

Wallbox
eMH3

Operating Manual



Contact

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Important information

About this manual

This manual documents the steps and options necessary for set up and operation of your ABL Wallbox. For quick and easy reference, certain sections of this manual are specially formatted.

- Descriptions listing equally valid 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, as it contains important information for using the wallbox with your electric vehicle. Please especially follow all operational and safety notices that are printed in this manual.

Keep this manual in a safe place for future reference. In case the wallbox is operated by several users, the contents of this manual, and the safety notices in particular, must in all cases be passed on to each individual user or made available to them.

All measurements in this manual are in millimeters. Where necessary, the scale is indicated for different illustrations.

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

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 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 device itself or to other electric devices. Actions marked with this symbol must be carried out with special care.

IMPORTANT INFORMATION

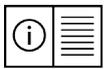


PLEASE NOTE:

Sections marked with this symbol draw attention to further important information and special features that are necessary for operating the device successfully. 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 outside of the housing and on the electronic components cover inside the wallbox. These symbols carry the following meanings:



WARNING!

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



WARNING!

After opening the housing, dangerous electrical voltages may be present inside the wallbox.

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 regulations and conditions by a qualified specialist electrical contractor.
- Please ensure that a minimum distance of 50 cm to the wallbox is kept on all sides after installation.
- Under no circumstances remove the protective cover for electronic components behind the housing cover of the ABL Wallbox. Cleaning or maintenance of components behind this cover is not necessary, and must under no circumstances be performed by the user.
- The ABL Wallbox must only be operated with the housing cover closed and locked: Before charging, ensure that the housing cover is closed and lock it using the triangular key supplied.
- Only use accessories intended and sold for the device 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 the respective protection degrees.

- 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 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).

General product information

This ABL Wallbox represents the current state of technology and complies with all current technical safety requirements, guidelines and standards. The safety information provided in this manual serves to ensure the proper and safe 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 and/or severe injury. Malfunctions affecting the safety of persons, connected electric devices or the device itself must be repaired by a qualified electrical contractor.

Should a malfunction occur with the wallbox, please always contact the company that carried out the installation first. If the malfunction can still not be resolved, please contact your local ABL technical support.

Always contact your local 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.

IMPORTANT INFORMATION



DANGER!

Should you detect damage to the housing, charging socket or charging cable, you must take the wallbox out of operation immediately via the upstream fuse(s) in your domestic power distribution box and the internal residual current circuit breaker: No further use of the wallbox is permitted in this case! Please contact your local ABL technical support!

User information

To operate your wallbox, please note these instructions:

- 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.
- The wallbox should not be installed in areas of high pedestrian traffic. Installation along thoroughfares and marked escape routes should be especially avoided.
- When there is no charging procedure under way, the charging cable should always be unplugged and stored to avoid trip hazards.
- Ensure that the rated voltage and rated current of the device comply with the parameters of your local electricity grid and that the rated output is not exceeded during the charging procedure.
- At all times comply with local safety regulations for the country in which you operate the wallbox.
- To disconnect the wallbox completely from the power grid, the power supply must be interrupted using the upstream fuse(s) and the internal residual current circuit breaker (RCCB).
- Never operate the wallbox in a confined space. In particular, you must ensure that the vehicle can be parked at a suitable distance from the wallbox and connected without any strain on the charging cable.
- A parking spot for the vehicle must be planned for in the area in front of the wallbox. The distance between vehicle and wallbox should be at least 50 cm and no more than 5 m.
- Make sure that the cover of the wallbox housing is always closed and locked when in use. Keep the triangular key for unlocking the door in a place that is only accessible to authorized users.
- Under no circumstances remove the protective cover for electronic components located behind the housing cover of the wallbox.

IMPORTANT INFORMATION

- 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.
- Only have qualified, specialist personnel install and/or repair the device. No parts to be maintained by the user are located inside the device.

Introduction

Thank you for choosing this wallbox to charge your electric vehicle! With this ABL Wallbox, you have selected an innovative and future proof solution.

eMobility helps to save natural resources and protect the environment sustainably. The ABL Wallbox combines progressive and pleasing design with intuitive functionality: According to their requirements, users may select from models with charging socket or fixed charging cable, which are designed for domestic and also for semi-public applications.

ABL Wallboxes are manufactured in Germany and comply with the regulations and norms for the charging of electric vehicles applicable throughout Europe according to IEC 61851-1, Mode 3. Please refer also to the section on "Wallboxes 3W2214, 3W2217 and 3W4401" on page 28.

Introducing the product

Your ABL Wallbox allows you to comfortably and safely charge electric vehicles according to IEC 61851-1 Mode 3 and is designed for the shortest possible charging times.

We place the highest value on user safety in all our products. For this purpose, your wallbox offers integrated DC fault current detection which, in combination with an internal type A residual current circuit breaker (residual current device, called RCCB in the following) and the protective measures of your electric vehicle effectively protects from short circuit, electric shock and other operational hazards.

The wallbox is especially easy to operate during everyday use: LED lights on the 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.

A common characteristic of all wallboxes is the attractively designed housing, which effectively protects the internal electric circuits against environmental influences and unauthorized access. In principle, all model variants of the wallbox must be installed and taken into operation by a qualified electrical contractor. Please contact your local ABL partner with any queries you may have.

Unpacking and components included

Your ABL Wallbox is delivered in an extremely sturdy box, including a range of accessory components required for proper operation. Therefore, please check immediately after unpacking whether the following components are included:

COMPONENT	QUANTITY	DESCRIPTION
Wallbox	1	Wallbox, consisting of plastic housing with lockable 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 distributor immediately:

Identifying your model variant

The ABL Wallbox series comprises several model variants, which are mechanically and electrically adapted to different usage profiles. A product sticker with the specific ABL product identification number is located on the internal electronic components cover. Please check the product sticker to ensure that the model variant you have installed is the one described in this manual.



The model code (3WXXXX) as well as the power supply ratings (voltage, frequency, current) indicated below it are especially relevant for proper identification.

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 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

INTRODUCTION

MODEL NUMBER	GRID CONNECTION	MODEL VARIANT
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 up to 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
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 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; 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 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; internal load management for charging outputs of up to 2 x 11 kW or 1 x 22 kW

MODEL NUMBER	GRID CONNECTION	MODEL VARIANT
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 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 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. These variants are delivered with specific instruction manuals where necessary.

Available accessories

ABL sells additional accessories for your eMH3 Wallbox. For the models of the eMH3 series, the following components are available:

	DESIGNATION	ARTICLE NO.	QUANTITY
	Type 2 charging cable (model variants 3W2214, 3W2217 and 3W4401) for connection with all eMH3 wallboxes and vehicles with charging sockets according to IEC 62196-2 Type 2, 32 A 240 / 415 V AC and IP44 splash protection rating Length: approx. 4 meters	LAK32A3	1
	Adapter cable Type 2 to Type 1 (model variants 3W2214, 3W2217 and 3W4401) for connection to all eMH3 wallboxes with charging sockets according to IEC 62196-2 Type 2, with charging connector according to IEC 62196-2 Type 1, 32 A 230 V AC, and IP44 splash protection rating Length: approx. 4 meters	LAKK2K1	1

INTRODUCTION

	DESIGNATION	ARTICLE NO.	QUANTITY
	Mounting pole for installing all eMH3 wallbox models Dimensions: 1650 x 400 x 150 mm Weight: 21,500 g <small>(does not include the wallbox pictured)</small>	STEMH30	1

Please contact your local distributor if you require additional information about these components or would like to place an order.



CAUTION!

Please note that the do-it-yourself installation of accessory components is not permitted: Please contact a qualified contractor or arrange installation with your local distributor.

Please also visit our website at ...

www.abl.de

You will find further information about our products and our entire range there.

Taking into operation and charging procedure

The mechanical and electrical installation of the ABL Wallbox model variant described in this manual must always be carried out by qualified specialist personnel: Preparation of the domestic power supply, and electrical connection to your domestic power supply in particular, must be carried out by a qualified electrical contractor, and subsequently inspected and approved as part of the process of taking the device into operation. Please contact a specialist electrical contractor or your local ABL partner, who will be pleased to assist you with any questions regarding the installation and operation of your wallbox.

Installation itself is described in the a separate installation manual. That manual contains important information regarding mechanical and electrical installation as well as regarding the subsequent functional inspection, approval and taking into operation of the wallbox. It is advisable that you are present when the device is taken into operation for the first time by a qualified electric contractor to ensure that your are able to easily carry out charging procedures with your ABL Wallbox.

The current operating status of the wallbox is indicated by the color LEDs in the lower part of the housing cover. Each LED may ...



You can find further information about operating states on the following pages.

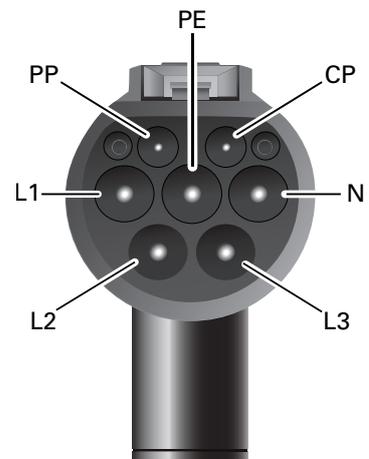
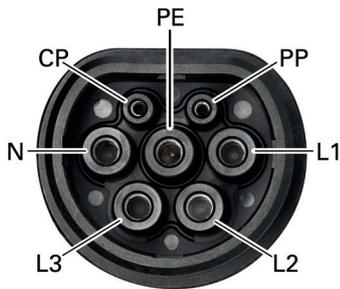
Your wallbox is ready for use immediately after mechanical and electrical installation have been completed. While the 3W2205 model variant has a fixed charging cable with a Type 2 charging connector, the 3W2207 and 3W2209 model variants come with one, the 3W2214, 3W2217 and 3W4401 with two IEC 62196-2 Type 2 charging sockets each. To connect your vehicle to model variants with charging socket(s), you will need the separately available charging cable. To provide a high level of flexibility, ABL has two different cables on offer for this purpose:

MODEL NUMBER	DESCRIPTION	MAXIMUM OUTPUT
LAK32A3	Type 2 charging cable for connecting all eMH3 wallboxes and vehicles with charging socket in acc. with IEC 62196-2 Type 2	22 kW
LAKK2K1	Adapter cable Type 2 to Type 1 for connection to all eMH3 wallboxes with charging socket in acc. with IEC 62196-2 Type 2, with charging connector according to IEC 62196-2 Type 1	7.4 kW

TAKING INTO OPERATION AND CHARGING PROCEDURE

The charging connector or charging sockets of the eMH3 have three current-carrying contacts, a neutral conductor, a PE protective earth conductor as well as two signaling contacts (**C**ontrol **P**ilot and **P**roximity **P**ilot), which ensure a secure connection and therefore the safe operation of the wallbox.

Charging sockets have an electromechanical locking mechanism that secures the charging plug in place as soon as the charging cable is connected to both the wallbox and the vehicle. As long as the plug of the external charging cable is not locked into place in the charging socket of the eMH3, the charging process cannot be initiated and no voltage will be applied from the socket to the charging cable via the current-carrying contacts.



Safety information for taking the wallbox into operation

Before you take the eMH3 wallbox into operation, you must observe the following safety notices:

- Ensure that the eMH3 is connected to the domestic power supply according to the instructions in this manual and the separately available installation manual.
- Ensure that the eMH3 is protected separately in your domestic power distribution box by suitable miniature circuit breakers (MCB, C characteristic).
- Ensure that any integrated upstream residual current circuit breakers (RCCB, if present) in the wallbox are switched on.
- Ensure that the eMH3 has been mechanically installed according to the instructions in this manual: Check especially that access to the wallbox is unobstructed, that it is not exposed to direct sunlight or rain and that the electric vehicle can be connected without any strain or other encumbrance on the charging cable.
- Ensure that the housing cover of the eMH3 is always closed and locked during operation.
- Ensure that the integrated or separately available charging cable is not twisted and check that cable, connector and housing do not show any observable damage.

Operating instructions

- The separately available charging cables (all model variants except 3W2205) are ca. 4 meters long to offer a flexible connection between wallbox and vehicle. In practice, it is advisable to remove the charging cable after each charging process.

- If you want to store your cable on the wallbox you can wrap it around the eMH3: This way it is always close at hand.
- Although the cable and connector are designed to withstand high mechanical stresses, you should not drive your vehicle over the cable and/or the connector.
- Also ensure that the cables are not kinked at the charging socket and that there is no excessive strain on the cable and/or the housing.



DANGER!

If the cables, the charging connectors and/or the housing have suffered mechanical damage or show visible deformities, you must under no circumstances continue to operate the wallbox. Please contact your local distributor from whom you have purchased the wallbox.

Description of the RFID module

The factory setting for the eMH3 RFID module is 'deactivated', but the module can be activated during initial installation or at a later time by a qualified specialist. For more information, see the installation manual for the eMH3.

After activation, the RFID module principally serves to identify the user and therefore to restrict or allow access to the charging procedure for a defined user group. Authentication is conducted via RFID compliant transponders and/or RFID access cards in MIFARE Ultralight® format. The different types of cards are as follows:

- **TEACH-In tag card**

This card serves to program ID tag cards using the teach-in process. In addition, the wallbox can be deactivated and then reactivated for operation using this card. One Teach-In card is supplied with the eMH3.

- **ID tag card**

This card serves to identify the user and authorize the charging procedure. Five ID tag cards are included.



PLEASE NOTE:

The RFID module is factory pre-set to the Teach-In and ID tag cards included. Therefore, please keep the Teach-In tag card in a safe place. If the Teach-In card is lost, please contact your local distributor.

Additional ID tag cards can be ordered by the user at any time and registered using the module.

Programming the ID tag cards, authorizing the charging procedure and deactivating/reactivating the charging function is carried out via the RFID module located in the upper part of the housing cover. During programming, registration and operation, status and feedback information from the RFID module is displayed by one green and one blue LED.



TAKING INTO OPERATION AND CHARGING PROCEDURE

In the TWIN models 3W2214 and 3W2217, the RFID module controls basic load management, even when access control has not been activated. Should both charging sockets be in use for charging at the same time, load management distributes the maximum available current equally to both charging points. When only one charging socket is in use, the maximum available current is allocated to this charge point.

In addition, the RFID module allows you to deactivate or reactivate the charging function in case you want to take the wallbox temporarily out of operation.

Deactivating and reactivating of the charging function via RFID

The charging function of the eMH3 can be deactivated and reactivated independently of the access control function: The factory preset for the charging function is always 'activated'. Proceed as follows to deactivate the charging function:

1. Check the status of the eMH3 via the LEDs on the lower part of the housing cover. When the wallbox is ready for operation, the blue LED  will flash every 5 seconds.
2. Check the status of the RFID module via the LEDs located on the upper part of the housing cover: When the wallbox is ready for operation, the green LED flashes (*factory setting*: access control disabled) or the blue LED (access control enabled) flash every 5 seconds.
3. Place the Teach-In tag card in front of the RFID module: The blue LED is ON.
4. When the green LED flashes twice, remove the Teach-in card.
5. The RFID module will now restart and the charging function is now deactivated. During continuing operation, both the green and the blue LED will now remain ON.



Blue flashes every 5 seconds



Green LED flashes every 5 sec., blue LED is OFF (access control disabled)



Green LED is OFF, blue LED flashes every 5 sec., (access control enabled)



Green LED flashes twice, blue LED is OFF



Green and blue are ON continuously (charging function deactivated)

For model variants with charging socket, any time a charging connector is plugged into the vehicle socket, it is locked, but no charging takes place.

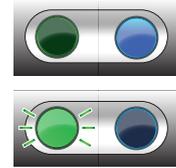
Proceed as follows to reactivate the charging function of the eMH3:

1. Check the status of the RFID module via the LEDs located on the upper part of the housing cover: When the charging function is blocked, both the green and blue LED will be ON continuously.



Green and blue are ON continuously (charging function deactivated)

- Place the Teach-In tag card in front of the RFID module: The blue LED is ON.
- When the green LED flashes twice, remove the Teach-in card.



Green LED flashes twice, blue LED is OFF

Now the RFID module restarts. After restart, the charging function is reactivated.

Registering additional RFID cards

If the RFID module has been activated during or after installation (see installation manual), you can register additional ID tag cards for your eMH3 wallbox in order to extend the user group: You can obtain suitable MIFARE Ultralight® cards from your local distributor. Proceed as follows to register an RFID access card on your eMH3:

- Check the status of the eMH3 via the LEDs on the lower part of the housing cover. When the wallbox is ready for operation, the blue LED  will flash every 5 seconds.
- Check the status of the RFID module via the LEDs located on the upper part of the housing cover: When access control has been activated, the blue LED will flash every 5 seconds.
- Place the Teach-In tag card in front of the RFID module: Remove the card when the blue LED is ON.
- Now, place a not previously registered ID tag card in front of the RFID module within 10 seconds: The green LED now flashes once.



Blue flashes every 5 seconds



Green LED is OFF, blue LED flashes every 5 sec., (access control enabled)



Green LED is OFF, blue LED is ON



Green LED flashes once, blue LED is OFF

The ID tag card is now registered with the RFID module. Repeat this process to register more ID tag cards with the RFID module.



WARNING!

If the ID tag card is already registered or no further cards can be registered in the wallbox memory, both the green and the blue LED will flash continuously.

Resetting RFID cards

If the RFID module has been activated during or after installation (see installation manual), it may become necessary to reset RFID tag cards registered with the RFID module (e.g. in order to program the RFID module with new access data using a different Teach-In card).

TAKING INTO OPERATION AND CHARGING PROCEDURE

Proceed as follows to initialize the registration of cards on the RFID Module:

1. Separate the eMH3 from the electricity supply by switching the internal RCCB or the upstream MCB in the domestic installation to the **0** position.
2. Place a Teach-In card in front of the RFID module and then switch the internal RCCB or the upstream MCB back to the **I** position.
3. The blue LED on the RFID module will now be ON continuously.
4. Remove the Teach-In tag card when the green LED flashes three times.



Green LED is OFF, blue LED is ON



Green LED flashes three times, blue LED is OFF

The internal memory is now erased and ID tag cards can be re-registered.

Operating status (RFID module)

If the RFID module has been activated during or after installation, the two LED indicators located in the upper part of the housing cover of the eMH3 will show the current operating status of the RFID module. During normal operation, the following operating states are shown:

	DESCRIPTION
 Green LED flashes every 5 seconds, blue LED is OFF	The RFID module is ready for use, a charging process may be requested at any time using an authorized transponder (access card)
 Green LED flashes once, blue LED is OFF	The RFID module has read the transponder data and initiated authentication
 Green LED is ON for one second, blue LED is OFF	Authentication of the transponder was successful, access to the charging process is being granted.
 Green LED is OFF, blue LED is ON for one second	Authentication of the transponder was NOT successful, access to the charging process is NOT being granted.



PLEASE NOTE:

Should the RFID module of the eMH3 refuse authentication of the charging process, this indicates that the ID tag card is not registered: Please also refer to section "Resetting RFID cards" on page 15.

Charging procedure

The eMH3 is engineered for the fastest possible charging of your vehicle according to IEC 61851-1 Mode 3. The actual charging time depends on the battery fitted to your vehicle as well as on the charge currently remaining in the vehicle: For these reasons it is not possible to make a reliable prediction of the charging time. You will discover its actual value in practice and derive your personal charging routine accordingly.

As described on the previous pages, eMH3 models have an integrated RFID module for authorizing charging procedures, which is factory pre-set to 'deactivated': For more information on activating the RFID module, see the installation manual for the eMH3. If the RFID module has been activated, the RFID icon located in the upper part of the housing cover is for authorization using a suitable ID tag access card (included).

Please follow the following steps to charge your vehicle:

1. Check the LED indicators on the eMH3: When the wallbox is ready for operation, the blue LED charging unit indicator in the lower part of the housing cover will flash, while the other LEDs will be OFF.
The blue or green RFID module LED will flash briefly every 5 seconds, while the other LED will be OFF.
The vehicle may now be connected.



Green LED flashes every 5 sec., blue LED is OFF
(access control disabled)



Green LED is OFF, blue LED flashes every 5 sec., (access control enabled)

2. Open the charging socket on the vehicle.
3. Remove the charging connector from the charging connector compartment (model 3W2205) or connect the separately available Mode 3 charging cable to one of the charging sockets on the wallbox (all model variants with charging sockets).

4. Plug the charging connector of the charging cable (Type 2 or Type 1) into the vehicle's charging socket.



5. If the RFID module has been activated, the blue LED  is continuously ON when the vehicle is connected and has been detected but the charging procedure has not yet been unblocked by via RFID.



TAKING INTO OPERATION AND CHARGING PROCEDURE

6. If the RFID module has been activated, log in at the RFID module of the eMH3 using an appropriate access card. To do this, place the card in front of the RFID icon on the upper part of the housing cover.



7. The green LED on the RFID module will begin flashing while the card is checked and will remain ON for 1 second as soon as login has been accepted or the card has been rejected.



Green LED flashes, blue LED is OFF



Green LED is ON for one second, blue LED is OFF

8. The blue LED  goes out and the green LED  is continuously ON when the vehicle is connected and the charging procedure has been unblocked: In this state, the wallbox is waiting for the vehicle to initiate the charging procedure.



9. The green LED  flashes during the actual charging procedure. The charging procedure can be manually interrupted at the vehicle and is automatically terminated by the vehicle when charging is complete.



10. When the charging procedure is paused or completed, the green LED  is again continuously ON.



PLEASE NOTE:

In principle, the charging procedure is always terminated by the vehicle, not by the wallbox. An illuminated green LED  indicates, on the basis of communication with the vehicle, that the charging procedure has been either paused or completed: Distinguishing these two operating states is only possible by checking the battery charge indicator inside the vehicle. Should the vehicle not be fully charged after a sufficiently long charging process, please contact your local service partner for the vehicle.



PLEASE NOTE:

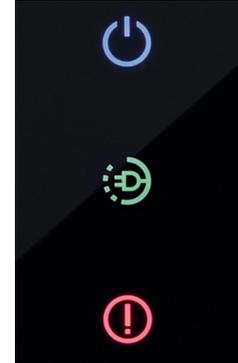
Should a malfunction occur during or after the charging process, this will be indicated by the LEDs on top of the housing. The following chapter describes how you can identify operational states and errors, and which measures will become necessary.

After the charging procedure has been completed, please remove the cable from the vehicle socket and store it properly, ready for the next charging procedure.

Resolving errors

Your eMH3 wallbox is engineered for maximum operational safety and the highest possible charging reliability. RCCB and DC fault current detection recognize all internal malfunctions and switch the device off immediately.

Should a malfunction occur in practice, this is shown by the indicator LEDs on the housing cover as an error code. The following chapter describes how you recognize operating states as well as error codes and which measures you must take to resolve them.



Error messages during the charging procedure

In some circumstances, malfunctions and disruptions of the charging procedure may occur that prevent the proper charging of the vehicle according to IEC 61851-1. The ABL Wallbox independently detects possible internal errors as well as errors on the part of the vehicle and shows them using the indicator LEDs.

To represent certain errors, the indicator LEDs will illuminate and flash in a specific, repeating pattern. The following error states are displayed:

LED DISPLAY	ERROR DESCRIPTION
	<p>When the red LED is ON and the blue LED and/or the green LED are flashing, the wallbox has detected an error. To resolve the error, terminate the current charging procedure and reinitiate it to reset the error.</p>
	<p>If the error repeats or occurs permanently, take the wallbox out of operation (see page 22) and contact your local ABL technical support.</p>
	<p>When the red LED flashes (every 10 seconds) and the green LED also flashes (every 2 seconds), the wallbox is only providing reduced charging capacity.</p> <p>If the error repeats or occurs permanently, take the wallbox out of operation (see page 22) and contact your local ABL technical support.</p>



PLEASE NOTE:

You can find a comprehensive list of all error messages in the installation manual for your wallbox.

RESOLVING ERRORS

For most error states, the wallbox reinitiates the charging procedure, checking communications with the vehicle. However, in practice, it is, in case of an error, advisable to manually reinitiate the charging procedure by unplugging and reconnecting the cable as not all errors can be resolved by the automatic restart.



WARNING!

If the wallbox continues to show error messages while charging the vehicle, please always contact the service partner for your vehicle. It is possible that your vehicle must be repaired or the wallbox needs to be replaced before the vehicle can be charged again using the wallbox.

Error codes for RFID module operation

Under some circumstances, malfunctions and disruptions may occur during login at the RFID module that prevent the proper charging of the vehicle according to IEC 61851.1 Mode 3. The eMH3 recognizes potential errors during user login and displays error codes via the indicator LEDs at the front of the RFID module.



Green LED flashes once,
blue LED is ON

The RFID module does not recognize the ID tag card: Charging is refused.



Green LED is OFF,
blue LED flashes once.

The ID tag card is rejected by the RFID module: Charging is refused.

- Should the ID tag card not have been registered with the RFID module previously, proceed as described from page 15 onwards to register it with the RFID module.
- You may first need to reset the RFID module in order to re-register the ID tag cards. This is described in detail in section page 15 and following.

Disruptions to the operation of the charging station and solutions

For safe operation, the eMH3 has integrated DC fault current detection and two residual current circuit breakers (RCCB), which detect residual currents that may occur and disconnect the entire wallbox from the electricity supply for your personal protection. The RCCBs are mounted flush with the internal electronic components cover and can be operated after opening the housing cover.

To take suitable measures and restore operation in case of malfunction, you must first clearly identify the type of error.

The following errors may occur:

TYPE OF ERROR	POSSIBLE CAUSE	SUGGESTED SOLUTION
LEDs are not functioning.	The eMH3 does not have a power supply.	The power supply of the eMH3 is interrupted within the domestic electrical infrastructure: Check the upstream circuit breaker in the domestic power distribution box.
		The internal RCCB(s) of the eMH3 have been tripped: Check the status of the RCCB and, if necessary, switch it back on using the pivot lever.
	The indicator LEDs of the eMH3 are faulty.	Should the indicator LEDs of the eMH3 be faulty, they must be replaced. In this case, please contact your local distributor.
The electric vehicle is not recognized.	The charging cable is not properly plugged into the vehicle or the wallbox.	Remove the charging connectors from the vehicle and the wallbox and plug them back in: Ensure that the connectors are placed in both the vehicle and charging sockets correctly.
	The vehicle is wrongly configured.	Check the vehicle settings and, if necessary, reset them (to factory settings).
The indicator LEDs show an error sequence.	The eMH3 detects a malfunction.	All errors shown by the eMH3 indicator LEDs relate to vehicle-based functions. The eMH3 reinitiates the charging process every 30 seconds: Should the error persist, please contact the service partner for your vehicle.



PLEASE NOTE:

Should there be a fault in the power supply that you cannot resolve yourself, please contact a qualified electrical contractor. Should there be a fault in relation to the internal RCCBs, please contact the local distributor from whom you have purchased the wallbox.

Checking the internal RCCBs

To ensure the continuing safe operation of the wallbox, you must check the function of the integrated residual current circuit breaker(s) (RCCBs) yourself every 6 months: Every RCCB has a button with which to initiate the test function.



PLEASE NOTE:

The internal DC fault current detection conducts a self-test before each charging procedure: a manual check is not required. In case of an error, the respective error sequence will be displayed (see page 19).

RESOLVING ERRORS

Proceed as follows to test an RCCB:

1. Open the housing cover of the wallbox using the triangular key supplied.
2. Locate the button engraved **T** or marked **Test**.
3. Press the button: The corresponding RCCB should now trip and flick the pivot lever of the RCCB into the **0** position (connection to the power supply is interrupted).
4. Switch the circuit breaker back on by flicking the pivot lever up into the **I** position.
5. Lock the housing cover of the wallbox using the triangular key.



Danger!

Should one of the RCCBs malfunction during testing, you must not continue to operate the wallbox under any circumstances! Please contact your local distributor from whom you have purchased the wallbox.

Taking the wallbox out of and back into operation

If required, you can take your wallbox temporarily or permanently out of operation. To temporarily deactivate an eMH3 model variant with integrated RCCBs, please proceed as follows:

1. Open the housing cover of the wallbox using the triangular key supplied.
2. Flick the pivot lever of the internal RCCB(s) into the **0** position (connection to the power supply is interrupted).
3. Lock the housing cover of the wallbox using the triangular key.

Now the eMH3 cannot be used for charging.

To deactivate your wallbox permanently, also switch off the miniature circuit breaker (MCB) in your upstream domestic power distribution box (position **0**). Now the eMH3 is completely free of electricity and may be demounted if required.



WARNING!

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



ENVIRONMENTAL NOTICE!

Please note that this product may not be disposed of in the household garbage collection, but must be taken to a collection point for electrical/electronic waste. Please observe all current national and regional legal regulations. You can obtain further information from your municipal administration, the waste management depot responsible for your area as well as from your local distributor.

To take the wallbox back into operation 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 eMH3 can also be deactivated and reactivated 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.

Frequently asked questions

A few frequently asked questions regarding installation and operation of your ABL Wallbox are listed here. Please always read this section first before you contact your local technical support: Your question may already be answered here.

Can I install the ABL Wallbox myself?

- No, the mechanical, and especially the electrical installation of the ABL Wallbox must always be carried out by a qualified electrical contractor. Only then can electrically safe operation be guaranteed.
- Installing the ABL Wallbox yourself can lead to a breach of warranty provisions and voids the warranty protection for operating the wallbox.

How must the ABL Wallbox be protected electrically?

- All phases of the ABL Wallbox must be protected in the domestic power supply. Please always follow all local regulations for operating electrical devices.

Can the ABL Wallbox be operated on a single phase power supply?

- Yes, in principle all model variants of the ABL Wallbox can be operated on a single phase power supply.

The ABL Wallbox is out of order (no LED indicators). How do I investigate the cause?

- If no vehicle is connected to the wallbox, the blue LED  on the front of the wallbox should flash approximately every 5 seconds. Should this not be the case, please check the following:
 1. The upstream fuse(s)
 2. The internal and upstream (if present) residual current circuit breaker(s)
 Should these protection devices not show any obvious sign of malfunction, please contact your local ABL technical support.

RESOLVING ERRORS

The key for opening the housing has been lost. Can I order a replacement key?

- One triangular key for the housing cover ins supplied with the ABL Wallbox. In case of a lost key, contact the dealer from whom you have purchased the wallbox to order a replacement triangular key.

Where can I order spare parts for the wallbox?

- Should you need spare parts for your wallbox, please contact your local ABL technical support.

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; 1 pcs.
Circuit protection devices	Type A 30 mA RCCB, and DC-RCM I Δ n d.c. electronic DC fault current detection \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		
Overtoltage 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. 13 kg	ca. 5.7 kg	
Weight per unit w/o mounting plate	ca. 12 kg	ca. 4.7 kg	

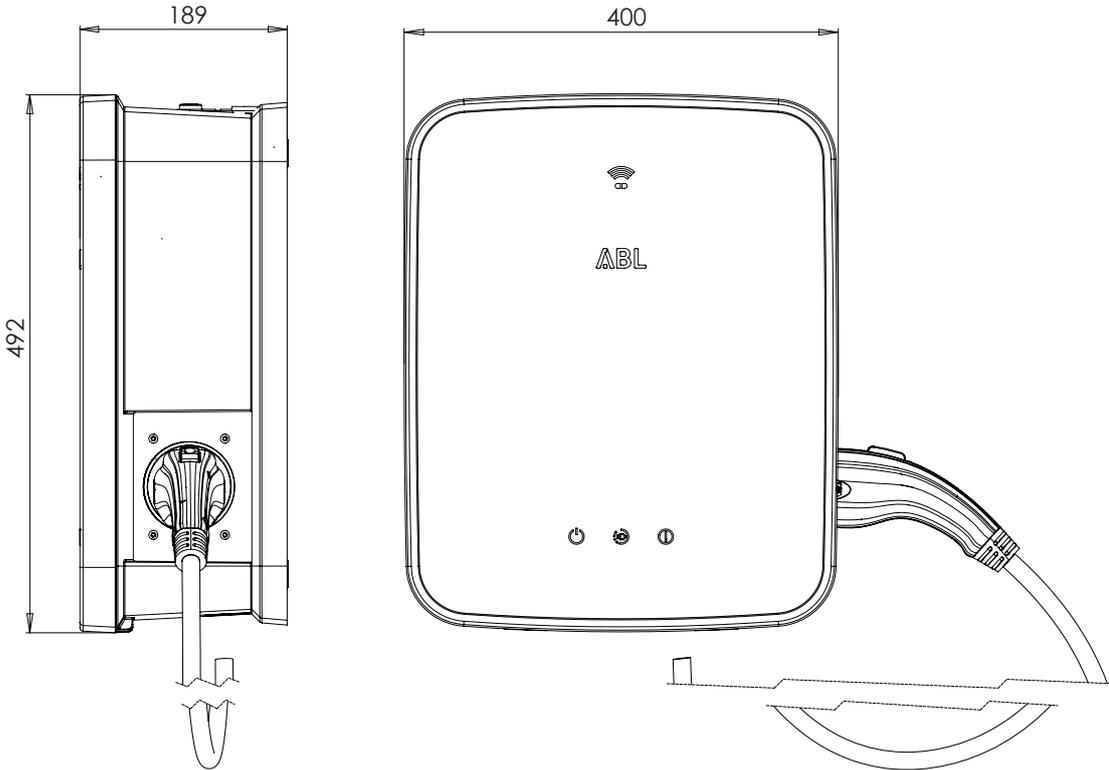
APPENDIX

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, 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 detection \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		

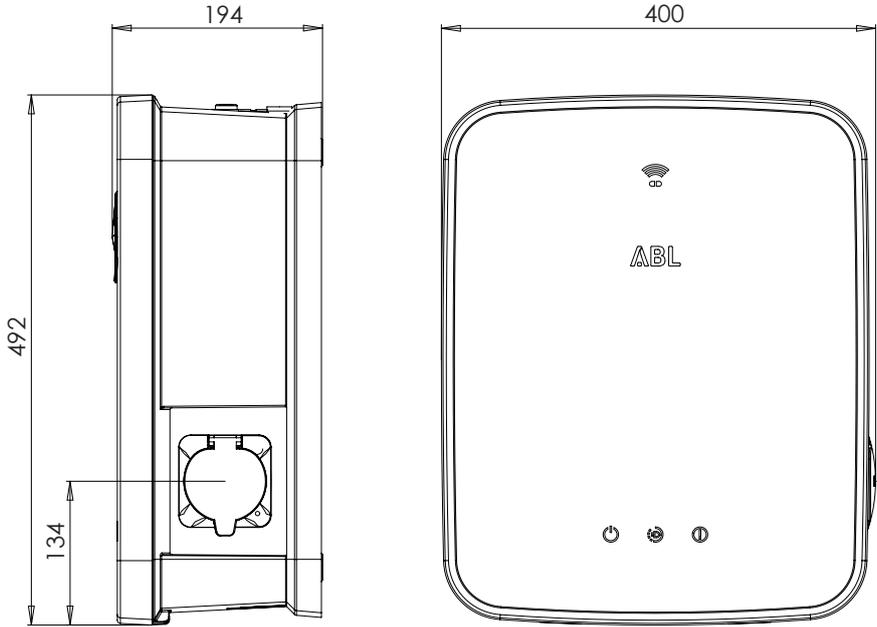
Scale drawings and dimensions

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

Wallbox 3W2205

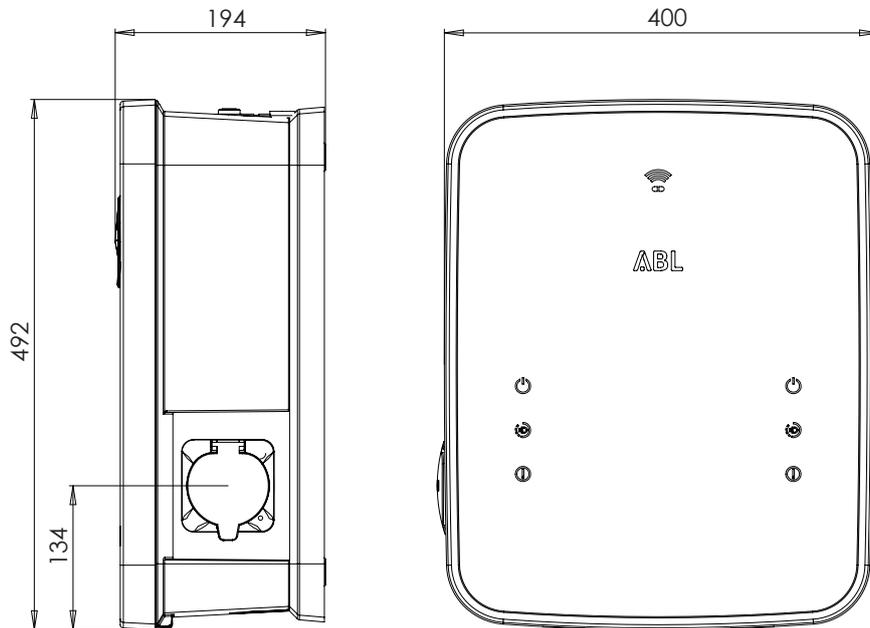


Wallboxes 3W2207 and 3W2209



APPENDIX

Wallboxes 3W2214, 3W2217 and 3W4401



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

Standard	Description
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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Disposal advice

For the preservation and protection of the environment, the prevention of pollution and in order to improve the recycling of resources, the European Commission has issued a guideline (WEEE-Guideline 2002/96/EC and EAG-VO) according to which electrical and electronic devices are taken back by the manufacturer in order to have them properly disposed of or recycled.

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

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.



