

MULTIPOINT SYSTEM FOR WALLBOX CHARGING STATIONS

INSTALLATION MANUAL

CCL-CML



MULTIPOINT SYSTEM CCL-CML Installation manual

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1 PREFACE

THE FOLLOWING SYMBOLS ARE USED FOR IMPORTANT SAFETY INFORMATION IN THIS DOCUMENT	
	The unit must be disconnected from any power source before performing any maintenance (repairing or handling of any equipment connections).
	Do not modify the unit. If modified, CIRCONTROL will reject all responsibility and the warranty will be void.

This manual provide commissioning information for CCL-CML Circontrol Multipoint System solutions, which has been designed and tested to allow centralization of wall mounted units on a master controller.

This document has different sections where describes how to install and connect the unit to power correctly to ensure proper operation of the unit.

Certification

- Complies with IEC 61851, Electric vehicle conductive charging system (IEC 61851-1 and IEC 61851-23)
- Complies with IEC 62196, Plugs, socket-outlets, vehicle couplers and vehicle inlets - Electric vehicle. conductive charging system (IEC 62196-1 and IEC 62196-3)
- RFID complies with ISO 14443A

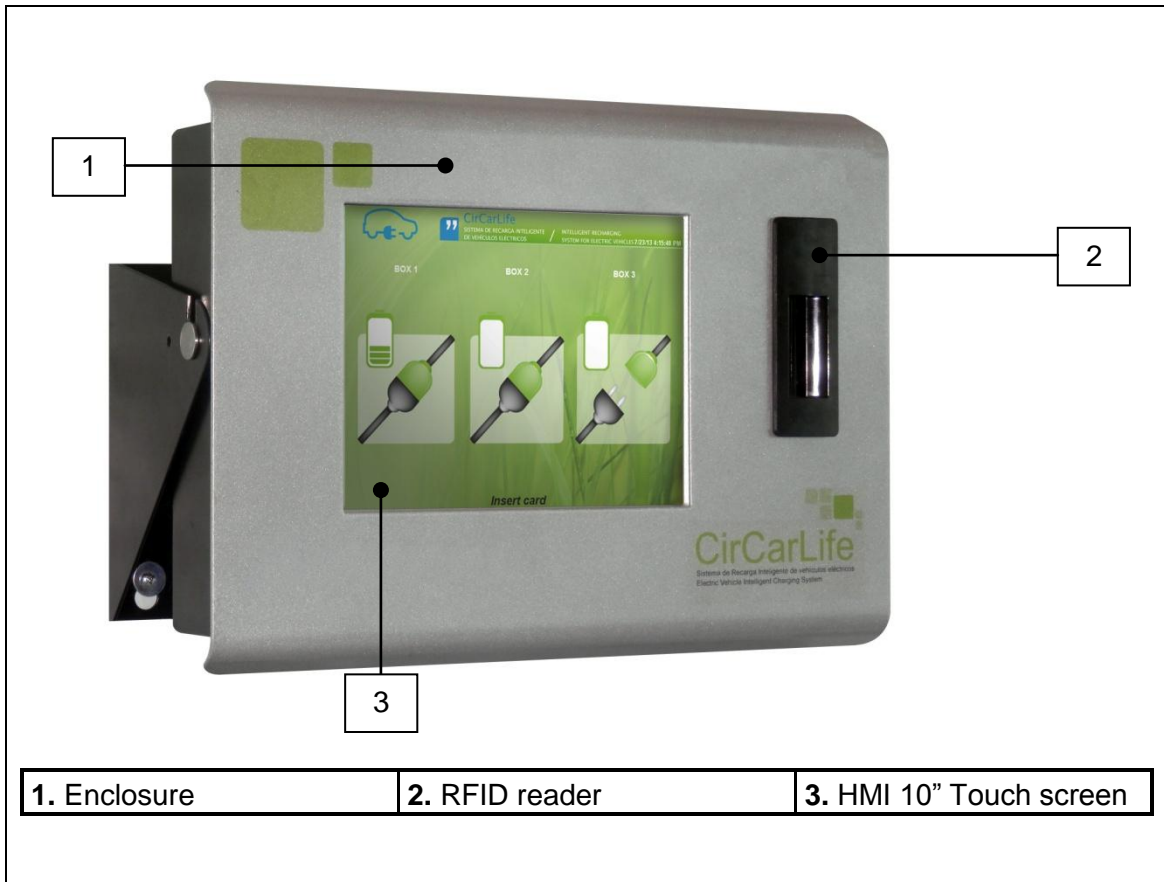
2 IMPORTANT SAFETY INSTRUCTIONS

- Read all the instructions before using and install this product.
- Do not use cables there are not in perfect conditions.
- Do not use this unit for anything other than electric vehicle charging.
- Do not modify this unit. If modified, CIRCONTROL will reject all responsibility and the warranty will be void.
- Comply strictly with current safety regulations according to your country rules.
- Do not make repairs or manipulations with the unit energised.
- Only trained and qualified personnel should have access to electrical parts inside the device.
- Replace from service any item that has a fault that could be dangerous for users (broken plugs, caps that don't close...).
- Use only Circontrol supplied spare parts.

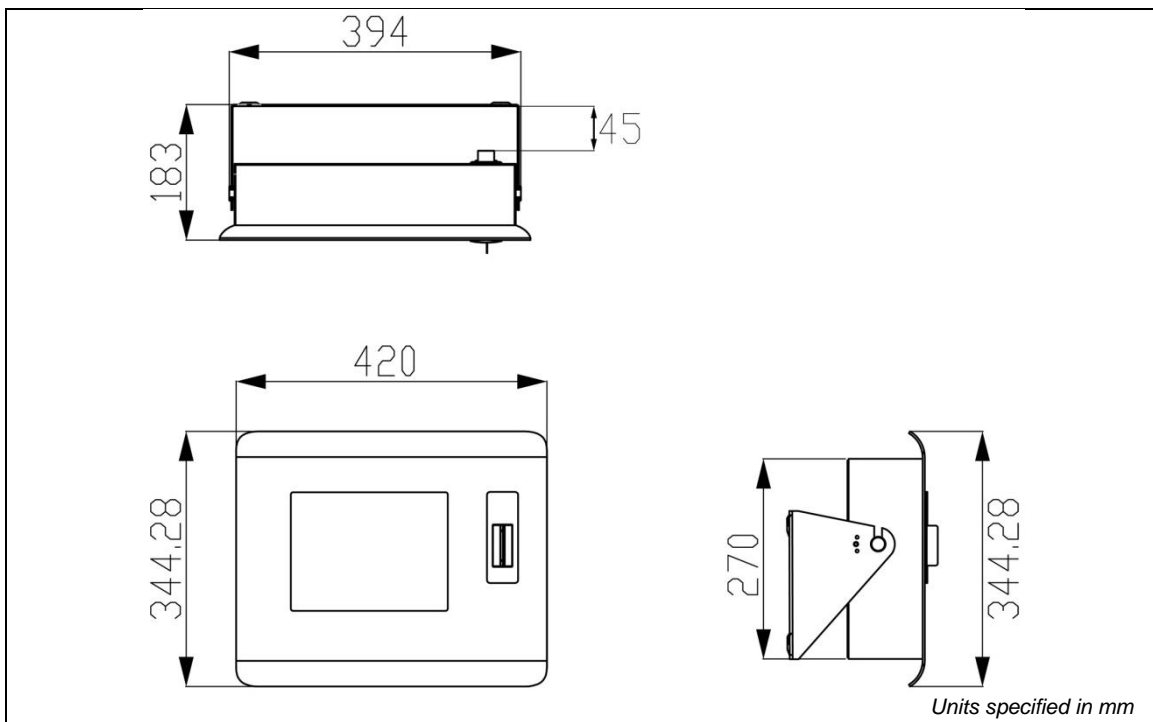


The installation company will be responsible for dimensioning the wires size, protection elements, in compliance with the current country regulations

3 PRODUCT OVERVIEW



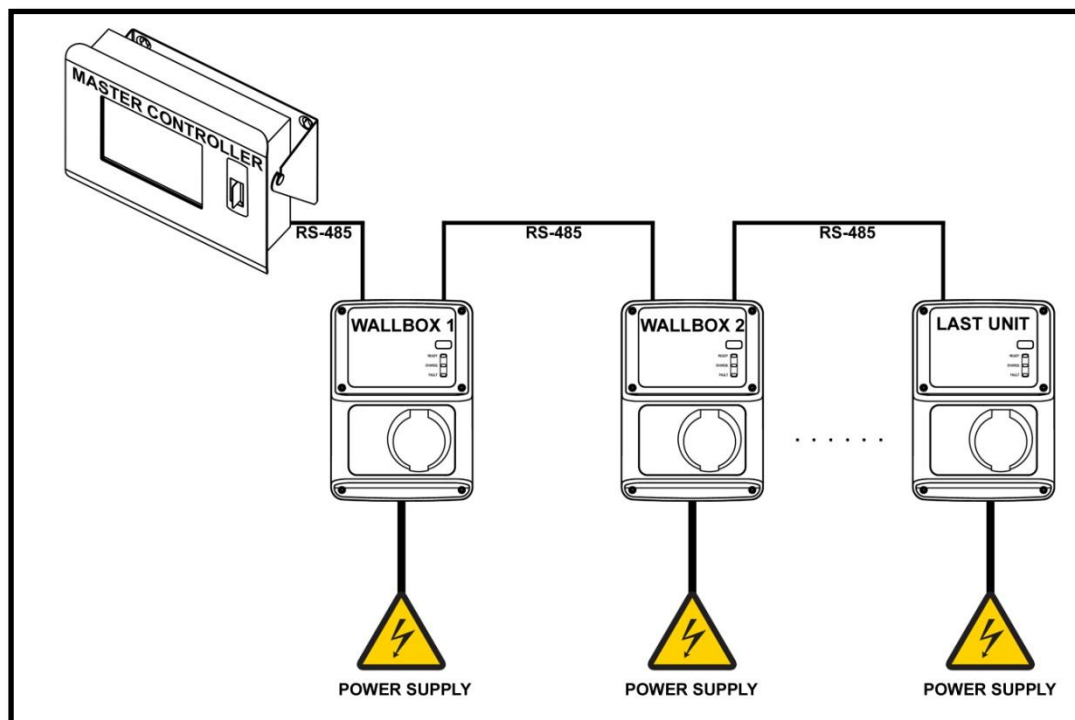
4 PRODUCT DIMENSIONS



5 ELECTRICAL INSTALLATION OVERVIEW

This section describes the overview of electrical and communications wiring between master controller and wall mount units.

Power wires and communications wires must be installed using different tubes to ensure properly communications.

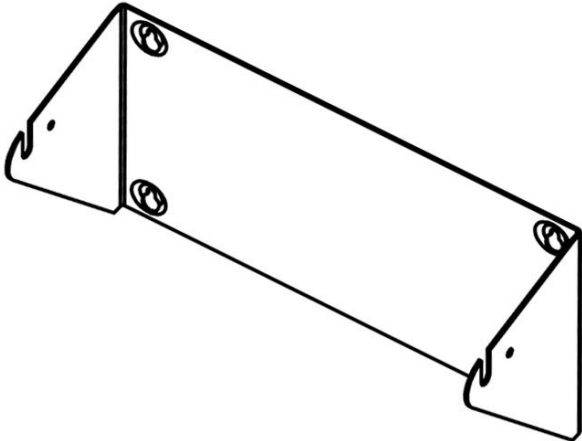
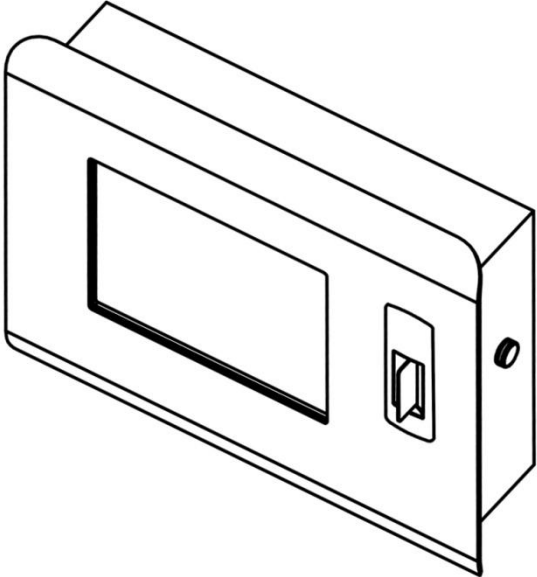



It is recommended to introduce the power cables into the bottom of each unit and RS-485 communications wires into the top of the each unit using always cable glands.

6 INSTALLATION

6.1 MATERIAL LIST

Following material is attached with the unit for installation purposes.

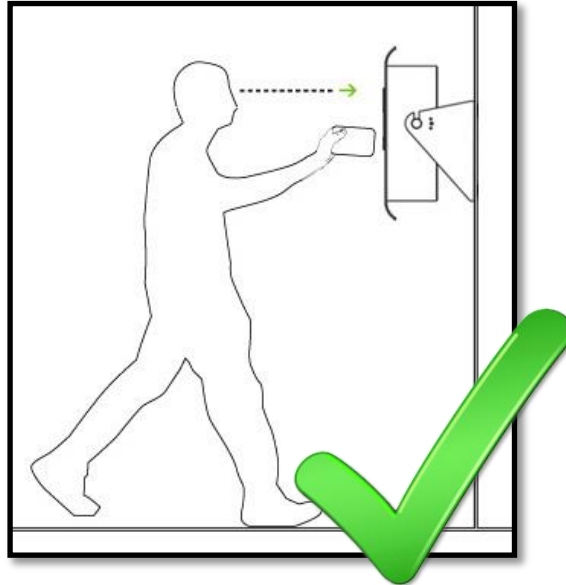
Nº	MATERIAL	QTY	PICTURE
1	Main fixing structure	1	
2	HMI housing	1	
3	M5 screws	2	

6.2 ANCHORING

Step	Actions
1	<div data-bbox="459 405 1238 840" data-label="Diagram"> </div> <ol style="list-style-type: none"> 1. Mark 4 holes taking into account the above measurements. 2. Place it on a flat surface. 3. Use 8mm screws to attach main fixing structure of the unit to the wall. 4. Check main fixing structure has no inclination using a level tool.
2	<p>Place the HMI housing into the main fixing structure as follows:</p> <div data-bbox="639 1290 1054 1960" data-label="Image"> </div>

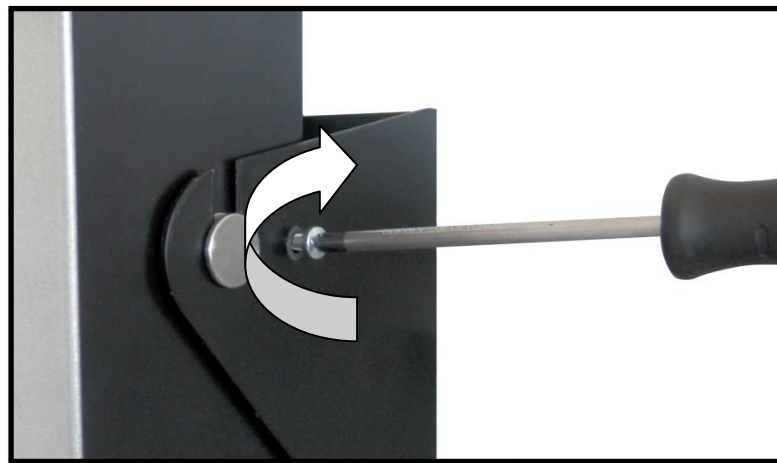
3

Multipoint unit allows tilt adjustment of the screen in different positions. **Adjust the position according to the correct vision and management for the end user.**



4

Place one screw M5 (included) on left and right side of the unit.






7 MASTER CONTROLLER CONNECTION

7.1 MATERIAL LIST

The connection of the unit has two interfaces using same connector:

- 230VAC single-phase to power the unit.
- RS-485 serial communications to connect all the charging WallBox units (up to 32 units).

Following connection kit is attached with the unit:

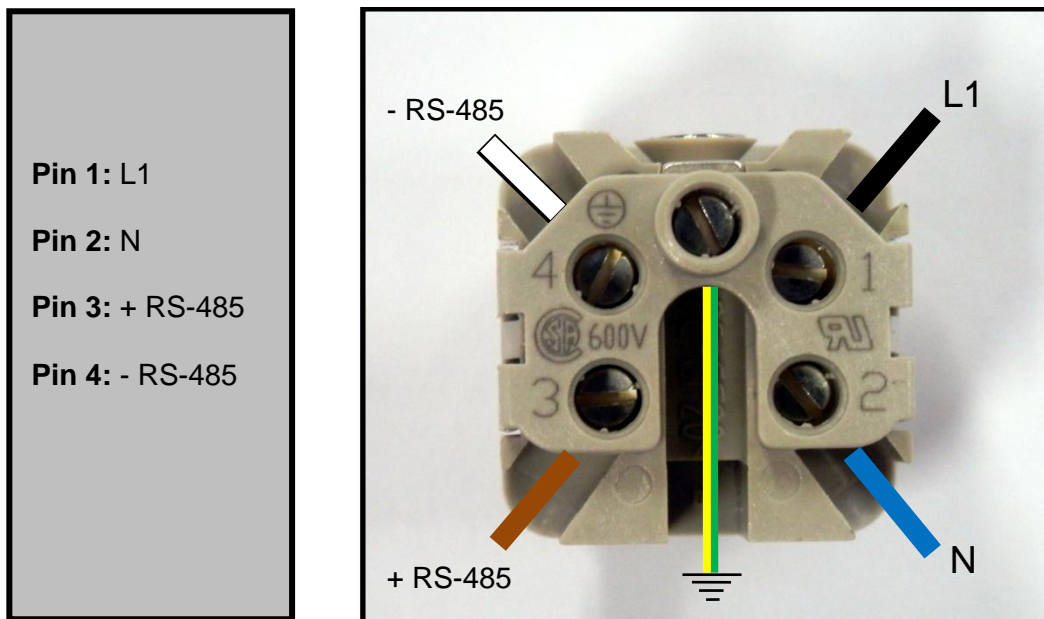
Nº	MATERIAL	QTY	PICTURE
1	Cable gland	1	
2	Plug housing	1	
3	Connector	1	

7.2 WIRING DIAGRAM

Assembly attached connection KIT and connects to the 230VAC and serial communications as showed below:



Taking into account the previous picture, insert all the wires through the cable gland first and connect all the pins from connector as follows:



NOTE: Do not forget to connect the ground cable to the ground terminal

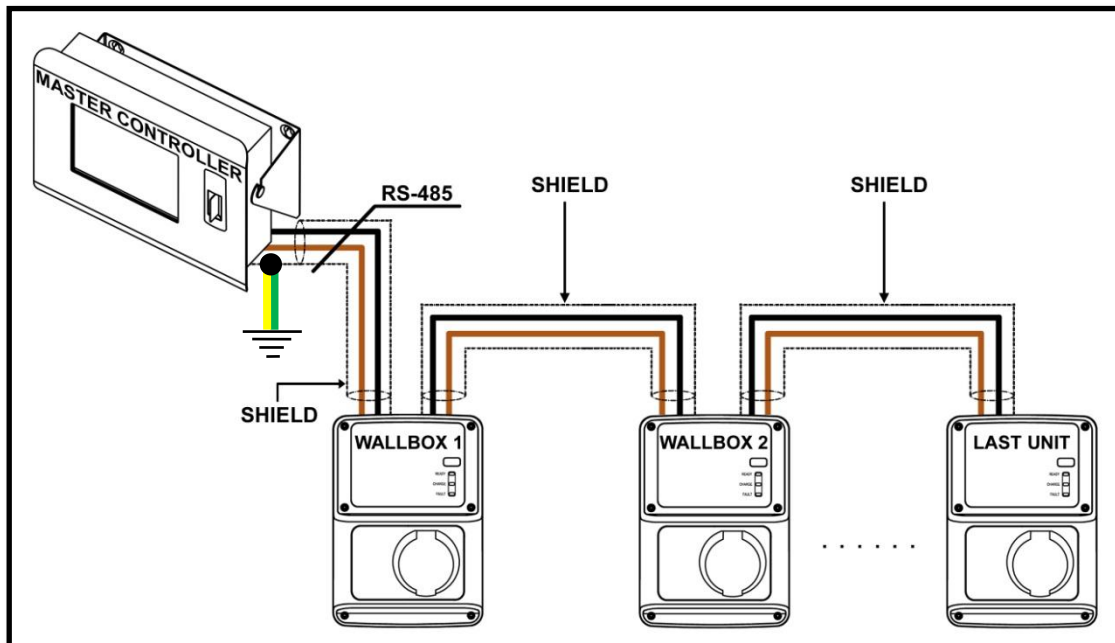
Not respecting the order of wires connection can cause irreversible damage on the equipment and the correct operation of the wall mount units.

8 RS-485 CONNECTION DETAILS

Connection between wall mount charging units and master controller is via RS-485 communication allowing up to 32 units.

8.1 MASTER CONTROLLER

Following wiring diagram shows how to connect all units properly:

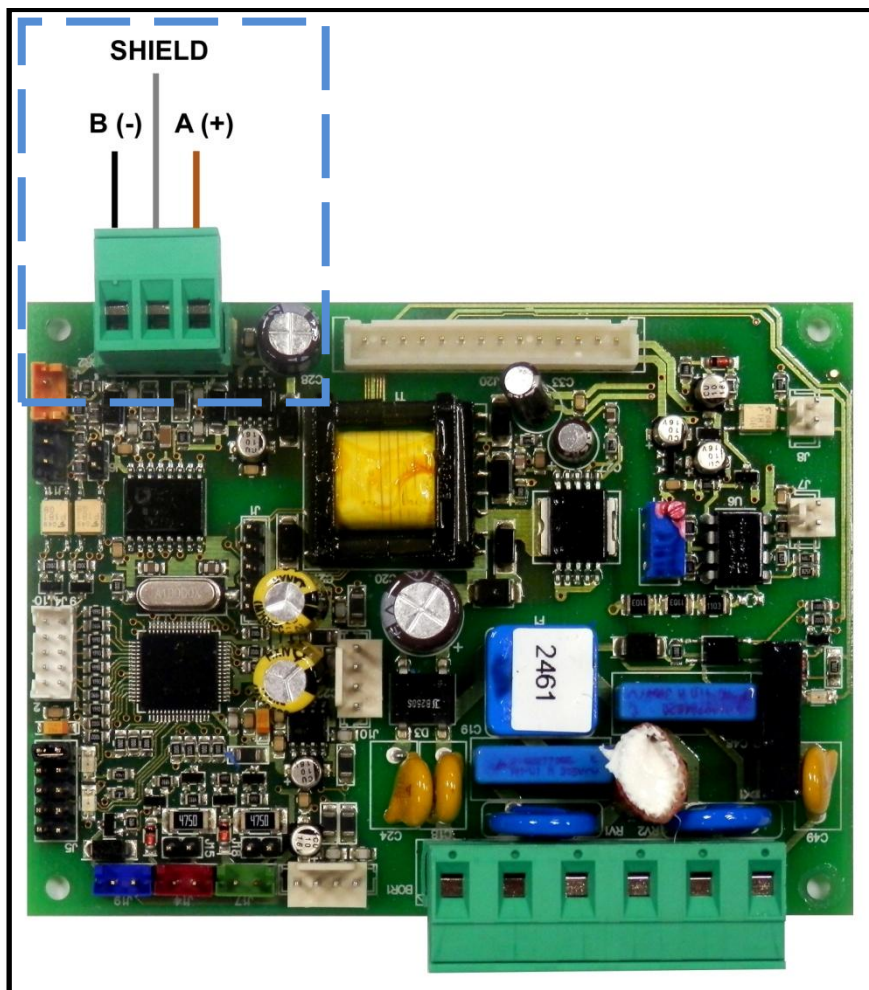


- **Respect the polarity** of the RS-485 BUS.
- RS-485 cable required: **2 wires twisted shielded communications.**
- Be sure to **connect the cable shield at each wall mount unit.**
- Maximum length at 19200bps: **1200 meters** from the master controller up the last WallBox.
- Make point to point connections between wall mount units for serial communications.
- It is recommended to **connect the RS-485 shield to ground only at the beginning of the line**, ie the Master controller connector.

8.2 WALL MOUNT UNITS

Each Wallbox has inside an X2s board allowing serial communications between charge units and master controller with a different peripheral number assigned from the factory which is identified by a label on one side of the unit.

Locate following green terminal for connection of RS-485 wires when opening each wall mount unit.

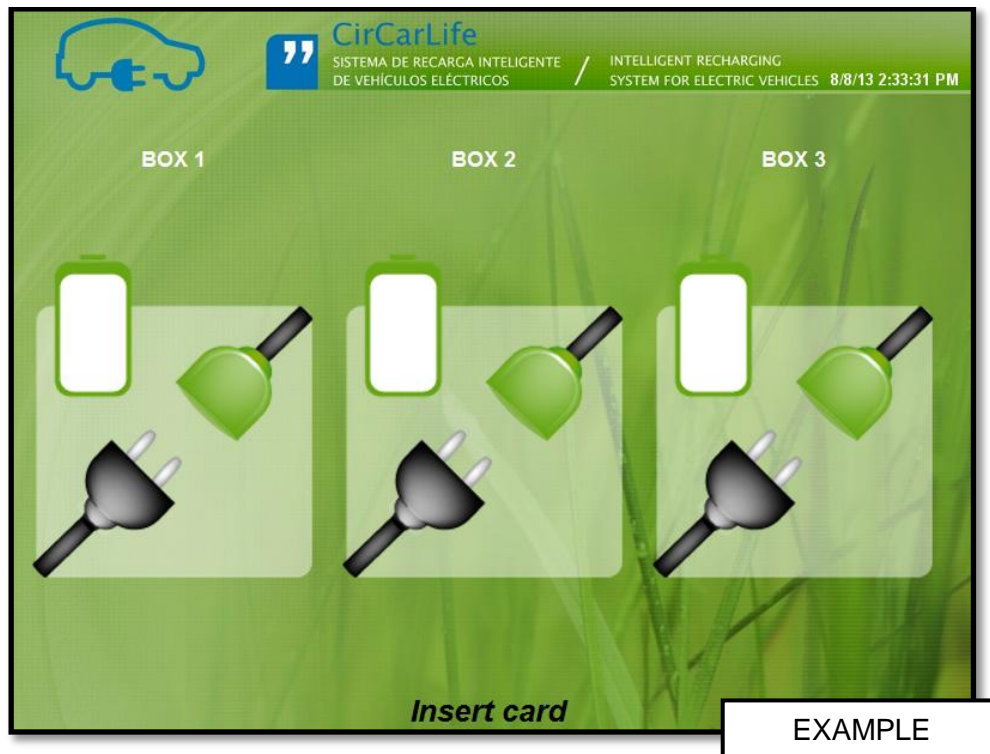


- **Respect the polarity** of the RS-485 BUS.
- Be sure to **connect the cable shield** at each wall mount unit.
- Baud rate of serial communications is set at 19200bps.

9 UNIT VERIFICATION

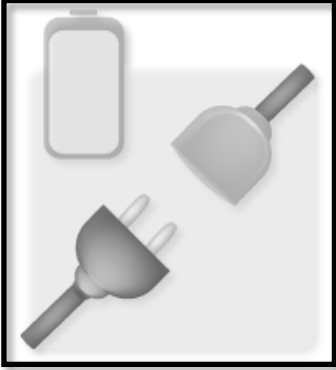


Once all installation procedure has been performed, check points below:

1. Switch ON all wall mount units and check if beacons are in green status in each unit.
2. Turn ON Master controller and wait until the system has booted. Following image shows an example of correct operation:



The process of recognition of the all wall mount units may vary more than expected depending on the number of units connected to the master controller.

Following table shows the different status that can be presented on the master controller from each wall mount unit during commissioning:

Picture	Status	Description
	<p>Communication not established or lost between master controller and Wallbox</p>	<ul style="list-style-type: none"> - Check wall mount unit is powered ON. - Check polarity of RS-485 communications inside the unit. - Check RS-485 wires.
	<p>Communication established and ready for plugging an electrical vehicle</p>	<p>Communication has been established properly between master controller and wall mount unit.</p>
	<p>Communication established and one vehicle is plugged into the Wallbox to start charging</p>	<ul style="list-style-type: none"> - Communications working properly. - One vehicle has plugged on the wall mount unit. In this status you can insert a card in the master controller to start charging.

10 TECHNICAL DATA

INPUT		AC
Input voltage		230VAC 1P+N
Nominal input power		35W
Input frequency		50/60Hz
COMMUNICATIONS		
Ethernet <i>(only for remotely monitoring)</i>		10/100/1000BaseTX
RS-485 <i>(only for communications between Wallbox and Master controller)</i>		Modbus protocol
RS-485 Maximum length		1200* meters at 19200Bps <i>*Depending on the cable used in the installation</i>
GENERAL		
Dimensions		344x420x183 mm
Weight		10 Kg
Enclosure Rating		IP20
Anchoring		4 point wall fixing
Operating temperature		"-30 to 45°C
RFID System		ISO/IEC14443A/B
RFID frequency		13,56 MHz
HMI		LCD 10" Touch screen
Interface protocol		XML command
Power limit control		Configurable from CirCarLife Scada editor software

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