Possible uses for the ZCS Azzurro Wallbox

Contents

1. Revisions 4
2. Purpose of this document 4
3. Choosing a wallbox based on the installation and the vehicle 4
4. Possible functions and uses of wallboxes 6
   - 4.1. Dynamic charging power balancing (BIL) 6
   - 4.2. Charging using photovoltaic (PV) power only 7
   - 4.3. Charging using surplus power only (EXC) 7
   - 4.4. Automatic switch from three-phase to single-phase (3PH->1PH) 8
   - 4.5. Charging authorisation via RFID card (RFID) 9
   - 4.6. Metering of kWh charged by various users (KWH) 9
   - 4.7. System monitoring via app or portals (MONIT) 9
   - 4.8. Payment systems for public use (POS) 9
5. Possible installation scenarios and available functions 11
   - 5.1. Single wallbox installed in systems without existing photovoltaic inverters or storage units 11
     - 5.1.1. Direct installation without accessories 11
     - 5.1.2. Installation with a meter or CT 13
   - 5.2. Multiple wallboxes installed in systems without existing photovoltaic inverters or storage units 15
     - 5.2.1. Direct installation without accessories 15
     - 5.2.2. Installation with Azzurro HUB 17
     - 5.2.3. Installation with Load Balance Controller (LBC) 19
   - 5.3. Single Wallbox installed in systems with existing non-ZCS photovoltaic inverters 20

Zucchetti Centro Sistemi S.p.A. – Green Innovation Division
Palazzo dell'Innovazione - Via Lungarno, 167
52028 Terranuova Bracciolini - Arezzo, Italy
VAT No. 01262190513 – Tax Code 03225010481 SDI Unique Code SUBM70N
Tel. +39 055 91971 - Fax. +39 055 9197515
innovation@zcscompany.com - zcs@pec.it - **zcsazzurro.com**

PILE Registration No. IT12110P00002965 – Share Capital €100,000.00 fully paid up
AR Business Register No. 03225010481 – REA AR – 94189
Certified Company
ISO 9001 – Certificate No. 9151 – CNS0 – IT-17778
ISO 14001 – Certificate No. 1425 – CNSQ – IT-134812
EPD Italy – Certificates available at epditaly.it

Identification: GID-GE-MD-01
Rev. 04 dated 19 June 24 – Application:

5.3.1. Direct installation without accessories 20
5.3.2. Installation with a meter or CT 22
5.3.3. Installation with Azzurro HUB 24
5.4. Multiple Wallboxes installed in systems with existing non-ZCS photovoltaic inverters 26
5.4.1. Direct installation without accessories 26
5.4.2. Installation with Azzurro HUB 27
5.4.3. Installation with Load Balance Controller (LBC) 28
5.5. Single Wallbox installed in systems with existing non-ZCS storage systems 29
5.5.1. Direct installation without accessories 29
5.5.2. Installation with a meter or CT 31
5.6. Multiple wallboxes installed in systems with existing non-ZCS storage systems 33
5.6.1. Direct installation without accessories 33
5.6.2. Installation with a Load Balance Controller (LBC) 34
5.7. Single Wallbox installed in systems with existing ZCS photovoltaic inverters 35
5.7.1. Direct installation without accessories 35
5.7.2. Installation with a meter or CT 37
5.7.3. Installation with Azzurro HUB 39
5.8. Multiple Wallboxes installed in systems with existing ZCS photovoltaic inverters 41
5.8.1. Direct installation without accessories 41
5.8.2. Installation with Azzurro HUB 42
5.8.3. Installation with Load Balance Controller (LBC) 43
5.9. Single Wallbox installed in systems with existing ZCS storage systems 44
5.9.1. Direct installation without accessories 44
5.9.2. Installation with Azzurro HUB 46
5.10. Multiple wallboxes installed in systems with existing ZCS storage systems 48
5.10.1. Direct installation without accessories 48
5.10.2. Installation with Azzurro HUB 49
6. Accessibility and configuration of wallboxes 51
6.1. Local and remote access channels to wallboxes 51

6.1.1. Local connection via Wi-Fi Access Point (AP) 52
6.1.2. Local connection via Bluetooth 54
6.2. Configuration procedures 55
6.2.1. Configuration via the EVChargo app 55
6.2.2. Configuration via AP for communication with Azzurro HUB 61
6.2.3. Configuration via AP for communication with third-party portals 64
6.2.4. Updating via the AP 66

1. Revisions

Rev.	*Date*	*Author*	*Changes*
00	13 October 2025	F. Mastronardi M. Puddu	First issue of ZCS

2. Purpose of this document

The purpose of this document is to list the possible uses of ZCS Azzurro wallboxes in various scenarios. The document outlines the connection diagrams and possible functions in each scenario and, in the final section, sets out all the procedures required for the complete configuration of the wallboxes and the system.
This document applies to all wallbox models in the **CARO** and **MOBOX** series; the older **VITA** and **CORE** series, as well as the **60/120 kW** charging stations, are excluded from this document.

3. Choosing a wallbox based on the electrical installation and the vehicle

The choice of wallbox must take into account the type of power supply available, the power available for charging and the characteristics of the vehicle's on-board charger. The wallbox's rated power represents its maximum limit, not the power that the vehicle will necessarily draw during every charging session. The actual power drawn also depends on the station's settings and the vehicle's AC charging capabilities.

Guidance table for selection
The following guidelines refer to a single wallbox. For examples of contracted power, it is initially assumed that there is no contribution from photovoltaic panels or storage systems. The rows relating to three-phase charging assume a vehicle that is actually capable of using it.

Available installation	Wallbox to consider	Selection criteria
Single-phase with a contracted power of 3–4.5 kW	7 kW single-phase, with limited power	Set up charging within the available power limit, taking other power consumption into account. Dynamic load balancing is recommended. The wallbox's rated power will not be fully utilised when powered solely by the mains supply.
Single-phase with a contracted power of 6 kW	7 kW single-phase	This is the standard choice for this power supply. Adjust the charging power according to other loads. An 11 kW three-phase wallbox does not automatically offer an advantage and must not be powered by a single-phase supply unless this configuration is specified by the manufacturer.

Three-phase with a contracted power of 6 kW	11 kW three-phase, with limited power	Recommended if the vehicle supports three-phase charging, even if it does not reach the nominal 11 kW. Check the availability on each phase and the minimum power required for charging: approximately 4.1 kW in total when all three phases are in use. If there is insufficient residual power, charging may be suspended.
Three-phase with a contracted power of 10 kW	11 kW three-phase	Allows power consumption to be distributed across the three phases, provided the vehicle supports this. Set a limit compatible with the residual power available after other loads have been taken into account. A 22 kW capacity should be considered primarily for specific requirements or future expansion.
Three-phase with a contracted power of 15 kW	11 kW three-phase; 22 kW three-phase for specific requirements	Opt for the 11 kW option where it meets the vehicle's capabilities and the required charging times. Consider the 22 kW option if the vehicle accepts AC power exceeding 11 kW and the system can actually supply that power, or in anticipation of future expansions.
Three-phase with a contracted power of 22 kW or more	11 or 22 kW three-phase	Choose based on the AC power accepted by the vehicle and the duration of the stop. To utilise approximately 22 kW, 32 A must be available on each phase, along with a suitable power supply line and a compatible vehicle. The power supply must also be sufficient to cover other simultaneous loads.
Single-phase with photovoltaic and/or storage	7 kW single-phase, with compatible energy management and metering equipment	Assess the usable power from the grid and the actual contribution from the solar panels and battery storage, net of consumption. Configure your desired charging strategy without exceeding the limits of the wallbox and the supply line.
Three-phase with solar PV and/or battery storage	11 or 22 kW three-phase, with compatible energy management and metering equipment	Make your choice taking into account the vehicle's capacity, the total available power and the power available on each phase. For charging using photovoltaic power only, also check that the surplus is sufficient to meet the minimum charging power requirement.

4. Possible functions and uses of wallboxes

The possible functions related to charging can be summarised, depending on the user's requirements, as listed and explained below.

4.1. Dynamic charging power balancing (BIL)

The basic function required in most installations is dynamic charging power balancing (BIL). In the majority of residential or commercial installations, the customer has a contract that limits the power that can be drawn from the meter to the value $\mathbf{P_{contr}}$. It is therefore necessary to automatically prevent the wallbox, whilst charging the vehicle, from drawing enough power to trigger the meter's overload protection. The following relationship must therefore always hold:

$$P_{ass} < P_{contr}$$

Depending on the system configuration, $\mathbf{P_{ass}}$ (power drawn from the grid) may be:

$P_{ass} = P_{load} + P_{car}$ when there is no photovoltaic generation

$P_{ass} = P_{load} + P_{car} - P_{PV}$ when there is a photovoltaic system or a hybrid system generating power

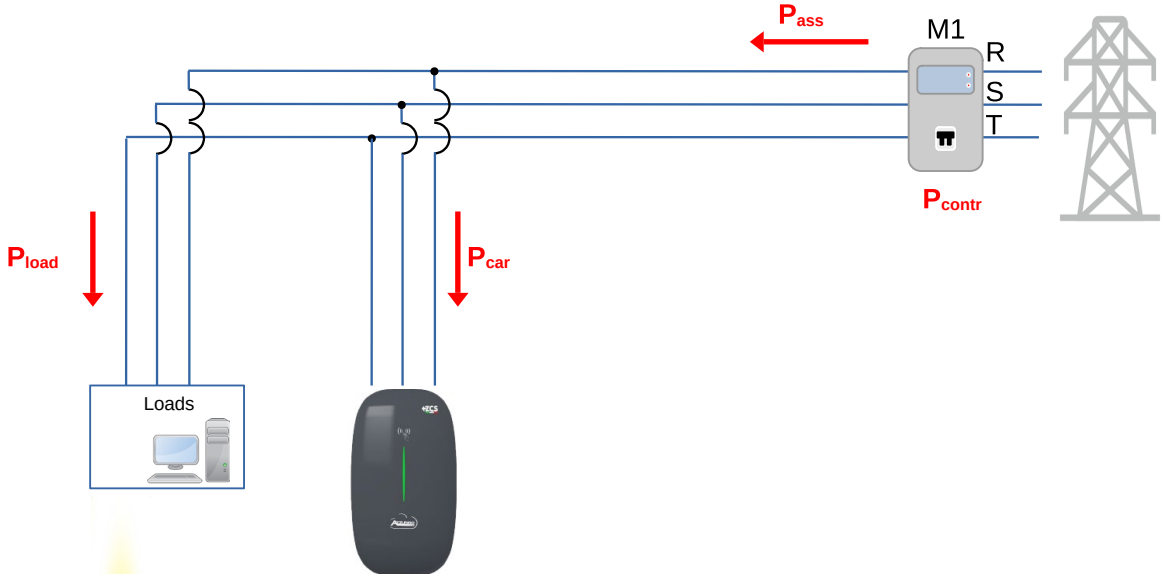


Figure1– Power drawn without photovoltaic generation

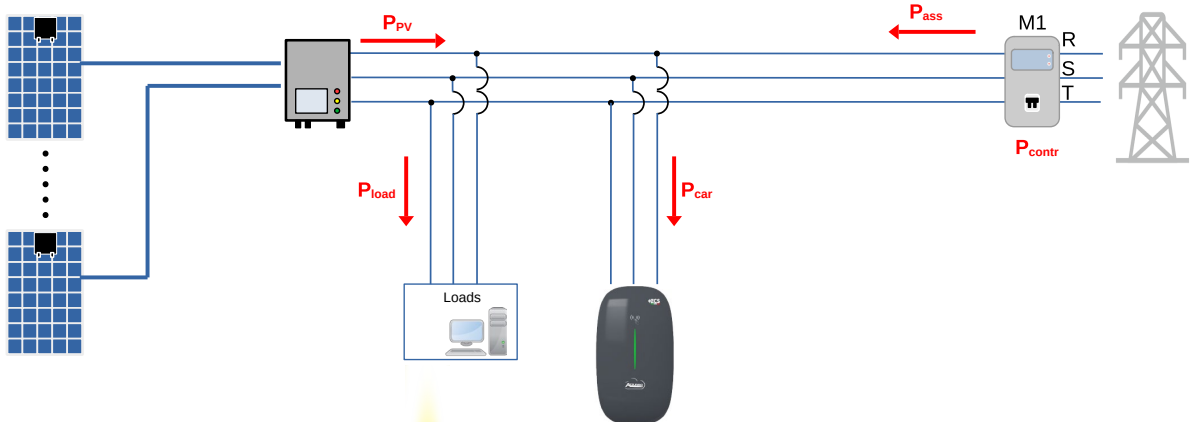


Figure2 – Power drawn with photovoltaic generation

4.2. Charging using photovoltaic (PV) power only

One possible – and sometimes required – function is to charge the vehicle using only photovoltaic (PV) power. This function should not be confused with charging using surplus power, which is explained in the section '4.3 '; rather, it simply achieves the following equality (see Figure2photovoltaic system 2):

$$P_{car} = P_{PV}$$

In this mode, therefore, the power drawn remains equal to that of the loads:

$$P_{ass} = P_{load}$$

4.3. Charging using excess power only (EXC)

Charging using excess power only (EXC) involves using only the power that would otherwise be fed into the grid – when generation exceeds consumption – to charge the vehicle. In this case, the following must apply:

$$P_{PV} > P_{load}$$

and the power charged into the vehicle will be precisely the difference between generation and consumption:

$$P_{car} = P_{PV} - P_{load}$$

consequently, the power drawn will be zero:

$$P_{ass} = 0$$

Note	**The description of the function is correct if the available excess power exceeds a minimum value defined by the regulations. Wallboxes can only charge at values > 6A for the phase current. This means a minimum charge of approximately 1.5kW for single-phase systems and 4.5kW for three-phase systems. Below this available power value, wallboxes do not initiate charging**

4.4. Automatic three-phase to single-phase switch (3PH→1PH)

A careful reading of the section4.3 , in particular the note at the end of the paragraph, explains the need for a switch function from three-phase to single-phase charging (3PH→1PH).
Let us suppose, for example, that we are in a situation where 6 kW of excess power is available and we have a three-phase wallbox installed. Using the EXC function, the wallbox begins to charge the vehicle with the 6 kW of available excess power without any particular problems. Subsequently, an additional 3 kW load (such as an oven or similar) is activated, reducing the available power to 6 kW – 3 kW = 3 kW. Consequently, as explained in the note in the previous paragraph, the wallbox can no longer provide the minimum 6 A per phase and stops charging because it is a three-phase unit.
If, under these conditions, I carry out a check and switch the wallbox from three-phase to single-phase operation, I change its minimum charging power to 1.5 kW; consequently, as 3 kW is available, it resumes charging at a power of 3 kW.

This control function is, of course, only available on three-phase wallboxes and operates automatically.

4.5. Charging authorisation via RFID card (RFID)

There are various situations in which access to the wallbox must be restricted to authorised users only, and the wallbox cannot simply be configured in PLUG&PLAY mode (i.e. plug in the connector and charging begins).
The wallboxes can be configured so that only certain users with an authorised RFID card can initiate vehicle charging.

4.6. Metering of kWh charged by different users (kWh)

In some situations, it may be necessary to track the kWh used, distinguishing between charges carried out by different users (APP users or holders of a specific RFID card). The tracking functions are accessible via the monitoring portals.

4.7. System monitoring via app or portals (MONIT)

A function not directly linked to operation but certainly essential is monitoring via an app on a mobile device or via dedicated portals for more advanced management. This function is directly linked to the metering function (kWh) described in the section4.6 .

ZCS provides two possible monitoring apps, which can be used in different ways depending on the peripheral devices installed on the system and the connectivity available:

a) Azzurro Monitoring app
b) EVchargo app

Consequently, there are two control portals:

a) Portal 2.0 – available at www.azzurrosystemsweb.com using the same login details registered for the Azzurro Systems app
b) EVchargo Portal – accessible by opening a support ticket on the website www.zcsazzurro.com

Further details regarding the portals and apps will be provided later in this document.

4.8. Payment systems for public use (POS)

Where wallboxes are installed in public spaces where a payment system and a platform for managing charging prices and other aspects are required, ZCS does not provide a direct service but only the products (some of which may come with an integrated POS).

However, as indicated in the datasheets, ZCS wallboxes use standard OCPP 1.6 communication protocols (upgradable to OCPP 2.0), making them compatible with a whole range of platforms that provide payment services. ZCS confirms compatibility with the following platforms:

- Electriease
- EVWay
- NextCharge

If you are using other platforms, you can request an integration assessment by opening a support ticket on the website www.zcsazzurro.com.

5. Possible installation scenarios and available functions

Wallboxes can be integrated into various scenarios and connected to other existing devices on the system; depending on the devices present and the configuration, some of the functions listed in the previous chapter may not be available. This chapter lists, for the various scenarios, the accessories required for installation to gain access to certain functions.

5.1. Single wallbox installed in systems without existing photovoltaic inverters or storage systems

The simplest scenario involves installing a single wallbox in systems where there is no renewable energy generation or ZCS or third-party storage system present.

5.1.1. Direct installation without accessories

Wallboxes can be installed without the use of additional accessories, as shown in the diagrams below

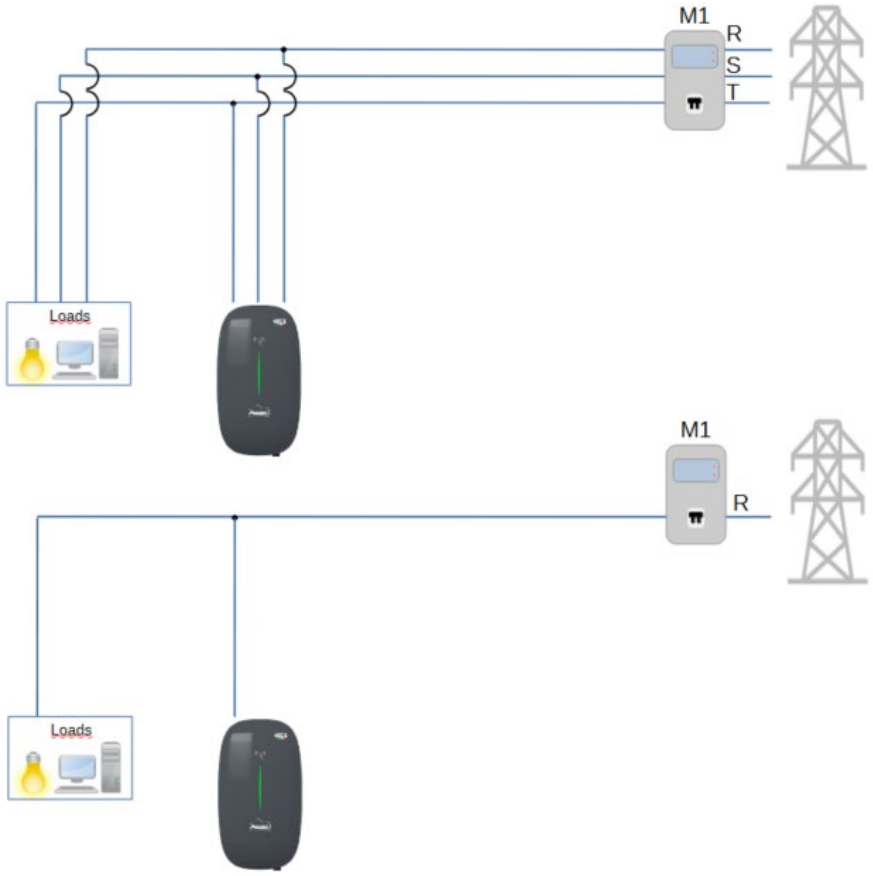


Figure3– single-phase and three-phase installation

In this type of installation, the only functions available are:

Function	Available	Installation notes
BIL (section4.1)	NO	
PV (paragraph4.2)	NO	
EXC (paragraph4.3)	NO	
3PH->1PH (paragraph4.4)	NO	The switch cannot be made without a meter reading device
RFID (section4.5)	YES	The wallbox must be connected online via Wi-Fi or Ethernet
kWh (section4.6)	YES	The wallbox must be connected online via Wi-Fi or Ethernet
MONIT (section4.7)	YES	The wallbox must be connected to the internet. Can only be monitored via the app or the EVCHARGO portal

POS (section4.8)	YES	The wallbox must be connected to the internet via Wi-Fi or Ethernet. You must configure the endpoint of your chosen service provider

5.1.2. Installation with a meter or CT

Wallboxes can be installed using accessories designed to measure the power exchanged with the grid, which are connected directly to the wallbox itself. These accessories are coded as follows:

Accessory	Code	Compatible with
3-phase direct-insertion meter	ZVM-CARO-METER-01	Three-phase AC wallbox
3-phase meter with 3 current sensors (150A/5A)	ZVM-CARO-METER-02	Three-phase AC wallbox
CT (current sensor) 100A/50mA diameter 16 mm	ZVM-CARO-TA	Single-phase AC wallbox

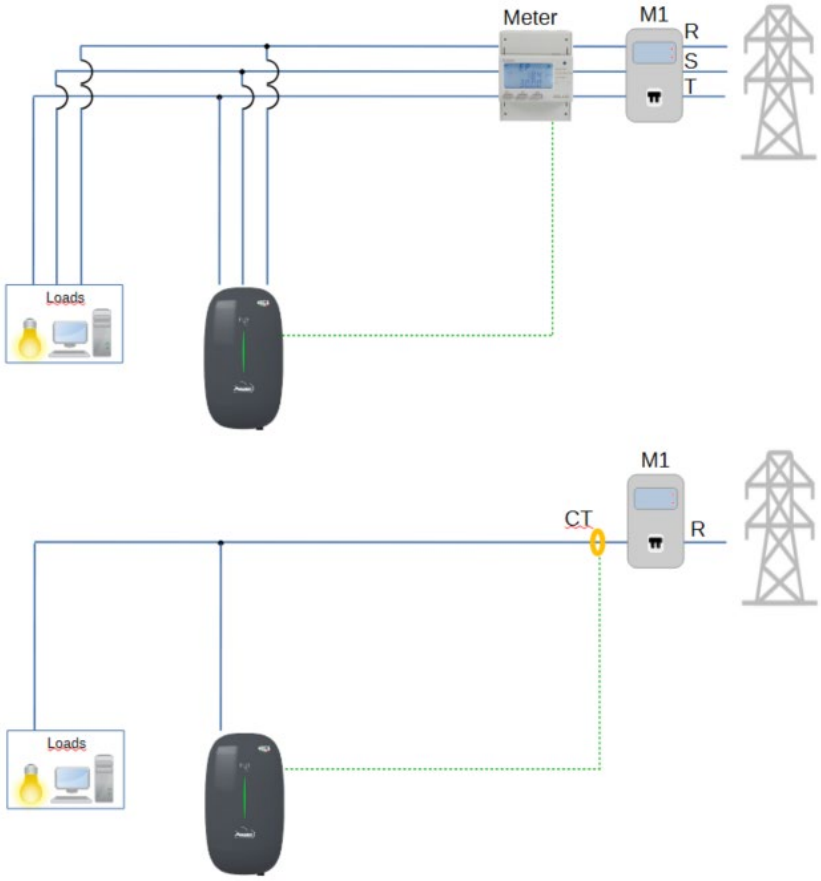


Figure4– installation with accessories (CT or meter)

In an installation of this type, the only functions available are:

Function	Available	Installation notes
BIL (section4.1)	YES	Must be configured via the EVCHARGO app
PV (section4.2)	NO	This function will not be available, as there is no device to measure the output of the photovoltaic system.
EXC (section4.3)	YES	
3PH->1PH (section4.4)	YES	
RFID (section4.5)	YES	The wallbox must be connected to the internet via Wi-Fi or Ethernet
kWh (section4.6)	YES	The wallbox must be connected to the internet via Wi-Fi or Ethernet

MONIT (section4.7)	YES	The wallbox must be connected to the internet. Can only be monitored via the app or the EVCHARGO portal
POS (section4.8)	YES	The wallbox must be connected to the internet via Wi-Fi or Ethernet. You must configure the endpoint of your chosen service provider

5.2. Multiple wallboxes installed in systems without existing photovoltaic inverters or energy storage systems

Multiple wallboxes can be installed in systems where there is no renewable energy generation or where a ZCS or other brand of storage system is present.

5.2.1. Direct installation without accessories

The wallboxes can be installed without the use of additional accessories, as shown in the diagrams below (or similar situations)

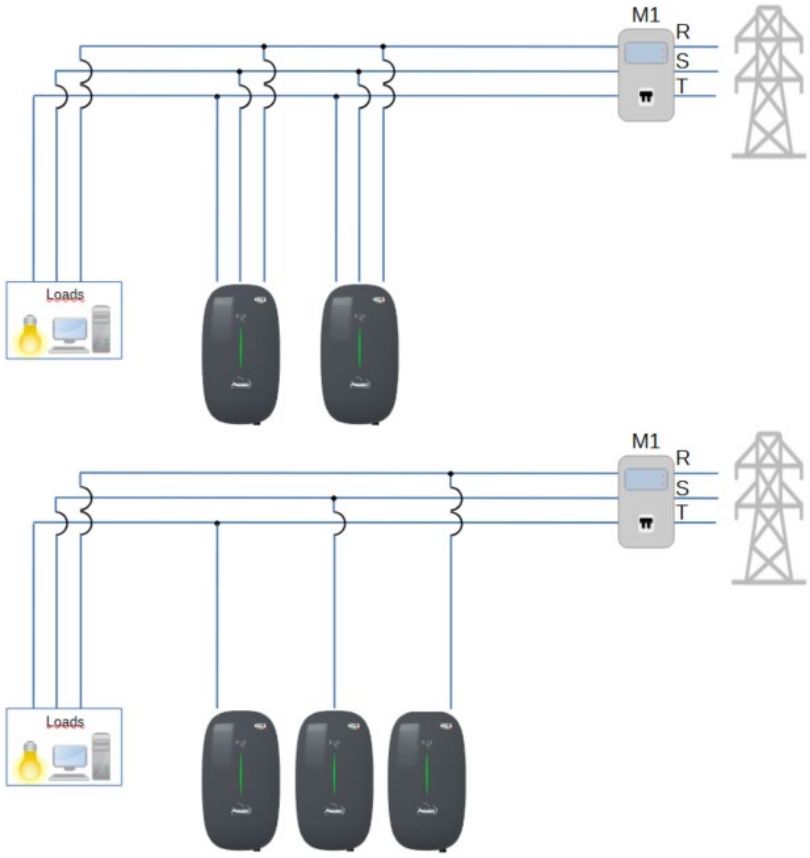


Figure5– Installation of multiple wallboxes without accessories

In this type of installation, the only functions available are:

Function	Available	Installation notes
BIL (4.1)	NO	
PV (paragraph4.2)	NO	
EXC (paragraph4.3)	NO	
3PH->1PH (4.4)	NO	The switch cannot be made without a meter reading device
RFID (section4.5)	YES	Wallboxes must be connected online via Wi-Fi or Ethernet
kWh (section4.6)	YES	Wallboxes must be connected online via Wi-Fi or Ethernet
MONIT (section4.7)	YES	The wallboxes must be connected to the internet. Can only be monitored via the app or the EVCHARGO portal

POS (section4.8)	YES	Wallboxes must be connected online via Wi-Fi or Ethernet. The endpoint of the chosen service provider must be configured

5.2.2. Installation with Azzurro HUB

The wallboxes can be installed using the Azzurro HUB accessory, which is fitted with an energy exchange meter that enables full management of all functions. The codes for the available accessories are:

Accessory	Code	Compatible with
3-phase meter with 3 current sensors 200A/5A	ZSM-METER-DTSU ZST-ACC-TA3PH200	Azzurro HUB
Azzurro HUB	ZSM-HUB	All wallboxes

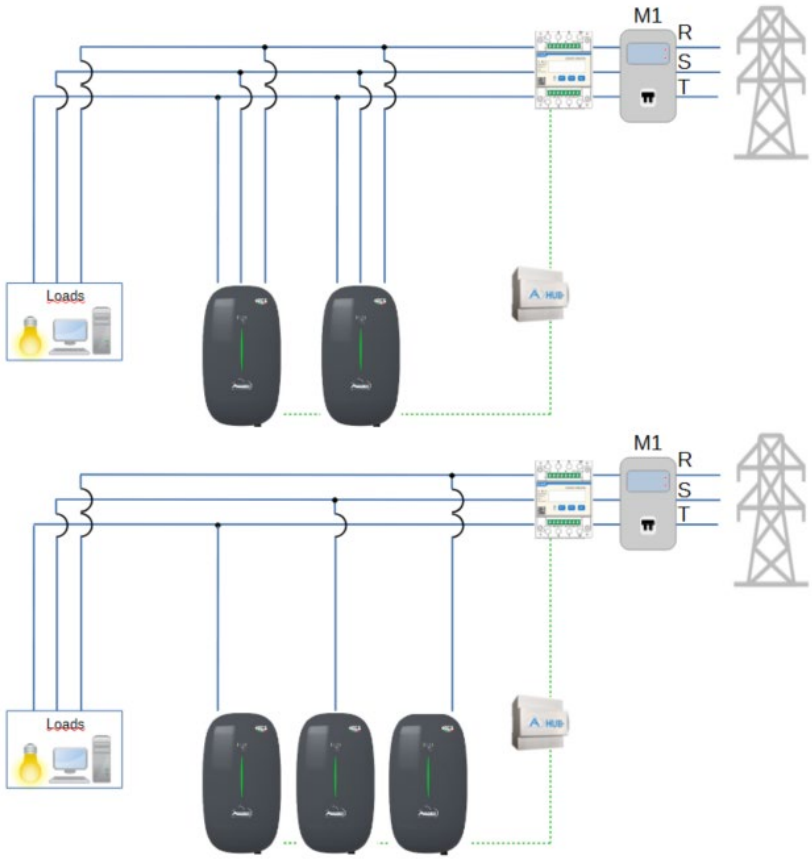


Figure6– installation with Azzurro HUB

In this type of installation, the only functions available are:

Function	Available	Installation notes
BIL (section4.1)	YES	
PV (paragraph4.2)	NO	
EXC (paragraph4.3)	NO	
3PH->1PH (4.4)	YES	
RFID (section4.5)	YES	
KWH (section4.6)	YES	
MONIT (paragraph4.7)	YES	Wallboxes must be connected to the internet. Can be monitored via the app and the Azzurro Systems portal
POS (section4.8)	NO	

5.2.3. Installation with Load Balance Controller (LBC)

The wallboxes can be installed using the Azzurro LBC accessory, which is fitted with a current transformer (CT) for measuring power exchange. The codes for the available accessories are:

Accessory	Code	Compatible with
Load Balance Controller (LBC) + CT 100A/50mA 200A/100mA 600A/300mA 1000A/500mA CT+Meter (1500A) 1-phase meter	ZVM-LBC-3PH-G2	All wallboxes

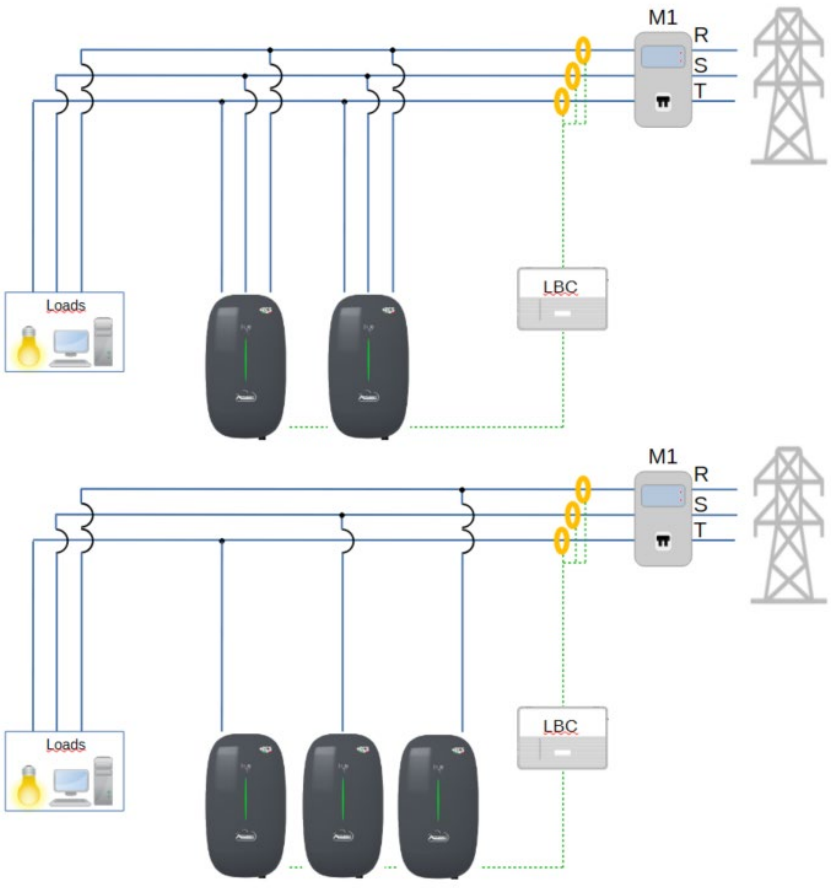


Figure7– Installation with LBC

In this type of installation, the only functions available are:

Function	Available	Installation notes
BIL (section4.1)	YES	Wallboxes and LBCs must be connected online via Wi-Fi or Ethernet
PV (section4.2)	NO	
EXC (paragraph4.3)	NO	
3PH->1PH (paragraph4.4)	YES	
RFID (section4.5)	YES	Wallboxes and LBCs must be connected online via Wi-Fi or Ethernet
kWh (section4.6)	YES	Wallboxes and LBCs must be connected online via Wi-Fi or Ethernet
MONIT (section4.7)	YES	The wallboxes and LBCs must be connected to the internet via Wi-Fi or Ethernet. Can only be monitored via the app or the EVCHARGO portal
POS (4.8)	YES	Wallboxes and LBCs must be connected to the internet via Wi-Fi or Ethernet. The endpoint of the chosen service provider must be configured

5.3. Single wallbox installed in systems with existing non-ZCS photovoltaic inverters

Installing a single wallbox in a system where renewable energy is generated by pure, non-ZCS photovoltaic inverters enables the use of additional functions.

5.3.1. Direct installation without accessories

The wallboxes can be installed without the use of additional accessories, as shown in the diagrams below

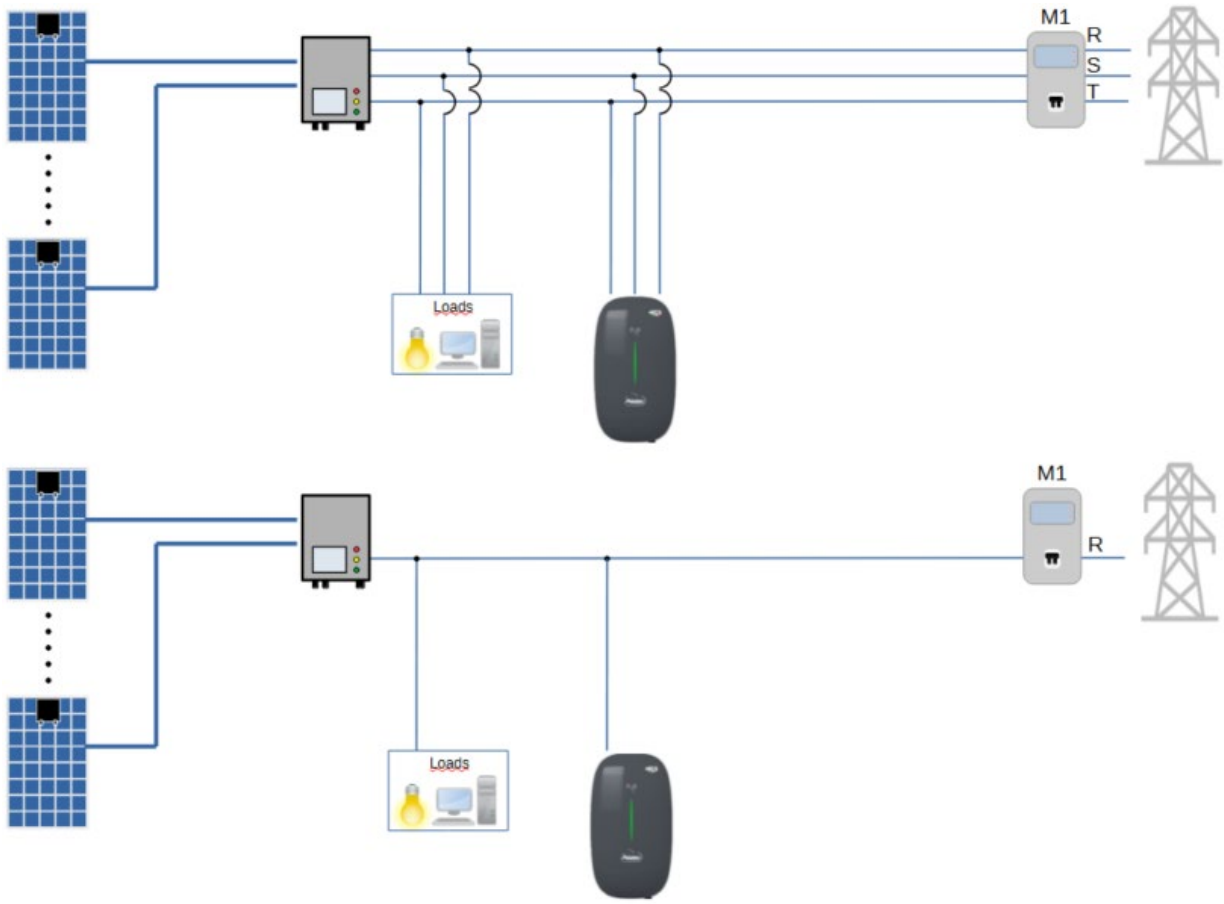


Figure8– installation without accessories

In this type of installation, the only functions available are:

Function	Available	Installation notes
BIL (section4.1)	NO	
PV (paragraph4.2)	NO	
EXC (paragraph4.3)	NO	
3PH->1PH (paragraph4.4)	NO	The switch cannot be made without a meter reading device
RFID (section4.5)	YES	The wallbox must be connected online via Wi-Fi or Ethernet
kWh (section4.6)	YES	The wallbox must be connected online via Wi-Fi or Ethernet

MONIT (section4.7)	YES	The wallbox must be connected to the internet. Can only be monitored via the app or the EVCHARGO portal
POS (section4.8)	YES	The wallbox must be connected to the internet via Wi-Fi or Ethernet. You must configure the endpoint of your chosen service provider

5.3.2. Installation with a meter or CT

Wallboxes can be installed using accessories designed to measure the power exchanged with the grid, which are connected directly to the wallbox itself. These accessories are coded as follows:

Accessory	Code	Compatible with
3-phase direct-connection meter	ZVM-CARO-METER-01	Three-phase AC wallbox
3-phase meter with 3 current sensors (150A/5A)	ZVM-CARO-METER-02	Three-phase AC wallbox
CT (current sensor) 100A/50mA diameter 16 mm	ZVM-CARO-TA	Single-phase AC wallbox

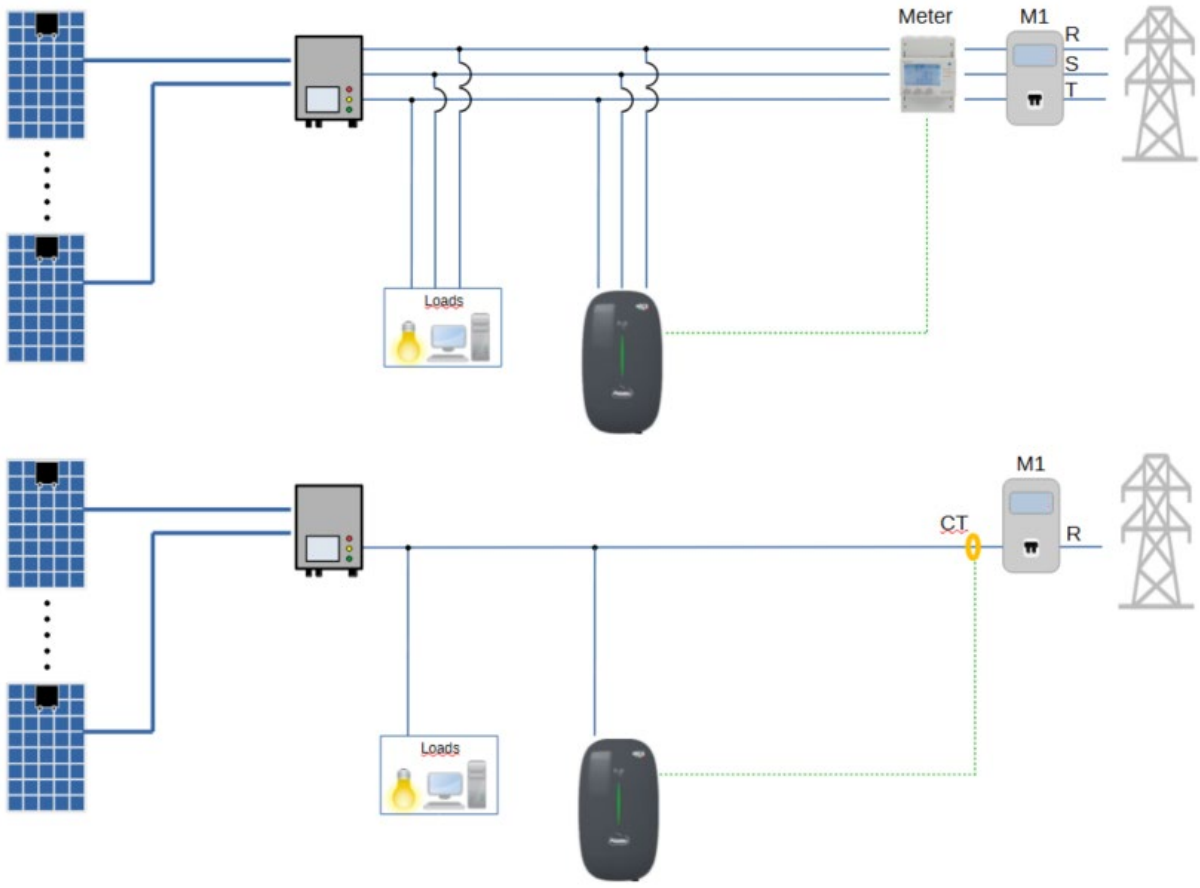


Figure9– installation with accessories (CT or meter)

In an installation of this type, the only functions available are:

Function	Available	Installation notes
BIL (section4.1)	YES	Must be configured via the EVCHARGO app
PV (section4.2)	NO	
EXC (section4.3)	YES	Must be configured via the EVCHARGO app
3PH->1PH (section4.4)	YES	
RFID (section4.5)	YES	The wallbox must be connected to the internet via Wi-Fi or Ethernet
kWh (section4.6)	YES	The wallbox must be connected to the internet via Wi-Fi or Ethernet
MONIT (section4.7)	YES	The wallbox must be connected to the internet. Can only be monitored via the app or the EVCHARGO portal

POS (section4.8)	YES	The wallbox must be connected to the internet via Wi-Fi or Ethernet. You must configure the endpoint of your chosen service provider

5.3.3. Installation with Azzurro HUB

The wallboxes can be installed using the Azzurro HUB accessory, which is fitted with an energy exchange meter that enables full management of all functions. The codes for the available accessories are:

Accessory	Code	Compatible with
3-phase meter with 3 current sensors 200A/5A	ZSM-METER-DTSU ZST-ACC-TA3PH200	Azzurro HUB
CT for Azzurro HUB 100A/33.3mA Diameter 16mm	ZST-ACC-TA	
Azzurro HUB	ZSM-HUB	All wallboxes

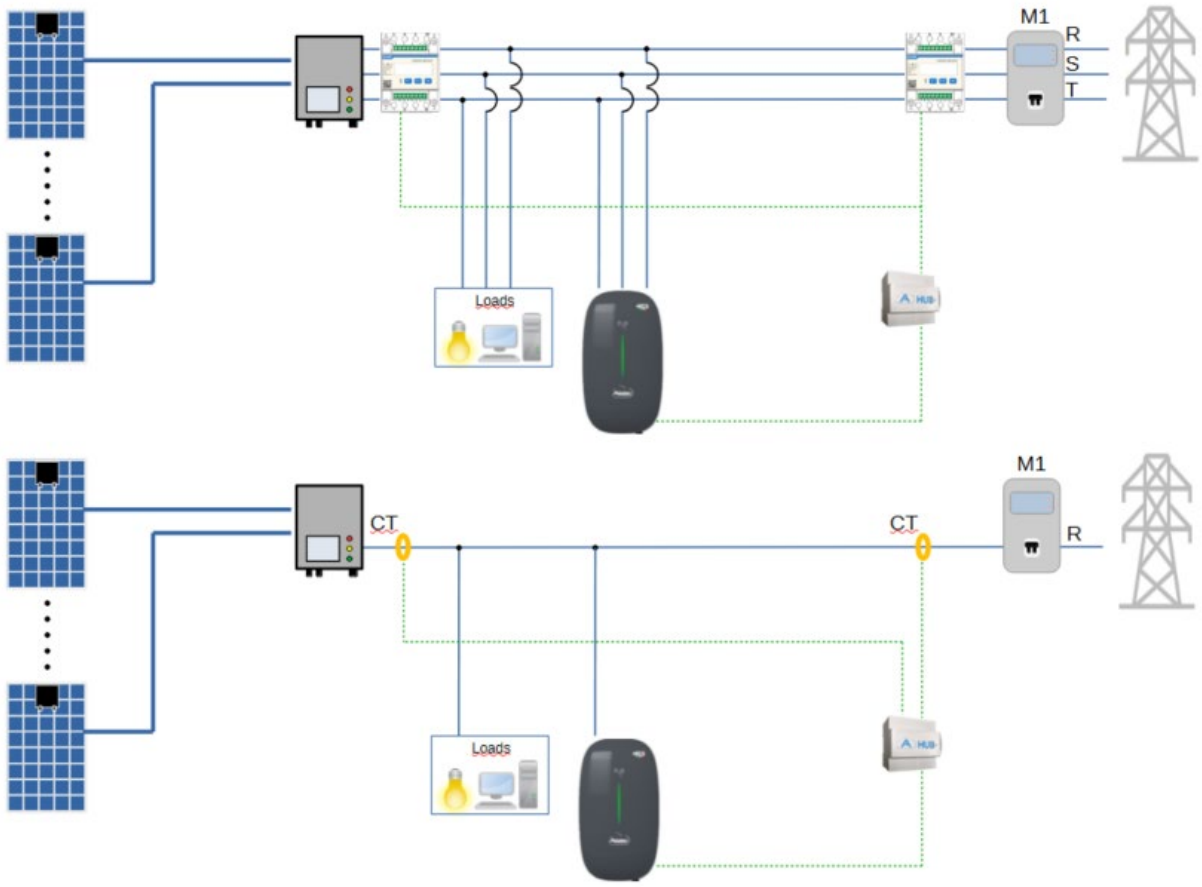


Figure10– Installation with Azzurro HUB

In this type of installation, the only functions available are:

Function	Available	Installation notes
BIL (paragraph4.1)	YES	
PV (paragraph4.2)	YES	
EXC (paragraph4.3)	YES	
3PH->1PH (paragraph4.4)	YES	
RFID (section4.5)	YES	
KWH (section4.6)	YES	
MONIT (section4.7)	YES	Wallboxes must be connected to the internet. Can be monitored via the app and the Azzurro Systems portal
POS (section4.8)	NO	

5.4. Multiple wallboxes installed in systems with existing non-ZCS photovoltaic inverters

Installing multiple wallboxes in a system where renewable energy is generated by pure, non-ZCS photovoltaic inverters allows for the use of additional functions.

5.4.1. Direct installation without accessories

Wallboxes can be installed without the use of additional accessories, as shown in the diagrams below (or similar situations)

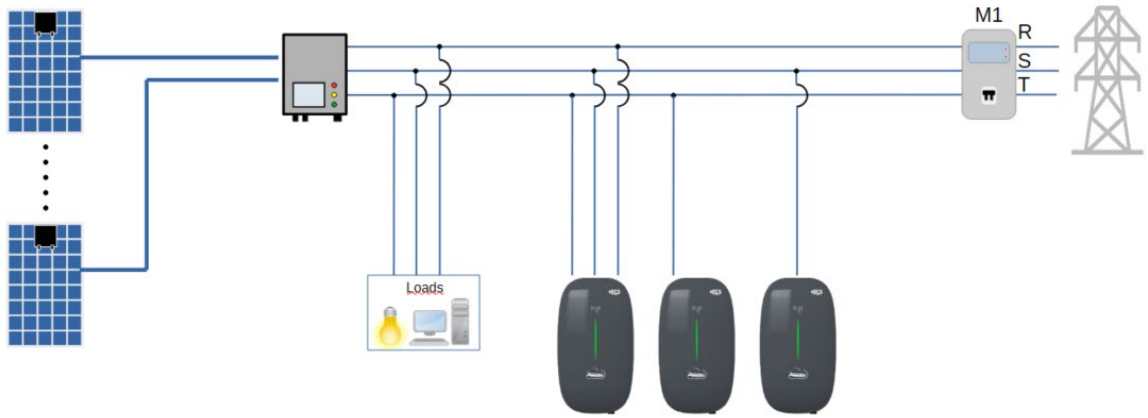


Figure11– Installation without accessories

In this type of installation, the only functions available are:

Function	Available	Installation notes
BIL (section4.1)	NO	
PV (paragraph4.2)	NO	
EXC (paragraph4.3)	NO	
3PH->1PH (paragraph4.4)	NO	
RFID (section4.5)	YES	Wallboxes must be connected online via Wi-Fi or Ethernet
kWh (section4.6)	YES	Wallboxes must be connected online via Wi-Fi or Ethernet
MONIT (section4.7)	YES	Wallboxes must be connected to the internet. They can only be monitored via the app or the EVCHARGO portal
POS (section4.8)	YES	Wallboxes must be connected online via Wi-Fi or Ethernet. The endpoint of the chosen service provider must be configured

5.4.2. Installation with Azzurro HUB

The wallboxes can be installed using the Azzurro HUB accessory, which is fitted with an energy exchange meter that enables full management of all functions. The codes for the available accessories are:

Accessory	Code	Compatible with
3-phase meter with 3 current sensors 200A/5A	ZSM-METER-DTSU ZST-ACC-TA3PH200	Azzurro HUB
Azzurro HUB	ZSM-HUB	All wallboxes

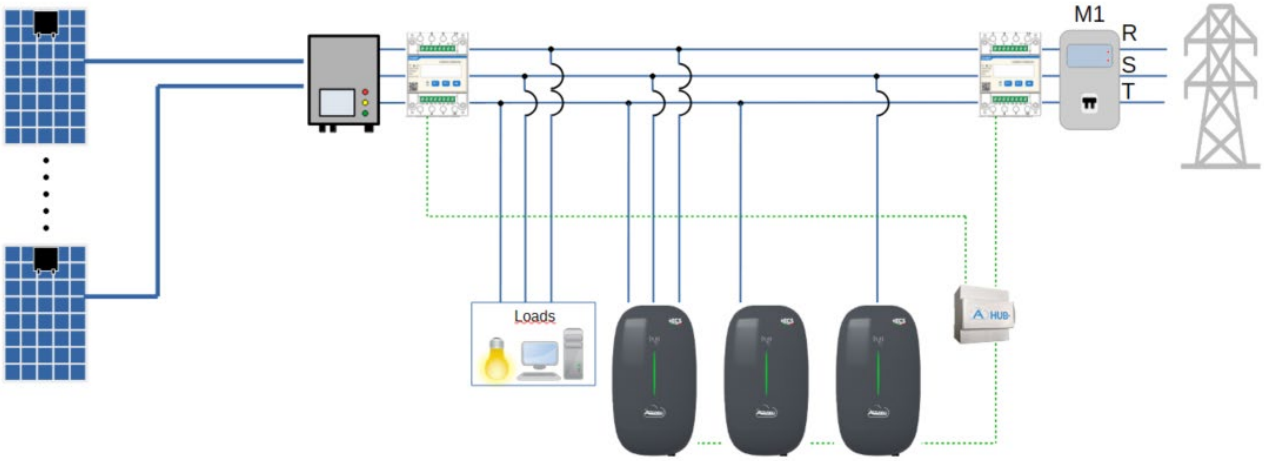


Figure12– Installation with Azzurro HUB

In this type of installation, the only functions available are:

Function	Available	Installation notes
BIL (section4.1)	YES	
PV (paragraph4.2)	YES	
EXC (paragraph4.3)	YES	
3PH->1PH (paragraph4.4)	YES	
RFID (section4.5)	YES	
KWH (section4.6)	YES	
MONIT (paragraph4.7)	YES	Wallboxes must be connected to the internet. Can be monitored via the app and the Azzurro Systems portal
POS (section4.8)	NO	

5.4.3. Installation with Load Balance Controller (LBC)

The wallboxes can be installed using the Azzurro LBC accessory, which is fitted with a current transformer (CT) to measure power exchange. The codes for the available accessories are:

Accessory	Code	Compatible with
Load Balance Controller (LBC) + 150A/5A CT	ZSP-CONTROLLER-LBC150E	All wallboxes

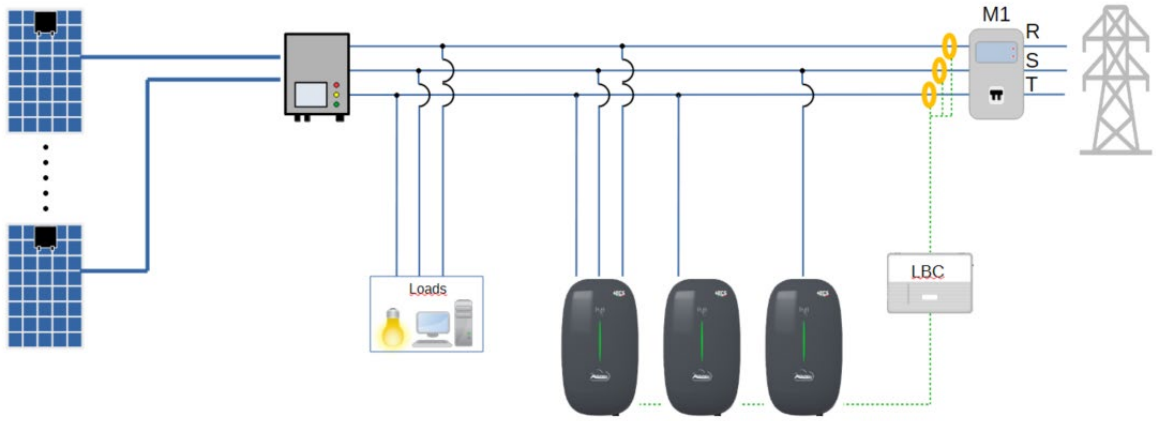


Figure13– Installation with LBC

In this type of installation, the only functions available are:

Function	Available	Installation notes
BIL (paragraph4.1)	YES	Wallboxes and LBCs must be connected to the internet via Wi-Fi or Ethernet
PV (paragraph4.2)	NO	
EXC (paragraph4.3)	YES	
3PH->1PH (paragraph4.4)	YES	
RFID (section4.5)	YES	Wallboxes and LBCs must be connected to the internet via Wi-Fi or Ethernet
kWh (section4.6)	YES	Wallboxes and LBCs must be connected to the internet via Wi-Fi or Ethernet

MONIT (section4.7)	YES	Wallboxes and LBCs must be connected to the internet via Wi-Fi or Ethernet. Can only be monitored via the app or the EVCHARGO portal
POS (section4.8)	YES	Wallboxes and LBCs must be connected to the internet via Wi-Fi or Ethernet. The endpoint of the chosen service provider must be configured

5.5. Single wallbox installed in installations with existing non-ZCS energy storage systems

Installing a single wallbox in a system where a non-ZCS storage system is present allows for a limited set of functions and only certain valid configurations.

5.5.1. Direct installation without accessories

Wallboxes can be installed without the use of additional accessories, as shown in the diagrams below

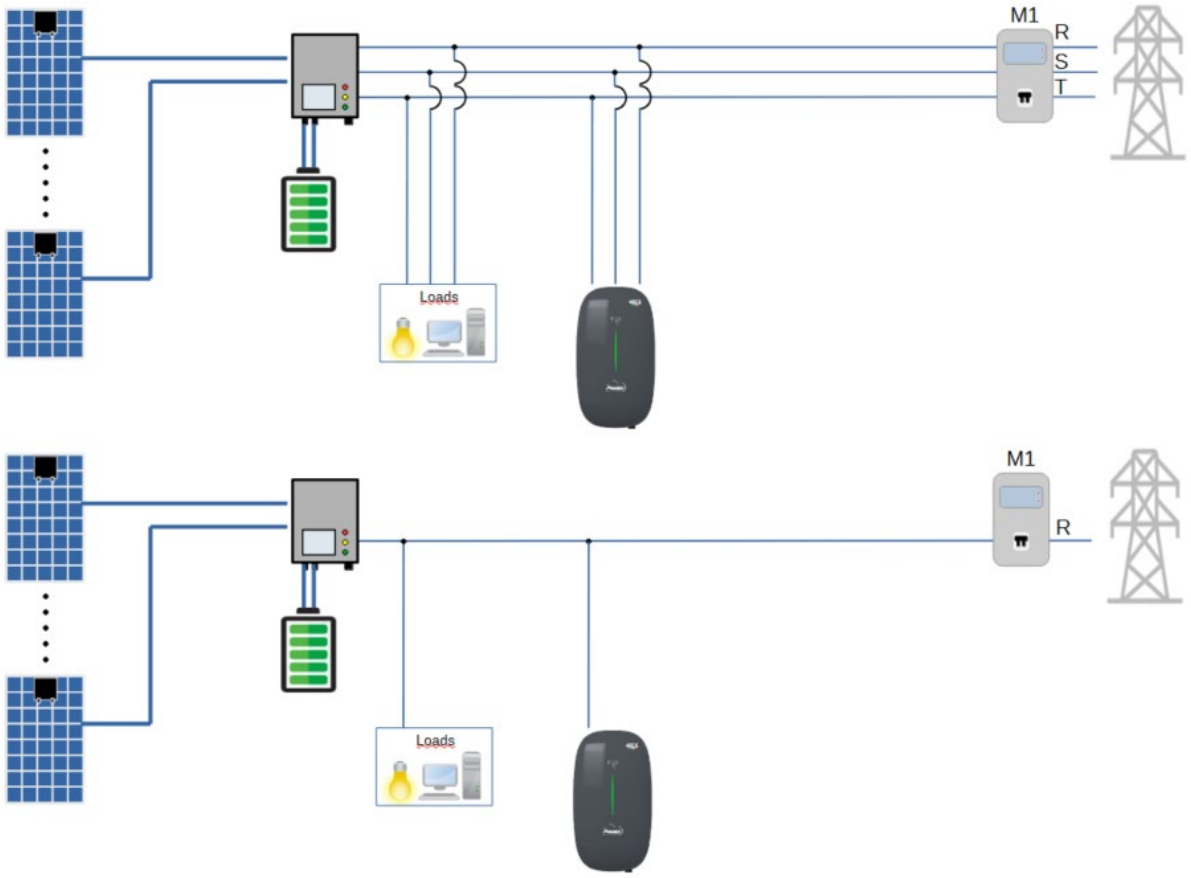


Figure14– installation without accessories

In this type of installation, the only functions available are:

Function	Available	Installation notes
BIL (section4.1)	NO	
PV (paragraph4.2)	NO	
EXC (paragraph4.3)	NO	
3PH->1PH (section4.4)	NO	
RFID (section4.5)	YES	The wallbox must be connected to the internet via Wi-Fi or Ethernet
kWh (section4.6)	YES	The wallbox must be connected to the internet via Wi-Fi or Ethernet
MONIT (section4.7)	YES	The wallbox must be connected to the internet. Can only be monitored via the app or the EVCHARGO portal

POS (section4.8)	YES	The wallbox must be connected to the internet via Wi-Fi or Ethernet. You must configure the endpoint of your chosen service provider

5.5.2. Installation with a meter or CT

Wallboxes can be installed using accessories designed to measure the power exchanged with the grid, which are connected directly to the wallbox itself. These accessories are coded as follows:

Accessory	Code	Compatible with
3-phase direct-insertion meter	ZVM-CARO-METER-01	Three-phase AC wallbox
3-phase meter with 3 current sensors 150A/5A	ZVM-CARO-METER-02	Three-phase AC wallbox
CT (current sensor) 100A/50mA diameter 16 mm	ZVM-CARO-TA	Single-phase AC wallbox

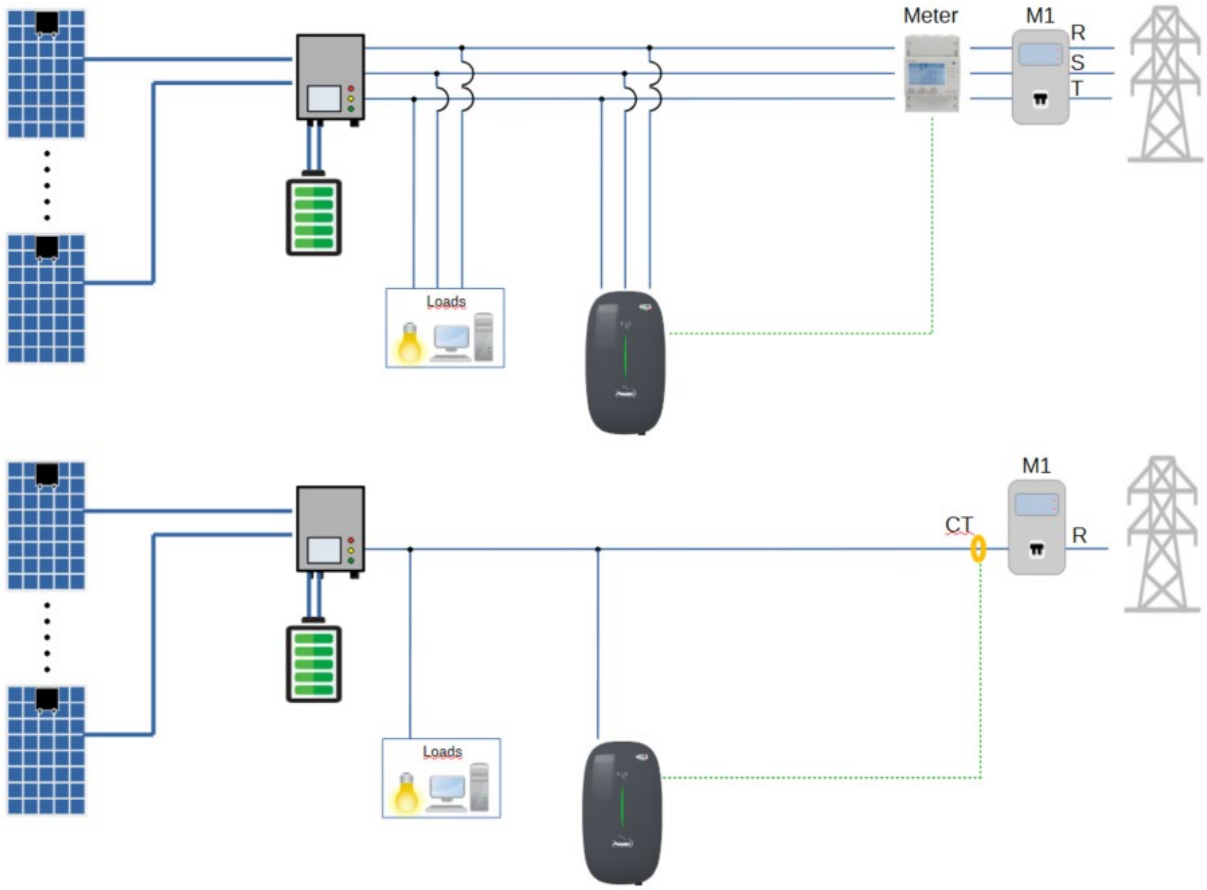


Figure15– installation with accessories (CT or meter)

In an installation of this type, the only functions available are:

Function	Available	Installation notes
BIL (section4.1)	YES	Must be configured via the EVCHARGO app
PV (section4.2)	NO	
EXC (section4.3)	YES	Must be configured via the EVCHARGO app
3PH->1PH (section4.4)	YES	
RFID (section4.5)	YES	The wallbox must be connected to the internet via Wi-Fi or Ethernet
kWh (section4.6)	YES	The wallbox must be connected to the internet via Wi-Fi or Ethernet
MONIT (section4.7)	YES	The wallbox must be connected to the internet. Can only be monitored via the app or the EVCHARGO portal

POS (section4.8)	YES	The wallbox must be connected to the internet via Wi-Fi or Ethernet. The endpoint of the chosen service provider must be configured

5.6. Multiple wallboxes installed in installations with existing non-ZCS energy storage systems

Installing multiple wallboxes in a system where a non-ZCS storage system is present allows for a limited set of functions and only certain valid configurations.

5.6.1. Direct installation without accessories

Wallboxes can be installed without the use of additional accessories, as shown in the diagrams below (or similar situations)

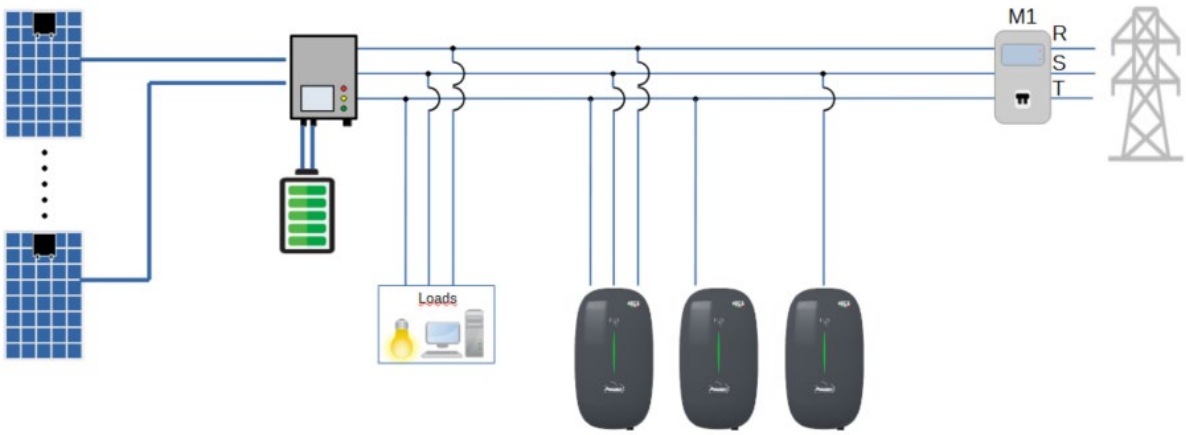


Figure16– Installation without accessories

In this type of installation, the only functions available are:

Function	Available	Installation notes
BIL (section4.1)	NO	
PV (paragraph4.2)	NO	
EXC (paragraph4.3)	NO	
3PH->1PH (paragraph4.4)	NO	
RFID (section4.5)	YES	Wallboxes must be connected online via Wi-Fi or Ethernet
kWh (section4.6)	YES	Wallboxes must be connected online via Wi-Fi or Ethernet

MONIT (section4.7)	YES	The wallboxes must be connected to the internet. Can only be monitored via the app or the EVCHARGO portal
POS (section4.8)	YES	Wallboxes must be connected online via Wi-Fi or Ethernet. The endpoint of the chosen service provider must be configured

5.6.2. Installation with Load Balance Controller (LBC)

The wallboxes can be installed using the Azzurro LBC accessory, which is fitted with a current transformer (CT) for measuring power exchange. The codes for the available accessories are:

Accessory	Code	Compatible with
Load Balance Controller (LBC) + CT 150A/5A	ZSP-CONTROLLER-LBC150E	All wallboxes

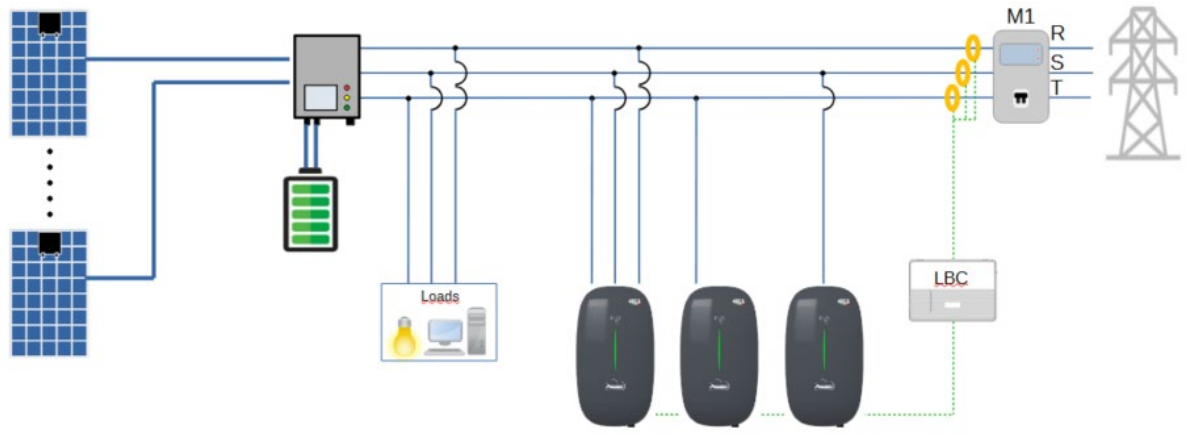


Figure17– Installation with LBC

In this type of installation, the only functions available are:

Function	Available	Installation notes
BIL (section4.1)	YES	Wallboxes and LBCs must be connected online via Wi-Fi or Ethernet
PV (section4.2)	NO	
EXC (paragraph4.3)	YES	
3PH->1PH (paragraph4.4)	YES	

RFID (section4.5)	YES	Wallboxes and LBCs must be connected online via Wi-Fi or Ethernet
kWh (section4.6)	YES	Wallboxes and LBCs must be connected online via Wi-Fi or Ethernet
MONIT (section4.7)	YES	Wallboxes and LBCs must be connected to the internet via Wi-Fi or Ethernet. Can only be monitored via the app or the EVCHARGO portal
POS (section4.8)	YES	Wallboxes and LBCs must be connected to the internet via Wi-Fi or Ethernet. The endpoint of the chosen service provider must be configured

5.7. Single wallbox installed in systems with existing ZCS photovoltaic inverters

Installing a single wallbox in a system where renewable energy is generated by pure ZCS photovoltaic inverters enables the use of additional functions.

5.7.1. Direct installation without accessories

Wallboxes can be installed without the need for additional accessories, as shown in the diagrams below

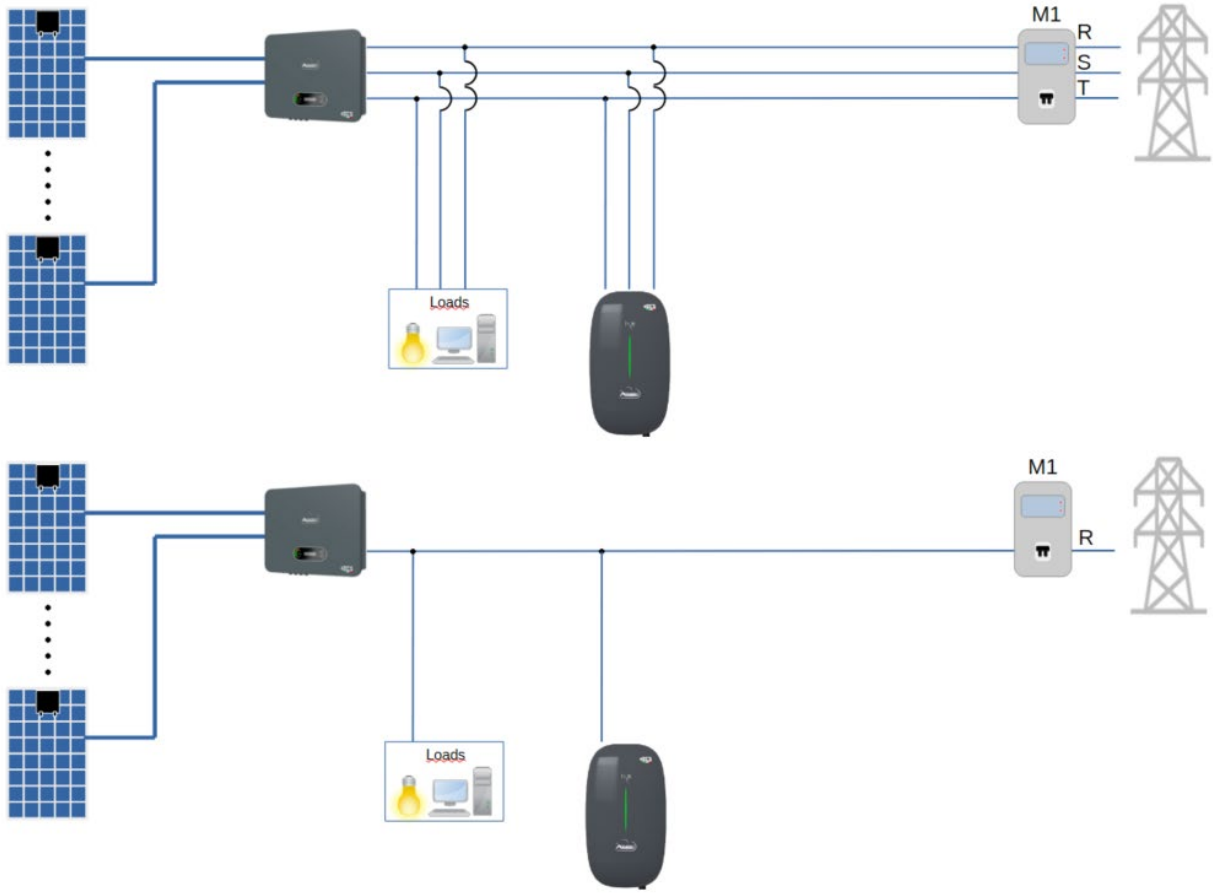


Figure18– Installation without accessories

In an installation of this type, the only functions available are:

Function	Available	Installation notes
BIL (section4.1)	NO	
PV (paragraph4.2)	NO	
EXC (paragraph4.3)	NO	
3PH->1PH (paragraph4.4)	NO	
RFID (section4.5)	YES	Wallboxes must be connected online via Wi-Fi or Ethernet
kWh (section4.6)	YES	Wallboxes must be connected online via Wi-Fi or Ethernet
MONIT (section4.7)	YES	The wallboxes must be connected to the internet. Can only be monitored via the app or the EVCHARGO portal

POS (section4.8)	YES	Wallboxes must be connected online via Wi-Fi or Ethernet. The endpoint of the chosen service provider must be configured

5.7.2. Installation with a meter or CT

The wallboxes can be installed using accessories to measure the power exchanged with the grid, which are connected directly to the wallbox itself. These accessories are coded as follows:

Accessory	Code	Compatible with
3-phase direct-insertion meter	ZVM-CARO-METER-01	Three-phase AC wallbox
3-phase meter with 3 current sensors 150A/5A	ZVM-CARO-METER-02	Three-phase AC wallbox
CT (current sensor) 100A/50mA diameter 16 mm	ZVM-CARO-TA	Single-phase AC wallbox

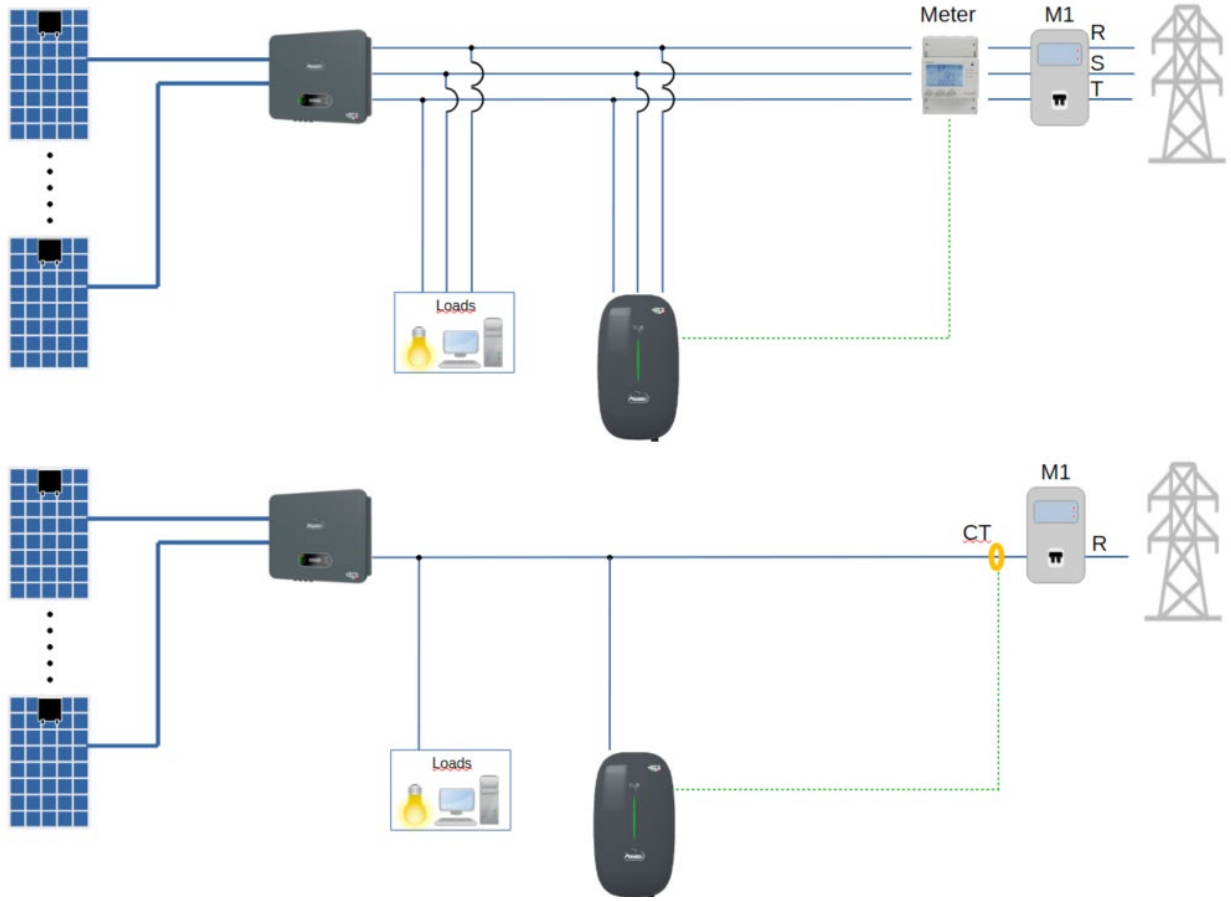


Figure19– installation with accessories (CT or meter)

In an installation of this type, the only functions available are:

Function	Available	Installation notes
BIL (section4.1)	YES	Must be configured via the EVCHARGO app
PV (section4.2)	NO	
EXC (paragraph4.3)	YES	Must be configured via the EVCHARGO app
3PH->1PH (section4.4)	YES	
RFID (section4.5)	YES	The wallbox must be connected to the internet via Wi-Fi or Ethernet
kWh (section4.6)	YES	The wallbox must be connected to the internet via Wi-Fi or Ethernet
MONIT (section4.7)	YES	The wallbox must be connected to the internet. Can only be monitored via the app or the EVCHARGO portal

POS (section4.8)	YES	The wallbox must be connected to the internet via Wi-Fi or Ethernet. You must configure the endpoint of your chosen service provider

5.7.3. Installation with Azzurro HUB

The wallboxes can be installed using the Azzurro HUB accessory, which is fitted with an energy exchange meter that enables full management of all functions. The codes for the available accessories are:

Accessory	Code	Compatible with
3-phase meter with 3 current sensors 200A/5A	ZSM-METER-DTSU ZST-ACC-TA3PH200	Azzurro HUB
Azzurro HUB	ZSM-HUB	All wallboxes

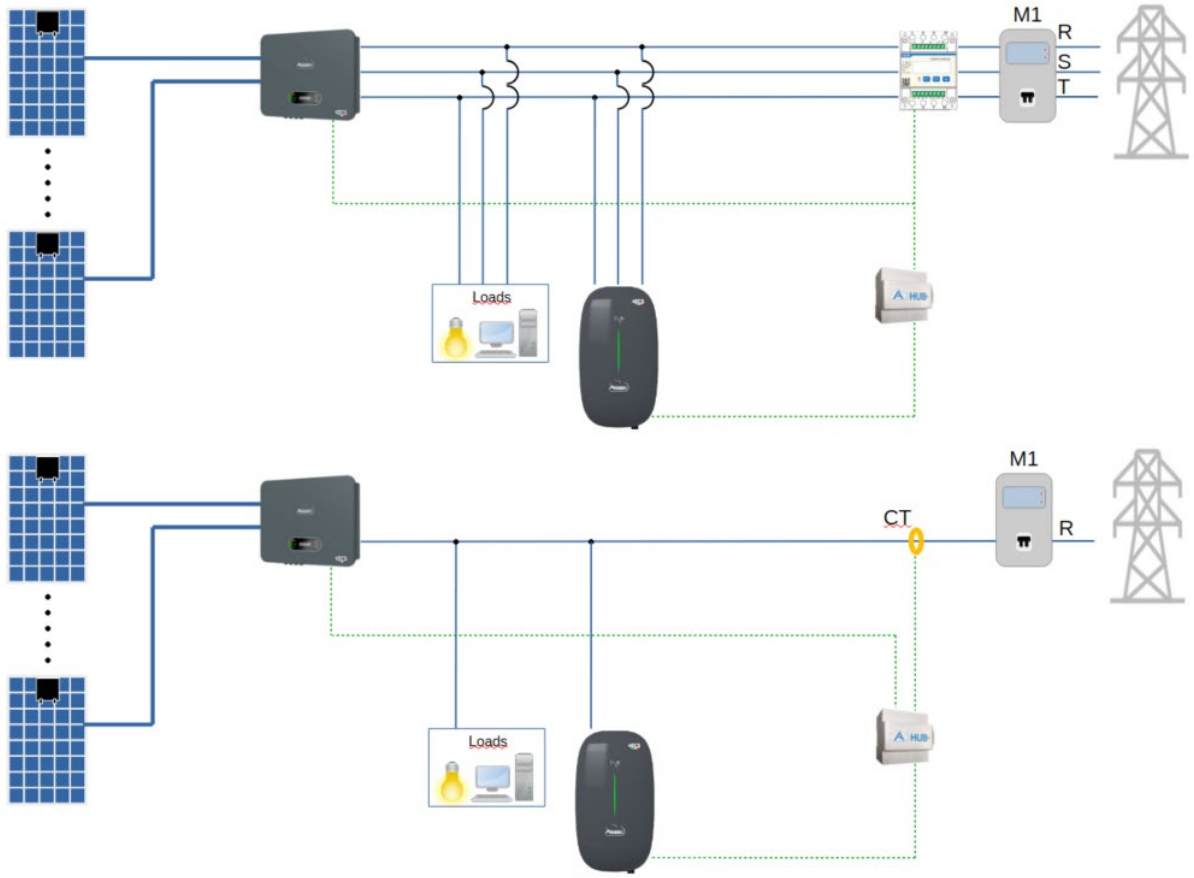


Figure20– Installation with Azzurro HUB

In this type of installation, the only functions available are:

Function	Available	Installation notes
BIL (section4.1)	YES	
PV (paragraph4.2)	YES	
EXC (paragraph4.3)	YES	
3PH->1PH (paragraph4.4)	YES	
RFID (section4.5)	YES	
KWH (section4.6)	YES	
MONIT (section4.7)	YES	Wallboxes must be connected to the internet. Can be monitored via the app and the Azzurro Systems portal
POS (paragraph4.8)	NO	

5.8. Multiple wallboxes installed in systems with existing ZCS photovoltaic inverters

Installing multiple wallboxes in a system where renewable energy is generated by pure ZCS photovoltaic inverters enables the use of additional functions.

5.8.1. Direct installation without accessories

The wallboxes can be installed without the need for additional accessories, as shown in the diagrams below (or similar situations)

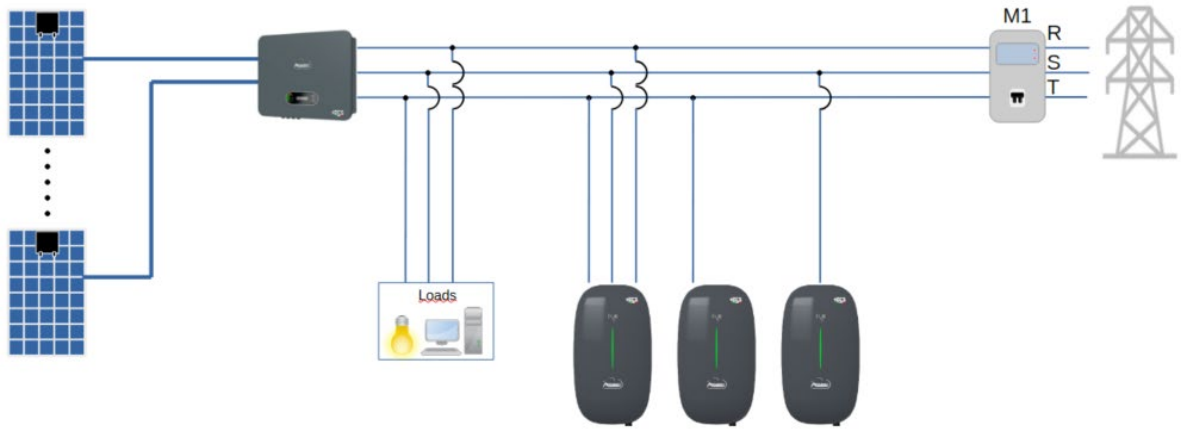


Figure21– Installation without accessories

In an installation of this type, the only functions available are:

Function	Available	Installation notes
BIL (section4.1)	NO	
PV (paragraph4.2)	NO	
EXC (paragraph4.3)	NO	
3PH->1PH (paragraph4.4)	NO	
RFID (section4.5)	YES	Wallboxes must be connected online via Wi-Fi or Ethernet
kWh (section4.6)	YES	Wallboxes must be connected online via Wi-Fi or Ethernet
MONIT (section4.7)	YES	The wallboxes must be connected to the internet. Can only be monitored via the app or the EVCHARGO portal
POS (section4.8)	YES	Wallboxes must be connected online via Wi-Fi or Ethernet.

		The endpoint of the chosen service provider must be configured

5.8.2. Installation with Azzurro HUB

The wallboxes can be installed using the Azzurro HUB accessory, which is fitted with an energy exchange meter that enables full management of all functions. The codes for the available accessories are:

Accessory	Code	Compatible with
3-phase meter with 3 current sensors 200A/5A	ZSM-METER-DTSU ZST-ACC-TA3PH200	Azzurro HUB
Azzurro HUB	ZSM-HUB	All wallboxes

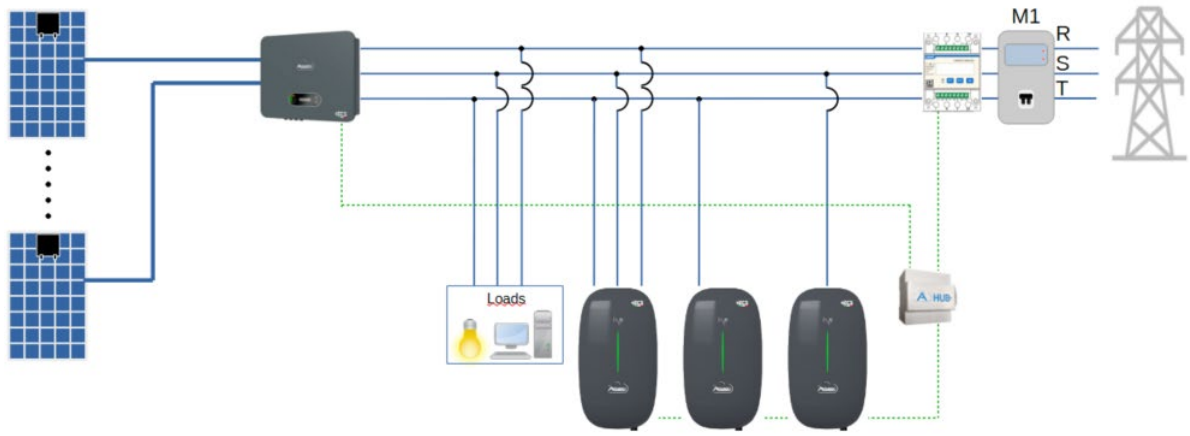


Figure22– Installation with Azzurro HUB

In this type of installation, the only functions available are:

Function	Available	Installation notes
BIL (paragraph4.1)	YES	
PV (paragraph4.2)	YES	
EXC (paragraph4.3)	YES	
3PH->1PH (paragraph4.4)	YES	
RFID (section4.5)	YES	
KWH (section4.6)	YES	

MONIT (paragraph4.7)	YES	Wallboxes must be connected to the internet. Can be monitored via the app and the Azzurro Systems portal
POS (section4.8)	NO	

5.8.3. Installation with Load Balance Controller (LBC)

The wallboxes can be installed using the Azzurro LBC accessory, which is fitted with a current transformer (CT) for measuring power exchange. The codes for the available accessories are:

Accessory	Code	Compatible with
Load Balance Controller (LBC) + 150A/5A CT	ZSP-CONTROLLER-LBC150E	All wallboxes

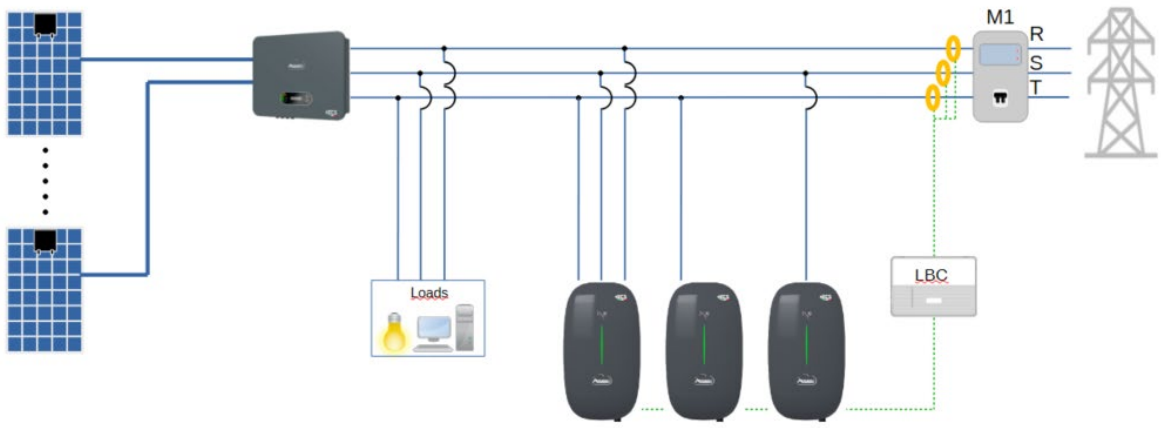


Figure23– Installation with LBC

In this type of installation, the only functions available are:

Function	Available	Installation notes
BIL (section4.1)	YES	Wallboxes and LBCs must be connected online via Wi-Fi or Ethernet
PV (section4.2)	NO	
EXC (paragraph4.3)	YES	
3PH->1PH (paragraph4.4)	YES	
RFID (section4.5)	YES	Wallboxes and LBCs must be connected online via Wi-Fi or Ethernet

kWh (section4.6)	YES	Wallboxes and LBCs must be connected online via Wi-Fi or Ethernet
MONIT (section4.7)	YES	Wallboxes and LBCs must be connected to the internet via Wi-Fi or Ethernet. Can only be monitored via the app or the EVCHARGO portal
POS (section4.8)	YES	Wallboxes and LBCs must be connected to the internet via Wi-Fi or Ethernet. The endpoint of the chosen service provider must be configured

5.9. Single wallbox installed in installations with existing ZCS storage systems

Installing a single wallbox in a system where a ZCS storage system is already in place enables a full range of functions.

5.9.1. Direct installation without accessories

Wallboxes can be installed without the use of additional accessories, as shown in the diagrams below; whilst this configuration is possible, it is not recommended as it offers limited functionality

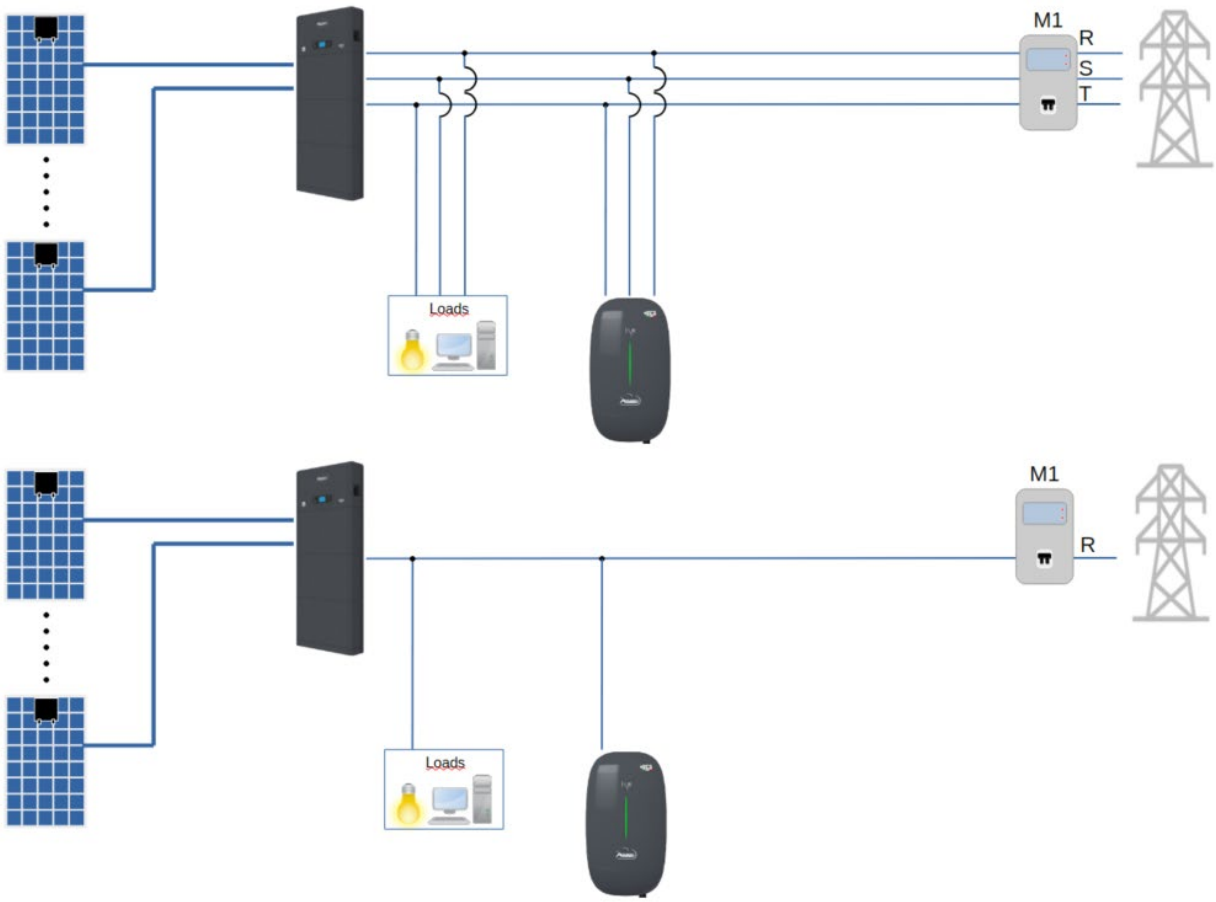


Figure24– installation without accessories

In this type of installation, the only functions available are:

Function	Available	Installation notes
BIL (section4.1)	NO	
PV (paragraph4.2)	NO	
EXC (paragraph4.3)	NO	
3PH->1PH (paragraph4.4)	NO	
RFID (section4.5)	YES	The wallbox must be connected to the internet via Wi-Fi or Ethernet
kWh (section4.6)	YES	The wallbox must be connected to the internet via Wi-Fi or Ethernet

MONIT (section4.7)	YES	The wallbox must be connected to the internet. Can only be monitored via the app or the EVCHARGO portal
POS (section4.8)	YES	The wallbox must be connected to the internet via Wi-Fi or Ethernet. You must configure the endpoint of your chosen service provider

5.9.2. Installation with Azzurro HUB

The wallboxes can be installed using the Azzurro HUB accessory, which is fitted with an energy exchange meter that enables full control of all functions. The part numbers for the available accessories are:

Accessory	Code	Compatible with
Azzurro HUB	ZSM-HUB	All wallboxes

Note	**In this configuration, the Azzurro HUB is not fitted with a meter as it is connected to a CS hybrid inverter which already has its own power measurement systems (CT or meter)**

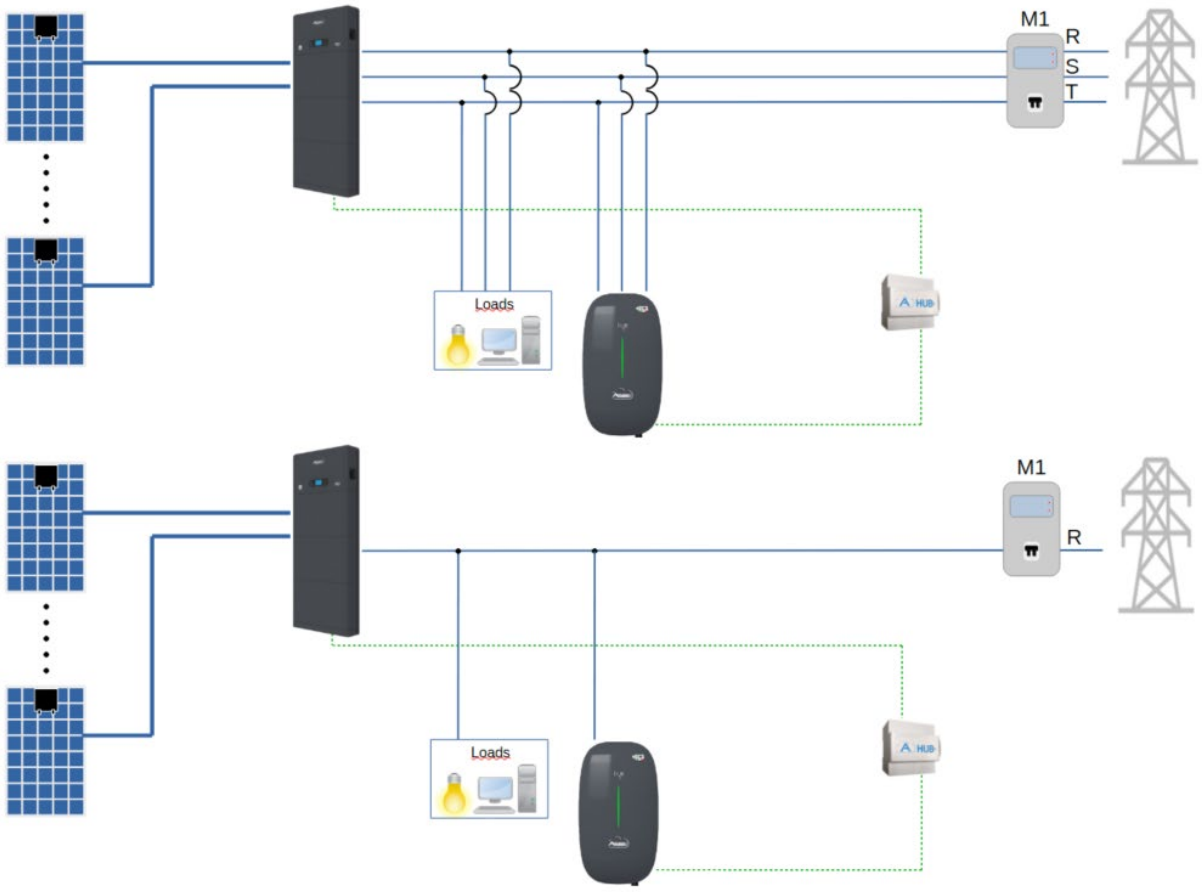


Figure25– Installation with Azzurro HUB

In an installation of this type, the only functions available are:

Function	Available	Installation notes
BIL (section4.1)	YES	
PV (paragraph4.2)	YES	
EXC (paragraph4.3)	YES	
3PH->1PH (paragraph4.4)	YES	
RFID (section4.5)	YES	
KWH (section4.6)	YES	
MONIT (section4.7)	YES	Wallboxes must be connected to the internet. Can be monitored via the app and the Azzurro Systems portal
POS (section4.8)	NO	

5.10. Multiple wallboxes installed in systems with existing ZCS storage systems

Installing multiple wallboxes in a system where a ZCS storage system is already in place enables a full range of functions.

5.10.1. Direct installation without accessories

The wallboxes can be installed without the use of additional accessories, as shown in the diagrams below (or similar situations)

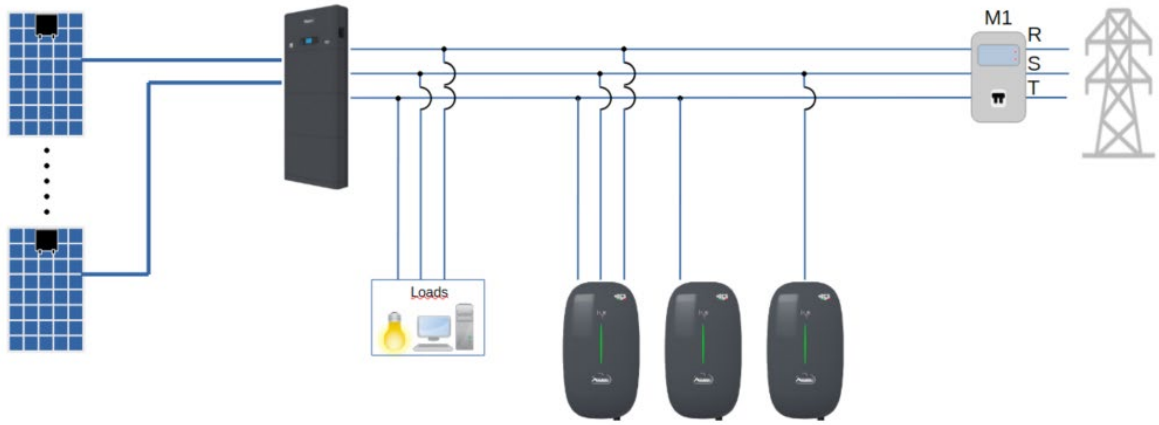


Figure26– Installation without accessories

In this type of installation, the only functions available are:

Function	Available	Installation notes
BIL (section4.1)	NO	
PV (paragraph4.2)	NO	
EXC (paragraph4.3)	NO	
3PH->1PH (paragraph4.4)	NO	
RFID (section4.5)	YES	Wallboxes must be connected to the internet via Wi-Fi or Ethernet
kWh (section4.6)	YES	Wallboxes must be connected to the internet via Wi-Fi or Ethernet
MONIT (section4.7)	YES	The wallboxes must be connected to the internet. Can only be monitored via the app or the EVCHARGO portal
POS (section4.8)	YES	Wallboxes must be connected online via Wi-Fi or Ethernet. The endpoint of the chosen service provider must be configured

5.10.2. Installation with Azzurro HUB

The wallboxes can be installed using the Azzurro HUB accessory, which is fitted with an energy exchange meter that enables full management of all functions. The codes for the available accessories are:

Accessory	Code	Compatible with
Azzurro HUB	ZSM-HUB	All wallboxes

Note	**In this configuration, the Azzurro HUB is not fitted with a meter as it is connected to a CS hybrid inverter which already has its own power measurement systems (CT or meter)**

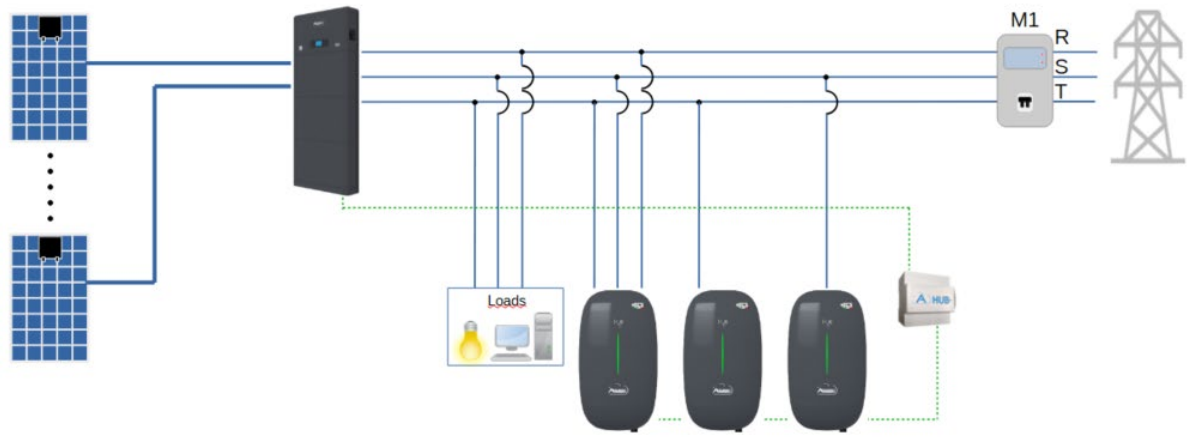


Figure27– Installation with Azzurro HUB

In an installation of this type, the only functions available are:

Function	Available	Installation notes
BIL (section4.1)	YES	
PV (paragraph4.2)	YES	
EXC (paragraph4.3)	YES	
3PH->1PH (paragraph4.4)	YES	
RFID (section4.5)	YES	
KWH (section4.6)	YES	

MONIT (paragraph4.7)	YES	Wallboxes must be connected to the internet. Can be monitored via the app and the Azzurro Systems portal
POS (section4.8)	NO	

6. Accessibility and configuration of wallboxes

This chapter lists all access points for ZCS wallboxes, along with restrictions and procedures for full configuration.

6.1. Local and remote access channels for wallboxes

ZCS wallboxes have 'local' access channels, i.e. those accessible only in the immediate vicinity of the device via a mobile device during the configuration phase and potentially protected by access restricted to specific passwords or for limited periods after the device has been switched on.
Connecting to networks then enables 'remote' access channels for monitoring, configuration and management.



Figure28– Distinction between wallbox access channels

6.1.1. Local connection via Wi-Fi Access Point (AP)

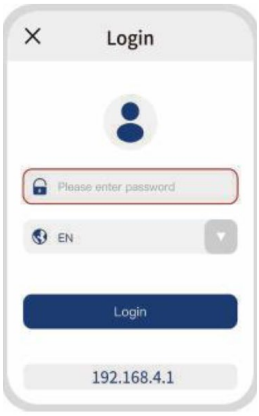
A local connection via a mobile device to the AP allows access to a ***web server,*** which enables the configuration of the wallbox and the setting of basic parameters.

Note	**The Wi-Fi access point (AP) becomes active approximately 1 minute after the wallbox is switched on and remains active for 15 minutes. After 15 minutes, you will need to switch the wallbox off completely and restart it to reactivate the AP**

Access to the AP is carried out in two ways depending on the wallbox's serial number: there are older production models that do not include cybersecurity measures and newer models that do include them. The instructions below outline the two methods of access.

Wi-Fi connection procedure for AP serial numbers =SN100xxxxxxxxxx (access without cybersecurity)

a) Enable Wi-Fi on your mobile device and search for the network named AP_SN100xxxxxxxxxx (the serial number must be the same as that shown on the wallbox label). If the network is not present, switch the wallbox off and restart it as indicated in the note at the start of this paragraph.
b) Connect to the AP_SN100xxxxxxxxxx network using the password *'admin123'*
c) Open a web browser on your mobile device (Firefox, Chrome or others) and, in the address bar, type the address *192.168.4.1*
d) On the page that opens, enter the password found on the last page of the wallbox manual and on a small label included in the installation kit



Note	**If you have lost the network password, go to the link** https://crccalc.com/?crc=SN100123145982734&method=CRC-16/MODBUS&datatype=ascii&outtype=hex **Enter the SN100xxxxxxxxxx (the wallbox's full serial number) and the 'Result' column will display the correct password**

Wi-Fi AP connection procedure for serial numbers >SN100xxxxxxxxxx (access via cybersecurity)

a) Enable Wi-Fi on your mobile device and search for the network named AP_SNxxxxxxxxxxxxxx (the serial number must be the same as that shown on the wallbox label). If the network is not present, switch the wallbox off and restart it as indicated in the note at the start of this paragraph.
b) Connect to the AP_SNxxxxxxxxxxxxxx network using the number shown on the wallbox label – identified as the "Wi-Fi AP Mode Login PIN Code" – as the password

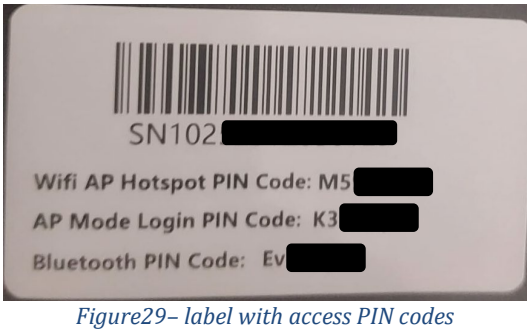
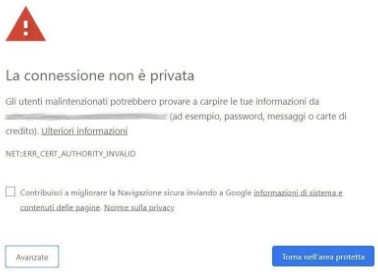
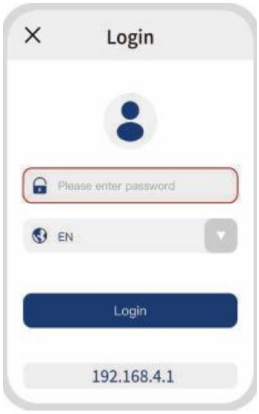


Figure29– label with access PIN codes

c) Open a browser on your mobile device (Firefox, Chrome or others) and, in the address bar, type https://apmode.net. (Please note: it is essential to include **'https'**)
d) Wait for about 20 seconds and click on 'Advanced' on the page that appears



e) On the page that opens, enter the password shown on the wallbox label as the "AP Mode Login PIN Code"



6.1.2. Local connection via Bluetooth

A Bluetooth connection is only required when using the EVChargo app to configure and manage the wallboxes.

Figure30– Download the EVChargo app for Android or iOS

If the Bluetooth communication channel is selected during configuration via the app, Bluetooth must be enabled on the mobile device. When connecting via Bluetooth, you may be asked for a PIN code, which will depend on the wallbox's serial number.

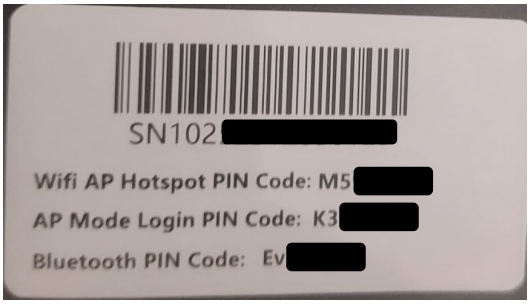


Figure31– label with access PIN codes

6.2. Configuration procedures

6.2.1. Configuration via the EVChargo app

To configure the wallbox using the EVChargo app, follow the procedure below:

a) Power on the wallbox
b) Open the EVChargo app and go to "Link charging point"



c) Select the wallbox from the list of devices



d) Select the communication type



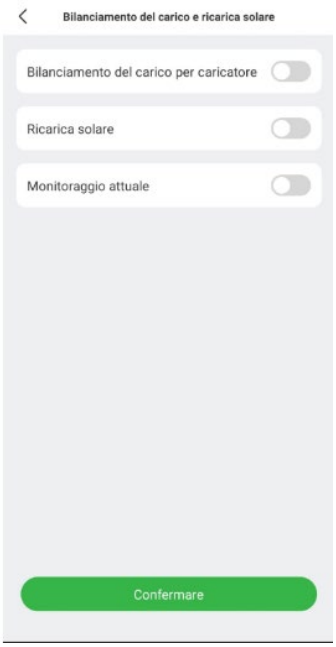
e) If you have selected “wired”, choose whether to set up Wi-Fi or Ethernet



f) Once connected, from the home screen you can set or change the maximum current, set up Plug & Charge, or configure time-of-use charging.



g) Tapping the button in the top right-hand corner will bring up a drop-down menu where you can enable the dynamic balancing (BIL) or excess power charging (EXC) functions, indicated under 'solar charging'



h) Enabling load balancing for the wallbox will bring up a field where you can enter the contracted power in kW and the maximum bus current (A)

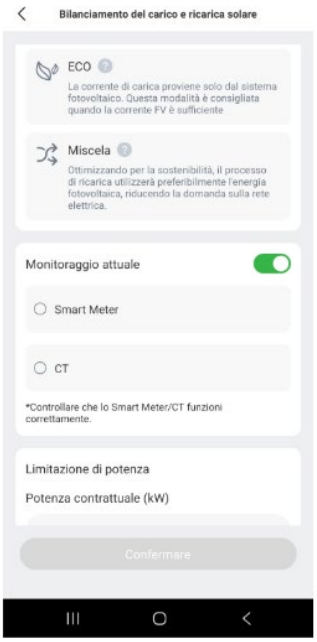


i) Enabling solar charging allows you to choose between ECO (charging only with surplus power and stopping once the available surplus power is exhausted) and Hybrid (charging

only with surplus power and continuing to charge at minimum power if surplus power runs out, drawing power from the grid)



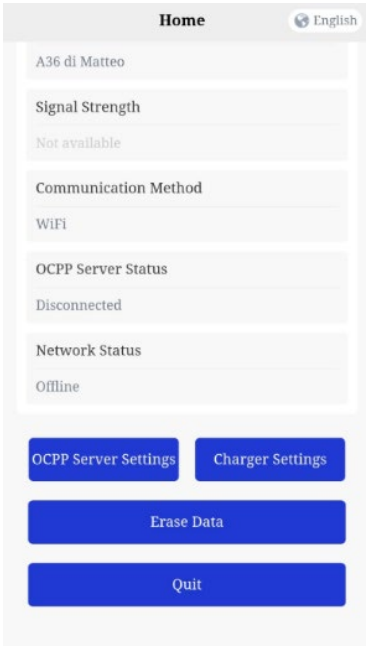
a) By enabling 'Current Monitoring', you can select the type of metering device at the point of delivery: CT for single-phase wallboxes, Smart Meter for three-phase wallboxes



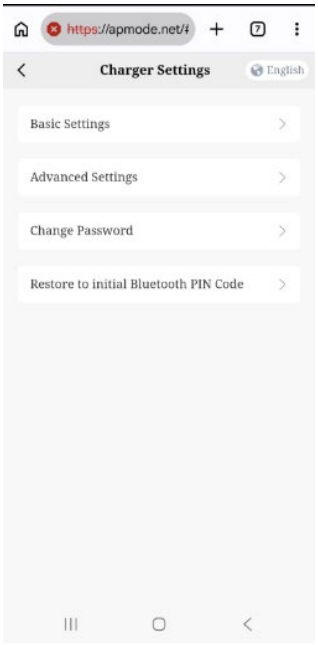
6.2.2. Configuration via AP for communication with the Azzurro HUB

Please note: this operation must be carried out whilst the Azzurro HUB is disconnected or switched off.

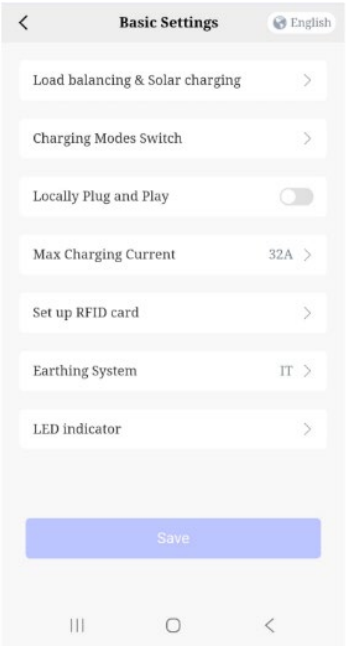
a) Powering the wallbox
b) Access the access point by following the instructions in the section ‘
c) Select the “charger settings” option



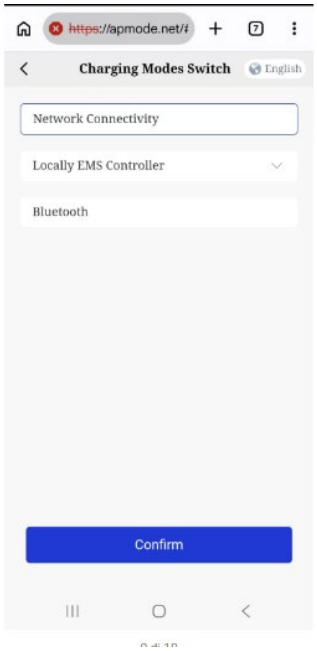
d) Select the “Basic Settings” option



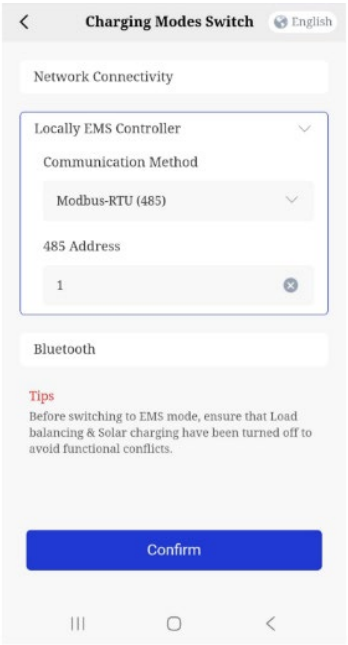
e) Select the “Charging Mode Switch” option



f) Select “Locally EMS Controller” to enable control of the wallbox via the Azzurro HUB

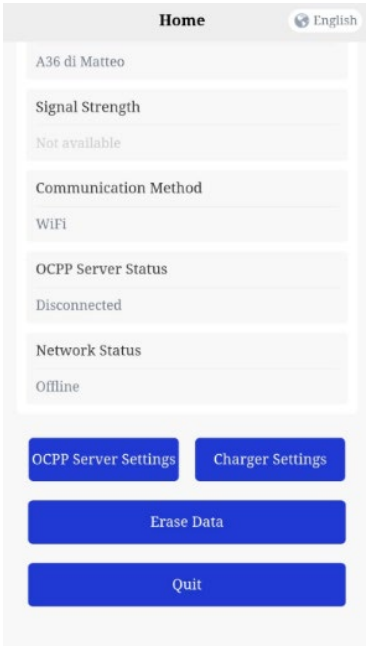


g) Select “Modbus-RTU (485)”, enter the wallbox address, taking care to select a different address for each wallbox, e.g. wallbox 1 = address 1, wallbox 2 = address 2, and press confirm.
Before switching to EMS mode, ensure that the *Load balancing* and *Solar charging* functions have been disabled to avoid functional conflicts

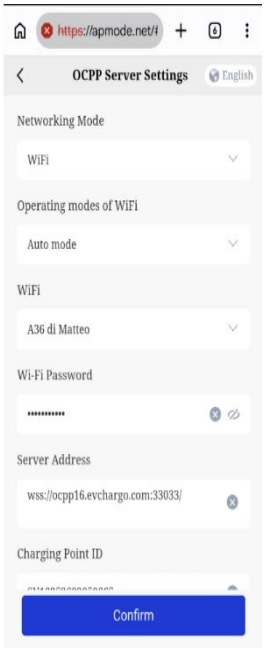


6.2.3. Configuration via AP for communication with third-party portals

a) Power on the wallbox
b) Log in to the access point following the instructions in the section ‘
c) Select the “OCPP settings” option

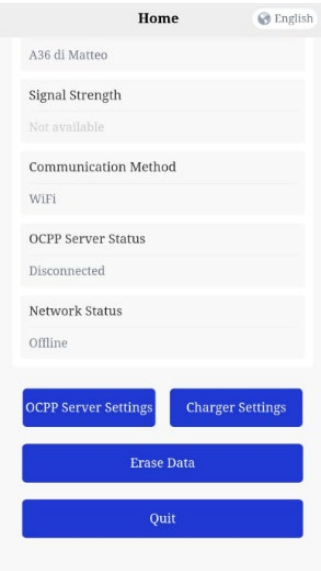


d) In the “Server Address” field, enter the wss address provided by the third-party service and press “Confirm”.

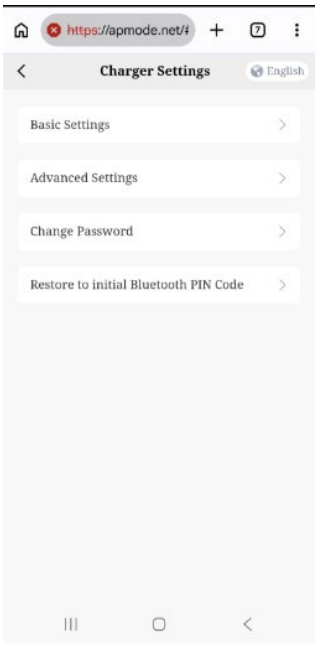


6.2.4. Updating via the AP

a) Power on the wallbox
b) Log in to the access point as described in the section **Error. The reference source could not be found.**
c) Select the “charger settings” option



d) Select the “Advanced settings” option



e) Select “Update firmware” and upload the .enfs file downloaded from the website. The update will take approximately 5 minutes, after which the wallbox will restart automatically.