

PACMOBILE 20

User and Operation Manual



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Glossary

AC

Alternating Current.

CCS

Combined Charging System. A universal AC and DC charging system

DC

Direct Current.

EV

Electric Vehicle.

HMI

Human Machine Interface; the screen on the charger.

Owner

The legal owner of the charger.

OCPP

Open Charge Point Protocol. Open standard for communication with charge stations.

PE

Ground.

RCBO

Residual-current Circuit Breaker with Overload protection. Breaks the connection if a residual current or overload is detected.

RCD

Residual Current Device. Breaks the connection if a residual current is detected.

RFID

Radio-Frequency Identification. is a communication technology that utilizes the radio frequency electromagnetic waves to transfer data over a very short distance between the reader and an electronic tag or card.

Site operator

Person or company that controls the charge station. The site operator could be the owner, but not necessarily.

User

The driver of an EV who uses the charge station.

1. Introduction

1.1 Preface

The PacMobile 20 Charge Stations are easy to install DC fast chargers for electric vehicles. Fast chargers are electrical installations with high electric currents.

This manual describes the general usage and daily operation instructions of the PacMobile 20 charging station.

1.2 Intended use of this document

This document serves:

- As a reference for site operators who are responsible for the charger's operation on site, performing daily inspection and maintenance activities and who are able to perform simple trouble shooting activities, after instruction of a certified ABB technician.
- As a reference to the operator's customers, the EV drivers who will mainly use the pictograms and texts on the display of the charger. The user interface design was thoroughly evaluated with user groups to optimize understandability and to get the best user experience. Besides the screens needed for the charging process, the interface has help screens available to provide additional information.

1.3 Intended use of the charger

The product is designed to charge an electric vehicle. The charging is achieved through a CCS plug mounted on the side of the cabinet. The properties of the rechargeable electric storage system (RESS) in the electric vehicle must comply with the technical data of the product.

1.4 Owner responsibilities

The owner and site operator are required:

- To prepare the site where the charge station will be located, according to the requirements described in this guide.
- To make sure that there is enough space around the charger to carry out maintenance work.
- To make sure all protective devices are correctly installed after carrying out installation or maintenance.
- To operate the charge station with the protective devices installed.
- To write an emergency plan that instructs people what to do in case of emergency.
- To appoint a person responsible for the safe operation of the charge station and for the coordination of all work. This person should be properly instructed by ABB or an ABB trained service partner.

The owner is cautioned that changes or modifications not expressly approved by PACCAR could void the owner's authority to operate the equipment or PACCAR's warranty. Neither PACCAR nor its affiliates shall be liable to the purchaser of this product or third parties for damages, losses, costs or expenses incurred by purchaser or third parties as a result of: an accident, misuse or abuse of this product, or unauthorized modifications, repairs or alterations to this product, or failure to strictly comply PACCAR operating and maintenance instructions.

1.5 Signs

The following signs are used on the equipment and in this manual:



DANGER

Hazardous voltage

Identifies a hazard that could result in severe injury or death through electrocution.



WARNING

Various

Identifies a hazard that could result in severe injury or death as also damage to the machine, other equipment, and/ or environmental pollution.



WARNING

Pinch Hazard

Identifies a hazard that could result in injuries, in which some body parts are pinched or crushed.



NOTICE

Contains remarks, suggestions or advice.

1.6 Safety regulations



WARNING

If a charge outlet is damaged, take the following steps:

1. Do not use the damaged charge outlet.
2. Contact the owner / site operator.



WARNING

Operation after damage or accidents

- If there is a fire in or nearby the charger;
- If the charger was immersed in water, or any other fluid;
- If the charger is damaged in any way.

Do not use the charger. Contact the owner / site operator.



CAUTION

Connector locked

Do not apply a force on the locked cable during the charging process. This might damage the inlet and locking mechanism in the Electric Vehicle or damage the charger.



NOTICE

When connecting or disconnecting a connector

1. Handle cables and connectors with care. Do not drop the cables or connectors.
Place them back in their respective holders.

Only insert a connector into a suitable Electric Vehicle inlet. Never use excessive force.



CAUTION

No User serviceable parts inside

Do not allow any user to repair or manage the electronics inside.

2. Description of the product

2.1 Overview of the system

The user operated components are indicated on Figure 1.

- A. Display / HMI.
- B. RFID card reader.
- C. Charge outlets DC.
- D. Air outlet
- E. Emergency button
- F. AC input cable
- G. Air inlet

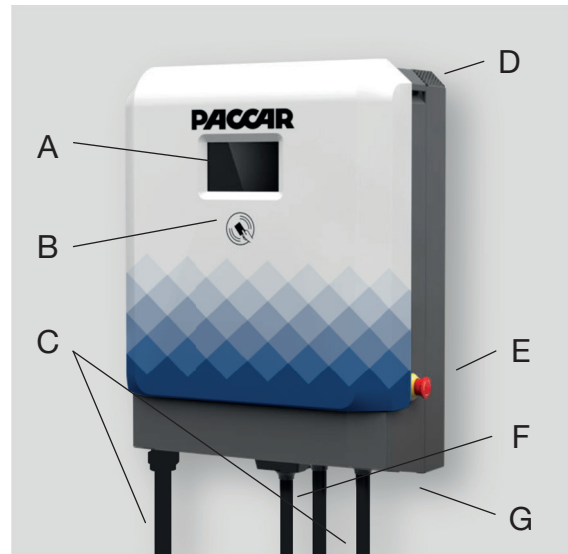


Figure 1
PacMobile 20 view

2.2 Charger configurations

The PacMobile 20 supports the CCS2 charging standards: One CCS outlet with output current/ power; 60 A / 22,5 kW.

2.3 Standard usage

Usually the PacMobile 20 gets the power from the grid.



22.5 kW
60 A
150-920 V_{DC}

Figure 2
PacMobile 20

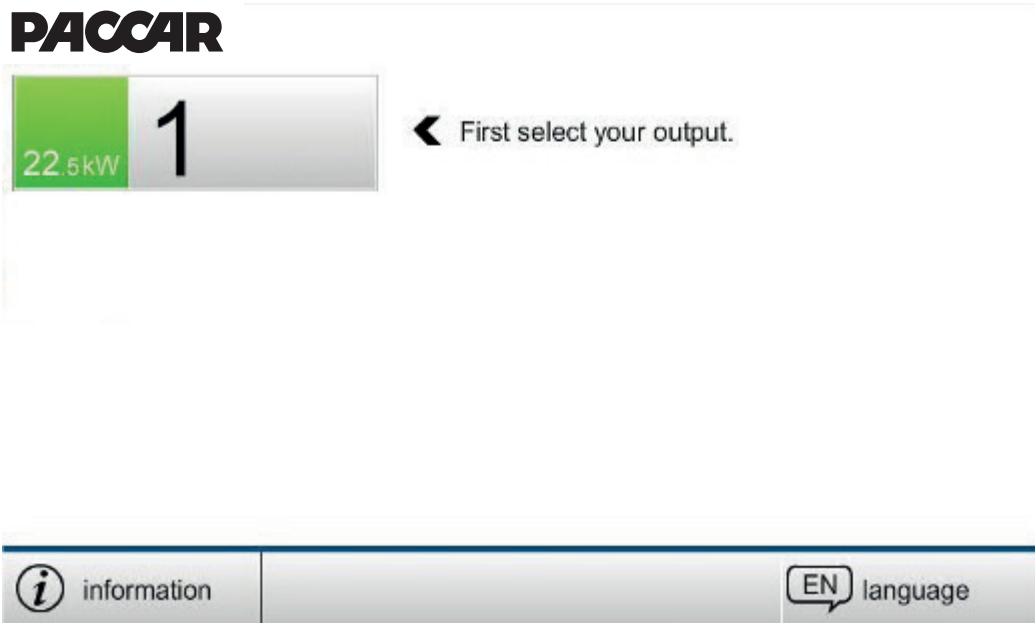
2.4 Authorization to charge

Operation of the charger is possible with or without authorization. The authorization to charge can be based on RFID or credit card payment methods. Operating a charger with authorization requires a subscription to a back office. Authorization can either be an PACCAR supplied standard solution, or from an external company offering authorization solutions via OCPP.

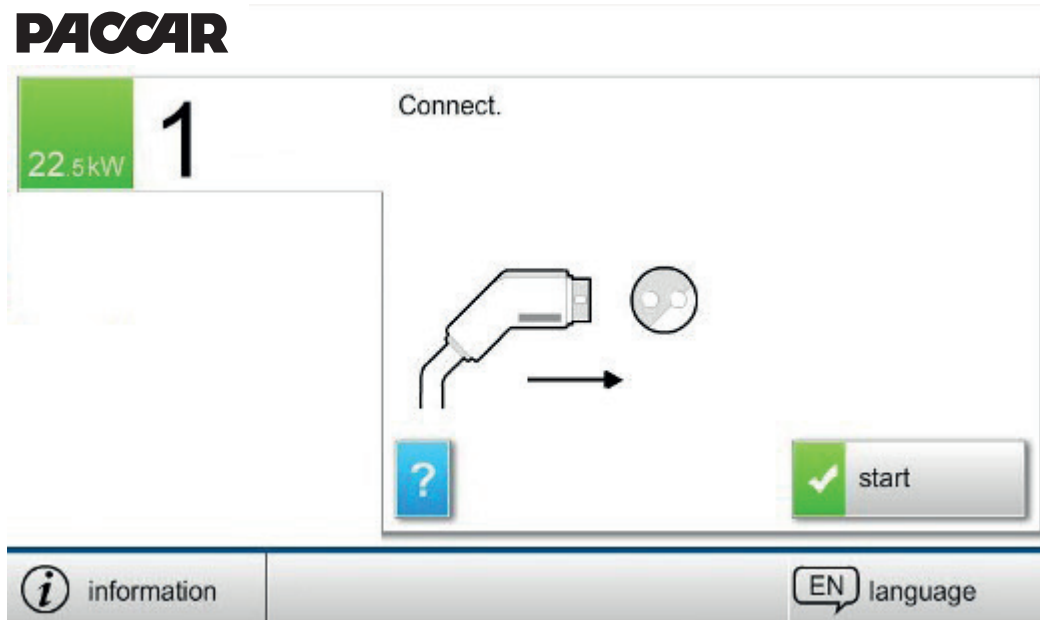
3. Quick instruction charging

To charge an electric vehicle (EV):

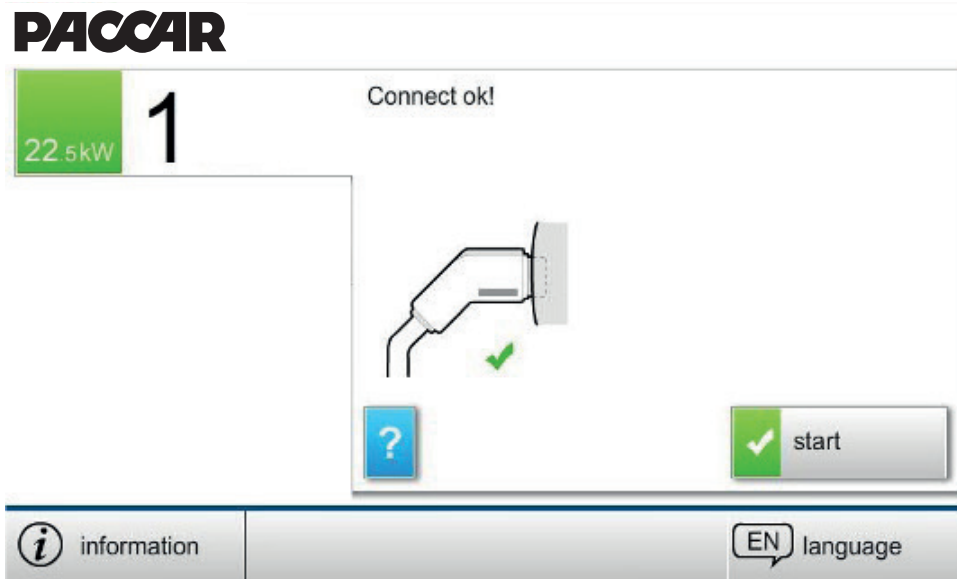
1. Park the EV with the charge inlet within reach of the connector, and turn it off.



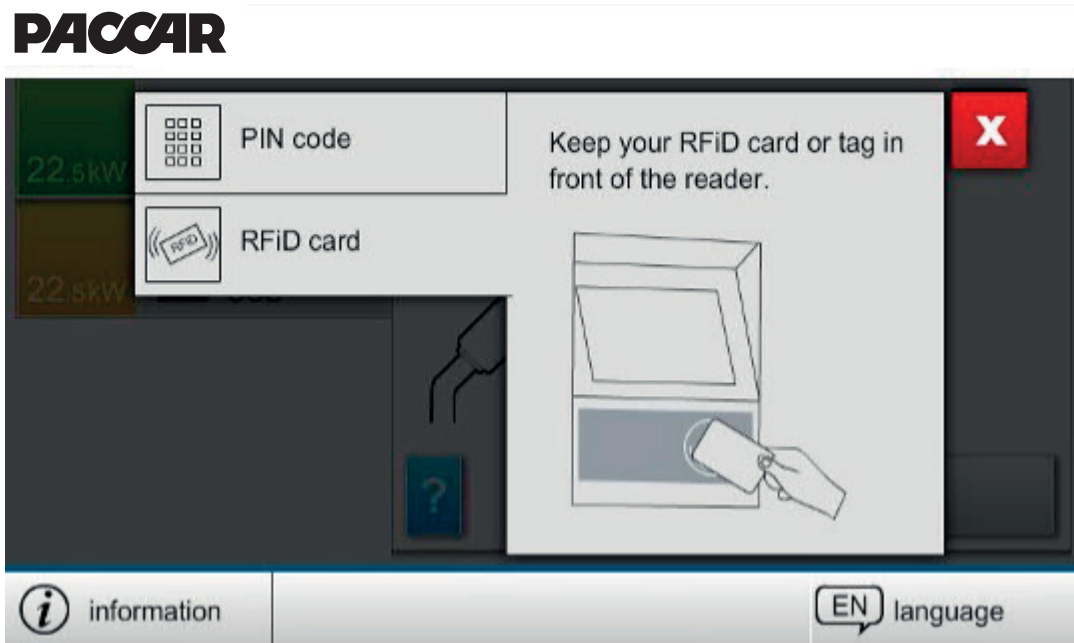
2. Connect the charger's connector to the vehicle's charge inlet.



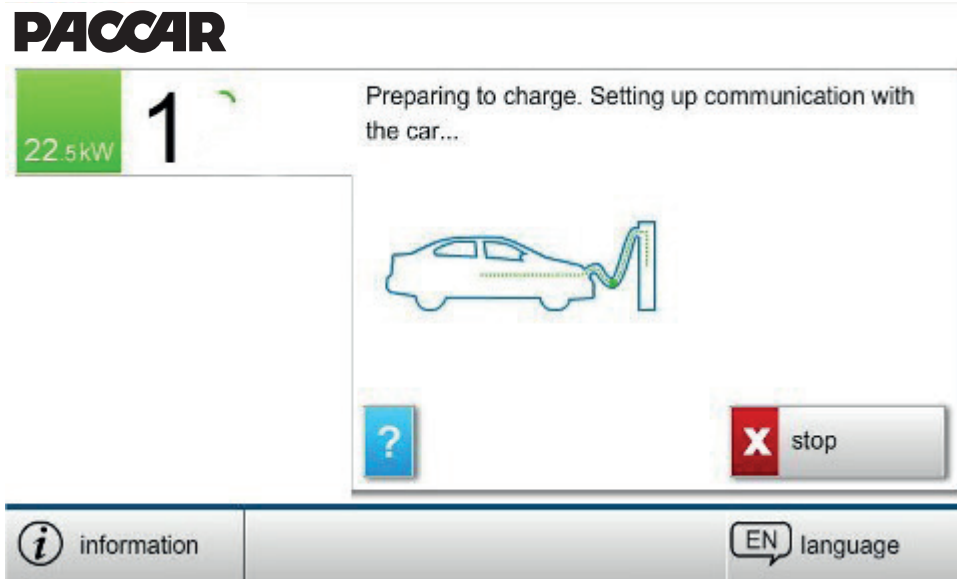
3. Follow the instruction of the Electric Vehicle manual.



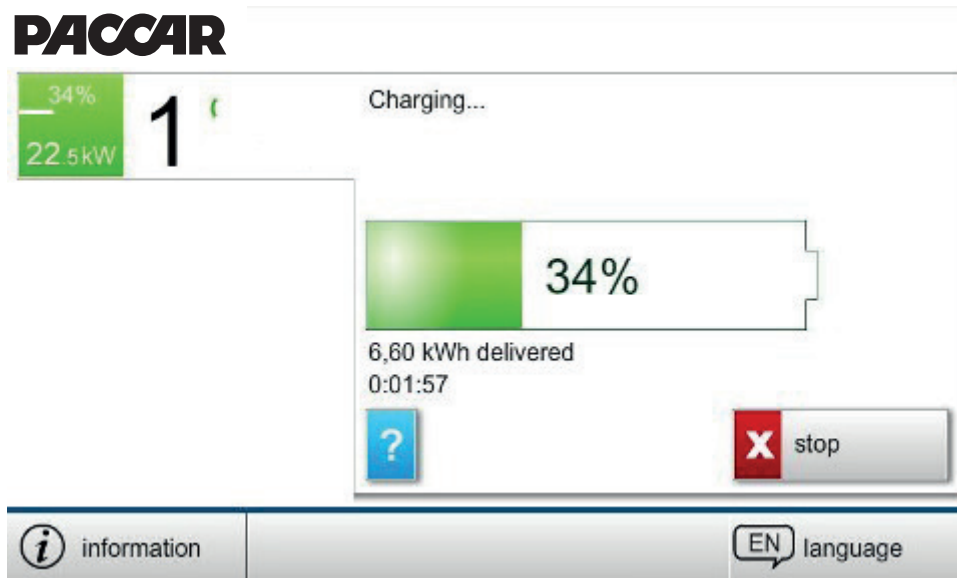
4. If applicable, authorize the charging session by PIN code or RFID card.



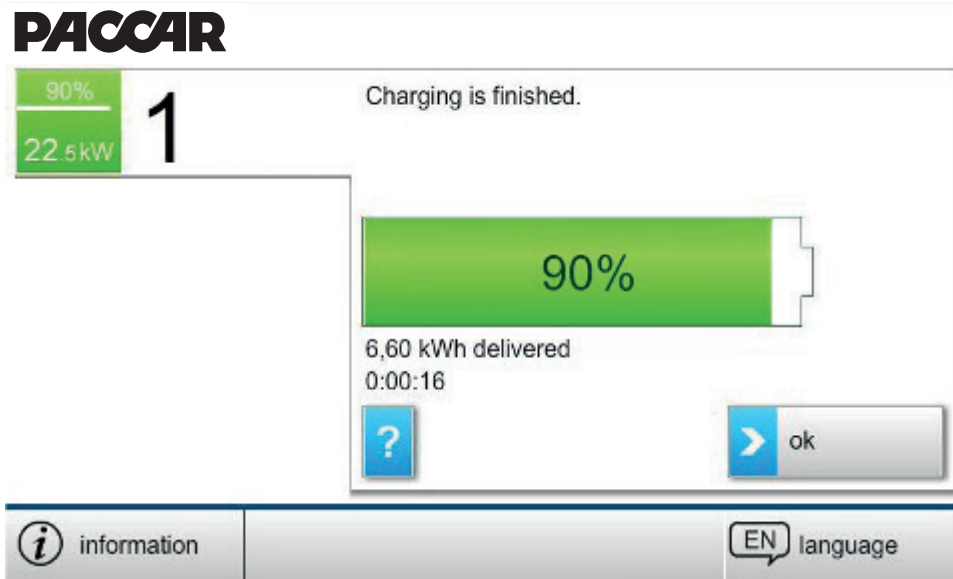
5. Wait until the preparation for charging is complete.



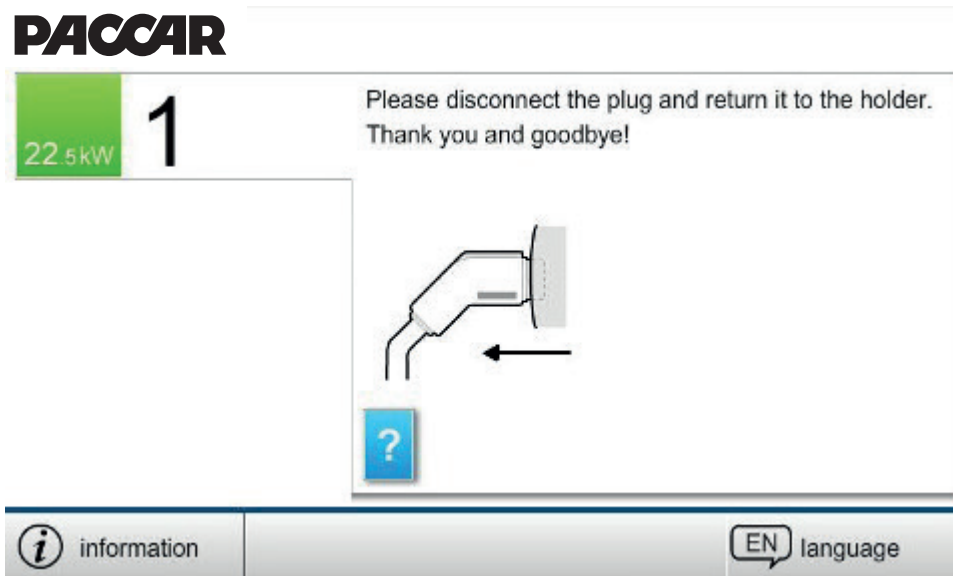
6. See the vehicle manual for manual stopping the charging session.



7. When the charge id finished, press OK on the display



8. Disconnect the plug from the vehicle and place it on the plug holder.



Stop charging:

1. Follow the instructions of the EV manual.
2. Potentially you have to authorize again to stop, using the same authentication method as was used to start. Note that for:
 - The CCS standard, the Electric Vehicle will unlock the outlet.
3. Take the connector out of the Electric Vehicle and put it back in the connector holder on the charger.



NOTICE

Locked connector

For CCS charging the EV locks the connector. If the user wants to take the connector out of the Electric Vehicle, it may be necessary to unlock all doors of the EV, or use the 'unlock charge connector button' on the Electric Vehicle key, if present.



NOTICE

Session end

Charging will stop without user interaction:

- When the EV indicates to the charger that charging is completed.
- When the maximum charge time set by the operator/ owner has been reached.

If the battery is not full, a new charge session can be started. In general, topping up the battery is slow-charging.

4. Operator Instructions

4.1 Cleaning of the PacMobile 20

Clean the DC charger once a year (during yearly maintenance) in the following way:

- Remove rough dirt by spraying with low-pressure tap water.
- Remove dirt by hand with a non-woven nylon hand pad.
- Rinse thoroughly with tap water.
- Optionally, apply wax on the front for extra protection and gloss.
- Do a check on the overall enclosure and on the frontal cover for cracks or other damages.



NOTICE

Ordinary cleaning

Keep the air inlets clean and free from snow and leaves or from any other materials.



NOTICE

Rust forming

When the charger is placed in a corrosion sensitive environment, the forming of superficial rust is possible on the welding points. This rust is merely visual, there is no risk for the enclosures integrity. The rust can be removed with the cleaning procedure described above. To prevent the rust from reappearing; prime the areas with a transparent or color-like priming finish (separate Service Instructions are available).



NOTICE

When the PacMobile 20 is exposed to rain, it is sufficient to clean it twice a year.



CAUTION

Do not apply high-pressure water jets. Water may leak into the enclosure. If a high-pressure water jet has been used, make sure that the inside of the enclosure is dry.

- Only use cleaning agents with a pH value between 6 and 8.
- Do not use cleaning agents with abrasive components.
- Do not use abrasive tools.

4.2 Service inspection of the PacMobile 20

The following points must be checked regularly:

- Internal RCM need to be tested on correct functioning on a regular basis. During the yearly maintenance visit, a check is advised, to be executed by a certified ABB technician.
- Cable and connector
 - Check for cracks or ruptures on the connector or cable, check whether no internal wires of the cable are visible.
- Display screen
 - Check for damage and cracks.
- Powder coating
 - Look for damage, cracks or ruptures.

4.2.1 Special inspections

In the following cases the PacMobile 20 must be checked by ABB service personnel before further use:

- If it was struck by lightning.
- If it is damaged due to an accident or fire.
- If its location has been flooded.

Do not power on until the charger has been inspected and approved.

4.3 Problem resolving

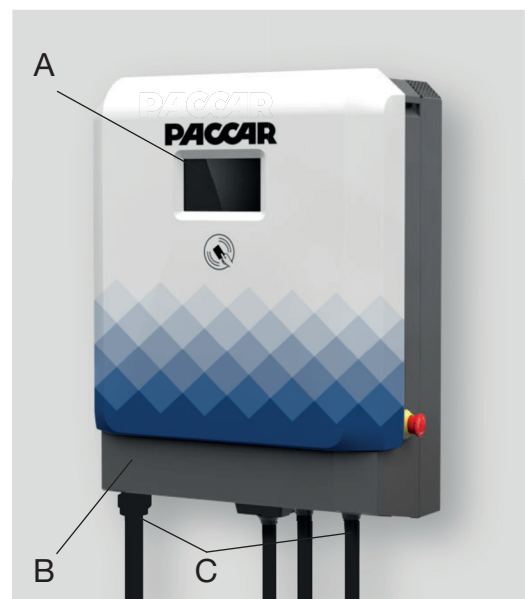
The site operator or helpdesk is the first response to a customer call. The helpdesk can remotely solve simple problems for the customer.

In special cases the site operator with knowledge of the charger can be asked by ABB Service to report about the status of some internal components of the charger. Therefore, a brief description of the position and function of these components is described on the next pages.

4.3.1 Overview of the enclosure

- A. HMI touch-screen display
- B. Bottom cover
- C. Fixing screws (2x)

The bottom cover can be opened by removing the two fixing screws (C) with a screwdriver.





WARNING

Do not open the enclosure if you are not certified to work with high voltage and high current.

LO.TO. Steps (Log Out Tag Out) commonly used by service consisting on cutting energy feed on upstream breaker, RCD and disconnect or need to be followed by any operator acting on the charger.

4.3.2 Component view open front cover

The main components as can be seen with an open front cover.

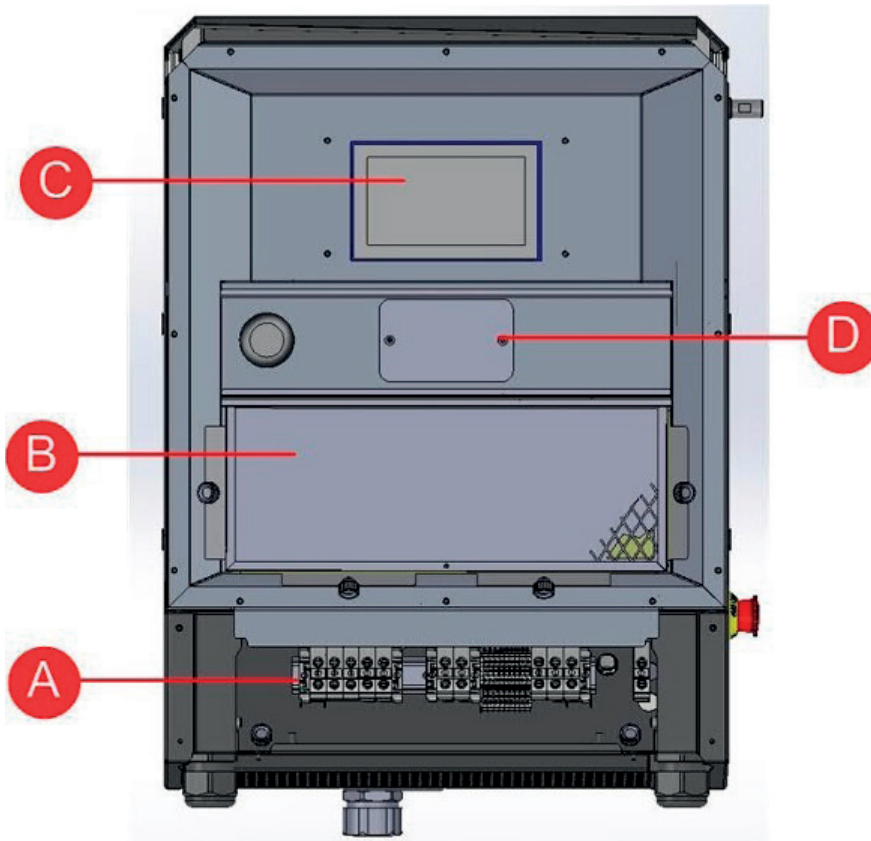


Figure 2
Charger front side component view

- A. DIN rail and contact blocks
- B. Grid
- C. HMI touch-screen unit
- D. RFID reader

4.4 Preventive maintenance

The charger must be inspected and serviced yearly by an ABB trained/ certified technician.

5. Contact information

Please contact your local ABB Service organization or Service partner for first line problem analysis and solving. In case they cannot solve the problem, they will contact the second line Service organization.

Caution: This equipment is not intended for use in residential environments and may not provide adequate protection to radio reception in such environments

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