

Wallbox One

AC 1 x 22 kW

Installation Manual

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1. Introduction

This manual guides the installation of the AgeVolt Wallbox One charging station (also referred to as the wallbox or charging station). The manual includes installation instructions (placement and connection) and the initial startup. Each step of the installation must be properly followed and secured by a qualified electrician. The installation must be inspected by a revision technician.

1.1 Safety Information

This document contains important instructions and warnings that must be followed during the installation and maintenance of the charging station.

- Before installing this product, read all instructions.
- The charging station can only be installed, repaired, or maintained by a qualified electrician. Unauthorized repair or modification of the device will result in the immediate voiding of the warranty.
- Unauthorized modifications or reconstructions are not permitted.
- Do not install or use the charging station near flammable or explosive materials, chemicals, or vapors.
- Do not operate the charging station at temperatures outside its operating range.
- The charging station must be connected to a grounding system (specified by the charging system project at the installation site).
- Protect the charging station from any impact.
- The charging station does not have its own switch. Always follow the rules and regulations related to local electrical installation.
- Incorrect installation of the charging station could cause damage to the charging station itself or the connected electric vehicle.
- After installing Wallbox One, it is necessary to have the installation inspected by a revision technician.

Throughout this manual, you will see notes and safety warnings regarding potential hazards. The symbols used have the following meanings:



DANGER - indicates an immediately dangerous situation that will result in death or serious injury if the appropriate measures are not taken.



CAUTION - means that if the necessary safety measures are not taken, property damage may occur.

1.2 Additional Documentation

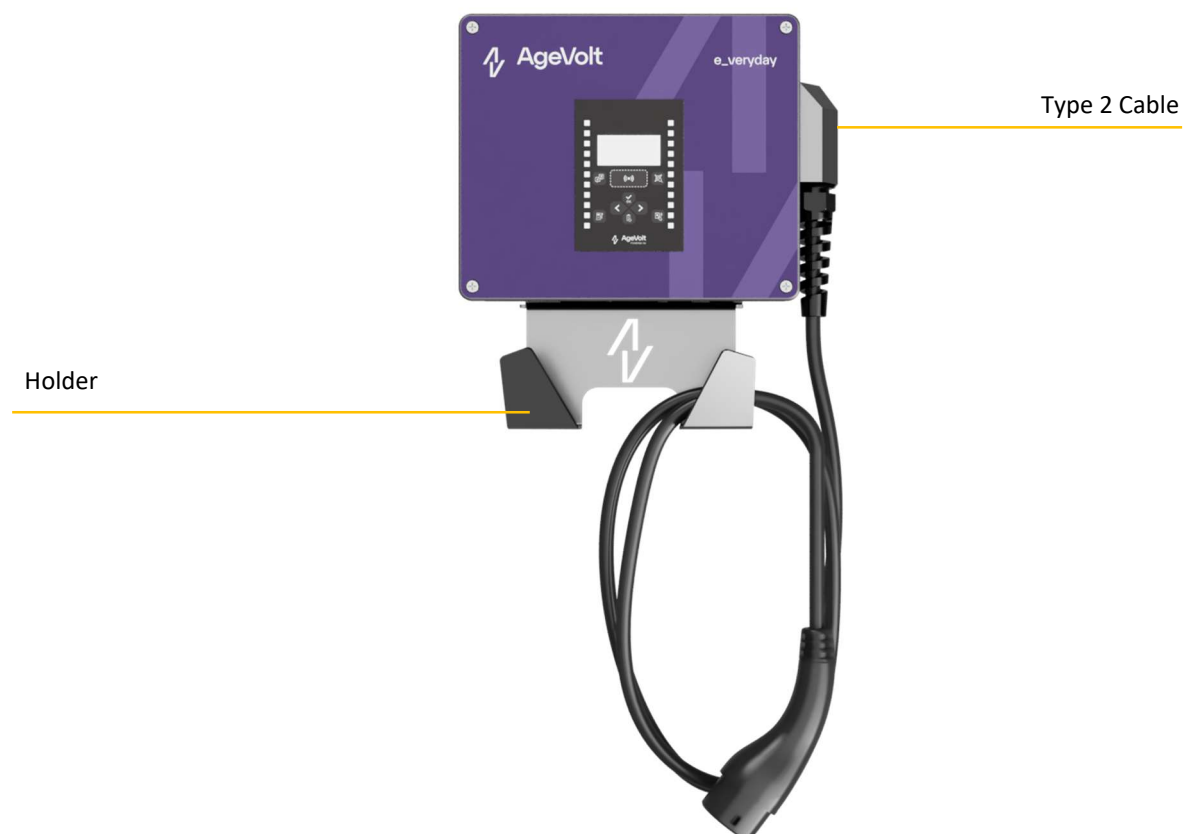
For more information and technical documentation visit www.support.agevolt.com

2. Description of the Charging Station

2.1 Version of the Charging Station with a Socket



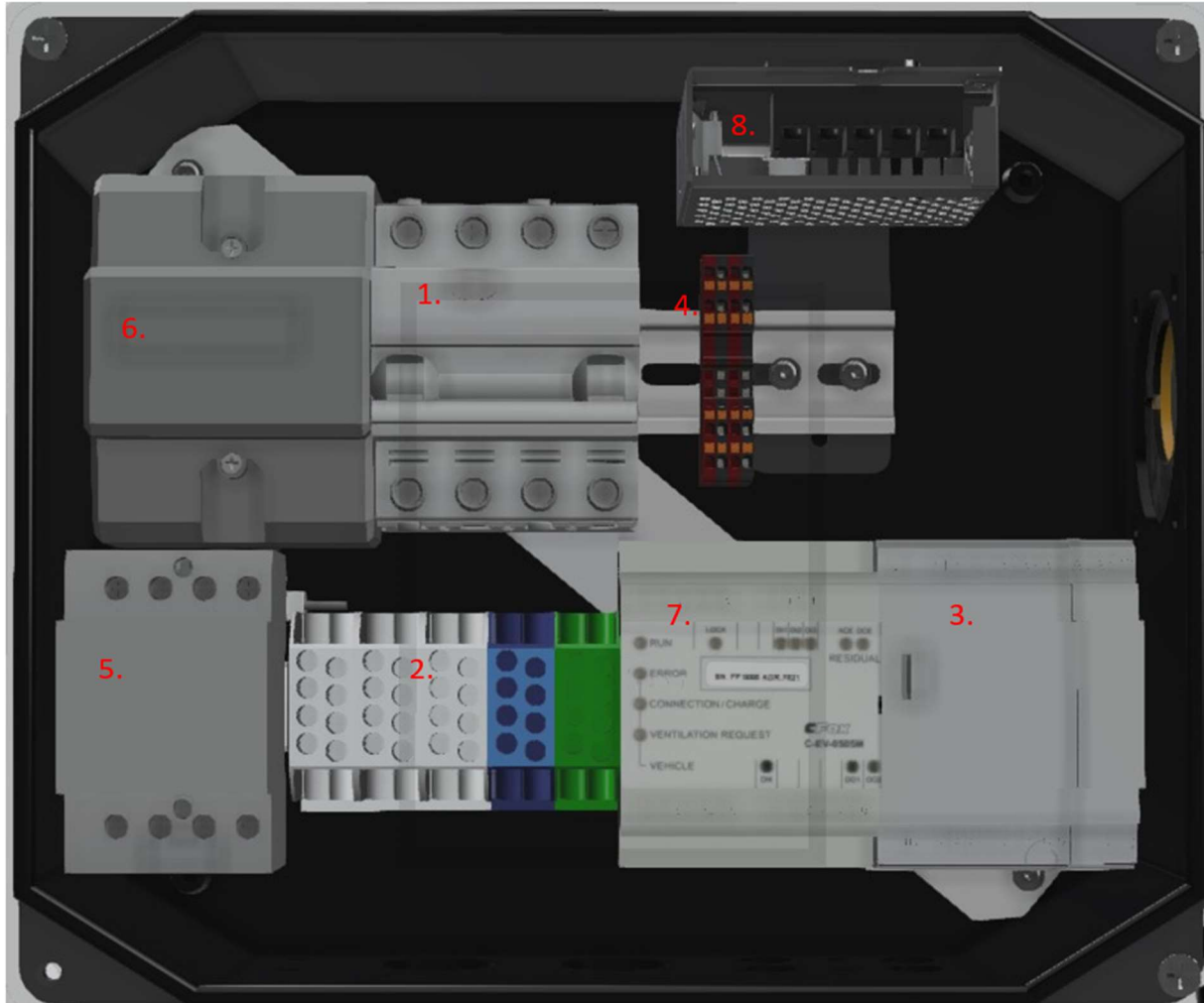
2.2 Version of the Charging Station with a Cable



* The charging station may not be equipped with a display with an RFID reader. The presence of the display depends on the configuration of the charging station.

2.3 Description of Selected Components of the Charging Station

The diagram below shows the internal components of the charging station.



1. RCBO (Residual Current Circuit Breaker with Overcurrent Protection) / MCB (Miniature Circuit Breaker) (depends on the configuration of the charging station)
2. Input terminals for connecting power wires
3. SmartSystem
4. Input terminals for connecting communication bus wires
5. Contactor
6. Electricity meter
7. EV module (communication unit)
8. Power supply

3. Specifications of the Charging Station

3.1 Basic Parameters

Standard version AgeVolt Wallbox One AC 1 × 22 kW	
Overall dimensions: 314 × 264 × 125 mm	Weight: 8 kg
Number of charging points (EVSE): 1	Operating temperature: -30 °C až +50 °C
Socket Version: Type 2 Mennekes socket (IEC62196-2) + lock	Operating humidity: 5 % až 95 %
Cable Version: Type 2 cable (5m) (5m) Mennekes (IEC62196-2)	Storage temperature: -30 °C až +60 °C
Maximum EVSE power: 22 kW	Surface material: Aluminum alloy (AlMgSi)
Rated voltage: 3 × 400/230 V AC, 24 V DC	Internal access: Front cover
Rated current: 32 A	Mounting access: Front cover
Rated frequency: 50 Hz	Elektromer: MID triedy 1
Degree of protection: IP54	DC protection: RCD DC 6 mA
Degree of mechanical protection: IK10	

4. Installation Planning

The installation of the Wallbox One charging station requires:

- Calculation of the existing electrical load to determine the maximum operating current.
- Calculation of the distance to ensure minimal voltage drop.
- Obtaining necessary permits from local authorities, such as building permits.
- Ensuring subsequent inspection of the installation by a revision technician.
- Cables must be dimensioned in accordance with local standards.
- The insulation of the used wiring must comply with local standards.

Before installation, consult all electrical equipment, including residual current devices, overcurrent protection, electrical installations, etc., with a qualified electrician.

To achieve the maximum charging power, use a three-phase circuit breaker with a rated current of 32 A. In some cases, this level of current may not be available, and therefore the maximum available charging current must be adjusted in the settings of the charging station.

4.1 Power Cable Requirements

Minimum (reduced charging power 1×11 kW):

- Input power cable CYKY-J 5 $\times$ 25 providing 400 V / 16 A at the installation site of Wallbox One
- 16 A circuit breaker before the charging station*

Optimal (full charging power 1×22 kW):

- Input power cable CYKY-J 5 $\times$ 6 providing 400 V / 32 A at the installation site of Wallbox One
- 32 A circuit breaker before the charging station*

*Lower input power cable parameters than the minimum can be installed after individual communication with AgeVolt technician to reduce the output charging power.

Different vehicles have different onboard chargers and therefore different charging power. This means that although the charging station is designed for 22 kW (three-phase 32 A), the vehicle may charge more slowly depending on its onboard charger.



Ensure the correct phase sequence L1 L2 L3 (U V W) at the input of the charging station!



If your configuration does not include an internal protective unit (RCBO), make sure that the power cable is already protected by an RCBO in the building's electrical panel!

4.2 Communication and Data Cable Requirements

A J-Y(ST)Y communication cable must be installed between the charging station and the SmartSystem (if the SmartSystem is located outside the charging station) and between the SmartSystem and the SmartMeter located in the electrical panel. The J-Y(ST)Y cable must also be installed if more than one charging station is installed to ensure communication between them. We recommend installing the J-Y(ST)Y communication cable even if only one charging station is installed for its easy future expansion.

Optimal Requirements: J-Y(ST)Y 2 × 2 × 08

An FTP communication cable must be installed to connect the charging station to the local network (internet) if the SmartSystem is located in the charging station.

Optimal Requirements: FTP CAT5e (or higher) + RJ45

4.3 Space Requirements

Wallbox One can be mounted on a wall or stand. We recommend placing it on a brick/concrete wall (in the case of a stand, on a concrete base with minimum dimensions of 40x40x40) or on a SmartBase near your parking spot, considering the length of the charging cable as well as convenient access to the charging station throughout the charging process. Do not place Wallbox One on an unstable or flammable wall, fence, post, or near a heat source. Wallbox One is approved for outdoor installation and does not require any additional protection from adverse weather conditions.

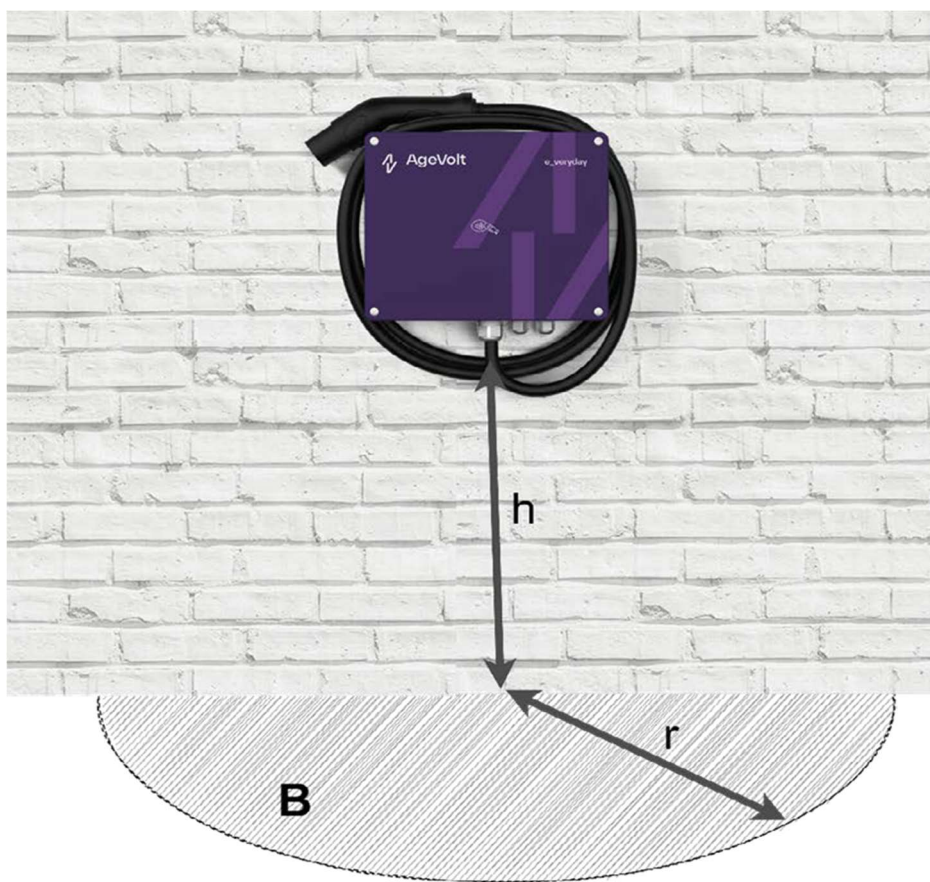
Local regulations for electrical installations, fire protection measures, and accident prevention must be taken into account, and escape routes must be secured at the installation site. It is prohibited to install the device in a location where falling objects could damage the charging station.

Recommendations:

- Height $h = 12$ m above the ground
- Adjust the height for convenient access if necessary, but always consider safe access to the charging station and during EV charging.

Zone B $r = 3$ m (depends on cable length)

When placing the charging station, consider the length of the charging cable. Make sure to park the EV so that the EV charging port is in zone B (within reach of the charging cable). Ensure there is enough space between the electric vehicle and the charging station during the entire charging process for easy access to both.



5. Installation

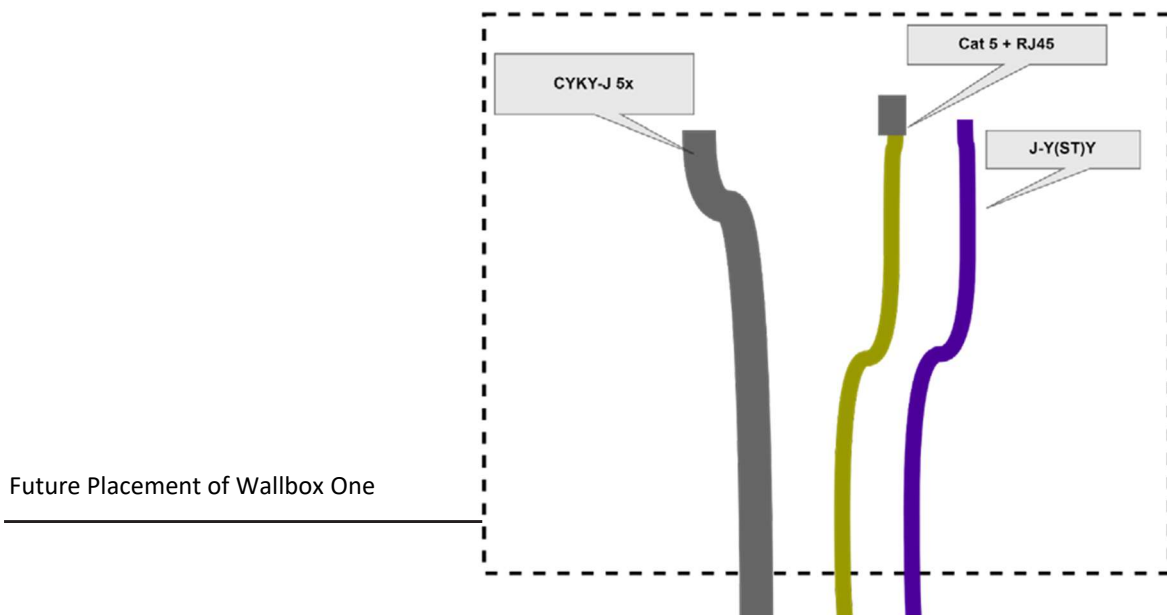
5.1 Tools and Materials for Installation

Before installing the Wallbox One charger, prepare the following tools and materials:

- PH2 screwdriver – for removing the front panel of the wallbox
- Spirit level, measuring tape
- Open-ended/spanner wrench 8, Allen key 3
- Drill and drill bit 8 mm (select a suitable drill bit depending on the material to be drilled)
- Hammer
- Mounting set (included in the Wallbox One package)
- Wire stripper
- Crimping ferrules (5 pcs for power wires if it is a soft cable)
- Crimping pliers for ferrules
- Flat screwdriver with a maximum width of 3 mm (for CIB terminals)
- FTP Ethernet connector CAT 5e (or according to the type of data cable brought)
- Crimping pliers for RJ45
- Ethernet cable tester
- Voltmeter or digital multimeter for measuring AC and DC voltage at the installation site.

5.2 Preparing the Installation Area

Bring the CYKY-J power cable to a solid wall or stand at a sufficient length necessary to install the wallbox at the correct height plus an additional 0.5 m for internal wiring and subsequent connection. Prepare the J-Y(ST)Y and CAT + RJ45 cables at the same length as the power cables.

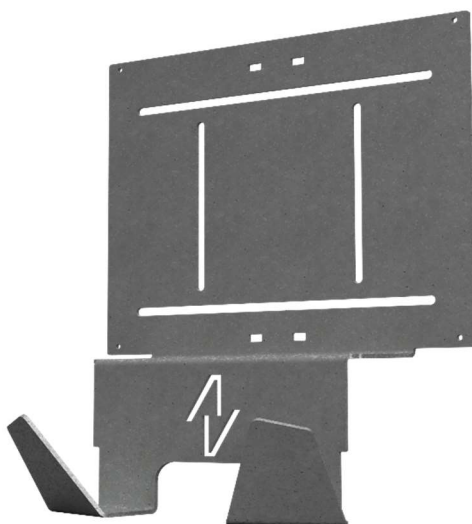


5.3 Wall Installation

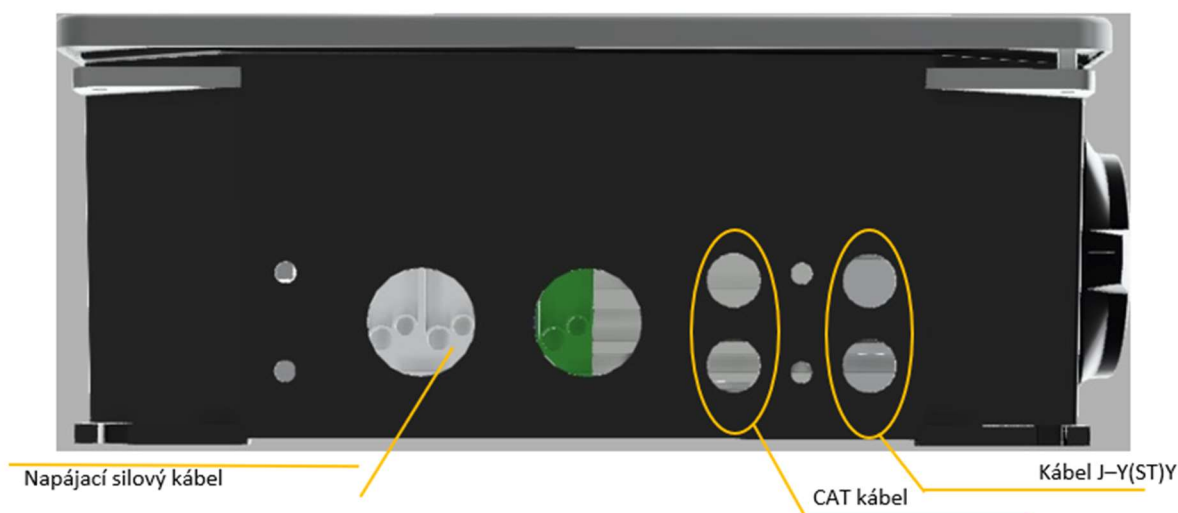


Warning: Before installation, turn off the circuit breaker of the power cable and check that the cable is not live.

1. Place the bracket for Wallbox One on the wall at the recommended height (section 4.3). Mark 4 points within the holes on the bracket as it suits you.



2. Drill four holes ($\varnothing$ 8 mm, depth 70 mm).
3. Insert the plugs into the drilled holes so that they are flush with the wall surface.
4. Fit the cable glands into the designated holes in the wallbox bracket (2x32 , 4x16).
5. Attach the wallbox bracket using the included screws.
6. Mount the wallbox onto the bracket. Fix it with 4x M5x12 DIN6921 A2 screws in the corners of the charging station.
7. Thread the power cable and communication cables through the cable glands. For easier installation of the cables, you can first thread the power and communication cables through the cable glands and then mount the wallbox onto the bracket. Thread each cable through a separate cable gland intended for it.

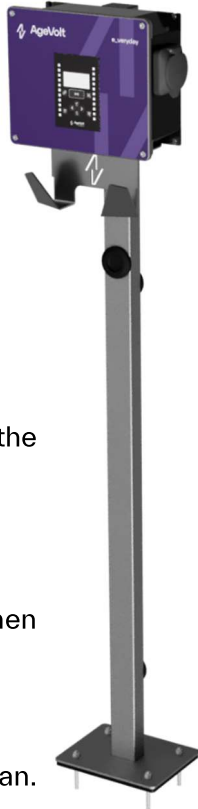




5.4 Stand Installation

Warning: Before installation, turn off the circuit breaker of the power cable and check that the cable is not live.

1. Fit the cable glands into the designated holes in the wallbox bracket (2x32, 2x16).
2. Thread the power, communication, and data cables through the bracket's cable glands.
3. Attach the wallbox bracket to the stand using the included screws.
4. Mount the wallbox onto the bracket. Fix it with 4x M5x16 screws in the corners of the charging station.



5.5 Cable Connection

Warning: Before installation, turn off the circuit breaker of the power cable and check that the cable is not live.

5.5.1 Connecting Power Wires

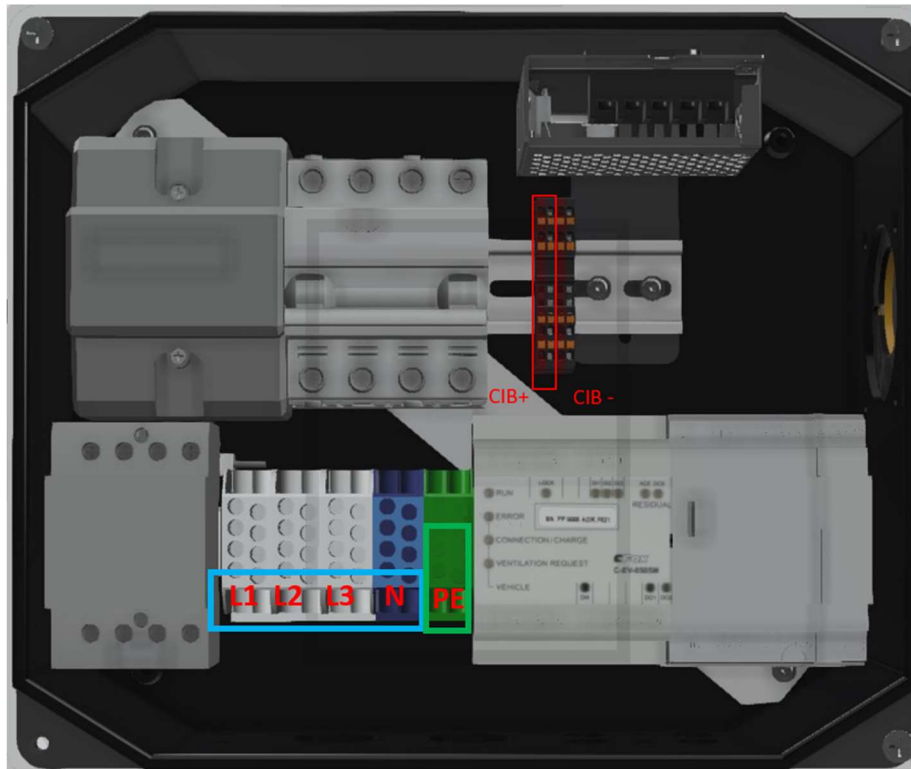
First, connect the PE wire to the PE terminal. Continue by connecting the N wire and then phases L1 L2 L3.



The connection must comply with local standards and be carried out by a qualified electrician. After connection, the entire installation must be inspected by a revision technician.

5.5.2 Connecting CIB Wires

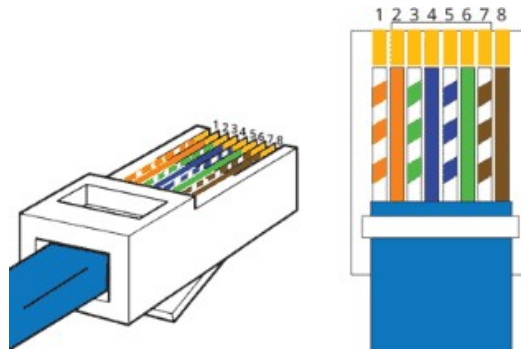
If Wallbox One requires a connection to the SmartSystem or SmartMeter, connect the J-Y(ST)Y signal cable to the terminals next to the control unit. Connect the red wire of the J-Y(ST)Y cable to the CIB+ terminal in Wallbox One located on the top DIN rail next to the control unit. Then connect the black wire to the CIB- terminal.



5.5.3 Ethernet Connection

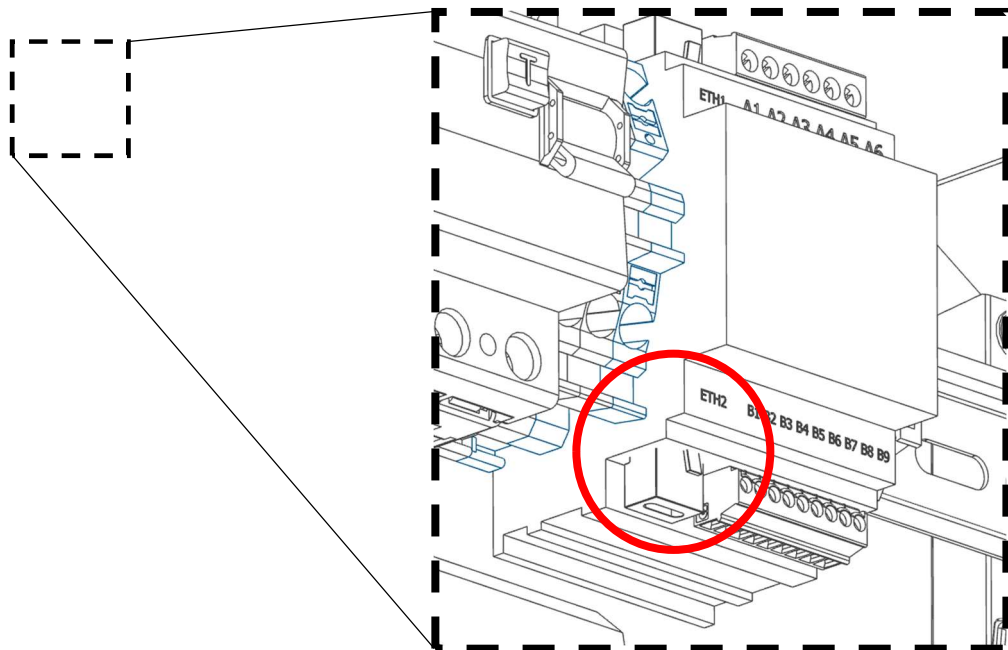
If Wallbox One contains a SmartSystem, connect the Ethernet cable to port ETH2. First, thread the FTP CAT Ethernet cable (minimum specification 5e) through the cable gland, and then install the RJ45 connector on the end of the Ethernet cable. Use an Ethernet cable tester to verify the functionality of the manually made ends on both ends of the Ethernet cable. Use the Ethernet cable tester according to the manufacturer's instructions.

- | | |
|----------------|---------------|
| 1 white-orange | 5 white-blue |
| 2 orange | 6 green |
| 3 white-green | 7 white-brown |
| 4 blue | 8 brown |



Connecting the CAT cable to RJ45

After successfully testing the Ethernet cable, connect the RJ45 connector to port ETH2 at the bottom of the control unit (picture below). Do not connect the Ethernet cable to port ETH1 at the top of the control unit.



5.6 Installing the Type 2 Charging Cable

If you are installing Wallbox One in the cable version and the Type 2 charging cable is not yet connected to the charging station, it needs to be connected.

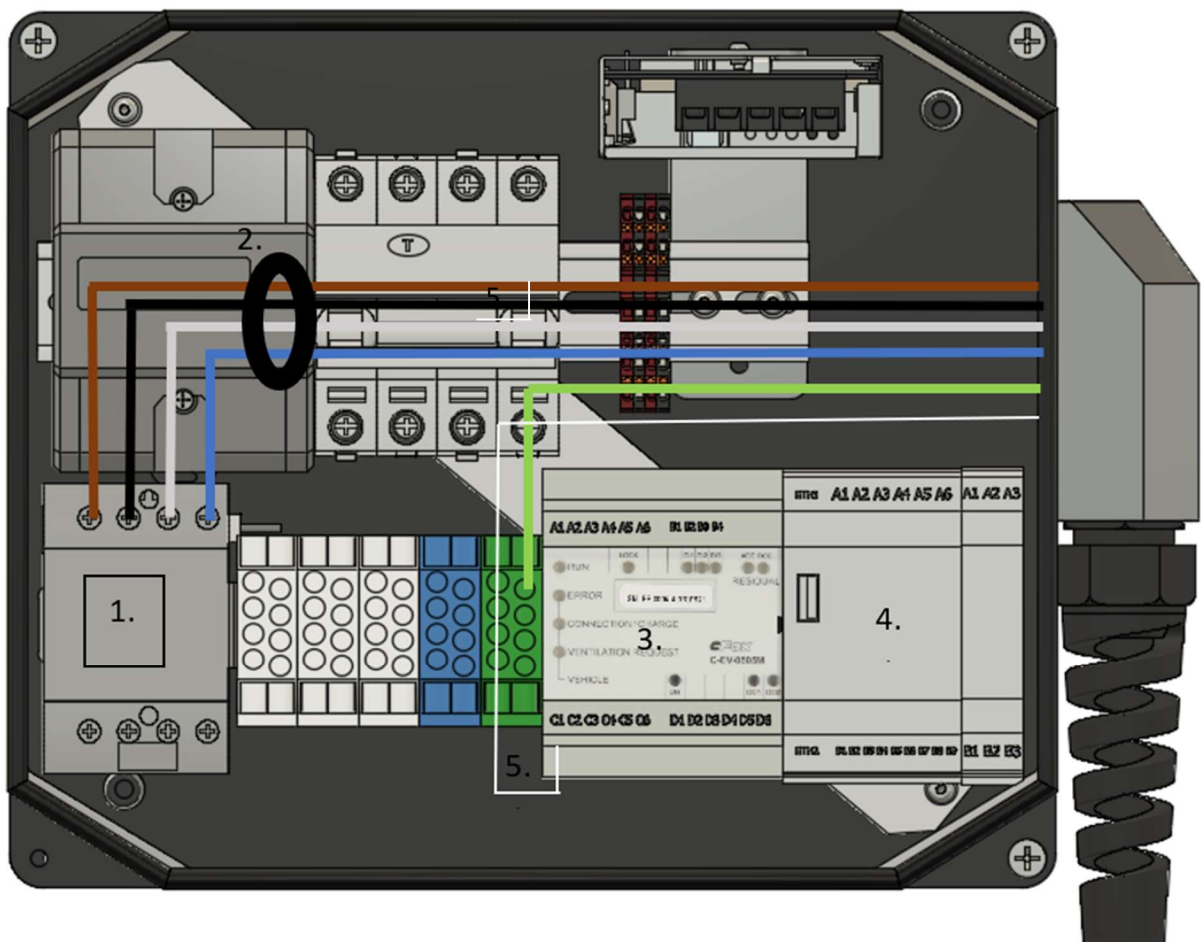


Only a qualified electrician can perform the installation. Before installation, turn off the circuit breaker on the power cable to the Wallbox One device in the electrical panel. Follow the steps in the installation instructions.

The charging cable uses these insulation colors for wires:

L1 brown, **L2 black**, **L3 grey**, **N blue**, **PE yellow-green**, **CP white**

1. Contactor
2. Residual Current Sensor
3. Communication Module (EV Module)
4. SmartSystem
5. CP - white wire



Installation Procedure:

1. Disconnect Wallbox One from the power source and remove the front cover. To open the front cover, unscrew 4 screws.
2. Install the cable glands. Fix them with 4x screws and 4x nuts.
3. Thread the charging cable through the cable glands on each side of the wallbox (side of the cable without the TYPE 2 plug) sufficiently so that the individual wires reach the terminals with some slack.
4. Start with the electrical installation with the green-yellow wire (PE) and insert it into the PE terminal according to the picture.
5. Thread the L1 L2 L3 N wires through the residual current sensor coil.
6. Connect the L1 L2 L3 N wires to the contactor terminals and tighten with a PH screwdriver.
7. Insert the CP signal wire from the charging cable into the communication unit in slot C1 and tighten with a flathead screwdriver.
8. Check the correct connection of the individual wires of the charging cable and check that they are sufficiently tightened with adequate force.
9. If the individual wires of the charging cable are correctly connected, secure the charging cable with the cable gland.
10. Reattach the front panel.

By completing the installation steps, the charging cable is ready for the charging process.

6. Commissioning the Charging Station



Before turning on the circuit breaker of the power cable, check with a multimeter that there is no short circuit between the individual wires.

6.1 Initial Startup

Turn on the (RCBO) / (MCB) inside the wallbox and close the front panel. Turn on the switch/circuit breaker in the electrical panel. If the SmartSystem is located outside the charging station, turn on the power for the SmartSystem as well. Wallbox One will turn on. During the first startup, Wallbox One is in the default factory setting, and the charging power needs to be adjusted according to the available capacity of the upstream circuit breaker.



The charging power must be set before the first charging in the SmartSystem.

7. Troubleshooting

7.1 Overview of Possible Problems and Solutions

Condition	Error	Solution
The charging station did not start / does not work properly	Phase sequence L1 L2 L3 (U V W) at the input is not observed.	Check the phase sequence.
	Input wires are not properly mounted in the terminals.	Check the wire connections (tighten them).
The display shows an error: Circuit breaker error	The residual current circuit breaker / circuit breaker in the charging station is tripped.	Check the residual current circuit breaker / circuit breaker inside the charging station.
The display does not work even though the circuit breaker for the charging station is on	SmartSystem error.	Check the power supply and proper functioning of the SmartSystem.
The display shows HALT	The system is updating.	Wait for the update to complete.
	The charging station is not properly configured in the SmartSystem. The display address does not match the set address.	Adjust the configuration in the SmartSystem.

7.2 Restarting the Charging Station

Turn off Wallbox One from the power source for 10 seconds and then turn it on.

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