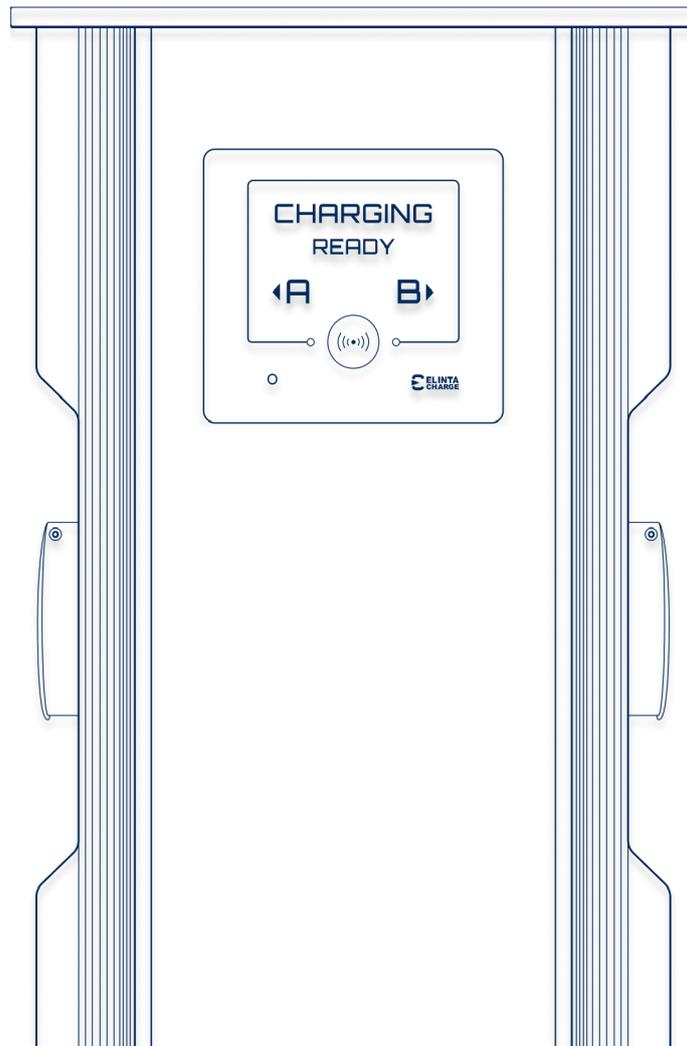


Public Electric Vehicle Charging station

CityCharge Mini2

Installation Manual



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Disclaimer: This installation manual includes the latest information available at the time of printing. Elinta Charge, UAB reserves the right to make changes to this installation manual and/or product without further notice. Changes or modifications to this product not completed by an authorized service provider could void the product warranty.

Elinta Charge,UAB
Partizanų g. 63M,
LT-50306 Kaunas
Lithuania

Phone: +370 653 66633

Website: www.elintacharge.com

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Chapter 1

INTRODUCTION

1.1 Purpose of the Manual

This manual provides information about the installation process of the public charging station CityCharge Mini 2. This document is designed for engineers and electricians who possess a general knowledge of electrical installation.

1.2 Qualified Personnel

The product described in this document may be installed only by personnel qualified for the specific task in accordance with the relevant documentation, in particular, its warning notices and safety instructions. Qualified personnel is those who, based on their training and experience, are capable of identifying risks and avoiding potential hazards when working with this product.

1.3 Symbol Usage

Prohibited  Indicates information about what is strictly Prohibited.

Danger  Indicates information about safety practices which, if not followed, may result in serious injury or death.

Keep Note  Indicates helpful information for installation or usage, but does not contain personnel or equipment safety related information.

Provide good Grounding  Indicates information about where good Earthing must be provided.

1.4 High Voltage Warning



Incorrect connections may cause electric shock.



Do not touch live electrical parts.



Improper connection of the equipment grounding conductor may result in electric shock. Consult a qualified electrician or service technician if you are in doubt as to whether the product is properly grounded.



It is recommended that your CityCharge Mini 2 be installed by a licensed electrician. To avoid serious injury or death, installation must be in accordance with the manufacturer's installation instructions and comply with all local codes.

1.5 Important Safety Instructions



Do not use this product if the enclosure or the EV connector is broken, cracked, open, or shows any other indication of damage.



Do not use this product if the EV cable is damaged, or there is any other sign of Charging station damage.



Read this manual carefully and make sure you understand the procedures before attempting to install this equipment. The purpose of this manual is to provide you with the information necessary to safely install and troubleshoot this unit. Keep this manual for future reference.

1.6 Additional Safety Information



Do not attempt to disconnect/modify or rewire any components inside the charging station. This will void the warranty and may cause the unit to fail.



This equipment is intended only for charging vehicles that do not require ventilation during charging. Please refer to your vehicle owner's manual for ventilation requirements.

1.7 Repair and Maintenance Clause



Elinta Charge products: CityCharge Mini 2 do not require routine maintenance, however, periodic inspections should be conducted to ensure that all parts remain in good working order and no damage exists. Do not attempt to disassemble, repair or modify any components of the charging station. If there are any issues or need for repairs, contact Elinta Charge support team.



Only licensed electricians can install or maintain the charging station. It is forbidden for general users to install or maintain it. Turn off the input power before performing any installation or maintenance of the charging station.



No modifications may be made to the interior of the charging station: Components, wiring, and hardware settings must remain as they are. If such changes are required, always contact Elinta Charge.

1.8 Definitions

AC - (Alternating Current): A charge of electricity that regularly changes direction.

kW - (Alternating Current): A charge of electricity that regularly changes direction.

A / mA - The strength of an electric current measured in amperes or milliamperes

kWh - A unit of energy equivalent to the energy transferred in one hour by one thousand watts of power. Electric car batteries are typically measured in kilowatt hours

EVSE - (Electric Vehicle Supply Equipment): Infrastructure designed to supply power to EVs.

RCM - Residual Current Monitoring and means the monitoring of residual currents in electrical systems.

RCD - A residual current device monitors your wiring installation permanently to detect any leaking current.

Shutter Socket - Socket type which prevents inserting charging cable, while charging station is not activated.

IEC 62196 - Also known as the Mennekes, it is a type of connectors that is used to charge Electric Vehicles in Europe.

Schuko - Europlug (CEE 7/16) and CEE 7/17. Commonly found across Europe for 230V appliance.

Typa A RCD - Type A RCDs detect residual sinusoidal alternating currents. Type A RCDs are suitable for general use and cover most of the applications in practice.

Typa B RCD - Type B RCD are intended to be used for loads with three-phase rectifier, such as variable speed drives, PV system, EV charging station and medical equipment.

1.9 Moving, Transporting and Storage instructions

It is recommended to store the charging station indoors and in a non-humid environment, keeping it in its original packaging until it is ready to be installed. Storage temperature should be between -30 °C and +60 °C When moving or lifting the unit, always carry the unit by the enclosure, never attempt to lift, move, or carry the unit alone.

Chapter 2

PREPARATION

2.1 Site Selection

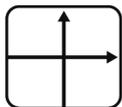
Selecting a site for EVSE installation will likely require consideration of a combination of factors. While every site is unique and every EVSE host has priorities for installation, common physical elements characterize every EVSE site design. Some of the most common design elements to look for:



Power Rating of Charging Station



Proximity to Power Distribution Box



Available Parking Space



Number of Sockets



Difficulty of Installation



Visibility of the Charger



Pedestrian Trip Hazard



Available Network Communications



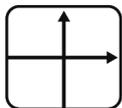
Integration to Charging Platforms



Power Rating of Charging Station - Connecting the charging station to a power source will require the evaluation of existing electrical capacity. Sometimes greater power charging stations are unnecessary for the selected location. Such as workplaces, where people tend to stay the whole workday and bigger power charging stations will not be benefiting between charging station power and electrical system power, consider two parts: the electrical system at the location of the EVSE installation, and electrical cabinets, panels, and circuitry will need to accommodate the anticipated additional load.



Proximity to Power Distribution Box - Installing the Charging station close to the required power source reduces the need for cutting, trenching and drilling to add new conduits to reach the EVSE. Additionally, the cost of installation can be reduced if the existing conduit has adequate capacity for EVSE



Available Parking Space - In addition to standard parking space considerations, make sure to accommodate extra space for the charging station.



Number of Sockets - The most common and financially simple solution is to choose a charging station with two charging sockets. In this way, the ease of installation and saving on labor costs is favored.



Difficulty of Installation - Consider the simplest procedure for installation. Choose a location where the least amount of labor is required for installation. Ensure that access to the power cable and the EVSE interface remains easy



Visibility of the Charger - The installation site should be chosen taking into account the visibility of the charger.



Pedestrian Trip Hazard - The charging station and charging cable must not interfere with pedestrians' paths or pose a tripping hazard.



Available Network Communications - Charging stations are much more with internet communication: mobile phone apps, payment solutions, charging reservations - all these functions are available with internet connectivity. When choosing a location for the charging station: make sure there is the possibility to share a network with the charging station. Charging stations usually accept all common communication types: Wi-Fi, LAN or GSM/4G.



Integration to Charging Platforms - Most charging stations have integrated payment solutions. Whether in the private or public sector, the charging station needs to communicate with the backend system to provide a payment gateway. We recommend using the Elios platform for full user satisfaction.

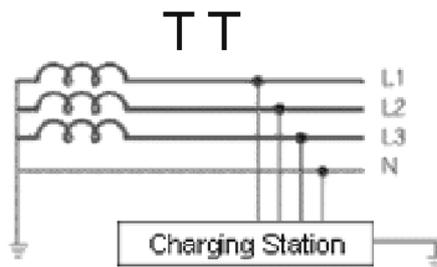
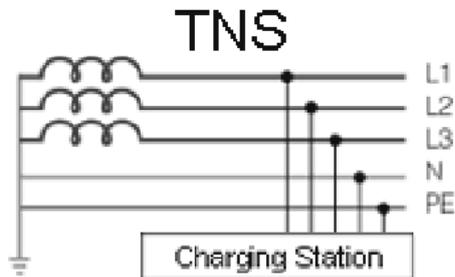
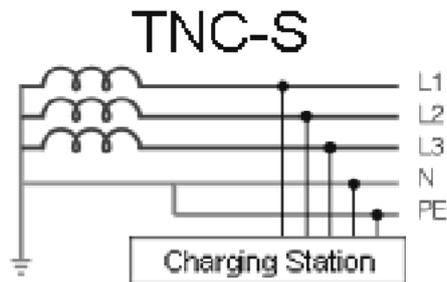
2.2 Electrical Requirements



Be sure to follow the electrical installation instructions. Failure to do so may result in damage to the unit or personal injury.



This charging station has been designed for operation with the power supply systems TNC-S; TNS or TT.



Make sure that the ground resistance is not greater than 10 Ω .

2.3 Wiring Recommendations



Recommended calculated values for CityCharge Mini 2 charging station wires: (When calculated cable length Max: 50 meters; Power factor ($\cos\phi$): 0,95; voltage drop (%): 7%; Cabling method: Four single core copper wire in the pipe (three phase)):

Side A, Power (kW)	Side B, Power (kW)	Total Charger Power (kW)	Amperage per Phase (A)	Recommended cross-section (mm ²)
3,7 kW	3,7 kW	7,4 kW	16 A	2,5 mm ²
7,4 kW	7,4 kW	14,8 kW	32 A	6 mm ²
11 kW	11 kW	22 kW	32 A	6 mm ²
22 kW	22 kW	44 kW	64 A	16 mm ²



Note that these values are only recommendations, each installation is different and the cable cross section should be calculated individually each time.



Warning: failure to select the correct cable cross-section may cause equipment damage or electrical fire.



When using TNS and TNC-S systems, it is recommended to use 5 single core copper wire. When using TT system with separate grounding, make sure that the grounding cable cross-section match the power supply cable cross-section.



The absolute maximum cable cross-section must be no greater than 35mm². The thicker cable will not fit the cable terminals inside the charging station.

Chapter 3

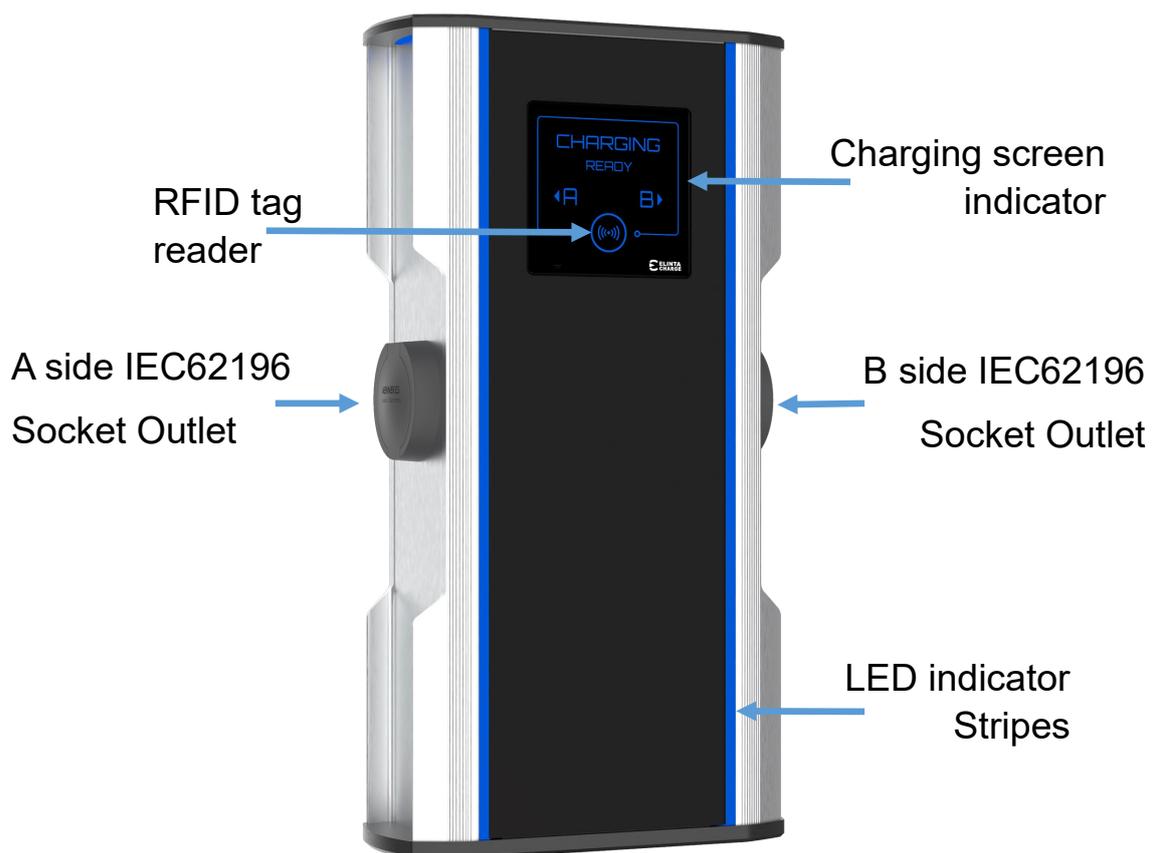
INSTALLATION

3.1 Charging Station Overview

CityCharge Mini 2 is classified as a fast Mode 3 charging station with the ability to provide up to 44 kW (2x22 kW) of power using two Type 2 charging sockets.

The bright animated LED screen and sidebars are visible even in the direct sunlight.

CityCharge Mini 2 comes with many great features, such as: Charging cable locking, Short circuit protection, Leakage current protection.



3.2 Charging Station Specifications

Charging Station CityCharge Mini 2 technical specification:

Weight: **21 kg**

Dimensions: **150 x 350 x 670 mm**

Phase Count: **3**

Operating Voltage: **400 V/AC**

Maximum Power: **44 kW**

Impact protection rating: **IK10**

IP class: **IP54**

Temperature range: **-30 °C to +50 °**

LED charging display: **YES**

Smart Energy Meter: **YES, MID**

RFID user control: **YES**

Internet communication: **YES**

Communication type: **GSM/LAN/WiFi**

Dynamic Load Management: **Optional***

DC leakage detection: **Optional***

RCD type B: **Optional***

Payment terminal: **Optional***

Back-end management: **YES Elios.Cloud**

Mobile application: **YES**

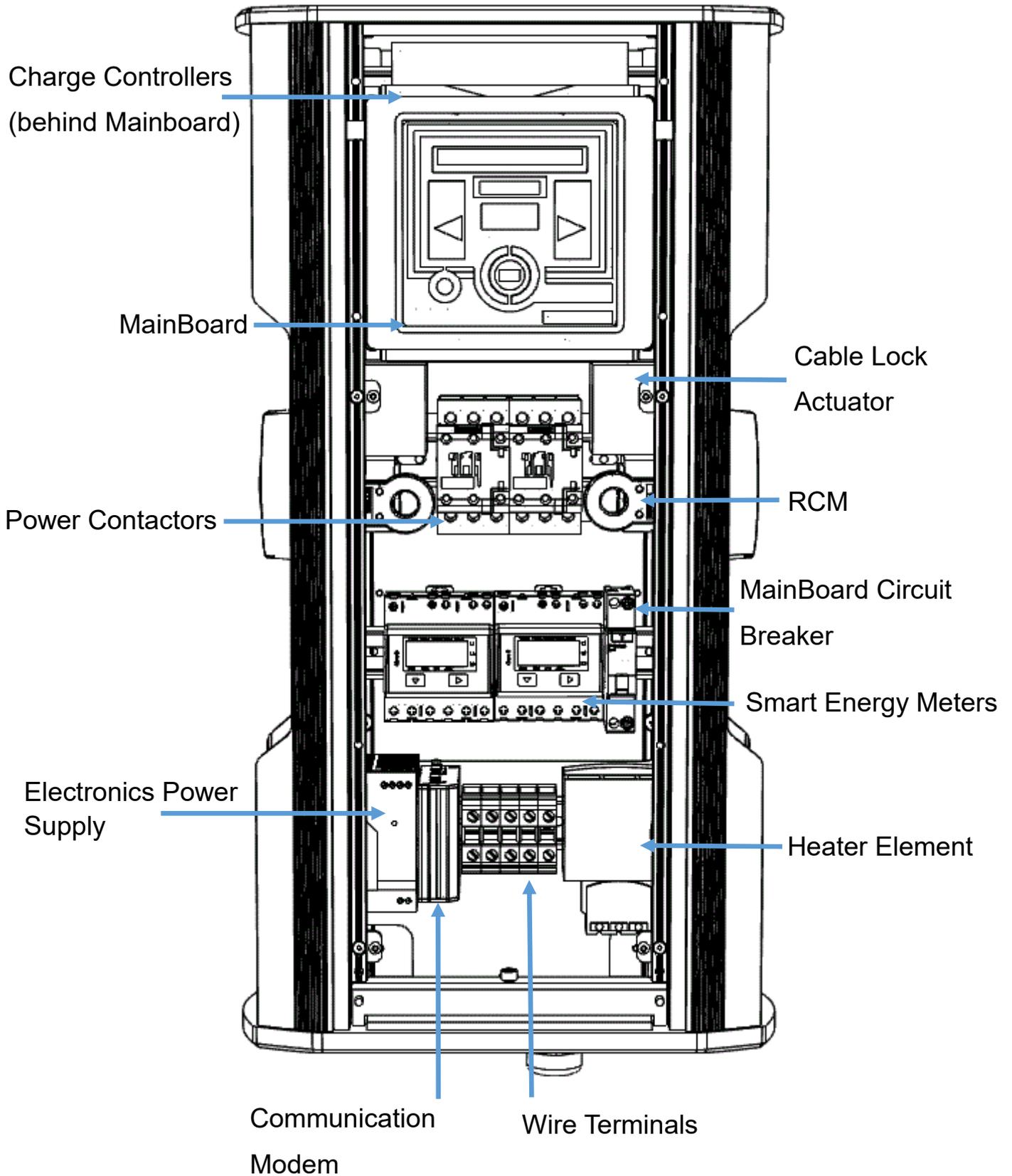
UV resistant: **YES**

CE certificate: **YES**



* - Extra features, which are not present in standard unit configuration

3.3 Charger Internal Components





EC DECLARATION OF CONFORMITY

Manufacturer: Elinta Charge UAB
Address: Terminalo str. 3, Biruliskes, LT-54469 Kaunas district, Lithuania

Herewith declares that socket-outlet board, stationary system with type markings

CityCharge V2, CityCharge Mini, HomeBox, HomeBox Mini, HomeBox Slim series

Trade mark Elinta Charge

Are in conformity with the provisions of the following EC directives:

Low Voltage Directive (LVD) 2014/35/EU
Electromagnetic Compatibility Directive (EMC) 2014/30/EU
Radio Equipment Directive (RED) 2014/53/EU
RoHS 2011/65/EU

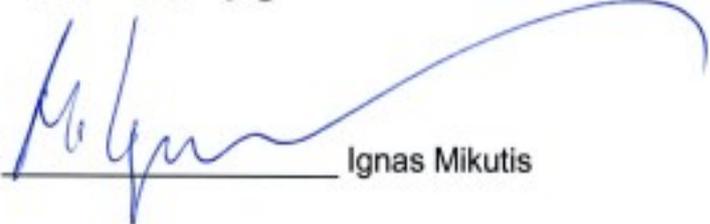
And that the following harmonized or national standards have been applied:

EN 61439-1:2011
EN 61439-3:2012
EN 50160:2010/A1:2015
IEC 61439-7:2014

Electromagnetic Compatibility (EMC)
EN 55022:2010
IEC 61000-3-2:2006
IEC 61000-3-3:2008
IEC 61000-3-12:2011
IEC 61000-4-4:2004
IEC 61000-4-5:2014
IEC 61000-4-8:2014
IEC 61000-6-3:2007/A1:2011/AC:2012

Operation, communication and connection according to IEC 61851-1:2017, IEC 61851-22 and IEC 62196.

CE 18

CEO  Ignas Mikutis

June 2018

3.4 Charging Station unpacking

The charging station is packed in a cardboard box. Store the charging station in an environment that is not too humid until the day of installation.

After removing the charging station from the packaging, keep the cardboard box for the entire warranty period in case the charging station needs to be sent in for repair.

Standard package includes:

- Charging Station CityCharge Mini 2 - 1 pcs.
- Mounting metal plate - 1 pcs.
- Wall anchors - 4 pcs.
- Wall screws - 4 pcs.
- RFID tag - 10 pcs.
- Circuit breaker C80 - 1 pcs.
- Residual Circuit Current Breaker - 1 pcs.
- Metal cable seal - 1 pcs.
- Electrical enclosure key - 1 pcs.
- Charging socket cable lock flags - 2 pcs.

If option Dynamic Load Management for Home selected:

- Smart energy meter - 1 pcs.
- Smart energy meter cables for connection - 1 pcs.

If option Dynamic Load Management for Business selected:

- Smart energy meter - 1 pcs.
- Smart energy meter cables for connection - 1 pcs.
- Current measuring transformers - 3 pcs.

3.5 Tools and Consumables

We recommend that you have these tools and consumables ready before you start installing the charging station:

Tools needed and consumables needed:

- Flat-head screwdriver
- Hexagon screwdriver set
- Measuring tape
- Level
- Drill
- 4 x screws for the wall mounting
- 4 x screw anchors for the selected wall type

3.6 Mounting Plate Preparation

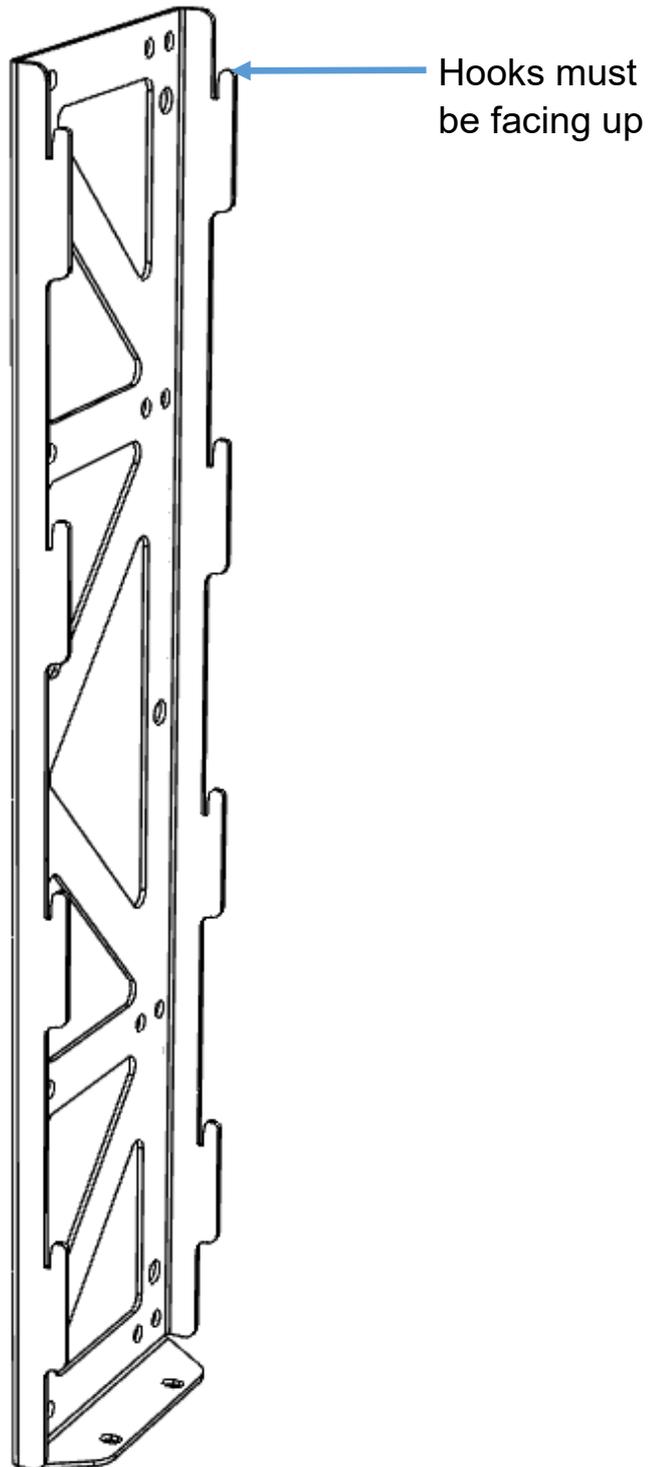
Take the metal mounting plate out of the package. Mount it on the wall with the specified screws:

- Measure approximately 140 cm from the floor.
- Place the mounting plate on the wall and tighten it with a screw.
- Check the horizontality of the mounting plate with the level.
- Screw the remaining screws to the wall
- Check that the mounting plate is securely fastened.

3.7 Wall Mounting The Charging station



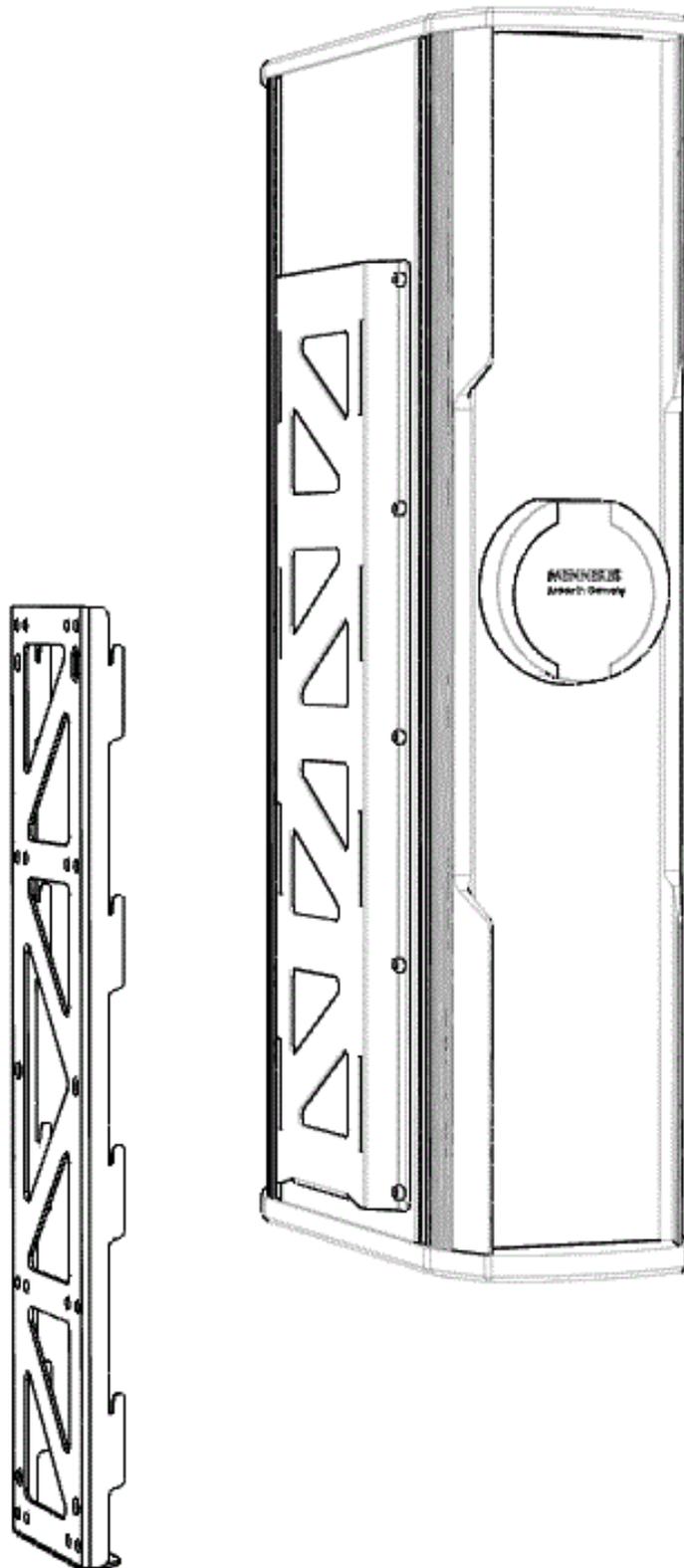
Make sure the mounting plate is securely fastened to the wall and the mounting plate hooks are facing up.



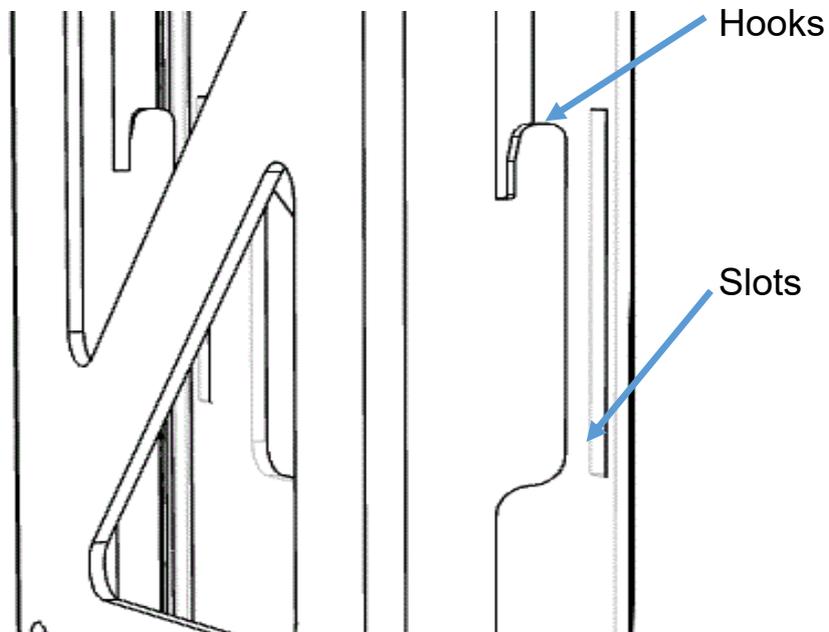
While securely holding the charger with both hands, place the charging station on to the mounting plate.



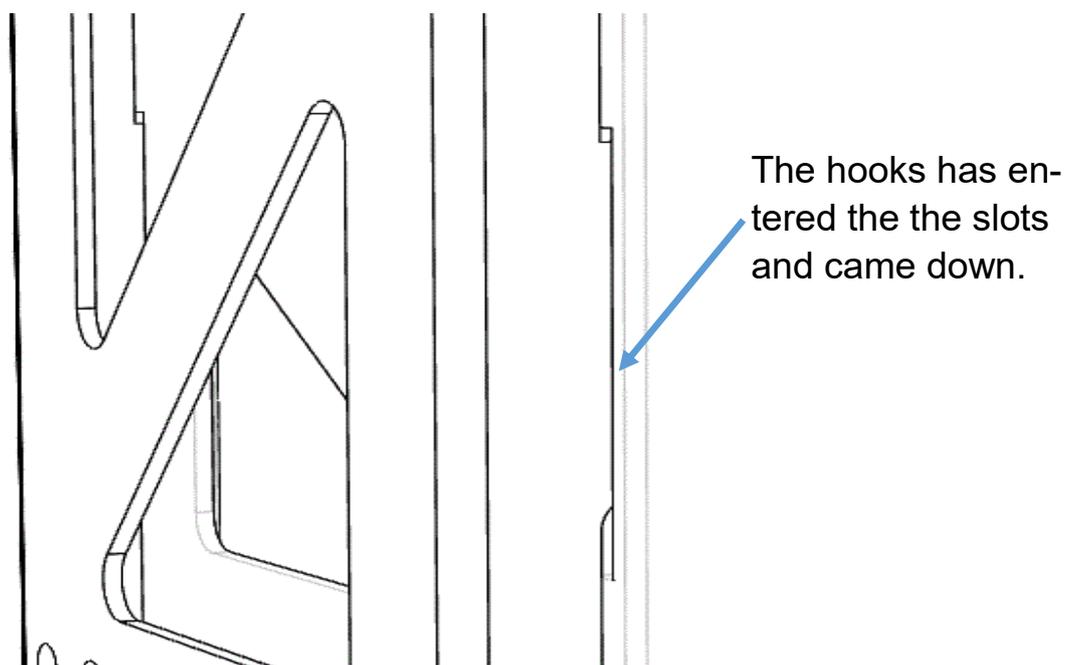
The weight of the charging station is 21 kg. It would be safer to have two people to hang the station on to the hooks.



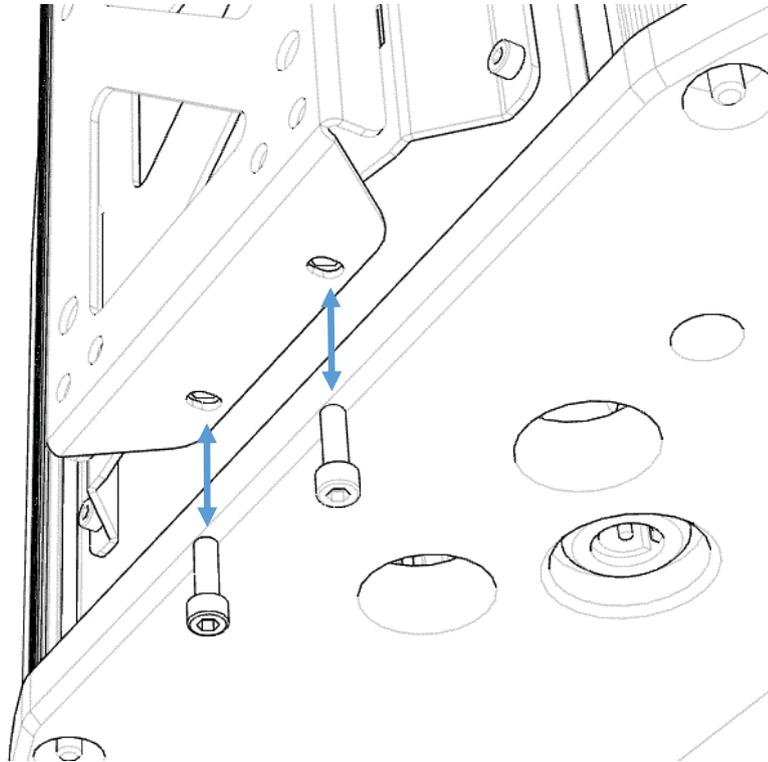
The hooks must first be inserted into the slots (see picture below):



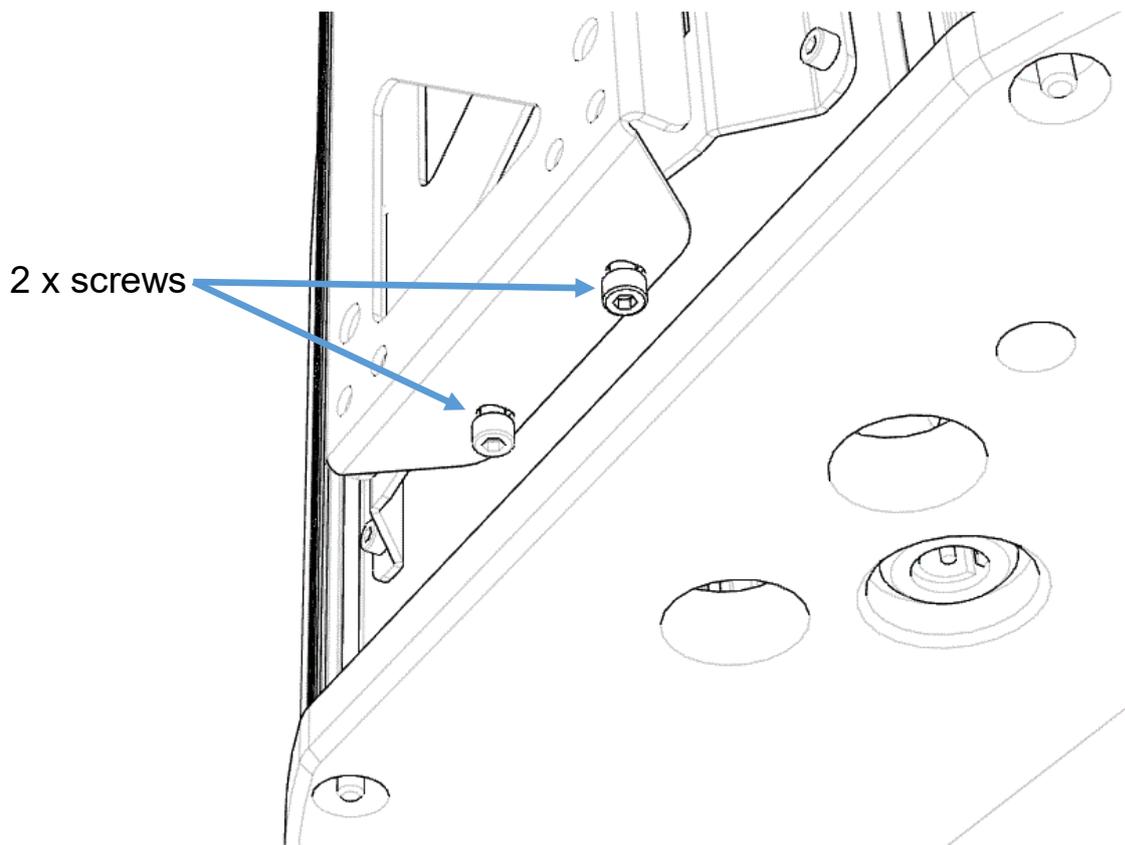
Push down the charging station to secure the charging station on to the hooks (see picture below):



Secure the charging station to the mounting plate by hexagon screws provided:

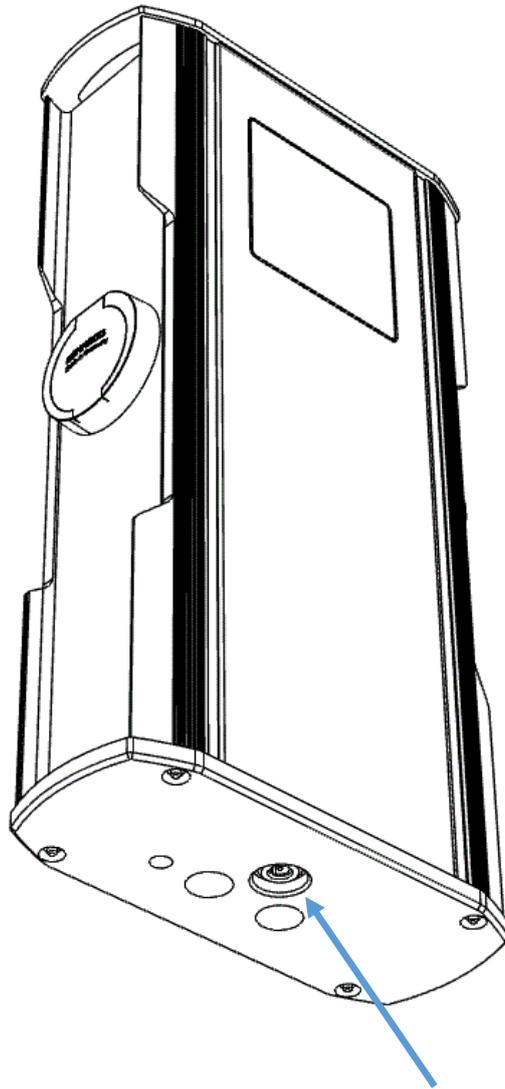


Tighten these screws with the force of 10 Nm.



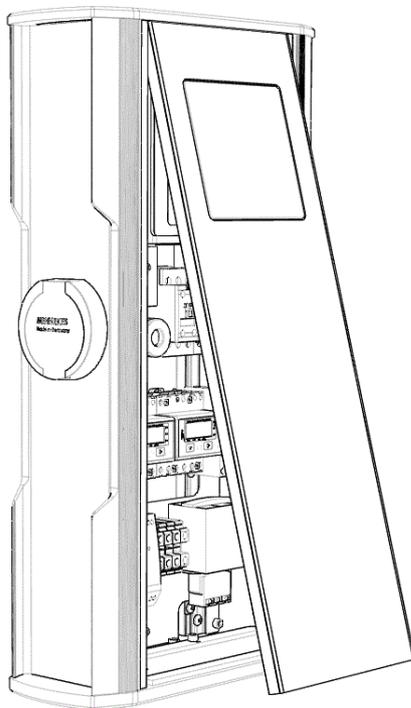
3.8 Connecting The Power Cable

Unlock the lock on the underside of the charging station using the electrical housing key supplied with the charging station:

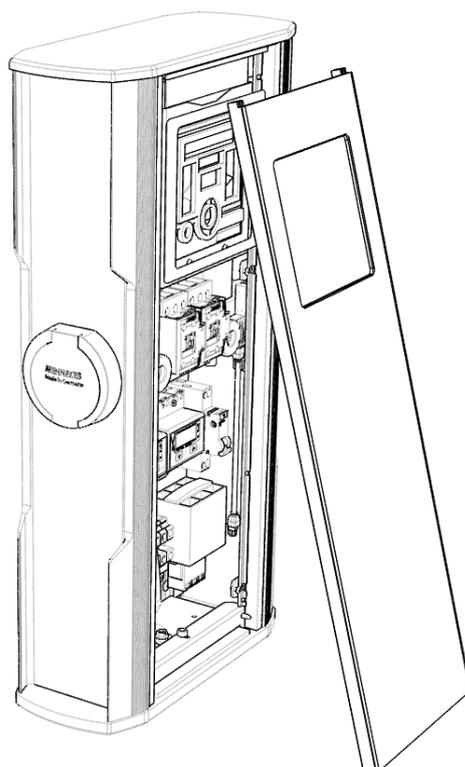


Unlock the lock by turning the key counterclockwise

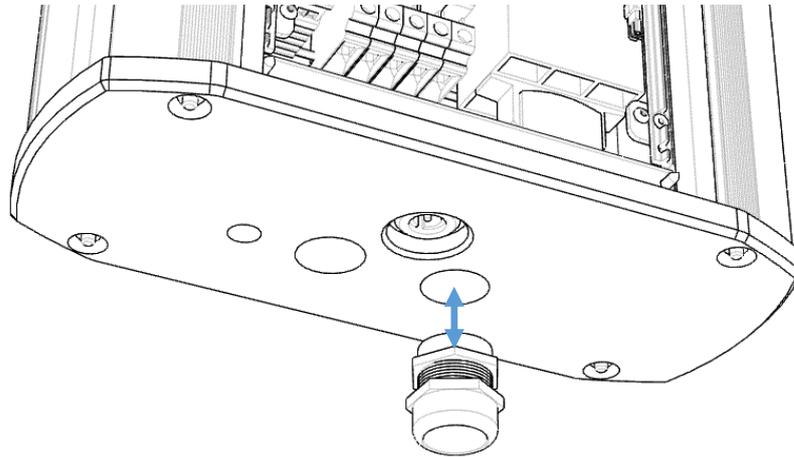
Open the charging station by lifting the front panel: lift from the bottom of the lid (see illustration below):



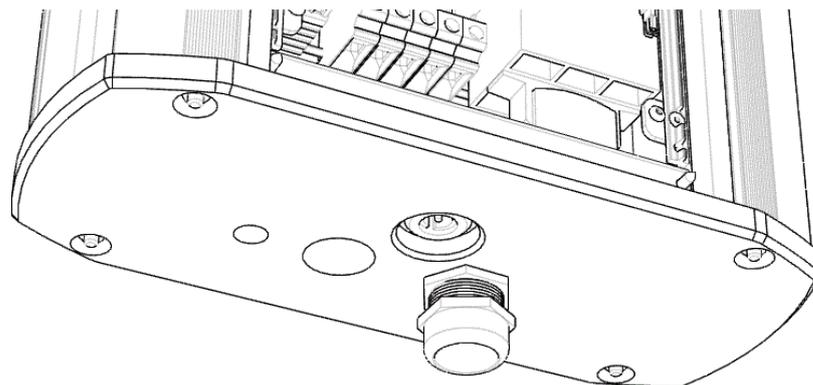
Remove the front panel. Be especially careful not to break the screen glass, which is held inside the front panel (see illustration below):



Screw the metal cable gland to the bottom of the charging station (see illustration below):



If the charging station is supplied with an optional LAN communication or an optional secondary power input, all additional cables must be routed to the charging station using these metal glands.



If there are unused holes in the bottom of the charging station, make sure that these holes are plugged to prevent water from entering.

3.9 Single Power Input



Danger: Before connecting the power cable, make sure that no current flows through the cable Power Supply

When the CityCharge Mini 2 is selected in the single power input configuration: The wire terminals accept a single 5-core wire up to 16 mm².

TN 3-phase connection to the grid:



Connect Power Supply Cable three phases L1; L2; L3 to three separate wire terminals. (Grey color wire terminal)

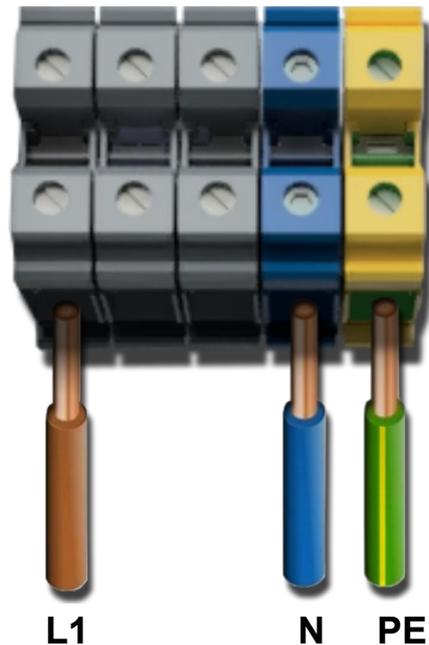
Connect the Power Supply Cable neutral (N) to the blue wire terminal.

Connect the Power Supply Cable Earth wire (PE) to the green-yellow wire terminal



Make sure the front lid is grounded through the separate green-yellow wire

TN 1-phase connection to the grid:



For TN 1-Phase: connect Power Supply L1 to the Grey color wire terminal.

Connect the Power Supply Cable neutral (N) to the blue wire terminal.

Connect the Power Supply Cable Earth wire (PE) to the green-yellow wire terminal.



Make sure that the service doors are grounded through the separate green-yellow wire.

IT network connection

NOTE: This charged is designed to operate on TN 3-phase network. (3P + N + PE) 230/400 VAC (+/-10%) 50-60 Hz.



If using in IT network, make sure that line-to-line (between phases) voltage do not exceed 220-230 VAC.



Always check line-to-line voltage when installing in IT network.

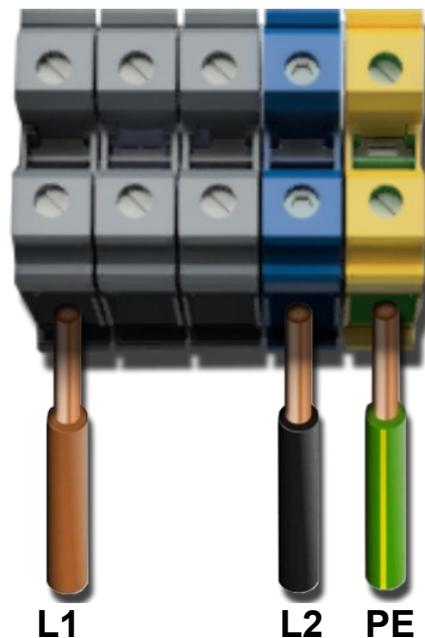
IT 3-phase connection to the grid:



For TN 3-Phase: connect L1 to charger's Phase 1. Connect L2 to charger's Phase 2. Connect L3 to charger's Neutral.

Connect the Power Supply Cable Earth wire (PE) to the green-yellow wire terminal.

IT 1-phase connection to the grid:

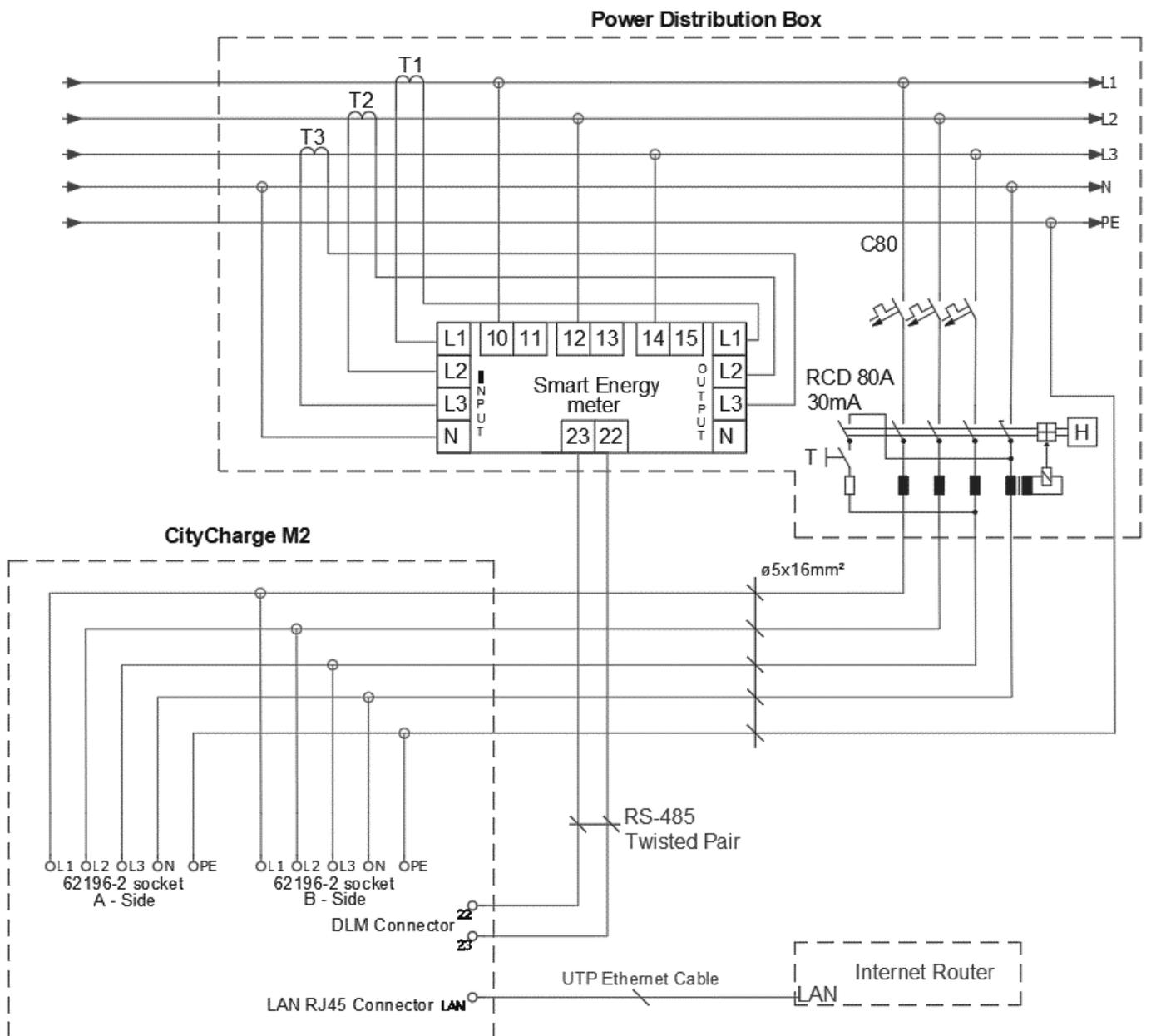


For TN 1-Phase: connect L1 to charger's Phase 1. Connect L2 to charger's Neutral.

Connect the Power Supply Cable Earth wire (PE) to the green-yellow wire terminal.

3.10 Single Power Input Connection Schematic

As standard, the CityCharge Mini 2 is supplied with a single power input terminal. The maximum permissible power cable cross-section is 16 mm². The wiring diagram below shows the single power connection. The smart energy meter is an optional extra and is used for dynamic load management.

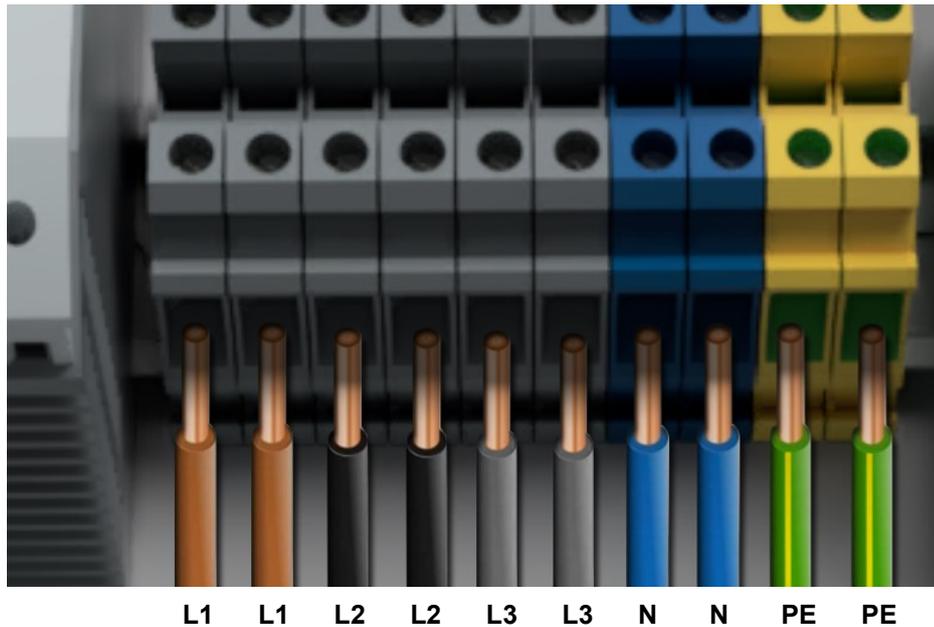


3.11 Double Power Input



Danger: Before connecting the power cable, make sure that no current flows through the cable Power Supply

When the CityCharge Mini 2 is selected in the dual power input configuration: The wire terminals accepts a dual 5-core wire up to 6 mm².



Connect the three phases L1; L2; L3 of the power supply cable to the three separate wire terminals (shown in yellow). Connect the second power supply phases L1; L2; L3 to the three separate wire terminals (shown in brown). One power supply is for the A side, while the other power supply is for the B side.

Connect both Power Supplies Cables neutrals (N) to the blue wire terminals.

Connect both Power Supplies Cables ground (PE) to the green-yellow wire terminals.

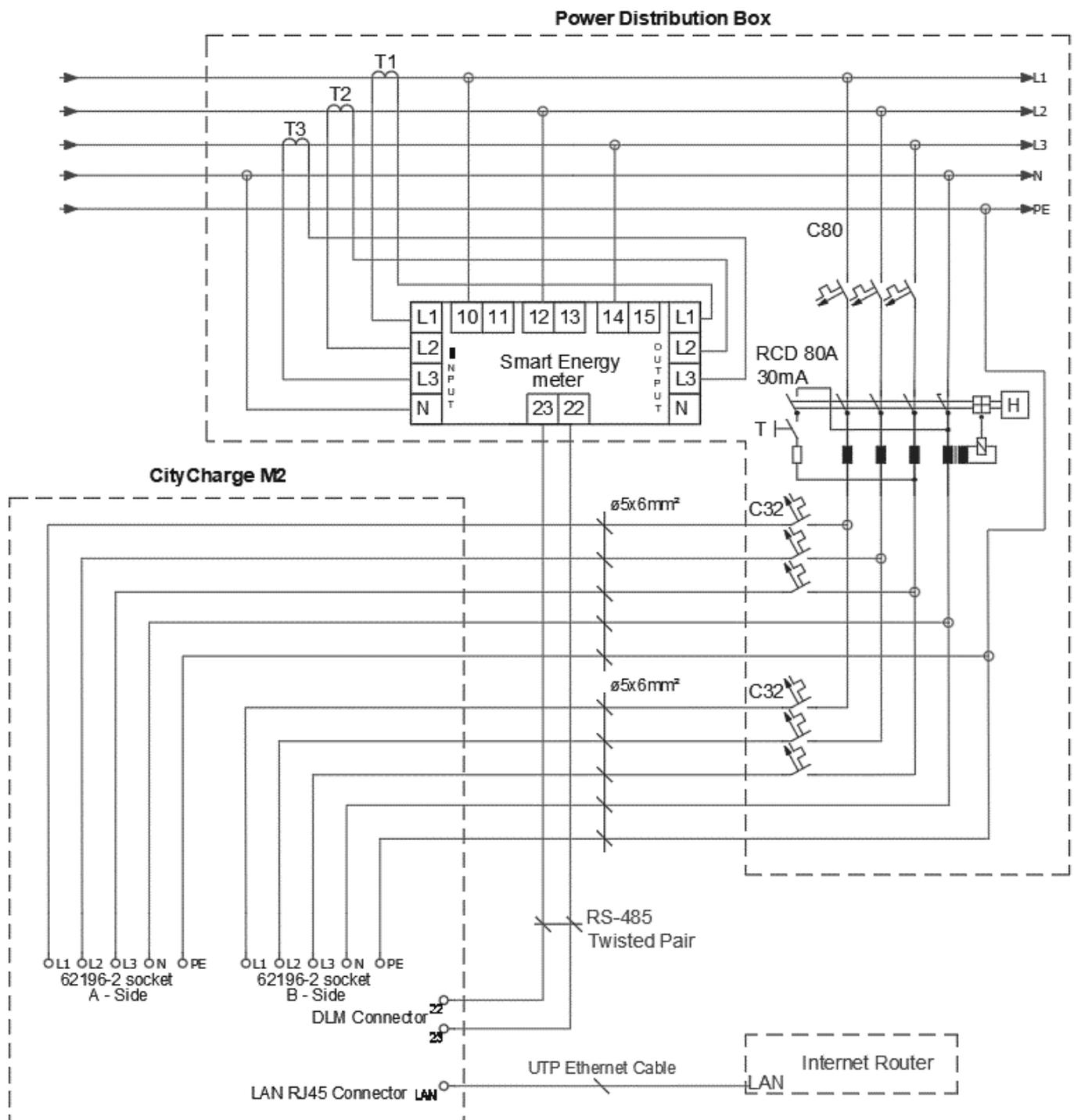


Make sure the front lid is grounded through the separate green-yellow wire

3.12 Dual Power Input Connection Schematic

Optionally, the CityCharge Mini 2 can be equipped with a feature that allows it to use two separate power inputs. This can be beneficial for installation purposes when using thinner cables for easier installation and/or aesthetics.

It is possible to use two completely independent power inputs, but keep in mind that then the DLM cannot be used and two separate RCD's must be used for each power line.



3.13 Power Supply Cable Introduction

The power supply cable must be routed through the bottom of the charging station. Use the metal gland provided. The cable should be protected by the corrugated PVC pipe. The maximum allowable cable thickness when the charging station is selected with a standard single power input option is 16 mm². For the dual power input option, the maximum cable thickness is 6 mm².

3.14 Ethernet Cable Introduction (Optional)

If the charging station with the LAN option is selected, a UTP Ethernet cable must be installed. The Ethernet cable should be long enough to reach the adapter inside the charging station. Leave at least 50 cm of UTP cable length for the desired installation location. Mount the RJ45 cable connector on the UTP cable after passing the cable through the metal gland into the charging station, otherwise the RJ45 cable end will not fit through the metal gland.



For maximum UTP cable protection, use separate corrugated PVC pipes for UTP cable.

3.15 DLM Data Cable Introduction (Optional)

For the dynamic load management system, use a UTP Ethernet cable (or the RS-485 twisted pair cable) for data transmission between the charger and the energy meter located in the main power distribution panel. For secure cable entry into the charger, use a corrugated PVC pipe to protect the cable.

3.16 LAN Cable Connection (optional)



Danger: Before connecting the LAN cable, make sure that no current flows through the cable Power Supply.

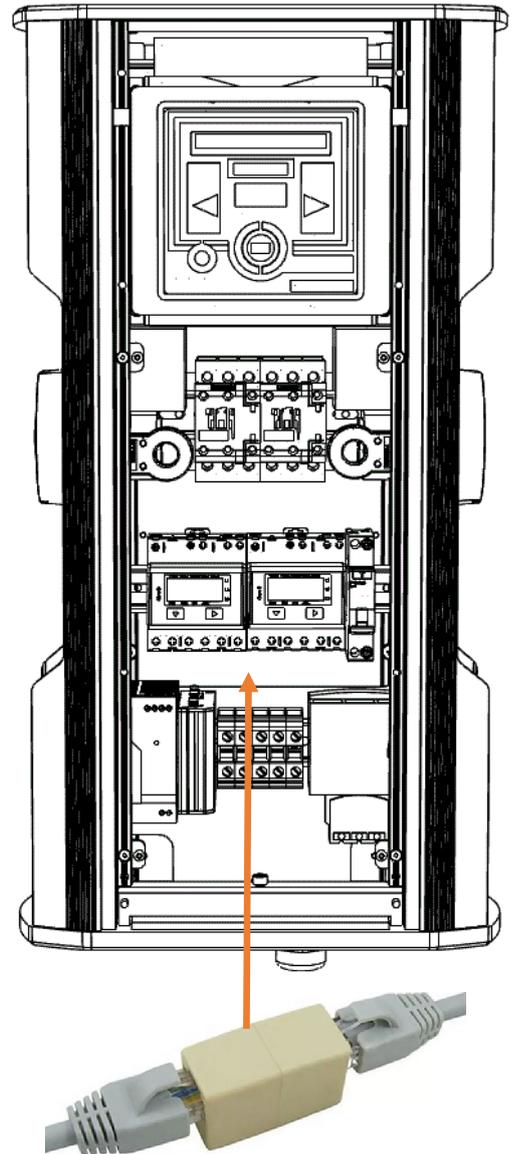


If the CityCharge Mini 2 charging station is equipped with a LAN option, make sure you follow these procedures to route the cable correctly in the charging station:

1. Route the UTP LAN cable to the charging station through the metal gland provided with the charging station.
2. After passing through, mount the RJ45 cable connector on the cable end.
3. Connect the LAN connector to the LAN cable socket-adaptor located near the wire-terminal.
4. Make sure that the device which provides internet to the charging station (router) works in DHCP mode, and the charger will be given access to the internet.



Make sure that the cable does not touch the heating element, which is located on the bottom right side of the charging station. Secure the cable with cable ties.

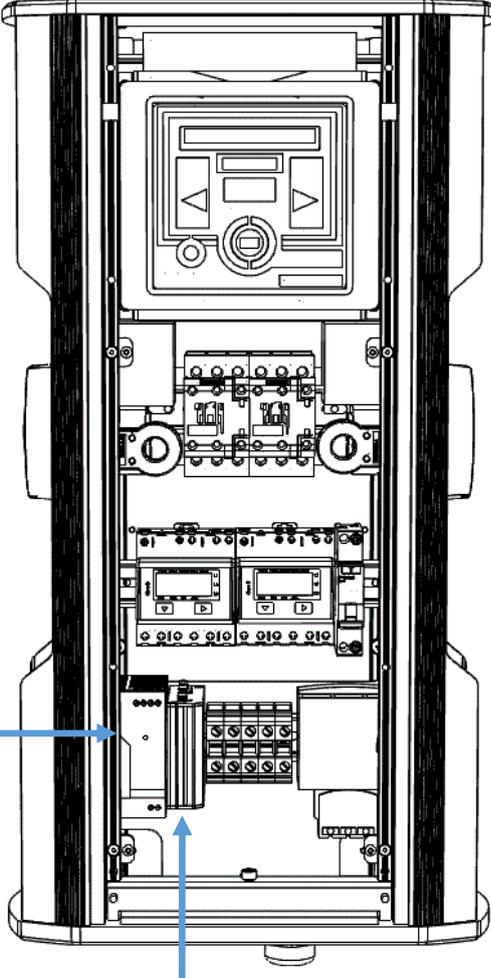


Connect the LAN cable to the RJ45 adapter

3.17 GSM Modem Settings And Setup (optional)

The CityCharge Mini 2 charging station supports multiple communication types: LAN, Wi-Fi, GSM/3G/4G. The charging station can be installed in a remote place and have a good communication speed through mobile network GSM/3G/4G communication.

If the CityCharge Mini 2 is selected with the SM /3G/4G option, the additional equipment is installed in the charging station: Modem RUT240 (located between the wire terminals and AC /DC power supply. (see illustration).



DC Power supply

GSM/3G/4G Modem

The RUT240 modem is a compact industrial 4G (LTE) router equipped with 2x Ethernet ports and Wi-Fi:

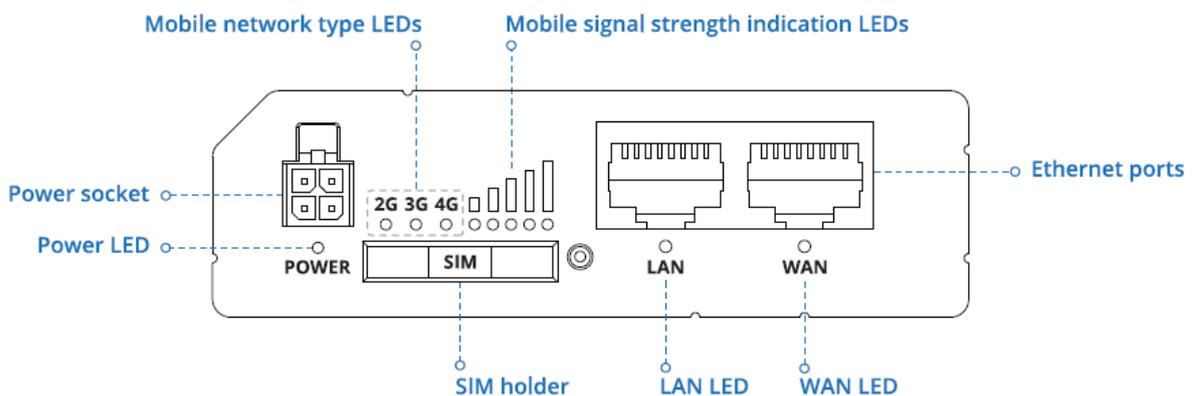


To set up the station for operation with GSM/3G/4G communication, the SIM card must be inserted into the modem:

1. Using sharp object push SIM card tray release button.
2. Take out the SIM card tray.
3. Put the SIM card into the tray.
4. Push SIM card tray into the modem.



Make sure that: The SIM card does not have PIN not set. SIM card should have up to 200 megabytes data allowance per month.

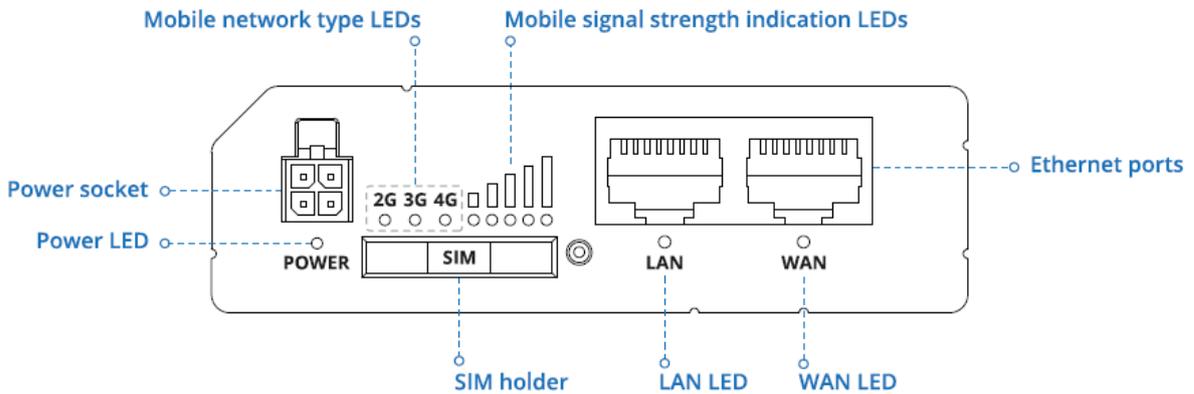


Successful insertion of the SIM card and communication should be confirmed by the LEDs indicating cellular signal strength and cellular type. The modem will flash to indicate which mode it is operating in: 2G/3G or 4G LED.

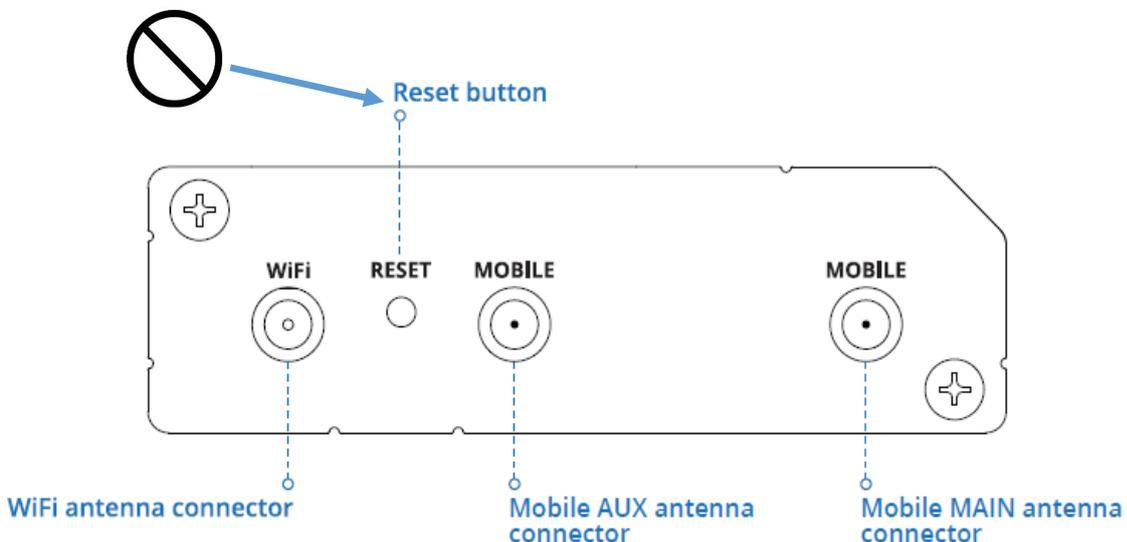
3.18 Alternative LAN Connection

The charging station, which is equipped with a GSM/3G/4G communication modem, can alternatively be connected via an Ethernet/ LAN cable.

Simply plug the Ethernet/ LAN cable into the WAN port on the modem. WAN LED should light up and start flashing, indicating that communication has started.



DO NOT press the "reset button" on the modem. CityCharge Mini 2 is shipped fully configured for use. Pressing the "Reset" button will erase all configuration settings.



3.19 Dynamic Load Management Wiring (optional)



Danger: Before connecting the Dynamic Load Management UTP cable, make sure that no power is flowing through the Power Supply cable. Turn off the power to the Charging Station.

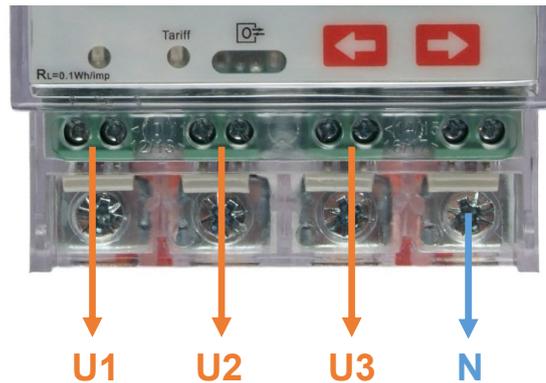
If the charger with DLM option is chosen, you will receive 3 pieces of split-core current transformers and a smart energy meter:



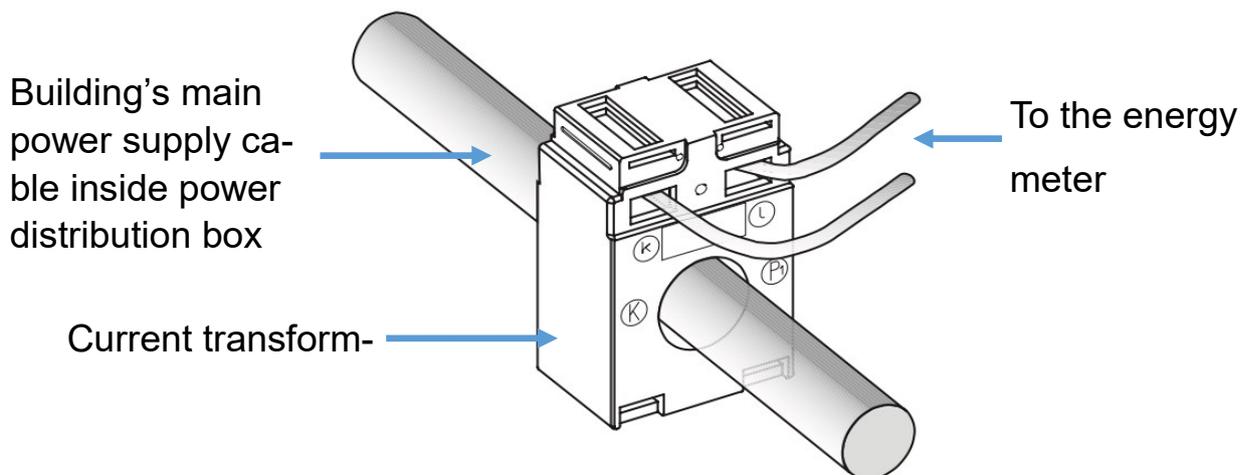
Installation: Follow the steps below to install Dynamic Load Management correctly:

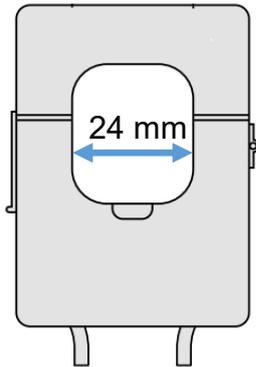
1. Make sure the charging station is turned off.
2. It is recommended that the entire building power supply be turned off completely.
3. Install the energy meter in your power distribution cabinet.

Connect phases L1, L2, L3 of the power supply and the neutral to the energy meter. Connect the wire to each phase: U1; U2; U3 with the smaller connectors 10/11; 12/13; 14/15. (Pins 10 and 11 are shorted. You can use either pin 10 or 11 for voltage measurement).



5. Attach the current measuring transformers to the each phase inside the power distribution box.





Make sure that the power supply cables of your building are not thicker than 24 mm, otherwise they will not fit into the current transformer.

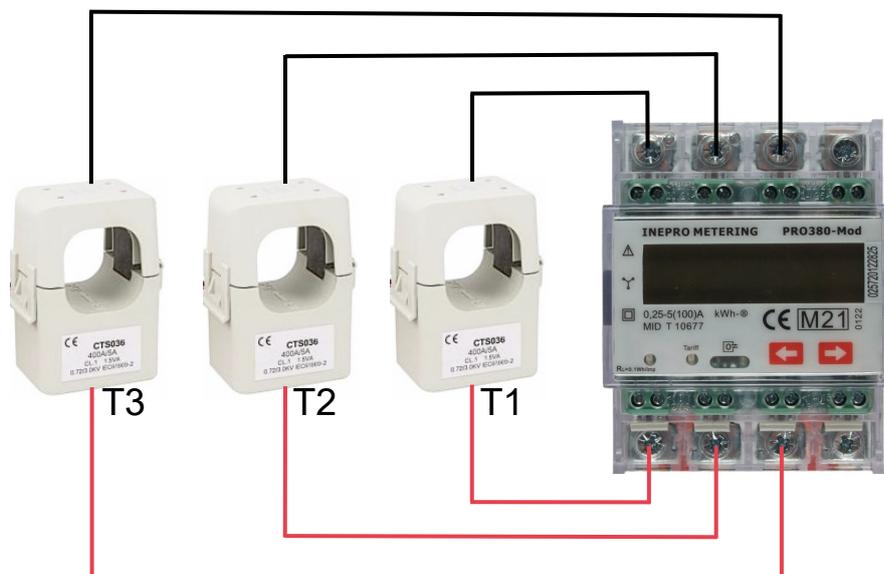


Make sure, that the current transformer is closed, otherwise the current transformer will not work.



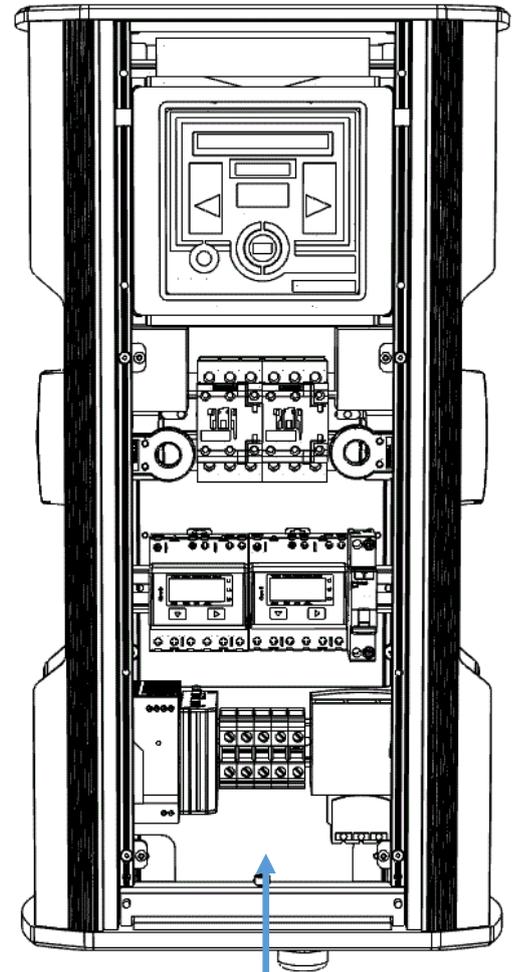
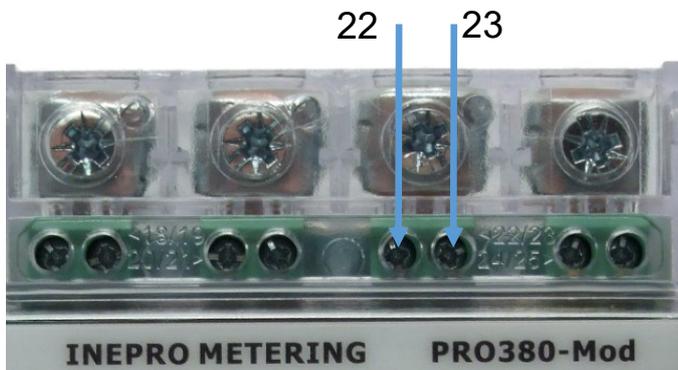
Make sure that the buildings total current consumption does not exceed 300 amps per phase.

6. Connect the red wire of current transformer T1 to the phase 1 input of the energy meter and the black wire to the phase 1 output. Connect the red wire of current transformer T2 to the phase 2 input of the energy meter and the black wire to the phase 2 output. Connect the red wire of the current transformer T3 to the input of phase 3 of the energy meter and the black wire to the output of phase 3: (See figure below):



- Dynamic Load Management (DLM) requires additional wiring between the Smart Energy Meter and the charging station. Use the standard UTP Ethernet cable(or RS-485 twisted pair cable) for the dynamic load management system:

Contacts 22/23 are ModBus communication contacts. Use the black color wire for the 22 contact and the red color wire for the 23 contact.

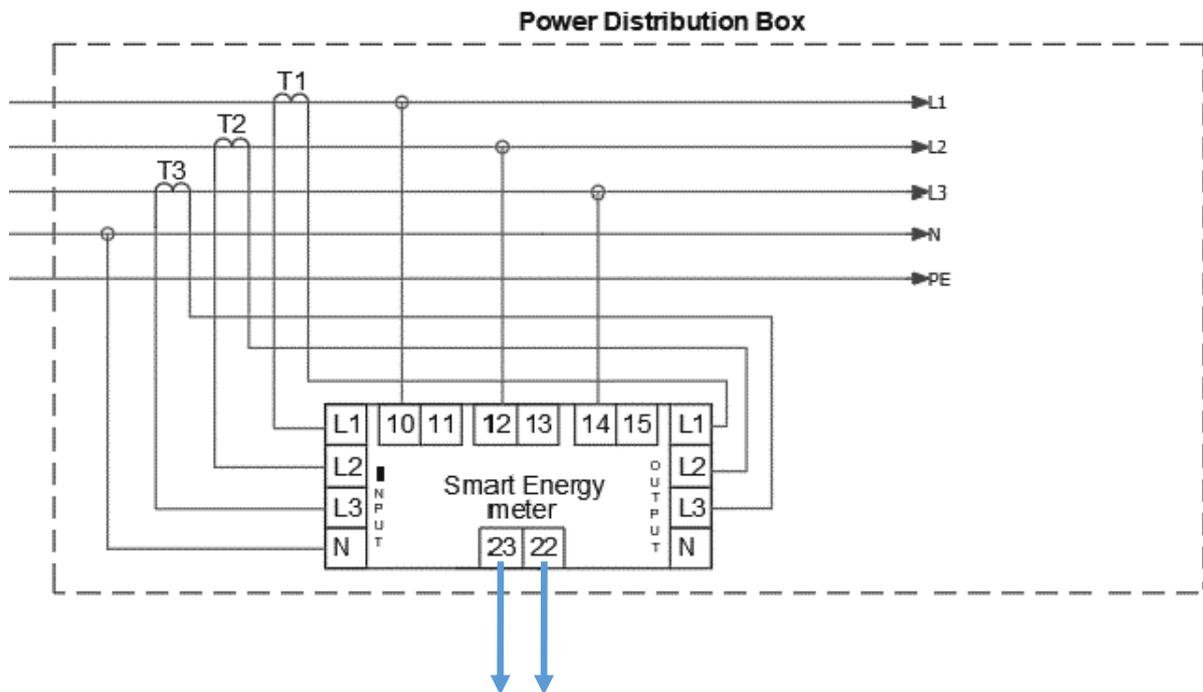


Connect Two data wires to the loose connection located near the power terminal:



3.20 Dynamic Load Management Connection Diagram

Principal Dynamic Load Management Wiring diagram is shown below:



- 23 - to the red wire inside the charger Wago connector.
- 22 - to the black wire inside the charger Wago connector.



The smart energy meter is completely set up to work with the charging station. No additional settings are required for the smart energy meter to work with a system.

Chapter 4

INITIAL STARTUP

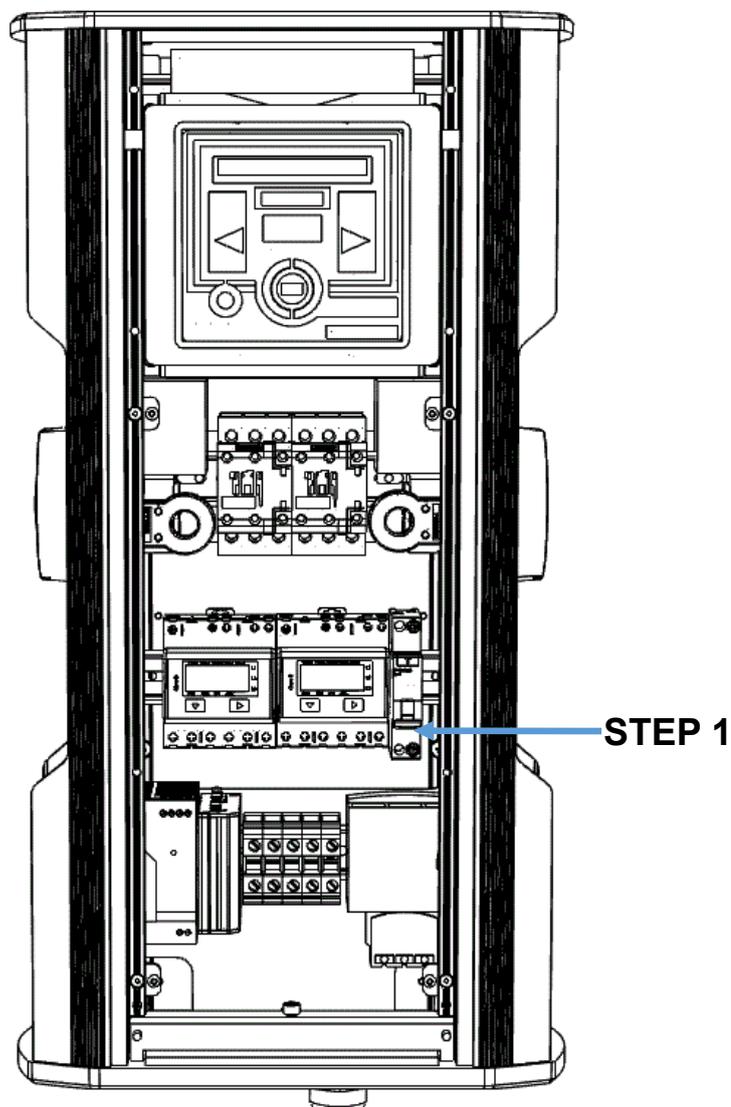
4.1 First Time Start-UP

STEP 1: Turn on electronics circuit breaker.

STEP 2: Close the service lid.

STEP 3: Go to your power distribution box and turn on the circuit breaker and residual current breaker.

STEP 4: Wait at least 5-10 min. for charger to boot-up.



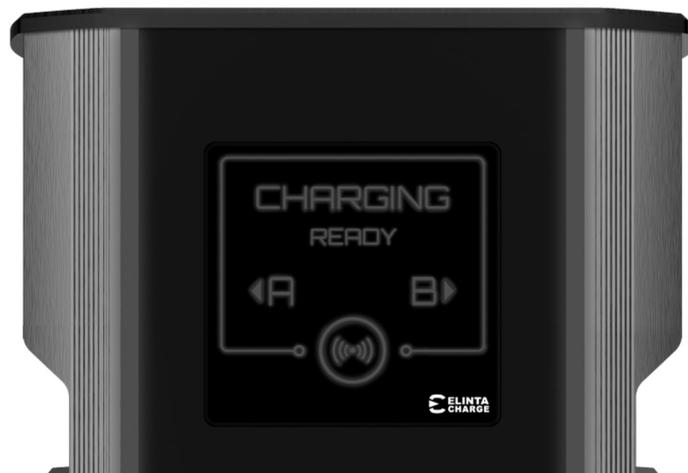
4.2 Charger Boot Sequence

Switching on the charging station for the first time can take up to 10 minutes.

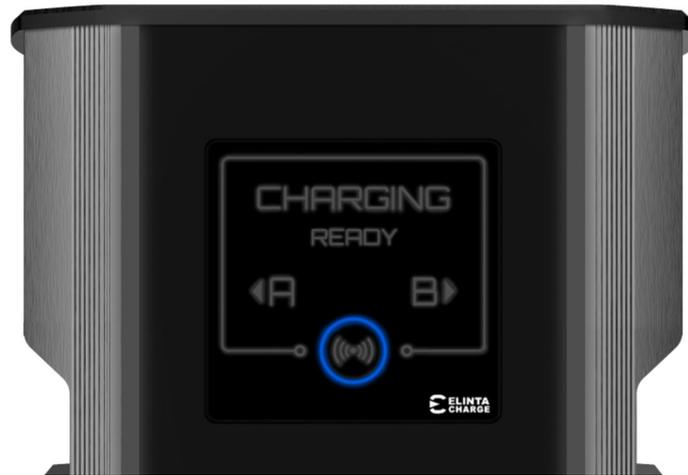


After turning on the charging station, leave it on. Do not turn off the charging station until the charger screen displays the message "Ready". There is a possibility that the charging station is initiating a software update process, which can be disrupted by switching it off immediately.

If the charger has been installed correctly and all necessary circuit breakers have been turned on - then the charger should immediately illuminate the white "Elinta Charge" logo in the lower right corner of the screen. As shown below:



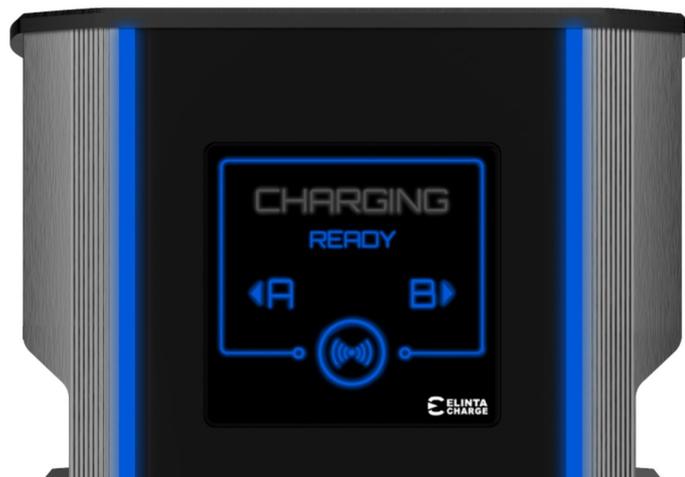
When the charging station decides to download the latest software version, the blue circle will "run in circles" until the download and installation process is complete. Usually, this process takes after a reboot or power failure. Normally, this step is skipped during the first boot-up.



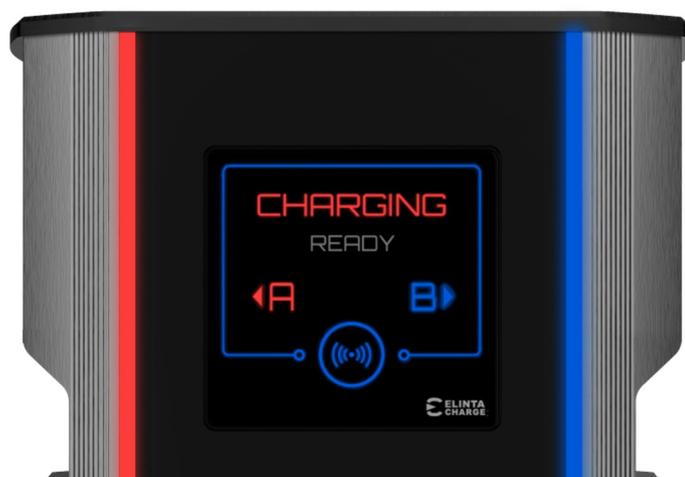
The blue frame around the screen should be constantly lit. If the frame around the screen is blinking, it means that the charger has lost communication with the server.



After these steps, the charging station should glow a constant color. The charging station screen will display "Ready". At this point, it is possible to use the charging station to charge the EV.



Plug the charging cable into the charging station and the other end into the electric vehicle. Activate the charging station by swiping an RFID tag on the screen. The charging cable will be locked and charging will begin. The color of the charging station LED stripes will change. Swipe again to end the charging process.



Chapter 5

SETTINGS AND TESTING

5.1 RCD Type B (optional)

By default, CityCharge Mini 2 is provided with residual current circuit breakers type A. This RCD type A ensures:

- The control and isolation of circuits.
- The protection of people against direct and indirect contact.
- The protection of installations against insulation faults

Type A RCD means that tripping is guaranteed at the booth for sinusoidal, alternating fault currents and for pulsed DC fault currents, whether they are applied quickly or rise slowly.

In many European countries there is a law that applies to the installation of EVSEs and requires that the requirements of IEC62955 (Residual direct current detecting device (RDC-DD) to be used for mode 3 charging of electric vehicles) are met. In this case, RCD type A is not sufficient and must be changed to type B.



As a less expensive alternative, residual current measuring rings can be used which, in conjunction with type A RCD, act in a similar way to type B RCD.



5.2 RCD Type A and Type B Testing

The CityCharge Mini 2 charging station is always supplied with two residual current circuit breakers (RCD), which should be tested every 3 months of use. To test the RCD, follow these steps:

1. Stop all car charging.
2. Disconnect all vehicles from the charging station.
3. Go to the building power distribution box.
4. Locate the corresponding RCD for the charging station.
5. Press the test button on RCD.
6. If the test is successful, RCD should trigger and shut off.
7. Turn on RCD.
8. Continue to use the Charging Station as normal



5.3 Dynamic Load Management Setup online (optional)

Log in to your administrative elios.cloud website:

1. Go to the Stations tab.
2. Select the station whose power you want to regulate.
3. Go to the Edit tab.
4. At the bottom of the page, configure these settings:

Balance Mode	<input type="text" value="LOCAL DYNAMIC MASTER"/>
Minimum power (STATION)	<input type="text" value="0"/>
Maximum power (STATION)	<input type="text" value="16"/>
Minimum power (SOCKET)	<input type="text" value="6"/>
Maximum power (SOCKET)	<input type="text" value="16"/>
Maximum power (DYNAMIC INPUT)	<input type="text" value="32"/>
Maximum power (DYNAMIC RESERVE)	<input type="text" value="13"/>

Balance Mode - how charger balances power: If selected: **None** - charger does not balance power at all. **Group** - charger balance only between it's socket. It does not take into account exact power consumption. If two cars are connected, then power is split in half. **Local Dynamic Master** - One charger power balance depending on building power consumption. **Local Dynamic Slave** - uses Local Dynamic Master settings (to different charger) Multiple chargers can balance depending on building power consumption.

Minimum power (station) - minimum amperage which is allowed to use by the station.

Maximum power (station) - maximum amperage which is allowed to use by the station.

Minimum power (socket) - minimum amperage which is allowed to use by the socket.

Maximum power (socket) - maximum amperage which is allowed to use by the socket.

Maximum power (dynamic input) - Building circuit breaker nominal. Max amperage which is allowed to flow through circuit breaker.

Maximum power (dynamic reserve) - Amperage reserve left for sudden current spikes, when using home appliances. We recommend to leave approx. 10% total building power for reserve.

Balance Mode	LOCAL DYNAMIC MASTER
Minimum power (STATION)	0
Maximum power (STATION)	16
Minimum power (SOCKET)	6
Maximum power (SOCKET)	16
Maximum power (DYNAMIC INPUT)	32
Maximum power (DYNAMIC RESERVE)	13

In this example, the charging station may use the power that: **Building power (32 A) - Dynamic reserve (13 A) = max. 19 A.**

But the maximum current at an outlet is 16 A.

The maximum power that the charging station puts out is 16 A.

If the house uses 10 A, then: $32 - 13 - 10 = 9$ A. The car is charged at 9 A. If the power is less than the minimum power (socket), the charger will not work at all.

5.4 Payment Solution Using The Payter (optional)

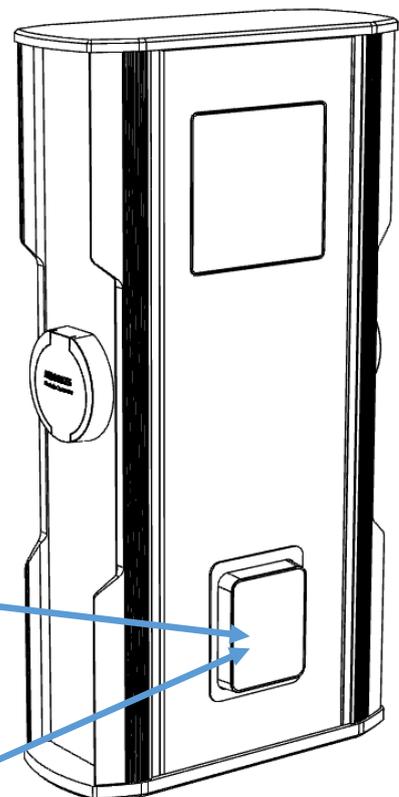
CityCharge Mini 2 charging stations can accept payments in two ways:

- Via the ElintaCharge app using a credit card.
- With the Payter contactless payment terminal.

The CityCharge Mini 2 can be selected with a Payter contactless payment terminal located at the front of the charging station, just below the screen.

The Payter payment terminal accepts all contactless payment cards as well as NFC mobile phones.

Payter Contactless



5.5 Using The Payter Payment Terminal



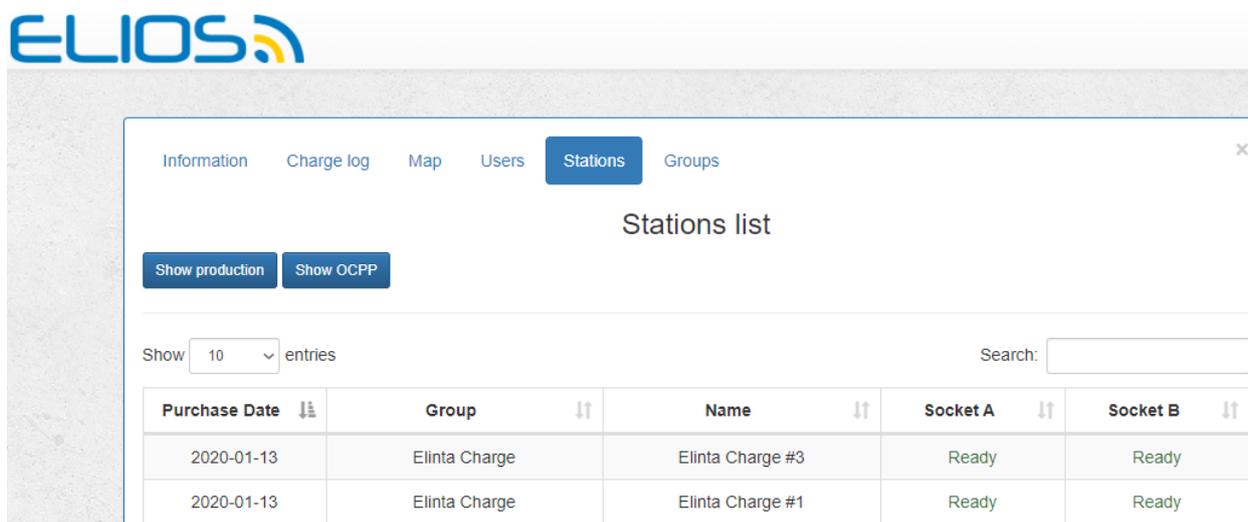
1. LED indicators
2. Status DisplayBlue Backlight
3. Contactless Symbol
4. Triangle Button

To start charging: connect the EV to the charging station. Take your contactless payment card and place it on the contactless symbol (3). The LED indicator (1) will light up and a beep will be heard. Remove the contactless card from the reader. The charging station locks the charging cable and the charging process begins. To end the charging process: Place your contactless payment card on the contactless symbol (3) again. The indicator LED (1) lights up and a beep is heard. The charging process is stopped and the cable is unlocked. The payment card is charged with the amount corresponding to the time the EV was charged.

5.6 Setting Up The Price Rules For Payter

To set up the price for the charging service, you need to set the price parameters:

1. Open the web browser and go to: elios.cloud.
2. Log in to the Elios platform with your username and password.
3. Navigate to the "Stations" tab:



The screenshot shows the Elios web interface. At the top left is the Elios logo. Below it is a navigation menu with tabs: Information, Charge log, Map, Users, Stations (selected), and Groups. Below the navigation menu is the title 'Stations list'. There are two buttons: 'Show production' and 'Show OCPP'. Below these buttons is a search bar and a dropdown menu showing '10' entries. Below the search bar is a table with the following data:

Purchase Date	Group	Name	Socket A	Socket B
2020-01-13	Elinta Charge	Elinta Charge #3	Ready	Ready
2020-01-13	Elinta Charge	Elinta Charge #1	Ready	Ready

4. From the list of the charging stations, select one which will be set up for receiving payments.
5. Navigate to the "Payment" tab:



The screenshot shows the Elios web interface. At the top is the title 'Information of Elinta Charge #3'. Below it is a navigation menu with tabs: Information, Hardware, Charge log, App Transaction log, Console, Schedule, Payment (selected), and Edit.

6. The payment tab will open with all available settings for the price setting:

Information of Elinta Charge #3 ✕

Information Hardware Charge log App Transaction log Console Schedule **Payment** Edit

Currency	<input type="text" value="EUR"/>
Initial price	<input type="text" value="0.3"/>
Price per minute	<input type="text" value="0"/>
Price per kWh	<input type="text" value="0.15"/>
Free minutes	<input type="text" value="0"/>
Free kWh	<input type="text" value="0"/>
Minimum price	<input type="text" value="0.3"/>
Maximum price	<input type="text" value="20"/>

Currency - The currency in which the client will be charged.

Initial price - The price which the client will be charged just for connecting to the charging station.

Price per minute - The cost of each minute spent charging.

Price per kWh - The cost of each kWh used.

Free minutes - If the price per minute is set, then the free minutes can be set. The client will be charged the standard “price per minute” rate when all the free minutes run out.

Free kWh - If the price per kWh is set, then the free kWh can be set in order to charge the client for each kWh additional used.

Minimum price - The absolute minimum price that the client will be charged no matter how much time or kWh was used.

Maximum price - The absolute maximum price that the client will be charged no matter how much time or kWh was used.



Note: Do not set the maximum price too high. There are restrictions on the credit cards on how much money it can be charged when using the RFID/contactless method.

7. Save the changed settings with the "Save to this" button or alternatively, if you want to save the same settings for all chargers in the same group, with the "Save to group" button.

Minimum price

Maximum price

[Save To This](#) [Save To Group](#) [Close](#)

8. Lastly, the charging station needs to be set as "paid" so it can use the settings you made earlier. Navigate to the "Edit" tab.

Information of Elinta Charge #3 ✕

[Information](#) [Hardware](#) [Charge log](#) [App Transaction log](#) [Console](#) [Schedule](#) [Payment](#) [Edit](#)

9. In the "Edit" find the "operational mode" and select "paid".

Name

Group

Latitude

Longitude

Operation Mode

Balance Mode

10. Click the "Save" button at the bottom of the page to save the settings. Now each user will be charged for using the charging station.

Chapter 6

TROUBLESHOOTING

The table below lists the most common solutions to problems:

Charging station CityCharge Mini 2 Troubleshooting Table

#	Problem	Possible cause	Troubleshooting
1	Charging station not functioning. Screen shows nothing.	No power to charging station. Or RCD / MCB triggered.	Open charging station service doors. Check that none of the circuit breakers or residual current circuit breakers have tripped. Check upstream power supply. Power may have failed in the upstream control panel.
2	The charger screen is working, but one side of the LED stripes are not lit.	One side of the charger RCD / MCB triggered.	Open the service doors of the charging station. Check that none of the circuit breakers or residual current circuit breakers have tripped.
3	Charging station can be activated, but the charging process does not start.	Cable not plugged in all the way. Car doors open, car not locked, or key in ignition.	Check that the cable is securely connected to the car and the station. Check that car is locked and key is not in ignition switch.
4	Can't stop charging. The cable is locked.	The charger has lost communication with the server or the wrong RFID tag used to stop.	Check if the charger screen frame is constantly lit or flashing (slowly). The slow flashing means communication to the server has been lost. If the red dot appears on the screen after trying to stop charging, it means that an incorrect RFID tag is being used.

Charging station CityCharge Mini 2 Troubleshooting Table

#	Problem	Possible cause	Troubleshooting
5	The charging station keeps losing a connection to the server.	Bad signal/ connection.	Depends on the selected communication. The problem could be a poor signal from WiFi or GSM. Check the signal strength. If the signal on Wi-Fi is too weak, set a Wi-Fi booster.
6	When attempting to start the charge, the station shuts down.	Faulty EV charging cable or electric vehicle.	A faulty EV charging cable or EV outlet may be responsible for triggering RCD. If the charger does not have an automatic RCD reset, RCD should be reset manually.
7	The charging process takes a long time	Reduced charging current	If the charging station power appears reduced compared to previous use, it may be due to reduced power. Check the charger configuration. If possible, try the charging station with a different EV. If the problem persists, contact technical support at Elinta Charge.
8	The charging station flashes red. EV cannot be charged.	The charging station has an error.	Cheque the charging station's charging log. Try restarting the charging station. If the problem persists, contact the support team at Elinta Charge.

Chapter 7

WARRANTY

7.1 Warranty Rules and Conditions

1. Elinta Charge guarantees the high quality of the CityCharge Mini 2 charging station. Elinta Charge will repair or replace, free of charge, defects that occur due to the manufacturer's error during the warranty period. All warranty terms apply in accordance with consumer protection laws.
2. Before using the product, read these warranty terms carefully and make sure you comply with them. Keep the invoice or check as proof of purchase during the warranty period of the device.
3. Elinta Charge provides a 24-month warranty from the date of purchase.
4. Up to 60 months (total) of warranty coverage is available at an additional charge.
5. All non-functioning chargers (or parts) are considered the property of Elinta Charge and must be returned to Elinta Charge when replacement chargers (or parts) come in for replacement.
6. The warranty is valid when installed by a certified electrician who has installed the charger in accordance with these installation instructions.

7.2 Warranty Does Not Apply:

1. For installation work: Power cable routing, equipment installation, station installation.
2. If the unit is not installed in accordance with the manufacturer's operating instructions.
3. For parts whose service life depends on the intensity of operation (fuses, seals, and other natural wear parts) unless the manufacturer and/or seller is responsible for the failure of these parts.
4. For glass, plastic/aluminum housing, and signs of natural wear of its parts.

5. For damage caused by unauthorized acts, incidents, vandalism.
6. For damage caused by factors beyond the control of the manufacturer and/ or the seller.
7. For damage caused by natural disasters.

7.3 Not Included Into The Warranty:

1. Periodic maintenance.
2. User training on how to use the product.
3. Equipment replacement, modification when equipment is being changed due to changing operating conditions (integration or changing components).
4. Fixing Faults in the power input circuit.

7.4 In Case of Breakdown

1. Turn off the charging station and do not use it.
2. Note the serial number of the station from the sticker. The label is located behind the service doors on the bottom of the station.
3. Contact the technical service Elinta Charge, tel. +370 653 66633 or +370 615 71604 or support@elintacharge.com.
4. When registering a fault, have the serial number of the charging station, the device name, and a detailed description of the fault ready.

7.5 Final Thoughts

1. If you have any questions about the use or installation of the charging station, please contact the company that installed the unit or the technical support department of Elinta Charge.
2. This document does not limit the rights of the consumer to the warranty if the purchased product (device) is of poor quality.

