ABL

Wallbox eMH3

Installation manual

Contact

ΛBL

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Contents

Additional technical information

Additional technical information is required to install your wallbox on one of the separately available mounting poles, as well as regarding further accessories. It is contained in separate documents.

In addition, the technical data for your wallbox are collated in product-specific data sheets. You can download these documents from the ABL website using the following link:

https://www.ablmobility.de/en/service/downloads.php

> **(!) NOTE**
>
> **Displaying the additional information on a computer, tablet or smartphone**
>
> Additional technical information is made available in the Portable Document Format (PDF).
>
> ■ To display PDF files, you need the free Adobe Acrobat Reader or comparable software.

You can find further information about our product range, as well as about separately available accessory components on our website at **www.ablmobility.de**. Please visit:

https://www.ablmobility.de

Intended use

Our Wallbox eMH3 is the ideal solution for group installations in company or hotel carparks. Available with one (Single) or two (Twin) charge points, and as stand-alone or Controller-Extender variants. You can also choose between versions with charging cable or charging socket.

Information in this document

This document explains how to install, configure and commission the Wallbox eMH3: It is recommended that all working steps described in this document are carried out by a qualified specialist electrical contractor only.

	User	Specialist electrical contractor
Installation manual (this document)	✗	✓
Additional technical information		
■ Data sheets	✓	✓
■ Operating manual	✓	✓
■ ABL Configuration Software manual	✗	✓

Safety and user information

General

This manual describes all working steps required to install and/or operate the product it concerns.

Certain sections of this manual are specially formatted for quick and easy reference.

- Descriptions listing equally valid options are indicated by bullet points.
1 Descriptions listing operating steps are numbered in chronological order.

⚡ DANGER!

Indicates life-threatening electrical voltages

Sections marked with this symbol indicate electrical voltages that present a danger of loss of life or grievous bodily injury.

- Actions marked with this symbol must not be carried out under any circumstances.

⚠ WARNING!

Indicates important actions and further hazards

Sections marked with this symbol indicate further hazards that may result in damage to the product or to other connected components.

- Actions marked with this symbol must be carried out with special care.

! NOTE

Indicates important information for operation or installation

Sections marked with this symbol indicate further important information and features necessary for successful operation.

- Actions marked with this symbol should be carried out as required.
- Passages marked with this symbol contain valuable additional information.

Safety information

The safety notices serve to ensure the proper and safe installation, as well as subsequent safe operation of the device.

⚡ DANGER!

Violation of the safety information

Disregard of or actions contrary to the safety information and instructions contained in this manual may lead to electric shock, fire, severe injury and/or death.

Please pay attention to the following points:

- Please read this manual carefully.
- Heed all warnings and follow all instructions.
- Keep this manual in a safe place where it can be accessed at all times: The contents of this manual, and the safety notices in particular, must be available to all users of the product.
- Only use accessories intended and sold for the product by ABL.
- Only use charging cables that comply with the IEC 61851 standard.
- Do not install this device in close vicinity to running water, water jets or areas subject to flooding.
- The product must not be installed in explosive atmosphere areas (EX areas).

- Mechanical installation should be carried out by qualified specialist personnel.
- Electrical installation and testing must be carried out with reference to local rules by a qualified specialist electrical contractor, who, on the basis of their specialist training and experience, as well as their knowledge of the relevant standards, is able to assess and carry out the working steps described in this manual and recognise potential hazards.

⚠ **WARNING!**

Notification or approval requirement for charging stations

Please note that electrical grid operators, energy suppliers or national regulations may require notification of or approval for the installation or operation of a charging station.

- The product must only be operated after final approval by a qualified specialist electrical contractor.
- In case of installation faults, or malfunctions that can be traced back to faulty installation, always contact the contractor who carried out the installation first.
- The product must not be covered with stickers or other objects or materials.
- No liquids or receptacles containing liquids must be placed on the product.
- Please note that operating a radio transmitter in the immediate vicinity (< 20 cm) of the product may lead to malfunctions.
- This device is not intended to be used by persons (including children) with limited physical, sensory or mental abilities or lack of experience and/or knowledge, unless they are supervised by someone responsible for their safety or have received instructions on how to use the device.
- Children must be supervised so that they do not play with the device.
- Do not under any circumstances make alterations to the product. Any disregard of this instruction represents a safety risk, fundamentally breaches the guarantee provisions and may void the warranty with immediate effect.
- Malfunctions affecting the safety of persons, connected electric devices or the device itself must be resolved by a qualified specialist electrical contractor.
- Should one of the following malfunctions occur, please contact the specialist electrical contractor who has carried out the installation of your wallbox and accessories:
  - The product housing has been damaged mechanically, or the housing cover has been removed or can no longer be closed.
  - Sufficient protection against splashing water and/or foreign objects is no longer provided.
  - The product does not function properly or has been otherwise damaged.

User information

- Ensure that the rated voltage and rated current of the product comply with the parameters of your local electricity grid and that the rated output is not exceeded during operation.
- Local safety regulations regarding the operation of electrical devices for the country in which you operate the product always apply.
- To disconnect the product completely from the electricity grid, the power supply must be interrupted using the upstream safety switches and fault current protection devices (if present) in the domestic power distribution.
- Never operate the product in a confined space.
- Ensure that the product can be operated without any strain pulling on its components.
- Make sure that the product is always closed and locked when in use. All authorised users must be aware of the 'unlock' position of the key.
- 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.
- Only have the product repaired by a qualified specialist electrical company.

> ⚠️ **WARNING!**
>
> Proof of professional qualification
>
> In order to carry out repairs on or exchange electrical components, proof of completion of an ABL training course may be required: For this purpose, please contact ABL technical support (see "Contact" on page II).

> ⓘ **NOTE**
>
> Changes to functions and design features
>
> Please note that all technical details, specifications and design characteristics of the product may be changed without prior notice.

Introduction to the Wallbox eMH3

Congratulations on the purchase of your new Wallbox eMH3 by ABL. Our Wallbox eMH3 is the ideal solution for group installations in company or hotel carparks. Available with one (Single) or two (Twin) charge points, and as stand-alone or Controller-Extender variants. You can also choose between versions with charging cable or charging socket.

The Controller and Extender variants of the Wallbox eMH3 are also available as a bundle with backend solutions by reev, which offer an intuitive interface for the administration and invoicing of all charging operations.

Further information on technical data is available in the appendix from page 55.

Identifying your wallbox

The model variant of the Wallbox eMH3 can be unambiguously identified on the rating plate located on the inside of the housing cover. Please verify the information listed below on the rating plate.

The following information is especially relevant:

- Model number and indication of product category (Controller or Extender)
- External power supply
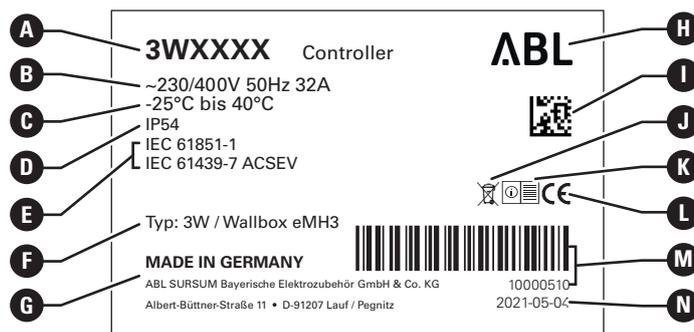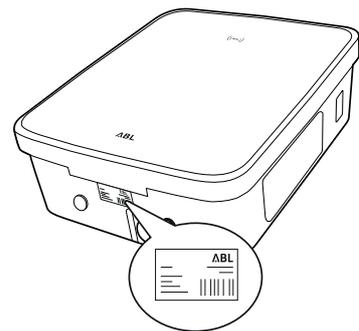
A	Model number and category (Controller or Extender)	F	Indication of type/production series (3W or Wallbox eMH3)	K	'Read instructions' advice
B	Power supply data	G	Manufacturer and manufacturer's address	L	CE label
C	Ambient temperature range	H	Manufacturer's logo	M	Barcode/serial number
D	Degree of protection (housing)	I	DataMatrix code/product number	N	Date printed
E	Standards	J	Disposal advice		

For calibration law compliant wallboxes, additional information is provided on the rating plate:
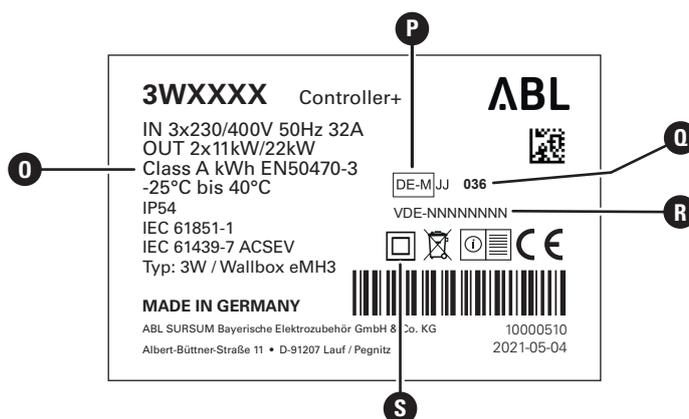
O Class of accuracy   **Q** Number of digits   **S** Class of protection II symbol

P Metrological mark   **R** BMP number (sample device testing certificate)

> **(!) NOTE**
>
> Explanation of calibration law compliance
>
> Calibration law compliance means that sets of measurement data for each charging procedure are saved permanently. According to the legal regulations applicable in Germany, the electric energy consumed at public charging stations must be billed in compliance with calibration law.
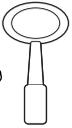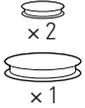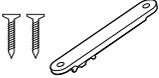
> **(!) NOTE**
>
> Labelling for calibration law compliant products
>
> To indicate calibration law compliance, the product category of calibration law compliant charging stations is extended by a 'plus' symbol.
>
> ■ Calibration law compliant Controller charging station: **Controller +**
> ■ Calibration law compliant Extender charging station: **Extender +**

Components included with the wallbox

The product is delivered including the following components:

■ Wallbox eMH3 including mounting plate, 1 pc

■ Triangular key, 1 pc

■ TX40 wafer head screws, 8 × 60 mm, 4 pcs

■ TX25 wafer head screws, 6 × 25 mm, 4 pcs

■ Wall plugs 10 × 50 mm, 4 pcs

■ Cable grommets, 3 pcs

■ Large strain relief incl. screws, 1 pc

■ Small strain reliefs incl. screws, 2 pcs

■ Label for marking the charge points according to DIN EN 17186-2019, 1 or 2 pcs (depending on number of charge points)
 • Configuration for charging station with socket
 • Configuration for charging station with cable

■ Operating manual & safety information (multilingual), 1 pc

■ Plug-in jumpers for terminating data bus, 6 pcs

Stand-alone variants of the eMH3 also include:

■ Teach-In tag card, 1 pc

■ ID tag cards, 5 pcs

Bundled variants of the eMH3 also include:

- reev onboarding letter, 1 pc
  (Controller/Controller+ only)

- reev RFID card, 2 pcs

- QR code stickers, 1 or 2 pcs
  (depending on number of charge
  points)

- **Controllers only:** LTE USB stick with
  SIM card (preconfigured), 1 pc

> ⓘ **NOTE**
>
> **Checking the components included**
> Check immediately after unpacking whether all components are included: should any components be missing,
> please contact the dealer from whom you purchased the wallbox.

Accessories

The following accessories for the Wallbox eMH3 are available separately:

- **CONFCAB**

 Configuration kit for connecting all ABL charging stations to a Windows PC for
configuration via specific software applications by ABL
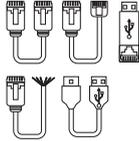
- **LASTMZ1**

External energy meter for connection to a Controller charging station or exter-
nal control unit

- **LASTMZ2**

Coil sensors for connection to the energy meter LASTMZ1
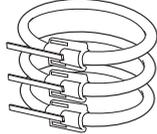
- **E017869**

For all eMH3 model variants, except bundle products: Set of ID tag cards (5 pcs)
to extend user pool

- **LAK32A3**

Type 2 charging cable according to IEC 62196-2, up to 32 A 240/415 V AC,
3-phase, length ca. 4 m

- **LAKC222**

Type 2 charging cable according to IEC 62196-2, up to 20 A 240/415 V AC,
3-phase, length ca. 7 m

- **LAKK2K1**

Type 2 to Type 1 adapter cable according to IEC 62196-2, up to 32 A 230 V AC,
single phase, length ca. 4 m

- POLEMH3

Galvanised sheetmetal mounting pole for the outdoor installation of one Wall-box eMH3, the weather shield WPR36, and up to two cable holders CABHOLD

h = 1,647 mm, w = 405 mm, d = 180 mm

- EMH9999

Precast concrete foundation for installing the mounting pole POLEMH3

h = 650 mm, w = 430 mm, d = 190 mm

- POLEMH6

Galvanised sheetmetal mounting pole for the outdoor installation of two Wall-boxes eMH3, two weather shields WPR36, and up to four cable holders CAB-HOLD

h = 1,623 mm, w = 410 mm, d = 360 mm

- EMH9996

Precast concrete foundation for installing the mounting pole POLEMH6

h = 420 mm, w = 420 mm, d = 420 mm

- WPR36

Weather shield for installation on an exterior wall or the mounting pole POLEMH3

h = 142 mm, w = 515 mm, d = 285 mm

- CABHOLD

Cable holder with charging plug receptacle for installation on an exterior wall or the mounting poles POLEMH1/2/3

h = 187 mm, w = 76 mm, d = 105 mm

- E3BLTE1

LTE accessory package with LTE USB stick and adhesive LTE antenna for installation in Controller wallboxes

- E3BWLAN

USB WiFi dongle for installation in Controller wallboxes

- TE001

Multipurpose measuring device for security checks according to IEC/EN61557, as well as for testing charging stations via the adapter TE002, suitable for TN, TT, and IT protective earthing systems

- TE002

EVSE and vehicle simulation adapter according to IEC 61851 for checking the function and electrical safety of charging stations
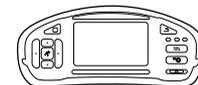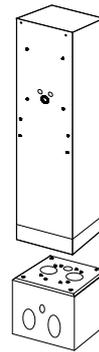
You can find further information on ABL charging stations and accessories at www.ablmobility.de.

Installation

It is recommended to have the entire installation of the wallbox carried out by a qualified specialist electrical contractor.

> ⚡ **DANGER!**
>
> Dangerous electrical currents
>
> Electrical installation, as well as final testing and certification for operation must be carried out by a qualified specialist electrical contractor, who, on the basis of their specialist training and experience, as well as their knowledge of the relevant standards, is able to assess and carry out the working steps described in this manual and recognise potential hazards.

> ⓘ **NOTE**
>
> Identical installation for Single and Twin variants
>
> The Wallbox eMH3 is available as a Single (one charge point) or Twin (two charge points) variant. In principle, installation and commissioning are identical. However, the working steps described may need to be applied to both charge points.

Installation site requirements

Your wallbox is suitable for outdoor use. Please note, however, that the permissible ambient conditions (see "Technical specifications" on page 55) must be adhered to in order to guarantee the functionality of your wallbox at all times.

- The installation site must be freely accessible.

- The mounting surface must be level and solid.

- The mounting surface must measure at least 492 × 400 mm (height x width).

- The installation height should be between 120 and 140 cm (ground to bottom edge of housing).
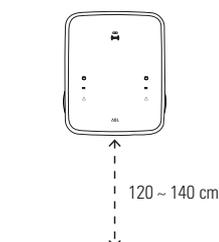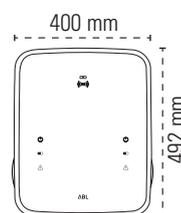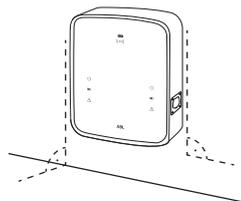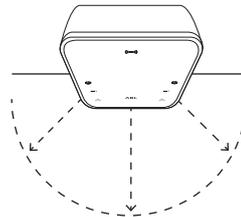
- Minimum distances to other technical installations must be observed.
  A minimum distance of 50 cm is recommended.

- Ideally, the installation site should provide a ready connection to the electricity grid. Otherwise, a separate power supply cable must be installed.

- In order to operate group installations, suitable data cables must also be installed in the installation site (see also "Preparing and fixing the wallbox in place" on page 17 as well as "Data cable connections" on page 19).
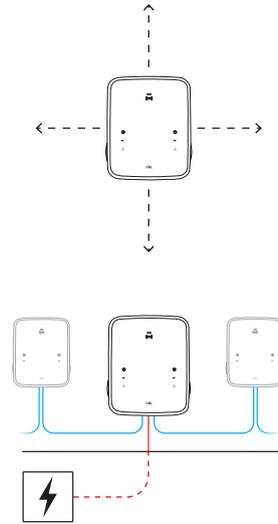
Tools and accessories required

For mechanical installation, you will need the following components included with the wallbox:

- Mounting plate, 1 pc

- Wall plugs 10 × 50 mm, 4 pcs

- TX25 wafer head screws, 6 × 25 mm, 4 pcs

- Large strain relief incl. screws, 1 pc

- Plug-in jumpers for terminating data bus, 4 pcs

- TX40 wafer head screws, 8 × 60 mm, 4 pcs

- Triangular key, 1 pc

- Cable grommets, 3 pcs

× 2   × 1

- Small strain reliefs incl. screws, 2 pcs

In addition, you will need the following tools:

- Electric drill

- 10 mm ⌀ drill bit suitable for the respective mounting surface

- Spirit level

- Bit (Torx T20)

- Pencil

- Tape measure

- Screwdriver (Phillips head)

- Screwdriver (TX 25)

- Screwdriver (TX 40)

- Hammer

- Pliers

- Utility knife

- Wire stripper

- Multi-purpose installation tester
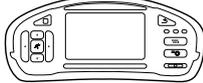
- Vehicle simulation adapter

- Voltage tester

Preparing the installation site

As a matter of principle, the electrical supply cable in the domestic power distribution must be switched off for the entire duration of mechanical and electrical installation. The connection to the power grid must only be made live for the purpose of commissioning, after electrical installation is complete.

> ⚠ **DANGER!**
>
> Dangerous electrical currents
>
> Always observe the 5 safety rules:
> 1 Cut power source
> 2 Secure all cut-off devices
> 3 Verify absence of voltage
> 4 Ground and short-circuit
> 5 Cover or bar access to adjacent components under voltage

Proceed as follows:

1 Using the spirit level, align the mounting plate level and plumb on the mounting surface.

2 With the pencil, mark the fixing points in the mounting position.

3 Pre-drill the marked fixing points with the electric drill and drill bit (⌀ 10 mm).

4 Drive the wall plugs into the fixing points with the hammer.
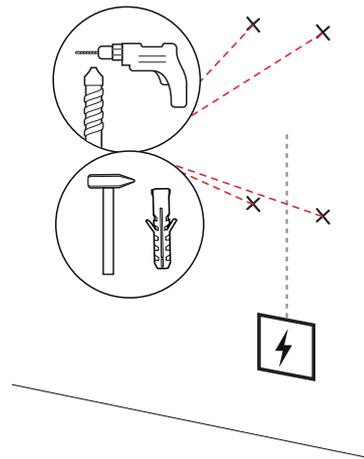
5 Prepare the mounting plate for the insertion of the power supply cable (red) and data cables (blue, if required).

- **Insertion from the top:** Insert the cables through the upper opening into the connection area of the mounting plate and secure the supply cables using the strain reliefs supplied (power: large strain relief; data cables: small strain reliefs).
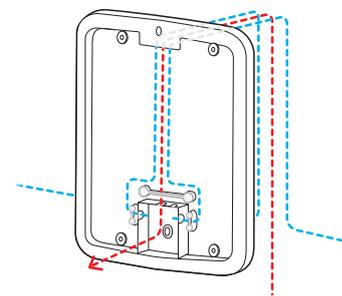
- **Insertion from the back:** Drill through the pre-stamped inlets in the connection area and insert the cables. In this case you do not need strain reliefs.
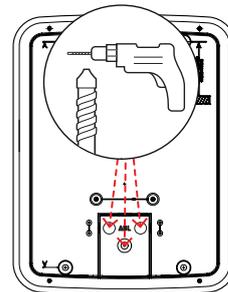
6 Insert the cables through the mounting plate and fix the mounting plate to the four fixing points using the four TX40 wafer head screws included.

7 Use a screwdriver or the electric drill with a suitable bit.
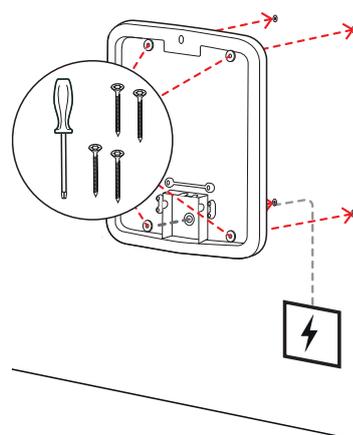
Preparing and fixing the wallbox in place

Continue to prepare the wallbox:

8 Open the housing cover of the wallbox using the triangular key and lower it.
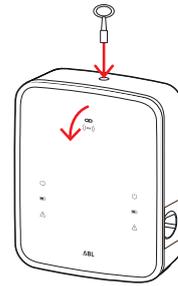
9 Loosen the screw holding the internal electronic components cover in place using the screwdriver (Torx 20) and put it aside.

- Keep the screw in a safe place.
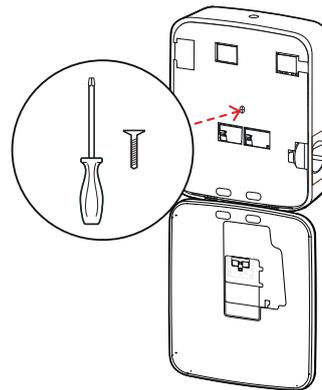
10 Use the utility knife to cut an opening for the power supply cable into the large rubber grommet, and then insert it into the housing base.

- Insert the two smaller grommets into the housing base.
- For wiring up group installations, you must also make cuts into the two smaller grommets for the data cables (see "Data cable connections" on page 19).
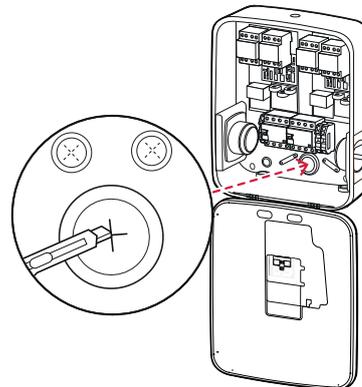
11 Insert the power supply cable into the housing base through the large rubber grommet.

- For wiring up group installations, you must also insert the data cables into the housing base through the small grommets.
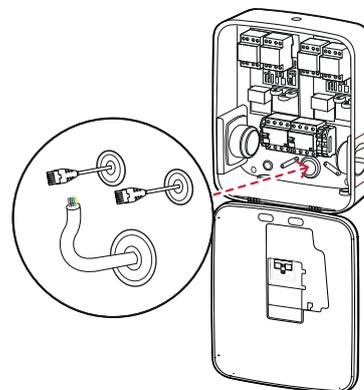
12 Fix the wallbox to the mounting plate using the four TX25 wafer head screws included.

   ● Use a screwdriver or the electric drill with a suitable bit.
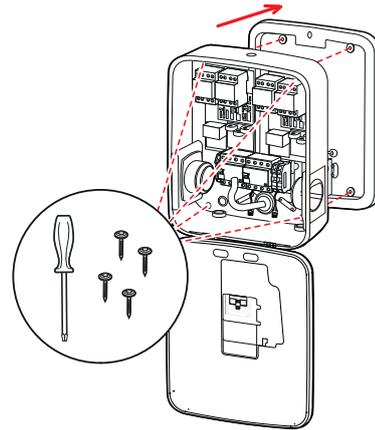
Electrical connection of the wallbox

⚠️⚡ **DANGER!**

Dangerous electrical currents

- ■ Electrical connection must be carried out by a qualified specialist electrical contractor!
- ■ Ensure that the power supply cable remains disconnected from the electricity grid.
- ■ Deactivate the RCCB in the wallbox and/or in the domestic power supply.

Proceed as follows to connect the power supply cable inside the wallbox:

1 Cut the supply cable to the required length with the pliers/wire stripper.

   ● For wiring up group installations (see next section), you must also cut the data cables to the required length.
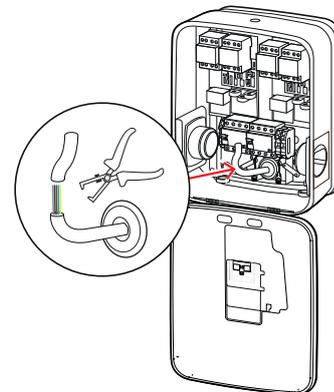
2 Insert the individual conductors of the power supply cable into the respective terminals of the RCCB and tighten them using the screwdriver (torque: 2.5 to 3 Nm).

   ● End ferrules must be fitted on flexible conductors.

   ● Operate the spring-loaded mechanism of the PE terminal and attach the protective earth conductor.

   ● Use the connection patterns listed below to allocate the individual conductors.
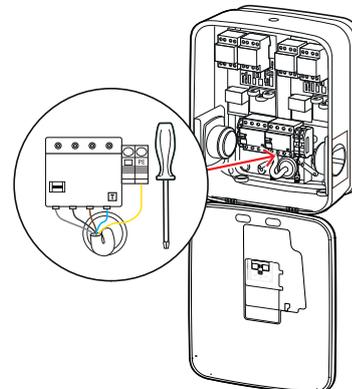
Connection pattern for 3-phase TN system

Designation	Conductor colour	Marks for
Phase 1 current-carrying conductor	Brown	L1
Phase 2 current-carrying conductor	Black	L2
Phase 3 current-carrying conductor	Grey	L3
Neutral	Blue	N
Protective earth	Green-Yellow	PE

⚠ **WARNING!**

Allocation of wire colours

Please note that the colour-coding convention used above is not internationally standardised.

⚠ **WARNING!**

Checking the connection

Please ensure that the conductors that are pre-fixed to the RCCB terminals remain attached correctly after connecting the power supply cable.

⚡ **DANGER!**

Dangerous electrical currents

The electronic components of your wallbox will be damaged if a voltage above 250 V is applied between the L1 current-carrying conductor and neutral!

Data cable connections

In group installations, a Controller wallbox can control up to 15 Extender charge points after connecting up the data cables. The Controller wallbox then centrally manages backend communication, charge current distribution, and many other functions.

- For wiring up, the internal bus interfaces of the Controller and Extender variants must be connected serially using suitable data cables (see "Data cable recommendations" on page 60).
- Inserting the data cables is described in **Step 10** in section "Electrical connection of the wallbox" on page 17.
- The data bus interfaces are manufactured either as spring terminals (until mid-2021) or established via the RJ45 ports of the Easy2Install interface (called E2I in the following, from mid-2021).
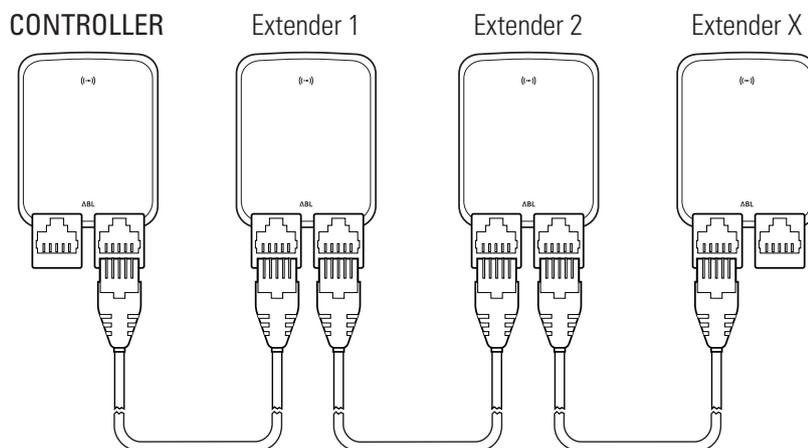
Example of a group installation via E2I interfaces

> **ⓘ NOTE**
>
> Data bus system compatibility
>
> The Wallbox eMH3 bus interfaces are completely downstream compatible. Wiring up spring terminals as well as E2I interfaces in mixed group installations is possible at any time, as long as the correct terminal allocation is kept consistent between the two systems. This allocation scheme is illustrated in section "Allocation schematic from spring terminal to Easy2Install interface" on page 61.

> **⚠ WARNING!**
>
> Mixed installation of ABL charging stations
>
> Thanks to the common bus formats and interfaces, it is possible to connect up and operate charging stations from different product series with each other and with the control units 1V0001/2. Configuration/connecting up follows the schematic as described in the following.
>
> - However, please note that connecting up and operating calibration law compliant together with non-calibration law compliant charging stations in the same group is not possible!

Proceed as follows to connect the wallboxes via the E2I interfaces:

1 Connect the RJ45 plug of the first data cable to one of the E2I interfaces inside the housing cover of the Controller wallbox.
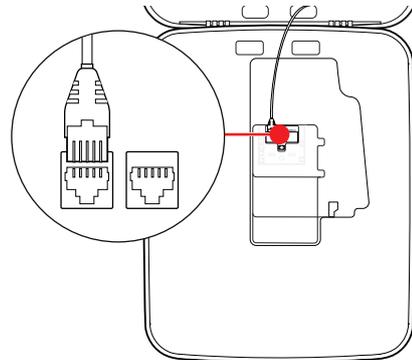
2 Connect the RJ45 plug of the incoming data cable with the left hand side E2I interface inside the housing cover of the first Extender wallbox.

- Connect the RJ45 plug of the outgoing data cable with the right hand side E2I interface inside the housing cover of the first Extender wallbox.
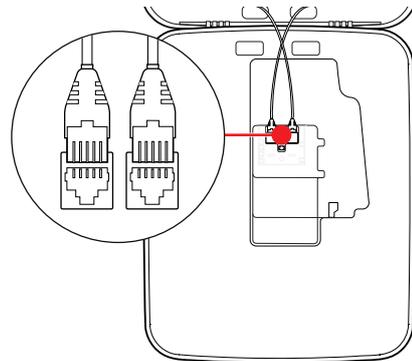
> **ⓘ NOTE**
>
> Continuation of the wiring diagram
>
> Connect all subsequent Extender wallboxes according to this method, **except for the last Extender wallbox**.

3 Connect the RJ45 plug of the incoming data cable with the E2I interface inside the housing cover of the last Extender wallbox.
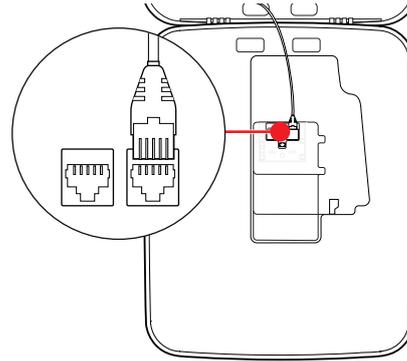
⚠ **WARNING!**

Terminating the data bus

For correct communication, the data bus must be terminated. The circuit board of the E2I interface provides two pairs of pin contacts marked **CONTROL** and **METER** for this purpose.

---

4 Connect the pin contacts marked **CONTROL** and **ME-TER** using a jumper for each.

- Carry out this process of terminating the data buses in the first (2 jumpers) and last (2 jumpers) charging station in the group.
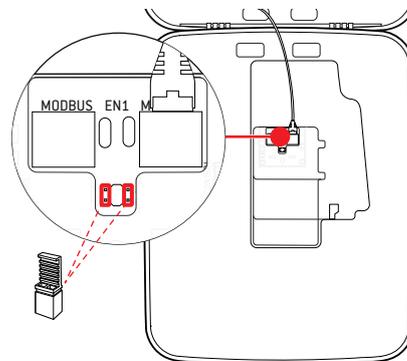
Commissioning the wallbox

To commission the wallbox, the power supply cable must be connected to the electricity grid.

⚡ **DANGER!**

Dangerous electrical currents

The following working steps must be carried out with the utmost care: There is a risk of electric shock if conductive components are touched.

---

1 Switch on the MCB in the domestic power distribution box.

- As soon as the wallbox is connected to the electricity grid and start-up is complete, the blue power symbol at the front of the housing cover flashes every 5 seconds, while the other LEDs remain OFF.
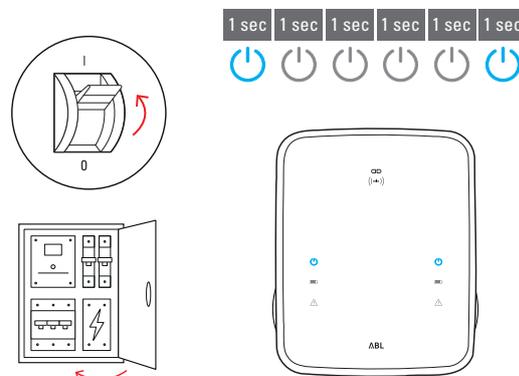
> ### ⓘ NOTE
>
> Illustration of initialisation
>
> The flash pattern illustrated above is only displayed on Controller wallboxes and on Extender wallboxes configured in stand-alone mode. Ordinary Extender wallboxes in a group installation, however, show the **F4** error pattern (see page 47) until the Controller wallbox has been detected and communication has been set up between Controller and Extender wallboxes.

> ### ⚠ WARNING!
>
> Checking the RCCB and MCB
>
> Should the LED not flash, check the RCCB and the MCB inside the Wallbox eMH3 and switch the pivot levers to position I if necessary.

2 Measure the voltage at the RCCB terminals using the voltage tester.

- In single phase installations, the voltage is measured between the phase and neutral conductors.
- In 3-phase systems, all phases are measured against each other (400 V) and all phases are measured against the neutral conductor (230 V).
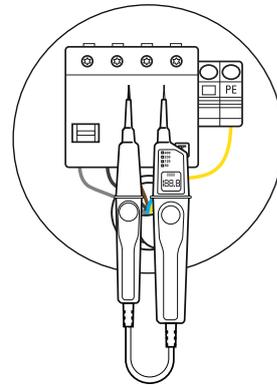
3 Replace the electronic components cover in the housing and fix it into place with the screw you removed in **Step 8** of section "Preparing and fixing the wallbox in place" on page 17.
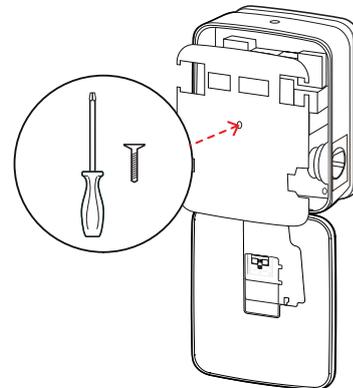
4 Use the installation tester and the vehicle simulation adapter to conduct all other required checks.
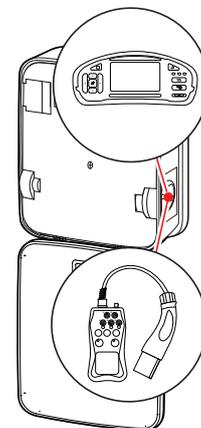
> ⚠️ **WARNING!**
>
> Conducting all necessary checks
>
> Now conduct all locally required checks and testing of the wallbox and its electrical installation. These include the following tests:
>
> - Effectiveness of protective earth conductor connections
> - Insulation resistance
> - Loop impedance
> - Voltage drop
> - RCCB tripping current and tripping time
> - Rotating field testing
>
> as well as additional tests according to local regulations.

5 Flip the housing cover up so that it clicks into the housing and lock it with the triangular key.
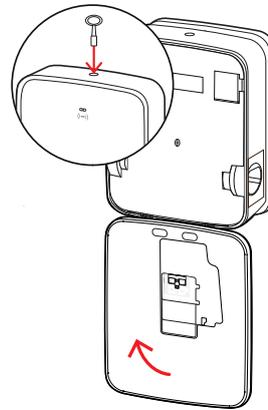
6 Use the vehicle simulation adapter to conduct a functional test of the charging function.
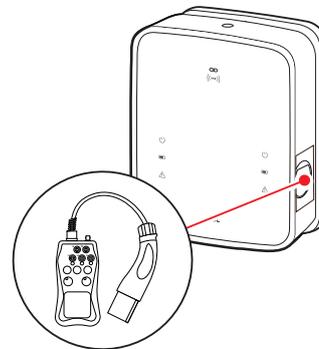
The installation of the Wallbox eMH3 is now complete and the wallbox is ready for operation.

Connecting the E3BWLAN

For integration into an existing WiFi network, any Controller wallbox can be retrofitted with the WiFi dongle E3BWLAN, which can be ordered separately as an optional accessory (see "Accessories" on page 11).

> ⚠️ **WARNING!**
>
> Installing the WiFi dongle
>
> - This manual only describes how to connect the E3BWLAN inside the wallbox and set up the communication with a WiFi network (see from "Set-up via Charge Point Administration application" on page 33), but not how to configure the external WiFi network. Contact your network administrator for this task.
> - Connecting the WiFi dongle must be carried out by a qualified specialist electrical contractor.

Proceed as follows:

1 Open the housing cover of the wallbox using the triangular key and lower it.
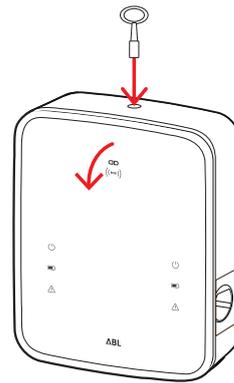
2 Disconnect the wallbox from the electricity supply via the integrated RCCB and MCB.
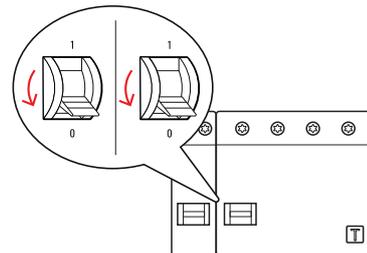
3 Locate the 5V USB switch on the inside of the housing cover of the wallbox and insert the **E3BWLAN** into the Type A port of the switch.

- If the 5V USB switch is already occupied by another device (e.g. an LTE USB stick), unplug this device in order to be able to plug in the WiFi dongle.
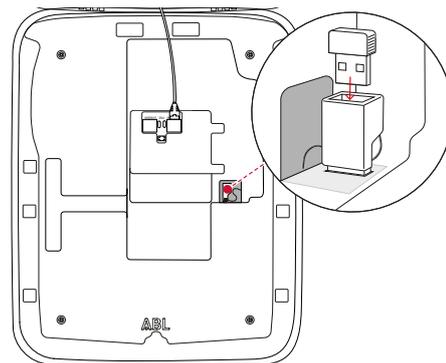
⚠ NOTE

Setting up communication via the WiFi dongle

Setting up the **E3BWLAN** for use with your wallbox is described from section "Setting up data communication" on page 36 onwards.

---

4 Switch the electricity supply of the wallbox back on.
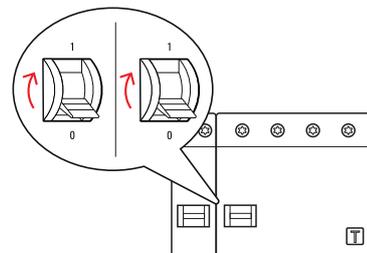
5 Flip the housing cover up so that it clicks into the housing and lock it with the triangular key.
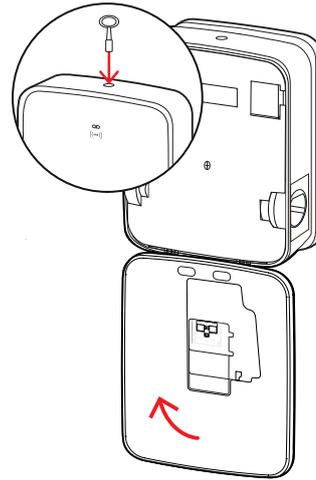
Installing and connecting the E3BLTE1

For wireless communication with a backend, all Controller wallboxes can be retrofitted with the **E3BLTE1**, which can be ordered as an optional accessory (see "Accessories" on page 11).

> ⚠ **WARNING!**
>
> Installing the LTE USB stick
>
> - This manual only describes connecting the LTE USB stick, the installation of its LTE mobile network antenna, as well as setting up communication (see from "Set-up via Charge Point Administration application" on page 33), but not the configuration of the associated backend: You can obtain information about registration with a backend from the respective backend provider.
> - Installation of the LTE USB stick must be carried out by a qualified specialist electrical contractor.

For installation in the Wallbox eMH3, you will need the following components from the LTE accessory package **E3BLTE1**:

- LTE USB stick, 1 pc

- LTE mobile network antenna with rear adhesive patch and antenna cable, 1 pc

- Cable tie base, 1 pc

- Cable tie 100 × 2.5 mm, 1 pc
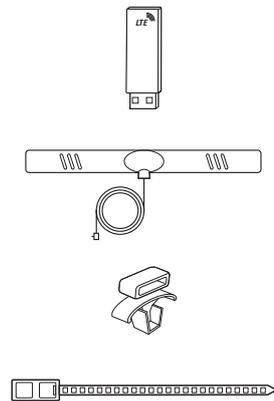
In addition, you will need one more cable tie to fix the antenna cable to the cable tie base (see step **8**).

Proceed as follows:

1 Open the housing cover of the wallbox using the triangular key and lower it.
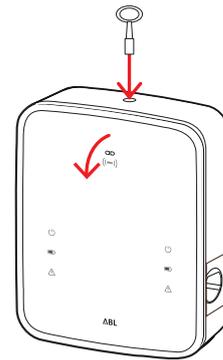
2 Disconnect the wallbox from the electricity supply via the integrated RCCB and MCB.
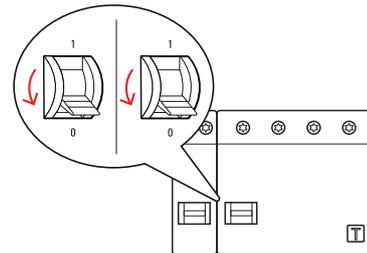
3 Locate the 5V USB switch of the SBC on the inside of the housing cover, and guide the cable tie through the oval openings in the cover lining above it.
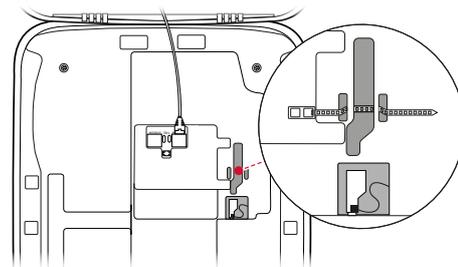
4 Insert the cable tie base into the opening located in the area left of the USB switch.
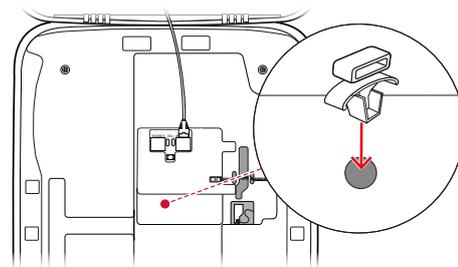
5 Degrease the area of the internal lining intended for the antenna using an alcohol swab.

6 Remove the rear protective foil from the LTE antenna and stick it to its intended position.
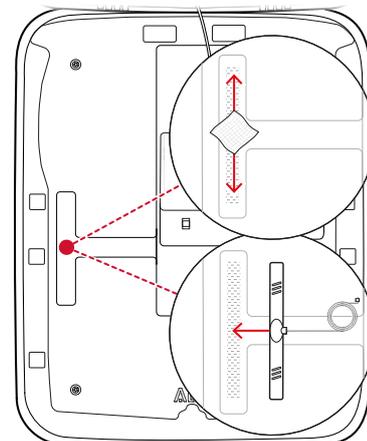
7 Open the connection marked **LTE1** in the upper part of the LTE USB stick, and carefully insert the plug of the antenna cable there.
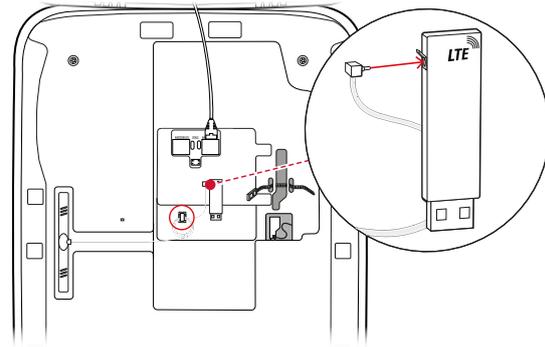
8 Lay the antenna cable: You can loop it and fix it to the cable tie base using an additional cable tie.

9 Plug the LTE USB stick into the Type A port of the USB switch.
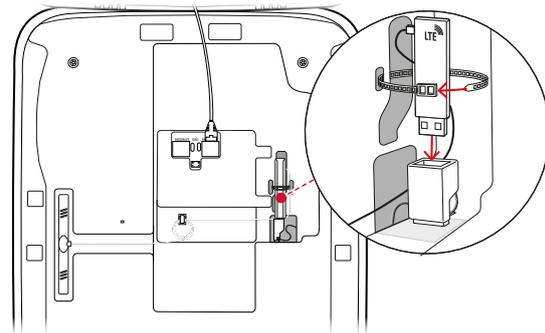
10 Fix the LTE USB stick in place using the cable tie: Tighten the cable tie so that the LTE USB stick sits firmly inside the USB switch and the USB switch sits firmly inside the USB port of the SBC.

11 Switch the electricity supply of the wallbox back on.
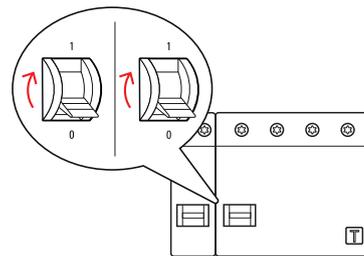
ⓘ NOTE

Setting up communication via LTE USB stick

Setting up the LTE USB stick for use with your wallbox is described from section "Setting up data communication" on page 36 onwards.

12 Flip the housing cover up so that it clicks into the housing and lock it with the triangular key.
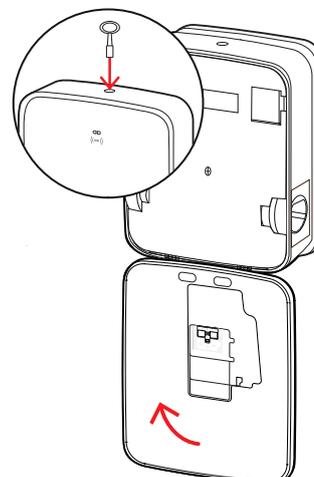
Affixing the label in accordance with DIN EN 17186-2019

In accordance with DIN EN 17186-2019, a graphical indication of the compatibility of vehicles and the charging infrastructure is mandatory for commercial use. Your charging station therefore comes with a sticker which the operator must position near the charge point after the installation has been completed.

> ## (!) NOTE
>
> Further information on labelling
>
> - The charging cables optionally available from ABL are marked accordingly by default.
> - In the case of purely private use, there is no obligation to affix the sticker to the charging station.
> - The sticker can be reordered as an accessory in case of switching from private to commercial use at a later date.

Wallbox eMH3 with charging socket(s)

- One sticker with black writing on a white background is supplied for each charge point.
- ABL recommends affixing the sticker in the position shown on the right-hand side.
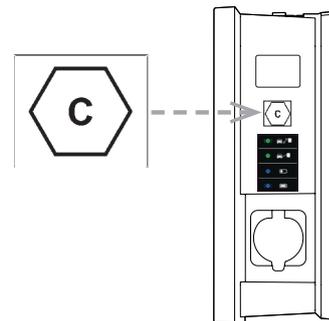
Wallbox eMH3 with charging cable(s)

- One sticker with white writing on a black background is supplied for each charging cable.
- ABL recommends affixing the sticker in the position shown on the right-hand side.
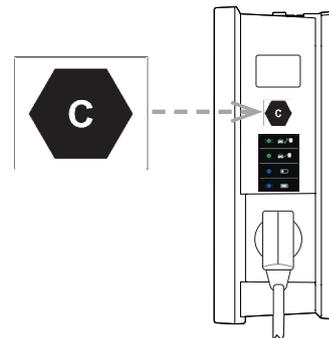
Configuring the Wallbox eMH3

The Wallbox eMH3 Controller and Extender variants are delivered preconfigured for operation within a group installation. However, they can also be used as a single charging station, or configured for stand-alone operation.

Stand-alone operation of a Controller wallbox

The Controller wallbox can be operated as a single charging station in its factory preconfigured state.

In order to use authorisation of the charging function via RFID, however, you must connect the Controller wallbox to and operate it with a suitable backend: The RFID cards used for registration are supplied by the backend provider.

ABL recommends the backend product by the provider **reev**, who is offering solutions that are specifically tailored to the Wallbox eMH3. For further information, please visit:

https://reev.com

> **(!) NOTE**
>
> Compatibility with backend providers
>
> Your Wallbox eMH3 is compatible with various backends for managing the charging infrastructure.
>
> ■ To check the compatibility of your Wallbox eMH3, please contact the desired backend provider.

Stand-alone operation of an Extender wallbox

In principle, Extender wallboxes are factory preconfigured to operate in combination with a Controller wallbox.

However, with the **ABL Configuration Software**, you can set up an Extender wallbox for stand-alone operation without Controller or backend. You can download the **ABL Configuration Software** free of charge in the **Service > All downloads > Software > Configuration Software** section at **www.ablmobility.de**.

You will need the following separately available accessories to configure the wallbox for stand-alone operation:

■ Windows PC (laptop recommended) with one free USB port

■ Configuration Cable CONFCAB (available from ABL as an optional accessory, see "Accessories" on page 11).

Section "Data cable connection with the computer" on page 32 describes how to connect the wallbox to the computer using CONFCAB: To configure the wallbox via the **ABL Configuration Software**, please read the **ABL Configuration Software manual** carefully, which is contained in the installation folder of the software and also embedded in the application.

> **(!) NOTE**
>
> Language selection for the ABL Configuration Software manual
>
> Please note that the manual for the **ABL Configuration Software** is only available in **German** and **English**.

Operation and address allocation in a group installation

In group installations, up to 16 charge points can be set up, managed and invoiced centrally via a Controller wallbox. In this setting, the Controller wallbox itself represents one or two of the charge points, while the remaining charge points can be freely distributed among any combination of Single and Twin Extender wallboxes.

In order for communication to function properly across the group, each wallbox must be uniquely identified by the following bus addresses:

Bus	Possible address range	
Charge controller	1 to 16	
LGW	100 to 116	Only for calibration law compliant wallboxes
Energy meter	1 to 16	
RFID	1 to 16	

Wallboxes are factory preconfigured with the following bus addresses:

Preconfiguration for Controller wallboxes

	Charge controller (L)	Charge controller (R)	Energy meter (L)	Energy meter (R)	RFID	LGW
Twin	1	2	1	2	1	100
Single	–	1	–	1	1	100

Preconfiguration for Extender wallboxes

	Charge controller (L)	Charge controller (R)	Energy meter (L)	Energy meter (R)	RFID	LGW
Twin	3	4	3	4	3	102
Single	–	3	–	3	3	102

> **(!) NOTE**
>
> Basics of address allocation
> - Bus addresses in the system are allocated from wallbox to wallbox in ascending order.
> - The address for the Logging Gateway (**LGW**) is only relevant for calibration law compliant wallboxes.
> - Up to 16 unique bus addresses may be allocated.
> - The upper limit address value of 16 will not be reached in smaller systems.

The examples below show address allocation patterns for systems with Twin, and systems with Single wallboxes. However, operating mixed systems is also possible.

Bus address allocation for a system with Twin wallboxes

	Charge controller (L)	Charge controller (R)	Energy meter (L)	Energy meter (R)	RFID	LGW
Controller	1	2	1	2	1	100
Extender 1	3	4	3	4	3	102
Extender 2	5	6	5	6	5	104
Extender 3	7	8	7	8	7	106
Extender 4	9	10	9	10	9	108
Extender 5	11	12	11	12	11	110
Extender 6	13	14	13	14	13	112
Extender 7	15	16*	15	16*	15	114

*The upper limit address value of 16 has been reached.

Bus address allocation for a system with Single wallboxes

	Charge controller (L)	Charge controller (R)	Energy meter (L)	Energy meter (R)	RFID	LGW
Controller	–	1	–	1	1	100
Extender 1	–	2	–	2	2	101
Extender 2	–	3	–	3	3	102
Extender 3	–	4	–	4	4	103
Extender 4	–	5	–	5	5	104
Extender 5	–	6	–	6	6	105

Extender 6	–	7	–	7	7	106
Extender 7	–	8	–	8	8	107
Extender 8	–	9	–	9	9	108
Extender 9	–	10	–	10	10	109
Extender 10	–	11	–	11	11	110
Extender 11	–	12	–	12	12	111
Extender 12	–	13	–	13	13	112
Extender 13	–	14	–	14	14	113
Extender 14	–	15	–	15	15	114
Extender 15	–	16*	–	16*	16*	115

*The upper limit address value of 16 has been reached.

The allocation of addresses may be carried out either manually or automatically (recommended) via the **ABL Configuration Software**: Please read the **ABL Configuration Software** manual, which is contained in the installation folder of the software and also embedded in the application.

Configuration via software

The functional set-up of Controller and Extender wallboxes is carried out via the **ABL Configuration** and **Charge Point Administration** software applications.

ABL Configuration Software

The **ABL Configuration Software** is an application for Windows PCs, and is used to set up the following wallbox parameters:

- Automatic allocation of bus addresses to charge controllers, energy meters, RFID modules, and to logging gateways/calibration law compliance modules (calibration law compliant charging stations only)
- Manual allocation or change of bus addresses
- Setting an Extender charging station up for stand-alone operation
- Setting up a maximum current and activating load imbalance detection
- (De)activating the internal load management
- (De)activating the RFID access restriction
- Management of RFID cards
- Enabling/locking the charging station

Software access

Free download at www.ablmobility.de

Description

Separate manual embedded in the application, and also contained in the installation folder.

Charge Point Administration

Charge Point Administration is an application embedded in the Single Board Computer (SBC) of the Controller wallbox, which is opened via the browser application of a Windows PC, and serves to set up the following and additional parameters for the group installation:

- Setting up system configuration
- Setting up static or dynamic load management for the system
- Displaying and setting up OCPP configuration
- Backend connection
- Displaying system status information
- Displaying wallbox parameters in the group

- Order of wallboxes in the system
- Setting up data communication

Software access: Access via http://169.254.1.1:8300/ after connecting a Controller wallbox to a PC

Description: → "Set-up via Charge Point Administration application" on page 33 ff.

In both cases, the Controller Wallbox eMH3 must be connected to a suitable computer via the configuration kit CONFCAB (see next section).

Data cable connection with the computer

To connect the Wallbox eMH3 to a Windows PC, you will need the configuration kit CONFCAB (separately available accessory), which makes the wallbox's modbus interfaces compatible with the computer's USB port. Using CONFCAB components, any charging station from the Wallbox eMH3 product series can be connected by cable:

- ① USB extension cable
- ② USB to RJ45 adapter
- ③ RJ45 to individual strands patch cable
- ④ RJ45 to RJ12 patch cable
- ⑤ RJ45 to RJ45 patch cable

> ⚠ **WARNING!**
>
> Data cabling using CONFCAB
>
> Only use the cables and adapters contained in the CONFCAB kit to connect your Wallbox eMH3 to the computer. Otherwise, faultless communication cannot be guaranteed.

Proceed as follows to connect the Wallbox eMH3 with the computer by cable:

Controller Wallbox eMH3 with spring terminals (until mid-2021)

1. Open the housing cover of the Controller wallbox as described in section "Preparing and fixing the wallbox in place" on page 17.

2. Connect the patch cable ③ to the spring terminals located in the area near the hinge on the inside of the housing cover.

3. Connect the USB extension cable ① to one of the computer's USB ports.

4. Use the USB to RJ45 adapter ② to connect the patch cable ③ to the USB extension cable ①.

The wallbox is now connected to the computer by cable.
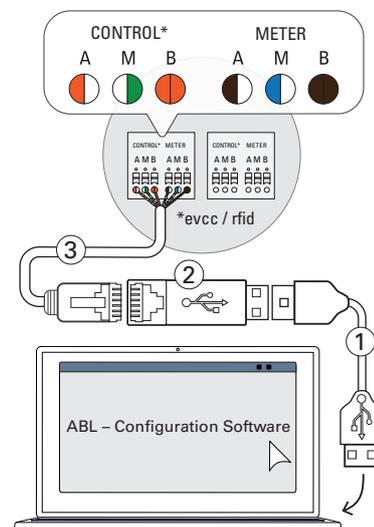
> ⓘ **NOTE**
>
> Data cabling via LOMK218
>
> All Wallboxes eMH3 with spring terminals can also be connected to a computer using the cable set LOMK218. You can find further information on this topic in section "Data cabling via LOMK218" on page 61.

Controller Wallbox eMH3 with E2I interface
(from mid-2021)

1 Open the housing cover of the Controller wallbox as described in section "Preparing and fixing the wallbox in place" on page 17.

2 Connect the patch cable ⑤ to one of the RJ45 ports of the E2I interface on the inside of the housing cover.

3 Connect the USB extension cable ① to one of the computer's USB ports.

4 Use the USB to RJ45 adapter ② to connect the patch cable ⑤ to the USB extension cable ①.

The wallbox is now connected to the computer by cable.
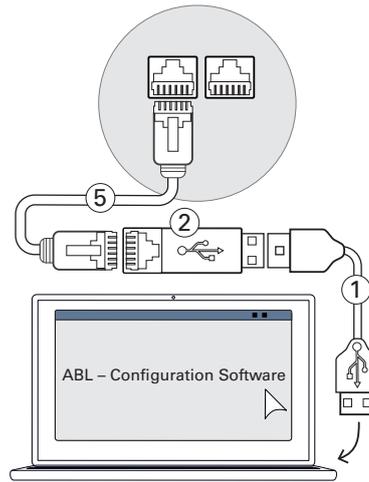
You can now start setting up the wallboxes using the **ABL Configuration Software** . For this purpose, download the current version of the software, and follow the instructions in the manual, which is embedded in the software and also contained in the installation folder:

https://www.ablmobility.de/en/downloads/software/CONFCAB

Set-up via Charge Point Administration application

After all Extender wallboxes have been configured, the entire Controller-Extender system can be set up for operation using the **Charge Point Administration** online application.

> **ⓘ NOTE**
>
> Updating the application
>
> The working steps described below refer to version **1.7** of the **Charge Point Administration** application.
> - Please check in advance which version is installed on your system and ensure that you update to version **1.7**.
> - The instructions included in the installation package describe step by step how to perform the update.

The application offers a role-based concept that restricts the editing of selected parameters.

■ Owner	The **Owner** may view all information about the application and the installed charging stations, perform updates and set up data communication in the system.
■ Installer	The **Installer** makes fundamental changes to the system properties. This person must therefore be a qualified electrician, who, on the basis of their specialist training and experience, as well as their knowledge of the relevant regulations, can assess and carry out the working steps described in this manual and recognise potential hazards.

> **⚠ WARNING!**
>
> Registration as a qualified electrician required
>
> The working steps described below for setting up the system must be carried out in the **Installer** role.
> - Contact a qualified specialist electrical contractor if the following working steps need to be carried out.

1 Switch the Controller wallbox on.
  - Always wait for two minutes until the SBC has completed set-up.
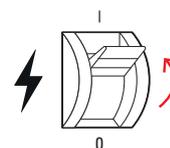
2 Connect an RJ45 data cable to the SBC of the Controller wallbox and the computer.

- The SBC network socket is located in the connections area on the inside of the housing cover of the Controller wallbox.
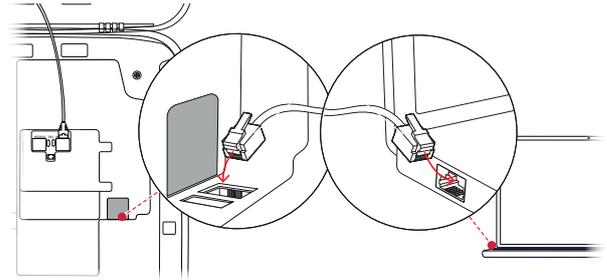
3 Open a web browser on your computer and enter the following address: http://169.254.1.1:8300/. This opens the **Charge Point Administration** online application, where you are automatically logged in with the **Owner** role.

- If you are unable to connect to the application, check your computer's network settings and, if necessary, adjust them as follows:

Network	169.254.0.0
Subnet mask	255.255.0.0
Address	169.254.1.2

4 Click the **Change role** selection menu in the top right and select the **Installer** role.

5 Click the **Products > Installation** tab, navigate to the bottom of the screen and click the **Add products** button.

- This opens the **Products > Catalog** tab.

(!) NOTE

Filter functions in the product catalogue

The **Products > Catalog** tab lists all compatible Extender charging stations in the **Catalog** view.

- You can enter the product number of the desired charging station directly via the **Model** search field.
- You can filter all displayed hits using further criteria such as **Revision**, **Product line**, **Type**, etc.

6 Search the product catalogue for the desired charging station, select the highest revision for that model and click the **Add products** button at the bottom of the screen.

- The selected charging station is now displayed in a separate overview in the **Catalog**.

7 Use the selection list at the bottom to enter the desired number and click the **Save** button.

- These Extender charging stations are then displayed together with the Controller in the **Products > Installation** tab.
- The **Cancel** button returns you to the **Products > Catalog** list without making a selection.
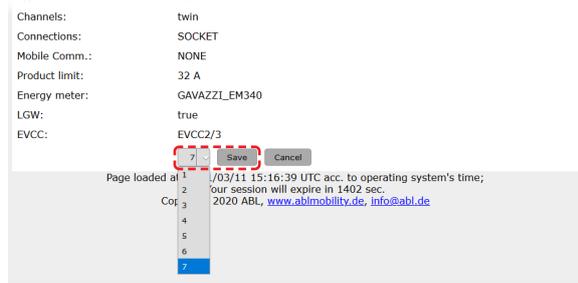
> ⓘ **NOTE**
>
> **Completing the system configuration**
>
> Repeat these steps to add all additional Extender charging stations in the system.

8 Navigate to the bottom of the **Products > Installation** tab and click the **Create new configuration** button.

9 Switch to the **Overview > Details** tab: this shows at a glance whether your system is set up correctly.
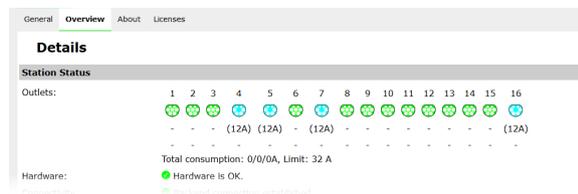
After you have set up all Extender charging stations for the Controller, you must also define the maximum available current for the entire system.

To do so, proceed as follows:

10 Make sure you are still logged into the **Charge Point Administration** application in the **Installer** role.

- If not, change your role as described in step **4**.
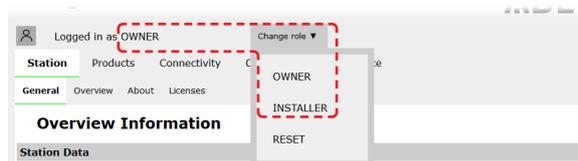
11 Switch to the **Products > Installation** tab, and, in the **Actions** column, click the Ⓜ button for the Controller charging station marked with ☰.
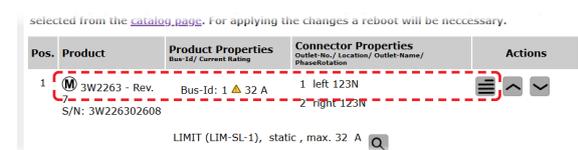
12 In the **Maximum Value** field in the **LIMIT (LIM SL-1)** section, enter the desired maximum current (for example: **32 A**) for the entire system.

- Confirm with the ✓ button on the right.
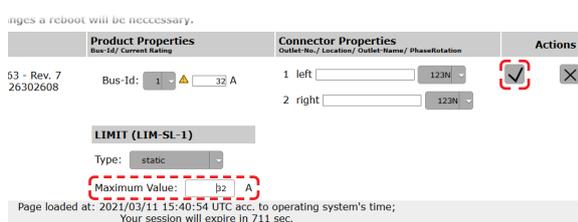
13 Switch to the **Operation > Load Management** tab and enter the same value in the **Maximum Current** field in the **Basic Settings** section that you entered for the **Maximum current** in step **12** (for example: **32 A**).

- Confirm with the **Save** button.
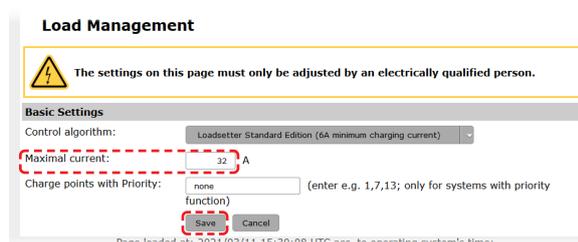
14 You can now restart the system via the **Perform reconfiguration** button.

- After restarting, the entire system is displayed in the **Station > Overview** tab.
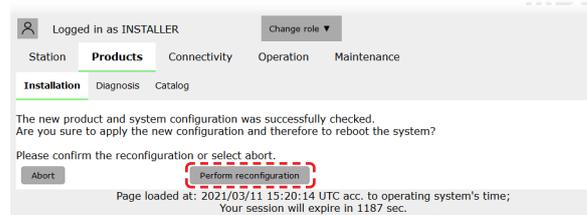
The Extender wallboxes are now correctly registered in your Controller/Extender system and configured for load management. To communicate with a backend, you will also need to set up the **Connectivity** in the **Charge Point Administration** application.

Setting up data communication

The Wallbox eMH3 offers three interfaces for data communication with an external network or a backend:

- LAN (wired via internal RJ45 interfaces)
- LTE (wireless via LTE USB stick **E3BLTE1**: preinstalled for bundle products, otherwise available separately, see "Accessories" on page 11)
- WiFi (wireless via separately available WiFi dongle **E3BWLAN**, see "Accessories" on page 11)

Data communication is also set up via the **Charge Point Administration** application: the application must therefore be open and the connection to the Controller charging station established. You can carry out the working steps described below either as **Owner** or **Installer**.

> **(!) NOTE**
>
> **Data communication for Controller charging stations only**
>
> Please note that Extender charging stations can only be integrated into a network via a Controller charging station, not directly.

Connection via the LAN interface

Each Wallbox eMH3 has an RJ45 socket for connecting an Ethernet cable on the inside of the housing cover. Via the RJ45 socket of the Controller charging station, a connection can be established between the SBC and a router, and thus to an OCPP backend.

1. Controller with Extender charging station(s)
2. Router
3. Internet
4. Backend (e.g. **reev**)
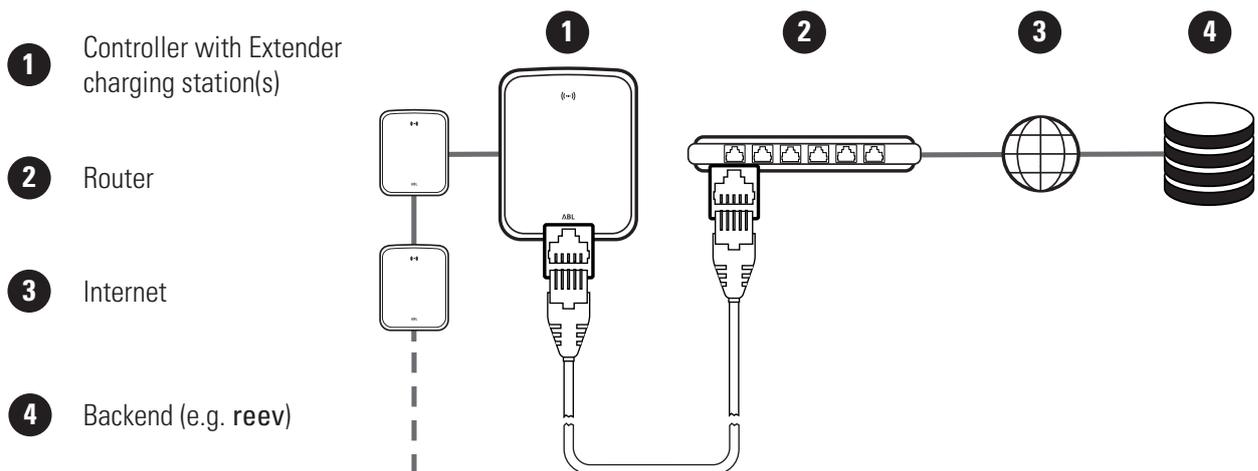
- The Controller charging station automatically receives a specific IP address via the router's DHCP server.
- The IP address assigned by the router can be individually recognised and reached via the MAC address of the Controller charging station.
- The Controller/Extender system must be connected via a suitable CAT cable to a router with Internet access to which your computer is also connected.

Proceed as follows to set up communication via the LAN interface:

1 Click the **Connectivity > LAN** tab and make sure that an IP and MAC address are specified for the **eth0** connection.

- This is the IP and MAC address of the Controller charging station.

2 Click the **Connectivity > Cellular** tab and delete all data for the mobile access point (APN), if present.

3 Switch to the **Maintenance > System** tab and click the **Hard reset** button in the **System Restart** section.

- Your Controller/Extender system will now restart with the selected settings.
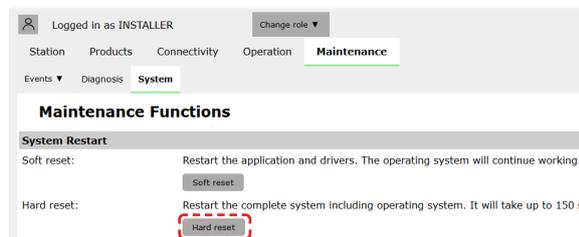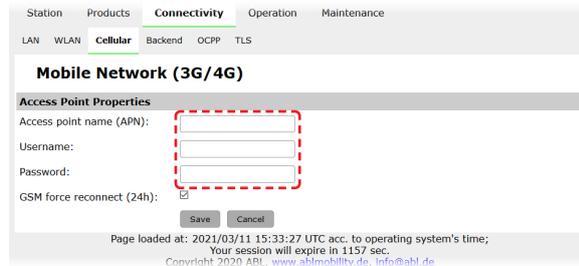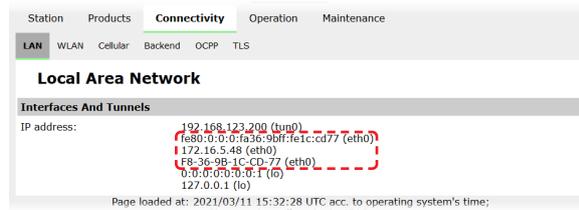
A LAN connection can now be established between the Controller charging station and the backend via WebSocket or WebSocketSecure.

NOTE

Communication with the backend

- The router's firewall must be set up in such a way that communication is possible between the charging station and the OCPP backend.

- You can obtain all the access data from your backend operator. A description of the set-up can be found on page 39.

Connection via the LTE interface

An LTE USB stick is factory pre-installed at the SBC on the inside of the housing cover in every Wallbox eMH3/reev backend bundle. You can retrofit all other Controller Wallboxes eMH3 for LTE functionality using the LTE accessory package **E3BLTE1** (see "Accessories" on page 11 and "Installing and connecting the E3BLTE1" on page 25). A mobile network connection can be established between the SBC and an OCPP backend via the LTE USB stick of the Controller charging station.

1 Controller with Extender charging station(s)

2 Backend (e.g. **reev**)
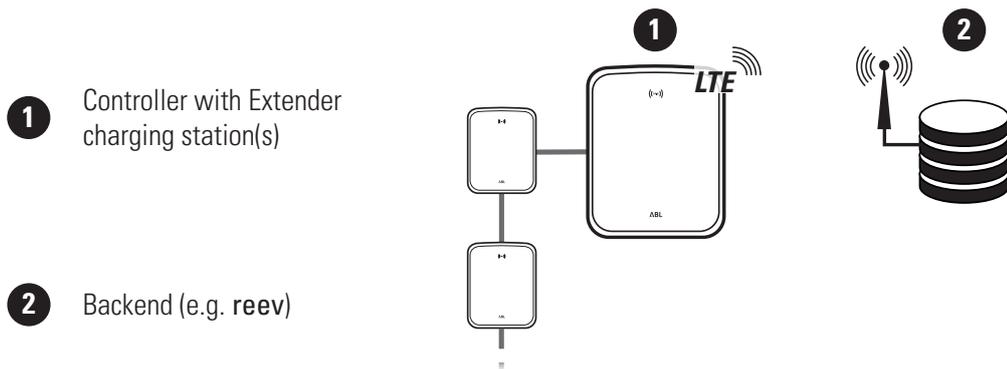
- In order to establish a mobile network connection with an OCPP backend, a suitable SIM card must be installed in the LTE USB stick when commissioning. You can find information about installation in the manual accompanying the LTE USB stick.

- The SIM card is usually included with your backend subscription: in this case, you will also receive the activation data from your backend operator.

Proceed as follows to set up communication via LTE:

1 Click the **Connectivity > Cellular** tab and enter the information provided by your backend operator for the **Access point name (APN)**, **Username** and **Password**.

  - Confirm by clicking the **Save** button.

2 Switch to the **Maintenance > System** tab and click the **Hard reset** button in the **System Restart** section.

  - Your Controller/Extender system will now restart with the selected settings.
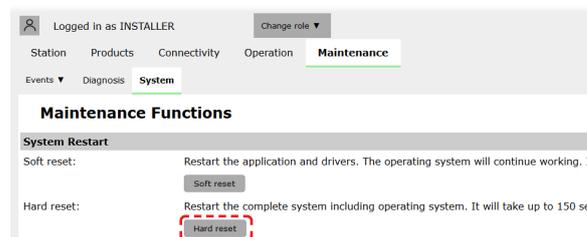
A connection can now be established between the Controller charging station and the backend via mobile network communications.

Connection via the WLAN interface

ABL offers the WiFi dongle **E3BWLAN** as an optional accessory (see page 11) for each Controller Wallbox eMH3: The installation is described in the section "Connecting the E3BWLAN" on page 23. After installation, a connection can be established between the SBC and a WiFi router and thus to an OCPP backend.

1 Controller with Extender charging station(s)

2 WiFi router

3 Internet

4 Backend (e.g. **reev**)
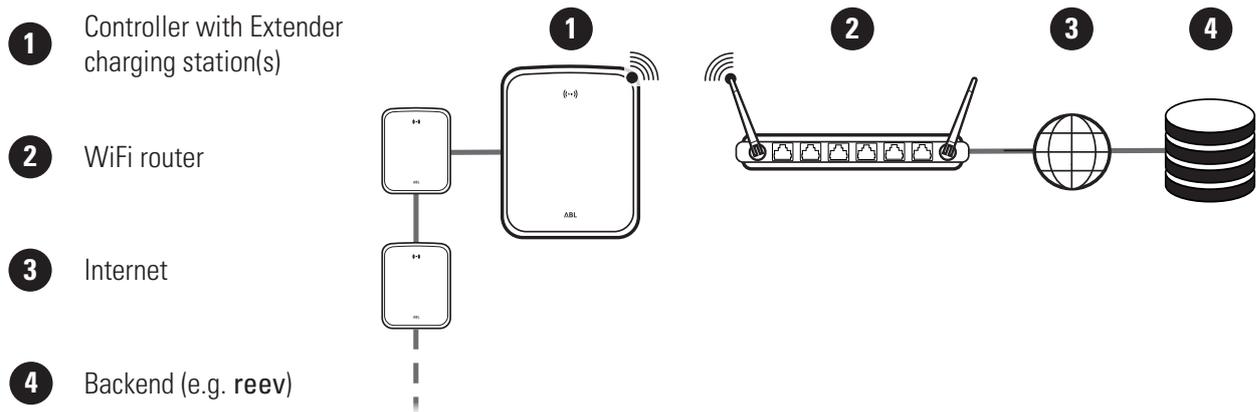
Proceed as follows to set up communication via WiFi:

1 Click the **Connectivity > Cellular** tab and delete all data for the mobile access point (APN), if present.
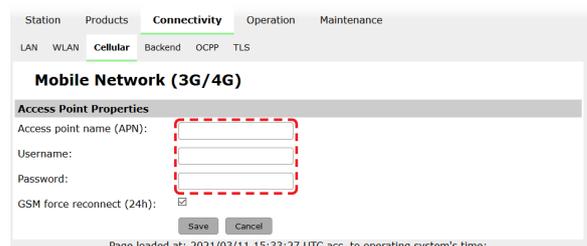
2 Switch to the **Connectivity > WLAN** tab and enter the information for **Service Set Identifier (SSID)** and the **Passphrase** for the network.

- Confirm by clicking the **Save** button.

3 Switch to the **Maintenance > System** tab and click the **Hard reset** button in the **System Restart** section.

- Your Controller/Extender system will now restart with the selected settings.
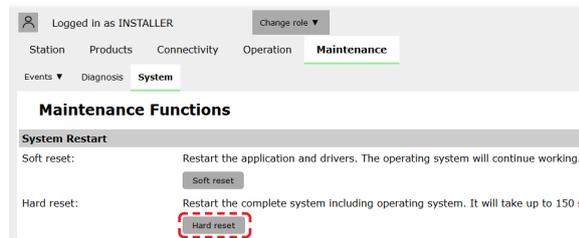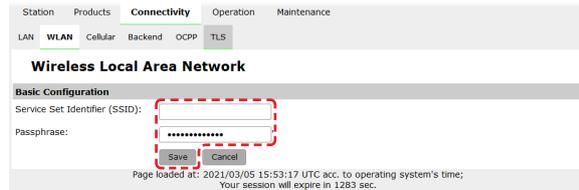
A WLAN connection can now be established between the Controller charging station and the backend via WebSocket or WebSocketSecure.

> ⓘ **NOTE**
>
> **Communication with the backend**
> - The router's firewall must be set up in such a way that communication is possible between the charging station and the OCPP backend.
> - You can obtain all the access data from your backend operator.

Setting up an OCPP backend

The backend operator will provide all the information required for registering your Controller/Extender system, which you then need to enter via the **Charge Point Administration** application.

> ⓘ **NOTE**
>
> **Supported network protocols**
>
> Communication between the Controller/Extender system and the backend can take place via the following network protocols:
>
> - **http:// (SOAP)**
>   If communication is set up via SOAP, the local port and path for the endpoint (the Controller charging station) must be specified.
> - **ws:// (WebSocket) / wss:// (WebSocketSecure)**
>   If communication is set up via WSS, you must check that the TLS certificates are correct and upload the server certificate if necessary.

Proceed as follows to set up communication with the backend:

1 Click the **Connectivity > OCPP** tab.

- In the **OCPP version** selection box, select the OCPP version supported by the backend.
- Under **Central system address (URL)**, enter the Internet address of your backend provider.
- In **Chargebox ID**, enter the OCPP name of the Controller/Extender group.
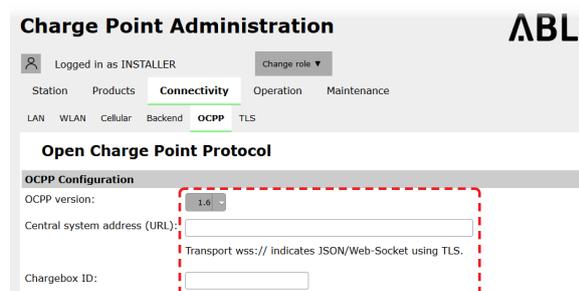
- Only for SOAP:
  - » **Local port:** Enter a port address between 1000 and 10000 or use the default (**7890**).
  - » **Local path:** Enter the path of the local endpoint here.
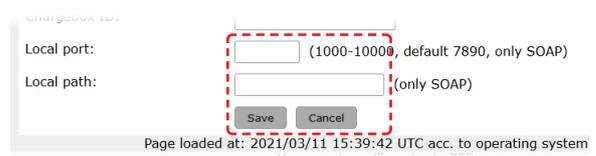
2 Confirm by clicking the **Save** button.

3 Only for WSS: Click the **Connectivity > TLS** tab and check the TLS versions and certificates shown here.
- Contact your network administrator if necessary.
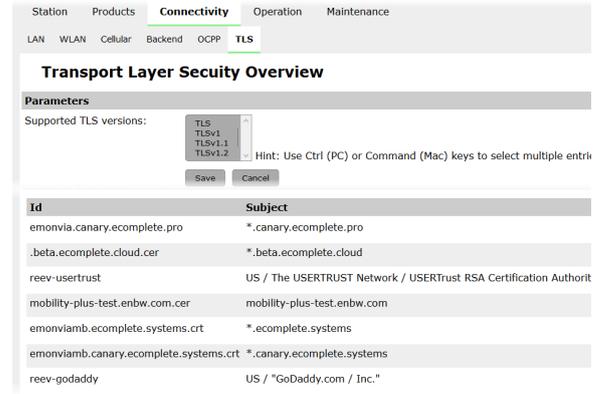
Completing the set-up

After setting up communication with the backend, the group installation is complete.

1 Close the **Charge Point Administration** application via the browser window.

2 Disconnect the computer from the wallbox by unplugging the RJ45 data cable from the SBC of the Controller charging station and the computer.
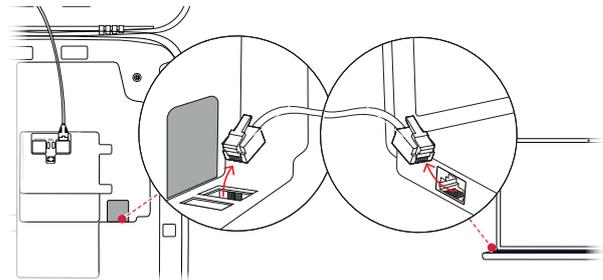
3 Flip the housing cover up so that it clicks into the housing and lock it with the triangular key.
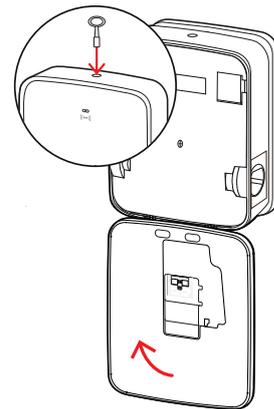
Manual RFID card administration

The stand-alone Wallbox 3W2214 leaves the factory with one teach-in and five ID cards included. For all other Wallboxes eMH3 (except product bundles), the **E017869** package of 5 ID cards is available, which can be configured for use as a teach-in card (1 pc) and RFID user cards (4 pcs) using the **ABL Configuration Software**.

Using the teach-in card, ID tag cards can be registered on the user list of the wallbox, and then used to authorise charging procedures. In addition, the user list of the wallbox can be reset, and all previously registered ID tag cards can be deleted using the teach-in card.

> ## ! NOTE
>
> **Administering RFID cards via the ABL Configuration Software**
>
> While the cards included with the stand-alone wallbox are already prepared for use, you must set up one of the cards from the E017869 as a teach-in card using the **ABL Configuration Software**.
>
> ■ Setting up the ID tag cards from the accessory set **E017869** is carried out in the **Individual configuration** > **Advanced configuration** > **Access control via RFID** tab of the **ABL Configuration Software**, and is described in the accompanying manual.

Proceed as follows to register an ID tag card manually at the wallbox:

1 Ensure that the wallbox is switched on and ready for operation.

- The blue LEDs of both charge points are flashing, while the green and red LEDs are OFF (illustration: 1 cycle).

2 Check the LED indicators of the RFID module (illustration: 1 cycle).

- If RFID access control is active, the green LED flashes once or the blue LED flashes twice.

3 Hold the teach-in card in front of the RFID module on the housing cover.

- When the blue LED is permanently ON, remove the teach-in card.
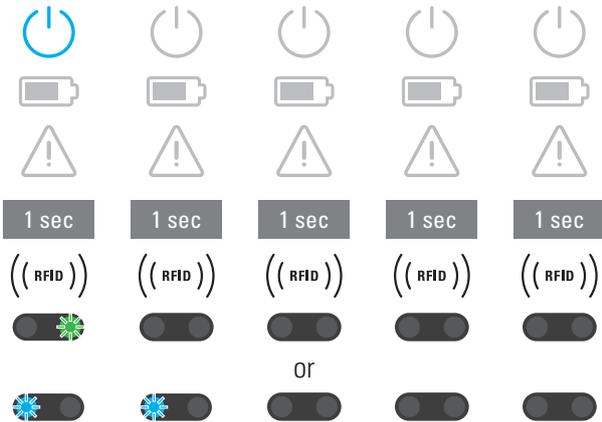
4 Now, hold a not previously registered ID tag card in front of the RFID module on the housing cover within 10 seconds.

- The ID tag card has been registered and can be withdrawn when the green LED flashes once.
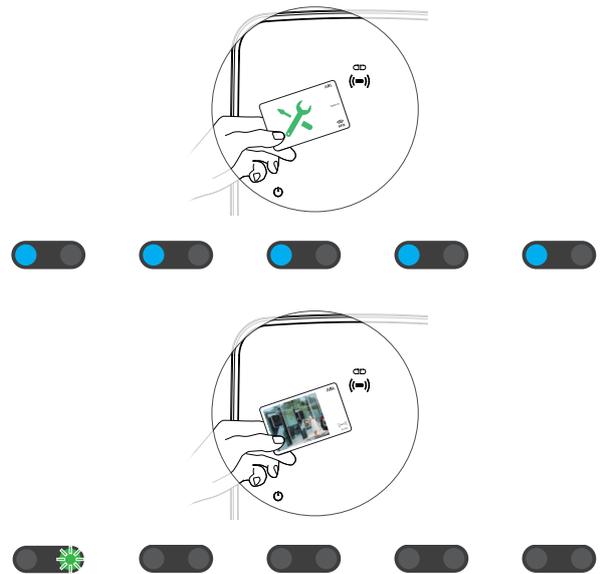
You can repeat steps **3** and **4** in order to register further ID tag cards on the wallbox's user list.

> ## ⚠ WARNING!
>
> **RFID module error message**
>
> If an ID card tag is already registered on the user list, or if no further cards can be registered in the memory of the wallbox, the green and blue LEDs of the wallbox will flash permanently.

If required, you can reset the user list saved in the wallbox in order to prevent authorisation of previously registered user ID cards.

Proceed as follows to reset the currently saved user list of a wallbox:

1 Disconnect the wallbox from the power supply.
   - Flip the pivot lever of the internal RCCB or MCB to the **0** position.
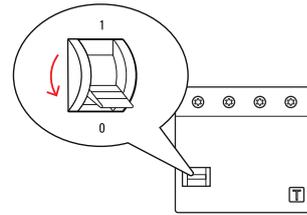
2 Hold the teach-in card in front of the RFID module on the housing cover and then reconnect the wall-box to the power supply.
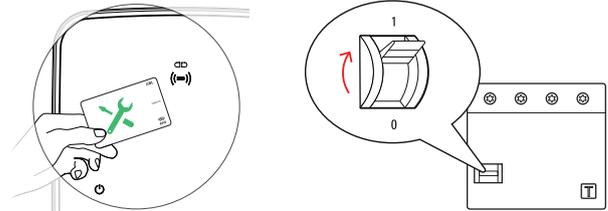
3 Hold the teach-in card in front of the RFID module as long as the blue LED is permanently ON.
   - Remove the teach-in card as soon as the green LED flashes three times.

The wallbox's user list has now been deleted. To obtain authorisation via the RFID module, new ID tag cards must be registered.

Charging procedure

After installation and configuration, the eMH3 is ready for operation immediately, and can now be used to charge an electric vehicle.

Please follow these steps to charge your vehicle using the Wallbox eMH3:

1 Park your electric vehicle so that its charging inlet can be easily reached with the charging cable's charging connector.

2 Check the LED indicators of the wallbox (illustration: 1 cycle).

- When the charge point is ready for charging operations, the blue LED flashes while the green and red LEDs are OFF.

3 Prepare the charging cable of the wallbox and the vehicle's charging inlet.

- **Wallbox with charging cable**
  Slightly lift up the charging connector and pull it downwards from its storage compartment. Open the charging inlet at the vehicle and plug in the charging connector.
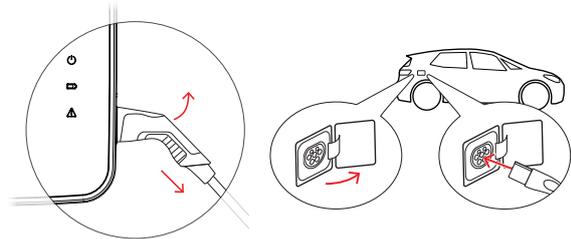
- **Wallbox with charging socket**
  Open the charging inlet at the vehicle and plug in the charging connector. Then open the charging socket lid on the wallbox and plug in the charging connector.
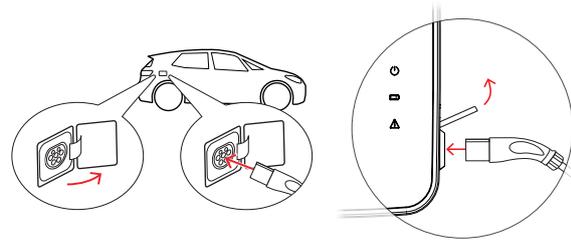
4 Check the LED indicators of the wallbox (illustration: 1 cycle).

- If the vehicle is connected and the wallbox is waiting for authorisation of the charging procedure, the blue LED of the charge point is continuously ON.

> **(!) NOTE**
>
> Authorisation via RFID
>
> The RFID module is located in the upper part of the housing cover, which, depending on the model variant and configuration of the Wallbox eMH3, is used for the authorisation of the charging procedure by the user.
>
> - **Controller with or without Extender:** To authorise charging procedures via RFID, the Wallbox eMH3 must be operated with a backend. This operating state is indicated by the flashing green LED of the RFID module.
> - **Extender without Controller:** If an Extender wallbox has been configured for operation without a Controller, you must authorise the charging procedure via RFID if the blue LED of the RFID module is flashing twice per cycle.
>   If the blue LED is only flashing once per cycle, the RFID module is inactive and the charging procedure will start automatically upon being requested by the vehicle: Steps **5** to **8** as described below do not apply in this case.

5 Check the LED indicators of the RFID module (illustration: 1 cycle).

- If RFID access control is active, the green LED flashes once or the blue LED flashes twice.

| 1 sec | 1 sec | 1 sec | 1 sec | 1 sec |

or

6 Check the LED indicators of the RFID module (illustration: 1 cycle).

- If the charging procedure must be authorised via RFID card, the green LED flashes once or the blue LED flashes twice.

| 1 sec | 1 sec | 1 sec | 1 sec | 1 sec |

or

7 Hold a valid RFID card in front of the RFID module on the housing cover.

8 Check the LED indicators of the RFID module (illustration: 1 cycle).

- While the RFID card is being checked, the green LED flashes every two seconds.

| 1 sec | 1 sec | 1 sec | 1 sec | 1 sec |

- When authorisation has been given, the green LED is ON for two seconds and then turns OFF.
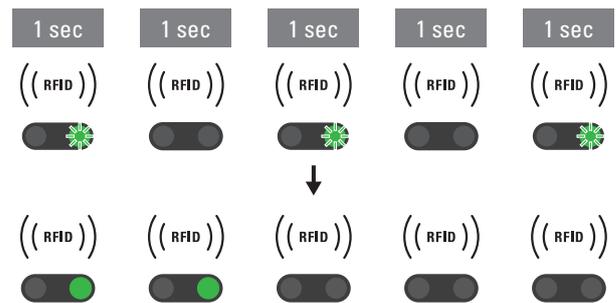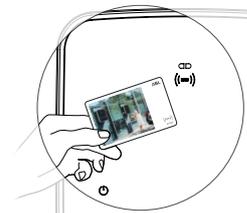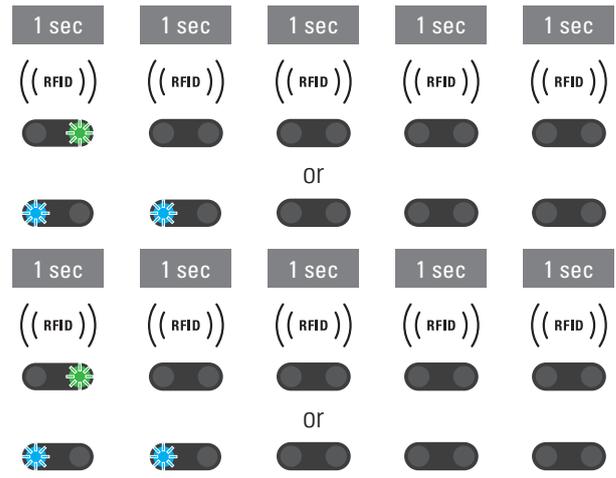
(!) NOTE

Authorisation of the RFID card is refused

If the RFID card is rejected, the blue LED of the RFID module is ON for two seconds and then turns OFF.

- **Controller-Extender with backend:** Make sure that your RFID card has been registered with your backend operator. Contact your backend operator for further information.
- **Extender without Controller and with active RFID module:** Make sure that the RFID card has been registered at the RFID module.

⚠ WARNING!

RFID card not readable

If the integrated antenna of your RFID card is being blocked or damaged, the RFID module is unable to recognise the card.

- Remove the RFID card from its protective cover or card holder to register at the RFID module.
- Do not make any modifications to the RFID card: The card must never be perforated, stamped, have stickers attached, or otherwise be manipulated mechanically.

9 Check the LED indicators of the wallbox (illustration: 1 cycle).

- The green LED is continuously ON while the wallbox waits for the charging procedure to be initiated by the electric vehicle.
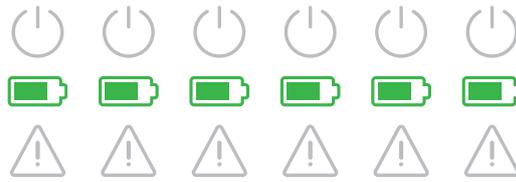
- When the charging procedure begins following a request by the vehicle, the green LED flashes.
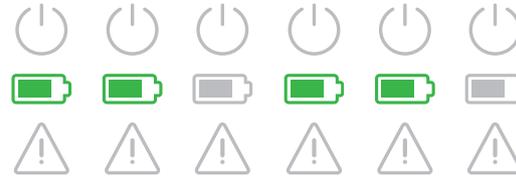
- When the charging procedure is paused or completed, the green LED is again continuously ON.
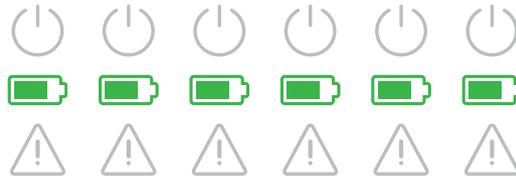
> ## (!) NOTE
>
> **Interruption or completion of the charging procedure**
>
> The charging procedure may be paused by the vehicle. Otherwise, the charging procedure is automatically terminated by the vehicle upon completion.
>
> - Check the displays inside the vehicle: Should the vehicle not be fully charged upon completion of the charging procedure, you may need to have it checked.

10 Unplug the charging connector from the electric vehicle's charging inlet and close it.
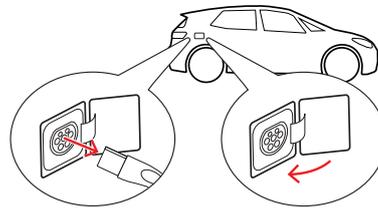
11 Store the charging cable ready for the next charging procedure.

- **Wallbox with charging cable**
  Replace the charging connector in its storage compartment.
- **Wallbox with charging socket**
  Unplug the charging connector from the charging socket and store the charging cable: the charging socket flap closes automatically.
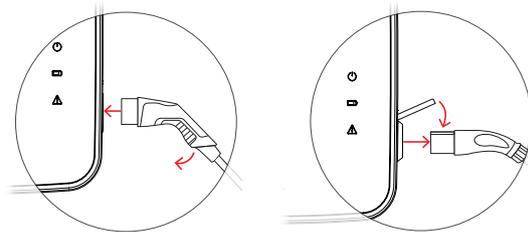
12 The wallbox is ready for operation and awaits the next charging procedure:

- When the charge point is ready for charging operations, the blue LED flashes, while the green and red LEDs are OFF.

Error resolution and maintenance

Under certain circumstances, malfunctions may occur during operation that prevent or restrict charging. The Wallbox eMH3 independently detects errors and indicates them in the form of cyclically repeating LED flash patterns.

Identifying errors

The following errors may occur:

Error F1

Description	Flash pattern
The green battery icon flashes four times per cycle while the blue power symbol remains OFF. The red warning symbol remains ON.	

Cause	Suggested solution
The main contactor of the wallbox does not open.	■ Check the RCCB of the wallbox and bring its pivot lever into the I position if necessary. ■ Switch the electricity supply for the wallbox off and then back on again. This should automatically reset the error. ■ Should the error persist, take the wallbox out of operation (see page 53) and contact a qualified specialist electrical contractor to resolve the error.

Error F2

Description	Flash pattern
Per cycle, the green battery icon flashes three times, followed by the blue power symbol flashing once. The red warning symbol remains ON.	

Cause	Suggested solution
The firmware has detected a disallowed operating state during an initial or periodic self-test.	■ Switch the RCCB of the wallbox off and then back on again. This should automatically reset the error. ■ Should the error persist, take the wallbox out of operation (see page 53) and contact a qualified specialist electrical contractor to resolve the error.

Error F3

Description	Flash pattern
Per cycle, the green battery icon and the blue power symbol alternately flash twice each. The red warning symbol remains ON.	

Error F3

Cause	Suggested solution
The internal DC fault current module has detected a DC fault current.	■ When this error occurs for the first time, the charging procedure is interrupted for 30 seconds and then restarted automatically. If the error occurs again immediately, the charging procedure is terminated permanently: A new charging procedure is only possible after disconnecting the vehicle from the wallbox. ■ There is possibly an electrical fault in the charging system of the vehicle. Do not charge the vehicle, and immediately contact a qualified specialist repairer. In addition, consider the notices provided in the operating manual for the vehicle.

Error F4

Description	Flash pattern
Per cycle, the green battery icon flashes once, followed by the blue power symbol flashing three times. The red warning symbol remains ON.	
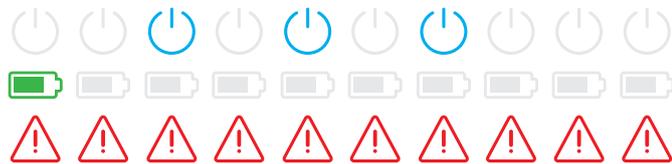
Cause	Suggested solution
Bus communication is not available inside the wallbox, or within the Controller-Extender group installation.	■ Disconnect the wallbox from the electricity supply and check the data cabling. Then switch the electricity supply back on. This should automatically reset the error. ■ Should the error persist, take the wallbox out of operation (see page 53) and contact a qualified specialist electrical contractor to resolve the error.

Error F5 (variants with charging socket only)

Description	Flash pattern
The blue power symbol flashes four times per cycle while the green battery icon remains OFF. The red warning symbol remains ON.	

Cause	Suggested solution
The self-test performed by the wallbox has detected an error because the charging cable plug could not be locked inside the charging socket of the wallbox.	■ The wallbox automatically reinitiates the self-test after 30 seconds: after two failed self-tests, the charging procedure is terminated permanently. ■ Should the error occur again, check the position of the plug in the charging socket, or unplug it and plug it back in. ■ Should the error persist, take the wallbox out of operation (see page 53) and contact a qualified specialist electrical contractor to resolve the error.

Error F6 (variants with charging socket only)

Description	Flash pattern
Per cycle, the green battery icon flashes twice, followed by the blue power symbol flashing twice. The red warning symbol remains ON.	

Cause	Suggested solution
The charging cable's current rating is incorrect.	■ The wallbox automatically reinitiates the charging procedure every 60 seconds. Should the error occur again, check the position of the plug in the charging socket, or unplug it and plug it back in. ■ Should the error persist, take the wallbox out of operation (see page 53) and contact a qualified specialist electrical contractor to resolve the error.

Error F7

Description	Flash pattern
The blue power symbol flashes twice per cycle while the green battery icon remains OFF. The red warning symbol remains ON.	

Cause	Suggested solution
The vehicle demands a charging procedure with ventilation.	■ The wallbox does not support charging procedures with ventilation.

Error F8

Description	Flash pattern
The green battery icon flashes twice per cycle while the blue power symbol remains OFF. The red warning symbol remains ON.	

Cause	Suggested solution
■ A short circuit has been detected between the pilot contact CP and the protective earth PE. ■ The vehicle's communication interface is faulty.	■ The wallbox automatically reinitiates the charging procedure every 60 seconds. ■ If the error persists, check the charging cable and/or the charging socket of the wallbox. If you detect any damage, take the wallbox out of operation and contact the dealer from whom you have purchased the wallbox. ■ If no damage is detected when checking the charging cable and socket, the vehicle must be checked: please contact a qualified specialist repairer.

Error F9

Description

Per cycle, the green battery icon flashes three times on its own, followed by the green battery icon and the blue power symbol flashing together once.

The red warning symbol remains ON.

Flash pattern

Cause

The current monitoring module has detected that the charging current is exceeding the preset maximum current.

Suggested solution

- The wallbox automatically reinitiates the charging procedure every 60 seconds. If the error persists, the wallbox and/or the vehicle must be checked: please contact a qualified specialist electrical contractor or a specialist repairer.

Error F10

Description

Per cycle, the green battery icon flashes twice on its own, followed by the green battery icon and the blue power symbol flashing together twice.

The red warning symbol remains ON.

Flash pattern

Cause

The temperature monitoring device has detected a temperature above 80° Celsius inside the housing.

Suggested solution

- The temperature monitoring device interrupts the charging procedure. After 10 minutes, the charging procedure is reinitiated automatically. If the temperature inside the housing remains at between 60° and 80° Celsius at this time, error code **F17** (see below) is shown and the charging current is limited to 6 A.
- The charging procedure is re-initiated as soon as the temperature inside the housing falls to below 60° Celsius.
- If the error repeats or persists, the wallbox must be cooled and/or shaded more effectively at the installation site.
- Should the error persist, please take the wallbox out of operation (see page 53) and contact a qualified specialist electrical contractor to resolve the error.

Error F11

Description

Per cycle, the green battery icon flashes once on its own, followed by the green battery icon and the blue power symbol flashing together three times.

The red warning symbol remains ON.

Flash pattern

Error F11

Cause	Suggested solution
The main contactor of the wallbox does not close.	▪ The wallbox automatically re-initiates the charging procedure after 30 seconds and repeats this process twice. After three failed reinitiation attempts, the charging procedure is terminated. ▪ If this error persists and the charging procedure is not initiated automatically, the wallbox must be taken out of operation and checked: please contact the specialist electrical contractor who has carried out the installation of your wallbox and any accessories.

Error F15

Description	Flash pattern
Both the green battery icon and the blue power symbol remain ON during the cycle. The red warning symbol flashes twice.	

Cause	Suggested solution
The current monitoring device has detected a load imbalance between the phases, and has reduced the maximum charging current to 20 A. Charging operations are still possible.	▪ Disconnect the charging cable from the vehicle (socket variants: and from the socket) and then plug it back in. ▪ Should this not reset the error, please check the electrical connection and parameters for the wallbox and set the charging current to a value above 20 A. ▪ If the error cannot be resolved, please contact the specialist electrical contractor who has carried out the installation of your wallbox and any accessories.

Errors F16 and F17

Description	Flash pattern
Both the green battery icon and the blue power symbol remain ON during the cycle. The red warning symbol flashes twice.	

Cause	Suggested solution
▪ Data transfer to the integrated current monitoring device is disrupted: The maximum charging current is limited to 10 A while this error persists. Charging operations are still possible. ▪ The temperature monitoring device has detected a temperature above 60° Celsius inside the housing: The maximum charging current is limited to 6 A. Charging operations are still possible.	▪ The charging output is limited until the error has been reset or the temperature inside the housing has fallen to below 60° Celsius. ▪ If the error repeats or persists, the wallbox must be cooled and/or shaded more effectively at the installation site. Please contact a qualified specialist electrical contractor to check and resolve the error, or to move the installation site of the wallbox.

⚠️ **WARNING!**

Taking the wallbox out of operation in the event of persistent malfunction

Should the wallbox keep displaying error messages, please take it out of operation (see further below) and contact a qualified specialist electrical contractor to resolve the error.

General operational malfunctions

Under certain circumstances, other malfunctions may occur.

Description

The electric vehicle is not recognised.

Cause and suggested solution

- The charging cable is not properly plugged in.
  - Remove the charging connector from the vehicle's charging connector and plug it back in.
  - **For wallboxes with charging socket:** also remove the charging connector from the charging socket of the wallbox and plug it back in.
  - Check the charging cable and replace it if required.

⚡ **DANGER!**

Dangerous electrical currents

Should the charging cable, the charging plug or connector show visible damage, you must under no circumstances perform another charging procedure. Take the wallbox out of operation and contact a qualified specialist electrical contractor.

Description

The green and blue LEDS of the charge point are continuously ON while the red LED is OFF.

Cause and suggested solution

- The Wallbox eMH3 has been deactivated and the charging procedure cannot be initiated.
  - Contact a qualified specialist electrical contractor to have the wallbox checked.
  - Should the wallbox have to be replaced, please contact the dealer from whom you have purchased your wallbox.

Description

The LEDs of the wallbox are not functioning.

Cause and suggested solution

- The wallbox is not connected to the electricity grid.
  - Check the internal RCCB(s) and switch it (them) back on if required.
  - Check the upstream circuit breaker in your domestic power distribution and switch it back on if required.
  - Have a qualified specialist electrical contractor check the power supply cable and restore it if required.
- The wallbox is defective.
  - Please contact a qualified specialist electrical contractor to have the error resolved.
  - Should the wallbox have to be replaced, please contact the dealer from whom you have purchased your wallbox.

Checking the internal RCCB

To ensure the continuing safe operation of the wallbox, you must test the function of the integrated RCCB (Twin wallboxes: both RCCBs) yourself every 6 months: each RCCB has a push button with which to initiate the test function.

Proceed as follows to test the RCCB:

1 Open the housing cover of the wallbox using the triangular key and lower it.
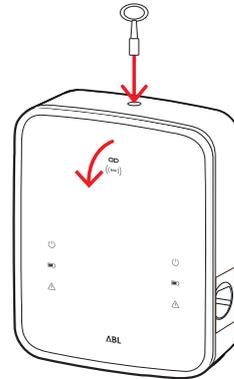
2 Locate the RCCB (TWIN wallboxes: both RCCBs) and press the button engraved **T** or marked **Test**.

- The RCCB must now trip and flick its pivot lever into the centre position (connection to the electricity grid is interrupted).
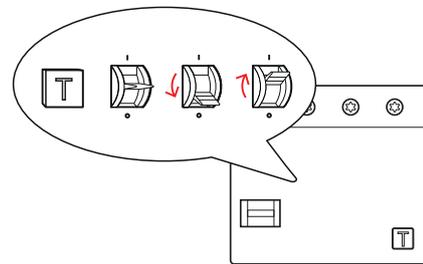
3 Now flip the RCCB first to the **0** position and then back to the **I** position.
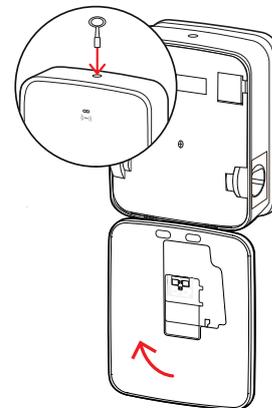
4 Flip the housing cover up so that it clicks into the housing and lock it with the triangular key.

⚠️⚡ **DANGER!**

Dangerous electrical currents

Should an RCCB malfunction during testing, you must not continue to operate the wallbox under any circumstances!

- Contact a qualified specialist electrical contractor to have the error resolved.

Taking the Wallbox eMH3 out of operation

In case of severe malfunctions or damage to the device, you must take the Wallbox eMH3 out of operation.

To do so, proceed as follows:

1 Open the housing cover of the wallbox using the triangular key and lower it.
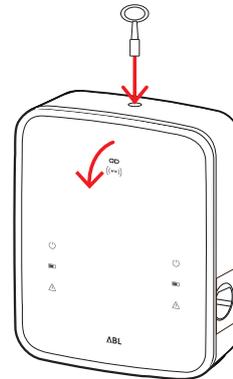
2 Flick the pivot lever of the internal RCCB (TWIN wallboxes: both RCCBs) into the **0** position (connection to the electricity grid is interrupted).

- Also flip the pivot lever of the internal MCB to position **0.**
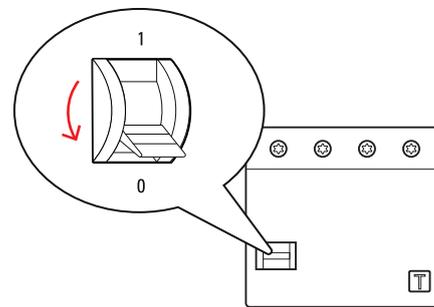
3 Flip the housing cover up so that it clicks into the housing and lock it with the triangular key.
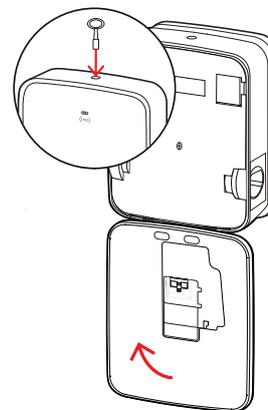
4 Open your domestic power distribution box, disconnect the power supply cable from the electricity grid via the MCB and close the distribution box.
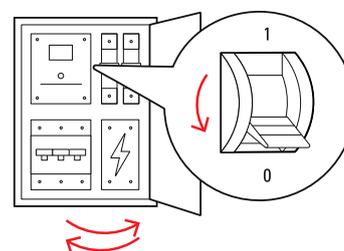
The Wallbox eMH3 is no longer connected to the electricity grid and can be removed by a qualified specialist electrical contractor if required.

⚠ **DANGER!**

Dangerous electrical currents

Always measure the voltage between the phases and the neutral conductor of the power supply cable before you start dismantling the wallbox.

Maintenance

Except for testing the integrated or upstream RCCB, your wallbox is basically maintenance-free. However, we still recommend the wallbox is regularly cleaned and the function of its charging interfaces checked:

- Use only a dry cloth for cleaning the wallbox. Do not use aggressive cleaning agents, waxes or solvents (such as cleaning fluid or paint thinner) as they may dull the wallbox displays.
- The wallbox must under no circumstances be cleaned with a pressure cleaner or similar device.
- Check the fixed charging cables or the charging sockets of the wallbox regularly for signs of damage.

Appendix

Technical specifications

Stand-alone Twin product series

Model code	3W2214*
Rated voltage	230/400 V
Grid frequency	50 Hz
Current	32 A
Maximum output	2 × 11 kW or 1 × 22 kW
Charging connection	Type 2 charging sockets, 2 pcs
Phase system	3-phase
Terminal blocks	Direct connection to RCCB, PE to rail mount terminal block, max. 5 × 16 mm²
Residual Current Devices	RCCB, Type A, 30 mA
DC fault current detection	DC-RCM, $I_{\Delta n\,d.c.} \geq 6$ mA
Overcurrent protection	Integrated into firmware, disconnection at 110% after 100 seconds, at 120% after 10 seconds.
Load switching	Contactor, 4-pole
Weld detection	Contactor welding of one contactor trips the second contactor
RFID	ISO14443A/B, UID (4 Byte/7 Byte) only
Compliance standards	IEC 61851-1
Control / customisation	Internal RS485 interface, bus system
Ambient temperature	-30°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
Impact strength	IK08
Dimensions (H × W × D)	492 × 394 × 189 mm (housing base incl. mounting plate, without overhangs)
Weight per unit	approx. 13.5 kg

* Structurally identical variant with two charging sockets with shutters: 3W2217

Controller Twin series

Model code	3W2283*	3W2284
Rated voltage	230/400 V	
Grid frequency	50 Hz	
Current	32 A	
Maximum output	2 × 11 kW or 1 × 22 kW	
Charging connection	Type 2 charging sockets, 2 pcs	Type 2 charging cables, 2 pcs
Phase system	3-phase	
Terminal blocks	Direct connection to RCCB, PE to rail mount terminal block, max. 5 × 16 mm²	
Residual Current Devices	RCCB, Type A, 30 mA	
DC fault current detection	DC-RCM, $I_{\Delta n\,d.c.} \geq 6$ mA	
Overcurrent protection	Integrated into firmware, disconnection at 110% after 100 seconds, at 120% after 10 seconds.	
Energy meter	MID compliant	
Load switching	Contactor, 4-pole	
Weld detection	Contactor welding switches off the charging point	

Model code	3W2283*	3W2284
RFID	ISO14443A/B, UID (4 Byte/7 Byte) only	
Backend communication	LAN/LTE	
Backend protocol	OCPP 1.5 / 1.6 (SOAP or WSS)	
Compliance standards	IEC 61851-1	
Control / customisation	Internal RS485 interface, bus system	
Ambient temperature	-30°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	
Impact strength	IK08	
Dimensions (H × W × D)	492 × 394 × 189 mm (housing base incl. mounting plate, without overhangs)	
Weight per unit	approx. 13.5 kg	approx. 21 kg

* Structurally identical variant with two charging sockets with shutters: 3W2285

Controller Single with shutter series

Model code	3W2287
Rated voltage	230/400 V
Grid frequency	50 Hz
Current	32 A
Maximum output	1 × 22 kW
Charging connection	Type 2 charging sockets with shutters, 2 pcs
Phase system	3-phase
Terminal blocks	Direct connection to RCCB, PE to rail mount terminal block, max. 5 × 16 mm²
Residual Current Devices	RCCB, Type A, 30 mA
DC fault current detection	DC-RCM, $I_{\Delta n\,d.c.} \geq 6$ mA
Overcurrent protection	Integrated into firmware, disconnection at 110% after 100 seconds, at 120% after 10 seconds.
Energy meter	MID compliant
Load switching	Contactor, 4-pole
Weld detection	Contactor welding switches off the charging point
RFID	ISO14443A/B, UID (4 Byte/7 Byte) only
Backend communication	LAN/LTE
Backend protocol	OCPP 1.5 / 1.6 (SOAP or WSS)
Compliance standards	IEC 61851-1
Control / customisation	Internal RS485 interface, bus system
Ambient temperature	-30°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
Impact strength	IK08
Dimensions (H × W × D)	492 × 394 × 189 mm (housing base incl. mounting plate, without overhangs)
Weight per unit	approx. 10 kg

Extender Twin series

Model code	3W2273*	3W2274	3W4473
Rated voltage	230/400 V		
Grid frequency	50 Hz		
Current	32 A		2 × 32 A
Maximum output	2 × 11 kW or 1 × 22 kW		2 × 22 kW
Charging connection	Type 2 charging socket, 2 pcs	Type 2 charging cable, 2 pcs	Type 2 charging socket, 2 pcs
Phase system	3-phase		
Terminal blocks	Direct connection to RCCB, PE to rail mount terminal block, max. 5 × 16 mm²		
Residual Current Devices	RCCB, Type A, 30 mA		
DC fault current detection	DC-RCM, $I_{\Delta n\,d.c.} \geq 6$ mA		
Overcurrent protection	Integrated into firmware, disconnection at 110% after 100 seconds, at 120% after 10 seconds.		
Energy meter	MID compliant		
Load switching	Contactor, 4-pole		
Weld detection	Contactor welding switches off the charging point		
RFID	ISO14443A/B, UID (4 Byte/7 Byte) only		
Backend communication	via Controller wallbox		
Compliance standards	IEC 61851-1		
Control / customisation	Internal RS485 interface, bus system		
Ambient temperature	-30°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		
Impact strength	IK08		
Dimensions (H × W × D)	492 × 394 × 189 mm (housing base incl. mounting plate, without overhangs)		
Weight per unit	approx. 13.5 kg	approx. 21 kg	approx. 13.5 kg

* Structurally identical variant with two charging sockets with shutters: 3W2275

Controller Twin series (calibration law compliant)

Model code	3W2263	3W2264
Rated voltage	230/400 V	
Grid frequency	50 Hz	
Current	32 A	
Maximum output	2 × 11 kW or 1 × 22 kW	
Charging connection	Type 2 charging sockets, 2 pcs	Type 2 charging cables, 2 pcs
Phase system	3-phase	
Terminal blocks	Direct connection to RCCB, PE to rail mount terminal block, max. 5 × 16 mm²	
Residual Current Devices	RCCB, Type A, 30 mA	
DC fault current detection	DC-RCM, $I_{\Delta n\,d.c.} \geq 6$ mA	
Energy meter	MID compliant	
Overcurrent protection	Integrated into firmware, disconnection at 110% after 100 seconds, at 120% after 10 seconds.	
Compliance module	Logging Gateway (LGW)	
Load switching	Contactor, 4-pole	
Weld detection	Contactor welding switches off the charging point	
RFID	ISO14443A/B, UID (4 Byte/7 Byte) only	

Model code	3W2263	3W2264
Backend communication	LAN/LTE - OCPP 1.6 and 1.5, transport via SOAP or WebSockets	
Compliance standards	IEC 61851-1	
Control / customisation	Internal RS485 interface, bus system	
Ambient temperature	-30°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	
Impact strength	IK08	
Dimensions (H × W × D)	492 × 394 × 189 mm (housing base incl. mounting plate, without overhangs)	
Weight per unit	approx. 13.5 kg	approx. 21 kg

Extender Twin series (calibration law compliant)

Model code	3W2253	3W2254
Rated voltage	230/400 V	
Grid frequency	50 Hz	
Current	32 A	
Maximum output	2 × 11 kW or 1 × 22 kW	
Charging connection	Type 2 charging sockets, 2 pcs	Type 2 charging cables, 2 pcs
Phase system	3-phase	
Terminal blocks	Direct connection to RCCB, PE to rail mount terminal block, max. 5 × 16 mm²	
Residual Current Devices	RCCB, Type A, 30 mA	
DC fault current detection	DC-RCM, $I_{\Delta n\,d.c.} \geq 6$ mA	
Overcurrent protection	Integrated into firmware, disconnection at 110% after 100 seconds, at 120% after 10 seconds.	
Energy meter	MID compliant	
Compliance module	Logging Gateway (LGW)	
Load switching	Contactor, 4-pole	
Weld detection	Contactor welding switches off the charging point	
RFID	ISO14443A/B, UID (4 Byte/7 Byte) only	
Backend communication	via Controller wallbox	
Compliance standards	IEC 61851-1	
Control / customisation	Internal RS485 interface, bus system	
Ambient temperature	-30°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	
Impact strength	IK08	
Dimensions (H × W × D)	492 × 394 × 189 mm (housing base incl. mounting plate, without overhangs)	
Weight per unit	approx. 13.5 kg	approx. 21 kg

Controller Single series (calibration law compliant)

Model code	3W2260	3W2261
Rated voltage	230/400 V	

Model code	3W2260	3W2261
Grid frequency	50 Hz	
Current	32 A	
Maximum output	2 × 11 kW or 1 × 22 kW	
Charging connection	Type 2 charging socket, 1 pc	Type 2 charging cable, 1 pc
Phase system	3-phase	
Terminal blocks	Direct connection to RCCB, PE to rail mount terminal block, max. 5 × 16 mm²	
Residual Current Devices	RCCB, Type A, 30 mA	
DC fault current detection	DC-RCM, $I_{\Delta n\,d.c.} \geq 6$ mA	
Overcurrent protection	Integrated into firmware, disconnection at 110% after 100 seconds, at 120% after 10 seconds.	
Energy meter	MID compliant	
Compliance module	Logging Gateway (LGW)	
Load switching	Contactor, 4-pole	
Weld detection	Contactor welding switches off the charging point	
RFID	ISO14443A/B, UID (4 Byte/7 Byte) only	
Backend communication	LAN/LTE - OCPP 1.6 and 1.5, transport via SOAP or WebSockets	
Compliance standards	IEC 61851-1	
Control / customisation	Internal RS485 interface, bus system	
Ambient temperature	-30°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	
Impact strength	IK08	
Dimensions (H × W × D)	492 × 394 × 189 mm (housing base incl. mounting plate, without overhangs)	
Weight per unit	approx. 10 kg	approx. 15 kg

Extender Single series (calibration law compliant)

Model code	3W2250	3W2251
Rated voltage	230/400 V	
Grid frequency	50 Hz	
Current	32 A	
Maximum output	1 × 22 kW	
Charging connection	Type 2 charging socket, 1 pc	Type 2 charging cable, 1 pc
Phase system	3-phase	
Terminal blocks	Direct connection to RCCB, PE to rail mount terminal block, max. 5 × 16 mm²	
Residual Current Devices	RCCB, Type A, 30 mA	
DC fault current detection	DC-RCM, $I_{\Delta n\,d.c.} \geq 6$ mA	
Overcurrent protection	Integrated into firmware, disconnection at 110% after 100 seconds, at 120% after 10 seconds.	
Energy meter	MID compliant	
Compliance module	Logging Gateway (LGW)	
Load switching	Contactor, 4-pole	
Weld detection	Contactor welding switches off the charging point	
RFID	ISO14443A/B, UID (4 Byte/7 Byte) only	
Backend communication	via Controller wallbox	
Compliance standards	IEC 61851-1	
Control / customisation	Internal RS485 interface, bus system	

Model code	3W2250	3W2251
Ambient temperature	-30°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	
Impact strength	IK08	
Dimensions (H × W × D)	492 × 394 × 189 mm (housing base incl. mounting plate, without overhangs)	
Weight per unit	approx. 10 kg	approx. 15 kg

Standards and guidelines

General standards

2014/30/EU	EMC Guideline
2011/65/EU	RoHS Guideline
2012/19/EU	WEEE Directive
2014/35/EU	Low voltage directive

Standards governing electromagnetic interference (EMV)

IEC 61851-21-2	Conductive charging systems for electric vehicles – Part 21-2: EMC requirements for off board electric vehicle charging systems

Device safety standards

IEC 61851-1 Ed. 3	Electrical equipment for electric road vehicles - conductive charging systems for electric vehicles – Part 1: General requirements
IEC 60364-7-722 Ed. 1	Low voltage installations - Part 7-722: Requirements for special installations or locations - Supply of electric vehicles

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Data cable recommendations

The following data cables are recommended for wiring up the bus interfaces in the Wallbox eMH3:

Designation	Cross section	Number
Cat5e	from at least 0.14 mm²	1 cable per connection
Cat6	from at least 0.14 mm²	between two wallboxes

⚠ **WARNING!**

Selecting suitable data cables

Please note that these are recommendations only: the conductor cross-section must be adjusted according to the cable length by the specialist electrical contractor responsible for installation.

Allocation schematic from spring terminal to Easy2Install interface

For mixed data cabling connections using E2I interfaces as well as spring terminals within one group installation, the below allocation schematic must be followed. For each length of cable between these two interface systems, one un-braided RJ45 to individual strand Ethernet/patch cable (1 pc) is required.

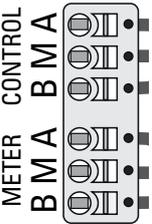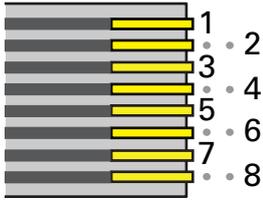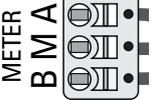The following allocations are then made:

- Controller/Extender with spring terminal to Extender with Easy2Install interface

  In this configuration, the individual wire strands of an Ethernet cable (CAT5e or above), which has been unbraided at one end, are connected to spring terminal R of the Controller or Extender charging station, while the RJ45 plug of the Ethernet cable is inserted into the left hand side Easy2Install interface of the next Extender charging station.

- Controller/Extender with Easy2Install interface to Extender with spring terminal

  In this configuration, the RJ45 plug of the Ethernet cable is inserted into the right hand side Easy2Install interface of the Controller or Extender charging station, while the unbraided wire strands of the Ethernet cable are connected to spring terminal L of the next Extender charging station.

In both cases, the individual wire strands of the Ethernet cable must be allocated as illustrated below.

Spring terminal		RJ45 plug	
Top view of terminal	ABL bus allocation	PIN allocation	Top view of RJ45 plug
	CONTROL A	1	
	CONTROL M	3 & 6	
	CONTROL B	2	
	METER A	7	
	METER M	4 & 5	
	METER B	8	

⚠️ **WARNING!**

Identical allocation of wire strands

Please note:

- As no standard exists for the allocation of wire strands colours to the contacts of an RJ45 plug, the above illustration only shows the allocation of the RJ45 contact to the spring terminal contact.

- These allocations must be followed consistently, otherwise faultless communication within the system is impossible.
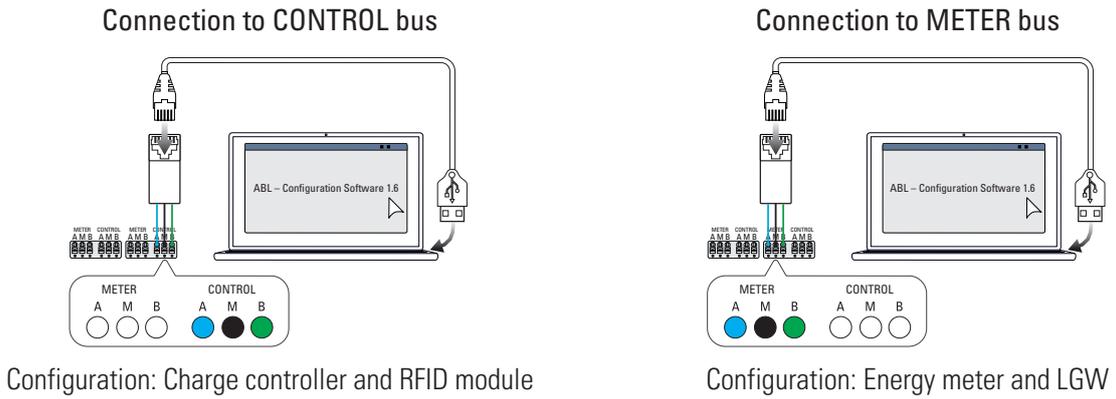
Data cabling via LOMK218

In case of all Wallboxes eMH3 with spring terminals (until mid-2021), you can, instead of the configuration kit CONFCAB, also use the cable kit LOMK218 for data cable connections to a computer.

However, the following limitations apply:

- The LOMK218 can only be used in conjunction with the ABL Configuration Software up to version 1.6. From version 1.7 and above, you must always use the configuration kit CONFCAB.

- Using LOMK218, either the CONTROL or the METER bus of the wallbox can be accessed, but not both at the same time. To set up the charge controller and the RFID module, the RS485 to RJ12 adapter from LOMK218 must therefore be connected to terminals A, M and B for the CONTROL bus. To set up the energy meter or the logging gateway (if present), you first need to disconnect the RS485 to RJ12 adapter, and then connect it to terminals A, M und B for the METER bus.

You can find further information in the Installation and User Guide LOMK218 (➔ www.ablmobility.de/en > Service > All downloads > Operation manuals > Accessories).

The following is a schematic illustration of data cabling using the LOMK218:

Connection to CONTROL bus	Connection to METER bus

Configuration: Charge controller and RFID module	Configuration: Energy meter and LGW

Definitions

| Abbreviation	Explanation
DC	Direct Current
E2I	Easy2Install interface for data cable connections between data buses via RJ45 ports
eMH	Electric Mobility Home
EVCC	Electric Vehicle Charge Control
LED	Light Emitting Diode
RCCB	Residual Current operated Circuit Breaker
RCM	Residual Current Monitor
RFID	Radio Frequency Identification
SBC	Single Board Computer
'T' button	Testing button

Dimensions

Single variants
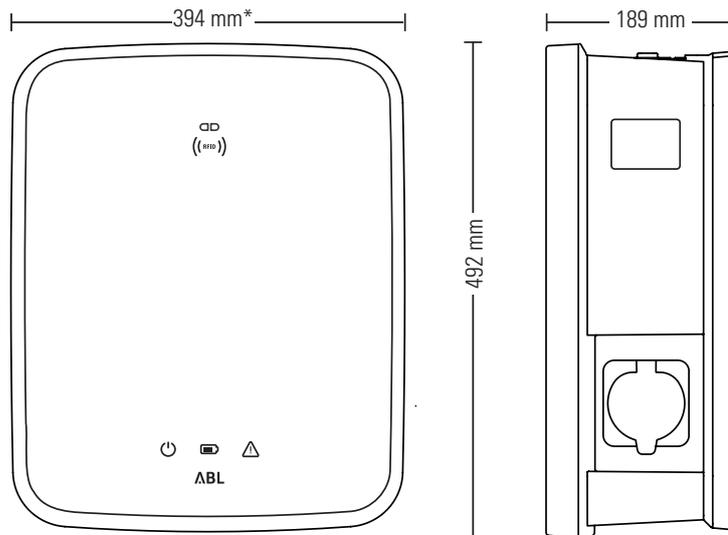
*Housing base incl. mounting plate, without overhangs

Twin variants

394 mm* 189 mm 492 mm
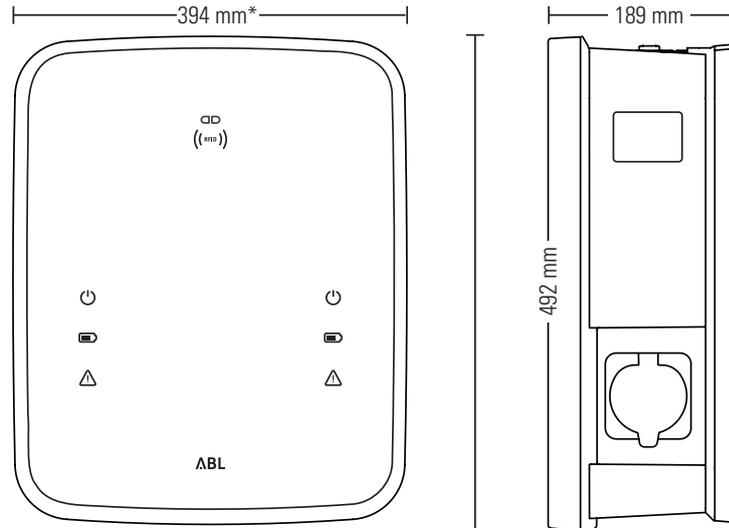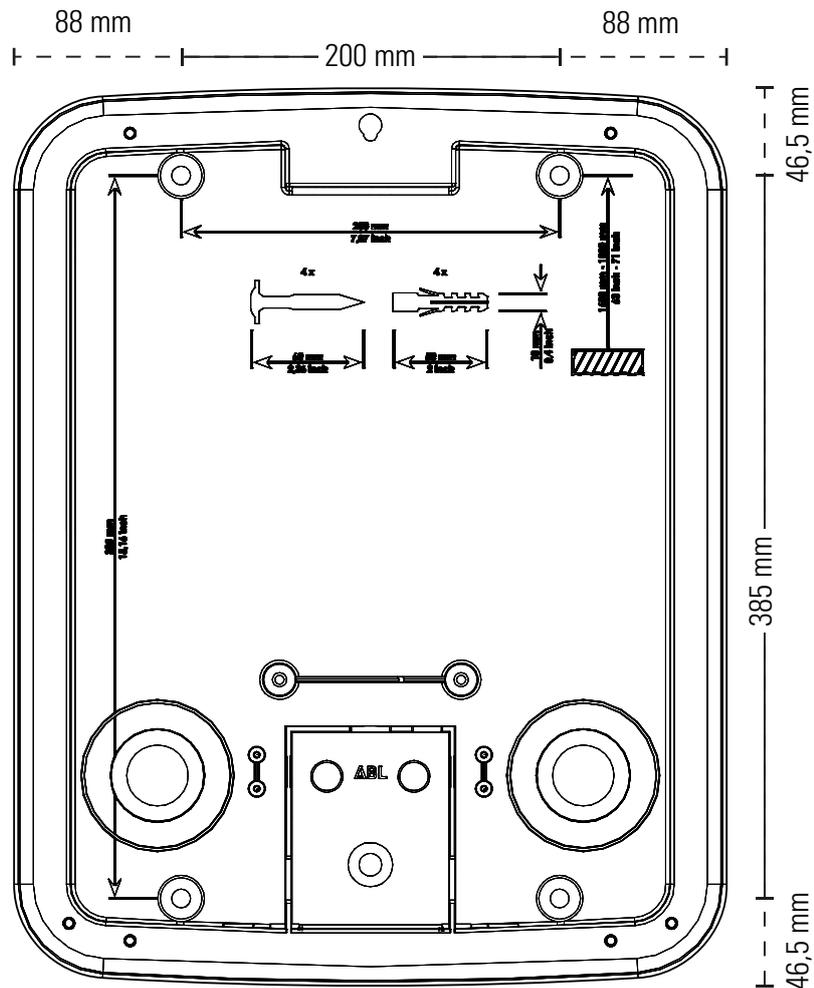
*Housing base incl. mounting plate, without overhangs

Using the mounting plate as drilling template

The mounting plate of the Wallbox eMH3 also serves as the drilling template for marking the fixing points. The illustration below shows external dimensions and drilling dimensions.

88 mm   200 mm   88 mm   46,5 mm   385 mm   46,5 mm

Copyright and disclaimer

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Disposal advice

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

The materials are recyclable as marked. The reuse or recycling of materials, or other forms of repurposing of old devices make an important contribution towards protecting the environment.

CE certification and compliance declaration

The Wallbox eMH3 carries the CE mark. A copy of the declaration of compliance is displayed below.

ZERTIFIKAT / CERTIFICATE   ABL

EU - KONFORMITÄTSERKLÄRUNG
EC - DECLARATION OF CONFORMITY

Name des Herstellers Name of manufacturer	ABL SURSUM Bayerische Elektrozubehör GmbH & Co. KG Albert-Büttner-Straße 11 91207 Lauf an der Pegnitz, Germany
erklärt, dass das Produkt declares that the product	Ladestationen für Elektrofahrzeuge, Charging stations for electric vehicles
Type-Nr. Ref. No.	Wallbox eMH3
die Forderungen folgender europäischer Richtlinien erfüllt: is in conformity with the following European Directives:	☒ Niederspannungsrichtlinie/Low Voltage Directive 2014/35/EU ☒ EMV Richtlinie / EMC Directive 2014/30/EU ☒ RoHS Richtlinie 2011/65/EU ☐
Angewendete (harmonisierte) Normen: Applied (harmonized) standards:	IEC 61851-1:2010-11 Ed. 2.0 IEC 61851-22:2001-05 EN 61000-6-2:2006-03 EN 61000-6-3:2011-09 VDE-AR-N 4100:2019-04

Diese EU-KONFORMITÄTSERKLÄRUNG gilt für alle im Anhang gelisteten Produkte.
This EC-DECLARATION OF CONFORMITY is valid for all products in the annex.

Jahr der Anbringung der CE-Kennzeichnung: Year of declaration:	2016

ABL SURSUM GmbH & Co.KG Lauf / Pegnitz
Lauf / Pegnitz

2.07.2020

Datum / Date
Date

Unterschrift   i.A. Helmut Mann
Signature   Abteilungsleiter
                    Entwicklungslabor und
                    Zertifizierung

Diese Erklärung bescheinigt die Übereinstimmung mit den genannten Richtlinien und beinhaltet jedoch keine Zusicherung von Eigenschaften.
This declaration certifies the conformity to the specified directives but contains no assurance of properties.

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