circontrol

Installation Manual

Wallbox eVolve Series

WallBox eVolve Series
Installation Manual

circontrol

Here's your guide to install eVolve.

1

So, hello!

This manual provides commissioning information about CIRCONTROL Charge Points, which have been designed and tested to allow electric vehicle charging, specified in IEC 61851.

This document has different sections such as step-by-step installation procedure and technical data.

THE FOLLOWING SYMBOLS ARE USED FOR IMPORTANT SAFETY INFORMATION IN THIS DOCUMENT

ELECTRIC RISK

Take precautions to make the electrical connection inside the unit. Unit must be disconnected from any power source during commissioning.

ATTENTION!

Indicates that the damage to property can occur if appropriate precautions are not taken

- Complies with IEC 61851, Electric vehicle conductive charging system (IEC 61851-1 and IEC 61851-21-2).
- Complies with IEC 62196, Plugs, socket-outlets, vehicle couplers and vehicle inlets (IEC 62196-1 and IEC 62196-2).
- Complies with Directives: 2014/35/UE, LVD;2014/30/UE, EMC.
- Complies with *The Electrical equipment (safety) regulations 2016 guidance* and *The Electromagnetic compatibility regulations 2016 guidance*
- RFID complies with ISO/IEC 14443A/B.
- Modem 4G complies with CE/RED and *Radio Equipment Regulations 2017*.

2

IMPORTANT SAFETY INSTRUCTIONS

Read carefully all the instructions before starting in order to ensure properly installation of the Charge Point.

The Charge Point is designed to be installed both in indoor and outdoor areas. For each of the different conditions of installation, the unit must be installed safely and ensure adequate protection.

- Charge Point must not be installed in areas where potential risk of explosions are.
- Do not install the Charge Point where falling objects may damage the equipment.
- The Charge Point can be installed in locations with non-restricted access.
- The surface where the Charge Point is placed must withstand the mechanical forces.
- This unit shall not be used for any other purpose than electric vehicle charging modes as specified in IEC 61851-1:2017.
- Do not modify this unit. If modified, CIRCONTROL will reject all responsibility and the warranty will be void.
- Comply strictly with electrical safety regulations according to your country
- Do not use any adapter, except those approved by the EV manufacturer. Adapter only allowed to eVolve models with socket-outlet.
- Do not make repairs or manipulations with the unit energized.
- Only trained and qualified personnel should have access to low-voltage electrical parts inside the unit.
- Check the installation annually by qualified technician.
- Remove 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.
- Do not use this product if the enclosure or the EV connector is broken, cracked, open, or shows any other indication of damage.

Refer to TECHNICAL DATA section for more information about environmental installation conditions.

Before installation

ELECTRICAL WIRING CONSIDERATIONS

Take into consideration this section before starting wiring the connections of the Charge Point.

1 — ELECTRICAL PROTECTIONS

Charge Point may not include elements of electrical protection. If this equipment has internal electrical protections, they are installed for each socket-outlet for the protection of the user against an electrical failure, according to the international standard IEC 61851-1:2017.

The chargers equipped with Type A RCDs require an additional RCD installed upstream in order to ensure the whole installation is compliant with the standard IEC 60364-7-722. This RCD shall be of Type B or Type A with additional protection for DC leakage of 6mA (RCD-DD) according to the IEC 62955.

In order to guarantee the total protection of the users and the installation (power supply line included) in front of any electrical hazard, it is mandatory to install a main circuit breaker (MCB) and a residual current device (RCD) upstream of the charger. These electrical protections and the rest of the installation have to be aligned with the local and national rules. The selectivity of the protections has to be guaranteed at all times.

2 — POWER SUPPLY LINE DIMENSIONING

The dimensioning of the input power supply line of the Charge Point shall be checked by a qualified electrician. Note that various factors such as cable length between distribution board and Charge Point and maximum output current of the Charge Point may have influence on the selected cable.

In such cases, increasing the cable cross-section is required to adapt the temperature resistance of the power supply line.

3 — MAXIMUM OUTPUT CURRENT

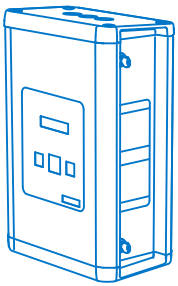
Please refer to the TECHNICAL DATA section to consult the default factory settings of maximum output current of the Charge Point.

If the power supply is less than maximum output current and adjustment to a lower nominal current needs to be performed, please refer to the USER MANUAL.

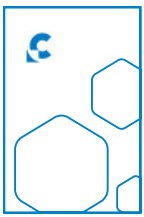
Depending on the model this value may vary.

3

What's included:

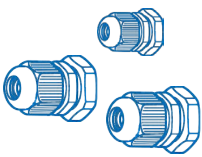


Charge Point



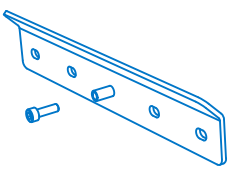
Installation Manual

CirCarLife RFID Card



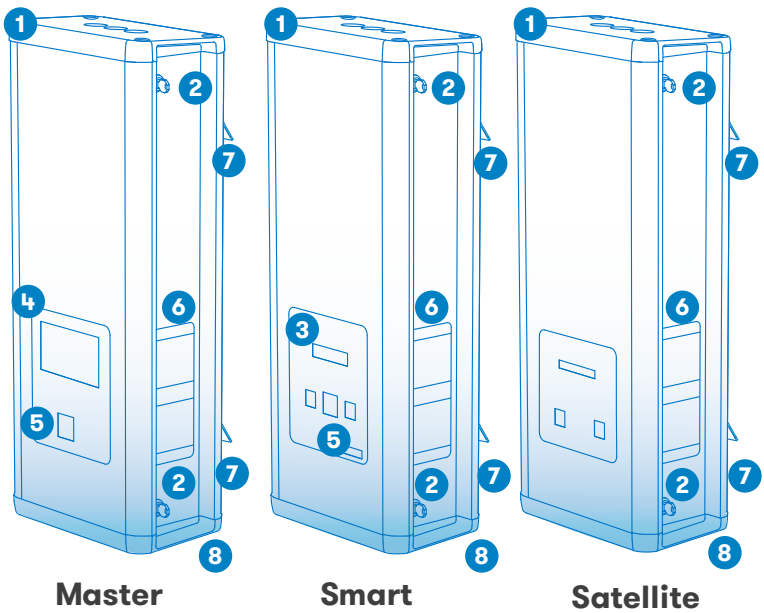
Cable Glands

eVolve Key



Installation Kit

Overview



1 — Hat

2 — Key lock access

3 — Display LCD*

4 — Touch screen 8”

5 — RFID Reader

6 — Plugs*

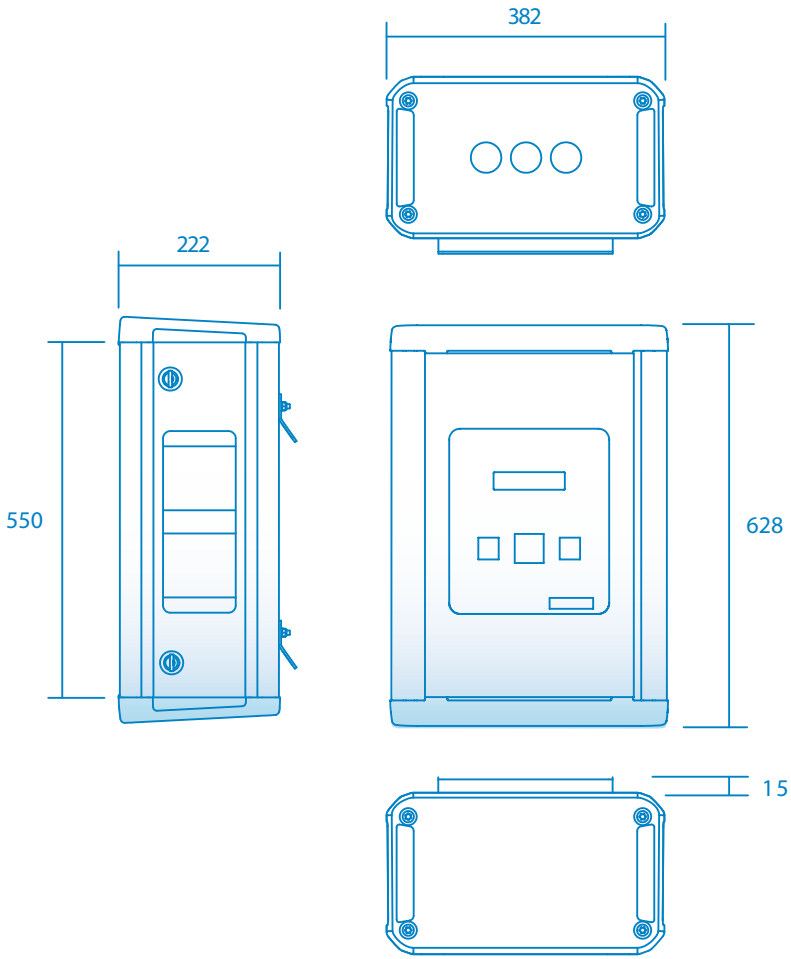
7 — Wall support

8 — Base

(*) Plugs may vary depending on the model

4

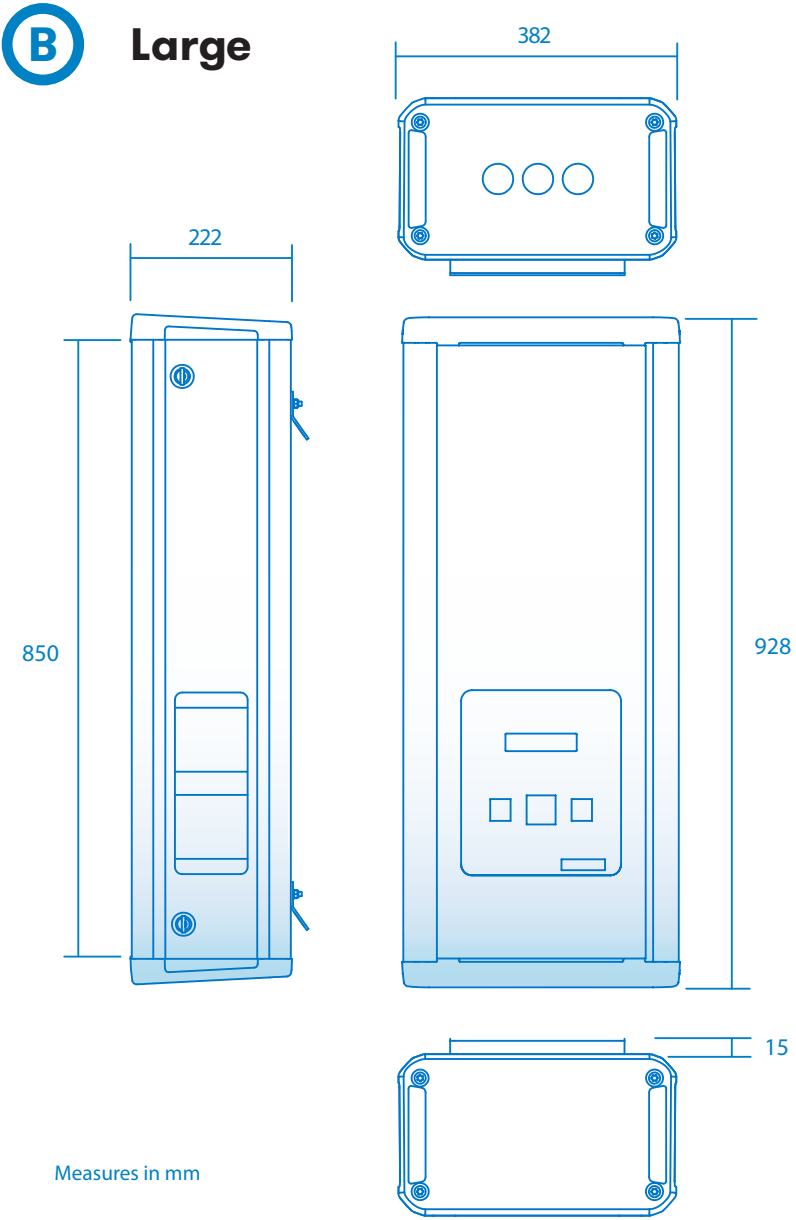
A Small



Measures in mm

Dimensions

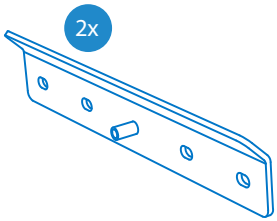
B Large



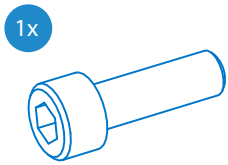
Measures in mm

5

Installation Kit:



Wall plates



Fixation Screw

- Screws and plastic anchors are NOT INCLUDED.
- The installation kit has been tested on a concrete wall. For the unit to be securely fixed in such conditions, it is recommended to use:

  8 x Inox A2 wall screws: DIN 7982 Ø4,8x38 or DIN 7981 Ø4,8x38

  8 x plastic anchors: 6x30

- If the installation surface has different properties, the screws and plastic anchors must be defined by a qualified installer.

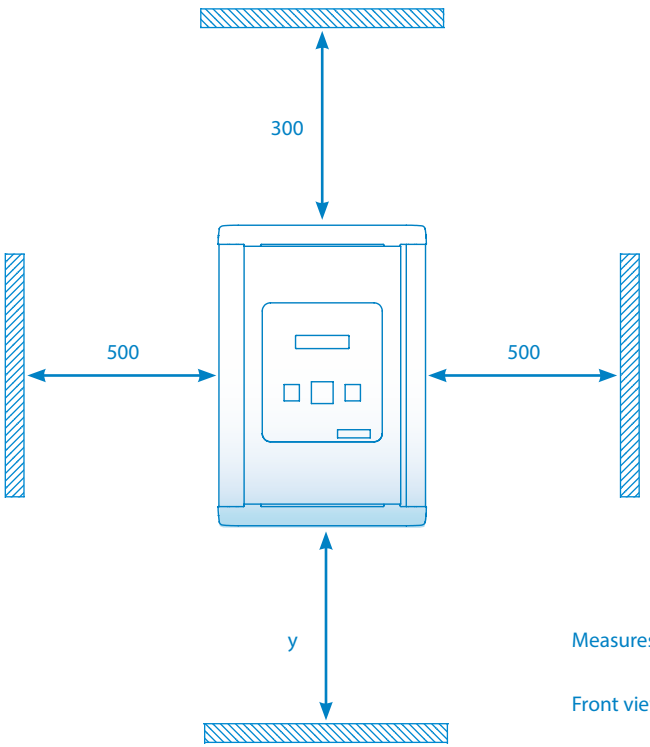
Installation

A Space requirements

When installing the unit, some space shall be reserved for usability, maintenance and safety reasons.

Please comply accordingly to your country specifications.

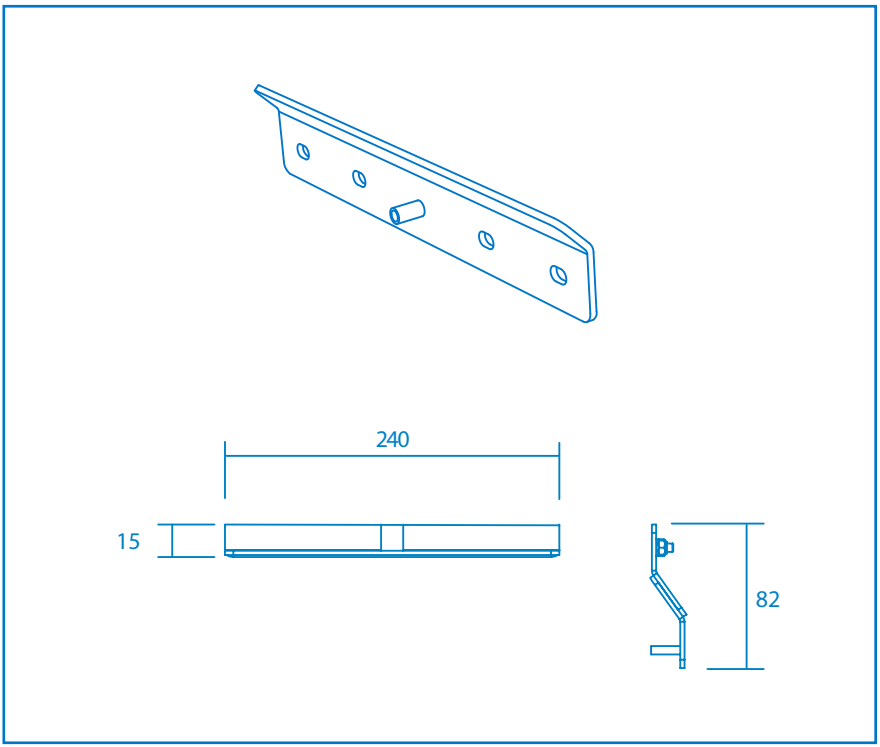
The next picture shows the minimum distances:



Measures in mm

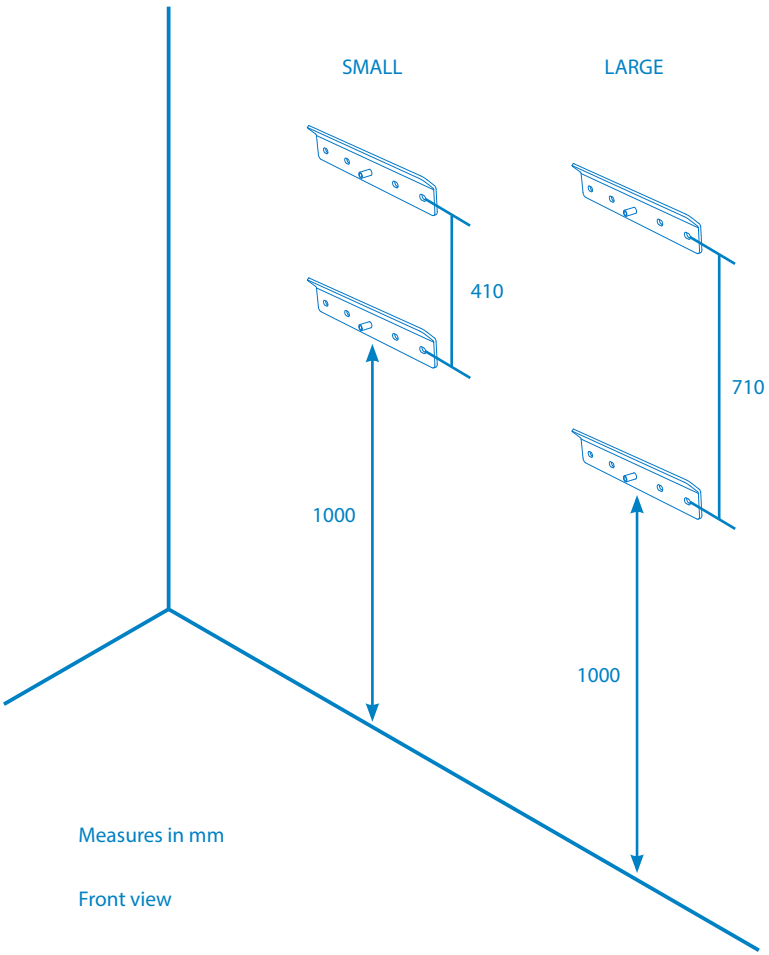
Front view

Wall plates:



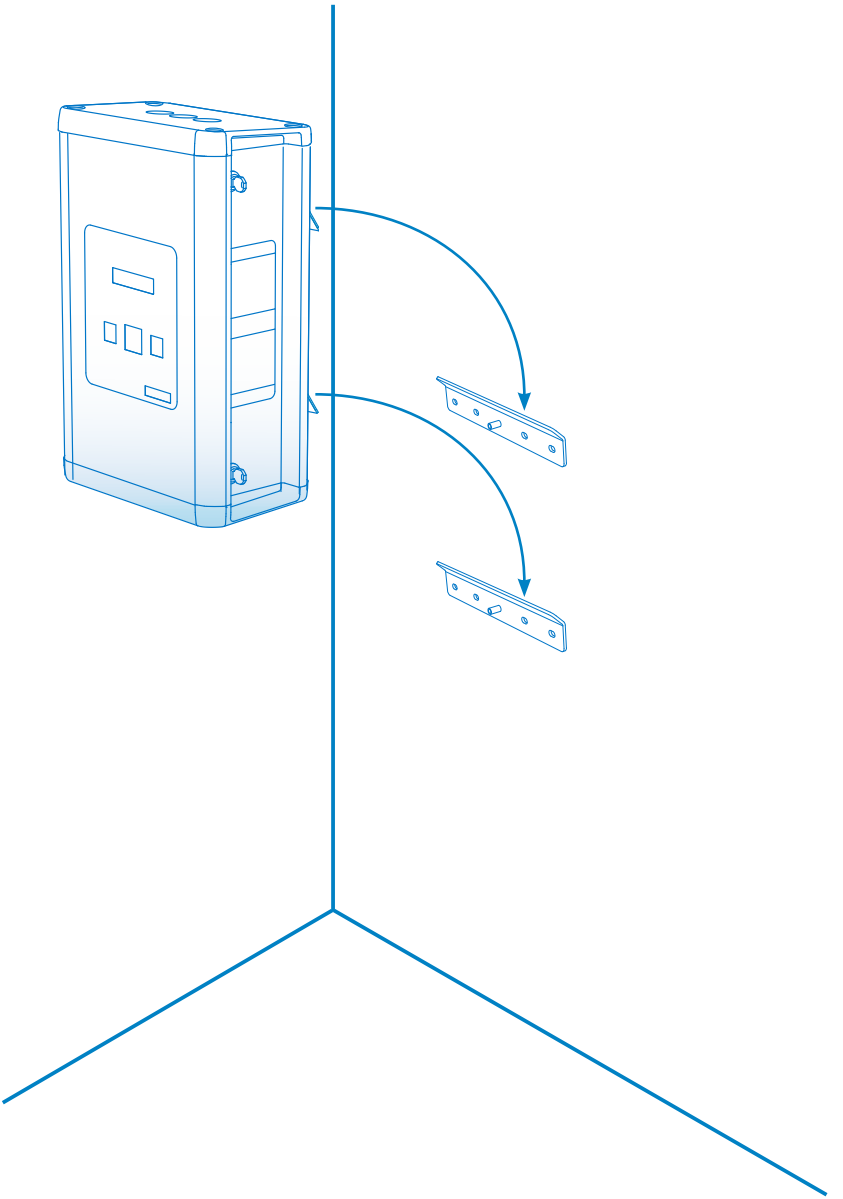
B Plates fixation

Install the plates on the wall considering the distances shown on the image below:



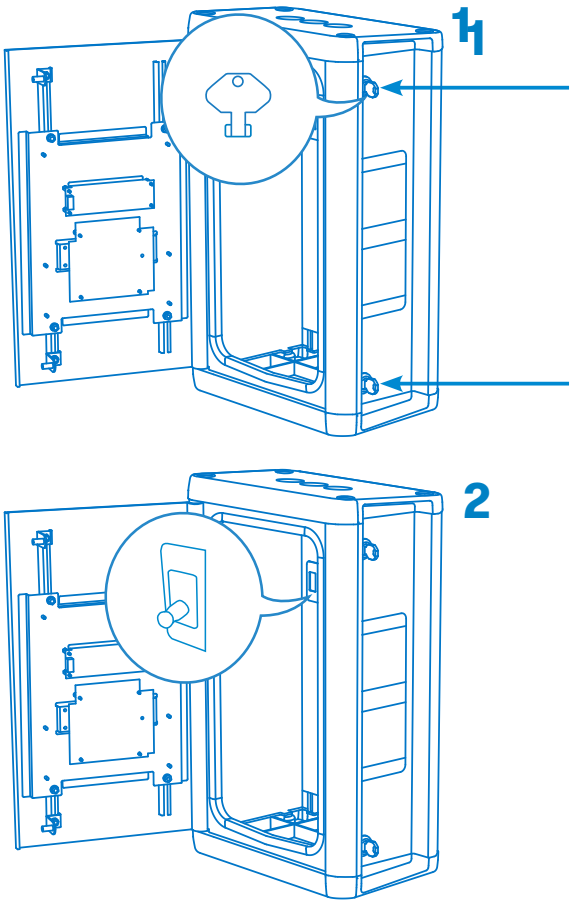
Positioning

Place the unit on the previously installed wall plates.



D Opening

1. Use provided key in order to open the unit.
2. Pull outward the Tamper switch* to operate the Charge Point.

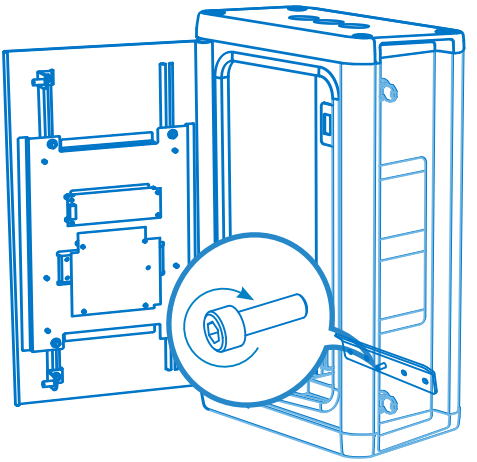


(*) Tamper Switch: The Charge Point has a security switch (anti-tamper protection) installed that will avoid any charging session if the doors are opened.
It has three positions.

1. Operative position The Charge Point is closed.
2. Error position: The Charge Point is opened without supervision.
3. Maintenance position: The Charge Point is opened under maintenance (Pulling out the tamper switch).

E Unit fixation

Tighten the provided fixation screw in order to secure the unit to the wall and make sure all components remain as by default before proceeding.



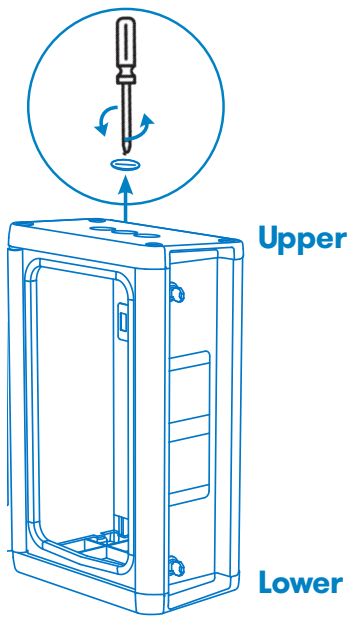
F Connections

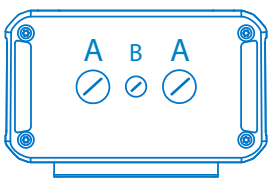
Introduce connections into the Charge Point:

1. Remove one or two of the upper or lower plugs that fit your electrical connection (A or B)*.

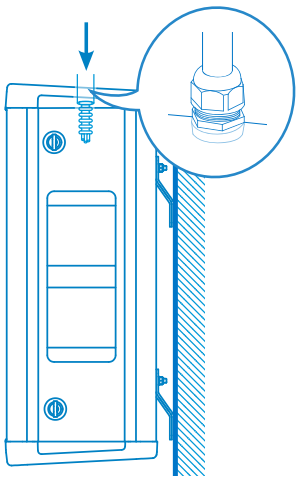
2. Put your electrical connections inside the Charge Point. Put the cable gland according to the chosen plug.
   Put your communications connection inside the Charge Point. Consult the user manual of each model for correct installation.

1





2



(*) A: M40 x 1.5

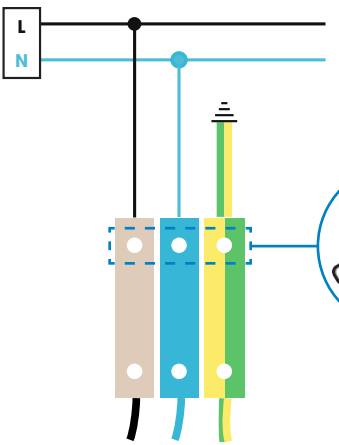
B: M20 x 1.5

Wiring

WallBox with protections included:

SINGLE-PHASE CHARGE POINT

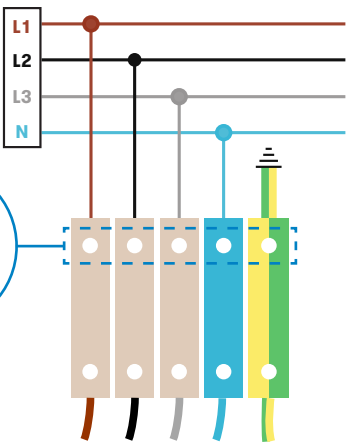
- Connect to the 230VAC.



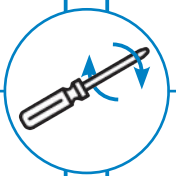
- Use provided cable glands in order to maintain the IP protection

THREE-PHASE CHARGE POINT

- Connect to the 400VAC.
- If the Power Supply is Single-Phase, connect L1 and N.



- Use provided cable glands in order to maintain the IP protection

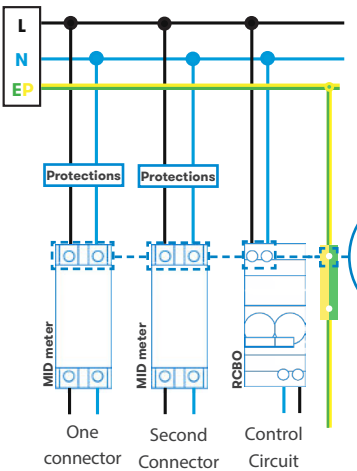


- Terminal block maximum cross-section: 35mm²
- Type of cable allowed by the terminal block: Aluminium & copper
- Do not forget to connect the ground cable to the ground terminal
- Make sure all screws are securely tightened at 4 - 5 Nm

WallBox without protections included:

SINGLE-PHASE CHARGE POINT

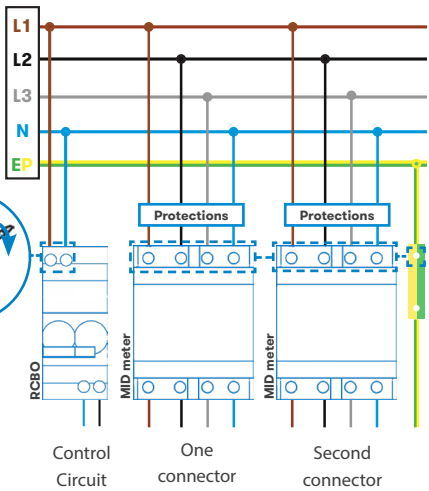
- Connect to the 230VAC.
- The regulation IEC-61851-1 ed 3 indicates each plug shall have their own protections upstream.



- Use provided cable glands in order to maintain the IP protection

THREE-PHASE CHARGE POINT

- Connect to the 400VAC.
- The regulation IEC-61851-1 ed 3 indicates each plug shall have their own protections upstream.



- Use provided cable glands in order to maintain the IP protection

Terminal block maximum cross-section: 35mm²

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

Make sure all screws are securely tightened at 4 - 5 Nm

Note: The proper earthing system must be TT or TN-S. The ground loop impedance measurement for the entire installation must be less than 80 ohms; however, it could be even less if required by national regulations. At least once a year it is recommended to carry out the verification of the installation grounding by qualified personnel when the terrain is drier.

Verification

1 — POWER INPUT

Before proceeding, make sure voltage is present in the terminal blocks.

For Three-Phase models pay special attention to Neutral Cable.

2 — MAINTENANCE MODE

Pull outward the Tamper Switch located in the lower half of the Charge Point.

3 — CAREFUL WITH THE WIRES

Before closing the unit, keep in mind all cables should remain inside.

4 — CHECK THE PLUGS

Plugs should be in good conditions before starting the unit.

5 — ELECTRICAL PROTECTIONS

If the unit includes electrical protections, rearm all of them.

6 — CHECK THE BEACON INDICATORS

All beacon indicators should light properly. Here's the reference:

CHARGE POINT STATE	BEACON COLOR
Available	Green
Charging	Blue
Fault	Red

7 — OPERATION

Check no abnormal noise appears while the unit is charging.

8 — PREVENTIVE MAINTENANCE

It is recommended to perform one preventive maintenance per year.

6

DATA	GENERAL SPECIFICATIONS	
MECHANICAL	Light beacon	RGB Colour indicator
	Enclosure rating	IP54 / IK10
	Enclosure material	Aluminium & ABS
	Enclosure door	Frontal key locked door
	Net weight	Small: 25 kg
		Large: 30 kg
	Dimensions (W x H x D)	Small: 222 x 382 x 628 mm
		Large: 222 x 382 x 928 mm
	Cable (optional)	Type 1; Type 2
ELECTRICAL	Power supply	1P+N+PE / 3P+N+PE
	Input voltage	230VAC+/-10% / 400VAC+/-10%
	Frequency	50Hz / 60Hz
ENVIRONMENTAL CONDITIONS	Operating temperature	-5ºC to +45ºC
	Operating temperature with Low Temperature Kit*	-25ºC to +50ºC
	Operating humidity	5% to 95% Non-condensing
PROTECTIONS	Overcurrent protection	Miniature Circuit Breaker (MCB) IEC 60898-1 (Curve C)
	Overvoltage protection	RCD Type A (30mA) + 6mA DC / Type B (optional)
	Surge protection (optional)	Transient surge protector IEC 61643-1 (Class II)

*Equipment to be installed outdoor shall be provided with the Low Temperature Kit in order to comply with the IEC 61851-1:2017

Protections may not be included in the Charge Point, at this point, protections with the same characteristics, shall be placed upstream. The national regulations shall be taken into account.

WallBox eVolve Small: enclosure without protections included
WallBox eVolve Large: enclosure with protections included

Technical Data

GENERAL DATA		SERIES
Display	LCD Multi-language	M S L
	Touch screen 8"	M S L
RFID reader	ISO / IEC 14443A/B MIFARE Classic/Desfire EV1 ISO 18092 / ECMA-340 NFC 13.56MHz	M S L
Meter	MID Class 1 - EN50470-3	M S L
Ethernet	10/100BaseTX (TCP-IP)	M S L
Cellular	Modem 3G / GPRS / GSM	M S L
	Modem 4G LTE/WiFi Hotspot/GRPS/GSM	M S L
Interface protocol	OCPP 1.5 / OCPP 1.6J	M S L
Charging mode	Mode 3	M S L

MODEL*	CONNECTORS	OUTPUT CURRENT	OUTPUT POWER	MINIMUM CABLE CROSS-SECTION**	MODELS
S	2 x Type 2 Socket	2 x 32A	2 x 7,4kW	25mm²	M S L
S-one	Type 2 Socket	32A	7,4kW	10mm²	M S L
T	2 x Type 2 Socket	2 x 32A	2 x 22kW	25mm²	M S L
T-one	Type 2 Socke	32A	22kW	10mm²	M S L
TM4	Type 2 Socket / CEE 7/3 Type 2 Socket / CEE 7/3	32A / 16A 32A / 16A	22kW / 3,6kW 22kW / 3,6kW	25mm²	M S L

M Master S Smart L Satellite

(*) Please check availability with your local supplier.

(**) This is the recommended cable cross section recommended for the maximum AC input current. The final cross section must be calculated by a qualified technician taking into account the specific conditions of installation.

7

Need help?

In case of any query or if further information is required, please contact our Post-Sales Department.

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CIRCONTROL
WALLBOX eVOLVE SERIES
INSTALLATION MANUAL

A comprehensive guide on
how to install and verify
your charge point.

v4.0 - May 2023.

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