VESTEL
MOBILITY

ELECTRIC VEHICLE CHARGER

EVC-X STELLA SERIES

Installation Guideline

CONTENTS

ABBREVIATIONS

PU	Power Unit
DU	Dispenser Unit
AC	Alternative Current
DC	Direct Current
PE	Protective Earth
L	Line
LED	Light Emitting Diot
MID	Measuring Instruments Directive

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

The AC grid connection and the electric vehicle charger's load plan are examined and approved by the electrical regulations and standards of the related region or country determined by the authorities. In the installation of multiple electric vehicle chargers, the load plan will be determined accordingly. The manufacturer shall not be liable in any way, directly or indirectly, for damages or risks caused by the errors that may occur due to AC grid connection or load planning.

CAUTION: FOR DEVICES WITHOUT EMERGENCY BUTTON;

If any suspicious or emergency situation arises at the charging station aside from normal operation, start by halting the charging process through the vehicle (using the appropriate switch or button, which may vary depending on the model), and then disconnect the socket. As an alternative option, consider switching off the MCB or RCCB in the panel where the product is energized by the installer.

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 (MCCB and RCCB) in upstream distribution panel. Consult your local dealer.
- The ambient temperature range during charging should be between –35 ˚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 parameters.
- 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.
- Charging Station bottom must be at (or above) the ground level.
- Adaptors or conversion adapters are not allowed to be used. Cable extension sets are not allowed to be used.
- The allowed current value of the service socket is maximum 10A.

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 - INSTRUCTIONS FOR DEALING WITH A FIRE AT ELECTRIC VEHICLE CHARGING STATION

- Personal Safety: If you notice a fire or signs of danger, your own safety is the most important. Do not take risks.
- Immediate Notification of Emergency Services: Contact the appropriate emergency services in your region.
- Discontinuing Charging: If safe to do so, disconnect the charging cable from the vehicle and the charging station.
- Use of Fire Extinguishing Agents: If a fire extinguisher or other fire-fighting equipment is nearby and you are trained to use them, attempt to extinguish the fire. However, never risk your own safety.
- Avoid Direct Contact with the Fire: Do not attempt to extinguish the fire if you do not have the appropriate equipment or knowledge, or if the fire is too large or dangerous.
- Move Away from the Station: If the fire is uncontrolled or growing in strength, move away from the charging station while maintaining a safe distance.
- Avoid Inhaling Smoke: Try to avoid inhaling smoke. If possible, cover your nose and mouth with a damp cloth or clothing.
- Warn Others in the Area: Inform others in the vicinity about the fire hazard and encourage them to leave the area.

- Wait for Emergency Services: After safely leaving the area, wait for the arrival of emergency services at a location that is safe for you.
- No Return to the Station Premises: Do not return to the charging station premises until the emergency services have completed their operation.
- Reporting the Incident: Contact customer support to report the incident.

Remember, safety is paramount. In the event of a fire, always consult with local emergency services and follow their instructions.

1.3 - 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.

1.4 - POWER CABLES, PLUGS and CHARGING CABLE WARNINGS

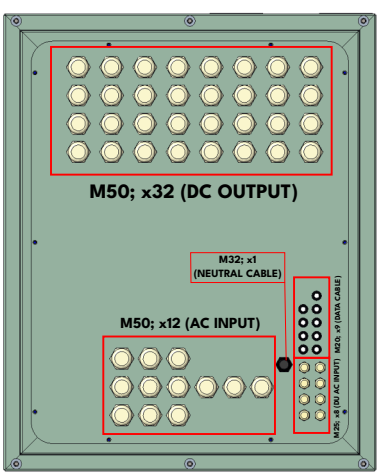
- Be sure that plugs and sockets are compatible on charging station side.
- A damaged charging cable can cause fire or give you an electric shock. Do not use this product if the flexible Charging cable or vehicle cable is frayed, has broken insulation, or shows any other signs of damage.
- Ensure that 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.
- Use appropriate protection when connecting to the main power distribution cable.

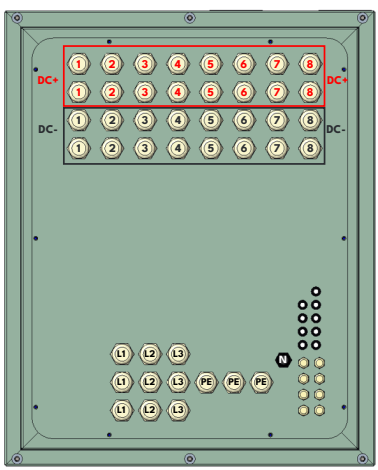
1.5 - REQUIRED UPSTREAM PROTECTIONS

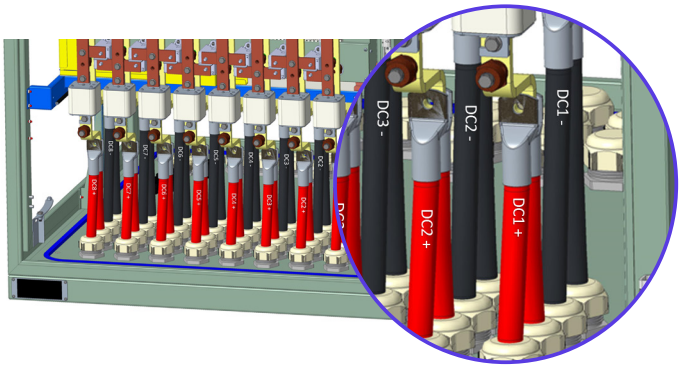
- Class-I/B Lightning Protection must be connected to the upstream distribution panel. Min. cable length between the charger and the protection device recommended to be 10m. *The charger contains Class II Surge Protector Device (SPD).
- MCCB (Thermic Magnetic Adjustable) must be connected to the upstream distribution box.
- Residual Current Device (Toroid) must be connected to the upstream cabinet.
- Single pole 63A MCB must be placed in the upstream cabinet, on the neutral line.

Power Unit (PU)						
Model	**Power output**	**Input Voltage**	**Maximum Input AC current**	**Recommended Cross Section Values L1-L2-L3 (mm2) - (XLPE 1kV 90 °C degrees Copper cable)**	**Suggested Cross-Section Value for Neutral - (Copper Conductor Cable)**	**Recommended Cross-Section Value for PE (mm2) - (Copper Conductor Cable)**
EVCXP-720**	720kW	400V (nom.)	1125A	3x240mm²	1x35mm²	2x240mm²
		360V (-%10)	1250A			
EVCXP-400**	400kW	400V (nom.)	625A	2x185mm²	1x35mm²	1x185mm²
		360V (-%10)	695A			

Details of Cable Glands for PU





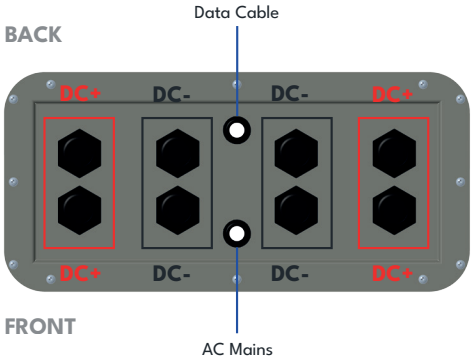


NOTE!! : The mounting plate and glands given in the image are factory output according to 720kW power. According to the product power to be preferred in the installations, the mounting plate revisions due to the cable cross-section belong to the customer.

Dispenser Unit (DU)

Model	Input Voltage (DC)	Maximum Input DC Current	Cooling Unit	Meter	Recommended Cross Section Values L1-N-PE (mm2) - (Copper Conductor Cable for AC Input)	Recommended Cross-Section Values +DC & -DC (mm2) - (XLPE 1kV 90˚C degrees Copper cable)	Fiber Optic Cables for Per Dispenser Unit (recommended shielded)	Ethernet Cables for Per Dispenser Unit
EVC-XD**	200-1000V	500A	NO	NO	3x6mm²	2x2x120mm² (+DC) 2x2x120mm² (-DC)	2xSC to SC, Single Mode, 9um diameter, 1310nm	1x CAT6 SFTP RJ45 Cable
				YES				
		600A	YES	YES		2x2x150mm² (+DC) 2x2x150mm² (-DC)		
		750A		NO		2x2x240mm² (+DC) 2x2x240mm² (-DC)		

Details of Cable Glands for DU

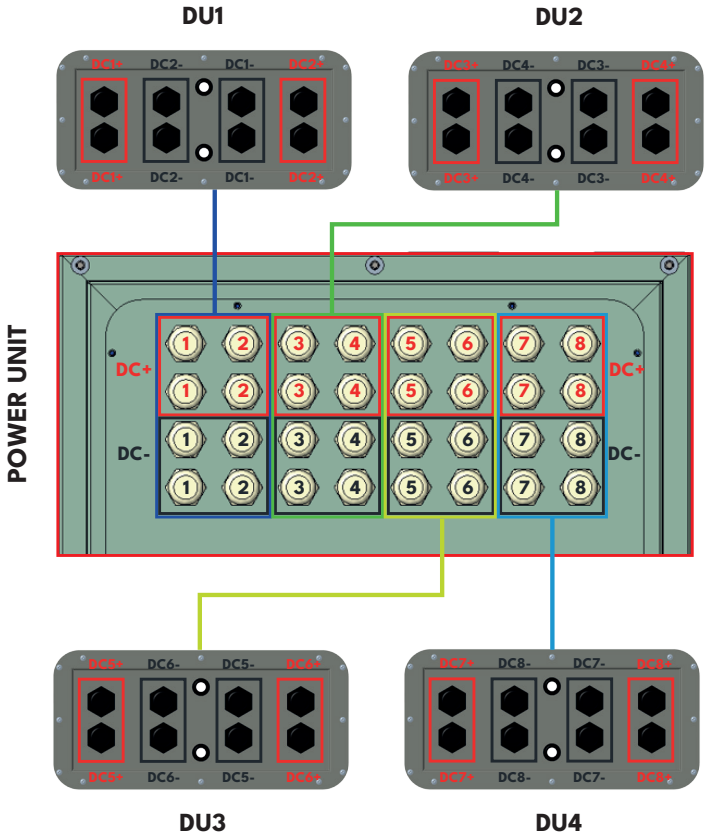


DC Cable Glands (M32)

AC Mains and Data (Ethernet and Fiber Optic) Cables Glands (M20)

DC Cable connection for individual DUs:

Charging station has capability of maximum 4 DU connection to the PU. There is a sequential connection necessity of the DUs to the PU. Whether 4 DUs are used or not, connections should be as shown in figure below:



2 - DESCRIPTION

This product was developed for charging electric vehicles with a suitable charging system in accordance with the IEC 61851-1 standard for the pilot standard signal. This document describes the specific functions and characteristics of the corresponding variants of charging stations and measuring devices in relation to electrical energy in accordance with § 46 of the German Measurement and Verification Ordinance (MessEV), taking into account PTB-A 50.7 and PTB-REA document 6-A.

Only the following models are certified in accordance with MessEG and MessEV:

EVC-XD-EICH**

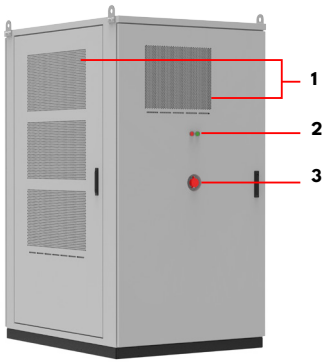
In accordance with the German Measurement and Calibration Act, the charging station can be billed according to kWh. You can consult the German Measurement and Verification Act, which is described in chapter 14.

POWER UNIT	
Model Name	**EVC-XP Series (Name Coding: EVC-XP***)** 1st Asterisk (*) : Rated Output Power 720 : 720 kW DC Power Output 400 : 400 kW DC Power Output 2nd Asterisk (*) : Supply Input A : Only AC Supply 3rd Asterisk (*) : Max Number of Charging Interfaces 8 : Power Unit Capable of Supplying Up to 8 Charging Interfaces
Cabinet	EVC-XP

DISPENSER UNIT	
Model Name	**EVC-XD Series (Name Coding: EVC-XD**-EICH)** 1st Asterisk (*) : Number of Charging Interfaces CC : Dispenser Unit with liquid cooled or non-cooled double CCS charging output 2nd Asterisk (*) : Max Output Current per Charging Interface 500 : Max 500 A Output Current per Charging Interface 600 : Max 600 A Output Current per Charging Interface
Cabinet	EVC-XD

3 - GENERAL INFORMATION

3.1 - INTRODUCTION OF THE PRODUCT COMPONENTS



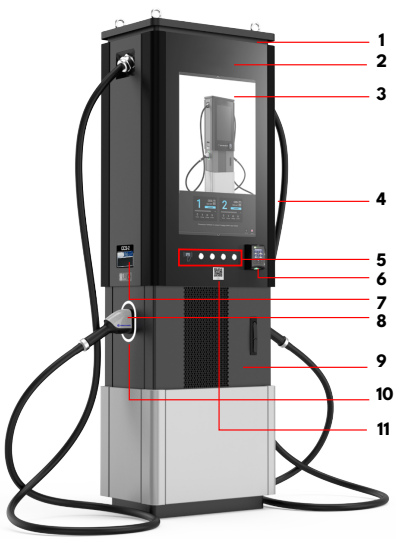
1- Access cover for fans, relays and main power button

2- Indicator LEDs

Red: If active AC power available at the input of the unit, circuit breaker is open.

Green: If active AC power available at the input of the unit, circuit breaker is close and power unit is operational.

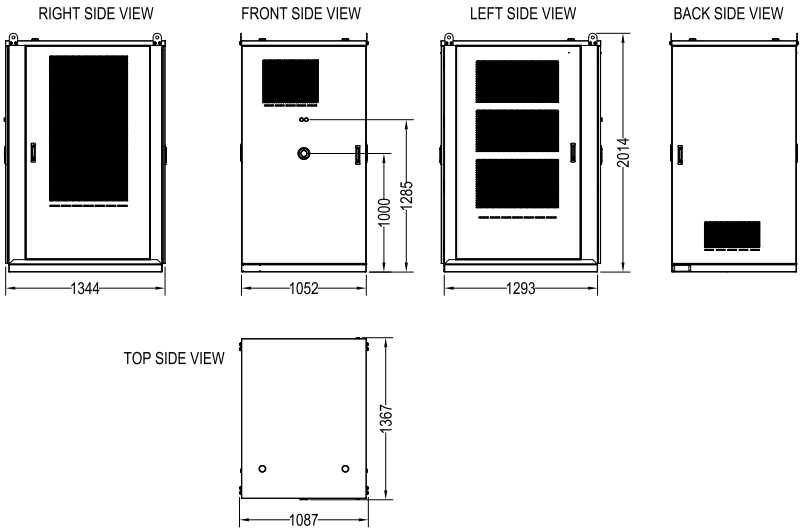
3- Emergency Button



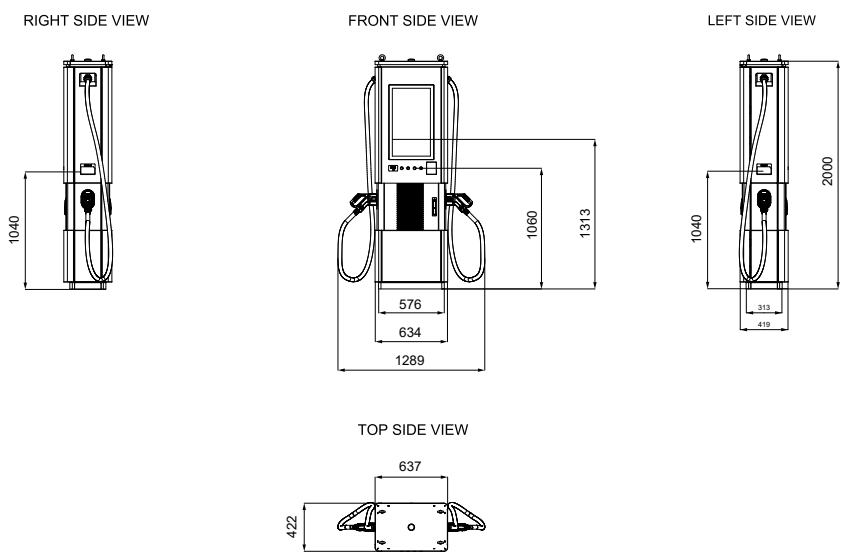
1- LED
2- Branding Area
3- Display
4- Charging Cable
5- RFID Reader and Buttons
6- Payment Terminal (optional)
7- MID Meter
8- DC Outlet
9- Access Cover for Internal Components and Boards
10- CCS Socket LED
11- User manual QR code

3.2 - DIMENSIONAL DRAWINGS

POWER UNIT



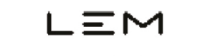
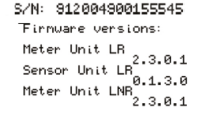
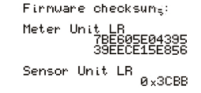
DISPENSER UNIT



3.3 - LCD DISPLAY

This display can be used to show the various measured values and the associated units and registers in plain text.

PRODUCT START DISPLAY

Bildschirm	Beschreibung
	Company logo Serial number of the device
	Identifiers of the DCBM firmware versions
	Integrity checks for legally relevant firmware components
	Public key of the device, for authentication in LEM format (i.e. without OCMF-RFC5480 header), public key with OCMF format is encoded in the data matrix on the front of the device.
	Test screen

The texts on the display are shown in a loop cyclically. The next display appears every 8 seconds. As long as the measuring device is measuring a consumer, the display is permanently illuminated and the scrolling of the display continues.

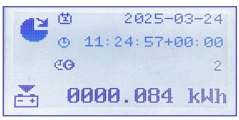
3.4 - PRODUCTS WITH CERTIFIED ENERGY METER

RFID/Autocharge authentication methods have different information on the meter display energy register at the beginning of the transaction.

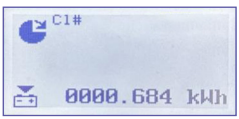
RFID/Autocharge

Date and time on site at the beginning of the transaction Total duration of the transaction.

RFID/Autocharge

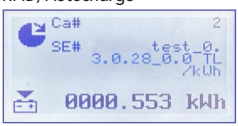


Customer RFID/Autocharge ID



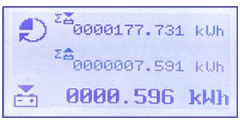
Cable compensation, EVSE identification input and charging point ID_Sw-Version_Tariff (chargepointid_Sw version_ tariff) with currency.

RFID/Autocharge



Energy register at the end of the transaction.

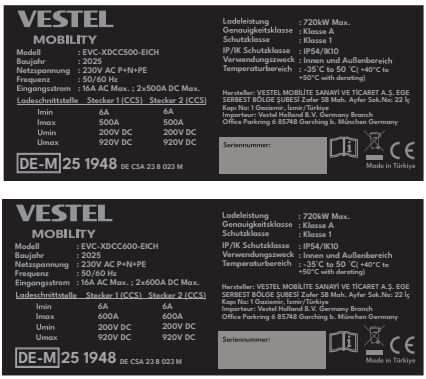
RFID/Autocharge



All products' images are given for representative purpose only

3.5 - TYPE PLATE

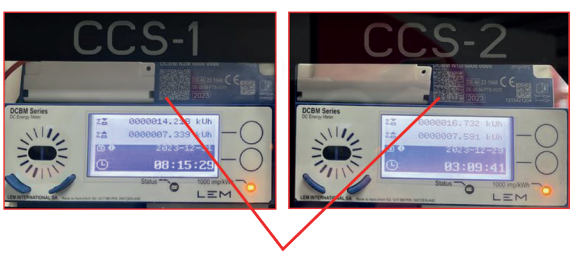
The type plate is located in the center right of the EV charger. The CE marking, the serial number and the electrical characteristics of the charger are indicated on the label. Read the instructions before first use.



Example of a type plate for EVC-X

3.6 - PUBLIC KEY

A QR code with the public key is printed in full format on the front of the meter. The signature can be verified using a public key.



Information on the public key

Public key (for the measuring capsule, shown on the type plate of the charging station's measuring device in the form of a QR code)

4 - TECHNICAL SPECIFICATIONS

POWER UNIT		
Protection class		Class - I
Power Input	**Voltage**	230/400 VAC ±10 % , 50/60 Hz
	Current	1220 A max. / phase
	Connection	3P - N - PE
	Power Factor	> 0.98 for over 50 % of rated power
	Efficiency	> % 95 @ rated power
Power Output	**Voltage Range**	200 – 1000 Vdc
	Total Power	720 kW
	Maximum Current per Charging Interface	750 A (Lower current levels can be provided by the power unit according to the dispenser specifications.)
Power Sharing		Dynamic power allocation with 80-120kW steps
Noise Level		< 80 dBA avg. from 1m distance from front @25˚ C
Electrical Protections		Over current / Over voltage / Under voltage / Short circuit / Over Temperature / Surge Protection

DISPENSER UNIT		
Protection Class		Class - I
Power Input	**Voltage**	200 – 1000 V DC
	Current	500 A per charging interface for EVC-XD*500 models 600 A per charging interface for EVC-XD*600 models 750 A per charging interface for EVC-XD*750 models
Power Output	**Voltage Range**	200 – 1000 Vdc
	Maximum Power	720 kW
	Maximum Current per Charging Interface	Up to 500A for EVC-XD*500 models with non-cooled cable. Up to 600 A for EVC-XD*600 models with liquid cooled cable and DC metering Up to 750 A for EVC-XD*750 models with liquid cooled cable.
	CCS Interface Compliance	IEC 62196-1 / 3 / 3-1 IEC 61851-1 / 23 / 24 ISO 15118-1 / 2 / 3 / 20 DIN 70121
Noise Level		< 65 dBA avg. from 1m distance from front @25˚ C
Internal Protections		RCBO Type-A for internal SELV circuit, Insulation monitoring for DC outputs , Over current / Over voltage / Under voltage / Short circuit / Over Temperature / Surge Protection (Type-1, Type-2)
DC Metering (Optional)		DC meter in accordance with IEC 62052-11:2020
Other Safety Features		Emergency Stop button (optional), Tilt sensor, Door Switches, Upstream Protection Trip (NC)

5 - USER INTERFACE & AUTHENTICATION

Display	27" Color TFT LCD
User Interface	Capacitive Touch Screen
RFID Reader Module	ISO-14443A/B and ISO-15693
Automatic Authentication (optional)	AutoCharge using MAC
Credit Card Reader (optional)	Contactless Credit Card Reader with PIN on Glass

6 - CONNECTIVITY

LAN Connectivity	Ethernet
Cellular Connectivity (Power Unit)	GSM 900/1800 UMTS 900/2100 LTE Band 1/3/7/8/20/28A
OCPP Specification	OCPP 1.6 J, OCPP 2.0.1 (via OTA Update)

7 - MECHANICAL SPECIFICATIONS

Material		Metal	
Protection Degree		Ingress Protection Impact Protection	IP54 IK10
Power Unit Cooling		Forced Air Cooling Fan	
Cable Cooling (Optional)		Liquid Cooled Cable Using Passive Heat Exchanger with Fan	
Cable Length		5.50 m with cable retraction unit 4.00 m without cable retraction unit	
Dimensions (Product)	**Power Unit**	2014 mm (H) x 1052 mm (W) x 1344 mm (D)	
	Dispenser Unit	2000 mm (H) x 637 mm (W) x 422 mm (D) (without cable retraction unit holders)	
Dimensions (With packing)	**Power Unit**	2260.0 mm (H) x 1250.0 mm (W) x 1500.0 mm (D)	
	Dispenser Unit	2200.0 mm (H) x 1000.0 mm (W) x 1000.0 mm (D)	
Weight (Product)	**Power Unit**	1080 kg	
	Dispenser Unit	280 kg (Liquid cooled)	
		255 kg (Non-cooled)	
Weight with Package	**Power Unit**	1265 kg	
	Dispenser Unit	330 kg (Liquid cooled)	
		305 kg (Non-cooled)	

8 - ENVIRONMENTAL TECHNICAL SPECIFICATIONS

Operation Condition	Temperature	-35˚C to + 50˚C (Derating is applied over +40˚C to +50 ˚C) For products with credit card option-20˚C to + 50˚C
	Humidity	5 % - 90 % (Relative humidity, non-condensing)
	Altitude	0 - 2,000m

If the product is kept de-energised in a cold environment (t < -20C), it must be allowed to warm up for a certain period of time before the current is drawn.

After the product has been supplied with energy at low temperatures, it should wait for the heating element in the charger to activate and the charging process should only be carried out afterwards.

9 - TECHNICAL SPECIFICATIONS OF THE MEASUREMENT CAPSULE

Model	DCBM_N1M_6000C20_0000C00 DCBM_N2M_6000C20_0000C00
Manufacturer	LEM INTERNATIONAL SA
Sign of the type test certificate	DE-20-M-PTB-0075
Iref [A]	120
Imax [A]	600
Imin [A]	6
Meter constant [imp./kwh]	1000
Un [V]	150/1000 V
Operating temperature	-25...+70 ˚C
Accuracy class	B
Firmware version (measuring device unit)	2.3.0.1
Firmware version (sensor unit)	0.1.3.0
Checksum of the firmware (measuring device unit)	0x7BE605E0439539EECE15E856
Checksum of the firmware (sensor unit)	0x3CBB

10 - REQUIRED EQUIPMENT, TOOLS and ACCESSORIES

10.1 - SUPPLIED INSTALLATION EQUIPMENTS and ACCESSORIES

M10x20 Bolt x6 (PU)	
M10 Washer x6 (PU)	
M10 Spring Washer x6 (PU)	
M8x30 Bolt x6 (per DU)	
M8 Washer x6 (per DU)	
M8 Spring Washer x6 (per DU)	
Eyebolt x4 (per DU)	
Seal Washer x4 (per DU)	
1 set (x2) Lock Keys	
Ferrite Clamp x16 (per DU)	

10.2 - RECOMMENDED EQUIPMENTS and TOOLS

			
Ø20 Drill Bit	Impact Drill	PC	Philips Screwdriver
			
RJ45 Crimping Tool	Cat5e or cat6 ethernet cable	Spanner set	Hammer
			
M20 Steel Expansion Bolt x8 (4+4)	RJ45 Male Connector	20 - 200 Nm D: 40mm H: 43mm	

11 - INSTALLING CHARGING STATION

Screws inside the product are recommended to be exceeding 72 hours Salt Fog test under ASTM B117 Method. Screws outside the product are recommended to be exceeding 480 hours.

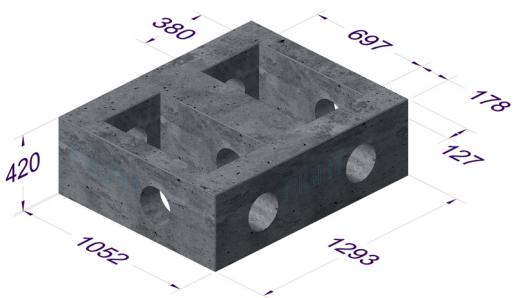
WARNING: RISK OF ELECTRICAL SHOCK AND INJURY. POWER OFF THE CHARGING STATION MAIN SUPPLY BEFORE ANY INSTALLATION STEPS.

WARNING: TO AVOID PERSONAL INJURY OR DAMAGE THE CHARGING STATION, ENSURE THE INSTALLATION AREA IS SUITABLE AND THE FLOOR CAN WITHSTAND THE WEIGHT OF THE CHARGING STATION.

11.1 - FOUNDATION, ALIGNMENT & PLACEMENT

The concrete foundation dimensions are shown as below:

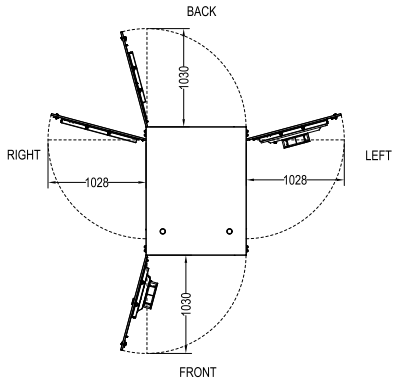
CONCRETE FOUNDATION FOR POWER UNIT



1. Dig a foundation pit in the ground according to the dimensions of the concrete foundation shown at Figure.

2. Make the rectangular spaces in the concrete for the cables which come from main supply (3P+N+PE), Communication (Data Cables and Fiber Cable) and DC Cables in between PU and DU on the concrete foundation from top to bottom. The dimensions and the position on the concrete foundation are shown in the figure above.

3. For installation, a minimum distance of 110 centimeter must be left from all sides of the PU.



4. Make the necessary cable ducts on the concrete foundation as shown in concrete figures.

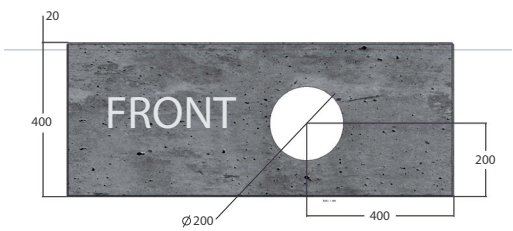
5. The top surface of the foundation must be at least 20 mm above the ground.

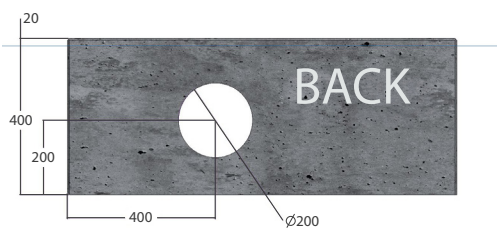
6. Open all covers of the product using the keys.

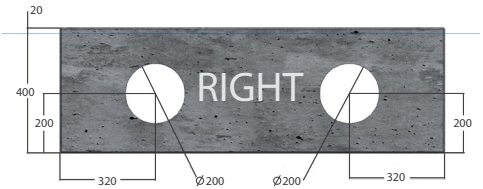
7. The cable length of 80 cm should be available above the foundation for cable assembly in cabinet. Figure below.

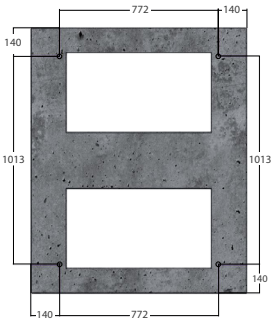
8. Drill 4 holes on the concrete foundation with dimensions shown at Figure below and tap M20x170 mm expansion bolt in these holes stated as shown at figure below.

Different Angles of Concrete:







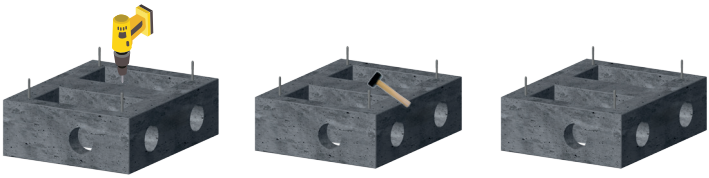


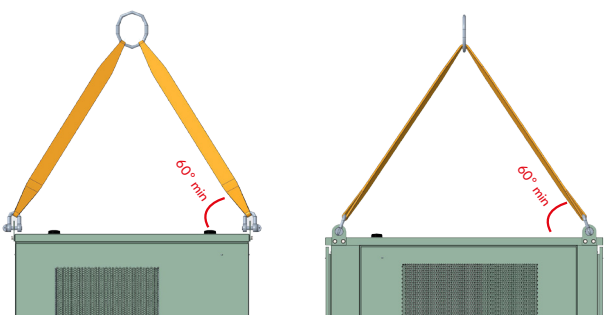
9. Place the Bottom Cover(base) of the Power Unit on the concrete foundation such that the base holes of the PU are aligned with these expansion bolts(4 unit) in the figure below. Tighten the expansion bolts with nuts. Type of the expansion bolts used are shown at figure below.

Then Lift the PU* by using four hanger brackets on the top of the PU. Place the PU on the Base. Then mount the PU to its base by using bolts (6 pieces) given.

*During transportation, sling angles must be at least 60 degrees. The sling lenght must be suittable for this angle.

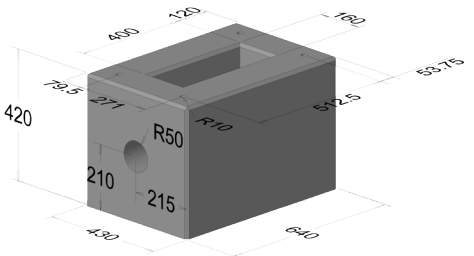
M20





All products images are given for as a representative

CONCRETE FOUNDATION FOR DISPENSER UNIT

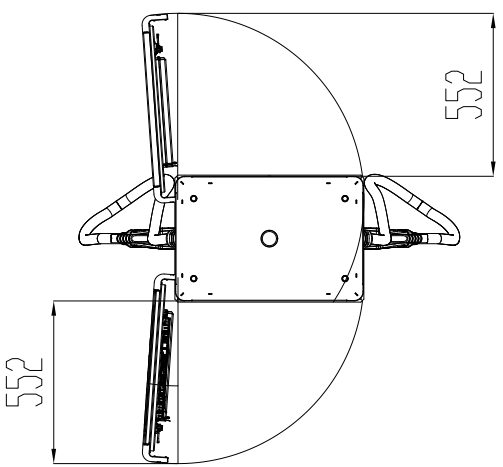


M20

1. Dig a foundation pit in the ground according to the dimensions of the concrete foundation shown at figure.

2. Make the rectangular spaces in the concrete for the cables which come from main supply (3P+N+PE), Communication (Data Cables and Fiber Cable) and DC Cables in between PU and DU on the concrete foundation from top to bottom. The dimensions and the position on the concrete foundation are shown in the figure above.

3. For installation, a minimum distance of 65 centimeter must be left from all sides of the DU.



Top View

4. Make the necessary cable ducts on the concrete foundation as shown in concrete figures.

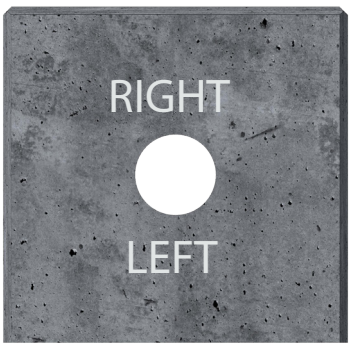
5. The top surface of the foundation must be at least 20 mm above the ground.

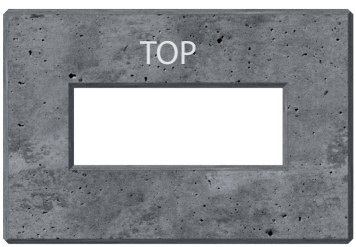
6. Open all covers of the product using the keys.

7. The cable length of 80 cm should be available above the foundation for cable assembly in cabinet. figure below.

8. Drill 4 holes on the concrete foundation with dimensions and tap M20x170 mm expansion bolt in these holes stated as shown at figure below.

Different Angles of Concrete:





1. Remove the screws of the base plate which is assambled on the top of the DU.

2. Mount the base plate on the concrete surface.

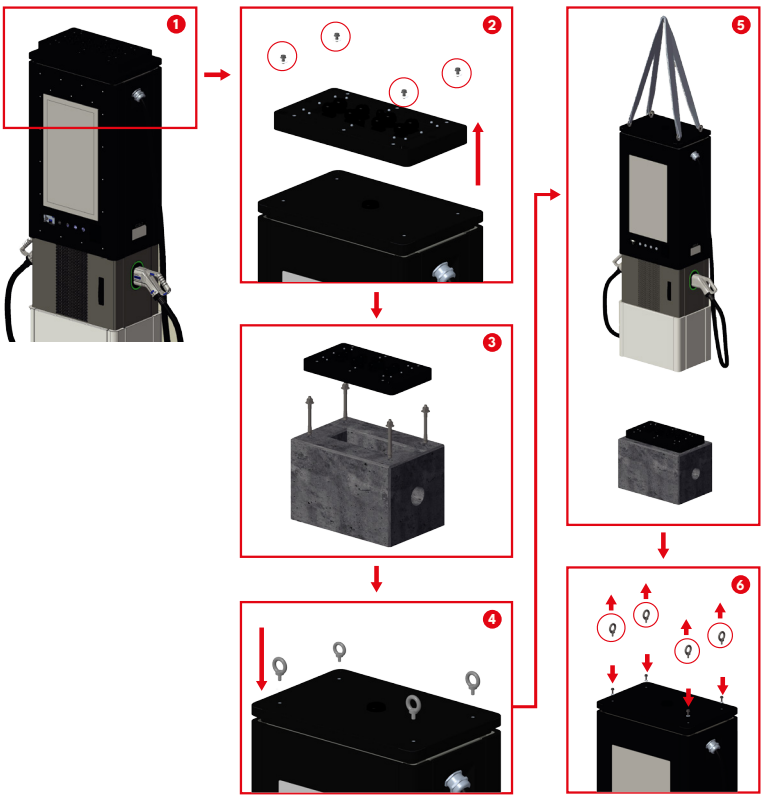
3. Place and align the unit on the base plate as shown in figure.

4. The eyebolts should be assembled to the top of the unit to lift.

5. The unit should be lifted over the concrete base.

*During transportation, sling angles must be at least 60 degrees. The sling lenght must be suittable for this angle.

6. The eyebolts should be removed and the screws which were removed in the begining should be assembled to the top of the unit. The washers should be fastened together with the screws.



All products images are given for as a representative

You can continue following “Cable Installation” steps.

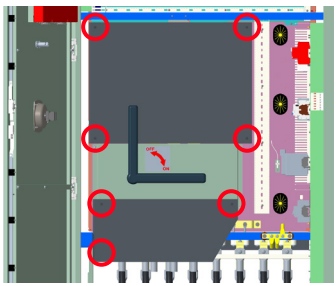
11.2 - CABLE INSTALLATION

11.2.1 - CABLE INSTALLATION FOR POWER UNIT

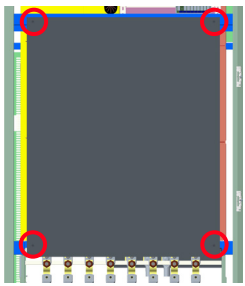
1- Open the covers of the product using the keys provided by turning the handle.

2- Remove the screws and isolator plates covering (front and back).

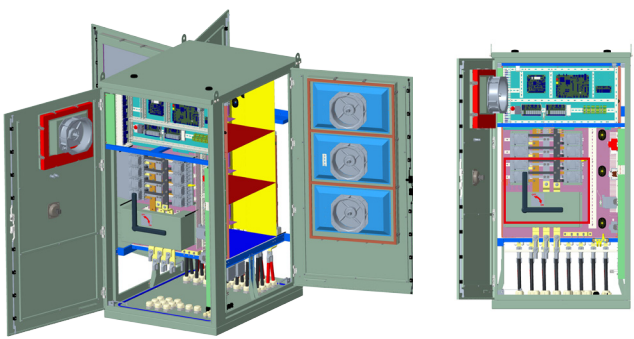
FRONT



BACK



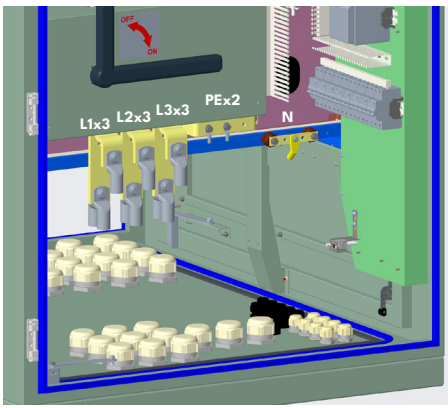
3- For AC Mains cable is in the bottom of circuit breaker to connect.



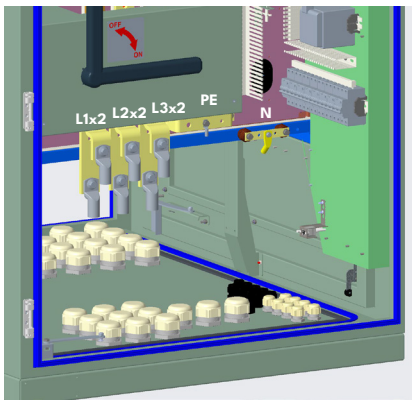
All products images are given for as a representative

Crimping lug positions:

L1, L2, L3, PE Crimping lugs are selected for 240mm^2 for 720kW version, 185mm^2 for 400kW version. For cable gland nuts are compatible with 240mm^2 and 185mm^2 cable sections complying with sealing standards. This structure is designed so that the cables with low elasticity can be mounted with the crimping lugs on the busbar as shown in the figure. Therefore the center points of the cable glands and the crimping lugs are aligned with the same axis (z-axis) as shown in the figure. The installation must be done accordingly as shown in the figure.

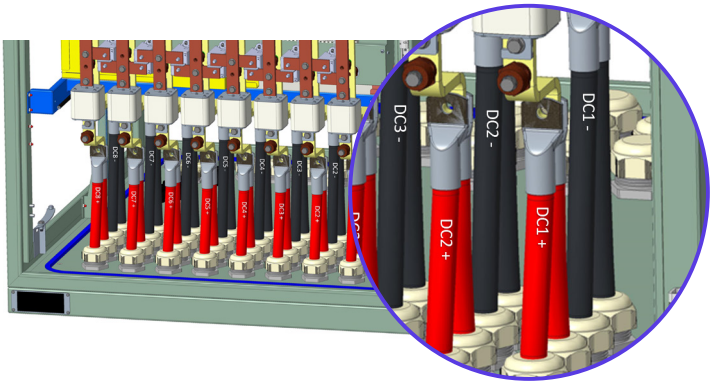


720kW Version



400kW Version

4- DC Output cables are in the bottom of busbars to connect.

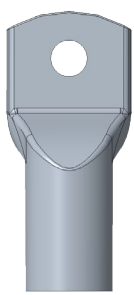


Crimping lug positions:

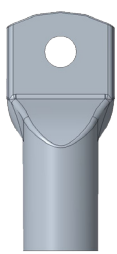
DC+ and DC- cables crimping lugs are selected as 240mm^2 for 720kW version, 185mm^2 for 400kW version. For Cable gland nuts are compatible with 240mm^2 and 185mm^2 cable sections complying with sealing standards. This structure is designed so that the cables with low elasticity can be mounted with the crimping lugs on the busbar as shown in the figure. Therefore the center points of the cable glands and the crimping lugs are aligned with the same axis (z-axis) as shown in the figure. The installation must be done accordingly as shown in the figure.

Contact surface of cable gland nuts and crimping lugs:

Surface contact of crimping lugs and cable glands must be connected to mounting surface of crimping lugs which corresponds to %92 of the surface data indicated in the crimping lug datasheet compatible with cable cross-section.



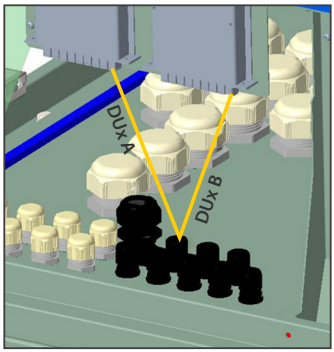
240-**M12** SKP for AC
240-**M10** SKP for DC

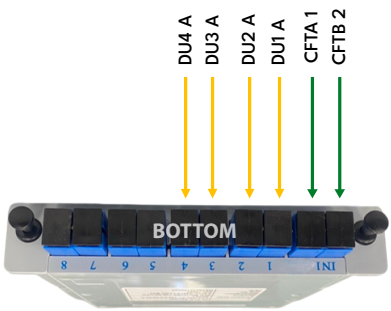


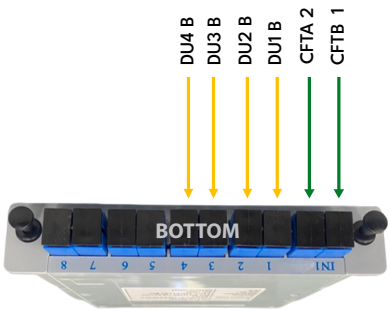
185-**M12** SKP for AC
185-**M10** SKP for DC

35-**M8** SKP

5- Fiber Optic Cables Connection in Power Unit







- Green marked cables are already connected in the power unit
- Yellow marked cables are the cables from dispenser unit. Depending on the number of dispenser unit (From 1 to 4) can be added and conected.

6- Pass the cables through the cable glands at the bottom of the charging station.

7- When AC Mains cables connect, first connect “Line PE” cable, then “Line N” cable, finally three phase cables (“Line 1”, “Line 2”, “Line 3”) as shown below:

The phase sequence is counter clockwise rotation.

8- When DC out cables connect, first connect “DC-” cables, then “DC+” cables.

9- Tighten the cable glands using an adjustable wrench 25Nm.

11.2.2 - CABLE INSTALLATION FOR DISPENSER UNIT

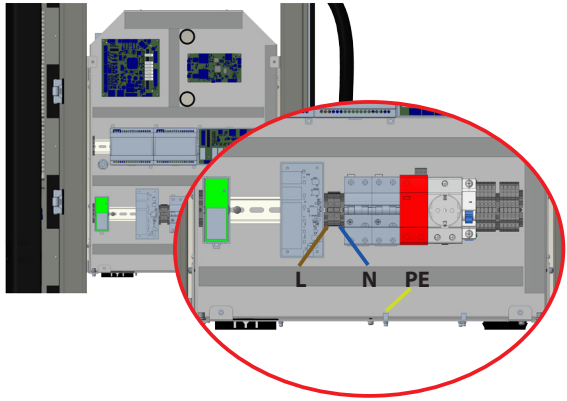
1- Open the covers of the product using the keys provided by turning the handle.

2- Remove the screws and isolator plates covering (front and back).

3- For AC and DC Mains cables are in the bottom of busbars to connect.

Cable Thimble:

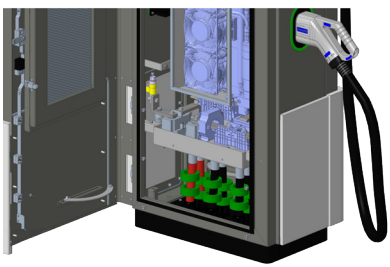
L1, PE,N cable thimbles are selected for 6mm^2 for 720kW and 400kW versions, for cable gland nuts are compatible with 6mm^2 cable sections complying with sealing standards. This structure is designed so that the cables with low elasticity can be mounted with the cable thimbles on the terminal block as shown in the figure. Therefore the center points of the cable glands and the cables are aligned with the same axis (z-axis) as shown in the figure. The installation must be done accordingly as shown in the figure.

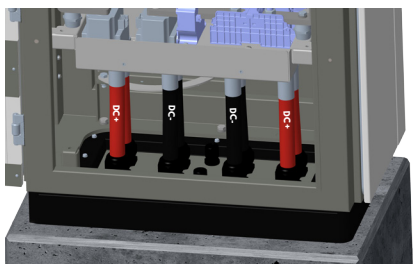


4- DC Input cables are in the bottom of busbars to connect.

The ferrite clamps provided in package should be installed to each DC cable before attaching to busbars as shown in figure below.

Two ferrite clamps are needed to attached each DC cable.

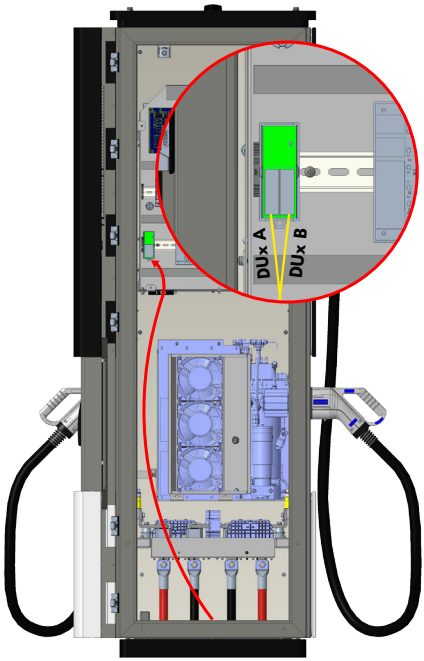




Crimping lug positions:

DC+ and DC- cables crimping lugs are selected as 240mm^2 for 720kW version, 185mm^2 for 400kW version. For Cable gland nuts are compatible with 240mm^2 and 185mm^2 cable sections complying with sealing standards. This structure is designed so that the cables with low elasticity can be mounted with the crimping lugs on the busbar as shown in the figure. Therefore the center points of the cable glands and the crimping lugs are aligned with the same axis (z-axis) as shown in the figure. The installation must be done accordingly as shown in the figure.

5- Fiber Optic Cables Connection



Dispenser Unit	Fiber Optic Cable Names
DU1	DU1 A-DU1 B
DU2	DU2 A-DU2 B
DU3	DU3 A-DU3 B
DU4	DU4 A-DU4 B

11.2.3 - DISPENSER UNIT ROTARY SWITCH ID CONFIGURATION

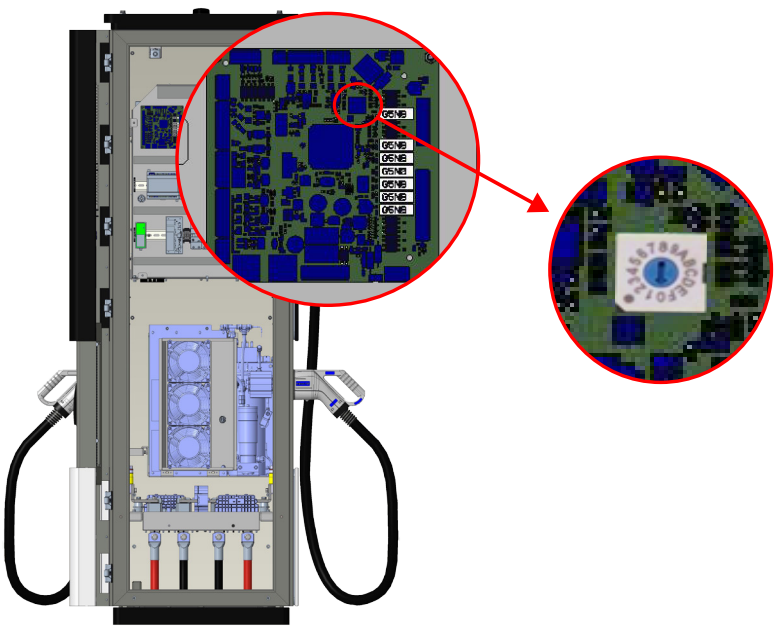
Set the rotary switch IDs for each dispenser unit's control boards according to the table below.

Dispenser Unit	Rotary Switch
DU1	0
DU2	1
DU3	2
DU4	3

WARNING:

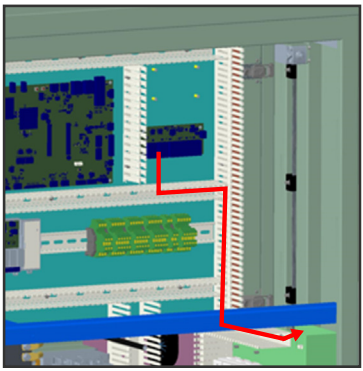
Do not set the same rotary switch ID on more than one dispenser unit.

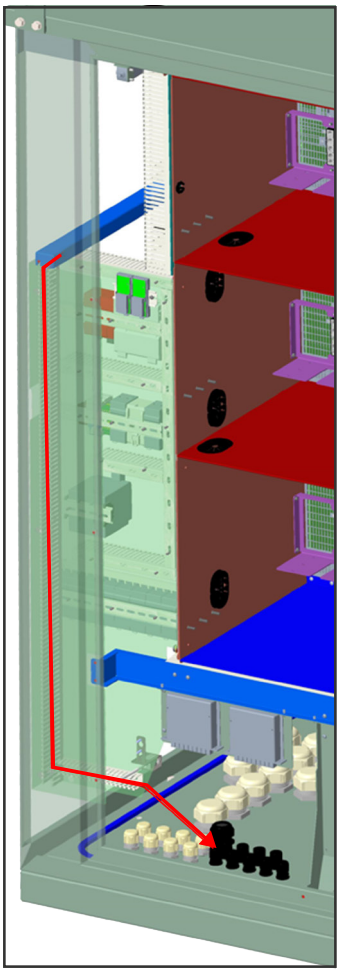
There shouldn't be incorrect setting on rotary switch ID's



POWER UNIT ETHERNET CONNECTION

Red line for DU to PU ethernet cable connection

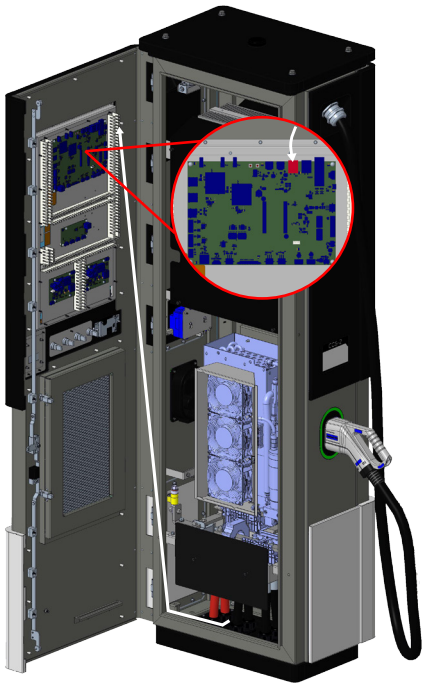


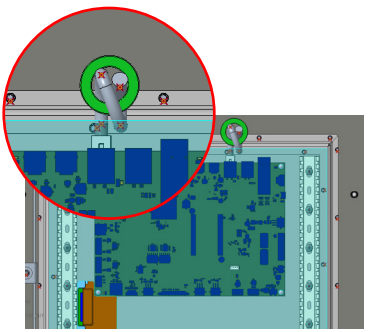


DISPENSER UNIT ETHERNET CONNECTION

White line for DU to PU ethernet cable connection.

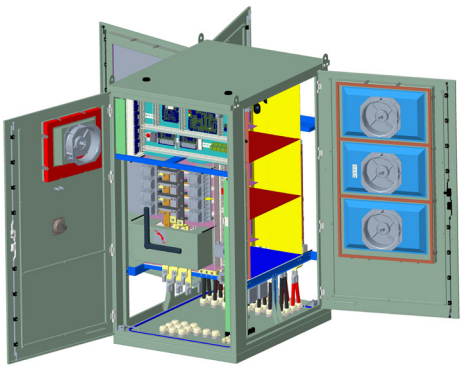
The Ethernet cable coming from the Power Unit should be looped once through the ferrite core before being terminated with the RJ45 connector.

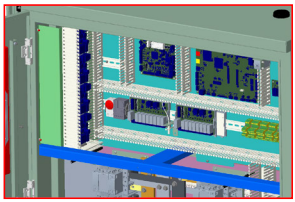


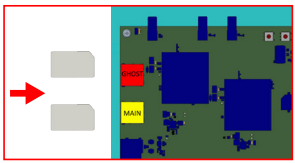


11.2.4 - SIM CARD CONNECTION

Open the side covers as described in previous section and insert the Micro SIM Cards (Main SIM Card and ghost OCPP SIM Card) to the module slots on the board as shown in the below figure.



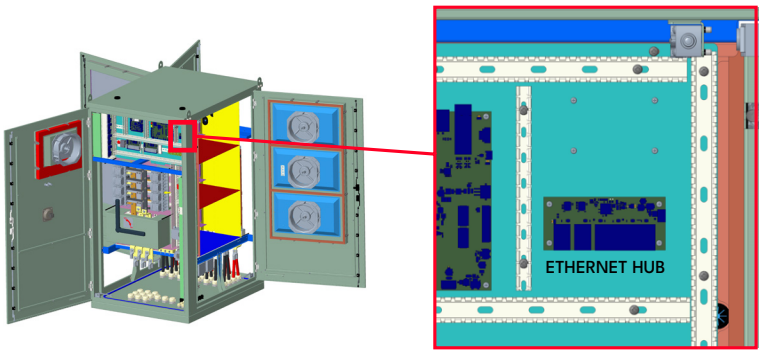




All products images are given for as a representative

11.2.5 - CONNECT PC TO THE SAME NETWORK WITH PU and DU HMI BOARDS

In order to access Web Config UI, first you need to connect your PC and EV charger to the same ethernet switch or connect EV charger to your PC directly.



Power-on the charging station. You should assign static IP address to your PC in 192.168.1.1/254 network to access Power Unit and Dispenser Unit webUI's.
Static IP address of your PC should be in a range between 192.168.1.1 and 192.168.1.254, except 192.168.1.10 (Power Unit IP) and Dispenser Unit/Units IP's (192.168.1.40/41/42/... etc.). For example, 192.168.1.11 can be set as a static IP to your PC.

After setting static IP to your PC correctly, use those addresses on the any browser to connect webUI's of the Power Unit and Dispenser Units;
To connect Power Unit webUI, use 192.168.1.10 address.
To connect Dispenser Unit webUI's, use assigned Dispenser Unit IPs by Power Unit, such as 192.168.0.40/41/...etc.

11.3 - COMMISSIONING VIA WEB CONFIGURATION INTERFACE

OPENING WEB CONFIGURATION INTERFACE WITH BROWSER

Open your web browser and type 192.168.1.10 which is IP address of HMI board.

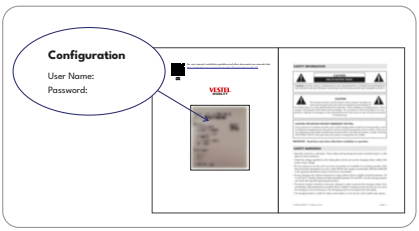
You will see login page on your browser;

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.

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



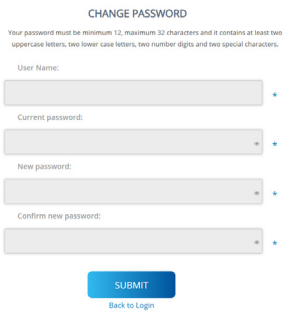
Visual representation is provided

Change Password:

If you click the “Change Password Button“ you will be redirected to the Change Password page.

Your password must be minimum 12 maximum 32 character and it contains at least two uppercase letters two lower case letters two number digits and two special characters.

After typing your current password and new password twice, you will be redirected to the login page again to log in with your new password.



POWER UNIT WEBUI

MAIN PAGE

In this page, charge point serial number, device software versions, OCPP device ID, duration after power on and Connection Interface can be seen.

GENERAL SETTINGS

In this page, Language Settings, Display Settings, Logo Settings, Tilt Threshold, Optional Prepaid settings, Display QR Settings and Customer Service Number Settings can be reached.

OCPP SETTINGS

In this page, OCPP Connection Main Settings like Charge Point Centrel System Address and Charge Point ID can be set. Also, OCPP version and other Ocpp Configuration parameters can be set.

NETWORK INTERFACE

In this page, Cellular and Ethernet (LAN) settings can be made.

POWER MANAGEMENT

In this page, Charge point maximum power can be limited and also, Fail Safe Power Setting can be done.

DISPENSER MANAGEMENT

Dispenser Management	**"Dispenser Management"** is responsible for adding or removing dispensers from the system. In this page individual dispenser adding and removing can be done. IP Address, Serial Number, Connection Status of each dispenser can be seen in this page. Also, dispenser actions like Soft Reset, Hard Reset and sending configuration can be done.
Dispenser Current Settings	**"Dispenser Current Settings"** controls the current limitations on the connectors of the dispenser. This tab was created to adjust the currents of the connectors owned by the dispenser. Current limitation shall be done after installation.

SYSTEM MAINTENANCE

In this page, Log Files can be downloaded. Also, Firmware Updates, Configuration Backup and Restore, Hard & Soft Reset, Administration Password Change and Factory Reset can be done.

DISPENSER UNIT WEBUI

MAIN PAGE

In this page, charge point serial number, device software versions, OCPP device ID, duration after power on and Connection Interface can be seen.

SYSTEM MAINTENANCE

In this page, Log Files can be downloaded. Also, Firmware Updates, Configuration Backup and Restore, Hard & Soft Reset, Administration Password Change and Factory Reset can be done.

First commissioning of the cooling unit with installed cables.

Make sure all pipes, sensors and cables are correctly fitted according to the installation instructions. To ensure a better filling process the coolant temperature should be above 12°C. There are two case for level of coolant.

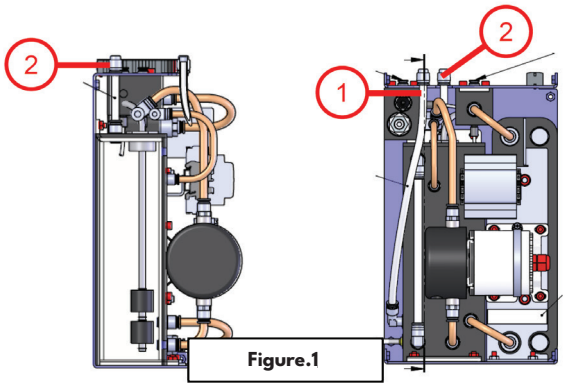


Figure.1

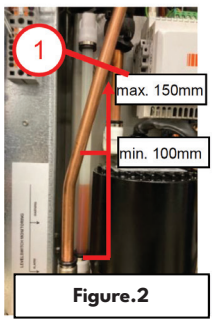


Figure.2

Case.1 : Tank is prefilled (standard at delivery)

- Tank is prefilled to operate one cable with a maximal total length of 8m. Coolant level before connecting the cable is visible in the venting tube (Figure.1, no,2).
- Starting up the cooling system for 5min.

- If coolant level is below the warning level (Figure.2 no.1), refill coolant according to the instruction case.2

Case 2: Refill coolant to have the right amount of coolant in cooling system

General amount of coolant: 1.1dl per meter cable.

- Check: Coolant level must be as shown in Figure.2 no.1 (min. 100mm, max. 150mm).
- Open cap no.1 and no.2 (Figure.1, no.1 and no.2)
- Use a funnel to avoid spillage => connect the funnel to tube Figure.1, no.1
- Tube no.1 (Figure.1, no.1) => fill in coolant
- Tube no.2 (Figure.1, no.2) => venting hole
- Coolant level must be minimum 100mm and maximum 150mm according viewing pipe (Figure.2, no.1)
- Close cap no.1 and no.2 (Figure.1, no.2)
- Starting up the cooling system for 5min.
- Check: Coolant level must be as Figure.2 no.1. If coolant level is below 100mm, refill according instruction in case 2.

6- Close the right side cover of the product by turning the handle clockwise with a wide-angle as shown in the section “Opening side covers“using the keys provided.

12 - CHECKING THE VALIDITY OF THE MEASUREMENT

Data with transparency software

This section deals with billing, the transmission of legally relevant data and the billing procedure in accordance with the German Measurement and Verification Ordinance (MessEV).

With this charging station, the information on the progressive kWh display is shown on the MID display of the meter, which is approved in accordance with calibration law.

If you have used your RFID card to authorize the charging process, you can request the signed measurement data from the operator of your charging station or your electromobility provider.

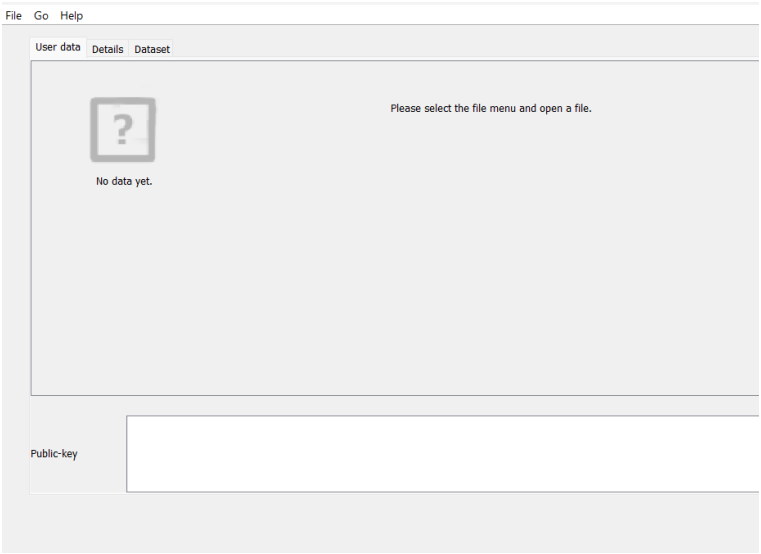
What is transparency software?

You can verify digital signatures with transparency software. Depending on its technical design, a charging station generates digitally signed meter readings for each charging process carried out at this charging station. Using these digital signatures, you can check the measured values with a time delay and thus ensure that no one has manipulated your measured values during transmission to your invoice.

If you want to use the transparency software, you must first download it and then open it on your desktop PC.

You can download the transparency software via the following link. The installation is explained on this website.

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



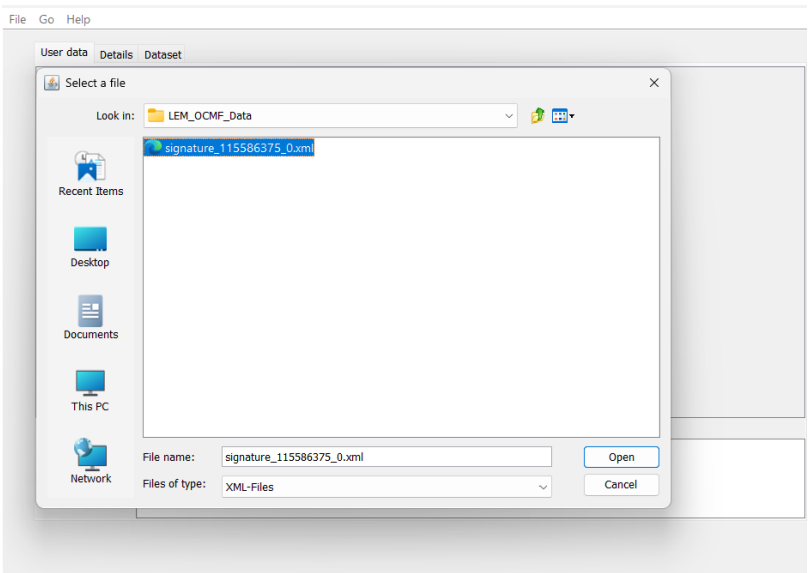
How does the transparency software work?

Transparency software v1.4.1

This software can be used to verify a digital signature. Depending on its technical equipment, a charging station generates a digitally signed meter reading that is linked to the charging station at which an electric vehicle is being charged. With this digital signature, the measured values can be checked with a time delay. As a consumer, you can therefore always be sure that the kWh charged are actually correct and that the measured values can no longer be changed when billing the kWh charged.

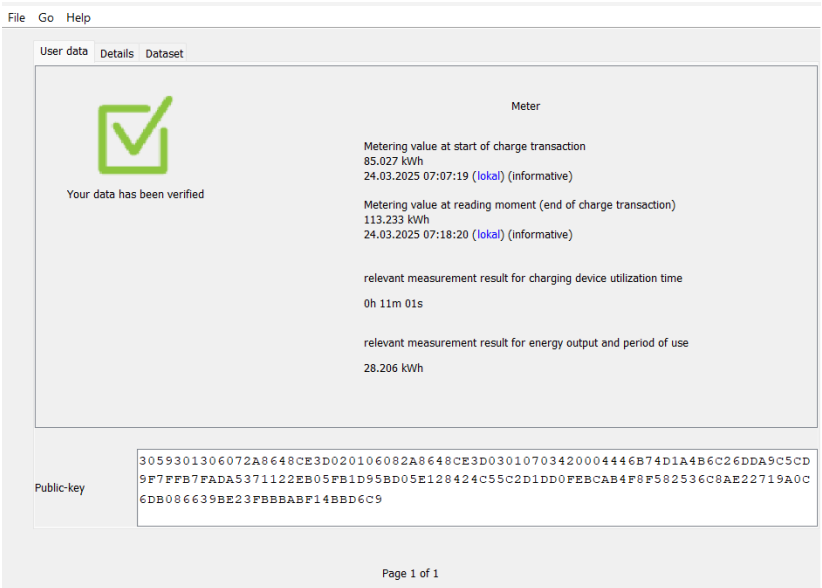
LOADING DIGITAL SIGNATURE DATA

Select the meter readings available to you via the “File”/”Open” function and enter the public key of the charging station.

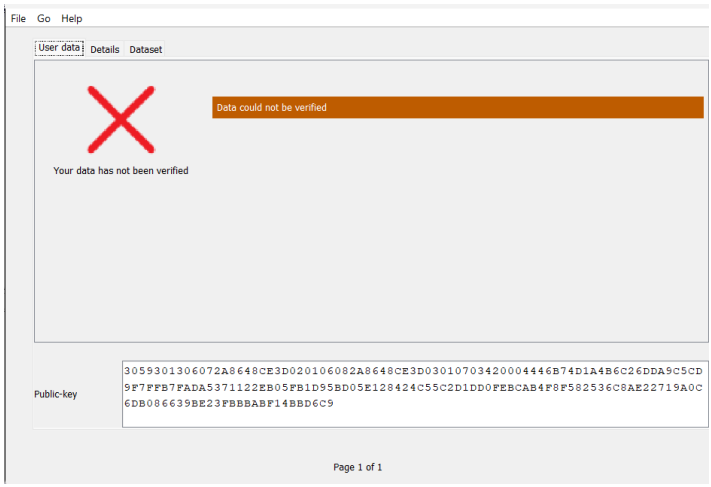


CHECK THE RESULT

Check the result to make sure that the results of the digital signature verification match the information on your invoice or billing document.



If an incorrect public key is entered, the following error message is displayed.



Remote transmission of measurement data to an OCPP backend

The charging station is connected to an OCPP backend and the corresponding signed measurement and log data record is automatically made available to the OCPP backend at the end of a charging process.

Transmission of data records to customers

The transmission of data records to customers is the responsibility of the charging station operator and is not the responsibility of the charging station manufacturer. After the loading process, the signed measurement data records are transferred to a central OCPP system and the end user can access this data via a web interface, email, smartphone app or similar means. The data records are preferably available in .xml format. In the event that you need to verify the charging process data using transparency software, please contact the operator of your charging station or your e-mobility provider to request the signed measurement data.

Verification of the measurement data with the transparency and display software

With the transparency and display software, users can check whether the measurement data originates from a specific charging station and whether its authenticity has been maintained.

The charging station has a public key. The public key is generally accessible and is indicated as a QR code on the type plate of the charging station's measuring unit. The charging station creates a data set with measurement data that is stored in the measuring capsule. The operator of the charging station then creates the invoice based on the signed measurement data record. In addition to the signed measurement data, the public key must also be provided on the invoice or in a customer portal in a format that is compatible with the transparency and display software.

After receiving the invoice, the consumer can enter the digitally signed measured values together with the public key into the transparency and display software. Verification of the signature gives the consumer the opportunity to check the validity of the measured values. For this purpose, the consumer compares the values shown in the transparency and display software with the invoice contents. Validation of the measurement data record using transparency software ensures that the data record is unaltered and admissible for invoicing.

The transparency and display software checks the following data:

The public key as identifier of the charging station. The public key can also be found on the type plate of the charging station's measuring unit.

Correct measured energy value

Correct user/transaction ID

Checking the signed measurement data set

To check the measurement data set:

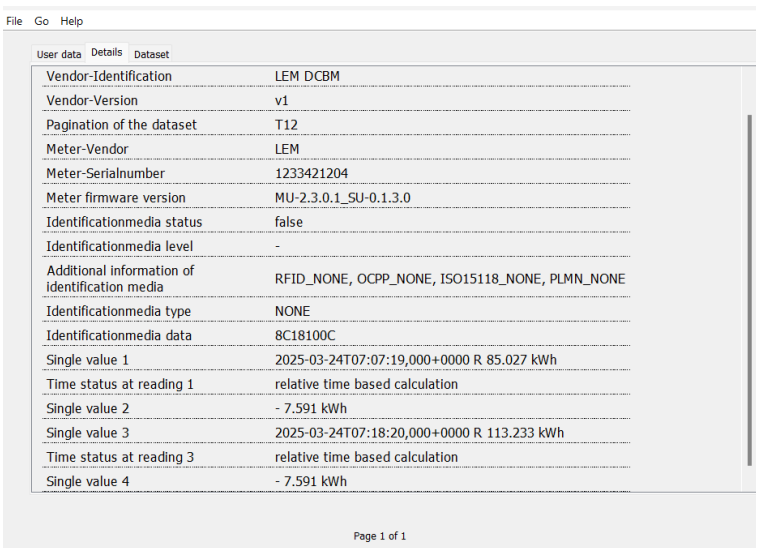
1) Download and install a Java runtime environment (this is available for all operating systems and is usually already pre-installed, e.g. Oracle).

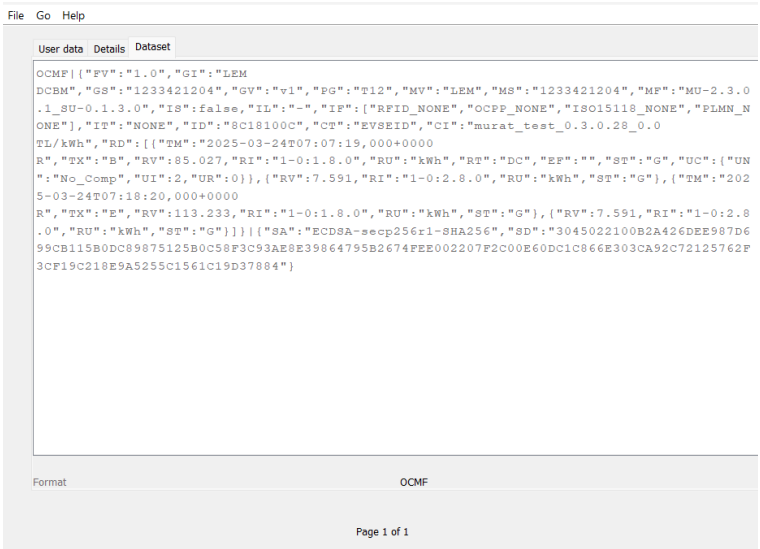
2) Download the transparency and display software from

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

3) Enter the following data in the transparency and display software:

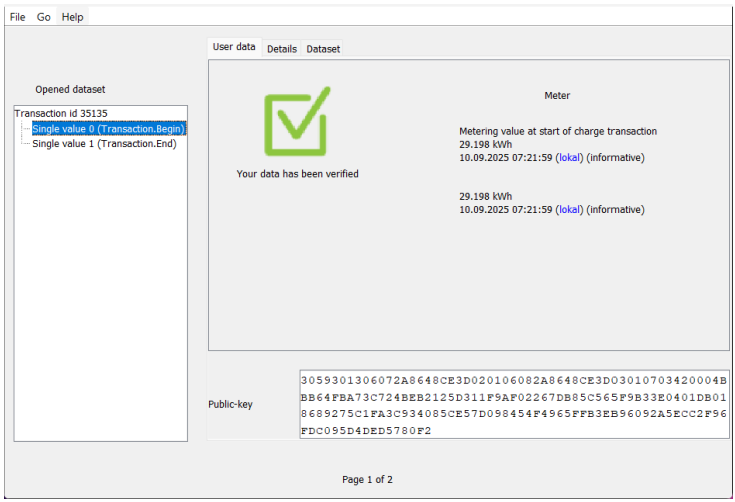
- the signed measurement data set
- the selection of the "OCMF" format
- the public key of the corresponding charging station





4) Once you have entered the required data, you can start the check.

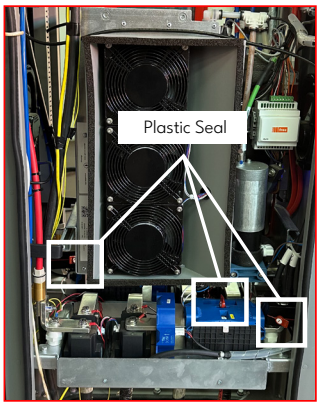
5) Once this check has been completed, it must be checked whether the results of the signature check match the information on the invoice.

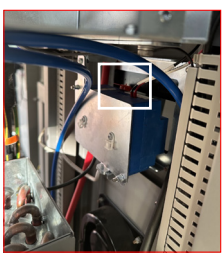


13 - OVERVIEW OF THE CHARGING STATION WITH DESCRIPTION OF THE MANUFACTURER'S/OPERATOR'S SEALS

13.1 - SEALS OF THE MANUFACTURER

During production, the measuring units of the charger are provided with manufacturer seals. The following illustration shows the images of the EVC-X calibration law product seals. The sections mentioned in rectangular indicate the manufacturer's seal.



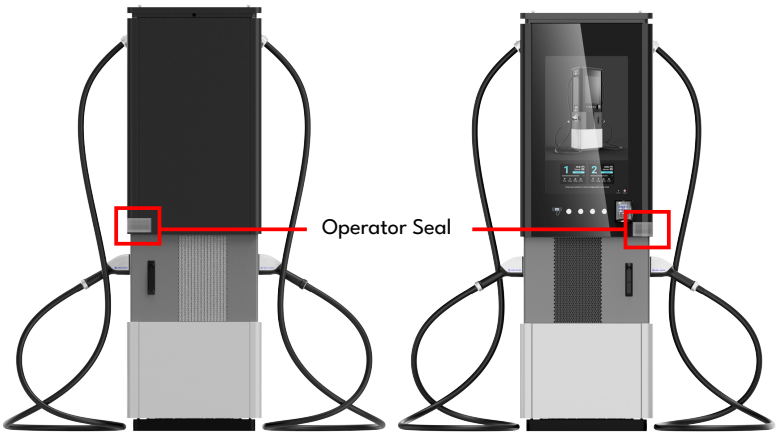


SEAL FOR MID METER

13.2 - RECOMMENDED POSITIONS OF THE OPERATOR SEALS

The recommended place for the operator to seal is as shown in the image below.

The parts circled in red indicate the operator's seal.It is recommended to seal the input terminal after the cable is connected to product the during the electric vehicle charger installation.



14 - LEGAL INFORMATION

14.1 - MEASUREMENT ACCURACY NOTES ACCORDING TO CSA TYPE EXAMINATION CERTIFICATE

I Requirements for the operator of the charging system, which he must fulfill as a necessary prerequisite for proper operation of the charging system.

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

1. The charging device is only considered to be used as intended and in compliance with calibration law if the meters installed in it are not exposed to ambient conditions other than those for which their type examination certificate was issued.

2. The charging device is only considered to be used as intended and in compliance with calibration law if only 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 their registration form! Without this registration, it is not possible to operate the column in compliance with calibration law. Weblink:

https://www.bundesnetzagentur.de/DE/Sachgebiete/ElektrizitaetundGas/Unternehmen_Institutionen/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 compliance with calibration law is no longer possible due to fault or error indications on the display of the human-machine interface relevant to calibration law. The catalog of fault and error messages in these operating instructions must be observed.

6. The User must store the signed data packets read from the loading device - in accordance with the pagination - permanently and without gaps (also) on hardware dedicated to this purpose in his possession or, by corresponding agreement, in the possession of the EMSP or backend system ("dedicated storage"), - and keep them available for authorized third parties (obligation to operate the storage). Permanent means that the data must be stored not only until the conclusion of the business transaction, but at least until the expiry of any 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 shall provide an electronic form of a CSA-approved instruction manual to measurement users who receive and use measurements from this product in the course of their business. The user of this product must pay particular attention to the no. II "Requirements for the user of the measured values from the loading device".

8. The user of this product is subject to the notification obligation in accordance with § 32 MessEG (extract):

§ Section 32 Obligation to notify (1) Anyone using new or renewed measuring devices must notify the competent authority in accordance with federal state law no later than six weeks after commissioning...

9. If deemed necessary by authorized authorities, the meter user must provide the complete content of the dedicated local or backend storage at the EMSP or backend system with all data packets of the billing period.

10. The user of this product must ensure that tariff information shown on the info display of the charging device or an informative display of a payment terminal in the case of spot charging corresponds to the tariff information in the calibrated display and the signed data package.

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

The user of the measured values must comply with § 33 of the MessEG:

§ 33 MessEG (quote)

§ 33 Requirements for the use of measured values

(1) Values for measured quantities may not be used in commercial or official dealings or for measurements in the

may only be indicated or used in the public interest if a measuring instrument has been used as intended for their determination and the values are attributable to the respective measurement result, unless otherwise specified in the ordinance pursuant to Section 41 number 2. Other federal regulations that serve comparable protection purposes continue to apply.

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

(3) Anyone who uses measured values must

1. to ensure that invoices, insofar as they are based on measured values, are issued by the person for whom the calculations can be easily reproduced to verify the specified measured values. and

2. to provide suitable aids for the purposes mentioned in number 1 if necessary.

For the user of the measured values, this regulation results in the following specific obligations for the use of measured values in compliance with calibration law:

1. The contract between EMSP and the customer must clearly state that only the supply of electrical energy and not the duration of the charging service is the subject of the contract.

2. The time stamps on the measured values originate from a clock in the charging device that is not certified in accordance with measurement and calibration law. They may therefore not be used to calculate a tariff for the measured values.

3. The EMSP must ensure that the customer is automatically sent a receipt of the measurement and the details for determining the transaction after completion of the measurement and at the latest at the time of invoicing, unless the customer expressly waives this. The details for determining the transaction can be as follows:

   a. Name of the EMSP
   b. Start and end time of the charging 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 measured values is obliged to provide proof in accordance with MessEG, § 33, para. (3) is obliged to provide this. If the customer requests a trustworthy permanent proof in accordance with. Annex 2 10.2 MessEV, the user of the measured values is obliged to supply it to him. The EMSP shall inform its customers of these obligations in an appropriate form.

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

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

b. For ad hoc charging using a (contactless) debit card together with the receipt via a short link in the purpose of use in the account statement

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

a. When loading with a continuing obligation via e-mail or access to a backend system

b. In the case of ad hoc charging by means of a (contactless) debit card via a short link in the purpose of use in the account statement and associated access to a retrieval platform on which the information mentioned under point 3 is requested to determine the transaction, so that the customer receives the permanent proof. Only information that can also be found on the customer's account statement may be requested to determine the transaction.

In addition, the EMSP must provide the customer with the transparency and display software belonging to the charging device to check the data packets for falsification. This can be done by referring to the source of supply in the operating instructions for the customer or through the channels mentioned above.

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 that he has correctly assigned the personal identification data to each business transaction and invoiced measured value. The EMSP shall inform its customers of this obligation in an appropriate form.

7. The EMSP may only use values for billing purposes for which data packets are available in any existing dedicated memory in the charging device and or the memory at the EMSP or backend system. Substitute values may not be created for accounting 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 to complete the associated business transactions.

9. The EMSP shall enable the authentication of the copies of the product belonging to these operating instructions used by it by providing suitable means of identification in the event of a justified request for the purpose of carrying out calibrations, diagnostic tests and usage monitoring measures.

10. All of the aforementioned obligations apply to the EMSP as a user of measured values within the meaning of

§ 33 MessEG even if it obtains the measured values from the charging facilities via a roaming service provider.

15 - MAINTENANCE

The device is maintenance-free. The deadlines for the validity of the calibration must be observed for the electricity meter and the charging station.

Conformity with the points listed in the chapters “Model description”, “Technical specifications” and “Legal information” must be guaranteed over the entire service life of the product. The user must not exceed the validity period for the calibration of the meter and the charging stations. If the calibration period is exceeded, please contact the manufacturer so that an authorized technical service company can replace the measuring device in the charging station.

16 - PERIODIC MAINTENANCE LIST

	Maintenance Period (years)									
	1	2	3	4	5	6	7	8	9	10
Air filters	R	R	R	R	R	R	R	R	R	R
Plugs	I	I	I	I	I	I	I	I	I	I
Screen	C	C	C	C	C	C	C	C	C	C
Distribution elements (MCCB, MCB RCCB)	T	T	T	T	T	T	T	T	T	T
AC input terminals	T	T	T	T	T	T	T	T	T	T
Fan	I	I	I	I	I	I	I	I	I	I
DC relay terminals	T	T	T	T	T	T	T	T	T	T
DC output cable and terminals	T	T	T	T	T	T	T	T	T	T
Body	C	C	C	C	C	C	C	C	C	C
Earthing resistance	M	M	M	M	M	M	M	M	M	M
Liquid cooling unit	I	I	I	I	I	I	I	I	I	I
Liquid cooling unit liquid	I	I	I	I	R	I	I	I	I	R

C : Clean

I : Inspect (check, confirm, clean, tighten or replace if necessary)

M : Measure

T : Tighten

R : Revise

Air filters

Air filters should be changed every year when going for maintenance.

Plugs

All Plugs should be checked when going for maintenance. If the plug is broken or cracked, it should be replaced. In addition, a charge attempt should be made with all plugs.

Screen

When going for maintenance, the screen should be checked by pressing the touchscreen. It can be controlled by pressing all the functions on the screen. If there is no problem with the screen touch, the screen should be cleaned.

Distribution elements (MCCB, MCB RCCB)

Distribution elements (MCCB, MCB RCCB) should be checked and tightened when going for maintenance. It can be tightened with a screwdriver with a torque of 2 Nm.

AC input terminals

When going for maintenance, AC input terminals should be checked and tightened. It should be tightened with 8 Nm for metric 8 bolts and 10 Nm for metric 10 bolts.

Fan

Fans should be checked when going for maintenance. In case of any breakage or damage, the damaged fan must be replaced. If there is no problem with the fans, a charging attempt should be made. It should be checked whether the fans rotate during this charging.

DC relay terminals

When going for maintenance, DC relay terminals should be checked and tightened. The tightening process should be applied with 6.5 Nm.

DC output cable and terminals

DC output cable and terminallet should be checked when going for maintenance. It should be checked for any damage.

Body

When going for maintenance, the outer cabinet should be cleaned.

Earthing resistance

When going for maintenance, a mechanism should be set up like measuring with meger. After the piles are driven, the voltage between the two piles should be less than 1V

Liquid cooling unit **

When going for maintenance, a charge attempt should be made with a Liquid Cooled Plug (gun). During charging, after waiting for 5 minutes, it should be observed that there is a liquid flow from the pipes in the liquid cooling unit.

Liquid cooling unit liquid **

When going for maintenance, the liquid cooling unit fluid should be checked. If there are any particles in the liquid, the liquid must be changed. In addition, the fluid should be changed every 5 years.

**** Units available on EVC-X products only. There is a detailed explanation in the liquid cooling section of the service manual.**

VESTEL

MOBILITY

CE

Hersteller: VESTEL MOBİLİTE SANAYİ VE TİCARET A.Ş. EGE SERBEST BÖLGE ŞUBESİ
Zafer SB Mah. Ayfer sok. No:22 İç Kapı No:1 Gaziemir, İZMİR/TÜRKİYE

Distributor: VESTEL HOLLAND B.V. GERMANY BRANCH OFFICE
Parkring 6, 85748 Garching b. München/Germany

Telefon: +49 89 55295-0
Fax: +49 89 55295-5086
Mail: EVC@Vestel-Germany.de
Web: www.Vestel-echarger.com

Im Service-oder Garantiefall kontaktieren Sie uns bitte über:
Telefon: 089 211 29 999 (Deutschland)
0800 29 78 52 (Österreich)

E-Mail: service.evc@vestel-germany.de (alle Länder)

Unsere Garantiebedingungen für EV-Charger finden Sie unter:
http://vestel-germany.de/de/page/service