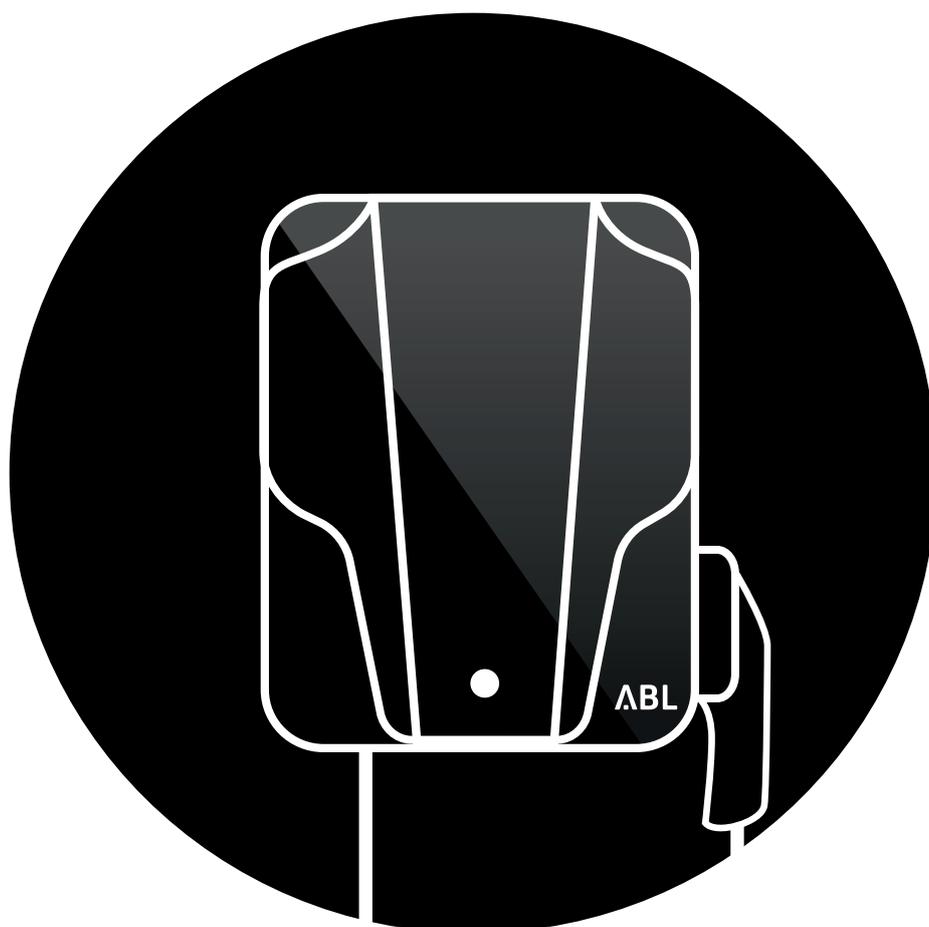


Wallbox

eMH1

with charging cable



Contact

Manufacturer **ABL**

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Safety and Operating Notices

Safety Notices in this Manual

This instruction manual contains important information for the installation and safe use of the eMH1 – EVSE 5X1 and EVSE 5X3 Wallboxes it refers to. Please ensure therefore that you read and follow the safety notices provided.

In particular, the warnings and safety measures clearly marked in this manual must be followed. The associated 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!**

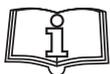
Sections marked with this symbol draw attention to further hazards that may lead to damage to the Wallbox itself or to other electric devices. Actions marked with this symbol must be carried out with special care.

**PLEASE NOTE:**

Sections marked with this symbol draw attention to further important information and particularities 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 safety notices and operating instructions can be found on the device. These symbols carry the following meanings:

**WARNING!**

Please ensure that you read the instruction manual (this document) before you open the housing of your eMH1 Wallbox.

**WARNING!**

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

**WARNING!**

Please ensure you read the instruction manual (this document), before you continue.

SAFETY AND OPERATING NOTICES

In case several users operate the Wallbox, the contents of this manual and the safety notices in particular must under all circumstances be passed on to each individual user.

General safety information

This device represents the current state of technology and fulfils all technical safety requirements, directives and norms. The safety information provided serves to ensure the proper operation of the device. Disregard of or actions contrary to the safety information and instructions contained in this manual and printed on the device may lead to electric shock, fire and/or severe injury.

The device may only be operated in technically sound condition. Malfunctions that affect the safety of persons or the device may only be repaired by authorized or qualified specialist personnel. In case you require service (see next page), always turn first to the dealer who supplied the device to you.

Service is required when e.g. the power supply cable or the charging connector are damaged, when liquids or objects have entered the housing, the device has been directly exposed to rain, has been dropped, is malfunctioning or has been otherwise damaged.

Please pay attention to the following points:

- Read this manual carefully.
- Keep this manual in a safe place where all users can always access it.
- Heed all warnings.
- Follow all instructions.
- Do not operate this device in close vicinity to running water.
- Do not install this device near radiators, heat storage devices, stoves or other sources of excessive heat.
- Do not step on the power supply cable, do not kink it and treat plugs and sockets with special care.
- Only use accessories intended and sold for the device by the manufacturer.
- Do not place containers with liquids on the device, as these may tip over and liquids may enter the device.

Operating instructions / Maintenance

Please note the following instructions for the operation and maintenance of your eMH1 Wallbox:

- The device must be connected to the protective earth conductor of your electricity supply.

- 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 charging operations.
- At all times comply with local safety regulations for the country in which you operate the device.
- To disconnect the device completely from the power grid, the power supply must be cut at your domestic miniature circuit breaker (MCB).
- Follow all information and instructions of the manufacturer for installing and operating the device.
- Do not operate the device in confined spaces.
- Make sure that the front cover shield is always locked to prevent unauthorized opening of the housing. Keep the key in a place that is known to all authorized users.
- You must under no circumstances make any changes to the housing or the internal wiring of the device: Any disregard of this instruction fundamentally breaches the guarantee provisions and voids the warranty with immediate effect.
- No parts to be maintained by the user are located inside the device.
- Only have qualified, specialist personnel repair and/or install the device.



WARNING!

This Wallbox is intended for connection to and operation on 230 or 230 / 400 V 50 Hz mains power only. Power supply cables may be installed below or above the wall surface. The cable should enter the device on the underside of the rear part of the housing (see page 10).

- Only use a dry cloth to clean the device. Do not use aggressive cleaning agents, waxes or solvents (such as cleaning fluid or paint thinner), because they can dull the displays on the device.
- The Wallbox must never be cleaned using a pressure cleaner or similar implement.
- Check the permanently installed charging cable of your eMH1 Wallbox regularly for potential abrasions or damage.



DANGER!

Should you discover any damage to the charging cable or a supply cable, you must take the device out of operation immediately. In this case, please turn to an authorized service partner or the dealer from whom you purchased the product. You must not under any circumstances attempt to resolve or repair any damage or malfunction yourself!

- Relevant local regulations for operating electrical devices always apply.

Introduction

Congratulations on the purchase of your eMH1 Wallbox by ABL!

With this Wallbox from our “Electric Mobility Home” series, you have chosen an innovative as well as future-proof product that guarantees particularly high operating safety while featuring extremely compact dimensions.

eMobility helps to save natural resources and protect the environment sustainably. ABL is, with its eMH1 family of products, a leading supplier in this area. The eMH1 combines progressive and pleasing design with intuitive functionality: According to their requirements, users may select from models with a variety of features developed for domestic and semi-public applications.

The eMH1 series Wallboxes are constantly developed further and at all times comply with the regulations and norms for the charging of electric vehicles applicable throughout Europe according to IEC 61851-1, Mode 3.

If you are looking for additional information about your Wallbox or would like to find out more about available accessories and the remaining ABL product range, please visit our website at

www.abl.de

Product description

Your eMH1 Wallbox allows you to comfortably and safely charge electric vehicles according to IEC 61851-1, Mode 3. Switching layout, cable diameters and charging connectors of the eMH1 are designed for the shortest possible charging times.

We place the highest value on user safety in all our products. Almost all eMH1 Wallbox models therefore feature an internal residual current circuit breaker and/or an integrated DC fault current detector (depending on the model variant). In combination with the protection devices of your electrical infrastructure and the fault current protection of your electric vehicle, these measures ensure effective protection against short circuit, electric shock and other operational hazards.

The eMH1 Wallbox is especially easy to operate in day-to-day use: Two LED lights in the upper part of the housing 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. Access to the internal switching devices is controlled through the lockable cover shield – this way you can ensure that the housing can only be opened by authorized users.

A common characteristic of all eMH1 models is the particularly space-saving housing made from durable plastic, which effectively protects the internal electric circuits against environmental influences and unauthorized access. In general, all model vari-

ants of the EVSE5X1 and 5X3 series should be installed and taken into operation by a qualified electrical contractor. Your local distributor will be happy to arrange specialist installation for you at your desired location.

Identifying your product variant

The eMH1 series comprises several model variants, which are mechanically and/or electrically adapted to different usage profiles. For identification, a product compliance plate is located at the back of the lockable housing cover shield near the hinge. Please open the cover shield before taking the device into operation and check the compliance plate to ensure that the model variant you have installed is the one described in this manual.



For identification, the model code (EVSE 5XX) as well as the power supply ratings (voltage, frequency, current) indicated below it are especially relevant.

The following Wallboxes are described in this manual:

MODEL	POWER SUPPLY	MODEL VARIANT
EVSE 501	230 V / 50 Hz / 16 A	Fixed charging cable with type 1 connector, internal residual current circuit breaker and DC fault current detector, integrated counter, charging output 3.6 kW
EVSE 511	230 V / 50 Hz / 16 A	Fixed charging cable with type 1 connector, internal residual current circuit breaker, authorized by NISSAN EUROPE, S.A.S., charging output 3.6 kW
EVSE 531	230 V / 50 Hz / 30 A	Fixed charging cable with type 1 connector, internal residual current circuit breaker, authorized by NISSAN EUROPE, S.A.S., charging output however is 6.9 kW
EVSE 551	230 V / 50 Hz / 16 A	Fixed charging cable with type 1 connector, internal residual current circuit breaker, integrated counter, charging output 3,6 kW
EVSE 561	230 V / 50 Hz / 16 A	Fixed charging cable with type 1 connector, charging output 3.6 kW

INTRODUCTION

MODEL	POWER SUPPLY	MODEL VARIANT
EVSE 503	230 V / 50 Hz / 16 A	Fixed charging cable with type 2 connector, internal residual current circuit breaker, charging output 3.6 kW
EVSE 543	230 V / 50 Hz / 16 A	Fixed charging cable with type 2 connector, internal residual current circuit breaker and DC fault current detector, integrated counter, charging output 3.6 kW
EVSE 553	230/400 V 50 Hz 16 A	Fixed charging cable with type 2 connector, internal residual current circuit breaker and DC fault current detector, charging output 11 kW
EVSE 563	230/400 V 50 Hz 32 A	Fixed charging cable with type 2 connector, charging output 22 kW
EVSE 573	230 V / 50 Hz / 16 A	Fixed charging cable with type 2 connector, charging output 3.6 kW



WARNING!

The information and technical specifications contained in this manual relate exclusively to the model variants mentioned in these instructions and must under no circumstances be transferred to other eMH1 models.

Package contents and unpacking

Your eMH1 Wallbox is delivered with a range of accessory components, which are necessary for the proper operation of the device. Therefore, please check immediately after unpacking whether the following components are included:

COMPONENT	QUANTITY	DESCRIPTION
eMH1 Wallbox	1	Wallbox comprising lower housing part, upper housing part and cover shield with integrated lock
Key	2	Key for locking the housing cover shield
Drilling template	1	Template for drilling the holes for wall mounting

Should one or more components be missing after unpacking, please contact your local distributor immediately: You can find the necessary contact details on page ii in this manual.

Available accessories

ABL sells additional accessories for your eMH1 Wallbox. For the models of the EVSE 5X1 and 5X3 series, the following components are available:

	DESIGNATION	MODEL NUMBER	QUANTITY
	<p>Mounting pole* For mounting all eMH1 Wallboxes with or without bracket Dimensions: 1600 x 280 x 70 cm Weight: 2,000 g</p>	STEMH10	1
	<p>Mounting plate / bracket with fixings for all eMH1 Wallboxes Weight: 640 g</p>	WHEMH10	1

* does not include the Wallbox pictured

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 product range there.

Installation and power supply connection

The electrical installation of the eMH1 Wallbox variants described in this manual must always be carried out by qualified specialist personnel: Please contact an electrical contractor or arrange installation at your premises with your local distributor.

However, as a user you may carry out the mechanical installation of the Wallbox yourself, as long as you follow the safety notices and general instructions.

Prerequisites for the mounting site and installation

Your eMH1 Wallbox is an electrical device and is therefore subject to particular prerequisites for indoor and outdoor installation: Although the housing of the eMH1 complies with the standards for the IP54 degree of protection, you must take into account certain environmental conditions, especially outdoors.

In selecting the mounting site you must consider the following points:

- For the safe operation of your Wallbox, minimum distances to other technical installations must be observed: You can obtain further information from your electrical contractor or your distributor.
- The Wallbox must be installed where it is freely accessible to all authorized users.
- Ideally, the mounting site should already provide a connection to the power supply. If not, a separate supply must be installed that complies with the generally prescribed standards for cabling and building infrastructure: Please contact a qualified electrical contractor for details.



WARNING!

The power supply for the eMH1 must always be protected by a domestic miniature circuit breaker (MCB)

Some model variants require the supply cable to be protected by an additional external FI residual current circuit breaker (RCCB). Further information available under Technical Data, see page 22.

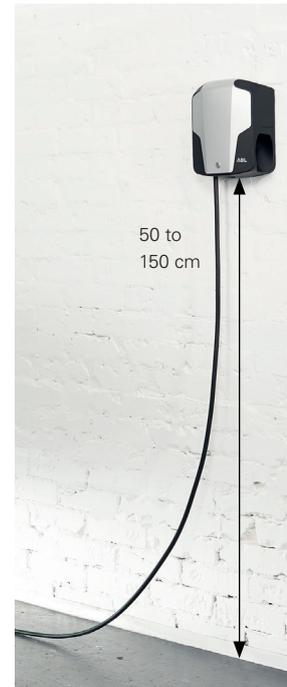
- Depending on model variant, this Wallbox is designed for connection to and operation on a rated voltage of 230/ 400 V 50 Hz.
- The power supply cables may be installed above or below the wall surface. However, the cable should preferably enter the device through the inlet on the underside of the rear part of the housing.
- Sufficient air circulation must be ensured at the mounting site so that the Wallbox is cooled during operation: Always observe the allowed operating temperatures (see "Technical specifications" on page 22).
- Do not install or operate the Wallbox in direct sunlight, as it could overheat and/or the housing could be damaged over time.



DANGER!

In case of visible damage to the Wallbox occurring during installation or use, the device must be taken out of operation immediately, as this poses a danger to life and limb. In this case, replacement of the Wallbox is required!

- Outdoors the Wallbox should only be installed in covered locations that provide sufficient protection from rainwater. Installation in a garage or carport is recommended, as long as it fulfills the stated requirements.
- The recommended installation height is 50 to 150 cm from the floor to the lower edge of the housing.
- The required mounting area for the model variants of the eMH1 Wallbox described in this manual is at least 262 x 222 mm (H x W).
- The mounting area must have an even surface that provides sufficient stability for installing the eMH1.
- Choose a mounting site that allows you to reach the charging socket of your vehicle comfortably with the charging connector of the eMH1: The cable must not under any circumstances be strained when connected to the vehicle.



Preparation and mechanical installation

After determining the mounting site for the eMH1, you can begin with the mechanical installation. For installation you will need the following components:

- Power drill or cordless drill (not included)
- Drill bit \varnothing 8 mm, appropriate for the wall material (not included)
- Pliers or cutter for breaking or cutting out the cable inlet in the rear part of the housing of the eMH1 (not included)
- Three flat-headed screws size M5 x 60, fully or partly threaded, with a head diameter of $8.5 \text{ mm} \pm 1 \text{ mm}$ (not included)
- Nylon wall plugs 8 x 40 mm suitable for the wall material (not included)
- Drilling template for the eMH1 model variants described in this manual (included)
- Spirit level if required (not included)



CAUTION!

Check the measurements on the drilling template with a calibrated measuring tape BEFORE you mark the drill holes using the template and then drill them.

INSTALLATION AND POWER SUPPLY CONNECTION

Drilling the mounting holes using the drilling template

Proceed as follows to drill the holes using the drilling template:

1. Place the drilling template vertically on the chosen mounting surface: Use a spirit level if required.
2. Mark the drill holes using the template.
3. Drill the marked mounting holes (Ø 8 mm) and check the positions of the holes using the drilling template.
4. Insert the wall plugs for the mounting screws.

Preparing the Wallbox

Proceed as follows to prepare the Wallbox for installation:

1. Open the cover shield of the EVSE 5X1 / 5X3 using the key supplied.
2. Loosen the four screws connecting the front part of the housing with the rear part: Keep the screws in a safe place as you will need them again to complete installation.
3. Pull off the front part of the housing.
4. Remove the plastic tongue intended for the power supply in the lower section of the rear part of the housing using a suitable pair of pliers or a cutter.
5. Use the cutter to cut an opening to suit the power supply cable into the rubber seal of the rear part of the housing. If necessary, remove the rubber seal for this purpose and place it back into the rear part of the housing afterwards.



Mechanical installation of the Wallbox

1. Fix one screw (5 x 60 mm, screw head Ø 8 mm) in the top drill hole and hang the upper mounting point of the Wallbox on it.
2. Fix the two lower mounting points using the other two screws (5 x 60 mm, screw head Ø 8 mm).
3. Tighten the two lower screws so that the rear part of the housing is held in place without being deformed by the tension applied to the mounting points.

Electrical installation of your Wallbox

The electrical connection of the EVSE 5X1 / 5X3 to your domestic power supply and taking it into operation must always be carried out by a qualified person or specialist electrical contractor. All local norms and regulations regarding the installation of electrical devices must be observed.



WARNING!

Read and make sure that you follow all safety notices in this manual and those on the Wallbox itself!

Now turn off the miniature circuit breaker (MCB) in your domestic power distribution box before you insert the power supply cable into the EVSE 5X1 / 5X3 housing: The power supply cable must be voltage-free under all circumstances before you or any third person open the housing and/or manipulate the power supply in any way.



DANGER!

Under all circumstances deactivate the miniature circuit breaker (MCB) allocated to the eMH1 in your domestic power distribution box before you begin electrical installation. Also ensure that the MCB cannot be reactivated during installation. Otherwise there is a danger of electric shock!

In addition, depending on your model variant, please deactivate the internal or external residual current circuit breaker (RCCB) to disconnect the internal electronics from the power supply terminal block during installation. Depending on the model variant, the RCCB is either integrated or must be placed upstream of the supply cable. Further information available under Technical Data, see page 22.

Insert the power supply cable through the lower cable inlet into the housing and fix the cable using the internal strain relief clamp.

For all 1-phase EVSE model variants, the power supply is connected as follows:

DESIGNATION	WIRE COLORS	CONNECTION CODING
Current-carrying conductor	Brown	L1
Neutral	Blue	N
Protective earth	Green-Yellow	PE

For all 3-phase EVSE model variants, the power supply is connected as follows:

DESIGNATION	WIRE COLORS	CONNECTION CODING
Current-carrying conductor phase 1	Brown	L1
Current-carrying conductor phase 2	Black	L2
Current-carrying conductor phase 3	Gray	L3
Neutral	Blue	N
Protective earth	Green-Yellow	PE

INSTALLATION AND POWER SUPPLY CONNECTION



DANGER!

The above color-coding is NOT internationally standardized: Should the individual wires in the power supply cable be color-coded differently, please immediately contact a qualified electrical contractor! Have the power supply checked and replaced if necessary.

After successful connection to the power supply by a qualified specialist or electrical contractor, please take the following steps to complete installation:

1. Replace the upper part of the housing.
2. Fix the upper part of the housing to the rear part using the appropriate screws.
3. Switch the integrated or external FI residual current circuit breaker (RCCB) back on.
4. Lock the cover shield of the EVSE 5x1 / 5X3 using the key supplied and store the key in a safe place.
5. Switch the MCB in your domestic power distribution box back on.

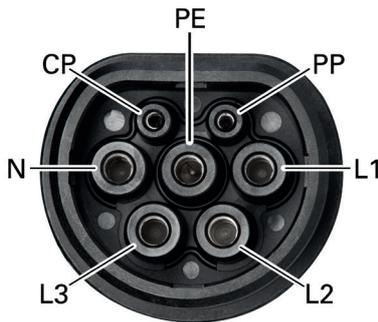


PLEASE NOTE:

We recommend that you take your Wallbox into operation in the presence of a qualified installer: He or she will be able to assess the proper functioning of the Wallbox and correct any malfunctions or installation errors that may occur.

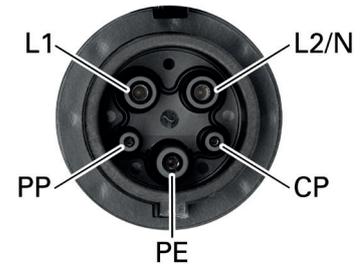
Taking into operation and charging procedure

Your Wallbox is ready for use immediately after mechanical and electrical installation have been completed. The EVSE5X1 is equipped with a fixed charging cable with a type 1 charging connector to connect to the vehicle. This connector has two current carrying contacts, a PE-protective earth conductor as well as two signaling contacts (Control Pilot and Proximity Pilot)



The EVSE 5X3, however, includes a charging cable with type 2 charging connector:

This connector has three current-carrying contacts, a PE-protective earth conductor as well as two signaling contacts (Control Pilot and Proximity Pilot), which ensure a secure connection and therefore the safe operation of the Wallbox.



As long as the connector is not locked into place in the vehicle socket, there will be no feedback response via the signaling contacts of the charging connector: As a result, charging will not be initiated and the EVSE5X1 / 5X3 will not apply a voltage to the connector's current-carrying contacts.

Some model variants come with a built-in DC-monitoring unit (DC-RCM): This module ensures that no DC fault current (DC current > 6 mA) can reach the domestic power installations and disrupt the proper functioning of the upstream domestic residual current circuit breaker (RCCB) during vehicle charging. This circuit breaker is especially required in cases where your electric vehicle does not provide any DC fault current protection itself: You can find information about this in the manual for your vehicle and from the manufacturer or vehicle dealership.



WARNING!

Ensure that your vehicle has internal DC fault current protection: Depending on the country where you operate the eMH1, charging using the model variants without integrated DC-RCM may only be permitted with an external, upstream type B RCCB! Otherwise, all local regulations for connection to the power supply must be observed.

Safety information for taking the Wallbox into operation

Before you take your EVSE 5X1 / 5X3 Wallbox into operation, you must observe the following safety notices:

- Ensure that the EVSE 5X1 / 5X3 is connected to the domestic power supply according to the instructions in this manual and the separately available service guide.
- Ensure that supply cable is separately protected in your domestic power distribution box by a suitable miniature circuit breaker (MCB, C characteristic).

TAKING INTO OPERATION AND CHARGING PROCEDURE

- Ensure that the integrated or external (depending on model variant) FI residual current circuit breaker (RCCB) is switched on.
- Ensure that the Wallbox has been installed according to the instructions in this manual: Check especially that there is free access to the Wallbox, 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 shield is always locked during normal operation.
- Ensure that the charging cable is not twisted and check that cable, connector and housing do not show any observable damage.

Normal operation

The fixed charging cable leaves the Wallbox on the left lower side of the housing. A matching compartment for the charging connector is provided on the right side of the housing: A pin inside the compartment, onto which the connector is hooked, serves to secure it in place.



DANGER!

Except during charging procedures, the charging connector must always be properly stored and thereby secured in its compartment: Never leave the connector lying out in the open or plugged into the vehicle after charging is complete.

You must under no circumstances use excessive force when removing the charging connector from its compartment or replacing it: If the pin inside the compartment is damaged or breaks off, the charging connector can no longer be stored properly. In this case you must under no circumstances continue to operate the Wallbox! Please contact your local distributor from whom you have purchased the Wallbox.

The fixed charging cable of the EVSE 5X1 / 5X3 is ca. 5 meters in length and thus enables a flexible connection with the vehicle. Unless charging, you should always roll the cable up into a compact shape and store it in a way that prevents it from being damaged by external mechanical forces. 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 charging cable is not kinked at the housing outlet and that there is no excessive strain on the cable and/or the housing.



DANGER!

If the cable, the charging connector 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.

Charging procedure

The EVSE 5X1 /5X3 is engineered for the fastest possible charge 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 energy 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.

Please follow the following steps to charge your vehicle:

1. Park your vehicle so that the charging socket can be easily reached with the charging connector: The charging cable must not be under any strain during the charging procedure!
2. Open the charging socket on the vehicle.
3. Check the two indicator LEDs on the top part of the EVSE 5X1 / 5X3: When the Wallbox is ready for operation, the green LED indicator will flash briefly every 5 seconds, while the blue LED will be not be illuminated.
4. Remove the charging connector from its compartment by lifting it slightly by the handle ① and pulling it downward ②.
5. Plug the charging connector into the socket completely: The charging process will only start when the two signaling pins in the charging connector will each have sent feedback regarding a safe connection.

The green LED will be illuminated continuously while the connection between Wallbox and vehicle is being established. When the charging procedure begins, the green LED will be extinguished and the blue LED will be illuminated continuously. Charging is completed when the blue LED is flashing.



Removing the EVSE 5X3 charging connector (illustration is approximate)



PLEASE NOTE:

Should there have been a malfunction during or after the charging procedure, this will be shown by the indicator LEDs. The following chapter describes how you can identify operational states and errors and which measures will become necessary.

Now unplug the charging connector from the charging socket on the vehicle and replace it in the compartment on the housing of the EVSE 5X1 / 5X3 by inserting the plug into the compartment and slightly lowering the handle.

TAKING INTO OPERATION AND CHARGING PROCEDURE

Taking energy consumption readings (model variants with energy meter)

Various eMH1 model variants feature integrated electricity meters with digital displays that inform you about the energy consumption of the Wallbox at any time. The energy meter is built into the Wallbox immediately next to the FI residual current circuit breaker.

To read the energy consumption, proceed as follows:

1. Open the cover shield of the Wallbox using the key supplied.
2. Locate the meter on the left side of the central display window.
3. Read the desired values. The following values can be selected and displayed using the button located under the digital display:

DISPLAY	EXPLANATION
T total(kWh)	This value represents the total consumption to date.
T part.(kWh)	This represents partial consumption since the last reset.
2000 I mp/kWh	This value flashes according to the power being drawn.
P (kW)	This represents the output at the time.
U (V)	This represents the voltage at the time.
I (A)	This represents the electrical current at the time.

4. After reading the power consumption values required, lock the cover shield of the eMH1 again.

Resolving errors

Your eMH1 Wallbox is engineered for maximum operational safety and the highest possible charging reliability. The RCCB and DC fault current detector (depending on model variant) 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 upper part of the housing 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.



Operating states

The two indicator LEDs on the left above the front cover shield show the current operating status of the eMH1 Wallbox. To indicate certain operating states, the LEDs may...

...be illuminated (continuous ON)

... flash

...be extinguished (continuous OFF).

During normal operation, the following operating states are shown:

		DESCRIPTION
flashes every 5 seconds	OFF	The Wallbox is ready for operation, the vehicle may be connected for charging at any time
illuminated	OFF	The vehicle is connected and has been detected. Next, the charging procedure will start automatically.
OFF	illuminated	The vehicle is currently being charged
OFF	flashes every 5 seconds	Charging is complete, the Wallbox can be unplugged from the vehicle



PLEASE NOTE:

The charging procedure is always terminated by the vehicle, not by the Wallbox. The EVSE 5X1 /5X3 only indicates that you can unplug the charging cable from the vehicle charging socket on the basis of communication with the vehicle. Should the vehicle not be charged sufficiently at this point, please contact your service partner for the vehicle.

RESOLVING ERRORS

Error messages during operation with the vehicle

Under some circumstances, malfunctions and disruptions may occur that prevent the proper charging of the vehicle according to IEC 61851.1, Mode 3. The Wallbox detects possible errors on the part of the vehicle independently and shows them using the indicator LEDs.

To represent certain errors, the indicator LEDs will flash in a specific, repeating pattern.

The following error codes are displayed:

LED-SEQUENCE (FLASHING)	ERROR DESCRIPTION
	The vehicle makes an unauthorized demand on the charging procedure
	Communication with the vehicle is disrupted
	A DC fault current has been detected

The EVSE 5X1 / 5X3 reinitiates the charging procedure every 30 seconds, checking communications with the vehicle. If the error recurs, the indicator LEDs continue to show the error code. No charging occurs in this operating state.



WARNING!

If the Wallbox continues to show error messages during operation with the vehicle, please always contact your service partner for the vehicle. It is possible that maintenance must be carried out before the vehicle can be charged again using the EVSE 5X1 / 5X3.

Disruptions to the operation of the wallbox and solutions

For safe operation, depending on model variant, the eMH1 has an integrated DC fault current detector and/or a residual current circuit breaker (RCCB), which detects residual currents that may occur and disconnects the entire Wallbox from the electricity supply for your personal protection. The RCCB is located under the lockable cover shield: This ensures that it can only be operated by authorized users.



PLEASE NOTE:

All EVSE model variants must be protected during operation either by an integrated or external RCCB.

Depending on the country, for model variants without DC fault current detection, an external type B RCCB must be set aside in the domestic power distribution box.

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 Wallbox does not have a power supply.	The power supply is interrupted within the domestic electrical infrastructure: Check the upstream circuit breaker in the domestic power distribution box.
		The internal RCCB of the Wallbox has been tripped: Check the status of the RCCB and, if necessary, switch it back on using the pivot lever.
	The indicator LEDs are faulty	Should the indicator LEDs 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	Remove the recharge plug from the vehicle and plug it back in: Ensure that the connector sits properly inside the vehicle socket.
	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 Wallbox detects a malfunction	All errors shown by the indicator LEDs relate to vehicle-based functions (see page 18). The Wallbox reinitiates the charging procedure every 30 seconds: Should the error persist, please contact your service partner for the 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 RCCB (if present), please contact the local distributor from whom you have purchased the Wallbox.

Checking the integrated RCCB (only for model variants with RCCB)

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

RESOLVING ERRORS



PLEASE NOTE:

The internal DC fault current detector (if present) conducts a self-test before each charging procedure: In case of an error, the respective error sequence will be shown (see page 18).

Proceed as follows to test the RCCB:

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



Danger!

Should the RCCB 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 device out of operation

If required, you can take your Wallbox temporarily or permanently out of operation. To deactivate your EVSE 5X1 / 5X3 temporarily, please proceed as follows:

1. Open the cover shield using the key supplied.
2. Flick the pivot lever of the internal RCCB (if present) into the **0** position (connection to the power supply is interrupted).
3. Lock the cover shield again.

Now the EVSE 5X1 / 5X3 cannot be used for charging.

To deactivate your Wallbox permanently, please proceed as follows:

1. Open the cover shield using the key supplied.
2. Flick the pivot lever of the internal RCCB (if present) into the **0** position (connection to the power supply is interrupted).
3. Lock the cover shield again.
4. In addition, switch off the miniature circuit breaker (MCB) in your upstream domestic power distribution box (position **0**).

Now the EVSE 5X1 / 5X3 is completely free of electricity and may be demounted if required.

**PLEASE NOTE:**

For model variants without RCCB, you must switch off the upstream MCB in your domestic power distribution box to temporarily or permanently deactivate the Wallbox.

**WARNING!**

The electrical de-installation of the EVSE 5X1 / 5X3 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 get further information from your municipal administration, the waste management depot responsible for your area as well as from your local distributor.

Appendix

Technical specifications

EVSE 5X1 Series

MODEL VARIANT	EVSE 501	EVSE 511	EVSE 531
Compliance standard	IEC 61851-1/22		
Rated voltage	230 V 50 Hz		
Rated current	16 A (MCB required onsite)		32 A (MCB required onsite)
Max. output	3.6 kW		6.9 kW
Charging cable	Type 1, length ca. 5 m		
Circuit-protection devices	Type A 30 mA RCCB, and DC-RCM $I_{\Delta n}$ d.c. electronic DC fault current detector ≥ 6 mA		
Energy meter	integrated	not included	
Control / Customization	internal RS485-interface		
Terminal block	up to 4 mm ²		
Operating temperature	-25°C to 50°C		
Storage temperature	-30°C to 85°C		
Relative humidity	5 to 95% (no condensation)		
Class of protection	I		
Degree of protection (housing)	IP54		
Overvoltage category	III		
Dimensions	272 x 220 x 106 mm (H x W x D)		
Weight per unit	ca. 3 kg		

MODEL VARIANT	EVSE 551	EVSE 561
Compliance standard	IEC 61851-1/22	
Rated voltage	230 V 50 Hz	
Rated current	16 A (MCB required onsite)	
Max. output	3.6 kW	
Charging cable	Type 1, length ca. 5 m	
Circuit-protection devices	RCCB, Type A, 30 mA	external RCCB required onsite
Energy meter	integrated	not included
Control / Customization	internal RS485-interface	
Terminal block	up to 4 mm ²	
Operating temperature	-25°C to 50°C	
Storage temperature	-30°C to 85°C	
Relative humidity	5 to 95% (no condensation)	
Class of protection	I	
Degree of protection (housing)	IP54	
Overvoltage category	III	
Dimensions	272 x 220 x 106 mm (H x W x D)	
Weight per unit	ca. 3 kg	

EVSE 5X3 Series

MODEL VARIANT	EVSE 503	EVSE 543	EVSE 553
Compliance standard	IEC 61851-1/22		
Rated voltage	230 V 50 Hz	230/400 V 50 Hz	
Rated current	16 A (MCB required onsite)		
Max. output	3.6 kW	11 kW	
Charging cable	Type 2, length ca. 5 m		
Circuit-protection devices	RCCB, Type A, 30 mA and electronic DC fault current detector DC-RCM, $I_{\Delta n \text{ d.c.}} \geq 6 \text{ mA}$		
Energy meter	not included	integrated	not included
Control / Customization	internal RS485-interface		
Terminal block	up to 4 mm ²	up to 6 mm ²	
Operating temperature	-25°C to 50°C		
Storage temperature	-30°C to 85°C		
Relative humidity	5 to 95% (no condensation)		
Class of protection	I		
Degree of protection (housing)	IP54		
Overvoltage category	III		
Dimensions	272 x 220 x 106 mm (H x W x D)		
Weight per unit	ca. 3.9 kg	ca. 4.9 kg	

APPENDIX

MODEL VARIANT	EVSE 563	EVSE 573
Compliance standard	IEC 61851-1/22	
Rated voltage	230/400 V 50 Hz	230 V 50 Hz
Rated current	32 A (MCB required onsite)	16 A (MCB required onsite)
Max. output	22 kW	3.6 kW
Charging cable	Type 2, length ca. 5 m	
Circuit-protection devices	external RCCB required onsite	RCCB, Type A, 30 mA
Energy meter	not included	
Control / Customization	internal RS485-interface	
Terminal block	up to 6 mm ²	up to 4 mm ²
Operating temperature	-25°C to 50°C	
Storage temperature	-30°C to 85°C	
Relative humidity	5 to 95% (no condensation)	
Class of protection	I	
Degree of protection (housing)	IP54	
Overvoltage category	III	
Dimensions	272 x 220 x 106 mm (H x W x D)	
Weight per unit	ca. 4.9 kg	ca. 3.9 kg

Standards & guidelines

Your eMH1-EVSE 5X1 / 5X3 Wallbox complies with the following standards and classes of protection:

General standards

STANDARD	DESCRIPTION
2004/108/EC	EMC Guideline
2002/95/EC	RoHS Guideline
2002/96/EC	WEEE Guideline
ElektroG	Electrical and Electronic Device Statute

Standards governing electromagnetic interference (EMV)

STANDARD	DESCRIPTION
DIN EN 61000-6-2:2005	Device interference protection for industrial applications
DIN EN 61000-6-3:2007	Device interference for domestic applications

Device safety standards

STANDARD	DESCRIPTION
IEC 61851-1 Ed 2.0:2010	Conductive charging systems for electric vehicles – Part 1: General requirements
IEC 61851-22 (69/201/CD)	Conductive charging systems for electric vehicles – Part 22: AC Wallbox 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 Wallbox 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
 <p>IP54</p>	<p>Class of protection I: All electrically conducting parts of the device are connected at low resistance with the protective earth system of the fixed installation</p> <p>Degree of protection of the device (protection against dust in harmful quantities and protection from splashing water)</p>

Trademarks

All trademarks mentioned in this manual including those that may be protected by third parties are, without restriction, subject to the regulations of the respectively applicable trademark law and the property rights of the respective registered owners. All trademarks, trading names or company names marked here as such are or may be trademarks or registered trademarks of their respective owners. All rights not explicitly granted here are reserved.

The absence of an explicit marking of trademarks used in this manual must not lead to the conclusion that a name is free from the rights of third parties.

CE certification and declaration of compliance



The eMH1-EVSE 5X1 / 5X3 Wallbox carries the CE mark. The respective compliance declarations can be obtained from

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on request and are available at **www.abl.de** for download.

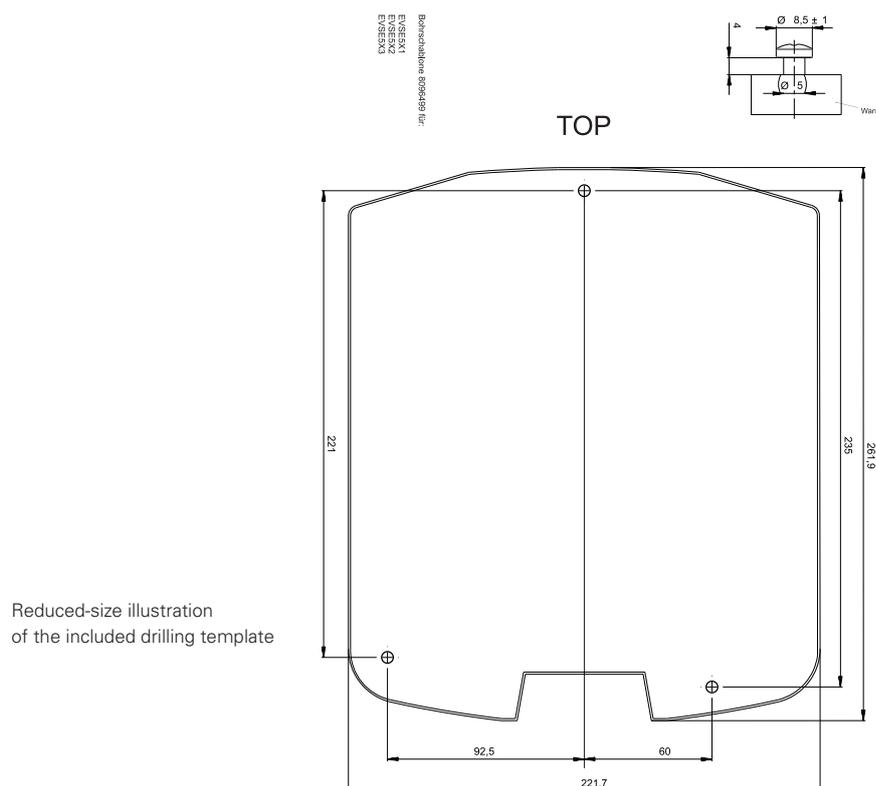
Glossary & Definitions

This table lists and explains important abbreviations from the wider eMobility area.

ABBREVIATION	DESCRIPTION	MEANING
BEV	Battery Electric Vehicle	Electric vehicle (100% electric use)
DC-RCM	Direct Current - Residual Current Monitor	Monitoring device for detecting DC fault currents
GSM	Global System for Mobile Communications	Standard for fully digital mobile networks
HEV	Hybrid Electric Vehicle	Hybrid vehicle (combination of a classic combustion engine and an electric motor with kinetic energy recovery system)
LED	Light Emitting Diode	Light-emitting diode
MCB	Miniature Circuit Breaker	Residual current circuit breaker
OCPP	Open Charge Point Protocol	Communication protocol between Wallbox and service providers (platform-dependent)
PHEV	Plug-In Hybrid Electric Vehicle	Plug-in hybrid vehicle (combination of classic combustion engine and electric motor)
RCCB	Residual Current operated Circuit-Breaker	Residual current device (RCD)
RCD	Residual Current protective Device	Residual current device (RCD)
RCM	Residual Current Monitor	Monitoring device for the detection of fault currents of a critical value
REEV	Range Extended Electric Vehicle	Electric vehicle with range extension (using a small combustion engine or a fuel cell)
RFID	Radio Frequency IDentification	Identification using electromagnetic waves

Drilling template

Your eMH1 Wallbox comes with a template (see reduced-size illustration) for drilling the mounting holes in a suitable substrate. Electrical installation of the eMH1 model variants described in these instructions must always be left to a qualified electrical contractor who will connect the device to the local power supply.



You may, however, carry out the mechanical installation of the Wallbox and drill the necessary mounting holes yourself: This is described in detail in section “Installation and power supply connection” on page 8.

The following instructions, which you must check in advance and may need to discuss with the contractor, always apply to the installation of the Wallbox:

The mounting surface area required for Wallboxes of the EVSE 5X1 / 5X3 series is 262 x 222 mm (H x W).

- The recommended shaft diameter for the fixings is 5 mm, with the drill hole diameter to be selected accordingly.
- All three screws and respective drill holes indicated on the drilling template must under all circumstances be used to fix eMH1 Wallboxes.
- Ensure that the selected installation site is suitable for mounting the Wallbox with respect to substrate, power supply/cabling path, distance to the vehicle and environmental conditions.

APPENDIX

- Strictly observe all instructions regarding mounting position and height. You will find the necessary information in section "Prerequisites for the mounting site and installation" on page 8.
- Check the measurements on the drilling template before you mark and drill the holes using the template.



WARNING!

Consider leaving the final installation to a qualified and authorized electrical contractor: Should malfunctions occur that can be shown to have resulted from improper mounting and installation, all guarantee and warranty provisions will become void. Proof of proper installation (e.g. by submitting the relevant invoices) must be furnished on request before guarantee and warranty provisions come into effect.

Warranty and guarantee provisions

ABL provides the legally prescribed guarantee period as well as a warranty of the same duration for the country in which the product was purchased. Should the product be operated in another country, the legal provisions of the country of purchase apply nevertheless: Under no circumstances are guarantees or the warranty transferable.

Should modifications of any kind have been made to the product that have not been explicitly authorized by ABL or described in the guidelines for authorized service partners, the manufacturer's warranty obligations become void with immediate effect.

On-site repairs are generally excluded by the manufacturer. In case of disregard of this provision, all guarantee and warranty provisions become void with immediate effect.



WARNING!

Should problems occur when operating your product, please contact your local distributor immediately and clarify whether the malfunction is covered by guarantee or warranty provisions.

Do not under any circumstances make alterations or repairs to your product yourself!

ABL guarantees the proper operation of the product after delivery within the applicable legal guarantee provisions. This guarantee is limited to damage that can be shown to have resulted from normal use and obvious material or manufacturing defects. In such cases the manufacturer, in collaboration with the local distributor, will attempt to restore the proper functioning of the product. The customer will be responsible for covering any arising transport costs.

However, the manufacturer further rejects any damage claims that can be shown to have resulted from improper use, neglect or modifications, from repair attempts by unauthorized persons or force majeure.

Any assumed guarantees, including a guarantee of marketability or suitability for specific uses are restricted to the warranty period.

Disposal advice



The crossed out trash can symbol indicates that electrical and electronic devices including accessories must be disposed of separate from household trash.

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.

