSIONING

If you want to connect the charging station's web configuration interface, you have two options;

a. You can directly connect your PC to the charging station using a patch Ethernet cable. If you follow this option, please make sure that you have properly configured your charging station's LAN interface to static IP.

b. You can use a router having DHCP server. In this option, both the charging station and the PC should be connected to the router. Please be sure that you need to check the IP adress from the router to be able to make the connection.

16.2.1 - CONNECT PC TO THE SAME NETWORK WITH SMART BOARD

In order to access web configuration interface, first you need to connect your PC and EV charger to the same ethernet switch or connect EV charger to your PC directly.

Default IP address of HMI board is 192.168.0.10. For this reason, you need to give static IP to your PC in the same network with HMI board.

You should assign static IP address to your PC in 192.168.0.0 network which means that IP address should be in a range of between 192.168.0.1 and 192.168.0.254.

16.2.2 - OPENING WEB CONFIGURATION INTERFACE VIA WI-FI HOTSPOT

For this unit, when accessing to Wi-Fi Hotspot settings in the WEB User Interface, under Network Settings tab, Wi-Fi Hotspot can be enabled or disabled. Also, optionally timeout activated can be changed as 5-30 minutes or continuous.
During the Wi-Fi Hotspot timeout duration, it is possible to connect a smart device (mobile phone, tablet or laptop) to the charging station.
Each product has a Wi-Fi Hotspot SSID and Wi-Fi Hotspot password set as factory configuration. Wi-Fi Hotspot SSID and Wi-Fi Hotspot password informations are located on the label pasted to the Quick Start Guide. You can log in to the Web configuration interface via Wi-Fi Hotspot by entering the network information written on the label.
After connecting to the "Wi-Fi Hotspot" network, the user can open the WEB browser from the computer or mobile device and type the IP address of the charging station, Wi-Fi Hotspot at IP-Address is written on the label.

For Android mobile devices, it is necessary to configure the browser to download and display the desktop site from the menu in the upper right corner of the Chrome browser. For iOS mobile devices, it is necessary to configure the browser to download and show the desktop site from the menu in the top right corner and also set the text size to 50%in the AA setting in the top left corner of the Safari browser.

Note: Maximum 3 users can connect to WEB Configuration Interface via Wi-Fi hotspot. It supports 2.4Ghz.

16.2.3 - OPENING WEB CONFIGURATION INTERFACE WITH BROWSER

Open your web browser and type 192.168.0.10 which is IP address of HMI board.

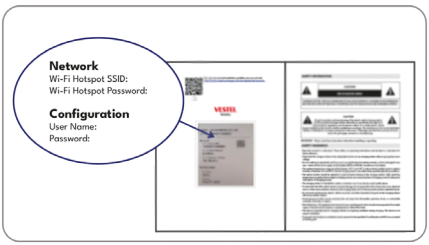
You will see login page on your browser;

Each product has a user name and password set as factory configuration.

In this section you can log in to the Web configuration interface by entering the configuration information printed on the label. User Name and Password informations are located on the label pasted to the Quick Start Guide as shown below.

Only for the first login you will be forced to change your password.

You can change password with Change Password Button in WEB UI login page or Administration Password section in the System Maintenance tab.



Visual representation is provided

Attention: For web configuration interface accessibility problems; Web browsers usually save some information from websites in its cache and cookies. Forcing Refresh or Clearing (depending on your operating system and browser) them fixes certain problems, like loading or formatting issues on web page.

In case of security warning via web browser due to expired SSL certificate, please proceed to webpage connection.

After logging in for the first time using the default credentials, you will be prompted to review and confirm the Privacy Policy.

You must check the box “I read, I understand” and click “Confirm” to continue to the interface.

17 - WEB CONFIGURATION INTERFACE

MAIN PAGE	The Main page provides an overview of the key system information and connection status of the EVC device. Below are the descriptions of each displayed parameter: **User Name:** Username of the logged-in user. **CP Serial Number:** Unique serial number of the device. It is used for device authentication and remote management. **HMI Software Version:** The software version of smart board (HMI) that runs the device's touchscreen interface. **OCPP Software Version:** The version of the Open Charge Point Protocol (OCPP) software, which enables communication with the charging network management system. **Power Board Software Version:** The version of the software that controls power management and charging operations of device. **Duration after Power On:** The total time (in hours, minutes, and seconds) that has passed since the device was last powered on. Useful for uptime tracking and performance monitoring. **Connection Interface:** The current communication method used by device. It can be Ethernet, WLAN (Wi-Fi), or Cellular. **Ethernet Interface IP:** The IP address assigned to device when connected via a wired Ethernet connection. **WLAN Interface IP:** The IP address assigned when device is connected via Wi-Fi. (If not connected, this field will be empty.) **Cellular Interface IP:** The IP address assigned when device is connected via a mobile network. (If not connected, this field will be empty.) **OCPP Device ID:** Unique identification number used by device when communicating with OCPP server. **Connector State:** Indicates current status of device's charging connector. This information helps users better understand the details displayed on the main page of the web configuration interface. You can also change the web configuration interface language and log out of the web configuration interface with the buttons in the upper right corner of the page. The following languages are available: Turkish, English, German, French, Romanian, Spanish, Italian, Finnish, Norwegian, Swedish, Hebrew, Danish, Czech, Polish, Hungarian, Slovak, Dutch, Greek, Bulgarian, Montenegrin, Bosnian, Serbian, Croatian.

17.1 - GENERAL SETTINGS

Display Language	Available languages will be listed, if display is available. The EV charger display language can be adjusted as desired.
Display Backlight Settings	To optimize visibility of display according to daylight conditions, Sunrise Time and Sunset Time can be selected when Backlight Level is time based.
Display Service Contact Info	Customer care number to be shown on "Out of Order" screen. When the device gets an error, the Display Service Contact Info entered in this field will be displayed on the screen to assist with resolving the problem. If you want to show display service contact information on another screens like "Connect Charging Cable", "Preparing for Charging", "Initializing", "Waiting for Connection" screens you can enable the config from Show Extra Service Contact Info setting. (If charging station has a display.)
Display QR Code	QR code can shown on screen or disabled. QR Code Delimiter, between CPID and ConnectorID of the text inside QR code.
LED Dimming Settings	To optimize visibility of status indicator LED according to daylight conditions, Sunrise Time and Sunset Time can be selected when Led Dimming Level is time based.
Standby LED Behaviour	Standby status indicator LED behaviour can be set as On or Off.
Display Theme	EV charger's display theme color can be set from this tab.
Logo Settings	Logo on the top-right corner of the display. You can change the Display logo with the upload button, You can only upload in png format and the size of the logo you choose must be 80x80. You can also remove the logo with the remove button.

Scheduled Charging	If the device is in Standalone Mode, you can only set Randomised Delay Maximum Duration and Continue Charging After Power Loss settings. Randomised Delay Maximum Duration is the setting that allows device to apply a random delay time before charging starts and can take values between 0 and 1800. The device waits for a random time before starting the charging process. For example, if Randomized Delay Maximum Duration = 60 seconds, the device will apply a random delay between 0 and 60 seconds. **Off- peak Chargig:** If the device is in OCPP Mode, for this mode you should enabled OCPP Connection in OCPP Settings. In OCPP Mode you can make all Off-Peak Charging settings. Off-Peak Charging is a feature that allows an electric vehicle to be charged during off-peak hours, when the grid is less busy. **Off- peak Charging at the Weekends:** Time period of charging at weekends when the electricity demand is low (off-peak hours). **Off- peak Charging Second Time Period:** Refers to charging in the second of the low electricity demand time periods. Some electricity tariffs offer more than one low-price time slot during the day. For example: First Off-peak time: 00:00 - 06:00 at night 2nd Off-peak time: 13:00 - 16:00 in the afternoon This expression means that charging is done during the second off-peak hour. So you are charging during the second off-peak time slot instead of the first off-peak time slot. **Off- peak Charging Periods:** User can determine set off-peak hours. Randomised Delay At Off Peak End: When the low tariff hours end, charging is delayed for a random period of time. Off-Peak End → End of low tariff (off-peak) hours Randomized Delay → Random delay **Timezone:** Refers to the local time zone in a particular region. **Continue Charging End Peak Interval:** Continue charging at the end of the peak interval. **Continue Charging Without Reauth After Power Loss:** Charging process will continue without requiring reauthorization after a power loss.

17.2 - INSTALLATION SETTINGS

Earthing system	In web configuration interface, earthing type is “TN/TT” by default. If Earthing Type is selected as IT, the protective earth error check is disabled.
Current Limiter Settings	Current Limiter Phase information can be adjusted in this menu. Also Current Limiter Value can be written manually between 6-32A. If a value below 6A is written, a warning will be shown to write minimum 6A. **Note:** The current limiter of the charging station can be set in hardware via the rotary switch or manually in the web configuration interface. There is no hardware or software configuration interface priority. The charging station uses the current value last set by the installer from either interface.
Unbalanced Load Detection	You can enable or disable the Unbalanced Load Detection. If enable option is selected, Unbalanced Load Detection Max Current can be selected. Unbalanced Load Detection Minimum value is 6, max value is Current Limiter Value. Current Limiter Value can be set on Current Limiter Settings.
External Enabled Input	You can enable or disable the External Enable Input.
Lockable Cable	You can enable or disable the Lockable Cable.
Charging Mode Selection and Power Optimizer Configuration	In this part, you can select Follow The Sun, Follow The Sun Mode, Auto Phase Switching, Operation Mode, Power Optimizer Total Current Limit and Power Optimizer External Meter. **For a detailed explanation of Follow The Sun, please refer to section 6.5.2.1.** Operation Mode can be Normal, Peak / Off-Peak, TIC without Peak / Off Peak. TIC Power Optimizer Total Current Limit can be Disabled or can take values between 10 and 100. When TIC selected in Operation Mode , Power Optimizer Total Current Limit and Power Optimizer External Meter can not be selected. When Power Optimizer Total Current Limit is Disabled, Power Optimizer External Meter can not be selected. Power Optimizer External Meter. can be selected Auto Selected, Klefr 6924 / 6934, Garo GNM3T / GNM3D, Embedded Power Optimizer with CT, P1 Slimmemeter. If Power Optimizer External Meter is Auto Selected, Power Optimizer value reads from main board.
Load Shedding Minimum Current	Load Sheddding Status is reading from main board, you can select Load Shedding Minimum Current from Web configuration. This parameter can take values between 0 and Current Limiter Value. Current Limiter Value can be set on Current Limiter Settings.

G100 Settings	G100 settings allows you to enable or disable **G100 Mode** and select the Installation Type as either Domestic or Commercial. When the **Installation Type** is set to Domestic, the **G100 OP State** automatically changes to State - 3 which means the device has entered safety mode beacuse the grid voltage or frequency has exceeded its limits. In this case, you can restart the device by pressing the **G100 STATE-3 RESET** button. However, this action can only be performed a limited number of times. If the G100 State-3 reset limit is reached to maximum, the admin can press the **G100 LOCKOUT RESET** button and confirm the action to exit the Excursion condition. In this part, to change the Installation Type to Domestic, ensure the following: 1. If using Local Load Management, the Maximum Grid Current must be 100 or less. 2. If using Power Optimizer, the Total Current Limit of the Power Optimizer must be 100 or less.

17.2.1 - FOLLOW THE SUN

17.2.1.1 - Inverter Type and Mode Configurations with Different Measurement Methods

17.2.1.1.1 - Export Mode with the usage of CTs

Export Mode with the usage of CTs at the inverter output and input of the electrical consumer devices of the house. Inverter may only be single phase for CT usage and also supports energy export to grid.

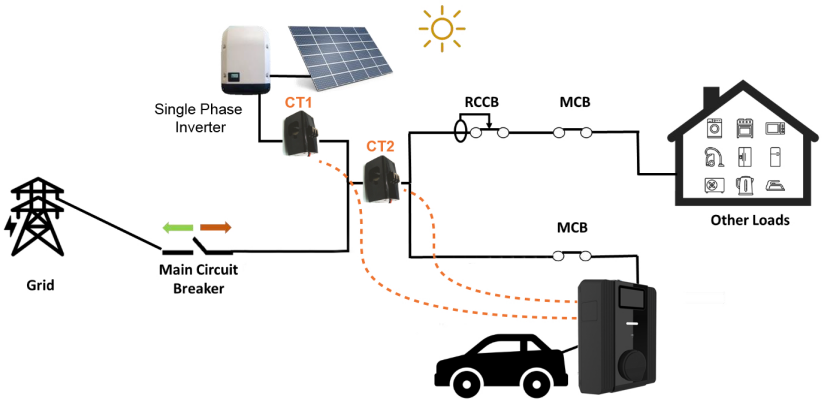


Figure 1

Place the CT1 and CT2 to mains lines with respect to Figure-1. Connect the CT1 and CT2 to terminal board with respect to data cable connection table. Set the switch 1 and switch 2 on terminal board to activate "power optimizer with external current transformer" with respect to data cable connection table.

NOTE: CAT5 cable length to use should be below 100 meters.

17.2.1.1.2 - Export Mode with the Usage of Utility Meter

Export Mode with the usage of Energy Meter at the Grid output.

Energy meter may be single phase or three phase for supports energy export to grid.

The energy meter KLEFR 6934 is used for a 3-phase installation or the model KLEFR 6924 for a 1-phase installation.

The total energy drawn from the main switch of the house by charging station and other household appliances is measured with this device integrated to the main power line. The charging station regulates the charging power of the electric vehicle according to the load on main switch of the house.

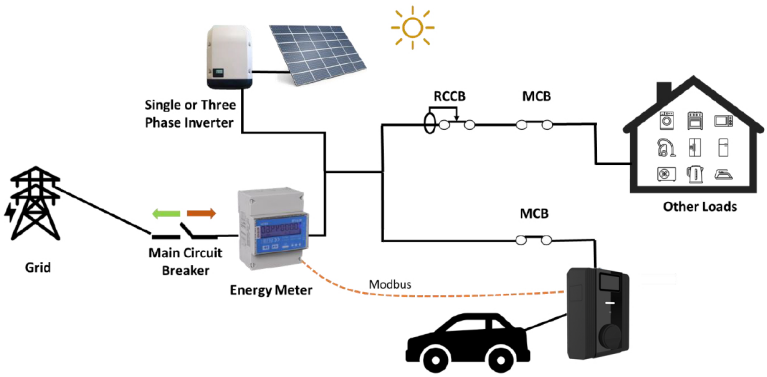


Figure 2

Energy Meter is connected to the terminal board with respect to data cable connection table.

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The figures are just generic examples of power optimizer meter installation to a distribution box of the house, not to be exactly the same for the actual house installation.

Energy Meter wiring connections can be made according to the information below.

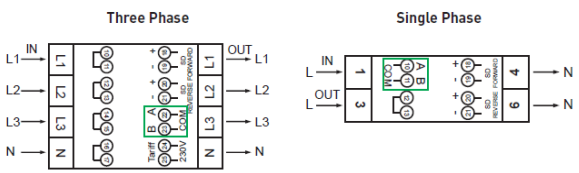


Figure 3

22-23: A-B (COM) Modbus connection over RS485 for three phase charging station models. (See the following section "Data Cable Connection Table")

10-11: A-B (COM) Modbus connection over RS485 for single phase charging station models. (See the following section "Data Cable Connection Table")

17.2.1.2 - Modes of Operation

Follow The Sun mode functionality can be enabled and disabled. If Follow The Sun mode is enabled; there are 3 options for the Follow The Sun;

17.2.1.2.1 - Sun Only

This mode is used for pure solar charging of the electric vehicle for least carbon footprint. When the user activates this mode, charging is only with energy from solar power generation. Vehicle can be charged with whatever solar generation is currently available, without using grid support at all. Charging is possible only with solar surplus. If solar generation is low, charging will not be possible.

17.2.1.2.2 - Sun Hybrid

This mode is used for solar charging with limited support from the grid when there is no solar generation. If solar generation is high enough, grid support won't be used. If solar generation is low, charging station will use grid support to be able to start charging. Eg. Solar generation is 3A and minimum charging current of the charging station is 6A, 5A will be used from the grid (minimum charging current is calculated as 8A because 6A + 2 A hysteresis). (CP min charging current is 6A for IEC 61851, 8A for ZE Ready 1 phase charging, 13A for ZE Ready 3 phase charging.)

Sun Only and Sun Hybrid modes can be overridden (forced charge) from Drive Green App and charging station will switch to max available charging current mode for that single charging session and will fallback to Sun Only mode after active charging session is finished.

17.2.1.2.3 - Max Hybrid

When the user activates this mode, the charging process should be a normal charging process that can charge at maximum power regardless of solar generation or grid support option.

17.2.1.3 - Auto Phase Switching

When the user activates the Follow the Sun, the charging station can automatically switch 1 phase/3 phase according to the amount of solar production and consumption.

17.3 - OCPP SETTINGS

OCPP Connection	If you select mode as “Enabled”; you should type all fields in the connection settings and configuration parameters sections are enable. For now, the only available OCPP version is OCPP 1.6, so it will be selected as default. The Central System Address and Charge Point Id are mandatory fields for saving this page. You can set OCPP configuration parameters to their default values by clicking “Set to Defaults” button. **OCPP Ciphers Support:** A cipher suite is a set of algorithms that help secure a network connection. If “Ocpp Security Profile” is selected as 2 or 3, OCPP specification enforces one of two cipher suites to be used. If your backend uses a different cipher suite you can change this setting as “All Ciphers” but it will be incompatible to OCPP standard. You can select the OCPP settings type you want from the menu which is at the left side of the page. For example OCPP Connection, OCPP Version, OCPP Ciphers Support, Connection Settings and OCPP Configuration Parameters. Then, click “Save” button. **Note:** Be careful for your entered values because the system does not accept the unsuitable values and gives warning. In this case, values will not be saved. Then you will not be redirected to the main page so you should check your values. **PLUG & CHARGE (Optional):** ISO15118-2 PLUG&CHARGE function can be enabled/disabled under the “OCPP Settings” page by “ISO15118PnCEnabled” item. To be able to charge with PLUG&CHARGE function, EV shall also support the PLUG&CHARGE function.

17.4 - NETWORK INTERFACES SETTINGS

There are four types of network interfaces in this page; Cellular, Ethernet, Wi-Fi and Wi-Fi Hotspot.
Select interfaces' modes as "Enabled" if you want to activate it.
You should fill all spaces in suitable formats.

CELLULAR	If "Static" is selected; "IMEI", "IMSI" and "ICCID" fields are mandatory. When cellular getaway is enabled, the LAN interface IP setting mode will be set to static and DHCP Server will be enabled.
LAN	If you select Ethernet or Wi-Fi IP Settings as "Static"; "IP Address", "Network Mask", Default Gateway"and "Primary DNS" spaces are mandatory.
WLAN	If you set Wi-Fi as enabled, "SSID", "Password" and "Security" are mandatory. A list of available wireless networks is displayed in the WLAN section.
WIFI HOTSPOT	Details are described in section "OPENING WEB CONFIGURATION INTERFACE VIA WIFI HOTSPOT".
FIREWALL	Input and output policies determine how the network is operated. Default policies in this area should be adjusted as needed by authorized people. Access to the device may be completely blocked after incorrect settings. This is not a software issue but a configuration error. These policies should be adjusted according to the whitelist or blacklist logic and the necessary rule configuration should be made for the desired situations. **Status** This setting controls the firewall status: "Enable" activates it, while "Disable" deactivates it. The "Disable" option turns off the firewall, preserving the status of all settings. **Incoming Trafic** This policy determines the default behavior for incoming traffic. The "Allow" option accepts all incoming traffic, while the "Deny" option rejects all incoming traffic. **Outgoing Trafic** This policy determines the default behavior for incoming traffic. The "Allow" option accepts all incoming traffic, while the "Deny" option rejects all incoming traffic. **Adding Custom Rules:** Users can add custom firewall rules and select and delete them. To delete a rule, check the box in the "Select" column and click the "Delete" button. Rules are prioritized from top to bottom. The "Add" button will open a pop-up and the rules will be added to the list by making the necessary settings and pressing "Add".

	Policy: This setting determines whether to accept or reject a certain type of traffic. The “Allow” option allows the traffic, while the “Deny” option blocks the traffic. **Direction:** This setting determines which direction of traffic the rule applies to. The “Input” option targets incoming traffic, while the “Output” option targets outgoing traffic. **Interface:** This setting determines which network interface the rule is applied to. Options include “LAN”, “wlan”, “Cellular”, and “lo”. **Protocol:** This setting determines which communication protocol the rule is applied to. Options include “tcp”, “udp”, and “None”. **Port:** This setting determines which port number the rule is applied to. Users can add as many rules as they want and can edit or delete them as needed. This enhances the flexibility and convenience of your firewall application.
WEBCONFIG ACCESS PROTOCOL	HTPP does not provide encrypted communication.Sensetive data such as passwords may be exposed to attackers. HTTPS is recommended for secure communication.

17.5 - STANDALONE MODE SETTINGS

If you have set OCPP as enabled in OCPP settings before, standalone mode cannot be selected. Otherwise, you can select standalone mode. There are three modes in the list;

Select “RFID Local List” mode to authenticate a RFID local list which will be entered by you. You can make an addition or deletion from the RFID local list later.

Select “Accept All RFID’s” mode to authenticate all RFID’s.

Select “Autostart” mode to allow charging without the need for authorization. It will be enough to plug to start charging.

If you are done with mode selection, click “Save” button and reboot the device.

For an in-depth overview of the LOCAL LOAD MANAGEMENT configuration settings, please refer to Section 17.7.

17.6 - MAKING SYSTEM MAINTENANCE OF THE DEVICE

Log Files	**In the Log Files page**, you can download device event logs for a selected date range (maximum 5 days) using the Start Date and End Date fields. Device logs are automatically deleted every 30 days. You can also click CLEAR to permanently delete all event logs stored on the device. **Download Change Logs:** Within the scope of Personal Data Protection, all changes made to the device settings are kept. Saved logs of which users and which actions were taken can be downloaded with the "Download Change Logs" button.
Firmware Updates	You can upload the firmware update file from your PC, after the file is uploaded, click on "Update" button to start the firmware update. When update is started, your charger's LED indication will be seen as constant red. With Display Models, the firmware update process is shown on the screen as follows: **1-**The firmware is sent, and the device begins uploading it. **2-** While updating, the following warning will appear on the screen: "Updating Firmware! Please do not start charging while updating." **3-** After 5 seconds, the display will automatically return to the home screen and the indicator "Connect charging cable" will appear on the screen. After the firmware update is finished, your charger will restart automatically. You can see the latest firmware version of your charger from webconfig UI in main page.
Configuration and Backup	You can backup of the sytem. If you want to restore you can click the Restore Config File button and upload the backup file. The system only accepts the .bak files.
System Reset	You can proceed to this section to make Hard Reset and Soft Reset.
Administration Password	A password is required for administrative access.
Factory Default Configuration	You can reset your device to its factory settings.
Local Charge Sessions	From this page, you can download and view the full session log and charging summary, including the duration of charging and the RFID card used, in Excel format.

17.7 - LOCAL LOAD MANAGEMENT OF THE DEVICE

The Local Load Management tab includes two parts: **General Settings** and **Load Management Group.**

GENERAL SETTINGS

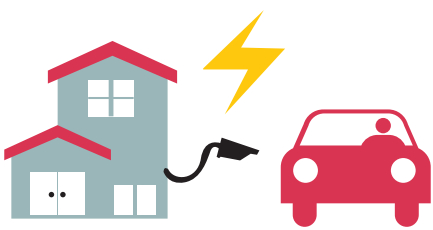
If the device with dynamic local load management; local management option can be disabled, Modbus TCP or Master/Slave.

17.7.1 - Modbus TCP/IP Protocol Parameters

EVC08 charging station acts as a slave device in the Modbus TCP/IP communication. Charging station should be in the same network with the master device or a proper routing should be applied to provide communication between slave and the master devices in different sub networks. Each charging station should have different IP address. Modbus TCP communication port number is 502 and Modbus Unit ID is 255 for EVC08 charging stations. There can be only one active Modbus master connection at any time. When a new Modbus connection is established, the master is expected to set the Failsafe Current, Failsafe Timeout and Charging Current registers immediately. The master also periodically sets the Alive register to indicate that the connection is still alive. If the master does not update the value of the alive register until the failsafe timeout, the device switches to the failsafe state; TCP socket is terminated and failsafe current becomes active. As the update period of the Alive register, half of the failsafe timeout is recommended.

17.7.2 - Static Management

For static management, a power limit can be set to the load management group and the charger won't go above the power limit.



17.7.3 - Dynamic Management

With the help of dedicated power optimizer option, EV Charging station can manage the power limit based on the available power. When the household appliances consumes more, the charger consumes less and doesn't overload the main switch.

There are 2 different types of network topologies available for connecting multiple EVC08 charging stations in master/slave clusters. According to the customer needs, one of these alternatives can be chosen.

17.7.4 - Star Topology

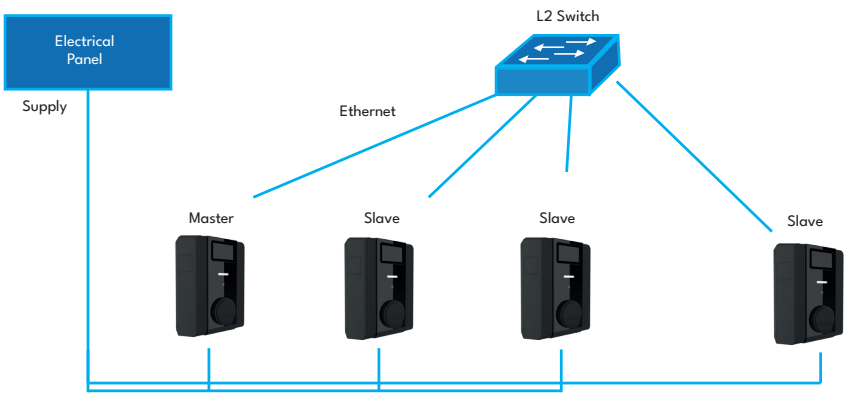
In star network topology, all chargers are connected to the master station via a network switch or router. This topology needs cabling between each charging station and the central switch. This topology is more reliable than daisy chain topology since each charging station has its own connectivity to the network switch. For connection of each station to the central switch, Cat5e or Cat6 Ethernet cables can be used up to 100 meters each.

For the IP configuration of the network, either the router may have DHCP server or the master charging station can be configure as DHCP server. If you use a router with a DHCP server, you need to configureall charging stations including the master station LAN IP address setting as “Dynamic” from “Network Interfaces” menu. In this scenario, all the charging stations get their IP addresses from central DHCP server.

If you use a router or a L2-switch without DHCP server, you need to configuremaster charging station LAN IP settings to DHCP server and slave charging station LAN IP setting to “Dynamic” from “Network Interfaces” menu. In this scenario, slave charging stations get their IP addresses from master charging station.

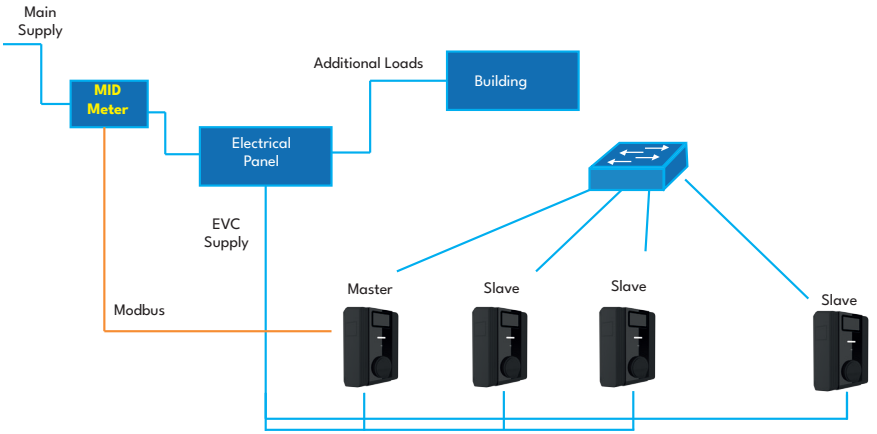
Block diagrams for static and dynamic supply in star network topology are provided as below.

17.7.4.1 - Static Supply Star Topology:



Local Load Management configuration of static supply.

17.7.4.2 - Dynamic Supply Star Topology:



LOCAL LOAD MANAGEMENT - LOAD MANAGEMENT GROUP

After the basic load management configurations are finished, be sure to connect all of the slave charging stations to the master charging station through daisy chain or star network topology.

When all the charging stations are ready to communicate with the master charging station, click “UPDATE DLM GROUP” button in “Load Management Group” menu. When “UPDATE DLM GROUP” button is clicked, master charging station starts slave discovery mode and automatically finds and lists slave charging stations in the list including master charging station itself as connector.

After master charging station discovers all the slave charging stations, then you can make other required settings of each connector one by one. After selecting the slave serial number the respective slave information will be visible.

If the selected connector is required to be prioritized over the other charging stations, you can set “VIP Charging” as enabled.

For setting the actual phase connection sequence of each charging station, you need to select correct sequence from the dropdown menu.

Note that if the charging station has only one phase supply, then you just need to select correct phase number from the drop down menu.

Until connection is alive operating with available current, when connection lost with network then operating with fallback current it is not compulsory until click in the block.

Other parameters of slave are just read only information from the connectors, which can be updated to the latest values by refreshing the configuration web interface.

Similar to slave list for each slave we have connector list and can select specific connector number from list of connectors and It will show updated information of respective connector as connector state, Instant Current and Available.

18 - CHECKING VALIDITY OF MEASUREMENT DATA USING TRANSPARENCY SOFTWARE

This section is describing charging, transfer of legally relevant data and billing of charging process in accordance with the German Measures and Verification Ordinance (MessEV).

In this charging station, the progressing kWh display information is shown on the display.

What is transparency software?

Transparency software allows you to verify digital signatures. Depending on its technical design, a charging station creates digitally signed meter readings in connection with the charging procedure you are carrying out at the charging station. These digital signatures enable you to check the readings with a time delay so that you can ensure noone has manipulated the readings at any point during their transfer to your invoice.

In order to use the transparency software you must first download and then open it on your desktop PC system.

You can download transparency software from the link below. Installation is explained on this site.

https://www.safe-ev.de/en/transparency_software.php

How does the transparency software work?

Transparenzsoftware 1.2.0

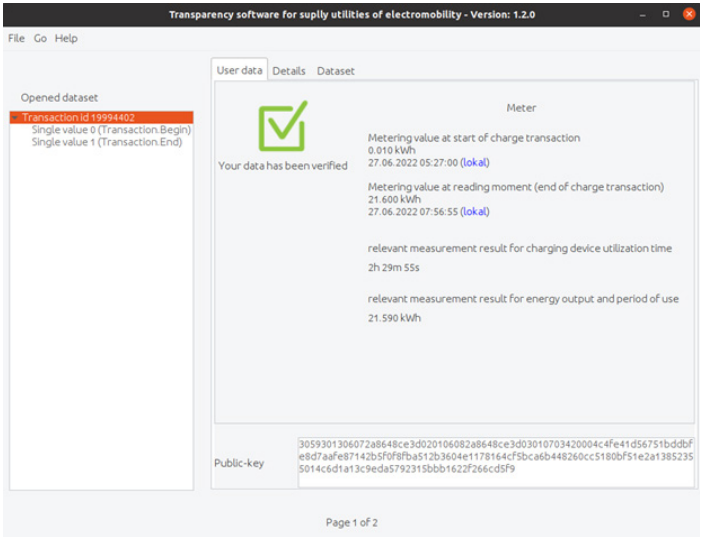
With the use of this software, it's possible to verify a digital signature. Depending on the technical setup, a charging station will produce a digitally signed meter reading that is linked to the charging station where an EV is being charged. With this digital signature, you can check the measured values with a delay. In this way, as a consumer, you always know for sure that the charged kWhs are correct and that the measured values can no longer be adjusted when the charged kWhs are invoiced.

LOADING DIGITAL SIGNATURE DATA

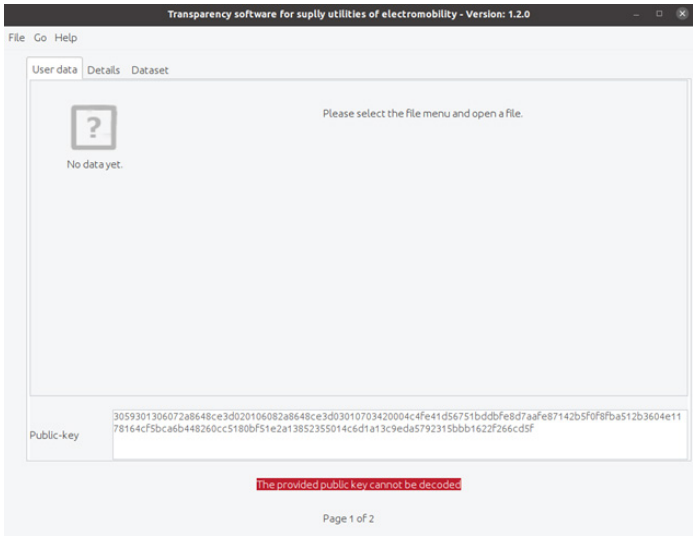
Select the meter readings available to you using the 'File' / 'Open' function and enter the charging station's public key.

CHECKING THE RESULT

Check the output as to whether the results of digital signature verification match the information on your invoice or charging receipt.



If you enter the wrong public key, it will give an error message as below.



Remote transmission of metering data to a OCPP backend

Charging station connecting to an OCPP backend, the corresponding signed measurement and log data record is provided to the OCPP backend automatically at the end of a charging session.

Forwarding data records to customers

Forwarding data records to customers is the job of the charge point operator and is not within the scope of influence of the charging station manufacturer. After the charging session, signed metering data records are transmitted to an OCPP central system and this data is available to an end user via web interface, e-mail, smart phone application or similar.) The data records are preferably in .xml format. If you need to verify the charging session data by using transparency software please request signed measurement data from your charge point operator or e-mobility provider.

Verification of measurement data using the transparency and display software

Using the transparency and display software, users can check whether the measurement data comes from a certain charging station and whether its authenticity has been maintained.

The charging station has a public key. The public key is openly available and indicated on the type plate of measurement unit of the charging station in the form of a QR code. The charging station creates a measurement data record in the measurement capsule. The charge point operator then uses the signed measurement data record to create the bill. Both the signed measurement data and the public key, in a format that is compatible with the transparency and display software, must be provided on the bill or in a customer portal.

After receiving the bill, the consumer can input the digitally signed measured values along with the public key into the transparency and display software. The signature verification enables the consumer to check the validty of the measured values. To do so, the consumer compares the values displayed in the transparency and display software with the contents of the bill. If the measurement record is validated by transparency software , this confirms that the data record was not changed and valid for billing.

The transparency and display software checks the following data:

Public key, as identifier of the charging station. The public key can also be read on the type plate of measurement unit of the charging station.

Correct measured energy value

Correct user/transaction ID

Checking the signed measurement data record

To check the measurement data record, proceed as follows:

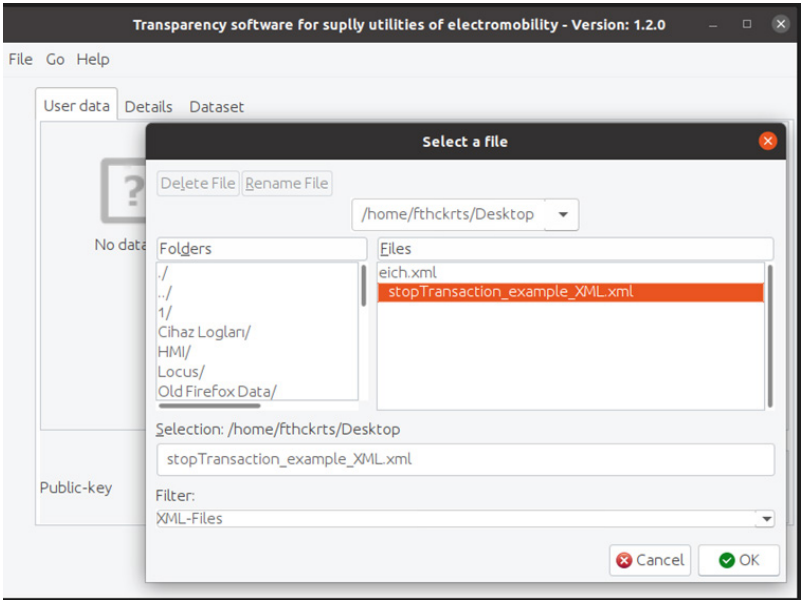
1) Download and install a Java Runtime Environment (available for all operating systems, usually already present, e.g. Oracle).

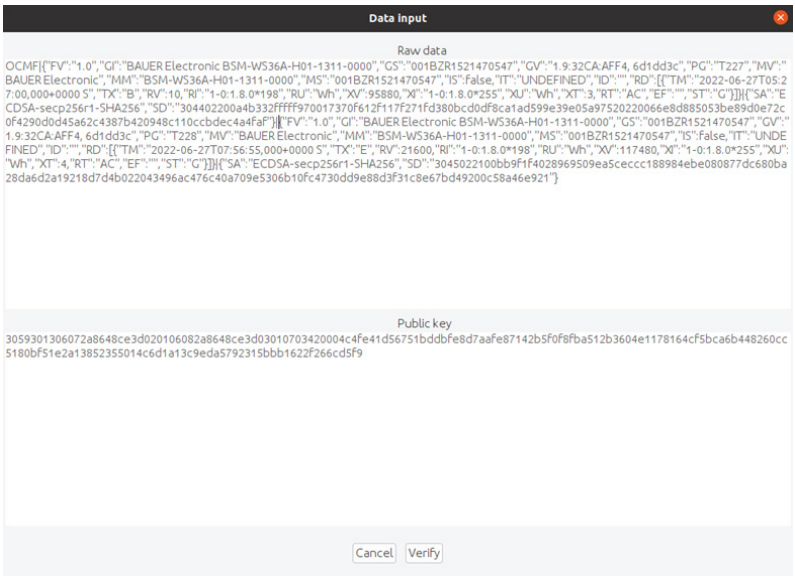
2) Download the transparency and display software from

https://www.safe-ev.de/en/transparency_software.php

3) Input the following data into the transparency and display software:

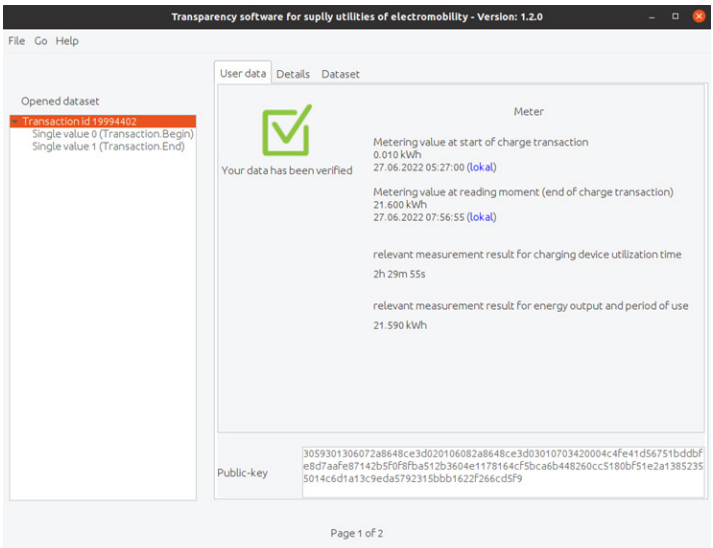
– Signed measurement data record
– Selection of the “OCMF” format
– Public key of the corresponding charging station





4) After entering the necessary data, the check can be started.

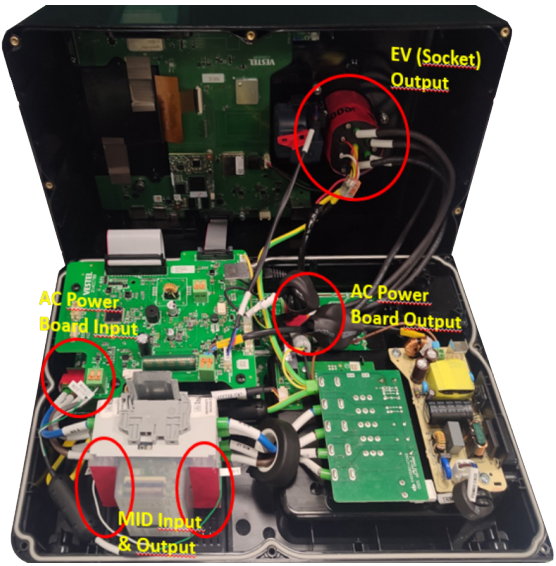
5) After this check is complete, it must be checked whether the results of the signature verification match the information on the bill.



19 - OVERVIEWS OF THE CHARGER CONSTRUCTION WITH DESCRIPTION OF MANUFACTURER'S/OPERATOR'S SEALS

19.1 - MANUFACTURER'S SEALS

Manufacturer's seals are applied to the measurement units of the charger during production. The EVC08 Eichrecht product front and back cover of the inside images are shown in the figure below. The parts circled in red indicate the manufacturer's seal.

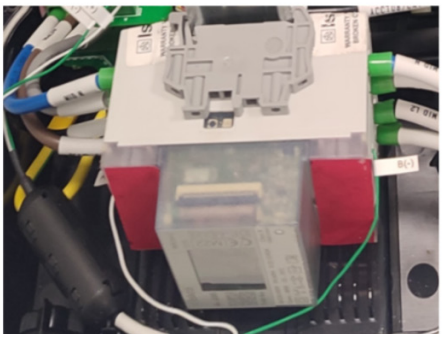


19.2 - MID INPUT & OUTPUT SEAL

Iskra WM3M4C eichrecht approved MID meter is going to be used with EVC08. Seals will be placed on the top of input & output connection screws of MID.

Correct Seal Placement of MID input & output:

Sealing sticker for MID input and output: 52*18 mm



19.3 - AC POWER BOARD INPUT CONNECTOR SEALS

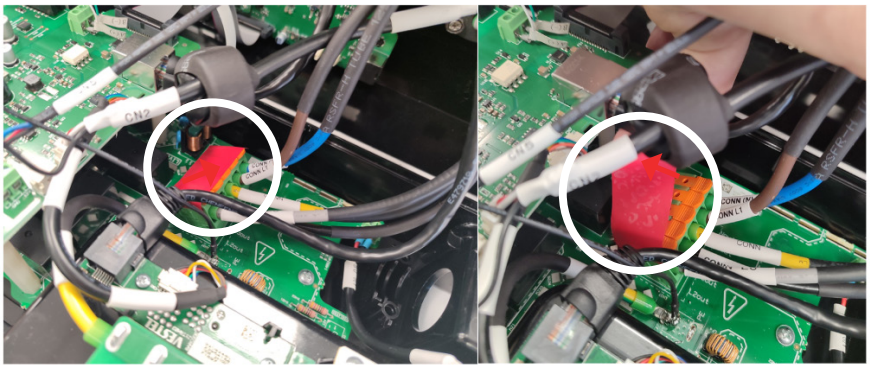
AC mains input connector of 21ACPW08 board has latch type terminals. Each of the power line is compressed with in the terminal which is operated manually and placed at the top of connectors. 21ACPW08 board's input connections are secured by placing a seal on the top of input connector at the top of it. Correct application of seal is on the below.

Sealing sticker for AC Power Board Input 40*20 mm

Sealing sticker for AC Power Board Output 40*20 mm

19.4 - 21ACPW08 OUTPUT CONNECTOR SEALS

Output connector of 21ACPW08 board has latch type terminals just like the input connecter. 21ACPW08 board's output connections are secured by placing a seal on the top of input connector at the top of it. Correct application of seal is on the below left, and defected sample photo is on the below right.

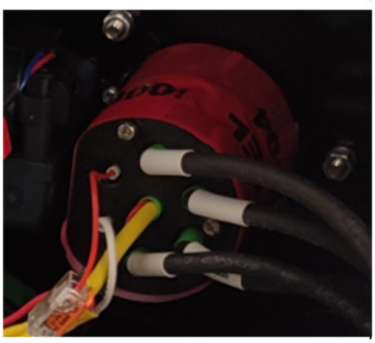


19.5 - EV (SOCKET) OUTPUT SEALS

Eichrecht seal of EV (socket) output is applied as two pieces. Seal is applied on the side walls of socket body where the connection screws are reachable. Correct application of seal is on the below.

Sealing sticker for socket #1 dimension: 110*52 mm

Sealing sticker for socket #2 dimension: 80*25 mm



19.6 - Operator's seal

The recommended places for the operator seals are as shown in the images below. The parts circled in red indicate the operator's seals. It is recommended to seal external enclosure of the charging station after the installation.

20 - LEGAL INFORMATION

20.1 - NOTES ON THE CORRECTNESS OF MEASUREMENT ACCORDING TO CSA TYPE EXAMINATION CERTIFICATE

I - Conditions for the operator of the charging device, which must be fulfilled as a necessary prerequisite for the intended operation of the charging device.

The operator of the charging device is the user of the measuring device within the meaning of Section 31 of the Measuring and Calibration Act.

1. The charging device is only used in accordance with calibration law and properly used, if the meters installed in it are not exposed to other environmental conditions than those for which their type examination certificate was issued.
2. The charging device is only used in accordance with calibration law and properly used, only if the authentication methods listed under point 1.3.2.3.2 of the currently valid BMP of these 6.8 devices are used.
3. When registering the charging points with the Federal Network Agency, the user of this product must also register the public key specified on the charging device for the charging points in the registration form! Without this registration, the column cannot be operated in accordance with calibration law. Web link: https://www.bundesnetzagentur.de/DE/Sachgebieten/ElektrizitaetundGas/UNTERNEHMEN_ INSTITUTIONS/E-Mobilitaet/start.html
4. The user of this product must ensure that the calibration validity periods for the components in the charging device and for the charging device itself are not exceeded.
5. The user of this product must ensure that charging devices are taken out of operation promptly if operation in accordance with calibration law is no longer possible due to fault or error messages on the display of the man-machine interface relevant to calibration law. The catalogue of fault and error messages in these operating instructions must be observed.
6. The user must store the signed data packets read out from the charging device - according to the pagination without gaps and permanently (also) on hardware dedicated to this purpose in his possession or by corresponding agreements in the possession of the EMSP or backend system ("dedicated storage"), - keep it available for authorized third parties (mandatory operation obligation.). Permanently means that the data not only has to be stored until the end of the business

transaction, but at least until the expiry of possible statutory appeal periods for the business transaction. No substitute values may be created for billing purposes for data that is not available

7. The user of this product has a user's measured values, the measured values received from them and used in the course of their business, provide an el3ectyronic form of a CSA approved instruction manual. In doing so, the user of this product must refer in particular to No. II "Conditions for the user of the measured values from the charging device".
8. The user of this product is subject to the obligation to notify according to § 32 MessEG (excerpt):*§ 32 Obligation to notify (1) Anyone who uses new or renewed measuring devices must notify the competent authority under state law no later than six weeks after commissioning....*
9. Insofar as it is considered necessary by authorized authorities, the complete content of the dedicated local memory or the memory at the EMSP or backend system with all data packages of the billing period must be made available by the meter user.

II - Requirements for the user of the measured values from the charging device (EMSP)

The user of the measured values must observe § 33 of the MessEG:

§ 33 MessEG (quote)

§ 33 Requirements for the use of measured values

(1) Values for measurands may be used in commercial or official transactions or for measurements in public interest only if a measuring device was used as intended and the values can be traced back to the respective measurement result, unless otherwise specified in the ordinance pursuant to Section 41 number 2. Other federal regulations that serve comparable protective purposes continue to apply.

(2) Anyone who uses measured values must ensure, as far as possible, that the measuring device meets the legal requirements and must have the person using the measuring device confirm that they are fulfilling their obligations.

(3) Whoever uses measurements has

1. to ensure that invoices, insofar as they are based on measured values, are issued by the person for whom the Invoices are determined, traced in a simple way to check specified measured values can be and

2. If necessary, provide suitable aids for the purposes specified in number 1

For the user of the measured values, this regulation gives rise to the following specific obligations regarding the use of measured values in accordance with calibration law:

1. The contract between EMSP and the customer must state unequivocably, that the supply of electrical energy only, and not the duration of the charging service is the subject of the contract.
2. The time stamps on the measured values come from a clock in the charging device that is not certified according to measuring and calibration law. They must therefore not be used to rate the measured values.
3. The EMSP must ensure that the customer is automatically sent a receipt of the measurement and the information on the determination of the business transaction after the measurement has been completed and at the latest at the time of invoicing, unless the customer expressly waives this. The information to determine the business transaction can be the following:
    a. Name of EMSP
    b. Start and end time of the loading process
    c. Charged energy in kWh
    d. Credit card number

4. If the customer requests proof of the correct transfer of the measurement results from the charging device to the invoice, the user of the measurement value is obliged to provide this in accordance with MessEG, § 33, paragraph (3). If the customer requests reliable, permanent proof in accordance with Annex 2 10.2 MessEV, the user of the measured value is obliged to provide this to him. The EMSP must inform its customers about these obligations in an appropriate manner.

This can be done, for example, in the following ways and depending on the authentication method:

a. When loading with a continuing obligation via the textual contract

b. When loading selectively (ad-hoc loading) via APP or mobile website together with the receipt via email or SMS

c. In the case of selective loading (ad-hoc loading) using a (contactless) money card together with the receipt for the account statement

5. The EMSP must provide the customer with the billing-relevant data packages automatically after the measurement is complete and at the latest at the time of billing, including the signature, as a data file in such a way that they can be checked for authenticity using the transparency and display software. The data packets can be made available in the following ways and depending on the authentication method via channels that have not been verified under calibration law:

a. When loading with a continuing obligation via an email or access to a backend system

b. When loading selectively via APP or mobile website via an e-mail or SMS

c. When charging selectively using a (contactless) money card via the account statement and the associated access to a backend system

6. The EMSP must be able to show in a verifiable manner which means of identification was used to initiate the charging process associated with a specific measured value. This means that he must be able to prove for every business transaction and billed measured value that he has correctly assigned the personal identification data to them. The EMSP must inform its customers of this obligation in an appropriate manner.
7. The EMSP may only use values for billing purposes for which data packets are available in a dedicated memory that may be available in the charging device and/or the memory at the EMSP or backend system. Substitute values may not be formed for billing purposes.
8. The EMSP must make appropriate agreements with the operator of the charging facility to ensure that the data packets used for billing purposes are stored for a sufficient period of time in order to be able to fully complete the associated business processes.
9. In the event of a justified notification of need for the purpose of carrying out calibrations, diagnostic tests and use monitoring measures, the EMSP must provide suitable means of identification to enable authentication on the copies of the product belonging to these operating instructions used by him.
10. All of the above obligations apply to the EMSP as the user of the measured values within the meaning of § 33 MessEG even if he obtains the measured values from the charging facilities via a roaming service provider.

21 - MAINTENANCE

The device is maintenance-free. The applicable periods for the validity of calibration must be observed for the electricity meter and charging station. Compliance with the points listed under Model Description, Technical Specification, and Legal Information chapters must be guaranteed over the entire service life of the product. The user must not exceed the validity period for calibration both of them the meter and inside the charging stations. When the calibration period is exceeded please contact the manufacturer for changing the meter inside the charging station by an authorized technical services company.

VESTEL

MOBILITY

CE

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