

Wallbox eMH3

Installation manual



Contact

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Contents

Contactii
Important information1
Preface1
About this manual1
Safety notices in this manual . . . . .	.2
Safety notices on the device . . . . .	.2
General safety information . . . . .	.3
General product information . . . . .	.4
Notes regarding installation . . . . .	.4
Preparations, installation and taking into operation . . . . .	.6
Introducing the product . . . . .	.6
Unpacking and components included . . . . .	.6
Identifying your model variant . . . . .	.7
General requirements of the installation site . . . . .	.8
Requirements for the power supply . . . . .	.9
Mechanical and electrical installation	10
Activating the RFID function	15
Taking the wallbox into operation	16
Error detection and solutions	17
Disruptions to the operation of the wallbox and solutions	17
Error codes and solutions	18
Taking the product out of and back into operation	22

Appendix	23
Technical specifications	23
Scale drawings and dimensions.	25
Contact chart Type 1/Type 2.	27
Guidelines & Norms	27
CE certification and compliance declaration	28
Glossary & Definitions.	28
Trademarks	28
Intellectual Property & Copyright	29
Disposal advice	29

Important information

Preface

This manual describes the mechanical and electrical installation of the ABL Wallbox. The working steps described in this manual must only be carried out by qualified specialist personnel (mechanical installation) and qualified specialist electrical contractors (electrical installation), who, on the basis of their specialist training, knowledge and experience as well as their knowledge of the relevant regulations, can assess and carry out the working steps described in this installation manual and recognize potential hazards.

The ABL Wallbox model variants can be identified by the ABL model number on the product label located on the internal electronic components cover. Always make sure before installation that your model variant is the one described in this installation manual!

Model variants covered by this manual

3W2205	eMH3 Single with charging cable and 22 kW max. output
3W2207	eMH3 Single with charging socket and 22 kW max. output
3W2209	eMH3 Single with charging socket and shutter, 22 kW max. output
3W2214	eMH3 Twin with charging sockets and 2 x 11 kW or 1 x 22 kW max. output
3W2217	eMH3 Twin with charging sockets and shutter, 2 x 11 kW or 1 x 22 kW max. output
3W4401	eMH3 Twin with charging sockets and 2 x 22 kW max. output

About this manual

This manual documents the steps and settings required for installing the wallboxes, taking them into operation as well as for resolving malfunctions during operation. For quick and easy reference, certain sections of this manual are specially formatted.

- Descriptions listing equally applicable options (as is the case here) are indicated by bullet points.
- Descriptions that describe performing a function are shown in the form of numerical lists indicating the order of the individual working steps.

Please make sure you read this manual carefully and ensure in particular that you follow all safety notices given in this manual.

All measurements in this manual are in millimeters.

Please note that all technical details, specifications and design characteristics of the product may be changed without prior notice.

IMPORTANT INFORMATION

Safety notices in this manual

In particular, the warnings and safety measures in this manual that are marked as follows must be adhered to. The symbols carry the following meanings:



DANGER!

Sections marked with this symbol draw attention to electrical voltages that represent a danger to life and limb: Actions contrary to these safety notices may lead to severe injury and death. Actions marked with this symbol must not be carried out under any circumstances.



CAUTION!

Sections marked with this symbol draw attention to further hazards that may lead to damage to the wallbox itself or to other electric devices. Actions marked with this symbol must be carried out with special care.

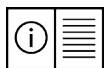


PLEASE NOTE:

Sections marked with this symbol draw attention to further important information and special features that are necessary for the reliable operation of the device. Actions marked with this symbol should be carried out as required.

Safety notices on the device

Further operational and safety notices are provided on the label on the right side of the housing and on the electronic components cover inside every wallbox. These symbols carry the following meanings:



WARNING!

Please ensure that you first read the operating manual, especially before you open the housing cover of your ABL Wallbox.



WARNING!

Please ensure that you first read the installation manual (this document) before you open the electronic components cover inside the wallbox.



WARNING!

After opening the housing, dangerous voltages may be present on the inside of the wallbox as well as on components you are able to touch.

General safety information

Please pay attention to the following points:

- Read this manual carefully.
- Heed all warnings.
- Follow all instructions.
- The wallbox must be installed, connected and approved for operation according to local rules and regulations by a qualified specialist electrical contractor.
- Please ensure that minimum clearances of 50 cm are kept on all sides of the wallbox during and after installation.
- Only use accessories intended and sold for the wallbox by ABL.
- Do not operate this wallbox in close vicinity to running water or water jets: However, the ABL Wallbox is sufficiently protected against water splashes and sprays according to IP54.
- The ABL Wallbox must not be installed in areas subject to flooding.
- The ABL Wallbox must not be installed in explosive atmosphere areas (EX areas).
- The ABL Wallbox must not be covered with stickers or other objects or materials so that sufficient air circulation is ensured at all times.
- No liquids, or objects or receptacles containing liquids, must be placed on the housing.
- Please note that additional overvoltage protection may be required depending on the connected vehicle and/or by national regulations.
- Please note that, in some countries, a different tripping characteristic for the upstream residual current circuit breaker (residual current device, in the following called RCCB, see also "Glossary & Definitions" on page 28) may be required. In this case, please contact ABL technical support.
- Please note that operating a radio transmitter in the immediate vicinity (< 20 cm) of the wallbox may lead to malfunctions and should therefore be avoided.
- This device is not intended to be used by persons with limited physical, sensory or mental abilities (including children) and/or lacking knowledge, unless they are supervised by someone responsible for their safety or have received instructions from such a person on how to use the device.
- Children must be supervised so that they do not play with the device.
- Please note that the ABL Wallbox may be installed and operated at elevations of max. 2,000 meters AMSL (above mean sea level).

IMPORTANT INFORMATION

General product information

The ABL Wallboxes described here represent the current state of technology and comply with all current technical safety requirements, guidelines and standards. The safety notices in this manual serve to ensure the proper and safe installation as well as subsequent operation of the device. Disregard of or actions contrary to the safety information and instructions contained in this manual may lead to electric shock, fire, severe injury and/or death.

The ABL Wallbox must be installed by a qualified specialist electrical contractor, connected according to local regulations and norms and subsequently checked and approved for operation.

Malfunctions affecting the safety of persons, connected vehicles or the device itself must be repaired by an authorized specialist electrical contractor only.

Should a malfunction occur with your wallbox, please first read the sections regarding "Error detection and solutions" on page 17. Should the fault or malfunction recur and still not be able to be resolved, please contact ABL technical support.

Always contact ABL technical support if:

- the housing has been damaged mechanically,
- the housing cover has been removed or can no longer be closed or locked,
- sufficient protection against splashing water and/or foreign objects is obviously no longer evident,
- there is functional or visible damage to the charging socket or external charging cable,
- or the wallbox does not function properly or has been otherwise damaged.



DANGER!

Should you detect damage to the housing, charging socket or charging cable, you must immediately discontinue installation or take the already installed wallbox out of operation via the upstream miniature circuit breaker(s) (in the following called MCB(s), see also "Glossary & Definitions" on page 28) in your domestic power supply and the RCCB: No further use of the wallbox is permitted in this case! Please contact ABL technical support!

Notes regarding installation

Please observe the following instructions for the installation of your ABL Wallbox:

- The device must always be connected to the protective earth conductor of your electricity supply. The protective earth connection will be made and checked by the installing contractor. After installation, only qualified specialist electrical contractors may make changes.

- At all times comply with local safety regulations for the country in which you operate the wallbox.
- For proper operation, the power supply for the wallbox must be protected in the domestic power supply with a suitable MCB.
- To disconnect the wallbox completely from the electricity grid, the power supply must be interrupted using the upstream MCB and the internal RCCB.
- Ensure that the rated voltage and rated current of the wallbox comply with the parameters of your local electricity grid and that the rated output is not exceeded during the charging procedure.
- The wallbox should not be installed in areas of high pedestrian traffic. Installation along thoroughfares and marked escape routes should be especially avoided.
- Never install the wallbox in a confined space. In particular, you must ensure that the vehicle can be parked at a suitable distance from the wallbox for charging and connected without any strain on the charging cable. The distance between vehicle and wallbox should be at least 50 cm and no more than 5 m. You may deviate from this recommendation depending on local conditions.
- You must not under any circumstances make any changes to the housing or the internal wiring of the wallbox: Any disregard of this instruction represents a safety risk, fundamentally breaches the guarantee provisions and may void the warranty with immediate effect.

Preparations, installation and taking into operation

Introducing the product

The ABL Wallbox is entirely manufactured in Germany and at all times complies with the regulations and norms for the charging of electric vehicles applicable throughout Europe according to IEC 61851-1 Mode 3 – please also refer to the section on “Guidelines & Norms” on page 27. According to their requirements, users may select from model variants with SINGLE or TWIN charging sockets or SINGLE fixed charging cable, all designed for domestic and semi-public applications.

We place the highest value on user safety in all our products. This is why the wallbox features an internal RCCB as well as DC fault current detection: In combination with the protection devices of the domestic electrical infrastructure and the fault current protection of the electric vehicle, these measures ensure effective protection against short circuit, electric shock and other operational hazards.

The wallbox is especially easy to operate during everyday use: LED lights on the front of the wallbox housing cover allow you to check the current operating status at any time. Should a malfunction occur, you can identify the cause by its specific LED error code without having to open the housing. After being taken into operation by a specialist contractor, the ABL Wallbox is ready for charging at any time. For some model variants, each charging process must be separately authorized via the integrated RFID module, provided this function was activated during installation.

Unpacking and components included

The ABL Wallbox package includes a range of accessory components needed for installation and proper operation. Therefore, please check immediately after unpacking (together with the customer, if required) whether the following components are included:

Component	Quantity	Description
Wallbox	1	Charging station, consisting of plastic housing with lockable housing cover and separate mounting plate
Quick start guide	1	Quick start guide including safety notices in printed form
Installation kit	1	Set of fixings for wall mounting, consisting of 2 x 4 screws as well as matching wall plugs, triangular key, strain relief including screws (2 pcs), sealing grommets for openings at the back of the housing (3 pcs)

Should one or more components be missing after unpacking, please contact your local ABL partner immediately.

Identifying your model variant

The ABL Wallbox is available in a range of model variants that are mechanically and electrically tailored to different usage patterns. When you open the housing cover for installation, you will find behind it on the lower part of the electronic components cover a product information label, which will carry the ABL model number. For identification, the model code (3WXXXX) as well as the power supply ratings (voltage, frequency, current) indicated below it are especially relevant.



Using the ABL model number, please always ensure before installation that your wallbox model variant is the one whose installation is described in this document. You can find a list of the wallbox model variants described in this manual in the table below.

The following wallboxes are described in this manual:

MODEL NUMBER	GRID CONNECTION	MODEL VARIANT
3W2205	230 / 400 V 50 Hz 32 A	Single charging station with fixed charging cable according to IEC 62196-2 Type 2; integrated, factory deactivated RFID module for access control; internal Type A RCCB; internal DC fault current detection; charging output up to 22 kW
3W2207	230 / 400 V 50 Hz 32 A	Single charging station with integrated charging socket according to IEC 62196-2 Type 2 with locking mechanism for separately available charging cable (Type 2 to Type 2 or Type 2 to Type 1); integrated, factory deactivated RFID module for access control; internal Type A RCCB; internal DC fault current detection; charging output 22 kW
3W2209	230 / 400 V 50 Hz 32 A	Single charging station with integrated charging socket according to IEC 62196-2 Type 2 with shutter and locking mechanism for separately available charging cable (Type 2 to Type 2 or Type 2 to Type 1); integrated, factory deactivated RFID module for access control; internal Type A RCCB; internal DC fault current detection; charging output up to 22 kW

PREPARATIONS, INSTALLATION AND TAKING INTO OPERATION

MODEL NUMBER	GRID CONNECTION	MODEL VARIANT
3W2214	230 / 400 V 50 Hz 32 A	Twin charging station with two integrated charging sockets according to IEC 62196-2 Type 2 with locking mechanisms for separately available charging cables (Type 2 to Type 2 or Type 2 to Type 1); integrated, factory deactivated RFID module for access control; internal Type A RCCB; internal DC fault current detection; internal load management for charging outputs of up to 2 x 11 kW or 1 x 22 kW
3W2217	230 / 400 V 50 Hz 32 A	Twin charging station with two integrated charging sockets according to IEC 62196-2 Type 2 with shutters and locking mechanisms for separately available charging cables (Type 2 to Type 2 or Type 2 to Type 1); integrated, factory deactivated RFID module for access control; internal Type A RCCB; internal DC fault current detection; internal load management for charging outputs of up to 2 x 11 kW or 1 x 22 kW
3W4401	230 / 400 V 50 Hz 2 x 32 A	Twin charging station with two integrated charging sockets according to IEC 62196-2 Type 2 with locking mechanisms for separately available charging cables (Type 2 to Type 2 or Type 2 to Type 1); integrated, factory deactivated RFID module for access control; internal Type A RCCB; internal DC fault current detection; charging output of up to 2 x 22 kW



WARNING!

The information and technical specifications contained in this manual relate exclusively to the above-mentioned model variants and must not be transferred to other wallbox models. Should your wallbox variant not be described in this manual, please contact ABL technical support. Do not under any circumstances install the wallbox in this case, as this could lead to damage to the wallbox, to injury and/or death.

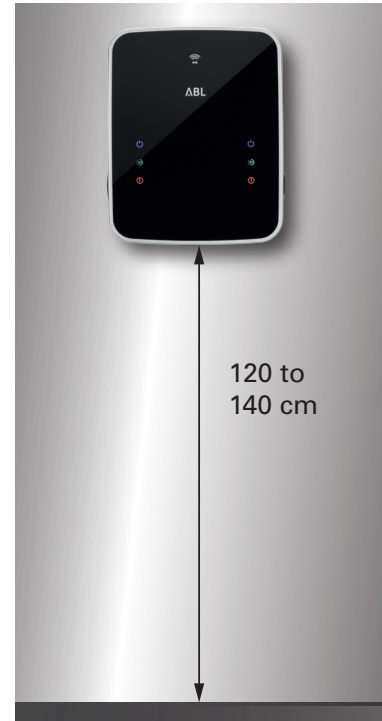
General requirements of the installation site

Your ABL Wallbox is an electrical device and is therefore subject to particular requirements for indoor and outdoor installation. In selecting the installation site, you must consider the following points:

- Consider all local regulations for electrical installations, fire protection and accident prevention.
- The wallbox must be installed where it is freely accessible to all authorized users.

PREPARATIONS, INSTALLATION AND TAKING INTO OPERATION

- A parking spot must also be planned for in front of the wallbox so that the vehicle can at all times be reached with the integrated or with an external charging cable.
- The recommended installation height is 120 to 140 cm from the floor to the lower edge of the housing. This recommendation may be adjusted upwards or downwards depending on local conditions.
- Sufficient air circulation must be ensured at the installation site so that the wallbox is cooled during operation: Always observe the allowed operating temperatures (see "Technical specifications" on page 23).
- The mounting area must have an even surface that provides sufficient stability for installing the wallbox.
- The required mounting area for the ABL Wallbox is at least 512 x 429 mm (H x W). All of the mounting plate of the wallbox must be in contact with the mounting surface.
- To ensure the safe operation of the wallbox, minimum clearances of 50 cm must be kept on all sides of the housing.
- In general, the ABL Wallbox is engineered for operation in high ambient temperatures. However, it must be ensured that the maximum operating temperature is not exceeded through external influences such as direct sunlight or similar.
- The wallbox meets the requirements for outdoor installation. Outdoors, the wallbox should only be installed in covered locations that provide sufficient protection from weather-related pollution.



Requirements for the power supply

The following standards must always be considered for the electrical installation of the ABL Wallbox:

- All regulatory requirements for low voltage installations according to IEC 60364-1 and IEC 60364-5-52 apply.
- ABL Wallboxes are designed for connection to and operation on rated voltages of 230 V (phase-neutral) or 400 V (phase-phase) at 50 Hz.
- The installation site must offer a sufficiently dimensioned power supply according to HD 60364-7-722:2012 (see also "Guidelines & Norms" on page 27): This power supply must be reserved exclusively for the wallbox and must not be used to supply other electrical devices.
- If necessary, a separate power supply must be installed that is intended exclusively for connecting the wallbox and complies with the general requirements for cabling and building infrastructure.

PREPARATIONS, INSTALLATION AND TAKING INTO OPERATION

- Depending on the desired rated power, the installation of the wallbox may need to be registered with and/or approved by the local electricity grid operator. Please consult the local regulations of your electricity grid operator.
- Cable dimensions must be adjusted according to the desired rated power and other aspects (such as cable length, material, cabling method etc.). The terminal blocks in the wallbox are designed for cable dimensions of up to 16 mm².
- The power supply cables may be installed above or below the wall surface: The mounting plate provides alternative cable inlets at the top and at the rear.
- The power supply for the wallbox must always be protected by an MCB: Please always observe the applicable national regulations regarding the selection of the MCB.
- The wallbox does not have a dedicated ON/OFF switch: If you want to take the wallbox out of operation, you must always switch the upstream domestic MCB and the internal RCCB(s) to the **0** (OFF) position. In addition, you have the option of deactivating the charging function of the **eMH3** via the integrated RFID module: The necessary procedure is described in section “Deactivating and reactivating of the charging function via RFID” on page 14 of the user manual for the ABL Wallbox.
- Please always ensure that the installation requirements listed in this manual are complied with. Disregard or actions to the contrary may lead to severe injury by electric shock or even death. In addition, in case of contravention of the notices given, the proper operation of the wallbox cannot be guaranteed.

Mechanical and electrical installation

After determining the mounting site for the wallbox, you can begin with the installation. For installation you will need the following components:

- Power drill or cordless drill (not included)
- Drill bit Ø 10 mm, appropriate for the wall substrate (not included)
- Screwdriver with flat head (2.5 mm blade width), Phillips head (PH1) and torx head (TX40, TX25, TX20, TX10) bits
- Mounting plate (included)
- Pliers or cutter for breaking or cutting out the cable inlet in the mounting plate (not included)
- Four 8 x 60 wafer head (TX40 bit) screws for fixing the mounting plate (included)
- Four 6 x 25 (TX25 bit) screws for fixing the wallbox housing to the mounting plate (included)
- If required: Wall plugs suitable for the mounting substrate (included: 10 x 50 nylon wall plugs)
- Spirit level if required (not included)

PREPARATIONS, INSTALLATION AND TAKING INTO OPERATION



DANGER!

Always observe the 5 golden rules of electrical installation:

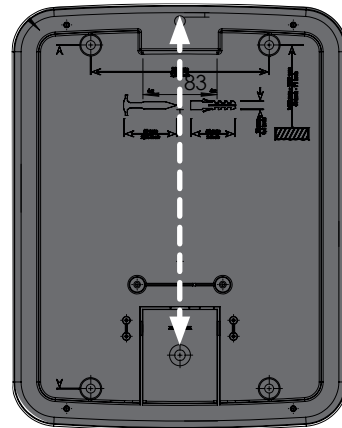
- 1. Cut off all voltage sources**
- 2. Secure all cut-off devices**
- 3. Verify absence of voltage**
- 4. Ground and short-circuit**
- 5. Cover or bar access to adjacent components under voltage**

Always deactivate the MCB allocated to the wallbox in the domestic power supply and the internal RCCB(s) before you begin installation. Also ensure that the MCB(s) and RCCB cannot be reactivated during installation. Otherwise, there is a risk of severe injury through electric shock or even death!

Proceed as follows to drill the holes using the mounting plate:

1. Ensure that a sufficiently dimensioned power supply is available at the desired installation site. Otherwise, a power supply must be installed especially.

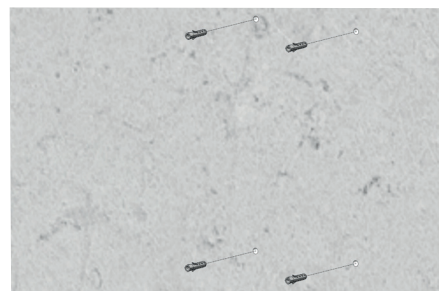
2. The mounting plate has pre-molded cable inlets for the power supply on its upper edge as well in the middle of its surface. According to the power supply at the installation site (and as required), please remove one of the plastic tongues intended for the power supply cable with a suitable pair of pliers, a cutter or drill.



3. Place the mounting plate on the chosen mounting surface: Use a spirit level if required. Mark the drill holes.



4. Drill the mounting holes as marked (Ø 10 mm). Insert the supplied wall plugs for the mounting screws if required.



PREPARATIONS, INSTALLATION AND TAKING INTO OPERATION

5. Fix the mounting plate in position with a screwdriver (TX40 bit) and the wafer head screws (8 x 60) included.

PLEASE NOTE: In case the power supply enters from the rear, you must first thread the cable through the opening in the connection area in the lower third of the mounting plate before screwing the plate into position.

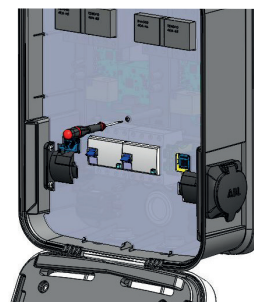
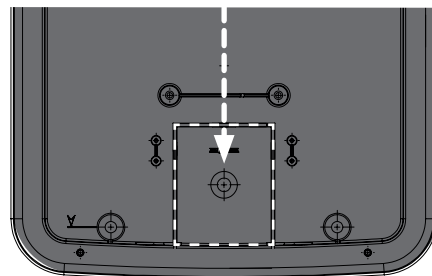
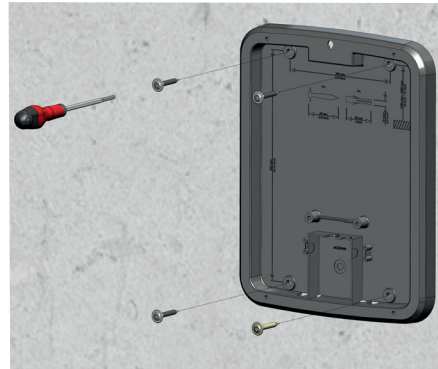
6. For the cable to enter from the top, you must install the power supply such that it is inserted into the connection area from above and can be fixed using its allocated strain relief.

PLEASE NOTE: The strain relief is not required if the power supply enters from the rear.

7. Now open the housing cover of the wallbox using the triangular key supplied and flip it towards the front.

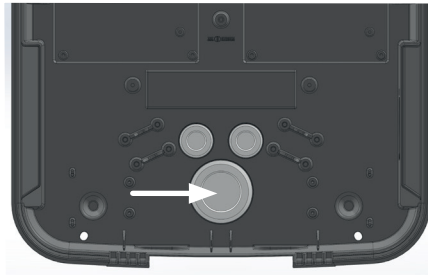
PLEASE NOTE: Take special care with this and protect the housing cover against scratching and other external damage. If possible, only remove the protective film from the housing cover just before completing installation.

8. Use the screwdriver to loosen the TX20 screw holding the internal electronic components cover in place and remove it. Keep the screw in a safe place.

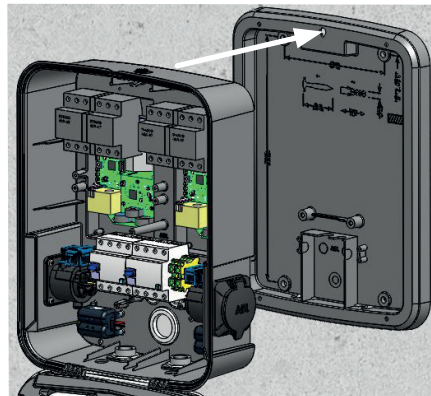


PREPARATIONS, INSTALLATION AND TAKING INTO OPERATION

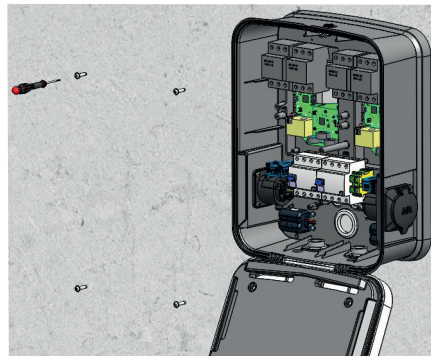
9. The wallbox includes three custom sealing membranes for the openings in the lower part of the wallbox: Insert these and cut a slit into the large sealing membrane: Now insert the supply cable through this opening.



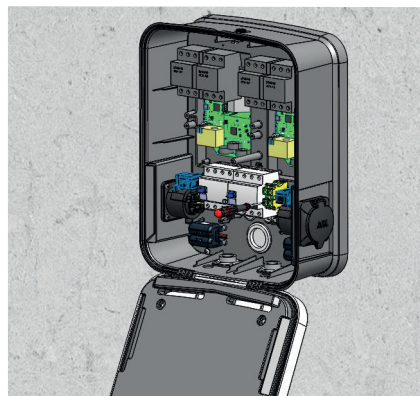
10. Hang the wallbox onto the mounting plate by inserting the screw in the centre of the upper part at the rear into the respective opening in the mounting plate: this already protects the wallbox from falling.



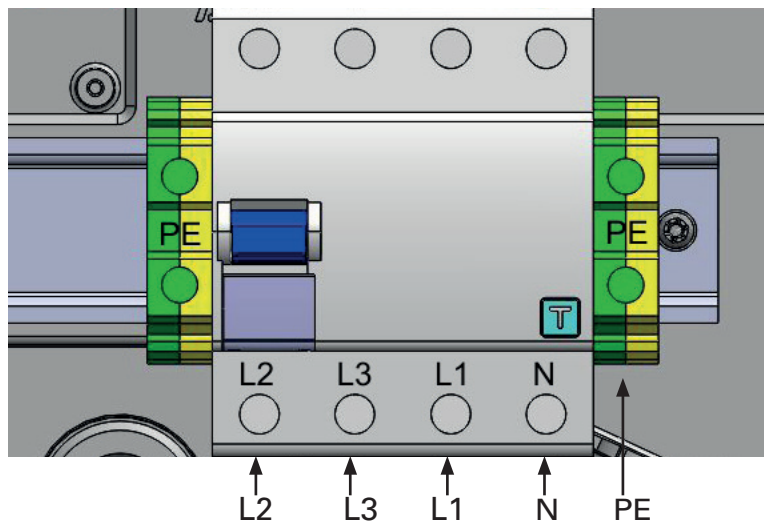
11. Now fix the wallbox to the mounting plate using the screwdriver (TX25 bit) and the four 6 x 25 screws included. The wallbox is now securely fastened to the mounting plate.



12. If using a power supply with flexible wires, ensure that the stripped ends are fitted with wire end ferrules. Loosen the lower screws in the terminal blocks, insert the wires into their respective terminals and tighten with a torque of 2.5 to 3 Nm. The wiring sequence is shown in the following diagram and table.



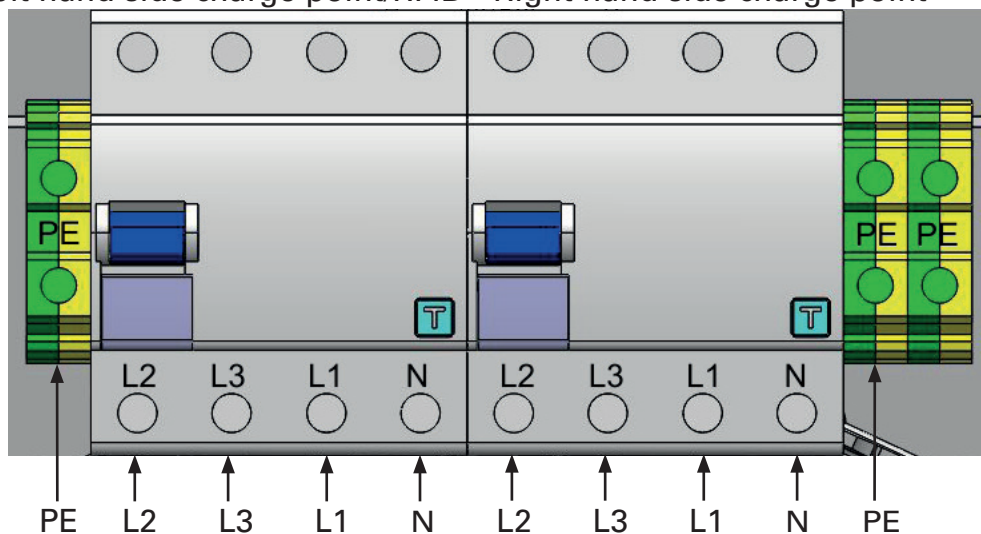
PREPARATIONS, INSTALLATION AND TAKING INTO OPERATION



The power supply for the Single model variants 3W2205, 3W2207 and 3W2209 as well as the Twin model variants 3W2214 and 3W2217 is connected as follows:

DESIGNATION	CONNECTION CODING
Current-carrying conductor phase 1	L1
Current-carrying conductor phase 2	L2
Current-carrying conductor phase 3	L3
Neutral	N
Protective earth	PE

Left hand side charge point/RFID Right hand side charge point



The two power supply cables for the Twin model variant 3W4401 are connected as follows:

PREPARATIONS, INSTALLATION AND TAKING INTO OPERATION

POWER SUPPLY	DESIGNATION	CONNECTION CODING
for 1 and 2 respectively	Current-carrying conductor phase 1	L1
	Current-carrying conductor phase 2	L2
	Current-carrying conductor phase 3	L3
	Neutral	N
	Protective earth	PE



PLEASE NOTE:

If desired, all **eMH3** model variants can also be connected and operated on a single phase at terminal L1: However, in this case the rated output for the wallbox will not be achieved.

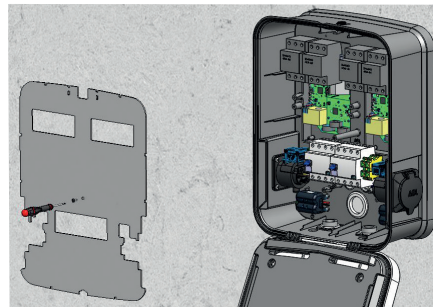


PLEASE NOTE:

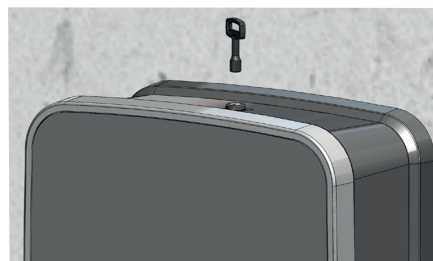
The ABL Wallbox is preset for a charging current of 32 A per supply cable by the factory. Should your domestic power supply provide a lower or higher charging current, the preset current for the wallbox must be adjusted accordingly before you replace the electronic components cover and then take the wallbox into operation. Please contact a qualified specialist repairer.

Please note that the rated current indicated on the product label and configured in the firmware must under no circumstances be exceeded.

13. Replace the electronic components cover inside the housing and fix it with its torx screw (TX20 bit).



14. Flip the housing cover upwards so that it clicks into the housing and lock it with the triangular key supplied.



Activating the RFID function

The **eMH3** Wallbox has an integrated RFID Module, which is factory pre-set to 'deactivated'. Should you wish to operate the wallbox with user identification to restrict or

PREPARATIONS, INSTALLATION AND TAKING INTO OPERATION

allow access to the charging procedure for a defined user group, you must first activate the RFID module via a software tool. This process can be activated during initial installation or any time after that by a qualified specialist.

The software required for activating the module can be downloaded from the ABL website by following this link:

www.abl.de/produkte/emobility/wallbox-emh3.php

The working steps for activating the RFID module are described in a separate set of instructions included in the software download.



WARNING!

The activation of the RDIF module must under all circumstances be performed by a qualified specialist on the basis of the working steps described in the instructions. Otherwise, faultless operation cannot be guaranteed.

Taking the wallbox into operation

After mechanical and electrical installation, you must check the correct functioning of the ABL Wallbox for operation and resolve any malfunctions or installation errors that may have occurred.

Proceed as follows to take the ABL Wallbox into operation:

- 1. Switch on the upstream MCB.
- 2. In addition, switch on the internal RCCB(s) (connection of the wallbox to the electricity grid is established).

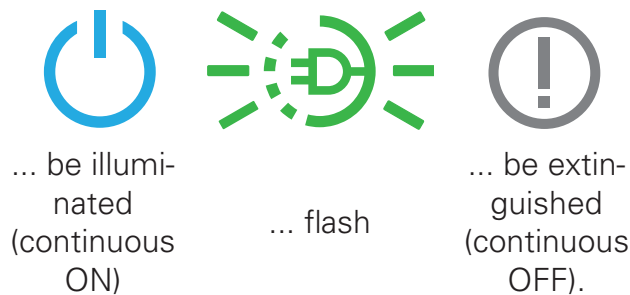
When the wallbox is reconnected to the electricity grid, it will initiate the start-up procedure: This includes an internal test of the electronics to ensure correct functioning. The internal test routine is indicated by the LEDs on the front of the ABL Wallbox as follows.

LED DISPLAY	DESCRIPTION
	All three LEDs flash once ...
	... and then go out.
	Then, the blue LED (ancillary version) and the green LED (main version) flash to indicate the current version of the firmware (only relevant for error detection).

On completion the blue LED flashes every 5 seconds, the green LED and the red LED go out. The vehicle can now be connected for charging. The charging procedure itself is described in the operating manual included.

Error detection and solutions

Should a malfunction occur during operation of the ABL Wallbox, this is shown by the indicator LEDs on the lower part of the housing cover as an error code. To indicate operating states and errors, the LEDs on the charging unit may ...



The following chapter describes how you recognize operating states as well as error codes and which measures you can take to resolve them.

Disruptions to the operation of the wallbox and solutions

For safe operation, the ABL Wallbox must be protected by an external MCB in the domestic power supply as well as the internal RCCB(s). To take suitable measures and restore operation in case of malfunction, you must first identify the type of error. The following errors may occur:

Type of error	Possible cause	Suggested solution
LEDs are not functioning.	The wallbox does not have a power supply.	First, check the internal RCCB(s). Should power be interrupted in the domestic supply: Check the upstream MCB and switch it back on if required. If the error repeats or occurs permanently, contact ABL technical support.
	An internal fault has occurred in the wallbox.	The wallbox must be replaced. In this case, please contact ABL technical support.
The electric vehicle is not recognized.	The charging cable is not properly plugged in.	Remove the charging connector from the vehicle (in model variants with charging sockets: from the wallbox as well) and plug them back in: Should the error persist, check the Mode 3 charging cable and contact ABL technical support.
The indicator LEDs show an error message.	The ABL Wallbox detects a malfunction.	Please reinitiate the charging procedure: If the error repeats or occurs permanently, take the wallbox out of operation (see "Taking the product out of and back into operation" on page 22) and contact ABL technical support.

ERROR DETECTION AND SOLUTIONS



PLEASE NOTE:

Should the power supply be faulty, please take the wallbox out of operation (see "Taking the product out of and back into operation" on page 22) and contact ABL technical support.

Error codes and solutions

To represent certain errors, the charging unit LEDs will illuminate and flash in a specific, repeating pattern. Error codes F1 to F10 are displayed at 200 ms intervals: LEDs may be illuminated or extinguished permanently, or may flash for 200 ms. You can find the correlations between visual display and errors in the following list:









































200 ms	200 ms	200 ms	200 ms	200 ms	200 ms	200 ms	200 ms	200 ms	200 ms	Description
										Error F1: The main contactor of the wallbox does not open.
The green LED flashes four times, the blue LED is OFF, the red LED is continuously ON.										
										Error F2: The firmware has detected a disallowed operating state during the initial or periodic self-test.
The green LED flashes three times, then the blue LED flashes once, the red LED is continuously ON.										

Solution: In both cases, switch the power supply off and then back on again. Should the error persist, please take that wallbox out of operation (see "Taking the product out of and back into operation" on page 22) and contact the specialist electrical contractor who has performed the installation to resolve the error.





















200 ms	200 ms	200 ms	200 ms	200 ms	200 ms	200 ms	200 ms	200 ms	200 ms	Description
										Error F3: The internal DC fault current module has detected a DC fault current.
The green and blue LEDs alternately flash twice each, the red LED is continuously ON.										

Solution: If the error occurs for the first time, the charging procedure is interrupted for 30 seconds and then restarted automatically. If the error occurs again immediately, the charging procedure is terminated: a new charging procedure is only possible after disconnecting the vehicle from the wallbox.

There is possibly an electrical fault in the charging system of the vehicle. Do not charge the vehicle and immediately contact a qualified specialist repairer. In addition, always consider the notices provided in the operating manual of the vehicle.

200 ms	200 ms	200 ms	200 ms	200 ms	200 ms	200 ms	200 ms	200 ms	200 ms		Description
										Error F5: This error is only relevant for model variants with charging socket(s) and indicates that the connector of the Mode 3 charging cable could not be locked inside the charging socket of the wallbox.	
											
The blue LED flashes four times, the green LED is OFF, the red LED is continuously ON.											
										Error F6: This error is only relevant for model variants with charging socket(s) and indicates that the electrical current coding of the Mode 3 charging cable is faulty.	
											
The green LED flashes twice, then the blue LED flashes twice, the red LED is continuously ON.											









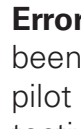
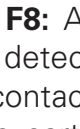










Solution: The wallbox automatically reinitiates the charging procedure every 60 seconds: Should the error continue to occur, check the position of the connector in the charging socket or unplug it and plug it back in. Should the error persist, please contact the specialist electrical contractor who has performed the installation to check the proper functioning of the charging cable and the wallbox.

200 ms	200 ms	200 ms	200 ms	200 ms	200 ms	200 ms	200 ms	200 ms	200 ms		Description
											Error F7: The vehicle demands a charging procedure with ventilation.
											
The blue LED flashes twice, the green LED is OFF, the red LED is continuously ON.											

Solution: The wallbox automatically reinitiates the charging procedure every 60 seconds: Should the error persist, please contact the specialist electrical contractor who has performed the installation to have the error resolved.









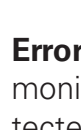











Charging vehicles that require ventilation during the charging procedure is not possible with the ABL Wallbox.

ERROR DETECTION AND SOLUTIONS

200 ms	200 ms	200 ms	200 ms	200 ms	200 ms	200 ms	200 ms	200 ms	200 ms	Description
										Error F8: A short circuit has been detected between the pilot contact CP and the protective earth PE or the communication interface of the vehicle is faulty.
										

The green LED flashes twice, the blue LED is OFF, the red LED is continuously ON.

Solution: The wallbox automatically reinitiates the charging procedure every 60 seconds: Should the error persist, please contact the specialist electrical contractor who has performed the installation to check the proper functioning of the charging cable and the wallbox. If no fault could be found on the charging cable, the vehicle must be checked: Please contact a qualified specialist repairer.

200 ms	200 ms	200 ms	200 ms	200 ms	200 ms	200 ms	200 ms	200 ms	200 ms	Description
										Error F9: The electrical current monitoring module has detected that the charging current is exceeding the preset maximum current.
										









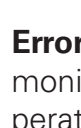
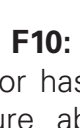










The green LED flashes four times, every fourth time the blue LED also flashes, the red LED is continuously ON.

Solution: The wallbox automatically reinitiates the charging procedure every 60 seconds: If the error continues to occur, the vehicle must be checked: Please contact a qualified specialist repairer.



PLEASE NOTE:

If this error occurs, the electric vehicle may not meet the requirements for charging operations of the ABL Wallbox.

200 ms	200 ms	200 ms	200 ms	200 ms	200 ms	200 ms	200 ms	200 ms	200 ms	Description
										Error F10: The temperature monitor has detected a temperature above 80° Celsius inside the housing.
										

The green LED flashes four times, the blue LED also flashes every third and fourth time and the red LED is continuously ON.

Solution: The temperature monitor interrupts the charging procedure.

- After 10 minutes, the charging procedure is automatically reinitiated. If the temperature inside the housing remains at between 60° and 80° Celsius, error code **F17** (see below) is shown and the charging current is limited to 6 A.
- The charging procedure is reinitiated immediately as soon as the temperature inside the housing falls to below 60° Celsius.

If the error repeats or persists, the wallbox must be cooled and/or shaded more effectively at the installation site. Should the error persist, please contact the specialist electrical contractor who has performed the installation to have the error resolved.



PLEASE NOTE:

In general, the **eMH3** is engineered for operation in high ambient temperatures. However, it must be ensured that the maximum operating temperature is not exceeded through external influences such as direct sunlight or similar. Otherwise, more effective cooling and/or shading at the installation site must be ensured.

200 ms	200 ms	200 ms	200 ms	200 ms	200 ms	200 ms	200 ms	200 ms	200 ms	Description
										Error F16: Data transfer to the integrated electrical current monitor is disrupted. The maximum charging current is limited to 10 A while this error occurs.
The blue and the green LED are continuously ON, the red LED flashes twice.										

Solution: Charging operations can continue, but the charging output will be reduced. Should the error repeat or persist, please take the wallbox out of operation (see "Taking the product out of and back into operation" on page 22) and contact the specialist electrical contractor who has performed the installation to resolve the error.

200 ms	200 ms	200 ms	200 ms	200 ms	200 ms	200 ms	200 ms	200 ms	200 ms	Description
										Error F17: The temperature monitor has detected a temperature of between 60° and 80° Celsius inside the housing. The maximum charging current will be limited to 6 A.
The blue and the green LED are continuously ON, the red LED flashes twice.										

Solution: Charging operations can continue, but the charging output will be reduced. If the error repeats or persists, the wallbox must be cooled and/or shaded more effectively at the installation site. Please contact the specialist electrical contractor who has performed the installation to check and resolve the error, or move the installation site of the wallbox.



WARNING!

Should the wallbox repeatedly or continuously show error codes, please take it out of operation (see "Taking the product out of and back into operation" on page 22) and contact the specialist electrical contractor who has performed the installation to have the error resolved. Should the problem persist, please contact ABL technical support. You can find contact details in section "Contact" on page ii.

Taking the product out of and back into operation

If required, you can take your ABL Wallbox out of operation. To take the wallbox out of operation, please proceed as follows:

1. Switch off the internal RCCB(s) (connection to the electricity grid is interrupted).
2. In addition, switch off the upstream MCB.
3. Always observe the five golden rules of electrical installation!

Now, no charging procedure can be carried out with the ABL Wallbox and it can be uninstalled if required.



WARNING!

The electrical de-installation of the **eMH3** must always be carried out by a qualified electrical contractor.

To take the wallbox into operation again at a later time, please proceed as follows:

1. Switch on the upstream MCB.
2. Switch on the internal RCCB(s) (connection to the electricity grid is established).

When the ABL Wallbox is reconnected to the electricity grid, it will reinitiate the start-up procedure: The vehicle can now be connected for charging.



PLEASE NOTE:

The charging function of the ABL Wallbox can also be deactivated and re-activated at a later time via the integrated RFID module: This is described in detail in section "Deactivating and reactivating of the charging function via RFID" on page 14 of the user manual for the ABL Wallbox.

Appendix

Technical specifications

Model Variant	3W2205	3W2207	3W2209
Compliance	IEC 61851-1 / 61439-7		
Grid connection	Direct connection to residual current circuit breaker (RCCB) PE: Feed-through terminal block, max. 5 x 10 mm ²		
Rated voltage	230 / 400 V		
Rated current	32 A, 3-phase		
Rated frequency	50 Hz		
Max. output	22 kW		
Charging outlet	Type 2 plug-in charging cable in acc. with IEC62196-2; 1 pcs.	Lockable Type 2 charging socket in acc. with IEC62196-2, 2 pcs.	Type 2 charging socket with shutter in acc. with IEC62196-2; 2 pcs.
Circuit-protection devices	Type A 30 mA RCCB, and DC-RCM I _{Δn} d.c. electronic DC fault current detector ≥ 6 mA		
Control / Customization	Internal RS485 and USB interfaces (no user access)		
Operating temperature	-30°C to 50°C		
Storage temperature	-30°C to 85°C		
Relative humidity	5 to 95% (no condensation)		
Class of protection	I		
Overvoltage category	III		
Degree of pollution	3		
Degree of protection (housing)	IP54		
Impact strength	IK08		
Dimensions incl. Mounting plate	492 x 400 x 192 mm (H x W x D)		
Dimensions w/o mounting plate	492 x 400 x 162 mm (H x W x D)		
Mounting plate dimensions	477.9 x 376.4 x 32 mm (H x W x D)		
Maximum elevation	≤ 2,000 m AMSL (above mean sea level)		
Weight per unit incl. mounting plate	ca. 13 kg	ca. 5.7 kg	
Weight per unit w/o mounting plate	ca. 12 kg	ca. 4.7 kg	

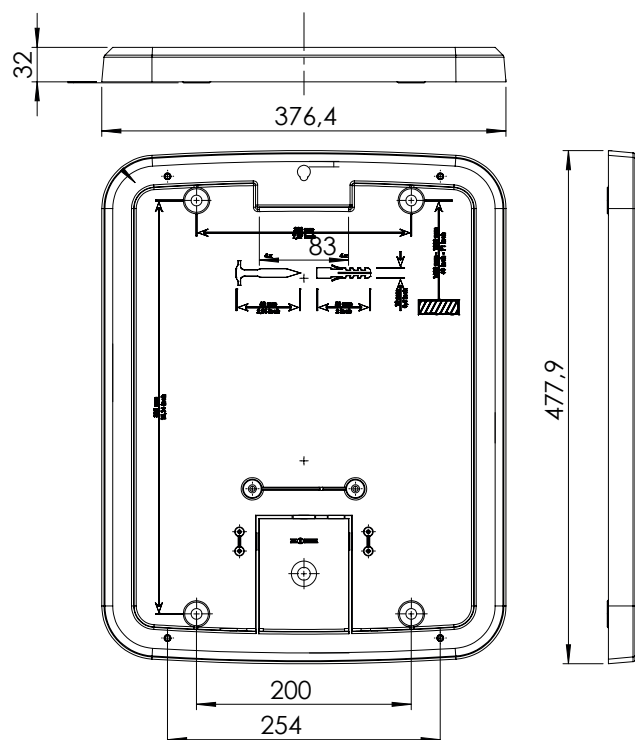
APPENDIX

Model Variant	3W2214	3W2217	3W4401
Compliance	IEC 61851-1 / 61439-7		
Grid connection	Direct connection to residual current circuit breaker (RCCB) PE: Feed-through terminal block, max. 5 x 10 mm ²		for two supply cables of max. 5 x 10 mm ² each
Rated voltage	230 / 400 V		
Rated current	32 A, 3-phase		2 x 32 A, 3-phase
Rated frequency	50 Hz		
Max. output	2 x 11 kW or 1 x 22 kW		2 x 22 kW
Charging outlet	Lockable Type 2 charging socket in acc. with IEC62196-2, 2 pcs.	Type 2 charging socket with shutter in acc. with IEC62196-2; 2 pcs.	Lockable Type 2 charging socket in acc. with IEC62196-2, 2 pcs.
Circuit-protection devices	Type A 30 mA RCCB, and DC-RCM I Δ n d.c. electronic DC fault current detector \geq 6 mA		
Control / Customization	Internal RS485 and USB interfaces (no user access)		
Operating temperature	-30°C to 50°C		
Storage temperature	-30°C to 85°C		
Relative humidity	5 to 95% (no condensation)		
Class of protection	I		
Overvoltage category	III		
Degree of pollution	3		
Degree of protection (housing)	IP54		
Impact strength	IK08		
Dimensions incl. Mounting plate	492 x 400 x 192 mm (H x W x D)		
Dimensions w/o mounting plate	492 x 400 x 162 mm (H x W x D)		
Mounting plate dimensions	477.9 x 376.4 x 32 mm (H x W x D)		
Maximum elevation	\leq 2,000 m AMSL (above mean sea level)		
Weight per unit incl. mounting plate	ca. 5.7 kg		
Weight per unit w/o mounting plate	ca. 4.7 kg		

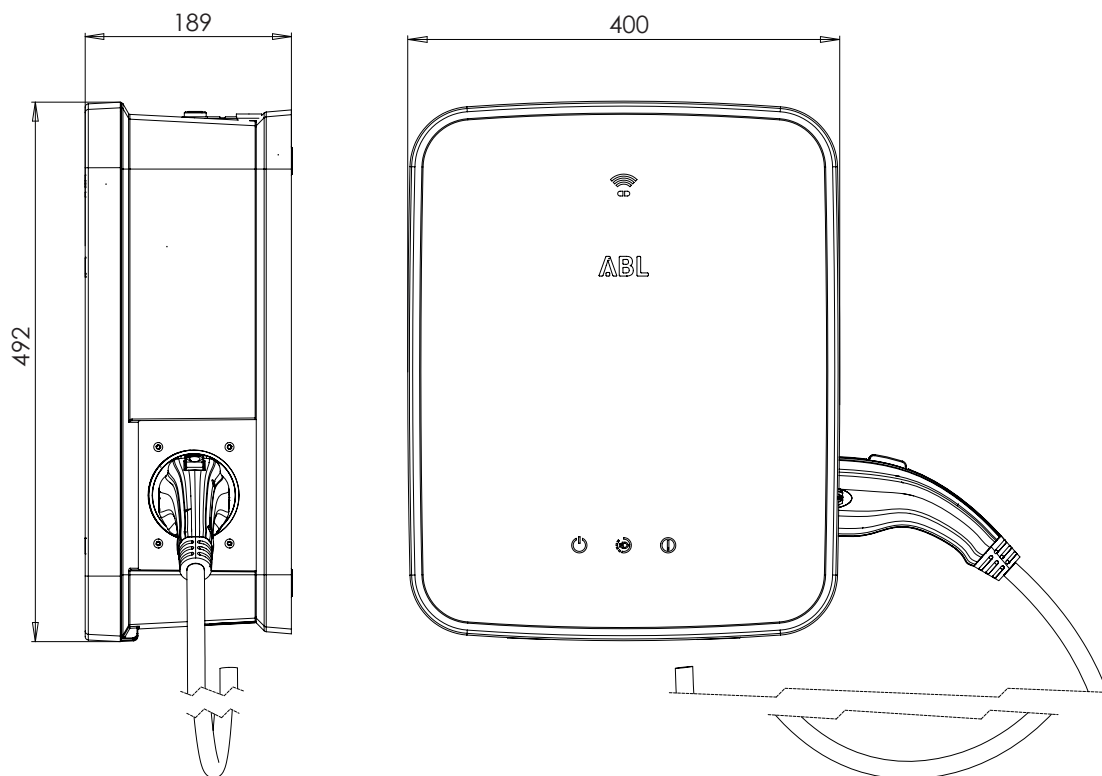
Scale drawings and dimensions

The ABL Wallbox is delivered fully assembled and quality checked. All measurements in the following elevations are in mm.

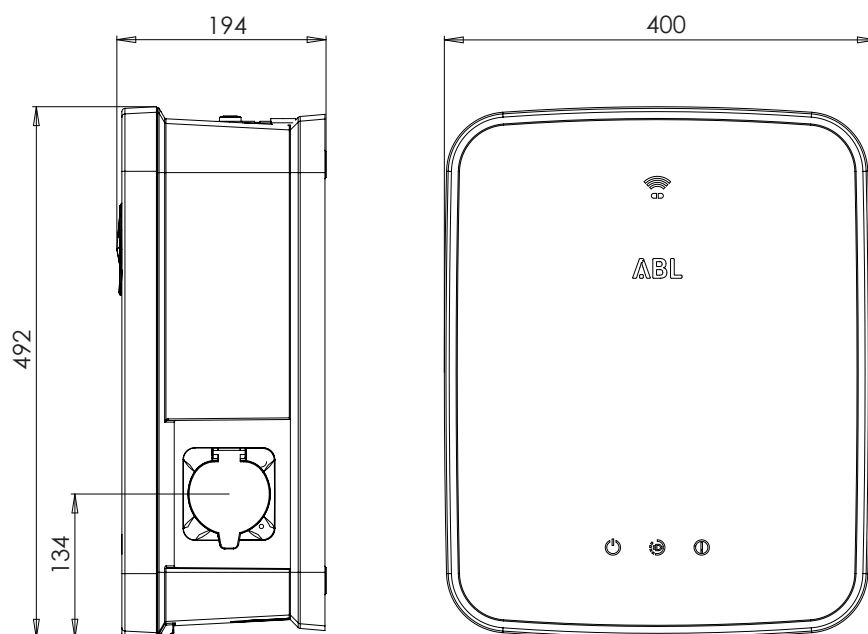
Mounting plate and wallbox



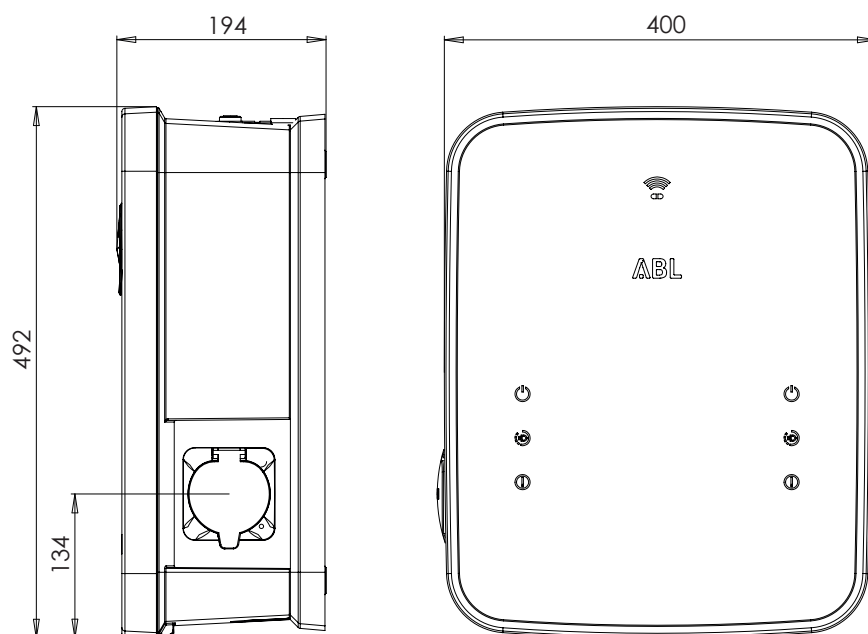
Wallbox 3W2205



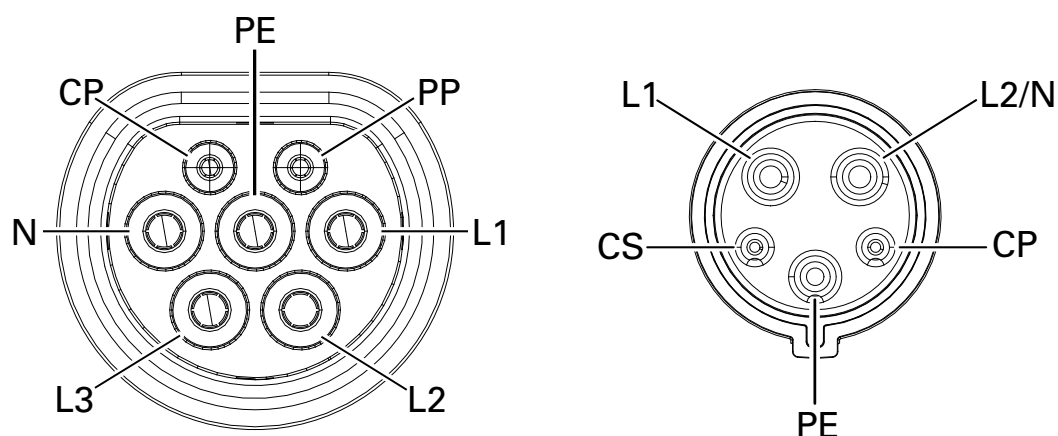
Wallboxes 3W2207 and 3W2209



Wallboxes 3W2214, 3W2217 and 3W4401



Contact chart Type 1/Type 2



Guidelines & Norms

The ABL Wallbox complies with the following standards and protection ratings:


General guidelines

Guideline	Description
2014/30/EU	EMC Guideline
2011/65/EU	RoHS 2 guideline
2012/19/EU	WEEE Guideline
2014/35/EU	Low voltage directive
ElektroG	Electrical and Electronic Device Statute

Device safety standards

Standard	Description
IEC 61851-1 Ed 2.0:2010	Conductive charging systems for electric vehicles – Part 1: General requirements
IEC/TS 61439-7:2014	Part 7: Switching device combinations for specific applications such as marinas, campgrounds, market squares, charging stations for electric vehicles
DIN EN 61851-1: 2012-01	Conductive charging systems for electric vehicles – Part 1: General requirements
E DIN EN 61851-22:2011-04	Conductive charging systems for electric vehicles – Part 22: AC charging station for electric vehicles
HD 60364-7-722:2012	Low voltage installations – Part 7-722: Power supply for electric vehicles

Classes of protection & Degrees of protection

Class of protection / Degree of protection	Description
	The device complies with IEC protection class 1.
IP 54	Degree of protection of the device: Protection against touch, dust in harmful quantities and protection from splashing water

CE certification and compliance declaration



The ABL Wallbox carries the CE mark. The associated compliance declaration is included with the ABL Wallbox as a separate printed document and is also available in electronic form at

www.abl.de

for download.

Glossary & Definitions

In the following, important abbreviations and terms used in this manual are explained.

Abbreviation	Description	Meaning
DC	Direct Current	Direct current
DC-RCM	Direct Current - Residual Current Monitor	Monitoring device for detecting DC fault currents
LED	Light Emitting Diode	Light-emitting diode
MCB	Miniature Circuit Breaker	Residual current circuit breaker
RCCB	Residual current operated circuit breaker	Residual current device (RCD)

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Therefore, devices marked with this symbol may not be disposed of as part of unsorted domestic waste inside the European Union: Please inquire about proper disposal with your local authorities.

The materials are recyclable as marked. By re-using, recycling or through other forms of processing obsolete devices, you make an important contribution to environmental protection.

