

# Green Motion DC 240 Green Motion DC 360 Installation manual

**Available power DC 240:**  
120 / 180 / 240 kW

**Available power DC 360:**  
300 / 360 kW



*Powering Business Worldwide*

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# 1. Introduction

**Thank you for installing the Green Motion DC 240/360 EV charger.**

## Before you start

This manual contains important instructions that must be followed during installation, operation and maintenance of the Eaton Green Motion DC 240/360 EV charger. All instructions must be read before installing and operating the equipment. This manual should be retained for future reference. Please note that the Green Motion DC 240/360 EV charger must only be installed by professional and qualified personnel, i.e. an Eaton technical support representative or a professional installer. There are no user serviceable parts inside the Green Motion DC 240/360 EV charger. Failure to observe the above will void the guarantee provided and Eaton cannot be held legally accountable.

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## Technical disclaimer

All drawings, descriptions and illustrations contained in this document serve to provide a clear overview and/or technical explanation of the present product and its various components and accessories. In line with our goal to continuously improve the products and the customer service we provide, all specifications contained in this document are subject to change without notice.

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## 1.1 Field of applications

This installation manual is intended for professional and qualified personnel. It describes how to securely install and commission the Eaton Green Motion DC 240/360 EV chargers:

**Table 1. Eaton Green Motion DC 240/360 EV charger overview**

Model	GREEN MOTION DC 240			GREEN MOTION DC 360	
Power output	120 kW	180 kW	240 kW	300 kW	360 kW
Power input					
Input nominal voltage	3-phase, 400 Vac L-L				
Input voltage range	340 Vac – 460 Vac				
Input current (nominal)	187 A	280 A	373 A	466 A	560 A
Input current (maximum)	215 A	322 A	429 A	536 A	644 A
Input frequency	50/60 Hz ± 10 %				
Grid systems	3-phase TN-S, TN-C, TN-C-S, TT				
Power factor (at full load)	> 0.99				
Input current TDD (at full load)	< 5 %				
Peak efficiency	94 %				
<b>Power output</b>					
DC output voltage	150 – 1000 Vdc				
Maximum output power	120 kW	180 kW	240 kW	300 kW	360 kW
Maximum output current	400 A	500 A		500 A	
Charging cable and connector	2x CCS2 @ 300 A, 5 m length, 500 A boost mode (400 A for 120 kW)				
Simultaneous charging	Yes				
Cable management	Yes				
<b>Environmental</b>					
Operating temperature	-35 °C to +55 °C (derating after 40 °C)				
Storage temperature	-40 °C to +80 °C				
Acoustic noise	60 dBA @ 3 m				
Altitude	Up to 2000 m				
Installation	Indoor or outdoor				
Humidity	< 95 % relative humidity				
<b>Mechanical</b>					
Mounting method	Floor-mounted				
Power input cable entry	Bottom				
Dimensions (W x H x D) in mm	750 x 2084 x 710				
Weight of the charging station (kg)	498	532	566	600	634
Material	SUS430 Stainless Steel				
Degree of protection	IP55				
Impact strength	IK10				
<b>Protection</b>					
Protections	Short circuit, overload protection, surge protection, protective earth, insulation failure				
Other monitoring	Overcurrent, overvoltage, undervoltage, emergency stop, door interlock, thermal protection				
<b>User interface and control</b>					
User interface	32" display with 4 control buttons LED status indicator, DC meter displays				
Authentication methods	RFID (ISO/IEC 14443A/B, ISO/IEC 15693) Free Charge Mobile App (Not included) ISO15118-2 Plug & Charge (upgradable by OTA)				
Payment terminal	Yes (Optional)				
<b>Connectivity</b>					
Network connection	Wired: Ethernet (10/100Mbps) Cellular: LTE 4G				
Communication protocol	OCPP 1.6j, upgradable to OCPP 2.0.1				
Remote monitoring	Yes				
Firmware upgrade	Over-the-air (OTA)				
<b>E-metering</b>					
MID	Yes				
Eichrecht	Yes (Optional)				
LNE	Yes				

Standards	
Safety compliance	IEC 61851-1, IEC 61851-23
Electromagnetic compatibility (EMC)	IEC 61851-21-2 Class A (Non-Residential) EN 301 489-1 (EMC generic) EN 301 489-3 (RFID) EN 301 489-52 (4G) EN 301 489-17 (Wi-Fi)
Electromagnetic field (EMF)	EN IEC 62311: 2020 EN 50665: 2017
Radio (EU only)	EN 300 328 (2.4G) EN 301 511 (2G) EN 301 908-1/2 (3G) EN 301 908-13 (LTE) EN 300 330 (NFC)
ROHS3	EN IEC 63000: 2018
ISO15118-2 Plug & Charge ready	Yes (upgradable by OTA)
Special requirements invoked	EN 18031-1: 2024 EN 18031-2: 2024

## 1.2 Conventions used in this document

This manual adopts the following type conventions and acronyms to refer to Green Motion DC 240/360 EV charger or its parts:

ALL CAPITALS highlight critical points that require careful attention.

All abbreviations used in this document are listed in Table 2.

**Table 2. Glossary**

Abbreviation	Description
AC	Alternating current
BEMS	Building Energy Management System
CAN	Controller Area Network
CCS	Combined Charging System
CSC	Charge Station Controller
CSMS	Charging Station Management System
CU	Control unit
DC	Direct current
DHCP	Dynamic Host Configuration Protocol
EMC	Electromagnetic compatibility
EMI	Electromagnetic interference
EV	Electrical vehicle
FW	Firmware
HW	Hardware
IEC	International Electrotechnical Commission
IP	Internet Protocol
LAN	Local area network
LCD	Liquid crystal display
MNO	Mobile Network Operator networks
N	Neutral
NAT	Network address translation
OCPP	Open Charge Point Protocol
OV	Overvoltage
PAT	Port address translation
PE	Protective earth
POS	Point of Sale
PPE	Personal protective equipment
RCD	Residual current device
SIM card	Subscriber identity module card
SW	Software
TCP	Transmission Control Protocol
UI	User interface
WEEE	Waste electrical and electronic equipment

## 2. Cautions

Read and follow the instructions and warnings in this Manual before attempting to install this product. Keep this Manual for future reference.

Please follow the below safety precautions to prevent bodily injuries and property damages.

Hazard of electric shock, explosion, or arc flash	
	WARNING: Damaging fumes
	WARNING: Explosive mixtures of dust or gases, corrosive gases, or conductive or radiant heat from other source.
	WARNING: Moisture, abrasive dust, steam or in an excessively damp environment.
	WARNING: Fungus, insects, vermin.
	WARNING: Salt-laden air or contaminated cooling refrigerant.
	WARNING: Pollution degree higher than 2 according to IEC 60664-1.
	WARNING: Exposure to abnormal vibrations, shocks, and tilting.
	WARNING: Exposure to direct sunlight, heat sources, or strong electromagnetic fields.
	WARNING: When the product is running, it should pay attention to ventilation, heat dissipation and keep the environment clean. Avoid installation in places with frequent occurrence of storm, rainstorm, lightning and other severe weather.
	WARNING: During installation, if any abnormal phenomena such as cracking, loose case lock, water leakage are showing up, all operations shall be stopped immediately and professionals shall be informed in time to deal with them.
	WARNING: Do not put inflammable, explosive or combustible materials, chemicals, combustible steam and other dangerous goods near the charger.
	WARNING: Please keep the connector clean and dry. If there is any dirt, please wipe it with a cleaning cadre. It is strictly prohibited to touch the charging core with hands when it is powered.
	WARNING: It is strictly prohibited to use the charger when the connector or charging cable is defective, cracked, worn, and the connector line is exposed. If any, please contact the staff in time.
	WARNING: In case of rain and thunder, please use electricity carefully. It is better to stop charging.
	WARNING: Do not attempt to disassemble, repair or modify the charger. For repairs or modifications, please contact the staff. Improper operation may result in damage, water leakage, electricity leakage, etc.
	WARNING: It is forbidden to insert and unplug the plug during the charging process to ensure the safety of life and the vehicle during the charging process.
	WARNING: It is strictly prohibited to continue to use this product for charging in case of failure.
	WARNING: If any leakage or insulation failure occurs during the operation of the product, please press the emergency power off button immediately.
	WARNING: Obvious maintenance marks shall be set up. Isolation and protection measures shall be added to live parts that may be near by operators to avoid contact.
	WARNING: The charger needs a dust net/cotton protection to prevent large foreign objects or racks from blocking the module air duct, and the resulting abnormal function or component damage is not covered by the warranty.

## 2.1 Operating environment and restrictions

Each system must be used exclusively for the operations it was designed for and within the operative ranges specified in the nameplate and/or in the relative technical datasheet, in accordance with the national and international safety standards.

Any use different from the intended use specified by the manufacturer is to be considered inappropriate and dangerous, and in this case the manufacturer declines all responsibility.

Check the regulations applied by the electricity provider.

The unit shall be connected to the distribution network in accordance with local rules.

The unit shall comply with all the technical specifications.



Improper or unauthorized use:

Although carefully constructed, like all electrical appliances the unit can catch fire.

The unit is intended for indoor or outdoor installation.

Recommended operating temperature range of the unit is -35 °C to +50 °C.

The unit must be transported and stored in indoor locations in the temperature range -40 °C to +70°C.

The unit must be used in locations free from acids, gases or other corrosive substances.

The unit must be used and stored in locations with relative humidity below 95 %.

The unit must be transported in conditions with relative humidity below 95 %.

The unit must be used at an altitude not exceeding 2000 m above sea level.

## 2.2 Suggested protections during the installation

The equipment was built according to the highest safety standards and equipped with safety devices designed to protect users, service personnel and components.

For obvious reasons, the manufacturer cannot envisage all potential types of installations and locations where the equipment will be installed; the customer must therefore clearly inform the manufacturer of specific conditions at the installation site. Eaton declines any responsibility if the unit is incorrectly installed.

The operators must be correctly instructed. The operators must therefore read and follow the technical instructions contained in the manual and in the enclosed documentation.

The instructions provided in this manual do not replace the safety regulations of the installation and operational technical data printed on the products, nor do they replace the current safety standards enforced in the country where the equipment is installed, and the rules dictated by common sense.

The manufacturer can provide theoretical or practical training to operators, either on their site or on the customer's premises, as specified at the time of drawing up the contract.

The equipment must not be used if any operational fault is identified.

Temporary repairs should be avoided; repair work must be carried out only with genuine spare parts, which must be installed according to the intended use.

The responsibilities deriving from the commercial components are delegated to the respective manufacturers.

Avoid touching the equipment housing during the equipment operation. The housing could overheat during its operation or be heated by direct sunlight. To avoid burns from an overheated surface caused by sunlight, please use suitable PPE or wait for the equipment to cool down before accessing it.

In the event of fire, CO2 foam extinguishers must be used, and self-vacuum systems must be used to put out fires in enclosed spaces.

If the noise level exceeds legal limits, the working area must be restricted, and anyone who has access to the area must wear ear defenders or ear plugs.

During the installation process, special attention must be paid to fixing the equipment and its components. At this stage, restricting or preventing access to the installation area is recommended.

Professional and qualified personnel are recommended to wear clothing and personal protective equipment (PPE) provided by their employer. Operators must not wear clothes or accessories that could start fires or produce static electricity, or any item of clothing that could affect personal safety. When carrying out any operation on the equipment, clothes and instruments must be suitably insulated.

Professional and qualified personnel must NOT access the equipment with bare feet or wet hands.

The maintenance engineer must always ensure that nobody else is able to reset or operate the equipment during maintenance and must report any fault or deterioration caused by wear or by aging, in order to restore the correct safety conditions.

The professional and qualified personnel must always pay attention to the working environment to ensure it is well lit and has a suitable escape route.

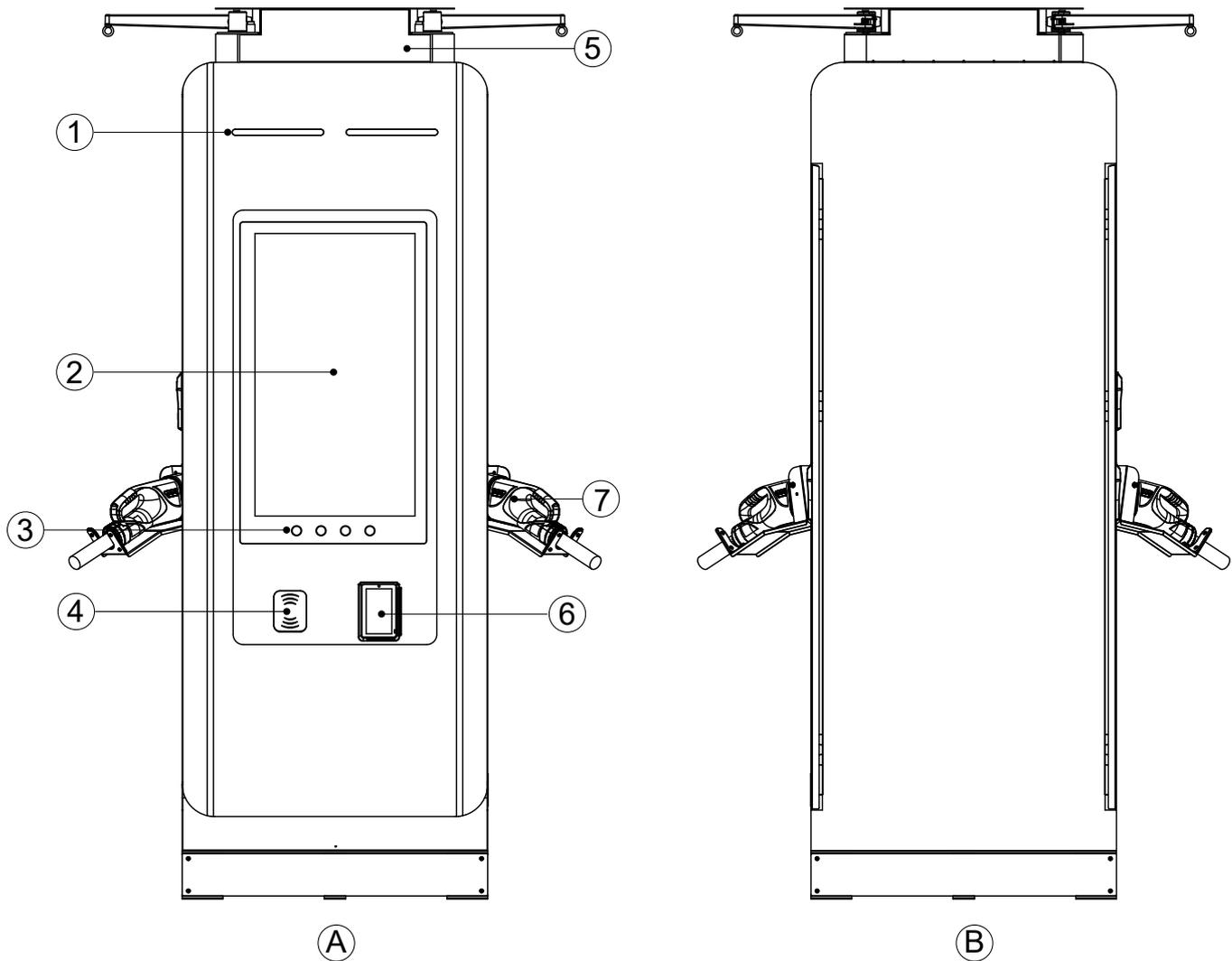
A first aid kit must be provided near the installation site so that it is readily available in case of emergency.

### 3. General description

The following figures show different views of the Green Motion DC 240/360 EV charger.

#### 3.1 Front and back views

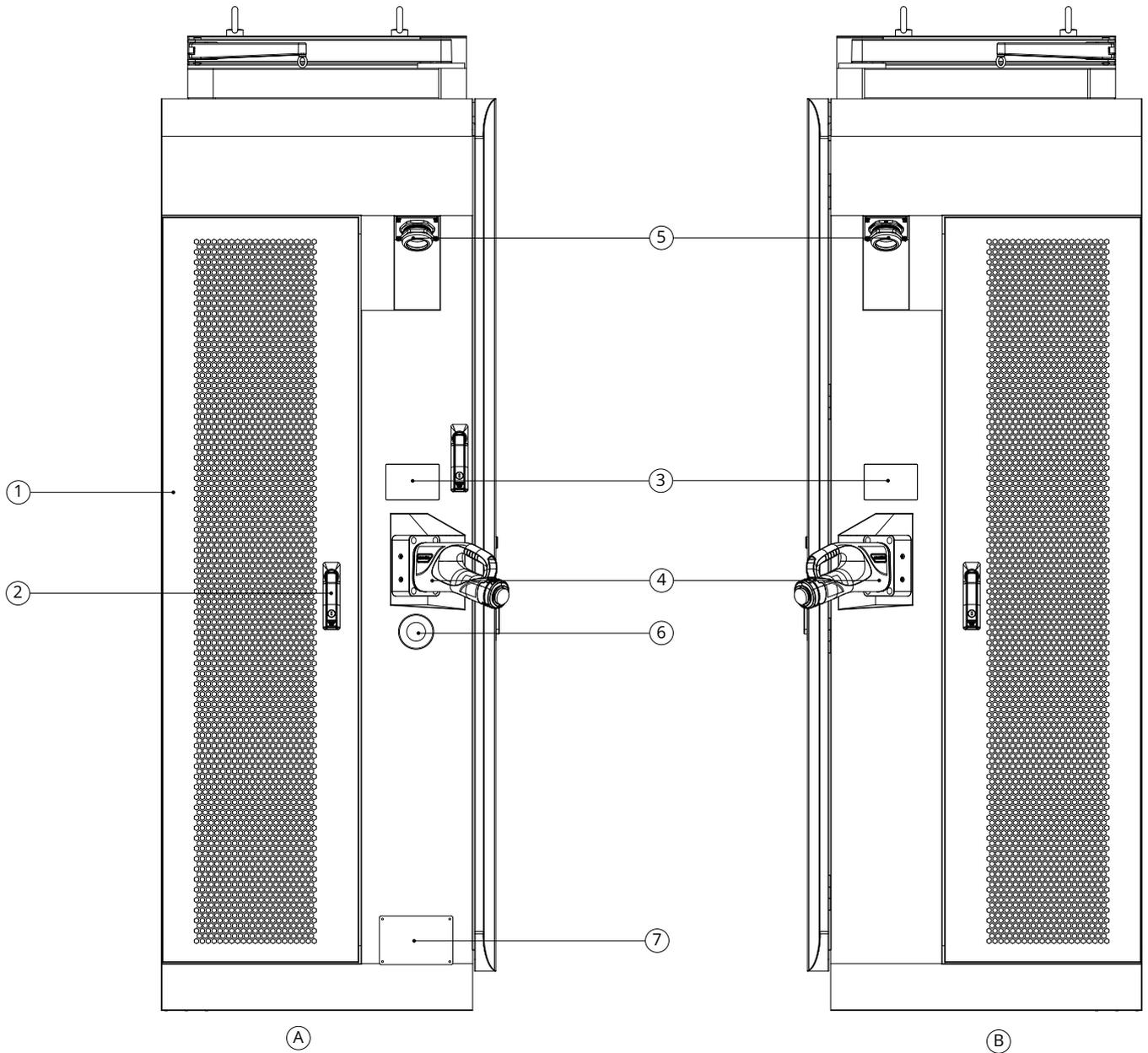
Figure 1. Front and back views of Green Motion DC 240/360 EV charger.



Tag	Description
(A)	Front view
(B)	Back view
(1)	LED indicator
(2)	Color display
(3)	Control buttons
(4)	RFID reader
(5)	Swing arms
(6)	Payment terminal
(7)	CCS 2 plugs

## 3.2 Left and right views

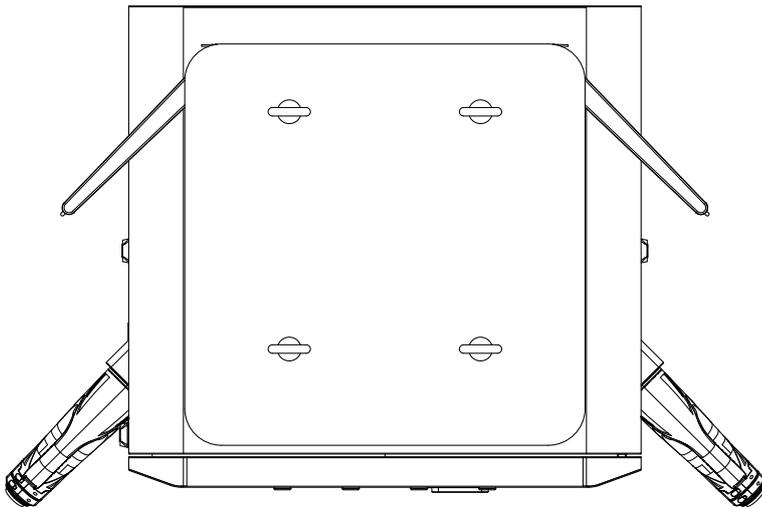
Figure 2. Left and right views of Green Motion DC 240/360 EV charger.



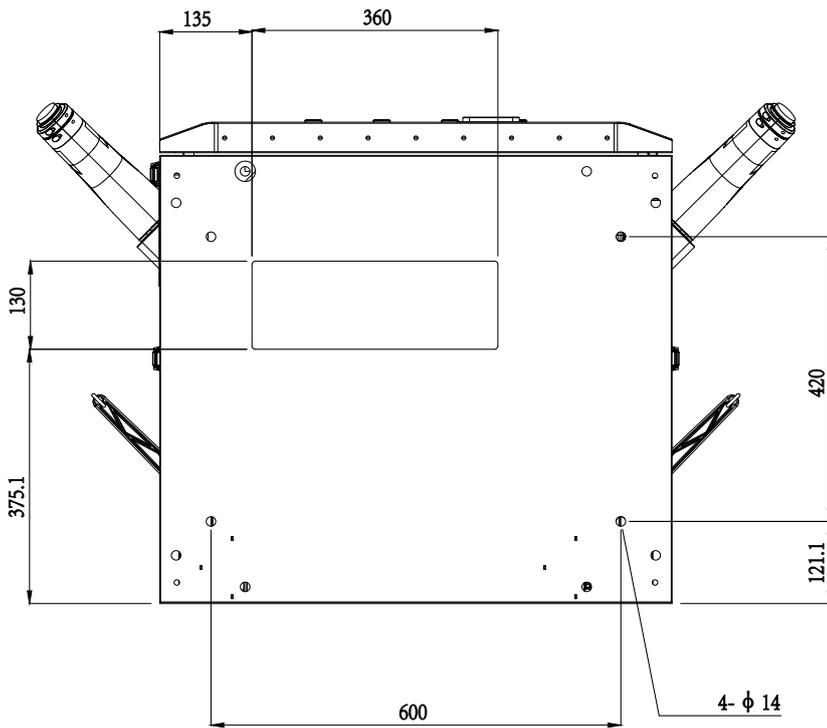
Tag	Description
(A)	Left view
(B)	Right view
①	Side doors
②	Door lock
③	Energy meter
④	CCS2 plug
⑤	Cable gland of charging cable
⑥	Emergency stop
⑦	Nameplate

### 3.3 Top and bottom views

Figure 3. Top and bottom views of Green Motion DC 240/360 EV charger.



(A)



(B)

Tag	Description
(A)	Top view
(B)	Bottom view

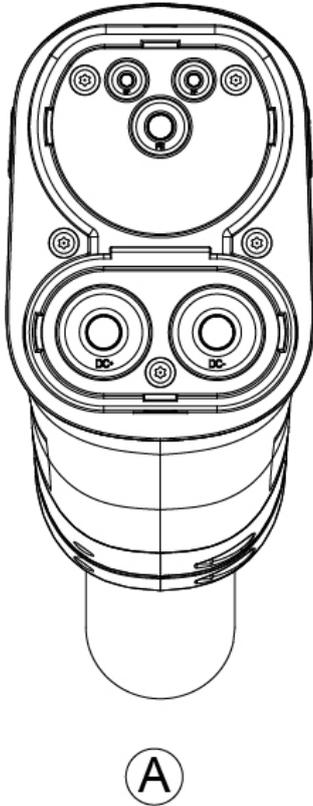
### 3.4 Types of cables

The Green Motion DC 240/ 360 EV charger provides one types of cables and connectors:

Combined Charging System (CCS). This is the default cable.

The maximum output power of the Green Motion DC 240 /360 charger is 240kW and 360 kW, respectively. However, the actual charging power may vary due to external factors such as the available grid power, electrical installations, EV model, battery state of- charge, and environmental temperature. For this reason, Eaton disclaims any liability concerning the actual power output.

**Figure 4. Illustration of connector types available with Green Motion DC 240/360 EV charger**



Tag	Description
(A)	CCS Type 2

The unit is equipped with both CCS 2 plugs as reported in the table below.

**Table 3. Possible cable configurations available with the charger**

Green motion DC 240/360 Cable options	CCS 2	CCS 2
Default	Left	Right

## 4. Relevant information prior to installation



The installation must be carried out only by professional and qualified personnel.



Installation, commissioning, maintenance or retrofitting of the charging station must be performed by professional and qualified personnel who are responsible for complying with existing standards and local installation regulations.



During the installation, ensure the equipment is powered off.

### 4.1 Tools required for installation

To perform installation, professional and qualified personnel requires the following tools:

- Screwdrivers
- Screwdrivers set (T20,Phillips head)
- Socket wrench (M8,M10,M12)
- Ratchet set
- Allen key set
- Door lock key
- Open ended wrenches (M25,M32,M50)
- Laptop or smartphone
- SIM card, in case of online chargers with 4G modem

### 4.2 Package contents

The Green Motion DC 240/360 box must contain the following parts:

- Green Motion DC 240/3 60 EV charger
- Cable retention clip
- Keys
- Cards
- Wrench for the switch Only Green Motion DC 360
- Allen plug
- Eye bolts
- Emergency button cap
- Quick start guide
- Safety guidelines
- Power Module (Optional)
- M12\*30mm screws

### 4.3 Dimensions and weight

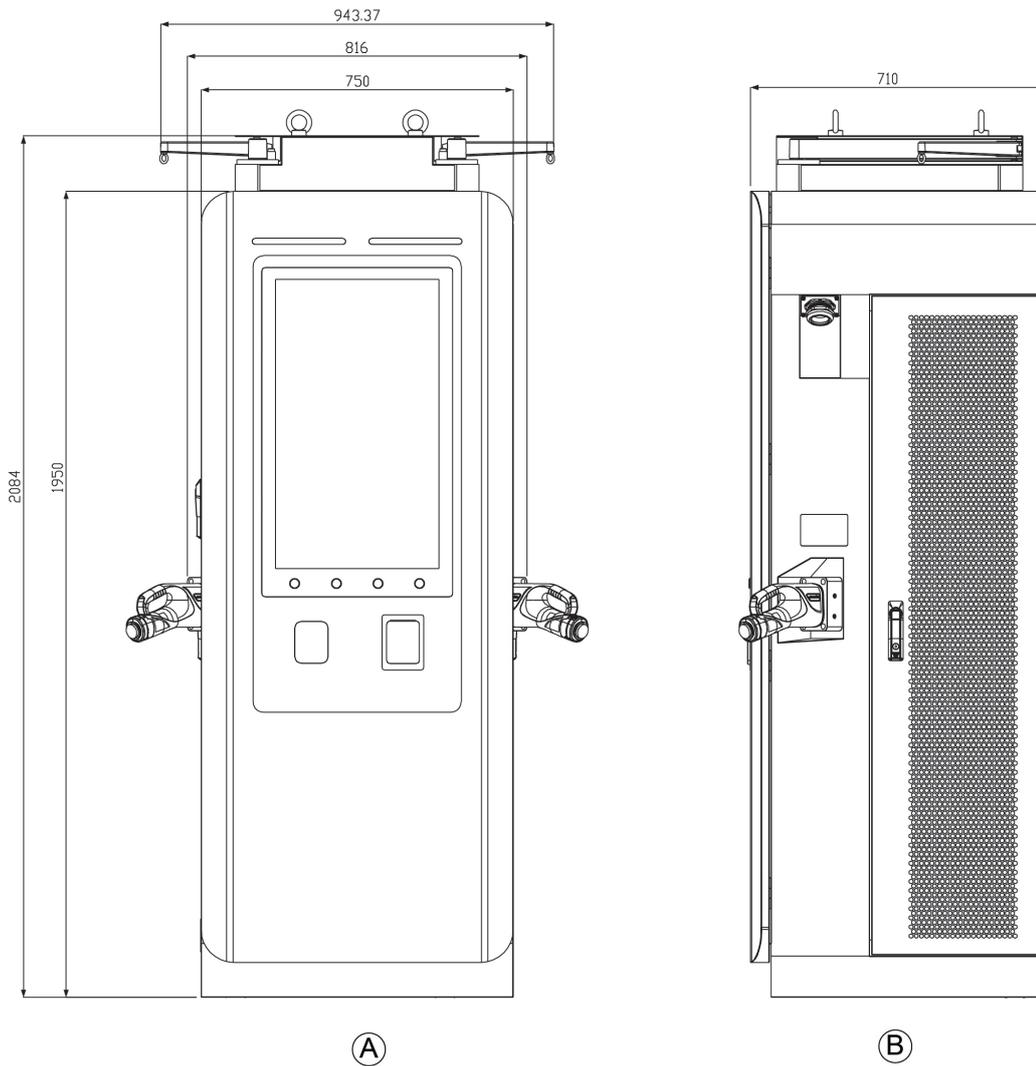
The table below shows the dimensions and weight of the DC 240/360 EV charger.

**Table 4. Dimensions and weight of Eaton DC 240/360 EV charger.**

EV charger	Green Motion DC 240			Green Motion DC 360	
	120 kW	180 kW	240 kW	300 kW	360 kW
Dimensions (W x H x D) in mm without cables	750 x 2084 x 710				
Weight in kg (approx.)	498	532	566	600	634
<b>Cables</b>					
CCS weight in kg	20	20	20	20	20

Figure 5 shows the front and side views of the electric charger with dimensions.

**Figure 5. Green Motion DC 240/360 EV charger front and side views with dimensions.**



Tag	Description
(A)	Front view
(B)	Side view

## 4.4 Lifting, transportation and unloading instructions

### Transportation and handling

Transportation of the equipment, especially on the road, must be carried out in such a way as to protect the system components (especially electronic components) from major impacts, humidity, vibrations, etc.

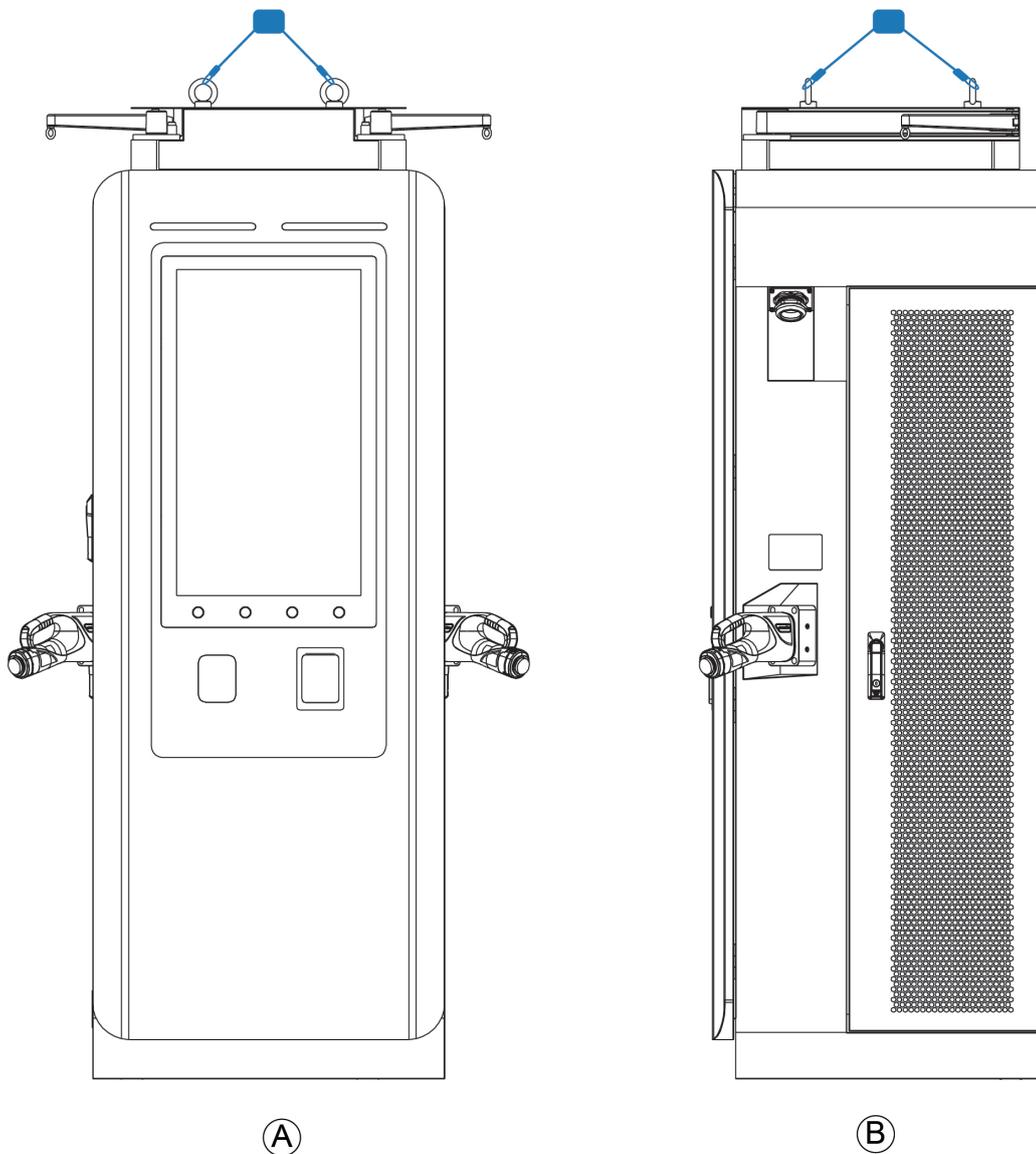
During handling, sudden or fast movements which could cause the system to sway dangerously must be avoided. Refer to local regulations and laws for transportation and handling of the equipment.

### Lifting

Eaton packs and protects each component by using devices that ease its transportation and handling. These operations must be carried out by professional and qualified personnel who specialize in loading and unloading components.

- The ropes and vehicles used for lifting must be able to withstand the weight of the equipment.
- Do not lift multiple units or parts of the equipment at the same time, unless otherwise stated.
- The Green Motion DC 240/ 360 EV charger is not equipped with specific lifting tools.
- The unit should be lifted with the sling loops through the lifting eyelet.
- Once the product is fixed to the floor, replace the eyelets with the M12 screws supplied.
- The screen and the housing should be protected during the operation to avoid damage and paint scratches.

**Figure 6. Lifting instruction for the electric charger.**



Tag	Description
(A)	Front view
(B)	Side view

## 4.5 Unpacking



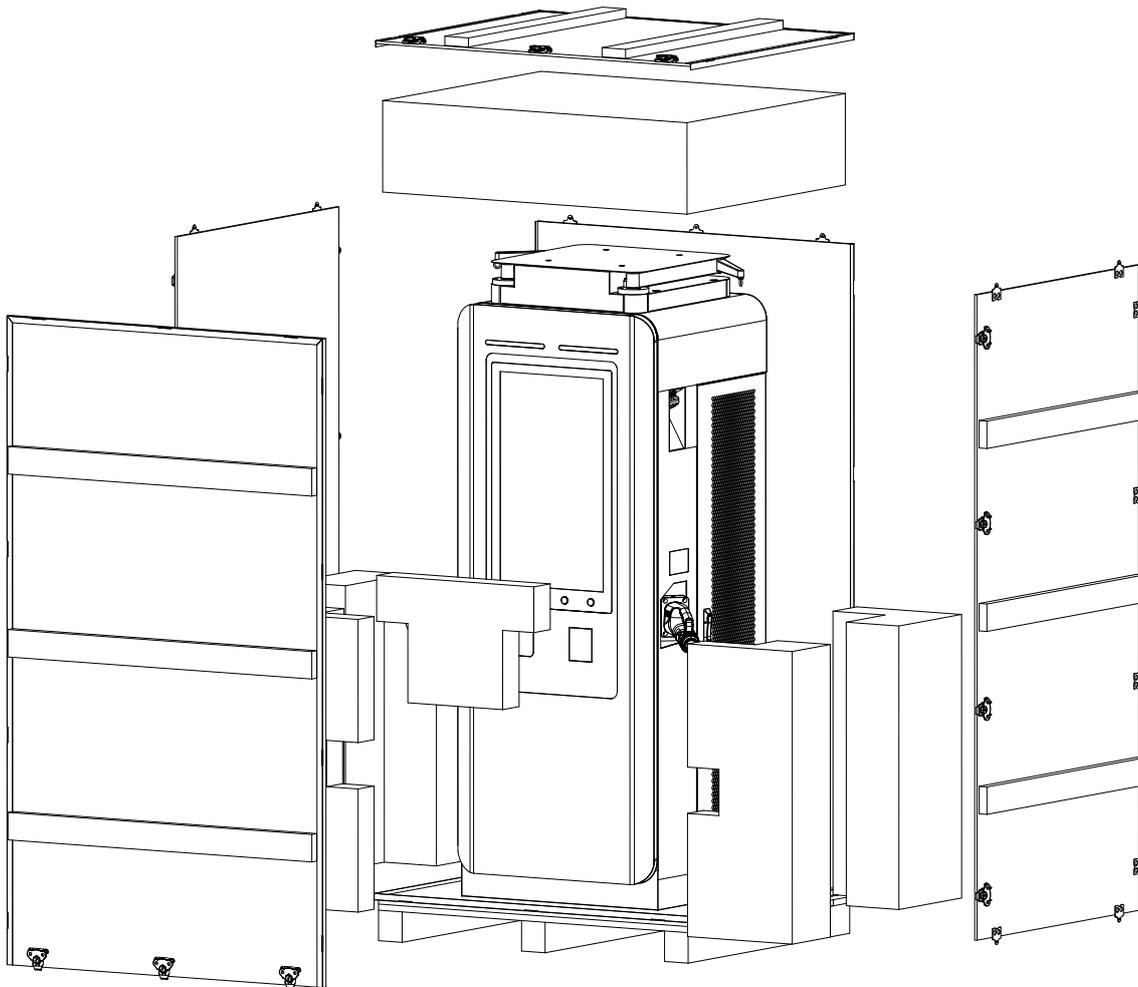
Remember that the packaging elements (cardboard, cellophane, staples, adhesive tape, straps, etc.) can cut and/or injure, if not handled with care. They must be removed with appropriate tools and must not be handled by non responsible people (i.e. children).

The packaging components must be removed and disposed of in accordance with the local regulations and laws of the country of installation.

Check the integrity of the packaging before opening.

Open the packaging and remove the Green Motion DC 240/360 EV charger carefully to avoid damaging the external casing or the internal electronic parts.

Before commissioning, ensure that the external casing of the unit is in good condition and free from damage sustained during transportation.



Tag	Description
(A)	Open the packaging

## 5. Mounting and installation

### 5.1 Pre-Installation



- Danger to life due to improper installation!
- Ignoring environmental conditions when handling electricity can lead to hazardous situations.

Before performing any installation activities, carefully read each item listed in this chapter that is critical to the installation process.

#### 5.1.1 Location selection

Consider before choosing where to install:

1. Meets all criteria regarding charger placement and location.
2. Make sure the installation location complies with cellular signal strength standards.
3. Avoid use in offshore environments or land-based outdoor environments near strong pollution sources and in environments with simple shelter. Otherwise, it is easy to lead to corrosion of the product, water ingress and other problems caused by module failure, resulting in abnormal functions or component damage is not covered by the warranty. A source of contamination is defined as an area within the following radius:
  - 0.5 km away from salt water (e.g. ocean).
  - 3 km away from heavy pollution sources such as metallurgy, coal mines, and thermal power plants.
  - 2 km away from medium pollution sources such as chemical, rubber, electroplating, etc.
  - 1 km away from light pollution sources such as food, leather, heating pots, etc.
4. For offshore applications, there may be pitted rust of the module shell or shortened life of the whole machine, which needs to be carefully selected, please consult the relevant service department for details. The offshore range value is within the following radius: 0.5 km ~ 3.7 km from salt water (such as ocean).
5. The installation environment shall meet the environmental characteristics specified in the technical data.

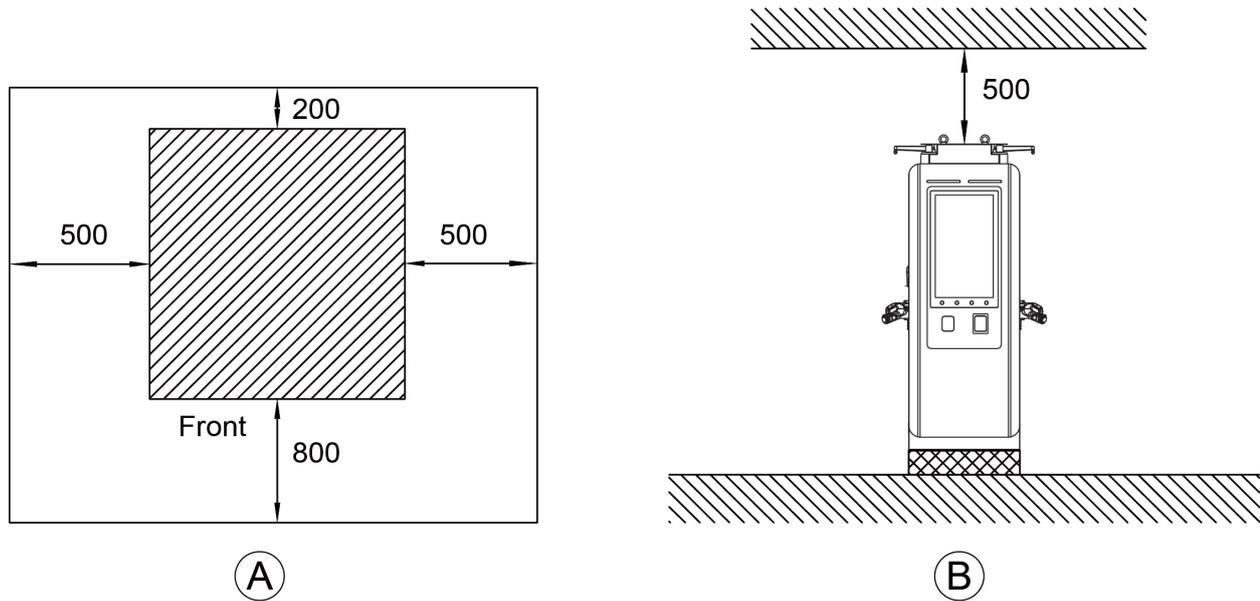
#### 5.1.2 Local Conditions

1. Area is dry and well ventilated.
2. The area is not exposed to dust, high temperatures, explosive gases, flammable materials or corrosive fumes.
3. Wiring and conduit needed to connect the charger to the board.
4. The location of the charging port when the vehicle is parked.
5. Space clearance requires minimum dimensions for airflow and service channels.

## 5.2 Required clearances

When installing the charger, ensure a minimum distance from possible objects around the charger to allow sufficient airflow, and secondly, to leave room for possible service or maintenance operations.

**Figure 7. Recommended minimum distance for on-site installation (The unit is mm)**



Tag	Description
(A)	Required clearances top view
(B)	Top airflow clearances front view

### Note:

- The space requirements when the door is open have been included.
- Clearance dimensions are published for airflow and service access only. Consult with the local safety codes and standards for additional requirements in your local area.

### 5.2.1 Site design

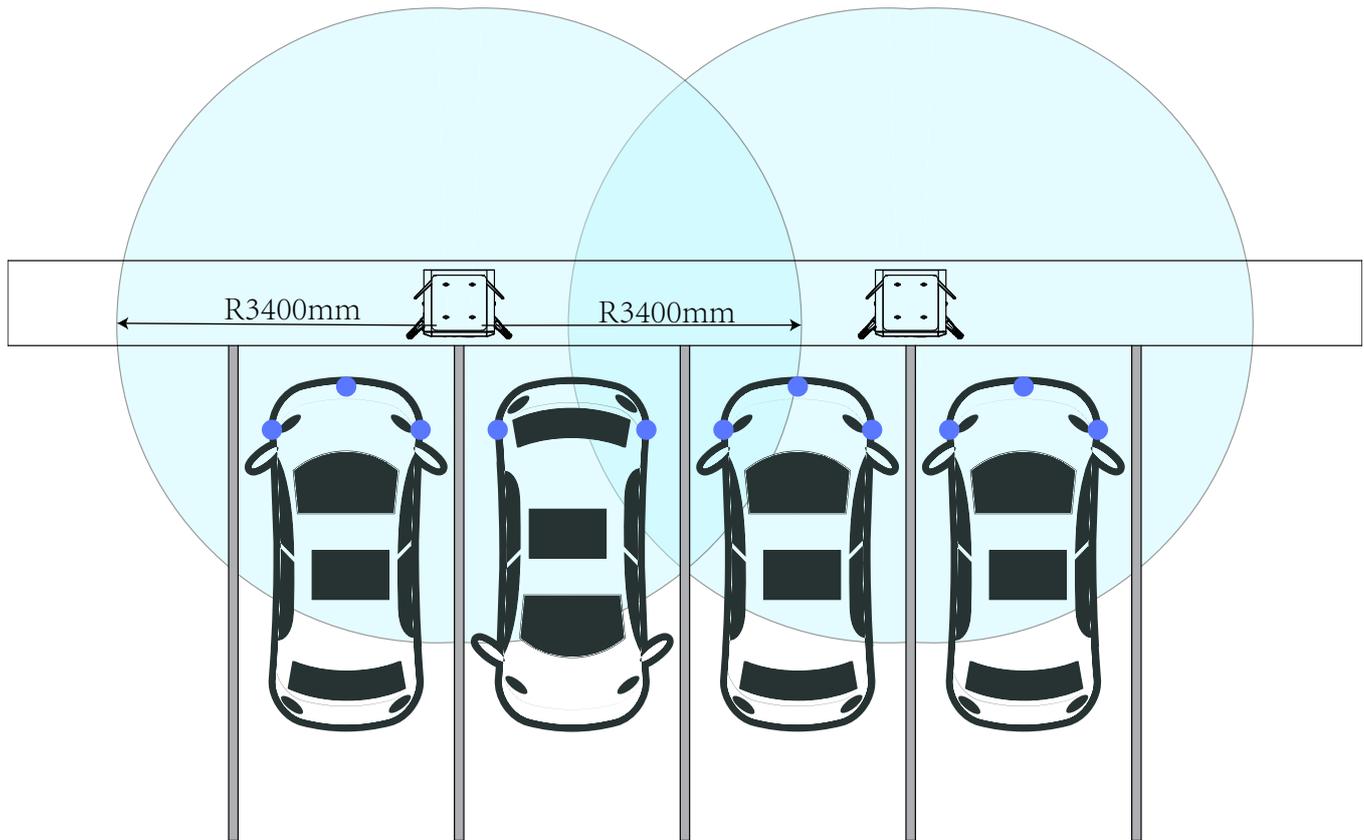
A site for electric vehicles (EVs) equipped with charging stations can be designed in different setups. This section is intended to provide some valuable information on the placement of the EV chargers with respect to parking spaces.

As shown in the following Figure 8, Eaton recommends installing the EV charger at the front and center of the parking space, and each single gun EV charger should serve one parking space.

**Figure 8. Optimal positioning of Dual gun EV chargers**

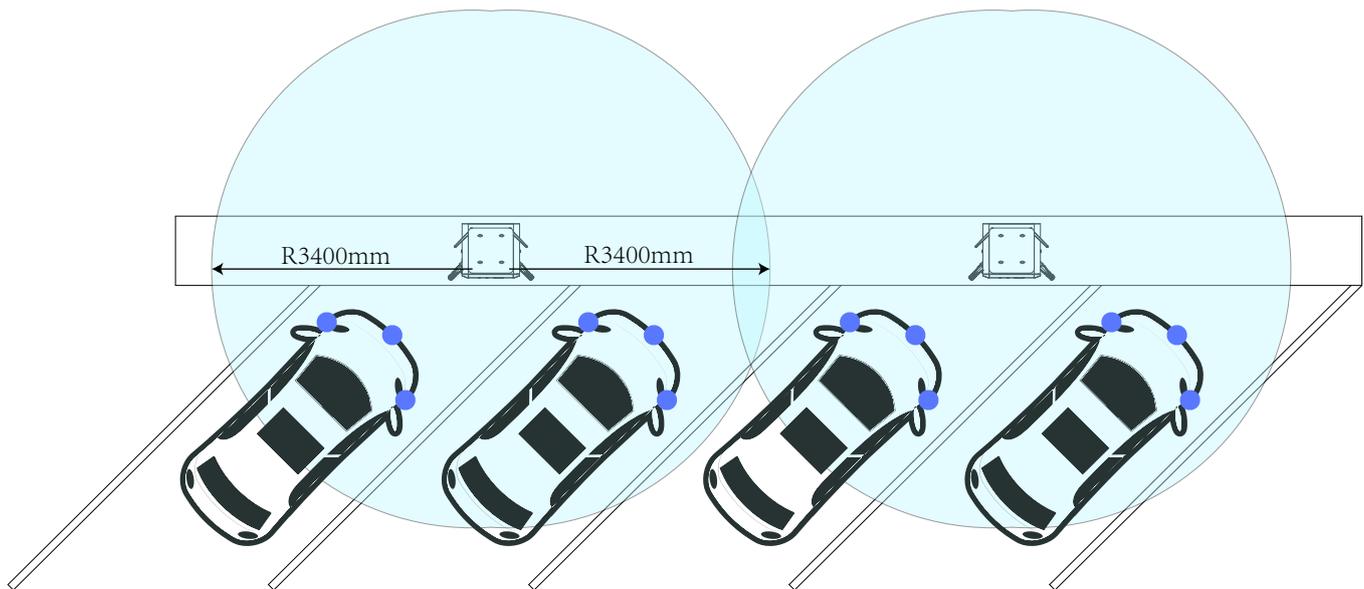
**Configuration A**

This scenario splits the parking spaces and allows the user to stand in front of the charger off the curb.



**Configuration B**

This scenario allows for floor mounted chargers against a wall. This is typically deployed in parking garages with limited space providing access between parking spaces for the end-user to stand.



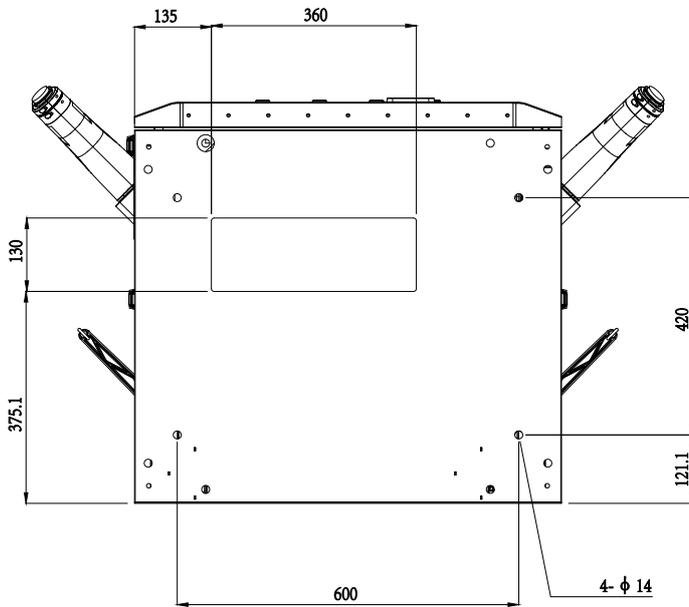
## 5.3 Mounting

Green Motion DC 240/360 EV charger must be mounted on a concrete base.

- The charger can be built on a concrete foundation, the flat surface of foundation should not be less than the dimension of 750 mm\*662 mm).
- When preparing the foundation base and wiring, please pay attention to the position and size of cable through holes and expansion bolts.

**Figure 9. Dimensions of base cable through holes and expansion bolts (The unit is mm)**

### Bottom view



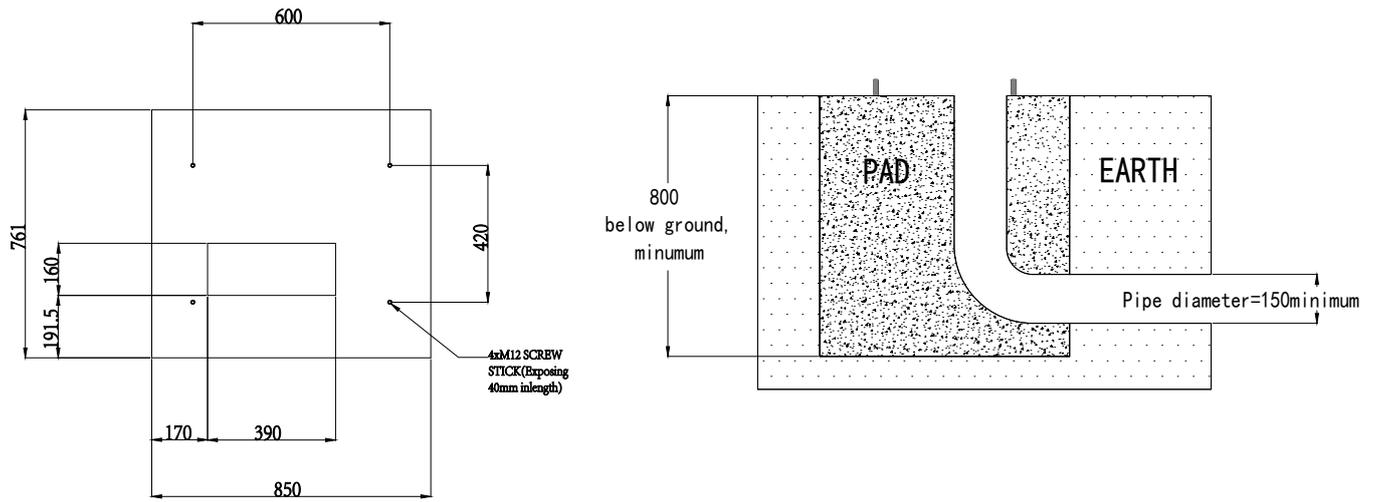
The height of the foundation is determined by the topography and natural environment of the site. Because of frost-proof the foundation has to be about 800 mm deep under the ground.

Recommended size of foundation conduit is 120 mm.

### Note:

- The unit must be mounted on solid and flat stone slabs.
- Different types of stone slabs require the use of expansion bolts, or choose suitable screw installation, in some conditions require drilling.
- The laying of power cables shall be in accordance with relevant national and industrial standards, specifications.
- Cable selection specification shall be selected according to the number of equipment and the type, power, voltage and current level of the equipment installed.
- When cables are laid, they are strictly forbidden to be exposed.
- When the cable is buried directly, the buried depth should not be less than 800 mm in order to prevent freezing.
- The selection of power cable specifications should be selected according to the installation environment and fire requirements.

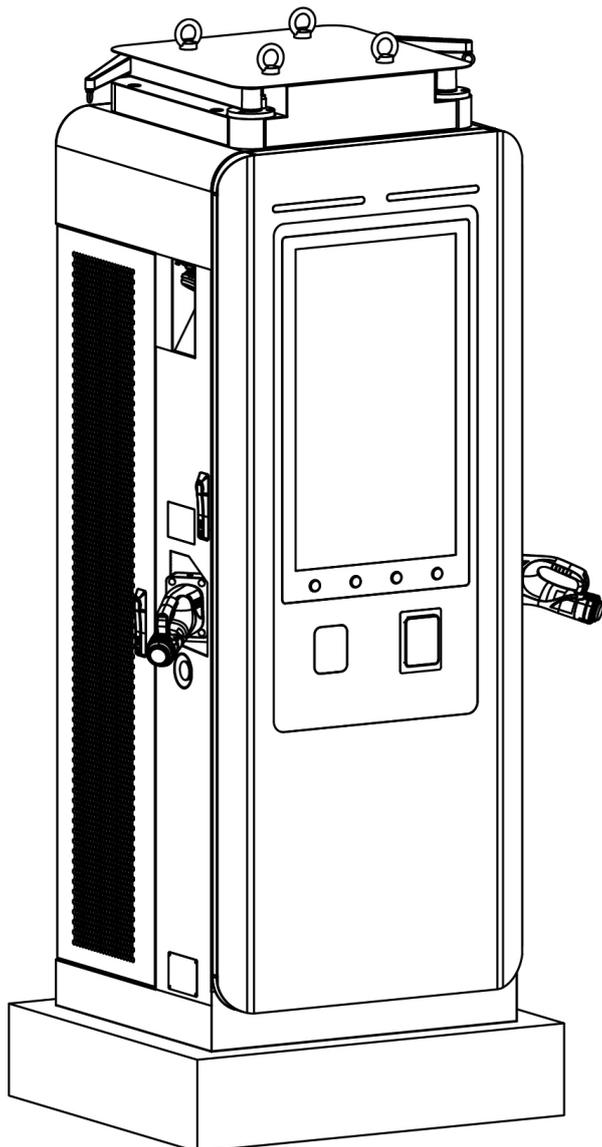
**Figure 10. Concrete size**



Tag	Description
(A)	Concrete pad top view
(B)	Concrete pad side view

See a schematic representation of the Green Motion DC 240/360 EV charger mounted on a concrete base in Figure 11.

**Figure 11. View of the electric charger mounted on a concrete base.**



## 6. Electrical connections and wiring

### 6.1 Cautions



Before carrying out any operations, ensure you have read and understood this manual. Do not make changes and do not carry out maintenance operations not described in this manual. The manufacturer does not accept responsibility for injuries to people and damages to things occurred if the information within this manual has not been read and followed.



Installation, commissioning, maintenance or retrofitting of the EV charger must be performed by professional and qualified personnel who are responsible for complying with existing standards and local installation regulations.



Opening of the product by unqualified personnel is strictly prohibited.



For safety reasons, an appropriately rated input load disconnecter must be provided for each individual product. No load should be connected directly to the product during wiring.



Connect only one EV charger for each circuit breaker and residual current device (RCD). The circuit breaker serves as a mains disconnecter.



The protective earth conductor must have a cross-section at least equal to or greater than the cross-section of the cables for connection to the public grid (AC), and in accordance with the requirements of local regulations.



Before starting connection operations, ensure that the external AC-line main switch is disconnected, and that circuit breakers are open.



Any operation that requires opening the EV charger can lead to electric shock hazards.

## 6.2 Standard wiring

To connect the EV charger to the electrical panel, professional and qualified personnel should consult Table 5 and consider the following guidelines.

**Table 5. Overview of parameters for dimensioning of the protective devices and power supply line**

	Green Motion DC 240	Green Motion DC 360
Maximum output power	240 kW	360 kW
Nominal input voltage	400 V AC, 50/60 Hz	400 V AC, 50/60 Hz
Nominal input current	429 A	644 A
Power supply system	3 phase, 3 Wire (L1, L2, L3 and PE)	3 phase, 3 Wire (L1, L2, L3 and PE)
Power supply terminal max. section	240 mm <sup>2</sup>	2*190 mm <sup>2</sup>



Power losses on the power supply line must be less than +/-10% of the rated power in accordance with IEC 60038 and local standards. For this reason, the cable lengths and cross-sections must be reassessed by professional and qualified personnel in accordance with maximum power loss regulations. When dimensioning the power supply line, observe the possible reduction factors and the increased environmental temperatures inside the connection area of the EV charger (see temperature rating of the supply terminals). Under certain circumstances, this can increase the cable cross-section and change the temperature resistance of the power supply line



Professional and qualified personnel must define the types of RCD and circuit breaker in accordance with local standards.



DC leakage protection is provided by means of electrical galvanic separation and an internal Insulation Monitor Device.

Eaton recommends that DC EV chargers installed in a TT system are equipped with an RCD upstream in accordance with IEC 60364-7-722.

Eaton recommends that DC EV chargers installed in a TN system where a fire hazard is present are equipped with an RCD upstream in accordance with IEC 60364-7-722.

Eaton's support teams can help with the selection of the proper RCD to be used. In case of connection in TN-C-S networks, earth rods must be used.

It is not possible to install the unit in an IT grid configuration.

Always refer to local regulations which may differ from and can supersede the international regulations listed above.

The circuit breakers and the power cable minimal cross-sections shall be over-dimensioned to ensure the functionality of the EV charger at higher temperatures.

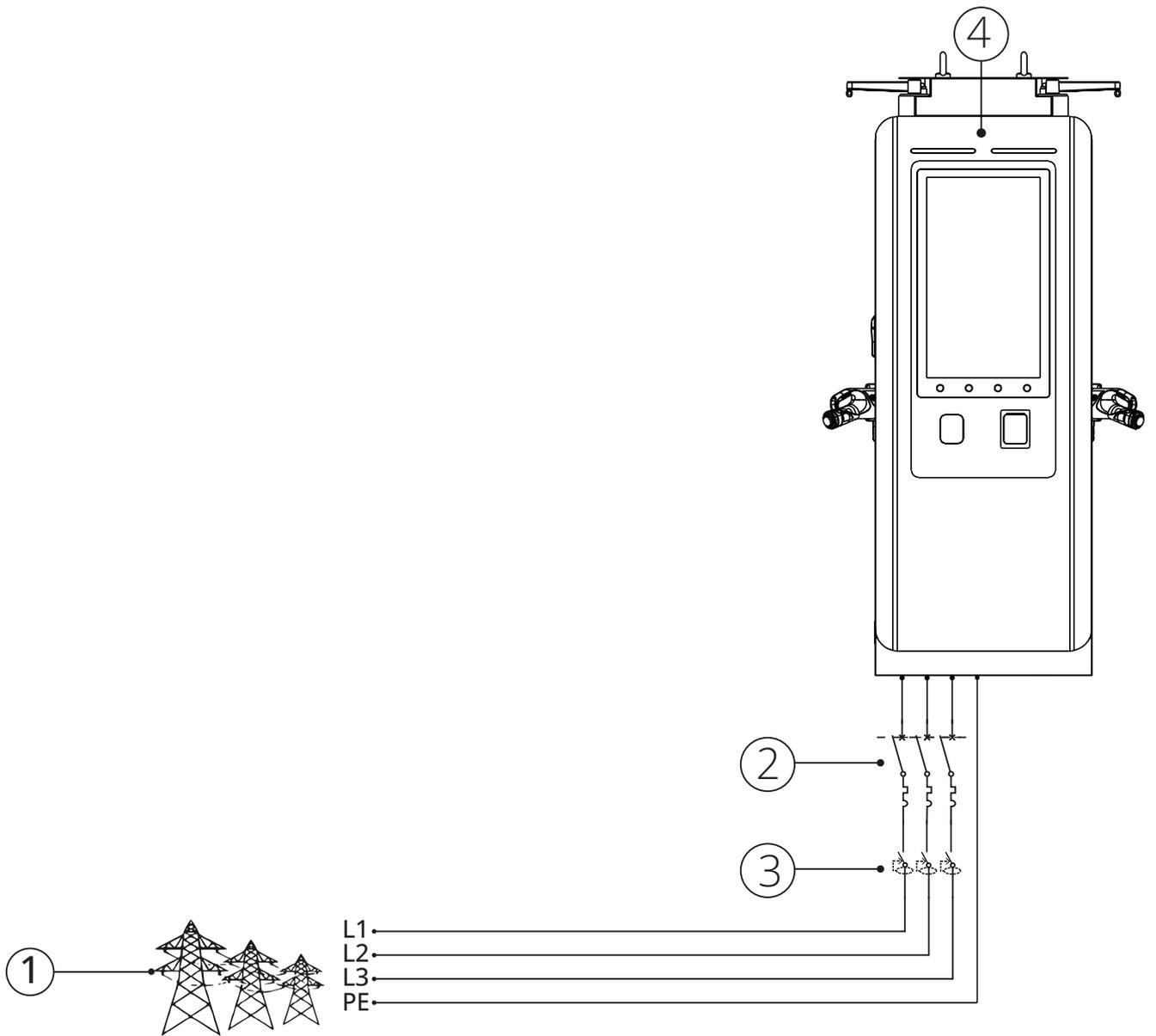
During installation, other important issues such as selection of a suitable line circuit breaker must be considered.



When dimensioning the line circuit breaker, the increased ambient temperatures in the distribution cabinet must also be considered. Under certain circumstances, this can make a reduction of the charging current specification necessary in order to increase the system availability.

The nominal current must be determined in accordance with the data on the nameplate and coordination with the desired charging power and the supply line.

Figure 12. Green Motion DC 240/360 EV charger wiring.

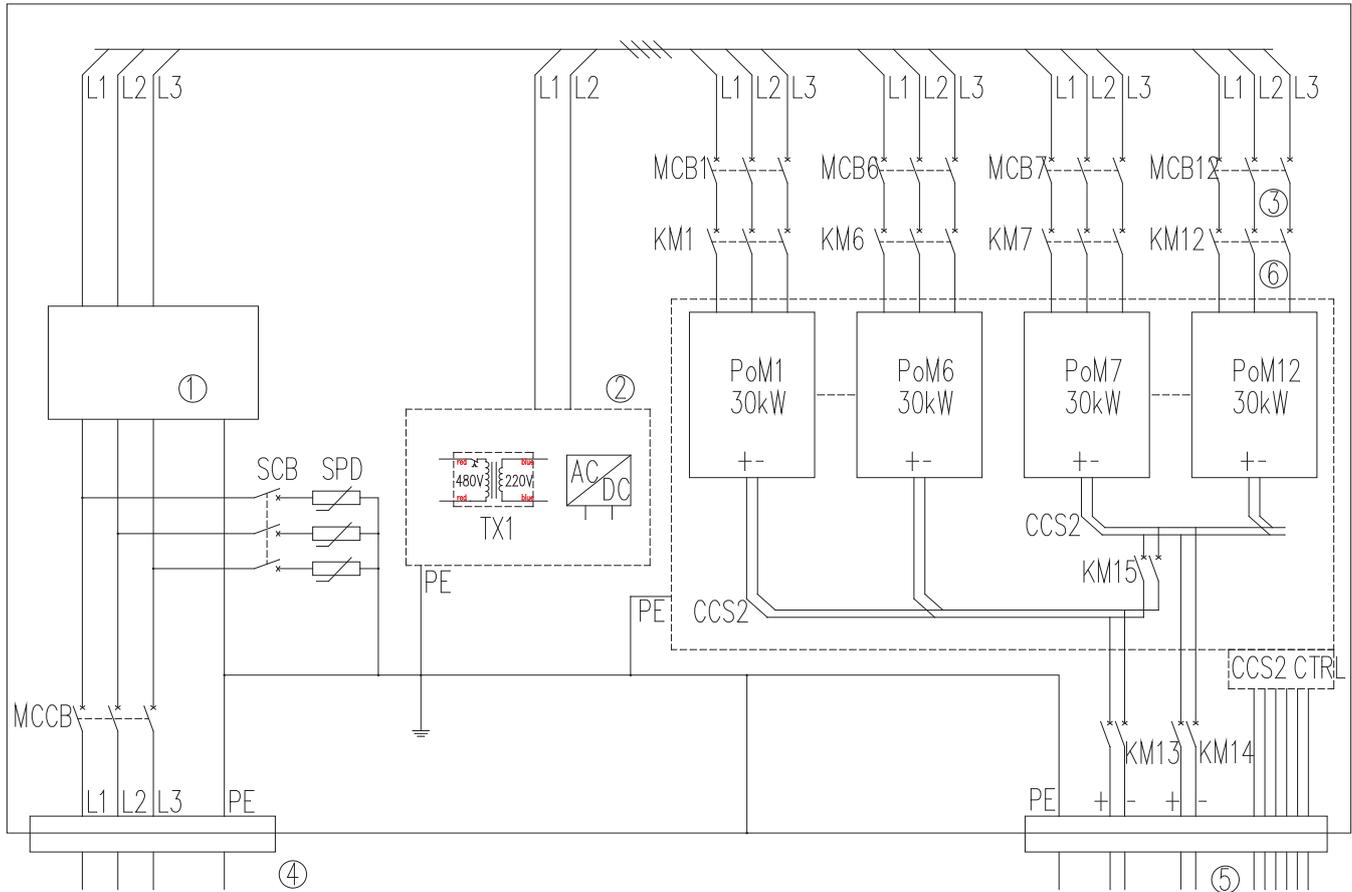


Tag	Description
①	Supply network
②	Circuit breaker
③	RCD (Optional)
④	Green Montion DC 240/360 EV charger

A detailed connection diagram of the Green Motion DC 240/360 EV charger in Figure 13 shows the main components, including the input switch, EMI, surge protection, power module, and the charging outputs.

**Figure 13. Detailed connection diagram of the EV charger.**

Power schematic:



Tag	Description
①	EMI filter
②	Auxiliary control
③	MCB
④	Input, 3×400 Vac
⑤	Output, CCS

## 6.3 Electrical connection and terminals

To connect the charger to the electrical panel, a professional installer or qualified electrician should consider the following guidelines and consult the table below.

**Table 6. Size parameters of protective devices and power cords**

Charger rating	120 kW	180 kW	240 kW	300 kW	360 kW
Input phases (mm <sup>2</sup> )	≥95	≥95*2	≥95*2	≥150*2	≥185*2
Input PE (mm <sup>2</sup> )	50	95	95	150	185
Main circuit breaker	250	400	500	630	800
Circuit breaker (A)	250	400	500	630	800

**Table 7. Specification of fixing bolts**

Charger rating	120 kW	180 kW	240 kW	300 kW	360 kW
Input phases terminal block	M12	M12	M12	M12	M12
Input PE terminal block	M8/M6	M8/M6	M8/M6	M8/M6	M8/M6

The Cable sizes is based on table B.52.12 of IEC 60364-5-52 with the following assertions:

- 90 °C conductors
  - An ambient temperature of 30 °C
  - Use of copper conductors
  - Installation method F
- PE cable size is based on table 54.2 of IEC 60364-4-54.

If the ambient temperature is greater than 30 °C, larger conductors are to be selected in accordance with the correction factors of the IEC.

Standard wiring considerations:

- Certified Type A RCD should be installed upstream close to the charger.
- In accordance with the electrical installation standard IEC60364-7-722. Refer to local regulation.
- The circuit breakers and the power cable minimal cross-sections are overvalued to ensure the functionality of the charger with higher temperatures.

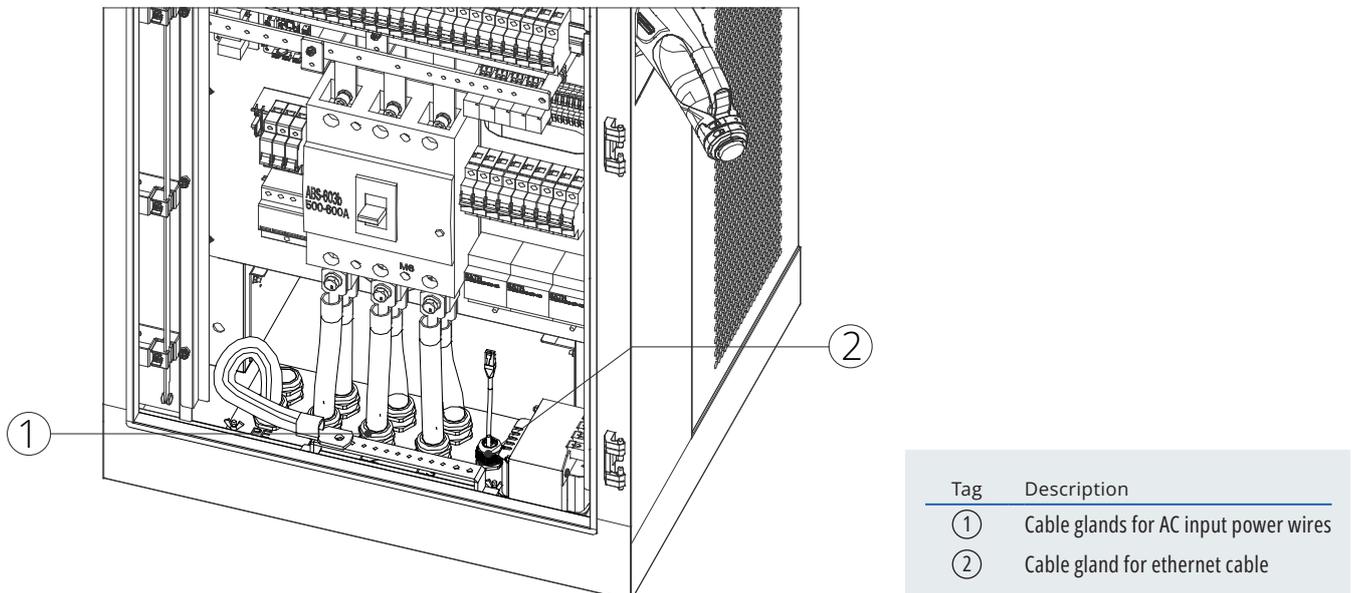
Before starting connection operations, ensure that the external AC mains isolator switch and/or main circuit breaker is switched off (open).

Follow the next steps to connect the electric charger to the power supply:

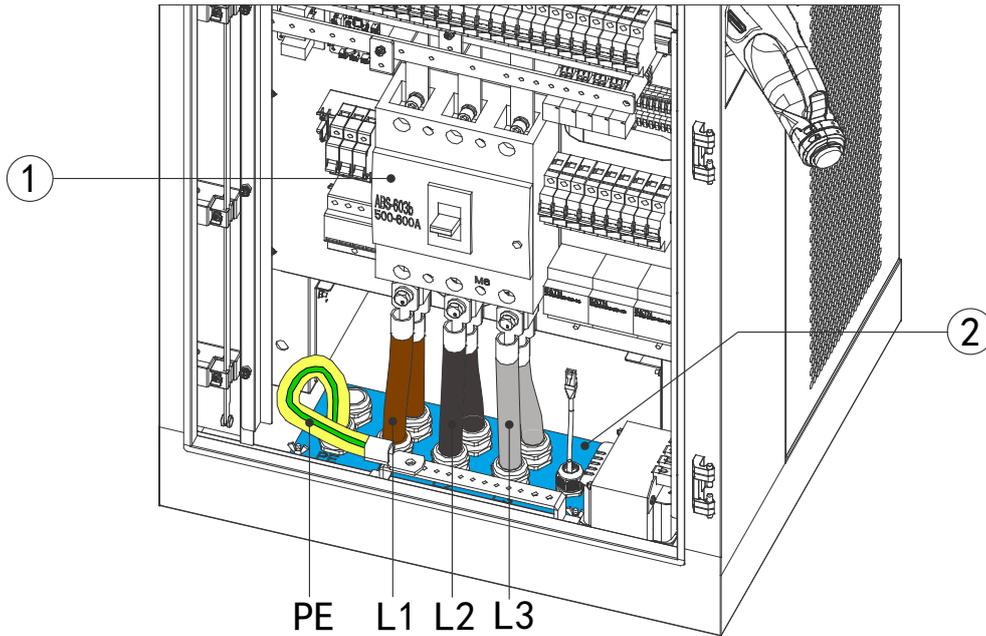
**Step 1.** Open the front door of the charger.

**Step 2.** Insert the AC grid cables into the unit (see Figure 13). The openings for the AC grid cables and the communication cable are located on the bottom-left side of the charger.

**Figure 14. Location of the openings for the AC grid and communication cables**



**Step 3.** The electrical connection is made at the terminals of the rotary switch located at the bottom left part of the charger (see Figure 14). To properly connect the Electric charger to the AC power grid



Tag	Description
①	Circuit breaker
②	Cable glands plate

## 6.4 Earth connection (MANDATORY)



Check that the protective earth conductor from the supply network is properly connected to the earthing stud on charger frame, as shown on Figure 14.

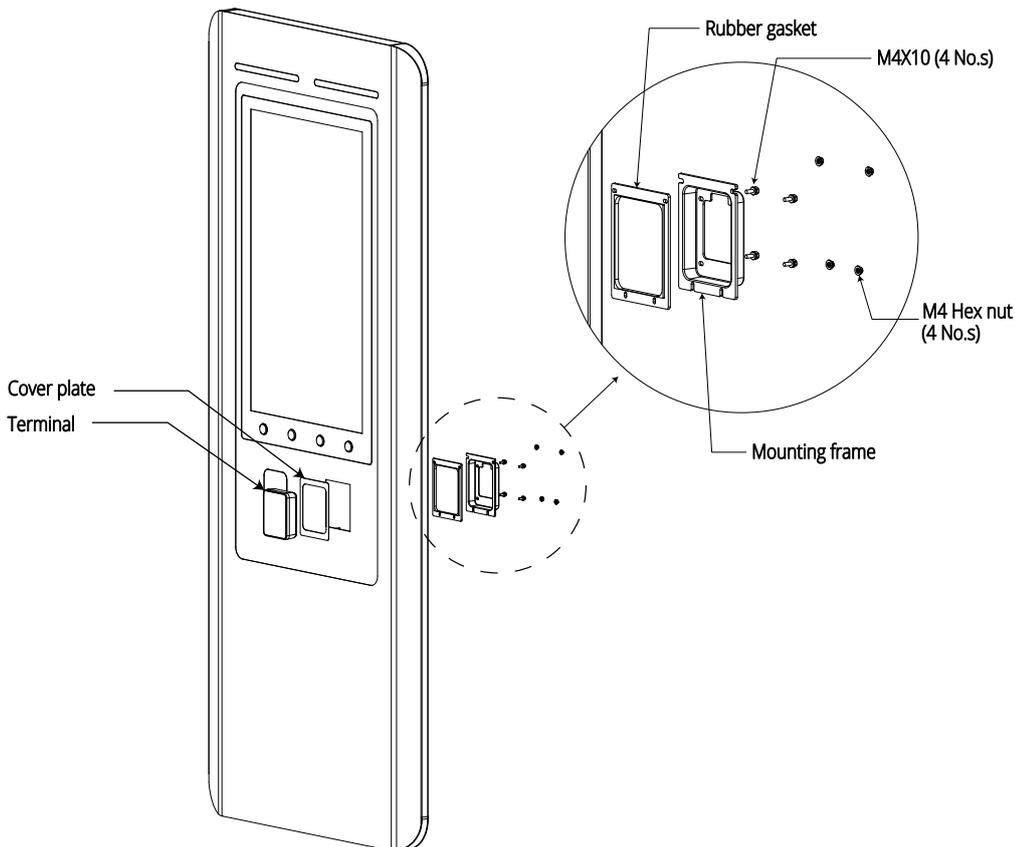
Verify the electrical continuity between the front door and the EV charger housing. Check for continuity by measuring between areas not covered by insulating material (paint, rubber, dirt, etc.)

## 6.5 PoS Device installation at site

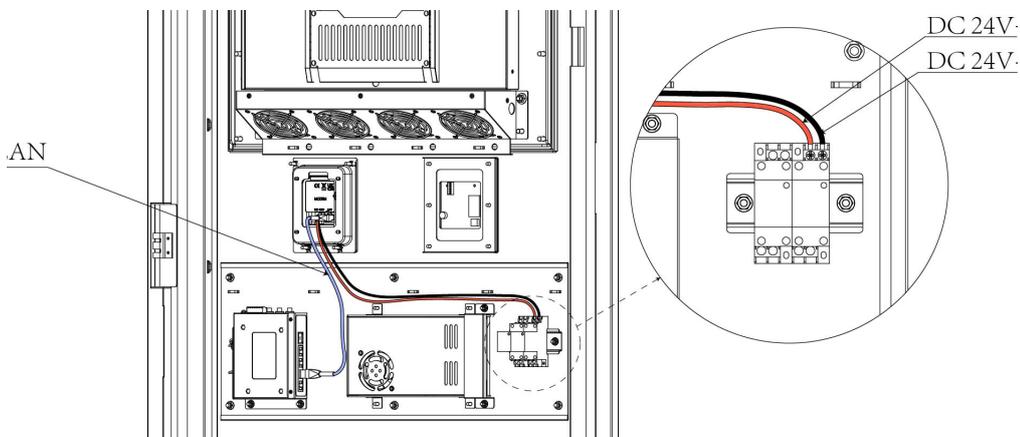
Follow below steps for Payter Apollo, Nayax VPOS touch or similar make PoS device installation at site.

1. Remove the NO PoS Plate & gasket by removing 4 nos. of nuts located at the rear side of front door. Refer attached Figure.
2. PoS device comes with its own gasket & fasteners provided by manufacturer. Place the PoS & gasket at front door slot. Secure 4 nos. of screws.
3. Connect the ethernet cable & power supply cables to PoS device. Ethernet cable is factory fitted & placed near rear side of NO PoS plate.
4. You need to connect the power cable of PoS to the DC24V+ / DC24V- of the relay separately.

**Figure 15. PoS device installation**



**Figure 16. POS power cable wiring diagram**

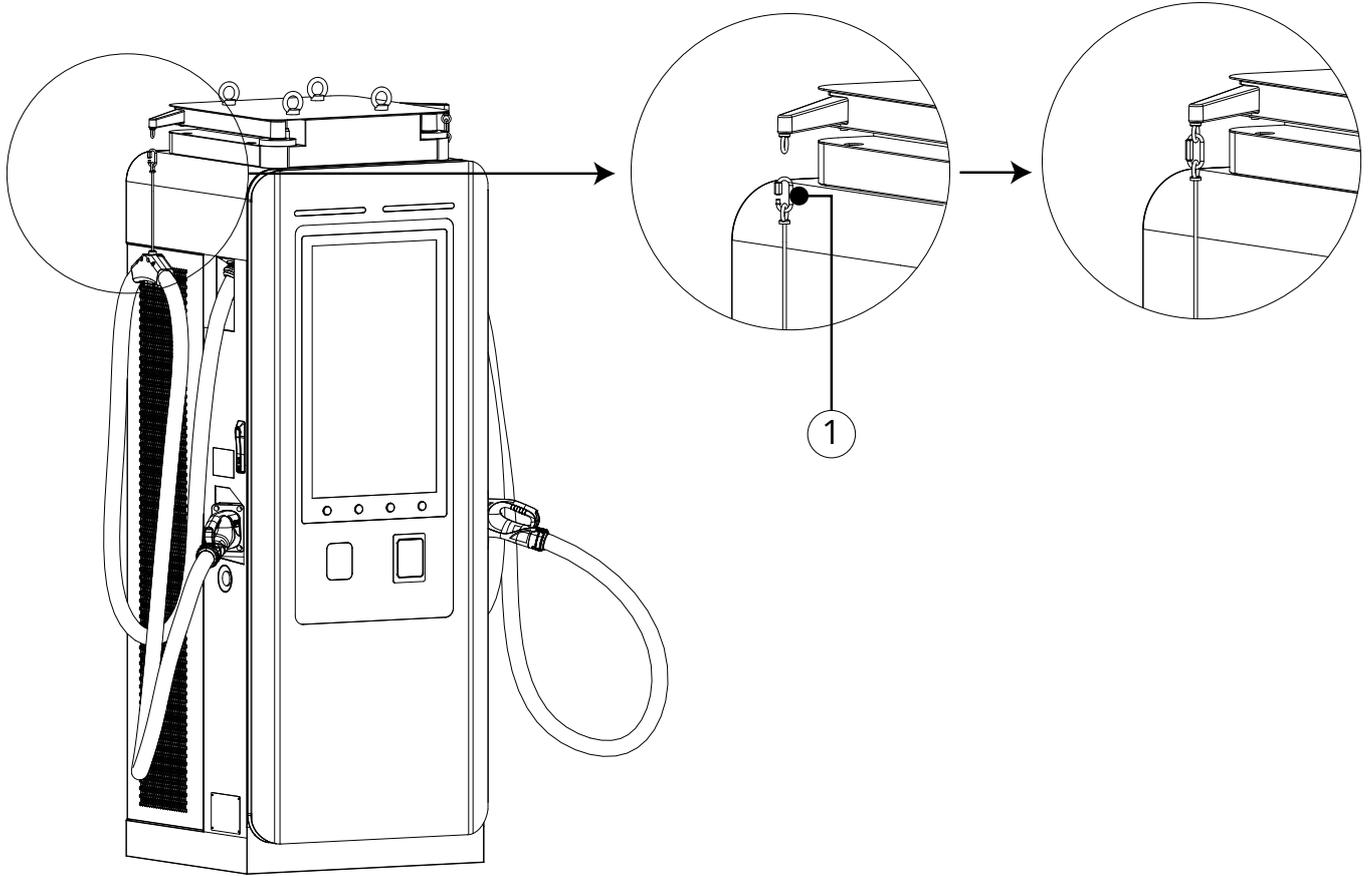


## 6.6 How to attach the cable to the CMS

**Step 1.** Loosen the quick fastener.

**Step 2.** Hang it on the ring of the CMS.

**Step 3.** Tighten the quick fastener.



Tag	Description
(A)	Push nut fasteners

## 6.7 How to install power module during first installation

**Step 1.** Please increase the number of power modules according to the power demand

**Step 2.** Refer to 10.5 (Replace the power Module) to install the power module.

**Step 3.** Then refer to Figure 31 (Definition of DIP switch for power module at Green Motion DC 240 charger position) and Figure 32 (Definition of DIP switch for power module at Green Motion DC 360 charger position) reconfigure the DIP switch of the power module

**Step 4.** Close the side door and lock the door and restart the unit

**Step 5.** Please refer to section 9.1 to correctly configure the number of modules on the WebApp.

The screenshot shows the 'Settings' page of a web application. At the top, there is a blue header with a menu icon, the word 'Settings', and icons for Wi-Fi, a notification bell, and a user profile. Below the header, there are three tabs: 'Network', 'OCPP Server', and 'Electrical'. The 'Electrical' tab is selected and highlighted with a blue underline. Under the 'Electrical' tab, there are two main sections. The first section is titled 'Power Modules' and contains a text input field labeled 'Number of Modules' with the value '12'. The second section is titled 'Output Current' and is highlighted with a green border. It contains two text input fields: 'Maximum Output Current(A)' with the value '500' and 'Maximum Output Current(B)' with the value '500'. Below these sections is a blue button labeled 'Save Changes'.

## 6.8 How to deploy advertisements on the display screen

There are two methods for deploying advertisements here.

### 6.8.1 You can upload media to the display with USB stick. The steps are as follows:

The EV charger is equipped with a LED indicator located on the front door (See Figure 1 and 6). Table 11 summarizes all possible LED indicators that may occur during the operation.

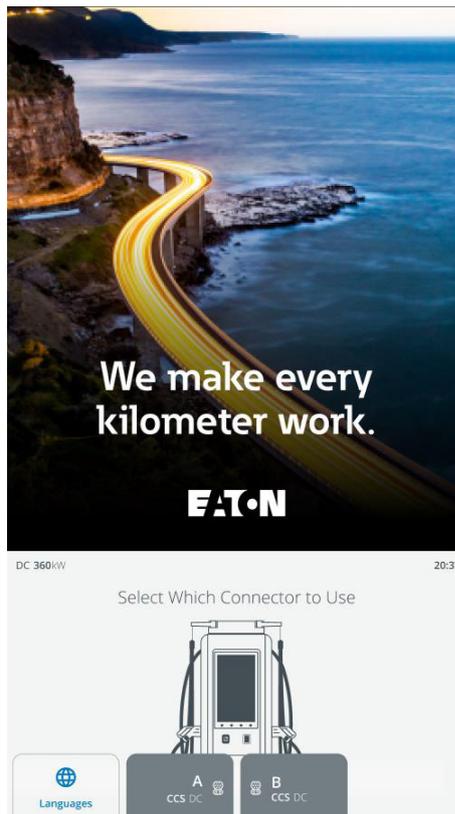
**Step 1.** Please prepare a USB drive.

**Step 2.** Load photos or medias in the appropriate format onto a USB drive using a PC

**Step 3.** Insert the USB drive into the USB port on the back of the advertising screen and wait for approximately 2 minutes for the loading to complete, It will play advertisements normally.

**Step 4.** Remove USB drive and deploy advertisement completed.

**Note, Supported formats: “.mp4”, “.avi”, “.mov”, “.jpg”, “.png”, “.jpeg”. Video spec: max 2K 30fps MP4 (H.264)**



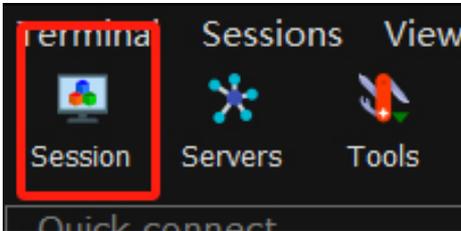
## 6.8.2 You can use a PC to log in to the display system via Ethernet cable to upload media to the display

The steps are as follows.

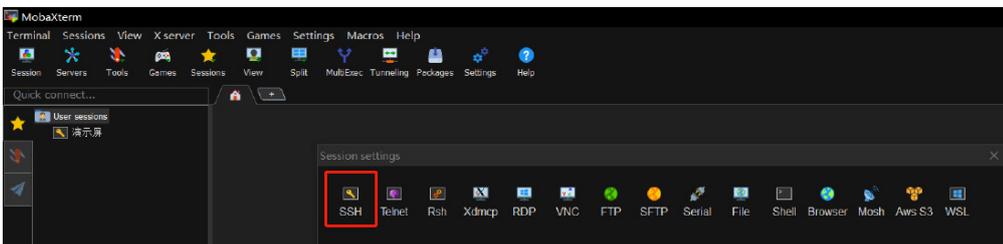
**Step 1.** Ensure Green Motion 240/360's router is connected via an Ethernet cable with normal internet access. Obtain the IP address of this Ethernet connection in advance.

**Step 2.** Please refer to Chapter 8 and connect the PC to the ETH4 port via RJ45 cable.

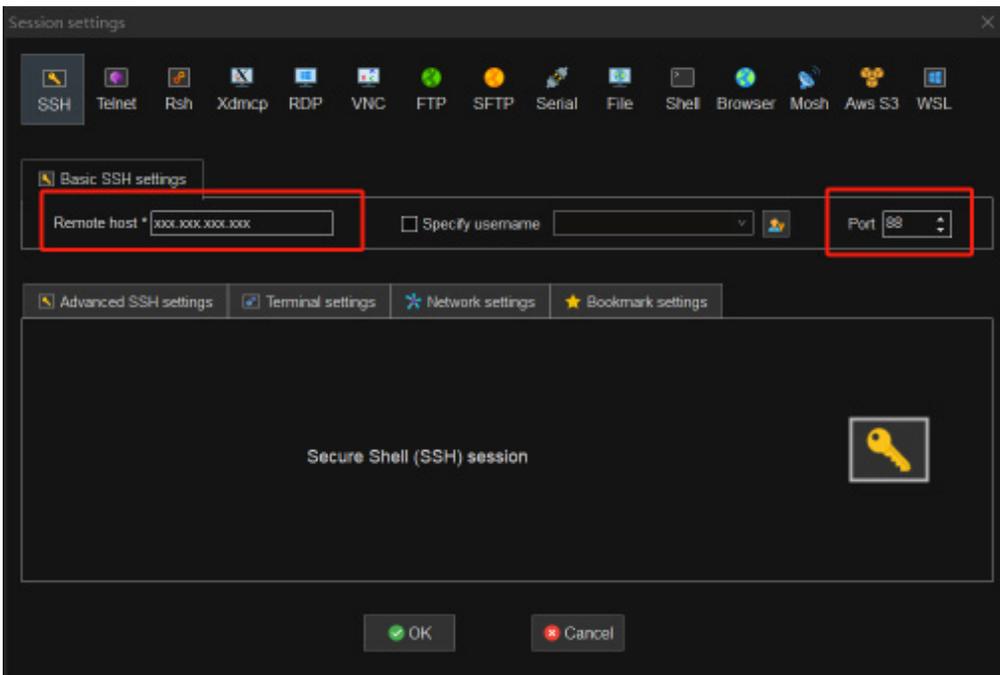
**Step 3.** Open "MobaXterm\_Personal\_25.2.exe" software and Click "Session" on the toolbar.



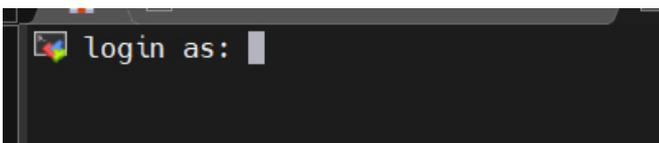
**Step 4.** Click SSH in the pop-up window.



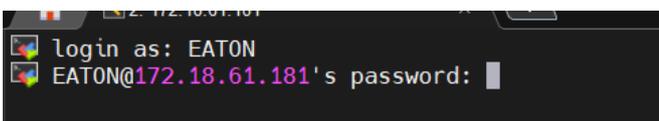
**Step 5.** Enter IP address of the advertising screen "192.168.2.10" in the Remote host input box, and change the port number to 88.



**Step 6.** A successful connection will display a login prompt.



**Step 7.** Enter username: EATON, then press Enter.



**Step 8.** Enter password: eaton123, then press Enter. The screen below indicates successful login.

```
? MobaXterm Personal Edition v25.2 ?
(SSh client, X server and network tools)

▶ SSh session to EATON@172.18.61.181
? Direct SSh : ✓
? SSh compression : ✓
? SSh-browser : ✓
? X11-forwarding : ✓ (remote display is forwarded through SSh)

▶ For more info, ctrl+click on help or visit our website.
```



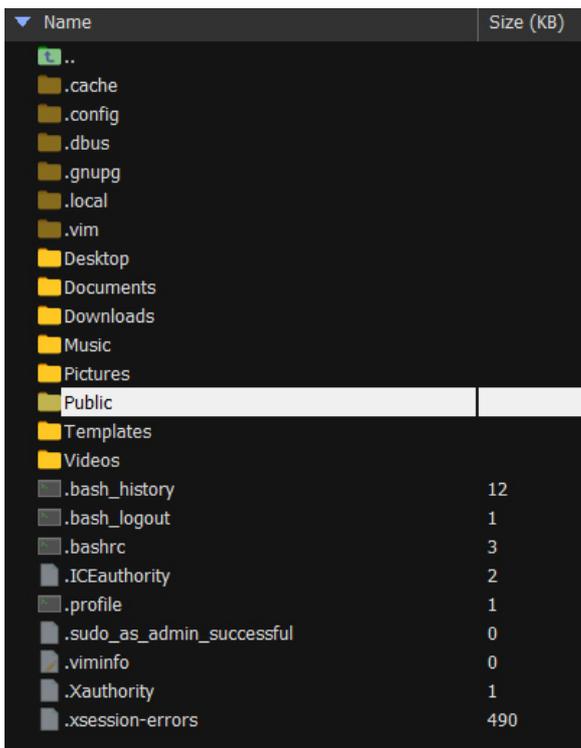
```
Welcome to Ubuntu 18.04.4 LTS (GNU/Linux 4.4.194 xrd version V0001 armv7L)

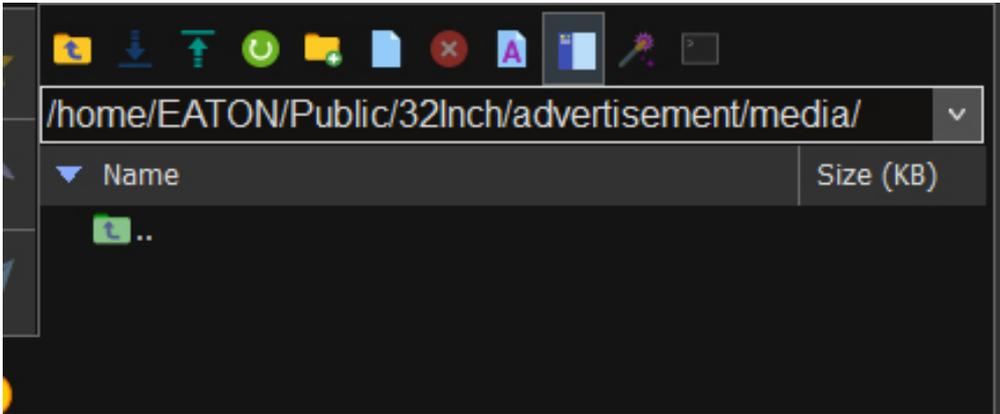
System information as of Mon Jul 21 21:21:02 UTC 2025

System load:  0.58 0.58 0.47   Up time:      24 min
Memory usage: 6 % of 1997MB   IP:          172.18.61.181
Usage of /:   18% of 6.8G

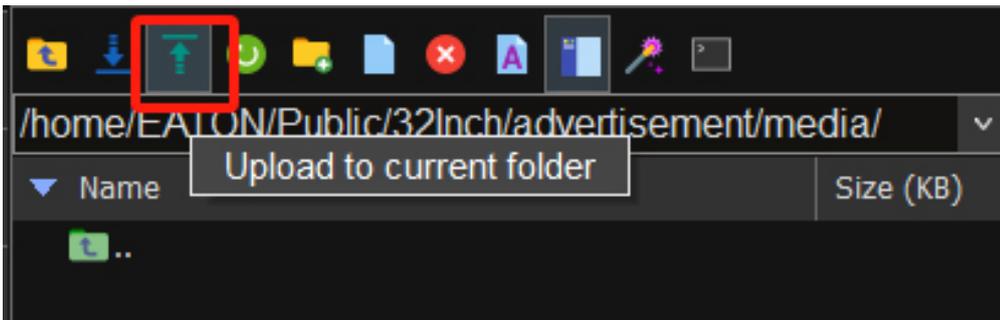
EATON@EATON:~$
```

**Step 9.** Double-click the “Public” folder in the left file panel -> Double-click “32Inch” folder -> Double-click “advertisement” folder -> Double-click “media” folder.

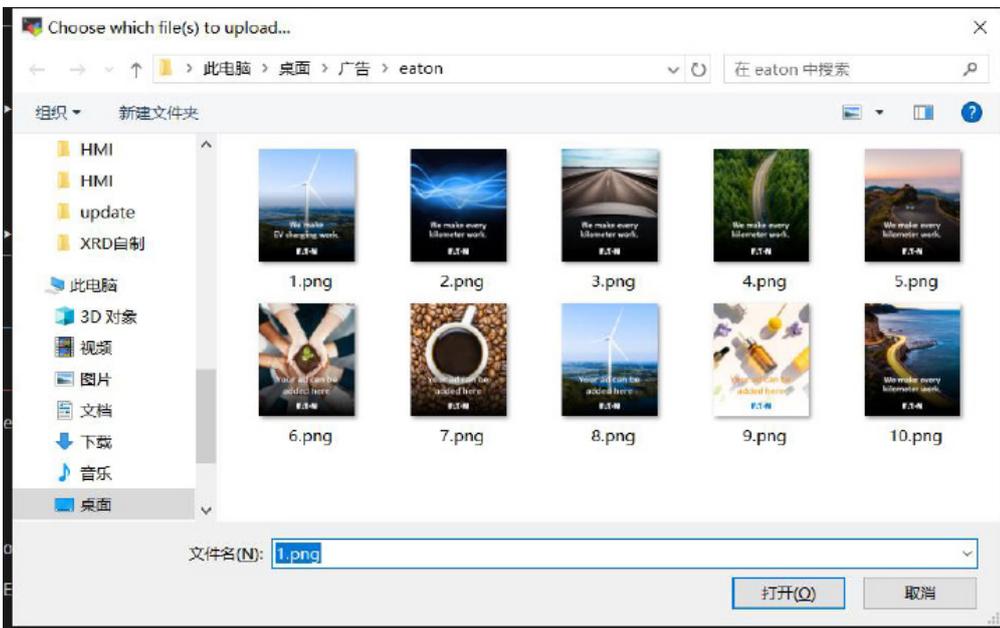




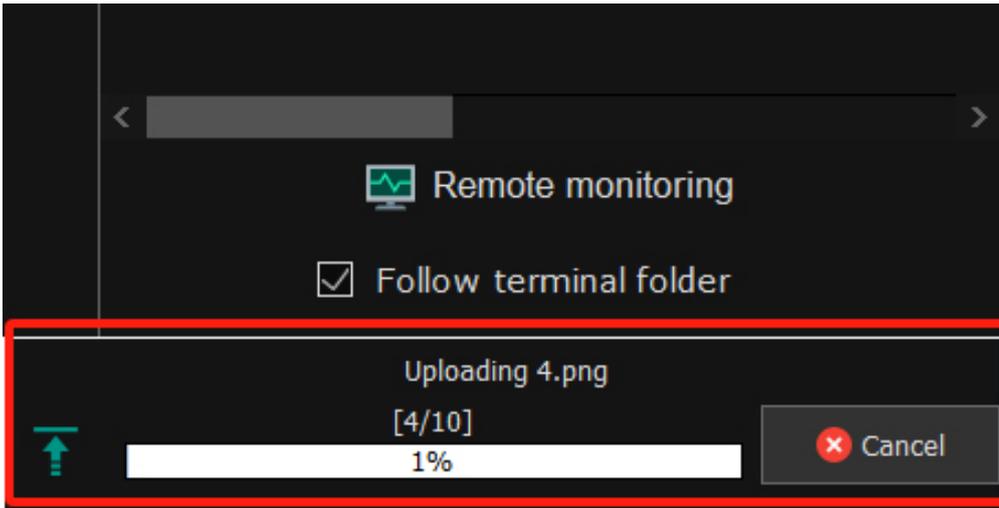
**Step 10.** Click the upload button as shown below.



**Step 11.** Select the image/video to upload and click Open.  
 (Supported formats: ".mp4", ".avi", ".mov", ".jpg", ".png", ".jpeg". Video spec: max 2K 30fps MP4 (H.264))



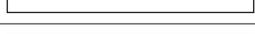
**Step 12.** Wait for the upload to complete.



## 6.9 LED indicator

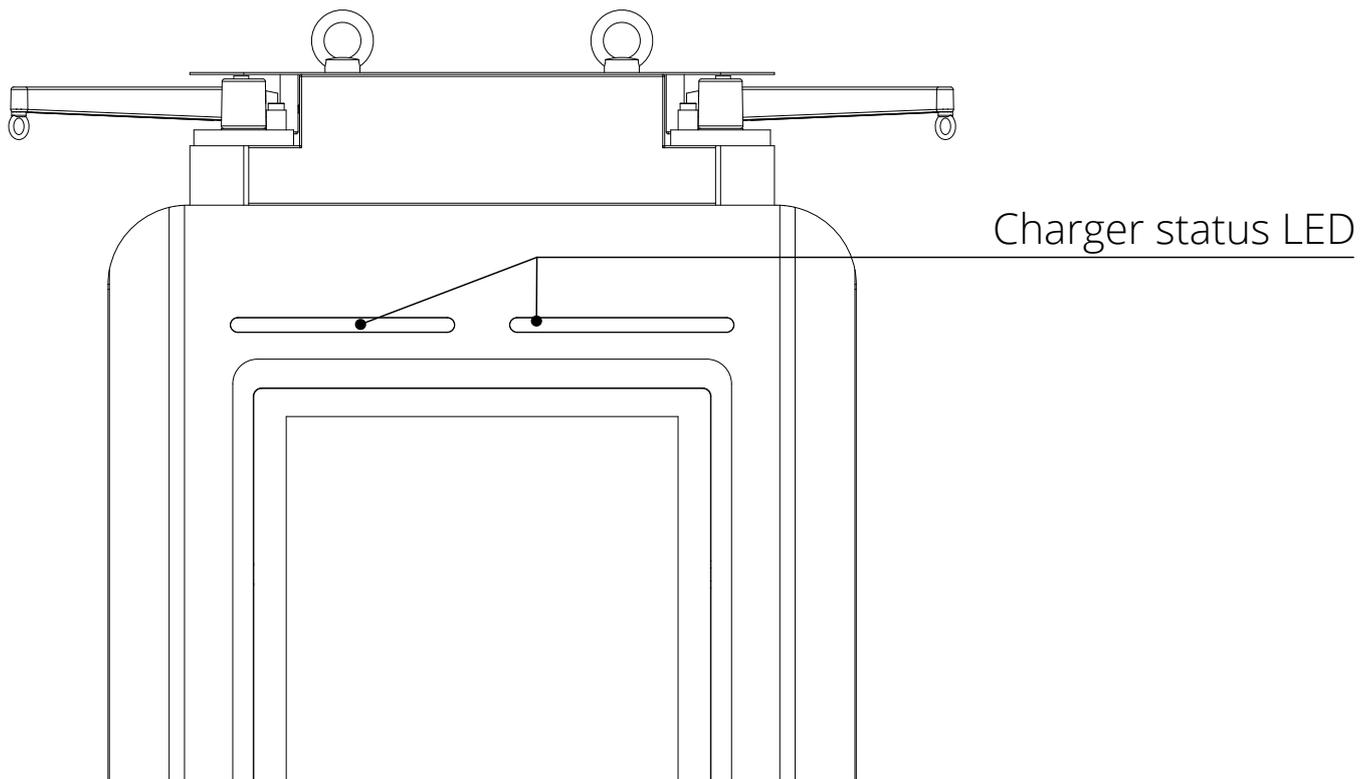
The EV charger is equipped with a LED indicator located on the front door. Table 8 summarizes all possible LED indicators that may occur during the operation.

**Table 8. LED indicator of the Green Motion DC 240/360 EV charger**

	State		
	Boot	Animation progress	Color
	Ready	Static	Green
	Waiting for authentication	Pulse	Green
	Authentication success	Static	Blue
	Authentication error	Blink	Red
	Charging	Progress	Blue
		Progress with battery percentage representation	
	Chargein Paused /Full	Static	Blue
	Error (General, the station is not usable)	Static	Red
	Firmware update	Pulse	White
	Boot	Progress	Green

During the charging process, the LED indicator also shows the state of charge of the vehicle, as per Figure 16.

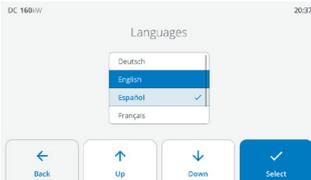
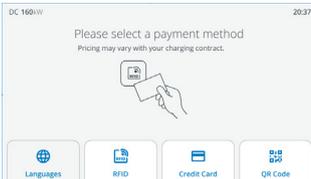
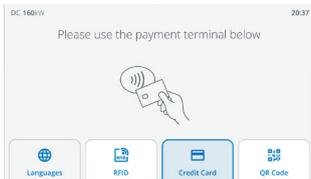
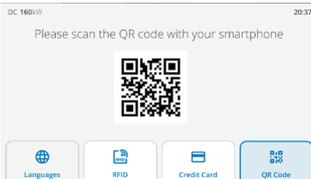
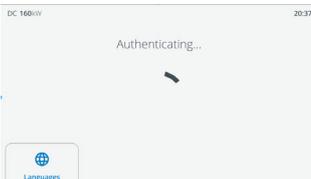
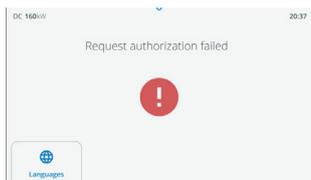
**Figure 17. LED indicator of the state of charge**

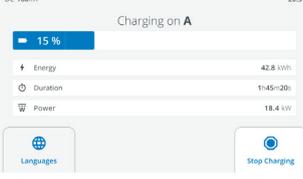
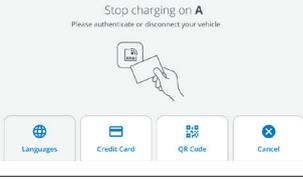
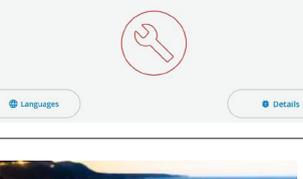


## 6.8 Color display

Green Motion DC 240/360 EV charger is equipped with a color non-touchscreen display located on the front door. Table 9 provides examples of the screens. Due to continuous improvement, it is possible that changes will be implemented in the future to enhance the user experience.

**Table 9. Examples of information available from the color display**

Display	Description
	<p>Display screen. Please press any navigation button below the HMI to wake up.</p>
	<p>Select language. Choose any language by pressing the button.</p>
	<p>Present the RFID badge on the RFID reader to initiate authentication.</p>
	<p>Present the Credit Card on the PoS terminal to initiate authentication.</p>
	<p>Please scan the QR code with your mobile phone to initiate authentication.</p>
	<p>Authentication screen.</p>
	<p>Authentication failed due to RFID card not recognized.</p>
	<p>Connect the vehicle. Authentication is successfully. Please connect the vehicle.</p>

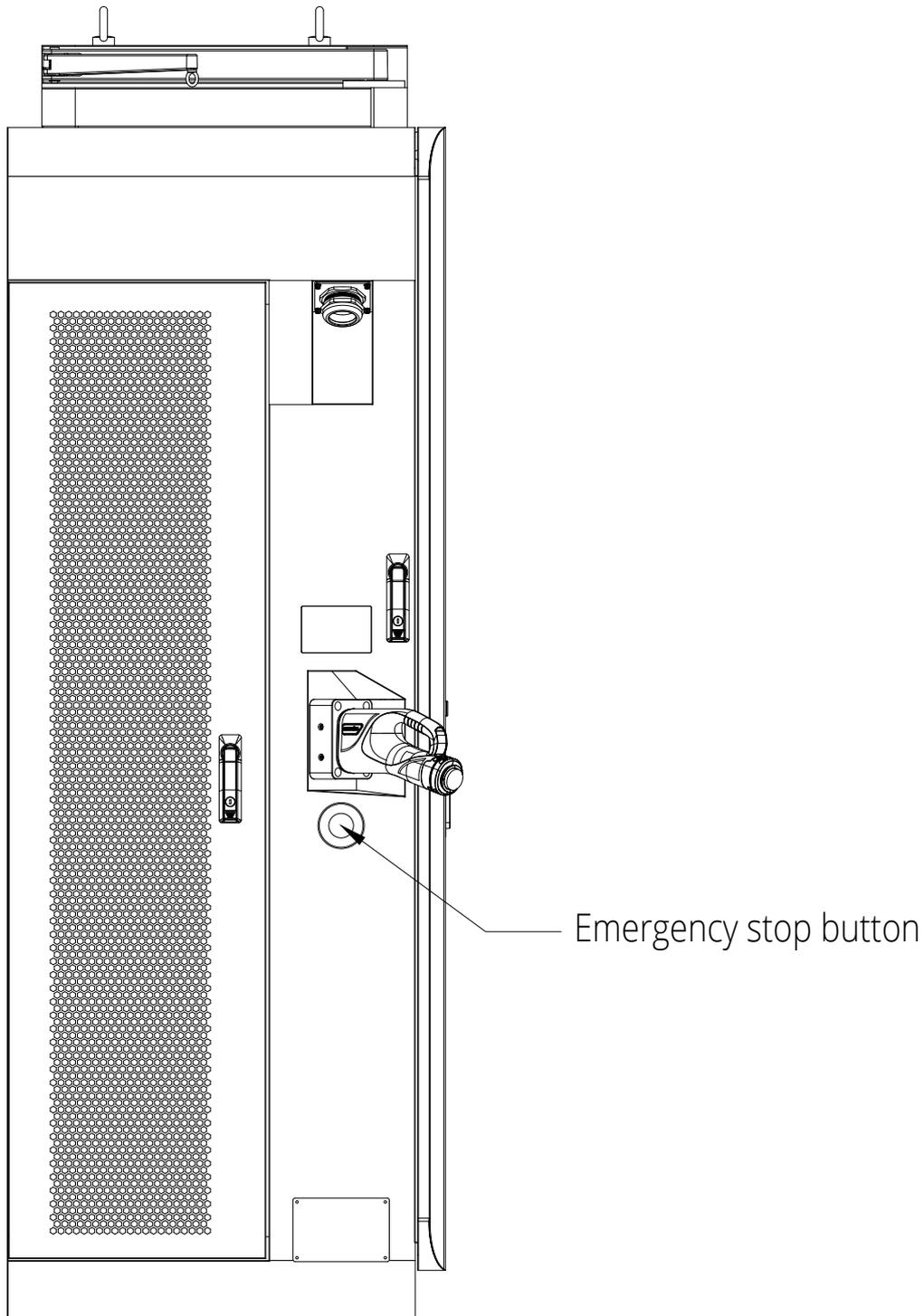
	<p>Vehicle connected. Communication established successfully between Vehicle and charger. Please wait to start the charging.</p>
	<p>State of charge of the vehicle.</p>
	<p>Stop charging. Note: There are three methods, When you choose RFID badge, please place it close to RFID reader to stop charging; When you choose a credit card, please place it close to PoS terminal to stop charging; When you choose QR Code, please use your phone to stop charging.</p>
	<p>Disconnect the Vehicle. Once charging session completed, remove the charging gun from vehicle.</p>
	<p>Charging summary. Amount energy transfer and duration of charging session.</p>
	<p>After checking that there is no more risk, release the emergency stop button located on the bottom left side for DC240/360.</p>
	<p>Charger is out of order. Maintenance is needed before putting the charger back in service. Contact the technical support to put the charger in service.</p>
	<p>Advertisement display Two methods for advertising deployment, 1. You can upload media to the display with USB stick. 2. You can use a PC to log in to the display system via Ethernet cable to upload media to the display. Note: Supported formats: “.mp4”, “.avi”, “.mov”, “.jpg”, “.png”, “.jpeg” The detailed steps for advertising deployment can be found in Chapter 6.8..</p>

## 6.11 Emergency stop button

When any of the following situation occurs, please press Emergency stop button to forcibly disconnect the AC contactor, and the control receives the Emergency stop information to forcibly stop the charging processing, and provides a warning on the screen.

- Unlock CCS2 plug if EV didn't release the cable
- Impossible to stop charge with RFID or remotely

**Note:** If you press the button by mistake, simply turn the button to the right to resume this action.



## 7. Commissioning



As experts in the field, qualified and trained service personnel are responsible for commissioning the product according to the manufacturer's instructions and local legislation.

### 7.1 Unit switch-on



Before switching on the EV charger, check the effectiveness of the safety measure(s) of the system in accordance with the local regulations.

The installer must check the electrical systems or devices before commissioning and switching on the product. Before switching on the product, please do the following:

- Step 1.** Verify that the equipment is correctly fixed on the concrete base in accordance with local regulations.
- Step 2.** Verify that the electrical connections have been made correctly in accordance with local regulations.
- Step 3.** Verify that the protective earth connection (MANDATORY) has been made correctly in accordance with local regulations.
- Step 4.** Perform checks on the continuity of the connections of the protective conductor, insulation resistance, RCD triggering current, triggering time, etc., in accordance with local regulations.
- Step 5.** Verify that the front door is closed and secured with the cam locks.



If the checks listed above were successful, proceed as follows:

- Step 1.** Close the external AC mains isolator switch and/or turn on the main circuit breaker.
- Step 2.** Wait for the display to turn on.
- Step 3.** Enable Wi-Fi on your phone (PC or tablet).
- Step 4.** Scan the QR code (or retype the SSID/Passphrase) and connect to the Wi-Fi network which is provided by the charger. Then landing page shall appear automatically in the open browser. If not, please open your web browser and type any web address e.g. 192.168.16.254
- Step 5.** The welcome commissioning screen of the charger should display.

### 7.2 Online station

The Green Motion DC 240/360 DC EV charger communicates with the remote database via the cloud infrastructure.

It is possible to establish the communication via internet in two ways:

1. LAN network: In this case the unit(s) are connected via Ethernet cable to a local router that provides internet connection.
2. SIM card: In this case a SIM card must be installed and configure on the 4G router.



To configure the router/modem the EV charger must be powered and in standby mode.



Commissioning and configuration of the router of the EV charger must be performed by professional and qualified personnel who are responsible for complying with existing standards and local installation regulations.

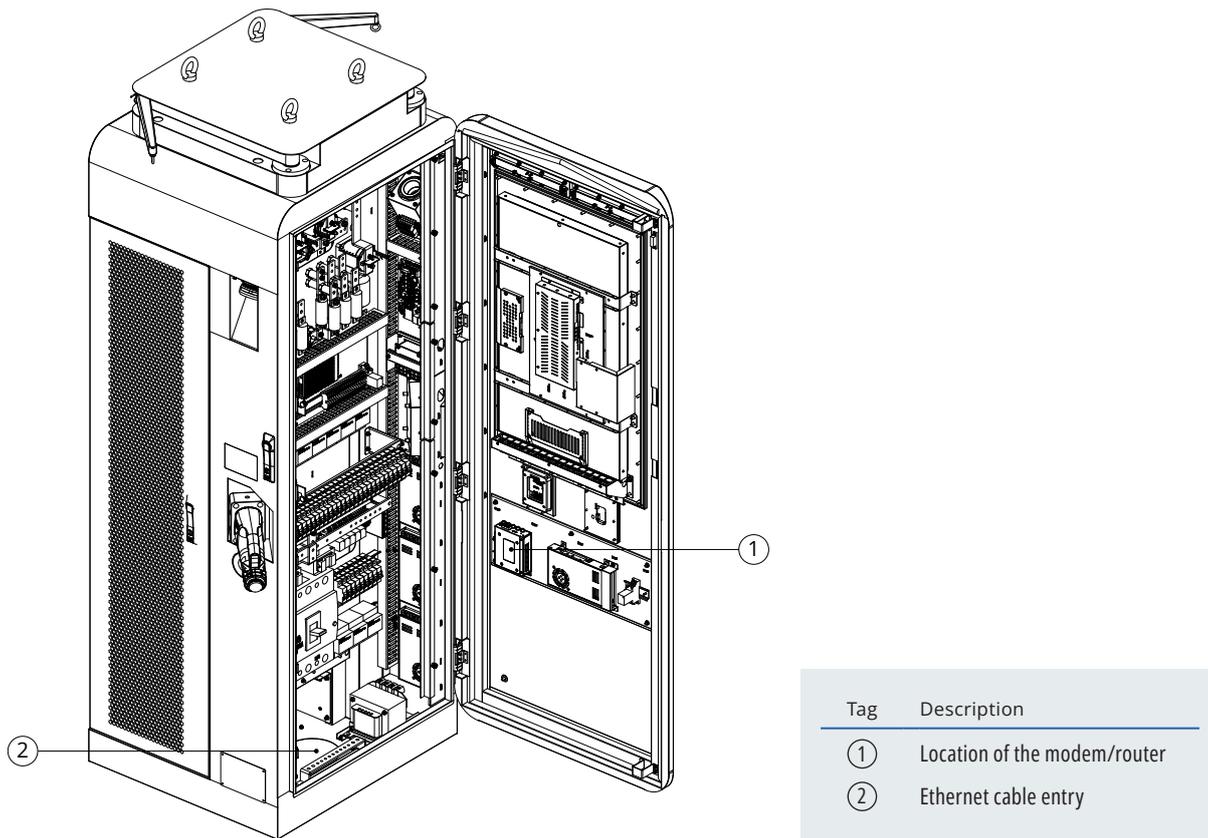


**WARNING** - Any operation requiring the opening of the charger can lead to electric shock hazards.

Refer to the Chapter 10.1 of this manual to open the Green Motion 240/360 EV charger housing.

It is possible to configure the network settings of the router located inside the EV charger. The router is located inside the EV charger, mounted on the DIN rail on the front cover of the housing as shown in Figure 17.

**Figure 18. Location of the modem/router in the EV charger**



### 7.3 How to start charging

To start the charging session, simply connect the appropriate charging cable to the electric vehicle socket. Hold the RFID card in front of the reader.

If the card is recognized, the LED starts flashing blue and then it shows the charge level (battery state of charge). Refer to the description in Section 6.9.

If the card is not authorized, the charging will not start and a red circle is displayed on the charging station status display. See Section 6.10.

If the charging cable is disconnected from the electric vehicle and there is no power consumption within two minutes, the user is automatically deauthenticated.

### 7.4 Emergency stop button

The emergency stop button is located on the left side of the Green Motion DC 240/360 EV charger, as per Figure 2. Push the button in case of emergency.

## 7.5 Connection to the building/installation energy meter

Building energy meter (EM) can be connected to the GM DC240/360 to perform the Dynamic load balancing via:

- Modbus TCP
- Modbus RTU (RS485)

The SW commissioning and testing of the EM data reading is described in the Load Balancing setup chapter (9.4)

### Energy meter connected Modbus TCP

Prerequisites, Energy meter must be:

1. In the supported EM list,
2. Installed in the building/location power distribution,
3. Must be on the same TCP/IP network segment - reachable via the local network (LAN) by the GM DC240/360.
4. Its IP address of the EM needs to be known.

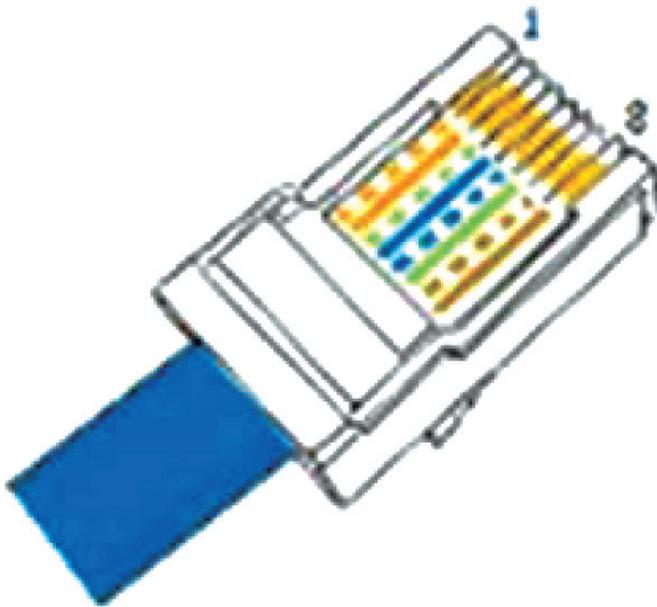
No specific physical installation steps needed to connect the energy meter on TCP/IP to charger.

### Energy meter connected via Modbus RTU (RS485)

Installation steps:

1. Preparation / crimping of the cable which will map the pins (+,-,GND) on the Energy meter to the relevant pins of the RJ45 connector of EM board.

**Figure 19. J45 pins of the EM board for the energy meter on RTU**



2. Consult with documentation of the Energy meter or use table below for mapping of the supported models of the Energy meters):

**Table 10. Physical connections of the energy meter RS485 Pins**

Power input	A(-)	B(+)	Ground
Eaton charger EM board RJ45	P1-1	P1-2	P1-12
Energy meters pins			
Eastron SDM630MCT	14	13	12

3. Connect the Energy meter with charger EM port "Energy Meter RS485" by prepared cable.

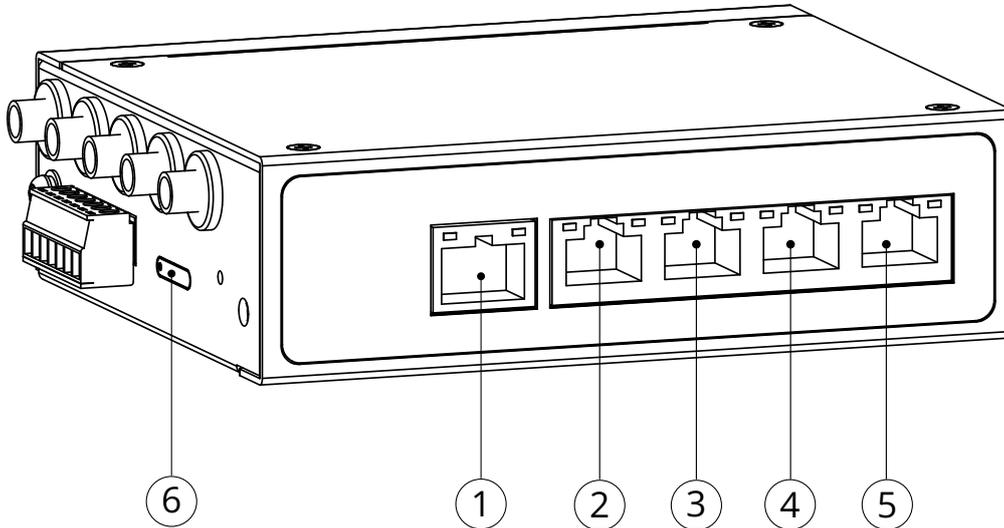
## 8. Internet connectivity

The 4G router is the main communication device for GM DC 240/360.

It is equipped by multiple networking interfaces which can be used to connect the charging cluster to the Internet and control backend system:

- Ethernet ports: ETH0, ETH1, ETH2, ETH3, ETH4 (10/100MB)
- Cat4 4G modem

**Figure 20. InRouter315 router in the GM DC 240/360 Charger and its (network) interfaces.**



Tag	Description
①	ETH0
②	ETH1
③	ETH2
④	ETH3
⑤	ETH4
⑥	SIM card slot

### 8.1 Internet connection over Ethernet

GM DC240/360 router is equipped with five Ethernet ports (ETH0, ETH1, ETH2, ETH3, ETH4).

- ETH0 is used to receiving an internet connection from an external source (modem router client).
- ETH1 is dedicated for the Advertising display screen.
- ETH2 is designated for the Protocol board connection for charger.
- ETH3 is designated for the Point of Sale (POS) system. An ethernet cable is pre-connected during manufacturing to ease installation of the POS.
- ETH4 not used, this is reserved.

The installation step is just to plug the ethernet CAT5/6 cable from modem router client into the ETH0 port (WAN Port).

Once the LAN contains a DHCP server, the charger will automatically obtain an IP address upon startup. Otherwise, the IP address needs to be set manually during software configuration.

## 8.2 Charger internet connection over 4G/cellular network

Each GM DC240/360 is equipped by the CAT4 4G/LTE modem for the WAN connectivity using the Mobile Network Operator networks (MNO).

The HW installation consists of inserting the relevant MNO SIM card during installation.

**Step 1.** Open the DC240/360

**Step 2.** Locate the sim card slot 1 on the front door's router.

**Step 3.** Insert the SIM card. Ensure it is not loosely fitted.

**Step 4.** Close the DC240/360. Power it.

The SIM is in the Nano format (8.8x12.3mm), Only SIM1 card slot 1 is available and should provide the following features:

- Universal integrated circuit card (UICC) pin support

Security measures against the SIM:

- Universal integrated circuit card (UICC) pin support
- Security measures against the SIM cloning

Prefer MNO which is providing:

- Private access point name (APN)
- Option to encrypt data communication.
- SIM card dedicated to IoT application (reduce potential cybersecurity risks)

### **Data Consumption: (data rates should be checked)**

The amount of data transferred between an EV charger and the backend server may vary, based on the network structure. It is recommended to select an unlimited data plan or at least a data plan that takes into account the usage pattern listed below:

- The expected average monthly data traffic may reach up to 80 MB per EV charger.
- An additional annual data usage of up to 500 MB should be considered for firmware and feature updates twice a year per EV charger.



In network installations where a single EV charger is used to route the traffic for the entire network, data usage will be multiplied by the number of EV chargers in the network.

**Note:** When using the 4G connection, ETH0 must not be connected to customer's local network to avoid DHCP conflicts.

## 9. Commissioning

Commissioning is the process of configuration of the GM DC240/360 according the primary use case and local networking possibilities.

Charger commissioning has following basic steps:

1. Access to the commissioning screen – mobile web page
2. Setup of the internet connectivity
3. Configuration of the EV charger parameters
4. Establishment of the backend connectivity (CSMS, OCPP server)

## 9.1 Accessing commissioning screen

The GM DC240/360 is configured via the web portal using the configuration page. The configuration page can be accessed using a laptop, tablet or smartphone to the charger via Wi-Fi Hotspot.

### 9.1.1 WIFI hotspot

This is the preferred/standard method of the commissioning. Installer will need only smartphone with WIFI capability and build-in web browser. But alternatively, can use also tablet or PC.

During the first 30 minutes after power-up or restart, the GM DC240/360 is creating an WIFI hot spot. (QR code or WiFi SSID information is on a product sticker).

Web browser of the phone/tablet/PC shall open automatically with address of the charger Web UI.

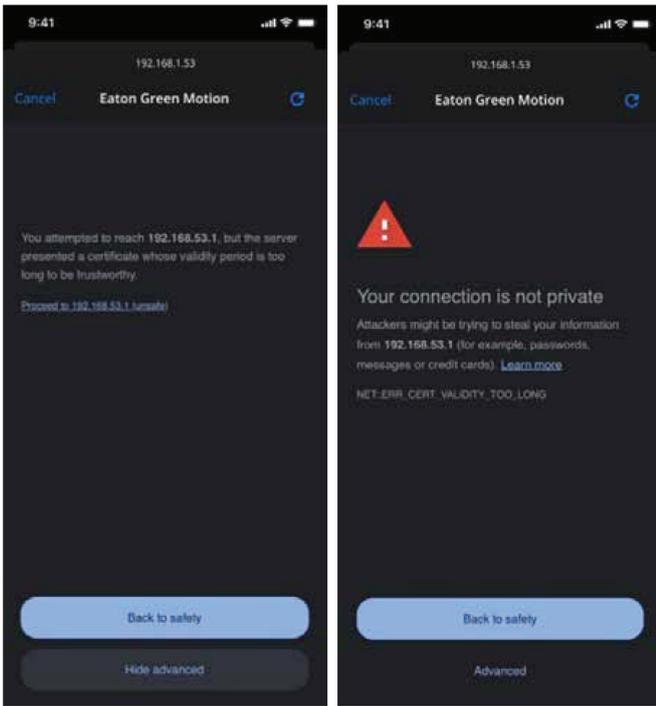
**Figure 21. Landing web page**



Commissioning steps:

1. Turn on the EV charger OFF and ON
2. Enable Wi-Fi on your phone (PC or tablet).
3. Scan the QR code (or retype the SSID/Passphrase) and connect to the Wi-Fi network which is provided by the charger. Then landing page shall appear automatically in the open browser. If not, please open your web browser and type any web address e.g. 192.168.16.254
4. The welcome commissioning screen of the Charger charger should display.
5. Switch to alternative Language if needed.
6. Press Next button to start commissioning wizard.
7. Accept the security warning (the charger is not connected yet to internet, and it is not possible to verify certificate):
  - On the browser press Advanced button
  - And then select link: "Proceed to unsafe web/IP address."

Figure 22. Access to offline web page.

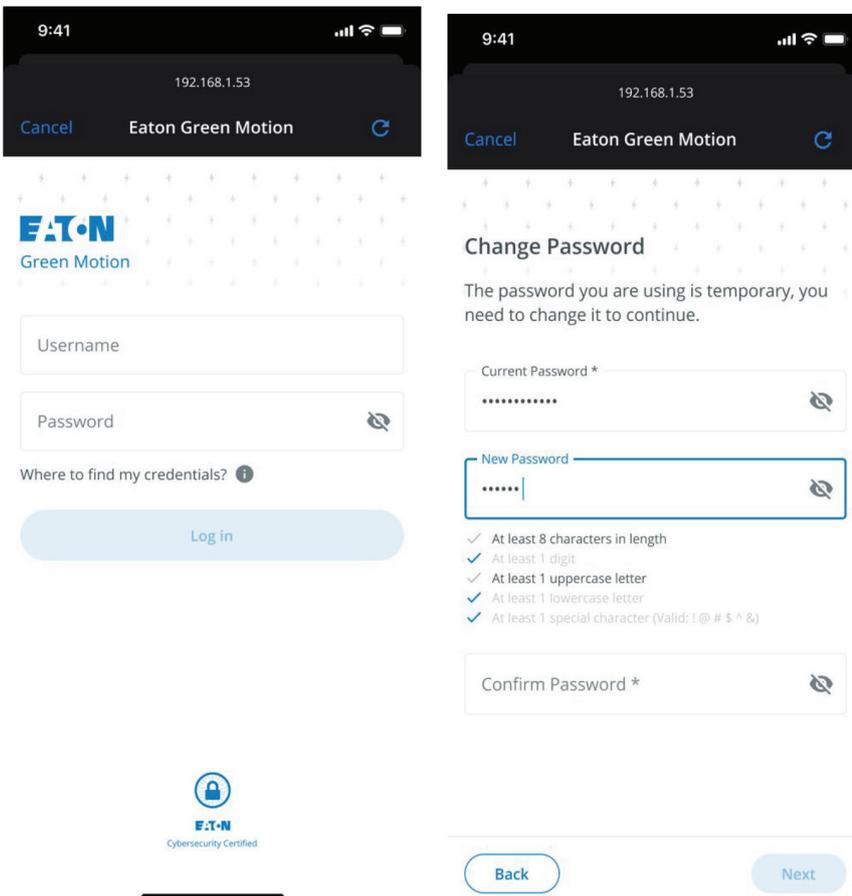


### 9.1.2 Access to the commissioning page

Commissioning steps:

1. Change the password and/or username after the first login (use suggested password complexity)
2. Store new password securely
3. Accept the End User Licence Agreement (EULA)

Figure 23. User login and password



## 9.2 Connection to internet

### Connected Charger operation

As described in the installation chapter 8 GM DC 240/360 can get the user connectivity via local network infrastructure (ethernet LAN) or use its own 4G modem.

### OCPP protocols

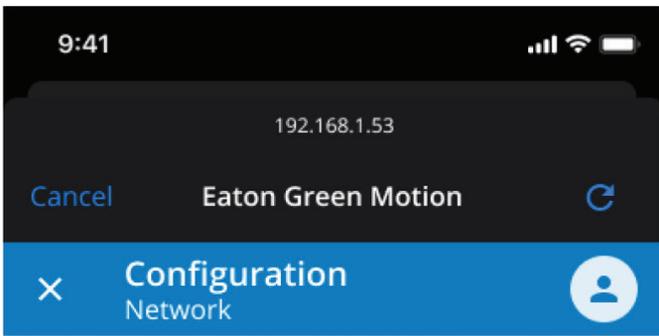
Connected GM DC 240/360 communicates with remote control systems via standardized OCPP 1.6 (J) protocol (HW ready for the upgrade to OCPP 2.01). And offer the seamless integration to any compatible CSMS system.

All OCPP 1.6 profiles are supported. For the details, please refer to the GM DC 240/360 OCPP reference document.

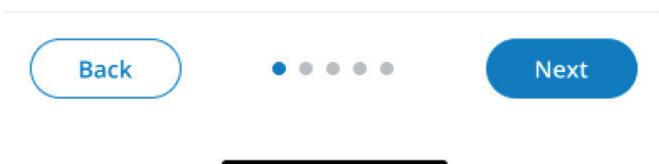
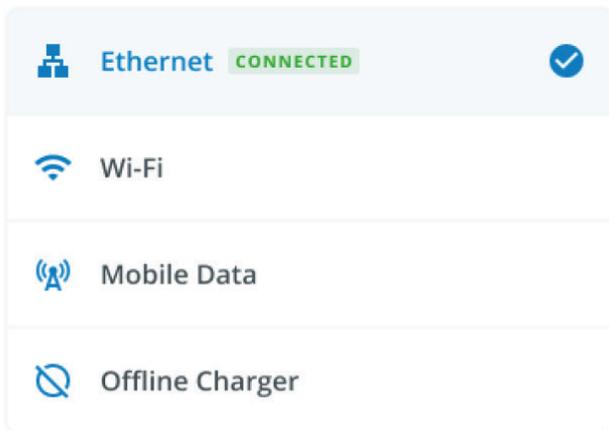
### ChargeCentral

GM DC 240/360 is by default configured to use Eaton proxy (ChargeCentral) between the Charger and the CPO central system (CSMS). ChargeCentral is collecting the statistical EV charging use data, which are used for remote support and preemptive maintenance.

**Figure 24. Internet connection wizard**



Please select the network type you would like to configure. You can change it or add an other one later.



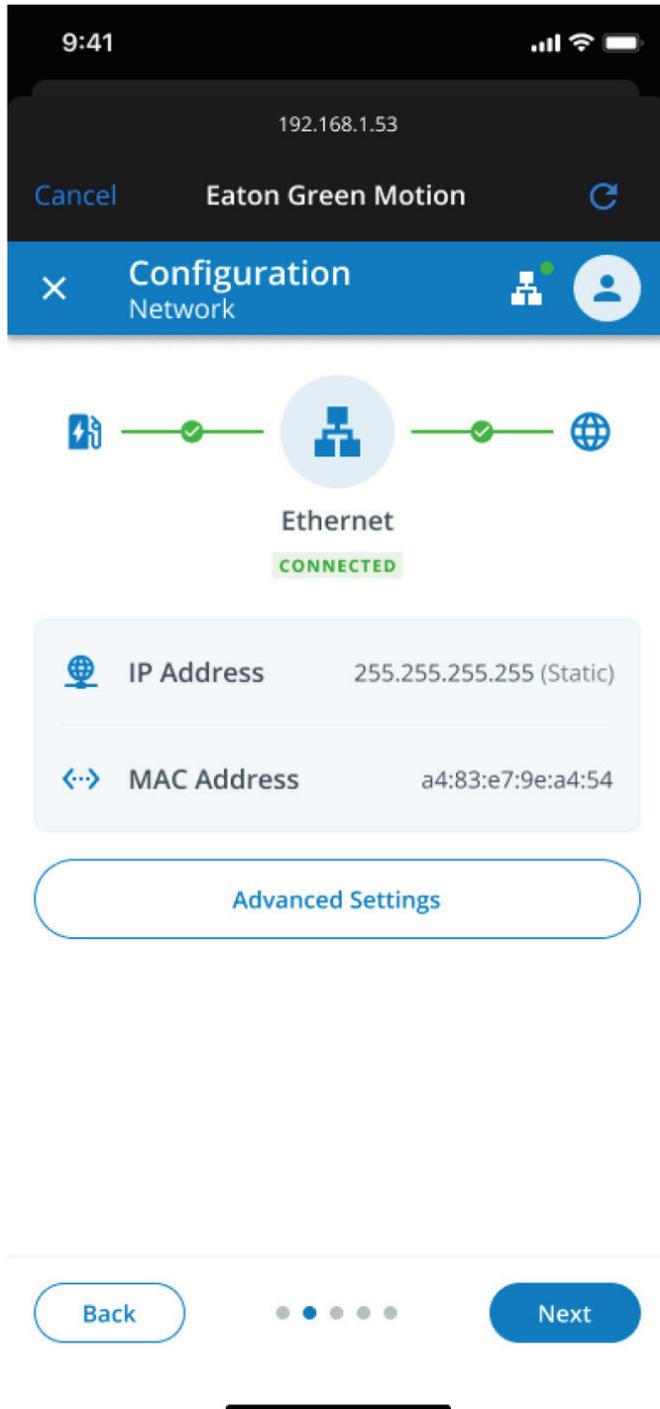
Commissioning steps:

1. Navigate to the first screen of the commissioning wizard.
2. Select internet connection method according to the local network configuration.
3. Configure the details of the selected method.

### 9.1.3 Ethernet

Prerequisite is connection.

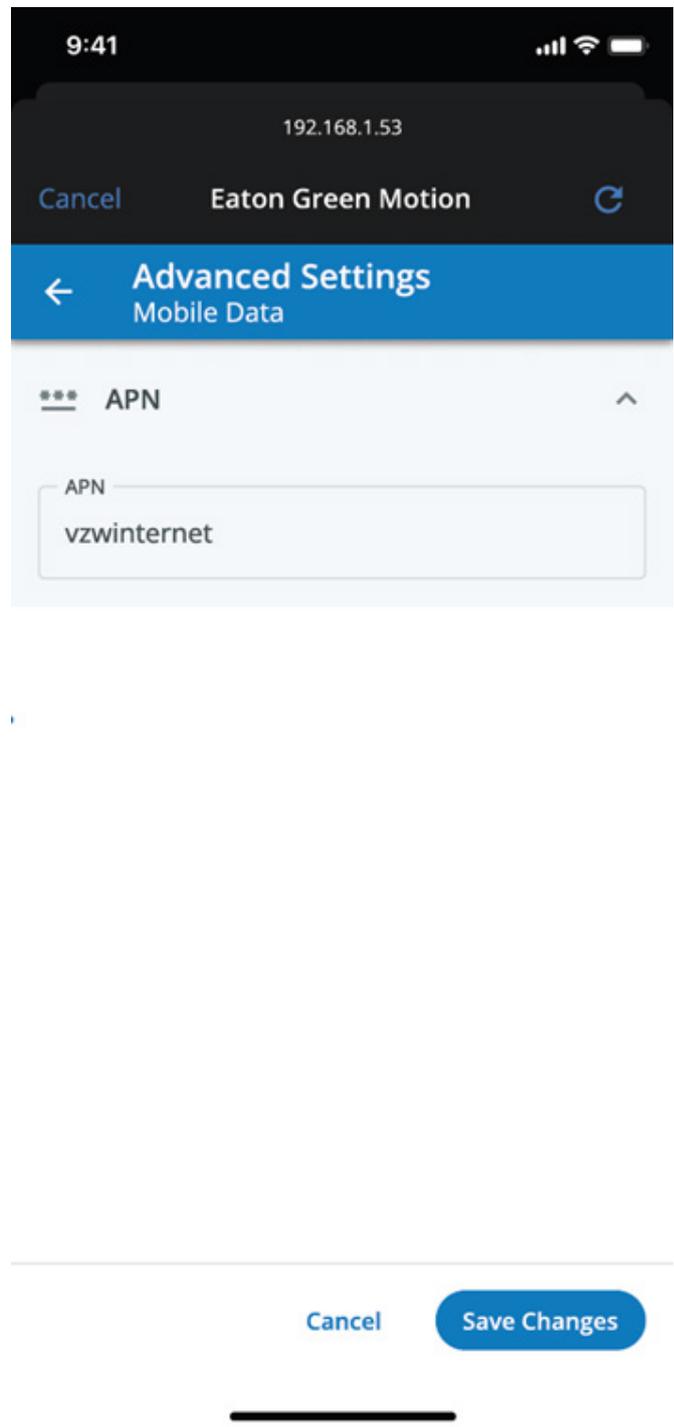
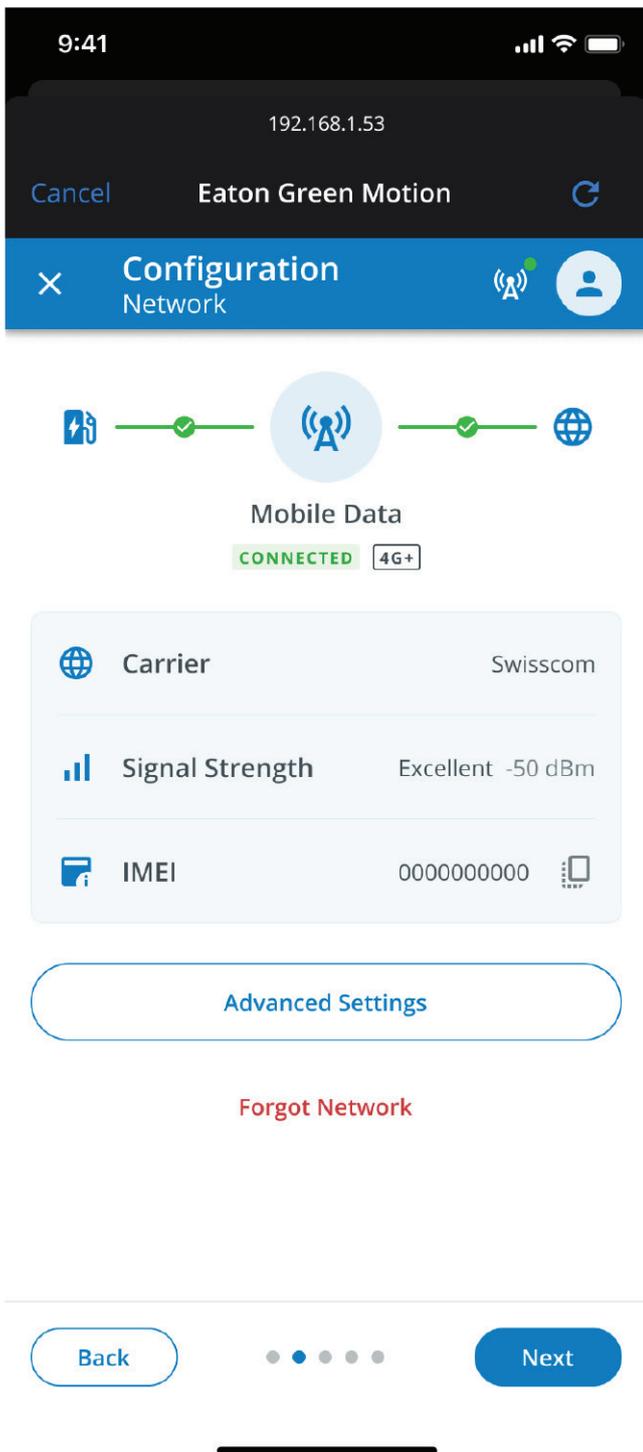
Normally no further setup is needed. The GM DC 240/360 will get an IP address from local network and can connect to the internet which is provided by local network infrastructure.



### 9.1.4 Cellular (Mobile Data/4G)

When the Mobile Data is chosen as a source of internet, then SIM card should be inserted. GM DC 240/360 can connect to the mobile network automatically. (**Note:** 4G connectivity is available only through SIM Slot 1)

Typically, the correct APN parameters need to be inserted in the 4G configuration.



### 9.3 Configuration summary

At the end of the commissioning flow, the installer has a configuration summary of the charger. This page presents the charger configuration details of:

- Network
- CSMS (OCPP Server)

By clicking on “Edit” links, the installer can get back to the related section of the commissioning flow to update the values he configured previously.

From this page, he can also download a JSON file that contains all the charger configuration data (the sensitive data are protected with a passphrase). He can then use this file to apply the same configuration to another charger.

The screenshot shows a mobile application interface for 'Configuration Summary'. At the top, there is a blue header with a close icon, the title 'Configuration Summary', and three icons: a person, a cloud, and a user profile. Below the header is a large green checkmark icon with the text 'Congratulations! You successfully paired your EV charger!'. The main content is divided into two sections: 'Network' and 'OCPP Server'. The 'Network' section includes an 'Edit' link, a 'Connection' dropdown set to 'Ethernet', and fields for 'IP address' (192.168.105.100) and 'MAC address' (00:05:4B:C2:D5:61). The 'OCPP Server' section includes a 'CONNECTED' status indicator, an 'Edit' link, a 'Backend' dropdown set to 'Custom', and fields for 'OCPP URL' (wss://ocpp.custom.domain), 'Charge Point ID' (EVCSC), 'Protocol' (OCPP 1.6j), and 'Security Profile' (2 - TLS with Basic Auth). At the bottom, there are two buttons: 'Download config' and 'Go To Dashboard'.

Section	Field	Value	Action
Network	Connection	Ethernet	Edit
	IP address	192.168.105.100	
	MAC address	00:05:4B:C2:D5:61	
OCPP Server	Status	CONNECTED	Edit
	Backend	Custom	
	OCPP URL	wss://ocpp.custom.domain	
	Charge Point ID	EVCSC	
	Protocol	OCPP 1.6j	
	Security Profile	2 - TLS with Basic Auth	

## 10. Maintenance



Installation, commissioning, maintenance or retrofitting of the EV charger must be performed by professional and qualified personnel who are responsible for complying with existing standards and local installation regulations.



Before starting connection operations, ensure that the external AC mains isolator switch and/or main circuit breaker is switched off (open).



Any operation requiring the opening of the housing of the EV charger can lead to electric shock hazards. In case the unit shows a failure and the emergency stop button is pushed, check the integrity of the unit, cables and connectors before starting the maintenance process.

The opening of the EV charger as well as any configuration changes must be carried out by a qualified electrician in accordance with the local safety and electrical regulations and laws.



Disconnect the unit from the power supply and wait at least 10 minutes to allow its components to cool down and any static electricity storage devices to discharge, before carrying out any maintenance on the unit. The housing could overheat during its operation or be heated by direct sunlight, and it can cause burns by contact. To avoid burns, please use suitable PPE or wait for the equipment to cool down before accessing it.



Green Motion EV chargers are equipped with tamper detection functionality. In case the EV charger is opened while powered on, a notification will be sent to the backed server. The EV charger will also prevent the connected EV from charging.

### 10.1 How to open/close the Green Motion DC 240/360 EV charger housing



Before attempting to open the EV charger, ensure that the external AC mains isolator switch and/or main circuit breaker is switched off (open).



Wait at least 10 minutes after disconnecting the unit from the power supply to allow its components to cool down and any static electricity storage devices to discharge, before operating on the unit.

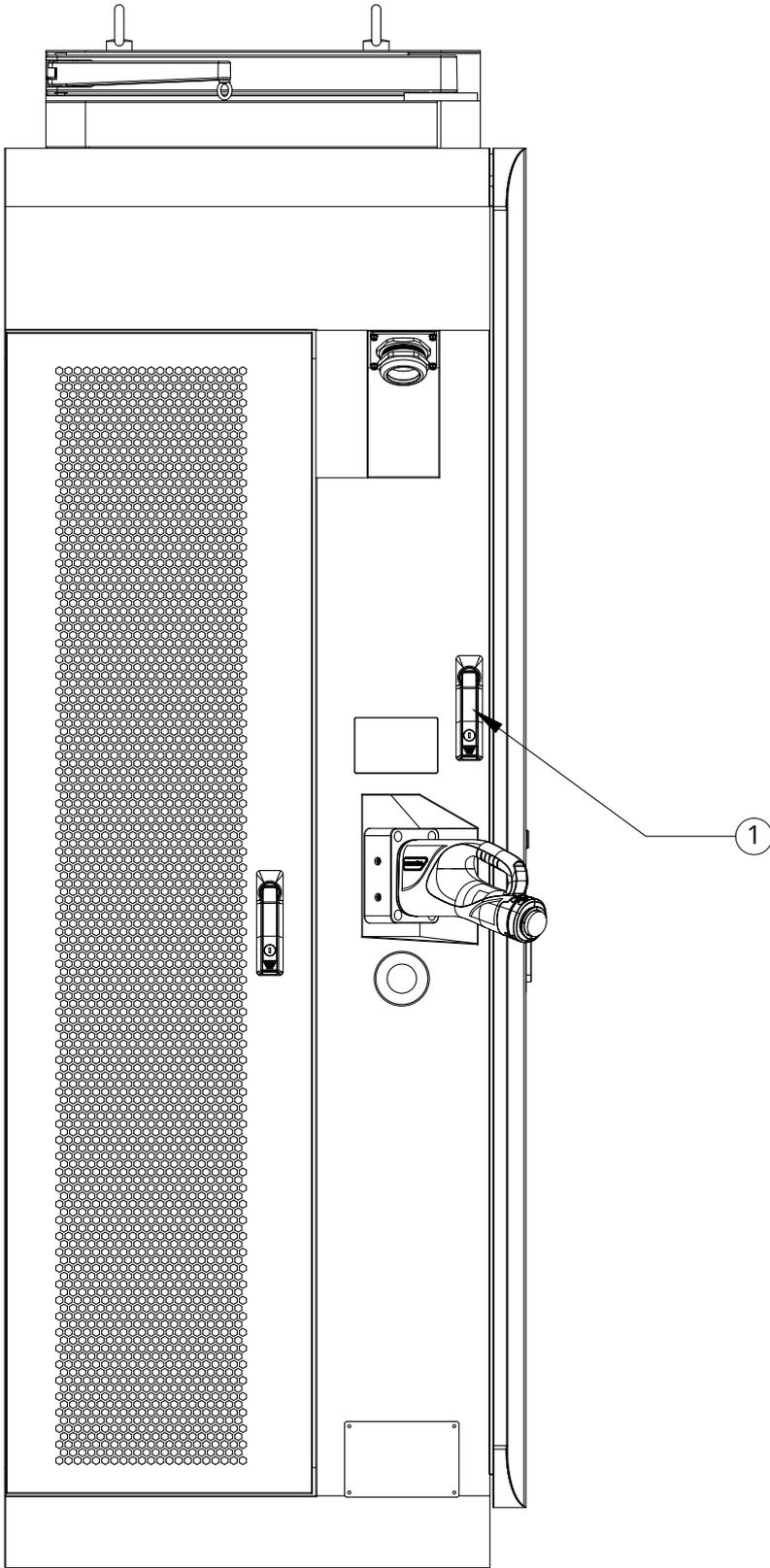
Follow these steps to open the housing of the EV charger.



When removing the front door, be careful not to damage any cables connected to the display and the electronics boards.

**Step 1.** Use key to unlock the left lock. Rotate the lock handle anti-clockwise by 90 degree.

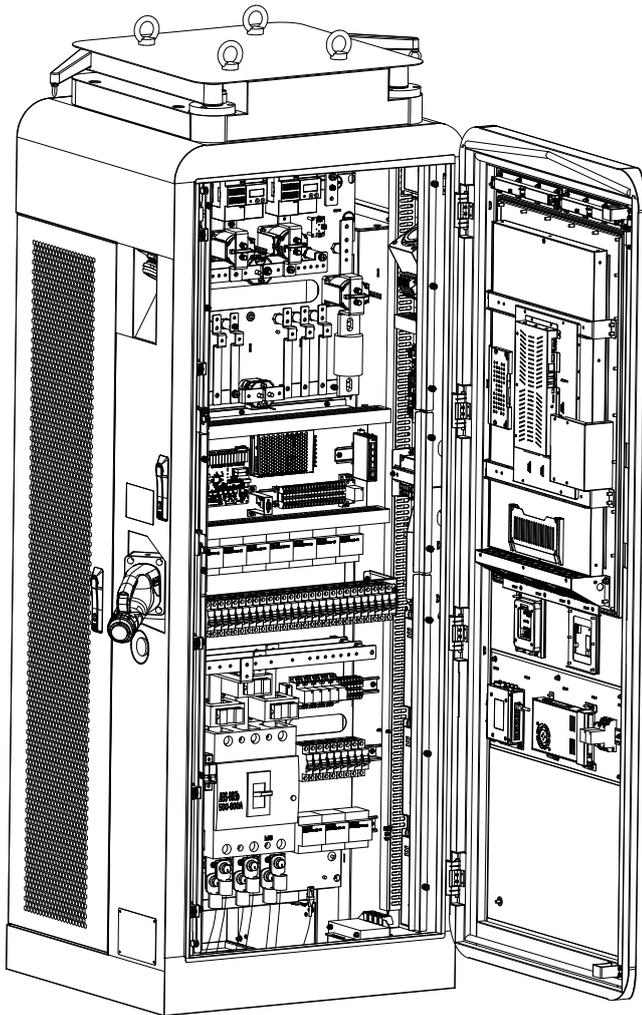
Figure 25. Location of the left door lock for Green Motion DC 240/360 EV charger



Tag	Description
①	Door handle

**Step 2.** Open the front door sideways.

**Figure 26. Green Motion DC 240/360 EV charger with the door open**



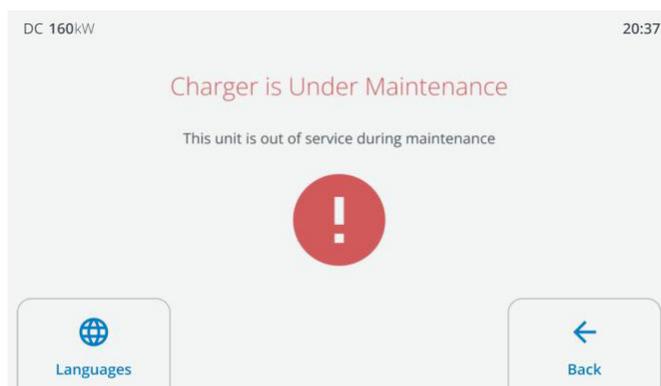
## 10.2 How to set the unit as out of order

The Green Motion DC 240/360 EV charger can be set as out of order by following the steps below:

1. On site method: Press the emergency stop button.
2. Send remotely an OCPP message to disable the station.

Specific operating methods, The Central System SHALL send a ChangeAvailability.req PDU for requesting a Charge Point to change its unavailability.

Then, HMI will display the following interface.



## 10.3 Replace the SIM card

To replace the SIM card, proceed as follows:

- Step 1.** Remove the existing SIM card from the card slot 1.
- Step 2.** Insert the new SIM card into the card slot 1.
- Step 3.** Update the credentials in the mode configuration page (if applicable)

## 10.4 Cleaning or replacing filters

Before starting connection operations, ensure that the external AC mains isolator switch and/or main circuit breaker is switched off (open).



Please make sure that the fans are turned off and that the EV charger is not in use during the maintenance operation. Moving fans can be dangerous and cause finger injuries.



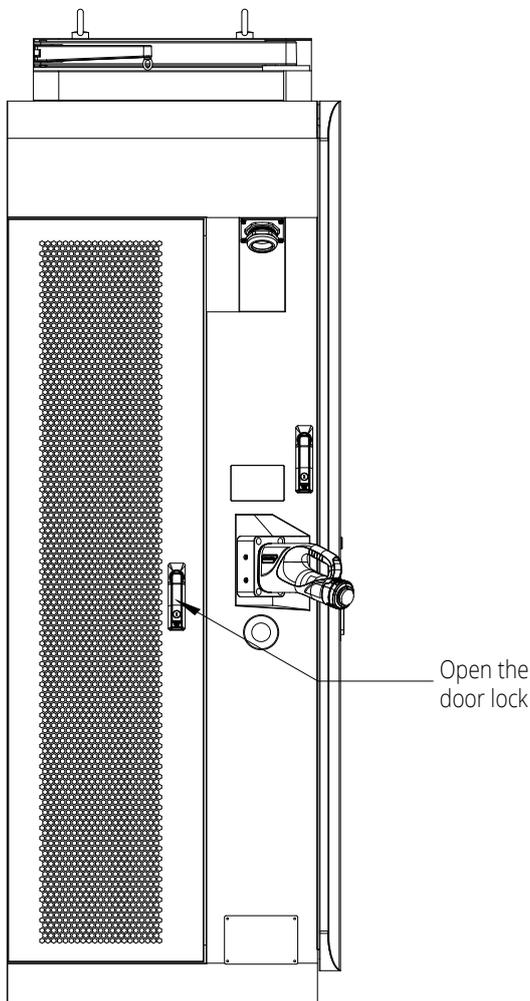
Please make sure the filters are checked on a yearly basis to ensure they are not obstructed and working properly. In case of obstruction, filters need to be replaced as soon as possible. In case of obstruction, Eaton recommends not to use the unit and wait for the replacement of the filters.

Please contact your Eaton service representative for the new filter reference using the email address [BGTechSupport@eaton.com](mailto:BGTechSupport@eaton.com).

Follow the steps below to replace the filters:

- Step 1.** Open the side door by removing the fixing screws as shown in the Figure 26. The filters are located on both left and right side doors of the unit, behind the louvers. Side door assembly method is same for Green Motion DC 240 and DC 360 EV chargers.
- Step 2.** Hold the side door from outside by one hand. Remove the side door screws. Open the side door as shown in the Figure 27

**Figure 27. How to open side door**

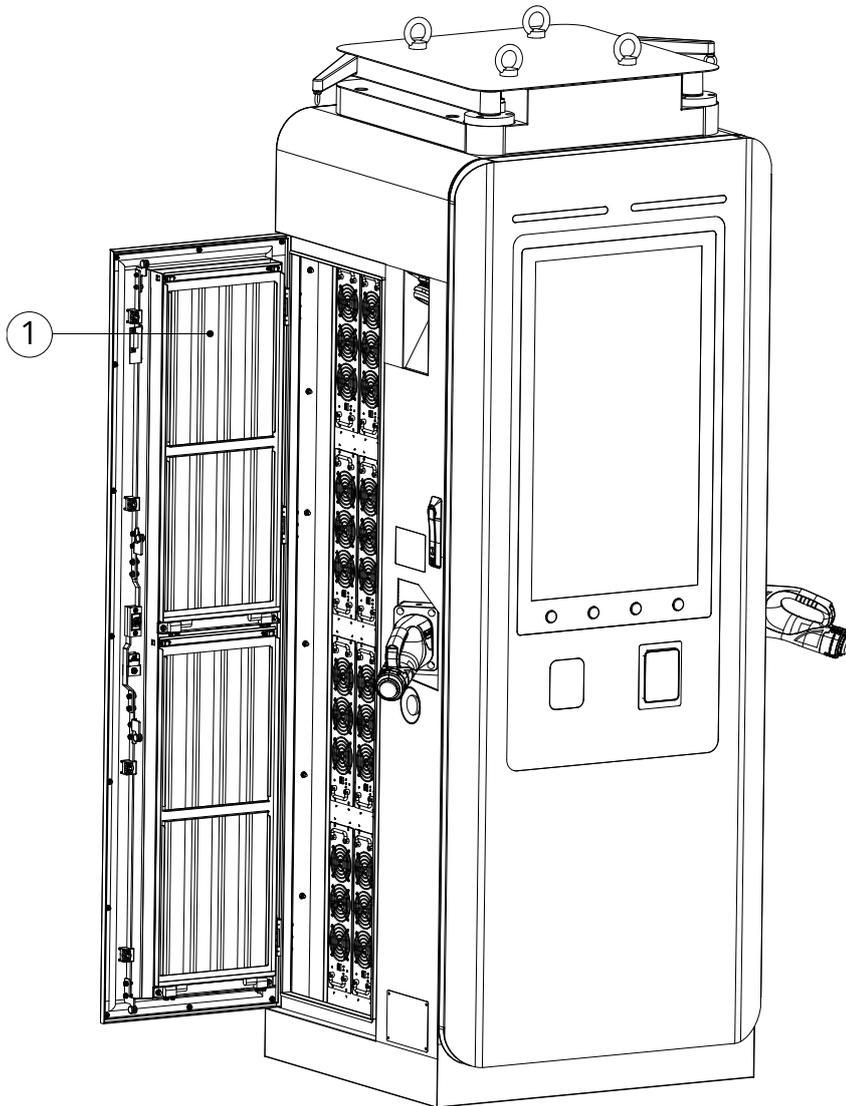


**Step 3.** The filters are located behind the air flow grid..It is possible now to replace the filters.

Pull the air filter from top side of the side door.

**Figure 28. Location of the filter on the left side of the unit**

Air filter and Side door assembly method is same for Green Motion DC 240 and DC 360 EV chargers.

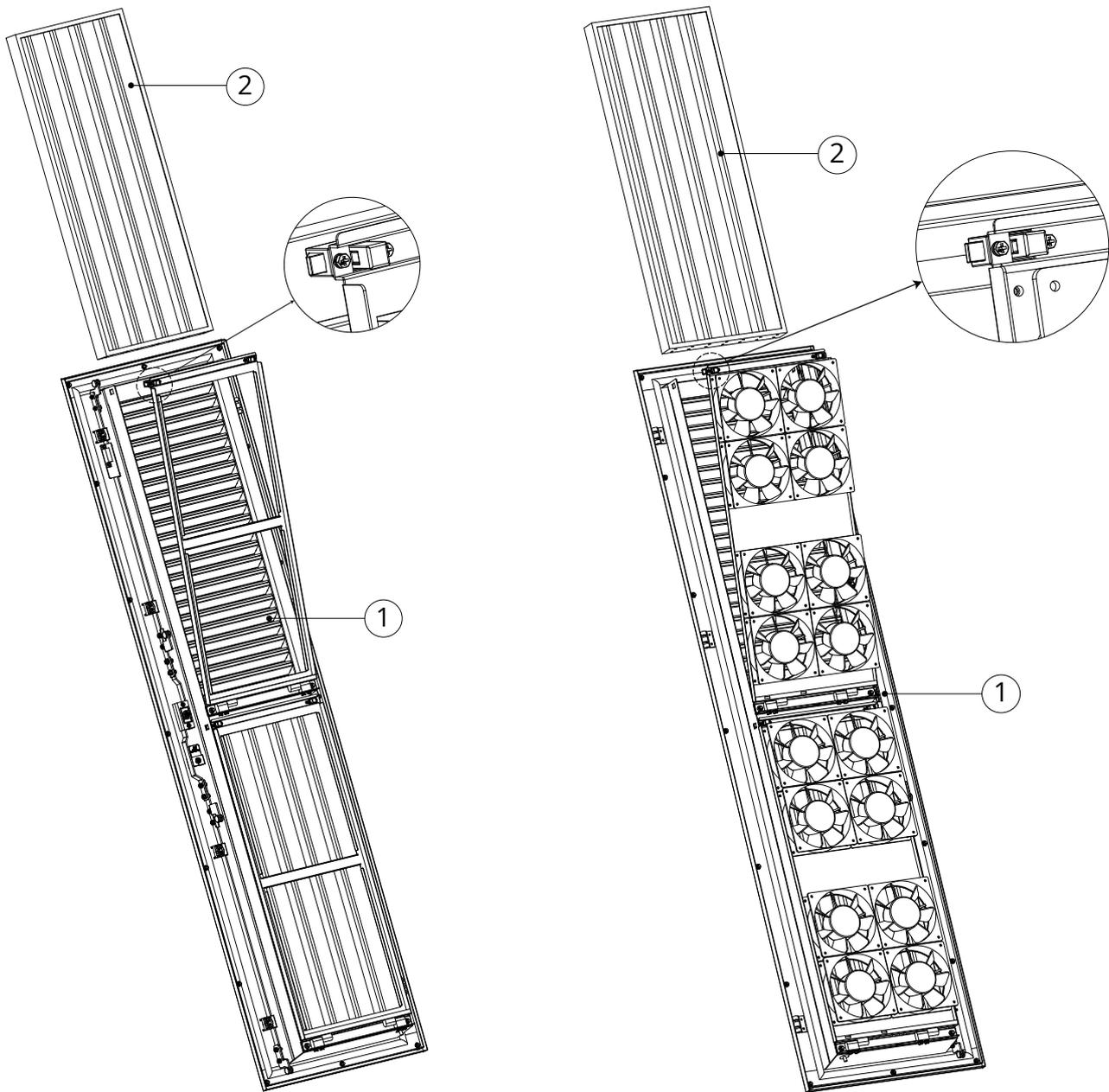


Tag	Description
①	Air filter

**Step 4.** Clean or replace the air filter. Clean the air flow grid by blower to make sure air opening cleared if there any blockage.

**Step 5.** Insert the new/cleaned filter air filter in the slot behind the air flow grid.

**Figure 29. Air filter removal and assembly at side door**



Tag	Description
①	Side door
②	Air filter

**Step 6.** Assemble the side door to enclosure and secure it by screws.

**Step 7.** Repeat the same process for other side doors and restart the unit.

## 10.5 Power module replacement

Before starting connection operations, ensure that the external AC mains isolator switch and/or main circuit breaker is switched off (open).



Please make sure that the fans are turned off and that the EV charger is not in use during the maintenance operation. Moving fans can be dangerous and cause finger injuries.

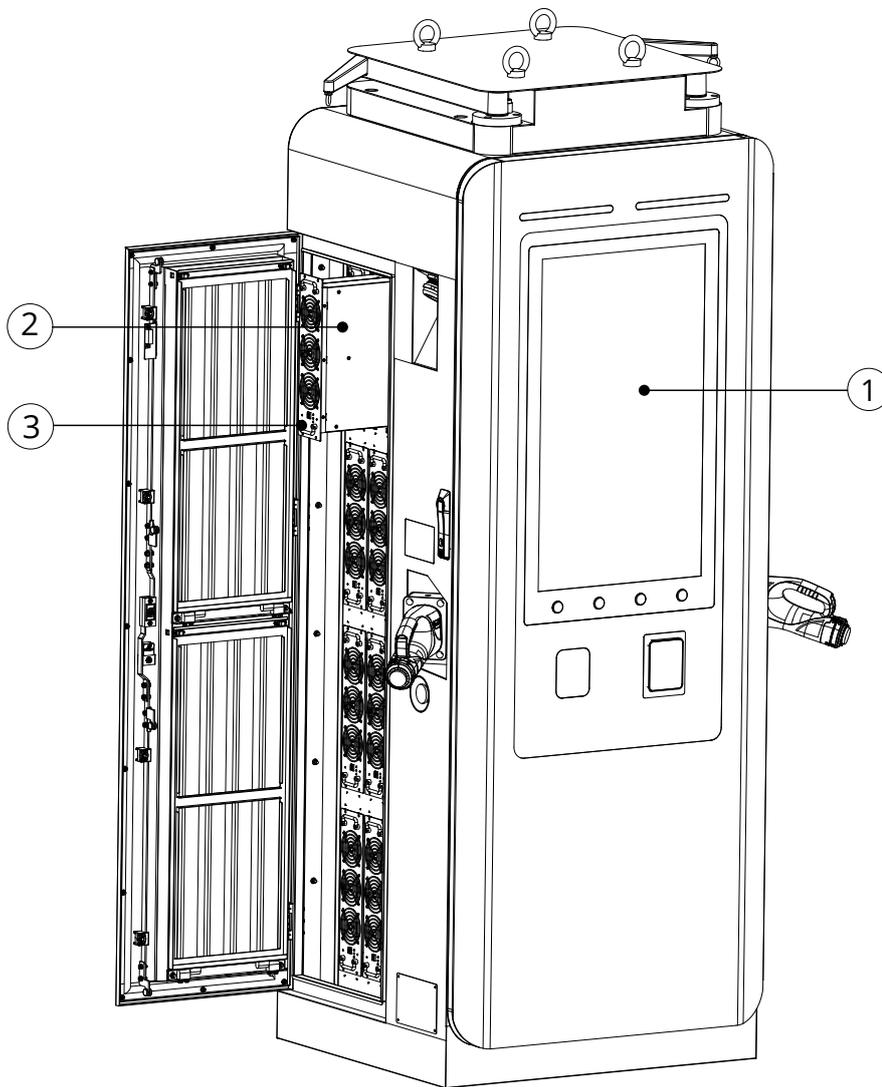
Follow the steps below to replace the power module. Power module replacement procedure is identical for Green Motion DC 240/360 EV chargers.

**Step 1.** Hold the left side door from outside by one hand. Remove the side door screws. Open the side door as shown in the Figure 26.

**Step 2.** Remove the screws located at top flange of the power module as shown in the Figure 30.

**Step 3.** Pull the power module gradually outside EV charger with the help of two handles (as shown in the Figure 29) located on the power module.

**Figure 30. Removal of the power module from EV charger**



Tag	Description
①	Green Motion DC 240 /360EV
②	Charger Power module
③	Power module handles



Do not underestimate the weight of the unit. Check the technical specifications.

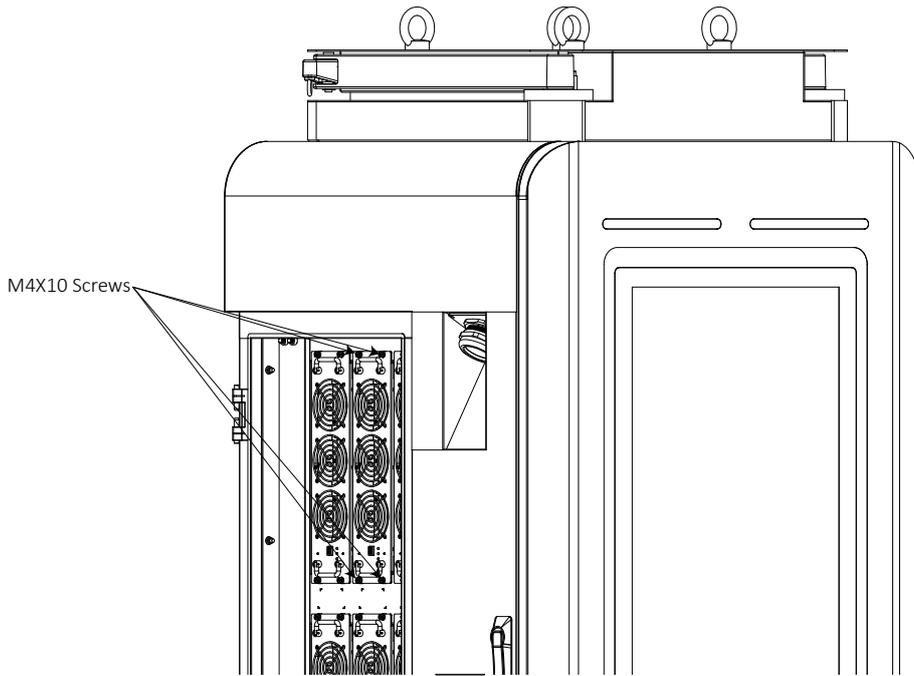
Number of manpower for transportation, handling and lifting in accordance with the requirements of local regulations.

Do not pull it with too much force.

Please refer to local regulations and laws for lifting the equipment.

**Step 4.** Left the new power module and insert inside EV charger. Push the power module gradually inside the EV charger until top power module flange rest on the enclosure frame as show in Figure 30.

**Figure 31. Fixing the power module to EV charger**



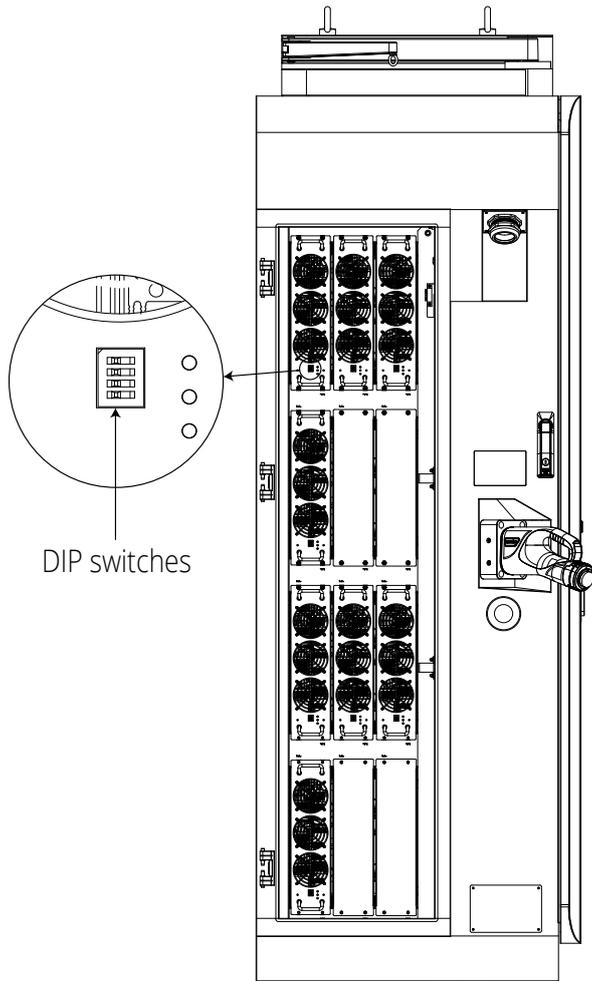
**Step 5.** Secure power module to EV charger by securing 2 screws at top flange of power module

**Step 6.** Configure the power Module DIP switch as explain in the next page

**Step 7.** Close the side door and lock the door. and restart the unit.

**Note:** Definition of DIP for Power Modules

**Figure 32. Definition of DIP switch for power module at Green Motion DC 240 charger position**



**Step 1.** Add the required power module

**Step 2.** To set the power module, switch the DIP switch left and right as shown in the following picture according to the power

**Step 3.** Close the side door and lock the door and restart the unit

↑	POWER	120	180	240
Slot 1	DIP	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

↑	POWER	120	180	240
Slot 2	DIP	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

↑	POWER	120	180	240
Slot 3	DIP	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

↑	POWER	120	180	240
Slot 4	DIP	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

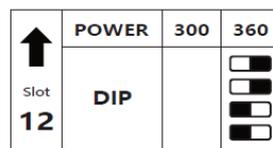
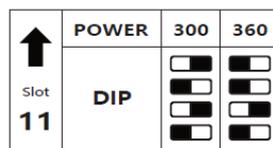
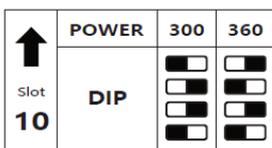
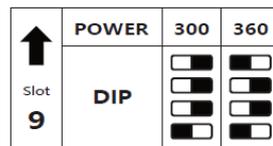
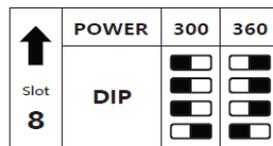
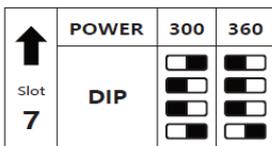
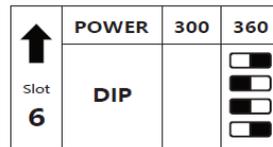
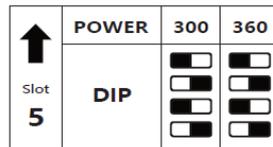
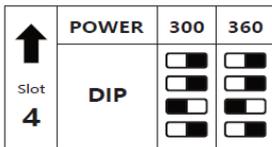
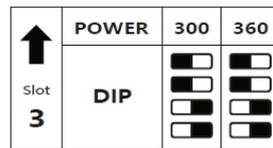
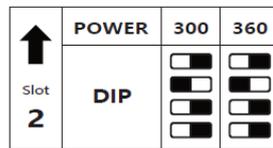
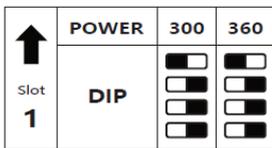
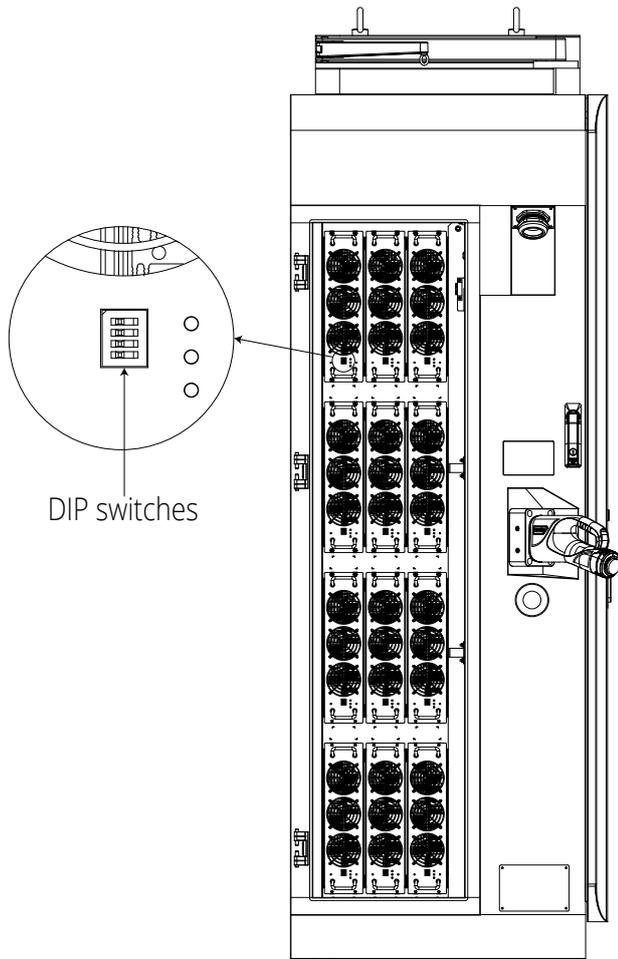
↑	POWER	120	180	240
Slot 7	DIP	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

↑	POWER	120	180	240
Slot 8	DIP	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

↑	POWER	120	180	240
Slot 9	DIP	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

↑	POWER	120	180	240
Slot 10	DIP	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Figure 33. Definition of DIP switch for power module at Green Motion DC 360 charger position



## 10.6 Dismount



Before starting any maintenance operations, ensure that the external AC mains isolator switch and/or main circuit breaker are switched off. Disconnect the unit from the power supply and wait at least 10 minutes to allow its components to cool down and any static electricity storage devices to discharge, before removing the unit.

The housing could be heated by direct sunlight and it can cause burns by contact. Please use suitable PPE or wait for the equipment to cool down before accessing it.

To uninstall the unit:



**Step 1.** Disconnect any load if present.

**Step 2.** Open the housing by opening front door as described in Section 10.1.

**Step 3.** Disconnect the AC power supply cables from the terminal block and the protective earth bolted joint.

**Step 4.** Disconnect the communication cables and external controls where present.

**Step 5.** Dismount the floor-mounted pedestal if present.

**Step 6.** The product can now be removed for disposal or repair.

## 10.7 Firmware updates



It is mandatory to install and maintain the units with the latest system updates to enable new features and bug fixes, or the guarantee conditions may be voided.

For units that are online, this must be done via the Charge Central (Eaton platform) or any backend which support OTA. for further details. For units that are offline, please contact your Eaton service representative using the [BGTechSupport@eaton.com](mailto:BGTechSupport@eaton.com) email address.

## 10.8 Disposal

When the EV charger reaches the end of its service life, the end user should contact professional and qualified personnel for disposal instructions.

Please refer to [www.eaton.com/recycling](http://www.eaton.com/recycling) for further details.



The EU Directive on Waste Electrical and Electronic Equipment (WEEE) (Directive 2012/19/EU) establishes common rules on the management of electrical and electronic equipment and minimizes its impact – from design until disposal – on the environment. As a manufacturer of electrical and electronic equipment, Eaton actively supports the requirements of the WEEE Directive.

In compliance with the EU standard EN 50419 for marking of electrical and electronic equipment, we include the crossed-out wheeled bin symbol on our products. This symbol alerts users that these products should be recycled in accordance with local environmental regulations and not discarded with household waste.

When end users recycle WEEE they are helping to ensure that they are neither incinerated nor sent to landfill, minimizing the potential negative impact on human health and the environment.

Any device that is no longer needed must therefore be returned to the distributor or disposed of via an authorized collection and recycling center in the area. Eaton encourages all its customers and end users to make responsible decisions when disposing of products.

Eaton is not responsible for the transportation of the device to the collection point or recycling center.

# 11. Troubleshooting



This section contains information and procedures for solving problems that may occur with the EV charger.



Check the warnings or error messages and act as indicated in Table 11.

If the problem persists, contact your Eaton technical support representative using the BGTechSupport@eaton.com email address.

**Table 11. List of alarms and troubleshooting**

Display message(EN)	Trouble shooting	Solution
FAULT_INS_BATU_NOT_ReachSetValue	The difference between the charging voltage and the preset voltage during the insulation detection stage is greater than 5%	Check if the module is working properly
CM_GPRS_COMM_ERROR	Abnormal internal communication between control board and protocol board	Please check if the network cable between the control board and protocol board is disconnected
STOP_SW_ACT	Emergency stop switch pressed	please turn the emergency stop button for charging
DOOR_OPEN	Front or rear door opened	Please check if the door is open
CM_MODULE_FAULT	There are two possibilities: 1,CAN communication and control boards of the modules are disconnected 2, All modules have malfunctioned	Please check the module and CAN communication cable
CM_INS_CHECK_ERR	<100 ohm/V	Please check the insulation condition of the EV
CM_LINK_ERR	Abnormal control guide line during charging stage	Please record a log and contact after-sales service
CM_DL645_COMM_ERR	Communication between control board and electricity meter exceeds 20S	Please check the electricity meter and RS485 wiring of the electricity meter
PRO_FAULT_GUN_OVER_TEMP	Nozzle detected $\geq 90^{\circ}\text{C}$ : alarm starts; Alarm relieves when nozzle detects $< 80^{\circ}\text{C}$  Nozzle detected $\geq 105^{\circ}\text{C}$ : Disconnect charging output and stop current session of charging.	Replacing Connector cable
PRO_AC_INPUT_OVER_VOLTAGE	Input Voltage $> 528\text{V}$	Please check if the input voltage of the mains is normal
PRO_AC_INPUT_LOW_VOLTAGE	Input Voltage $< 408\text{V}$	Please check if the input voltage of the mains is normal
WATER_SENESING_FAIL	Internal water ingress into the charger	Please open the front and rear doors for inspection
CM_INS_COMM_ERR	Communication between control board and insulation detection drive exceeds 20S	Please check if the communication line between the insulation detection and control board is normal
PRO_ACinput_LOSS_PHASE	There is a phase loss situation in the mains power supply	Please check the mains power supply
PRO_PHASE_ERROR	There is a phase error situation in the mains power supply	Please check the mains power supply
PRO_LOSS_PE	There is a PE loss situation in the mains power supply	Please check the mains power supply
EV_COM_CLOSE	Communication failure between charger and EV	Please record a log and contact after-sales service
EV_OS_ERR	Communication failure between charger and EV	Please record a log and contact after-sales service
CP_STATUS_ABNORMAL	Abnormal control guide line during charging stage	Please record a log and contact after-sales service
CM_INS_CHECK_ALARM	$>100\text{ ohm/V}$ and $<500\text{ ohm/V}$	Please check the insulation condition of the EV
CM_COMM_OVERTIME	The main control did not receive any charging module information within 5 seconds	Check if the CAN communication line between the main control board and the module is securely connected

## 11.1 Radio communication.

The Green Motion radio modem supports the following frequency bands:

**Table 12. Frequency bands and transmission levels**

Frequency band	Transmission level (maximum nominal power)
FDD: B1/ B3/ B5/ B7/ B8/ B20 /B28	25 dBm
TDD: B38/ B40/ B41	25 dBm
WCDMA: B1/ B5/ B8	25 dBm
GSM: B3/ B8	25.97 dBm
WiFi: 2.4GHz (4G router)	13.24 dBm
RFID: 13.553-13.567 MHz	20 dBm
WiFi: 2.4GHz (WebApp)+	20 dBm

## 12. Contact support information

Should any technical problems arise during the operation of the charging station, contact your Eaton technical support representative for assistance using the email address [BGTechSupport@eaton.com](mailto:BGTechSupport@eaton.com). The following information should be provided when contacting the Eaton technical support representative:

- Product model and serial number
- Fault messages

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