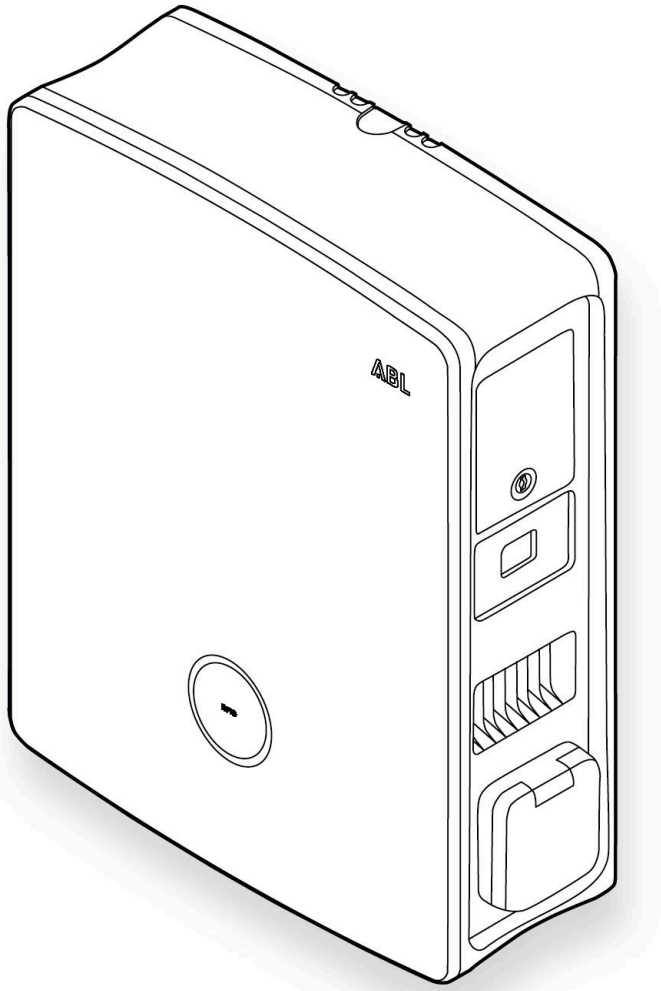
ABL




# Wallbox eM4 Twin

EN

Installation manual

Article No.: 0301501_EN_a

# Contact

ABL GmbH

Albert-Büttner-Straße 11
91207 Lauf an der Pegnitz
Germany

+49 (0) 9123 188-0
+49 (0) 9123 188-188

info@abl.de
www.ablmobility.de

## Customer Service

+49 (0) 9123 188-0
www.ablmobility.de/de/service/support/


Revision: 0301501_EN_a, Version: 26.04.23

# Contents

## Additional technical information

Additional technical information is required to install your Wallbox eM4 Twin 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/en**. Please visit:

https://www.ablmobility.de/en

## Intended use

The Wallbox eM4 Twin is the ideal solution for group installations in semi-public and public areas. Large charging parks can be set up by cascading several eM4 Twin Controller Wallboxes. The Wallbox eM4 Twin can be connected to a backend for the billing of charging processes and user management. Alternatively, the Extender variant of the Wallbox eM4 Twin can also be configured for stand-alone operation using the software, e.g. for use in private households.

## Information in this document

This document explains how to install, configure and commission the Wallbox eM4 Twin: 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 | ✓ | ✓ |

# 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.

→ Descriptions that require an additional step are marked with an arrow.

**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 instructions

The safety notices serve to ensure the proper and safe installation, as well as subsequent safe operation of the device. Please observe the following notes:

**DANGER!**

Dangerous electrical currents

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 read all safety information carefully.
- Always follow all safety notices provided!

**General safety information**

- 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.
- The product must only be operated after final approval by a qualified specialist electrical contractor.
- The product must not be covered with stickers or other objects or materials.
- 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.

**Qualified specialist personnel**

- 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.
- Qualified personnel have technical training and the experience and knowledge of the relevant standards to assess and carry out the described work steps and to recognise and avoid any hazards.

**Guidelines and regulations**

- Electrical installation and testing must be carried out by a qualified specialist electrical contractor, taking into account local rules and regulations.
- 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.
- 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.

**Operating environment**

- The device must not be installed 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).
- The product must never be installed or operated in confined spaces.
- Do not exceed the maximum permissible ambient temperature during operation (see "Technical specifications" on page 62).
- It is recommended that the product is not operated in direct sunlight, if possible.

**Interference sources**

- Please note that operating a radio transmitter in the immediate vicinity (< 20 cm) of the product may lead to malfunctions.

**Accessories**

- It is advisable to only use accessories intended and sold for the product by ABL.
- Only use charging cables that comply with the IEC 62196 standard.

## Operating instructions

- Local safety regulations regarding the operation of electrical devices for the country in which the product is operated always apply.
- 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.
- 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.

**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 for reasons of product development.

# Introduction to the Wallbox eM4 Twin

Thank you for choosing the Wallbox eM4 Twin from ABL. The eM4 Twin is the ideal solution for efficient vehicle charging in private environments, in public areas and for large group solutions in semi-public company or hotel car parks. In addition to the simple mechanical and electrical installation, the ABL Configuration App for mobile devices (iOS, Android) ensures a quick and straightforward setup.

The Controller and Extender variants of the Wallbox eM4 Twin are also available as reev ready versions with backend solutions by reev, which offer an intuitive interface for the administration and invoicing of all charging operations.

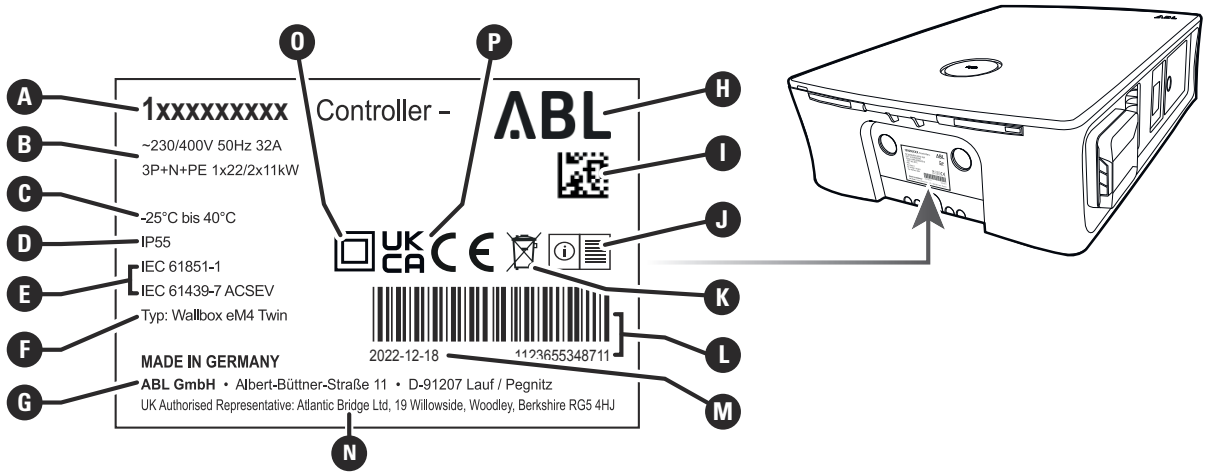
Further information on technical data is available in the appendix from page 62.

## Identifying your wallbox

The model variant of the Wallbox eM4 Twin 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)
- Mains connection



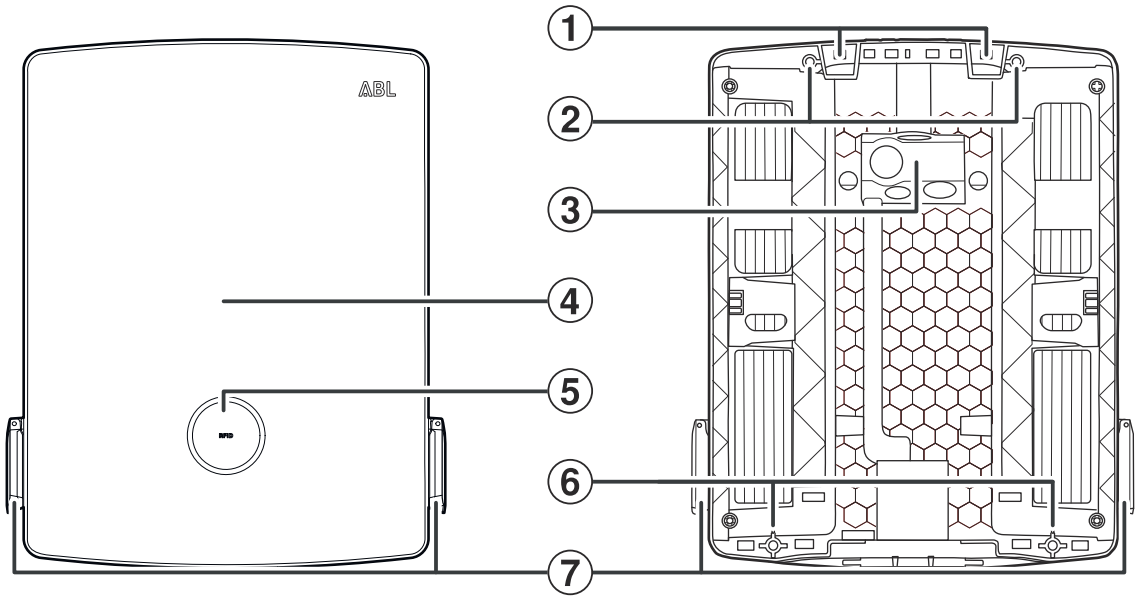

| | | | | | |
|---|---|---|---|---|---|
| A | Model number and category (Controller or Extender) | F | Type specification (eM4 Twin) | K | Disposal advice |
| B | Connection requirements | G | Manufacturer and manufacturer's address | L | Barcode/serial number |
| C | Temperature range | H | Manufacturer's logo | M | Date printed |
| D | Degree of protection (housing) | I | DataMatrix code/product number | N | Authorised representative (UKCA) |
| E | Standards | J | 'Read instructions' advice | O | Symbol protection class II |
| P | CE / UKCA marking | | | | |

## The Wallbox eM4 Twin at a glance

The Wallbox eM4 Twin is designed as follows:

### Front and rear view

The following illustration shows the Wallbox eM4 Twin from the front and from behind.




Front Rear

**1** Suspension points

There are two suspension points on the upper edge of the rear side, which are used to hang the eM4 Twin in the mounting rail which is screwed to the mounting position (see "Preparing and fixing the wallbox in place" on page 29). The mounting rail is supplied with the unit.

**2** Attachment points for mounting rail

The wallbox is fixed in place by screwing it into the mounting rail using the two upper attachment points (see page 28). The corresponding screws are supplied.

**3** Supply cable area

The supply cable area has three large grommets for inserting a power line from above, below or behind, marked Ⓐ, Ⓑ and Ⓒ on the drilling template.

A medium-sized grommet, which is located directly to the right of grommet Ⓑ on the drilling template and which is marked DATA, is used to insert a cable for wired data communication.

The small grommet located to the right of grommet Ⓒ on the drilling template and marked EXT. CONTROL is used to lay a control line, e.g. in accordance with VDE AR-N 4100.

All grommets in the supply cable area are designed as "push-out" membranes and can be pierced directly with the cable (see "Inserting the power and data cables" on page 26).

**4** Housing cover

The housing cover protects the internal electronic components (see next figure) from unauthorised access and must always be closed and locked during operation. It can be locked/unlocked via the RCCB flaps ⑩ of the left and right power module ⑨.

### ⑤ Status display with RFID reader

The circular status indicator shows the states of the two charge points by means of a multi-coloured LED ring (see point ⑭).

The RFID reader module for authorising the charging process is located centrally behind the status indicator (see point ⑭).

### ⑥ Wall mounting point

The wallbox is fixed in place by screwing it into the wall using the two lower attachment points (see page 30). The corresponding screws are supplied.

### ⑦ Type 2 charging socket

Each power module ⑨ of the Wallbox eM4 Twin has a Type 2 charging socket for connecting a charging cable certified in accordance with IEC 62196-1 and IEC 62196-2. The charging cables can be purchased as accessories from ABL (see "Accessories" on page 20).

**NOTE**

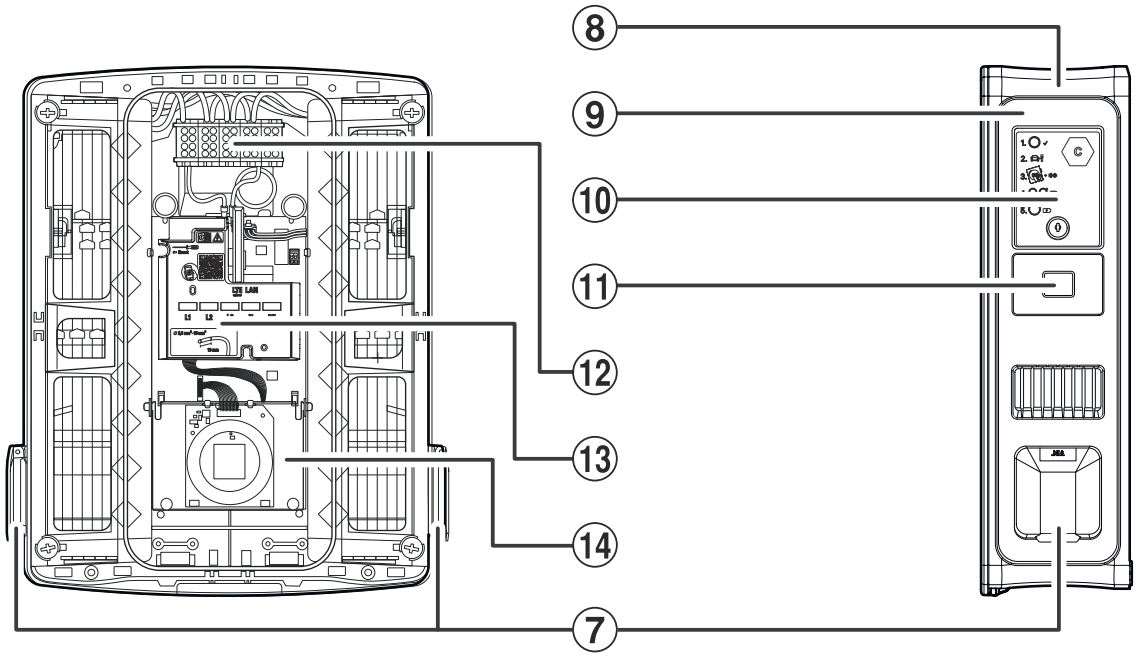
**Compatibility with RFID transponders**

The Wallbox eM4 Twin supports the following RFID transponders: Mifare Classic, Mifare mini, Mifare DESFIRE EV1, Mifare Plus S/X, Mifare Pro X, Mifare SmartMX, Mifare Ultralight, Mifare Ultralight C, SLE44R35, SLE66Rxx (my-d move), Legic Advant, Pay Pass, Pico Pass.

To ensure the compatibility of the RFID transponder, it should be tested with the Wallbox eM4 Twin. Besides the RFID standard used, other factors such as the dimensions of the transponder also influence compatibility. If you need support with testing an RFID transponder, contact **ABL Customer Service** (see "Contact" on page II).

**Interior and side view**

The following illustration shows the Wallbox eM4 Twin with the housing cover open and from the right-hand side: The left-hand side of the wallbox has an identical design.




Interior view of electronic components

Right-hand side

### ⑧ Housing

The wallbox housing integrates the two power modules ⑨ and the other electronic components for communication in a group. The wallbox is securely fastened at the installation location by means of the suspension points ① and the attachment points ② and ⑥.

### ⑨ Power module

The power module integrates the components for the respective charge point, including the RCCB, DC residual current detection, the contactor, the MID-compliant energy meter ⑪ and the Type 2 charging socket ⑦.

### ⑩ RCCB flap

The RCCB flap protects the RCCB of the power module and is locked and unlocked using the key supplied. The locking mechanism also locks the housing cover ⑧: To open the housing cover, both RCCB flaps must be unlocked and folded upwards.

### ⑪ MID-compliant energy meter

The MID-compliant energy meter displays various information on the charging operation. You can find further information on this topic in section "Information displayed in the energy meter" on page 15.

### ⑫ Terminal block

Directly behind the supply cable area ③ is the terminal block for connecting the power line: The connection pattern is shown on the communication module ⑬. In a group installation, the connection diagram must be adapted to each wallbox to ensure an even load on the phases (see "Electrical connection of the wallbox" on page 30).

### ⑬ Communication module

The communication module provides a LAN interface for data cabling and a USB port (Controller wallbox only) for the supplied LTE USB stick for wireless communication with a backend (see "Preparing and installing the LTE USB stick" on page 34).

In the upper left area of the communication module, there is access to the reset push button marked with a screwdriver and the word ← Reset, which allows the wallbox to be reset to the factory settings (see "Resetting the wallbox and restoring to factory settings" on page 57).

In addition, the communication module can be flipped forward, allowing access to terminal EN1 for connecting a control cable in accordance with VDE AR-N 4100 (see "Connecting a control cable in accordance with VDE AR-N 4100" on page 34).

### ⑭ HMI module

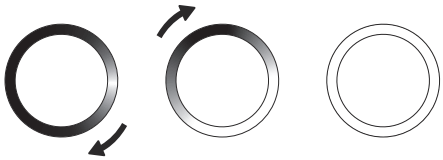
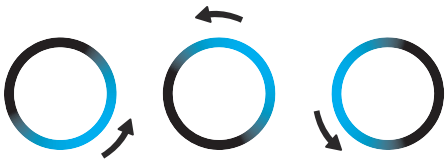
The HMI (Human Machine Interface) module of the wallbox displays the various states of the electronic components for monitoring and determining the status of the charge points via a multi-coloured LED ring and an acoustic signal generator (see next section).

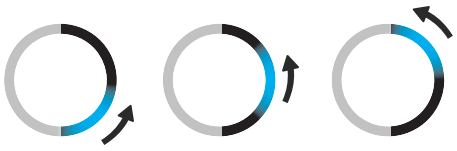
It also includes the RFID reader module for authorising the charging processes, provided that the wallbox was configured accordingly during installation or is operated with a backend. The RFID function is set up via the ABL Configuration App (see "Configuring the Wallbox eM4 Twin" on page 38).

## How the HMI works

The Human Machine Interface of the Wallbox eM4 Twin informs the user about the current status of the wallbox or the two charge points. Visual feedback is provided by an LED ring with different colour and movement patterns. The wallbox also emits sound signals for selected functions.

The following table shows the HMI signal and its corresponding functional status:

| | |
|---|---|
|  | **Boot process active**<br>When the Wallbox eM4 Twin is connected to the electricity grid or restarted during setup, it starts the boot process: The LEDs light up green, blue, white and red for 5 seconds. |
|  | **Configuration required**<br>If the wallbox has not yet been set up via the **ABL Configuration App** during first use or if the setup is currently being performed, the LED circle pulsates white. |
|  | **Completing the configuration**<br>Once the setup has been completed in the **ABL Configuration App** and transferred to the wallbox, the LEDs light up white one after the other in a clockwise direction until finally the entire LED ring is lit up white continuously for a short moment. |
|  | **Ready for charging**<br>In normal operation, the status indicator pulsates green to indicate readiness for charging. The right half of the status indicator is assigned to the right-hand charge point, the left half to the left-hand charge point.<br>(Illustration: Right-hand charge point) |
|  | **Vehicle connected and recognised**<br>If a vehicle has been connected and recognised, the half that corresponds to the charge point lights up static green.<br>(Illustration: Right-hand charge point) |
|  | **Authorisation required**<br>If the charging operation has to be enabled using an RFID card, a blue chase light is shown dynamically on the status indicator.<br>■ For the right-hand charge point, the chase light turns anti-clockwise (see illustration).<br>■ For the left-hand charge point, the chase light turns clockwise. |



### Charging process active

After a request by the vehicle, the charging operation in process is displayed dynamically via the blue status indicator for the charge point. The right half of the status indicator is assigned to the right-hand charge point, the left half to the left-hand charge point.

(Illustration: Right-hand charge point)

### Charging process completed or paused

If the charging process has been completed or paused by the vehicle or the load management, the half corresponding to the charge point lights up static blue.

(Illustration: Right-hand charge point)

### Malfunction

If an error has occurred during operation, the status indicator pulses red. The right half of the status indicator is assigned to the right-hand charge point, the left half to the left-hand charge point.

(Illustration: Right-hand charge point)

### RFID card recognised

If the RFID card has been recognised by the RFID reader, the wallbox emits a short sound signal.

### RFID card authorisation successful

If the RFID card has been successfully authorised, the wallbox emits two short sound signals.

### RFID card authorisation rejected

If the authorisation of an RFID card has failed, the half corresponding to the charge point lights up static orange. In addition, the wallbox emits three long sound signals.

(Illustration: Right-hand charge point)

## Information displayed in the energy meter

Each charge point of the Wallbox eM4 Twin has its own energy meter that shows various information about the charging operation via the three display lines. In contrast to the top line, the values displayed in lines 2 and 3 are switched cyclically:

### A Total electric energy consumed

The top line always shows the total electric power consumed in kWh, and therefore the sum of all the electrical charge obtained via this particular charge point. This line is not switched.

### B Current electric energy consumed

In this state, the second line shows the active energy in kWh that has been drawn so far during the active charging operation.

### C Charge point allocation

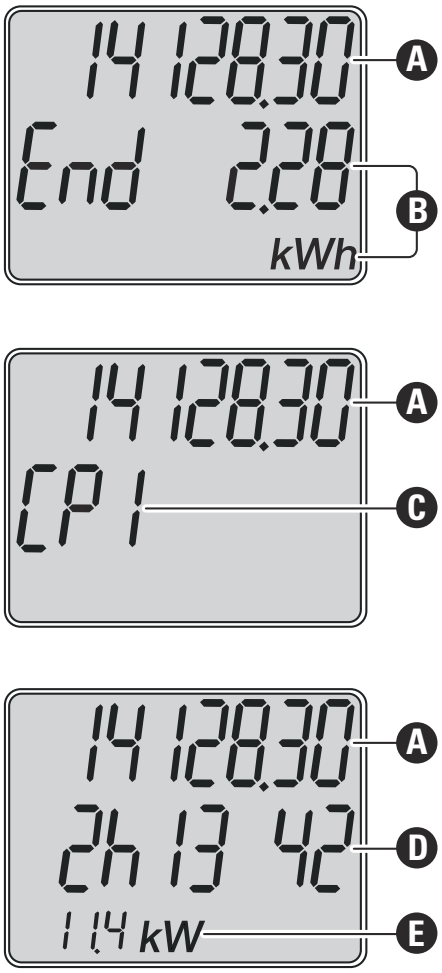
After switching, the second line in this state shows the identification that was assigned to the charge point during installation.

### D Duration of the charging operation

After switching, the second line in this state shows the duration of the active charging operation in hours, minutes and seconds.

### E Current electric power consumption

In this state, the third line shows the active power that the vehicle is currently drawing: With no vehicle connected, this value is 0.0 kW.



## Forming charging groups and network topologies

The Wallbox eM4 Twin offers several interfaces for internal communication in a charging group as well as for external communication with a backend. Here, a distinction is made depending on the wallbox variant:

- **Controller / Controller+:** The Controller wallbox can be operated either individually or as a charging group together with one or more Extender wallboxes. Internal communication within the charging group can be set up via WLAN or LAN. For external communication with a backend, you can use the Controller's WLAN or LAN interface or LTE USB stick.
- **Extender / Extender+:** The Extender wallboxes can be operated either individually (stand-alone) or as a charging group together with a Controller. Internal communication within the charging group can be set up via WLAN or LAN.

**WARNING!**

Integration into an existing network infrastructure

If you want to use an existing network infrastructure for communication within a charging group and/or with a backend, you will need to contact an IT administrator in advance to plan the integration.

The interfaces of the Wallbox eM4 Twin can be used to connect a charging group to a backend. The following combinations are possible:

| Controller–backend communication | | | Controller–Extender communication | |
|---|---|---|---|---|
| WLAN | LAN | LTE | WLAN | LAN |
| ✓ | | | ✓ | |
| | ✓ | | ✓ | |
| | ✓ | | | ✓ |
| | | ✓ | ✓ | |
| | | ✓ | | ✓ |

**NOTE**

Information for network communication

- The following ports must be available for communication with the Internet (Controller–backend):
  HTTP: 80 / HTTPS: 443 / NTP: 123 / OCPP: 7890
- The following ports must be available for communication within the network (Controller–Extender):
  DNS: 53 / mDNS: 5353 / UDP/TCP: 68, 1024, 4332, 5432, 11010
  - The network must assign each wallbox its own IP address (e.g. via DHCP).

The network interfaces are presented below in detail and illustrated with the help of illustrations in practical use. Further practical examples of the different possibilities for network communication are available via the link below.

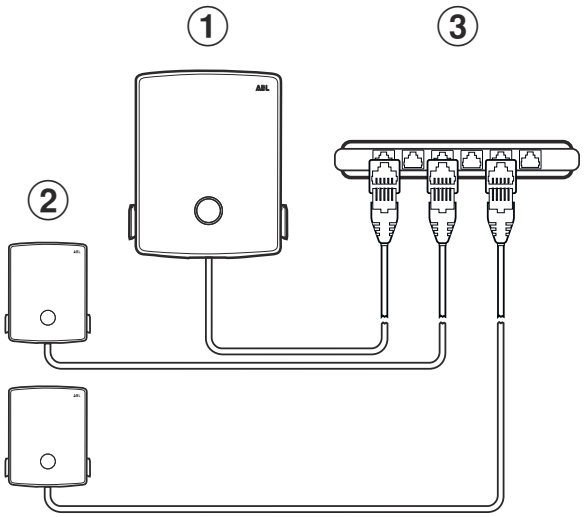
www.ablmobility.de/en > Partner > Electrical contractors

**Communication between a Controller and one or more Extenders via LAN**

- The communication module of each Wallbox eM4 Twin includes a LAN interface.
- The connection is made via one Ethernet cable per wallbox, which is routed into the wallbox via the supply cable area.
- To form a charging group, the Controller wallbox is wired to one or more Extender wallboxes on a local router, which assigns each wallbox its own IP address.
- The wiring of the Wallbox eM4 Twin via LAN is described in the sections "Inserting the power and data cables" on page 26 and "Data cable connections" on page 33.
- Communication via LAN must be set up in the ABL Configuration App (see page 38 onwards).

Communication in a charging group via LAN

- The Wallbox eM4 Twin Controller ① and one or more Wallboxes eM4 Twin Extender ② are connected to a local router ③ via their LAN interfaces.
- Each wallbox must be assigned its own IP address via the router, either automatically via DHCP or manually.

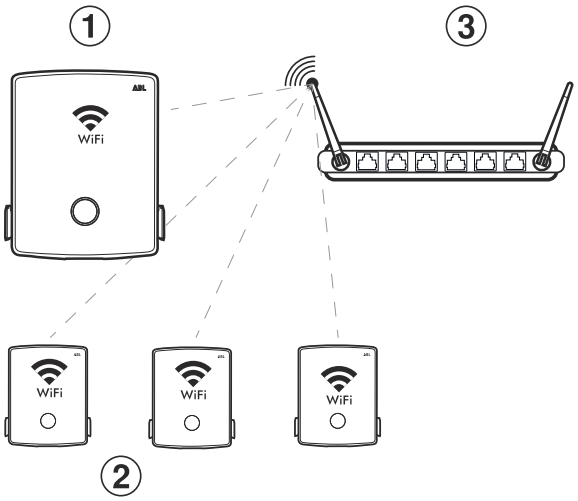



**Communication between a Controller and one or more Extenders via WLAN**

- Every Wallbox eM4 Twin has an integrated WLAN module.
- Direct communication with the ABL Configuration App installed on a smartphone/tablet (iOS, iPadOS, Android) can be established via the WLAN module.
- To form a charging group, the Controller wallbox can be connected wirelessly with one or more Extender wallboxes to a local WLAN router, which then assigns each wallbox its own IP address.
- Communication via WLAN must be set up in the ABL Configuration App (see page 38 onwards).

Communication in a charging group via WLAN

- The Wallbox eM4 Twin Controller ① and one or more Wallboxes eM4 Twin Extender ② are connected to a local WLAN router ③ via their WLAN modules.
- Each wallbox must be assigned its own IP address via the WLAN router, either automatically via DHCP or manually.

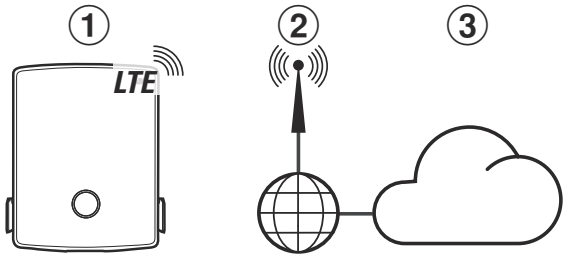


**Communication between a Controller and a backend via LTE**

- Each Controller wallbox comes with an LTE USB stick that can be fitted with the SIM card of a backend operator and used in the wallbox. This process is described starting on page 34.
- In the reev ready variants, the SIM card for communication with the reev backend is already pre-installed in the LTE USB stick in the Controller.
- LTE communication with the backend must be set up in the ABL Configuration App (see page 38 onwards).

Communication with a backend via LTE

- The Wallbox eM4 Twin Controller ① communicates via the LTE USB stick with an LTE receiver ②, which establishes the connection to the selected backend ③.

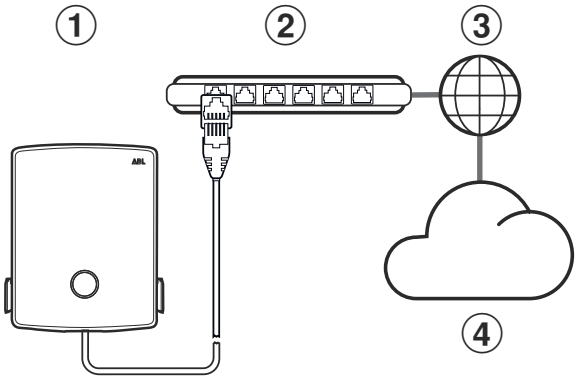



**Communication between a Controller and a backend via LAN**

- The Controller can communicate with an Internet-connected network via its LAN interface.
- The connection is made via one Ethernet cable (Cat5 or better) per wallbox, which is routed into the wallbox via the supply cable area.
- Communication via LAN must be set up in the ABL Configuration App (see page 38 onwards).

Communication with a backend via LAN

- The Wallbox eM4 Twin Controller ① is connected by cable to a LAN network ②, which establishes communication with the selected backend ④ via the Internet ③.

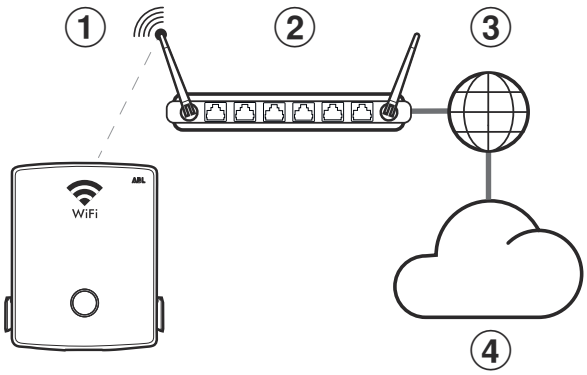



**Communication between a Controller and a backend via WLAN**

- The Controller can communicate with an Internet-connected network via its WLAN interface.
- Communication via WLAN must be set up in the ABL Configuration App (see page 38 onwards).

Communication with a backend via a WLAN network

- The Wallbox eM4 Twin Controller ① is connected wirelessly to a WLAN network ②, which establishes communication with the selected backend ④ via the Internet ③.



**NOTE**

Compatibility with backend providers

The Wallbox eM4 Twin is available as a reev ready product, which is specially prepared for operation with the backend solutions from reev. For more information, please visit:

https://reev.com

- Alternatively, the Wallbox eM4 Twin is also compatible with other backends for managing the charging infrastructure. To check the compatibility, please contact the desired backend provider.

## External load shedding in accordance with VDE AR-N 4100

The terminal **EN1** installed on the main module is used to connect a control control cable in accordance with VDE AR-N 4100. The local energy supplier can use this control cable to remotely switch the charging function of the wallbox off or on. The cable length between the wallbox and a suitable ripple control receiver / VDE-FNN control box must not exceed 30 metres.

In addition to switching the two charge points on and off, there is also the option to limit the maximum current set for charging via two further, externally wired resistor values.

| Position | Resistance ±10 % | Maximum set current limited to | Resulting charging current (e.g.: 32 A / 16 A) |
|---|---|---|---|
| 1 | min. 27 kOhm | 0% | 0 A / 0 A |
| 2 | 4.7 kOhm | 30% | 9 A / 5 A* |
| 3 | 1.5 kOhm | 60% | 19 A / 10 A |
| 4 | max. 100 Ohm | 100% | 32 A / 16 A |

* If the resulting charging current falls below the limit of 6 A, no charging occurs!

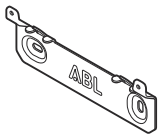
In a charging group, the control cable is connected to the Controller, which then regulates the current for all charge points in the group. In all other configurations (charging group with external control unit, stand-alone), the control cable must be connected to the wallbox with the first charge point (assignment in line 2 of the energy meter: CP 1).

## Components included with the wallbox

The product is delivered including the following components:

- Wallbox eM4 Twin, 1 pc.

- Installation rail, 1 pc.

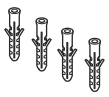



- TX30 wafer head screw, 6 × 140 mm, 2 pcs.

- TX30 plug screw, 6 × 60 mm, 2 pcs.

- TX30 half-round head screw, 6 × 60 mm, 2 pcs.

- Wall plugs 8 × 50 mm, 4 pcs.



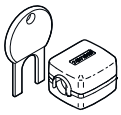
- Key, 2 pcs.

- Insulating cap, 4 pcs.

- Drilling template, 1 pc.

- Operating manual & safety information (multilingual), 1 pc.

- Folding ferrite with key, 1 pc.



The Controller variants of the eM4 Twin also include:

- LTE USB stick for installing an optionally available SIM card for communication with a backend, 1 pc.

The reev ready variants of the eM4 Twin also include:

- reev ready installation kit, 1 pc.


- **Controllers only:** LTE USB stick with SIM card for communication with the reev backend, 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 eM4 Twin are available separately:

- CC3225

Type 2 charging cable according to IEC 62196-2, up to 32 A 480 V AC, 3-phase, length 2.5 m

- CC3250

Type 2 charging cable according to IEC 62196-2, up to 32 A 480 V AC, 3-phase, length 5 m

- CC3275

Type 2 charging cable according to IEC 62196-2, up to 32 A 480 V AC, 3-phase, length approx. 7.5 m

- CC3210

Type 2 charging cable according to IEC 62196-2, up to 32 A 480 V AC, 3-phase, length approx. 10 m

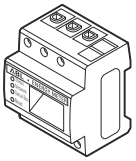
- LAKK2K1

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

- 100000193

ABL Energy Meter external meter for integrating the Wallbox eM4 Twin Controller(+) into a dynamic load management, top-hat rail module

h = 88 mm, w = 70 mm, d = 65 mm



- 100000253

RFID key fobs in ABL design for all ABL charging stations, 5 pcs.


- 100000192

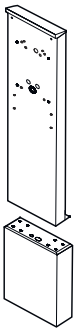
POLEM4 Twin galvanised sheet metal mounting pole for the outdoor installation of one Wallbox eMH3 or eM4 Twin, the weather shield WPR36, and up to two cable holders CABHOLD

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

- EMH9999

Precast concrete foundation for installing the mounting pole POLEMH3 or POLEM4 Twin

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



- 100000191 / 100000237

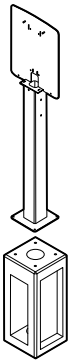
POLE Slim compact galvanised sheet metal mounting pole for the outdoor installation of one (100000191) or two Wallboxes eM4 Twin (100000237) via the adapter plate(s) supplied as well as up to two CABHOLD cable holders

h = 1,469 mm, w = 395 mm, d = 210 mm

- 100000238

POLE Slim concrete foundation for installing a POLE Slim mounting pole

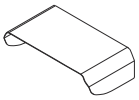
h = 600 mm, w = 260 mm, d = 260 mm



- WPR36

Weather protection roof for installation on an exterior wall or the mounting poles POLEMH3 and POLEM4 Twin

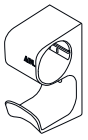
h = 142 mm, w = 515 mm, d = 285 mm



- CABHOLD

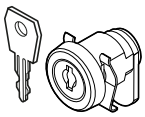
Cable holder with charging plug receptacle for installation on an exterior wall or the mounting poles POLEMH1/2/3, POLEM4 Twin and POLE Slim

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



- 100000214, [...], 100000223

Pack of 10 individual locks with the same closure, without group key, 10 pcs.



- 100000224, [...], 100000230

Pack of 10 individual locks with different closures, with one group key, 7 pcs.

You can find further information on ABL charging stations and accessories at www.ablmobility.de/en.

# Installation of the Wallbox eM4 Twin

The entire installation of the Wallbox eM4 Twin must be carried out by a qualified specialist electrical contractor.

**DANGER!**

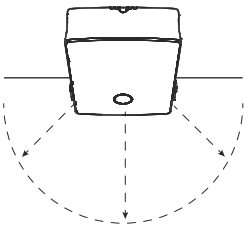
Dangerous electrical currents

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.

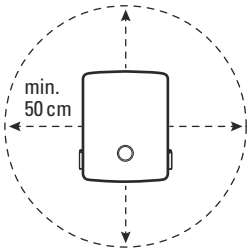
## Installation site requirements

The Wallbox eM4 Twin is suitable for installation in enclosed spaces such as garages as well as in outdoor areas such as company car parks. Please note, however, that the permissible ambient conditions (see "Technical specifications" on page 62) must be adhered to in order to guarantee the functionality of the wallbox at all times.

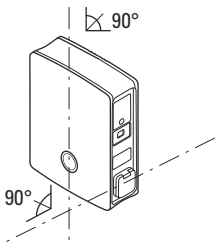
- The installation site must be freely accessible.



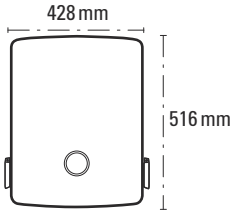
- Minimum distances to other technical installations must be observed. A minimum distance of 50 cm is recommended.



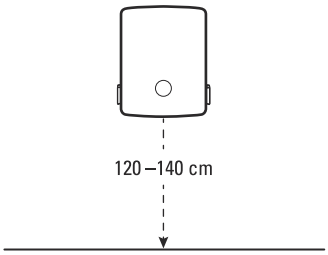

- The installation surface must be level and sufficiently load-bearing (minimum: weight of the wallbox plus two charging cables).



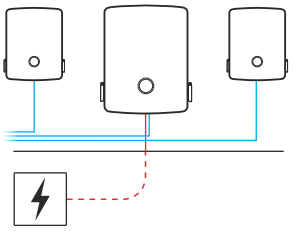

- The mounting surface must measure at least 516 × 428 mm (height x width). Also take into account the couplings of the charging cables.



- The installation height should be between 120 and 140 cm (ground to bottom edge of housing).




- Ideally, the installation location should already provide a fused connection to the electricity grid. Otherwise, a separate power supply cable with fuse protection must be installed.
- In order to operate wired group installations, suitable data cables must also be installed in the installation location (see "Data cable recommendations" on page 65, "Inserting the power and data cables" on page 26 as well as "Data cable connections" on page 33).



**WARNING!**

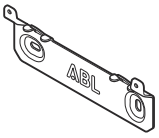
Maximum length of data and control cable

Please note that the length of the data and control cables from the tapping point (router, switch, ripple control receiver, VDE-FNN control box, etc.) must not exceed 30 metres!

## Tools and accessories required

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

- Installation rail, 1 pc.

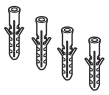



- TX30 wafer head screw, 6 × 140 mm, 2 pcs.

- TX30 plug screw, 6 × 60 mm, 2 pcs.

- TX30 half-round head screw, 6 × 60 mm, 2 pcs.

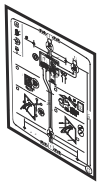
- Wall plugs 8 × 50 mm, 4 pcs.



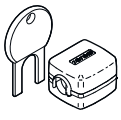
- Insulating cap, 4 pcs.

- Key, 2 pcs.

- Drilling template, 1 pc.



- Folding ferrite with key, 1 pc.



If you want to operate your Controller wallbox or a group installation with a backend, you will need the following components:

- LTE USB stick included with the Controller wallbox, 1 pc.

- SIM card of the backend operator, 1 pc.

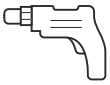
**NOTE**

**Communication via LTE with reev ready variants**

In the reev ready Controller variants, the LTE USB stick is already pre-installed in the wallbox and fixed there. The SIM card for communication with the reev backend is inserted in the LTE USB stick ex works.

In addition, you will need the following tools and accessories:

- Electric drill

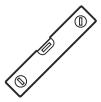


- 8 mm ∅ drill bit suitable for the respective mounting surface

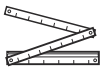
- Pencil

- Hammer

- Spirit level



- Tape measure



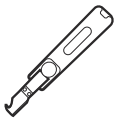
- Phillips screwdriver

- Torx screwdriver (TX 30)

- Universal pliers

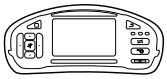
- Utility knife

- Stripping tool

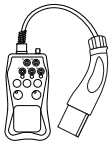


- Side cutters

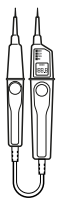
- Multi-purpose installation tester



- Vehicle simulation adapter



- Voltage tester



**NOTE**

Network connection

If you want to operate the Wallbox eM4 Twin wirelessly or wired in a network, you will also need suitable network components.

## Inserting the power and data cables

The Wallbox eM4 Twin offers the option of inserting the supply cables from above, from below or directly through the rear wall via the supply cable area of the housing. Depending on which you choose, you may need to prepare the wallbox and break out the pre-stamped inlets at the top and bottom of the housing.

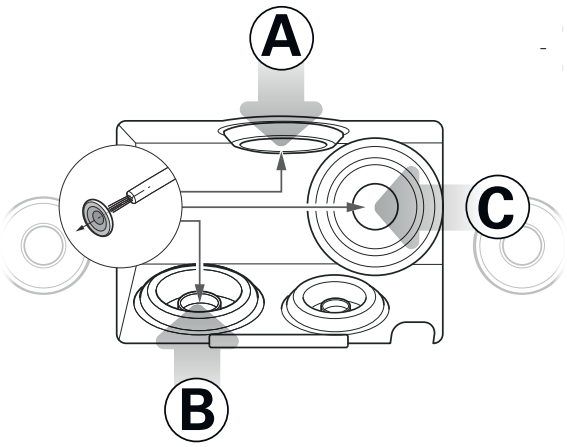
### Power line in

The grommets in inlets Ⓐ, Ⓑ and Ⓒ, which are designed as "push-out" membranes, can be pierced directly with the power line.

**A** This inlet is intended for flexibly routing the power line over the upper edge of the housing and should only be used in weather-protected installation locations (e.g. in multi-storey car parks).

**B** This inlet is intended for flexibly routing the power line over the lower edge of the housing.

**C** This inlet is intended for direct insertion of the power line from a wall outlet into the wallbox.




**NOTE**

Recommended supply cable via inlet Ⓑ

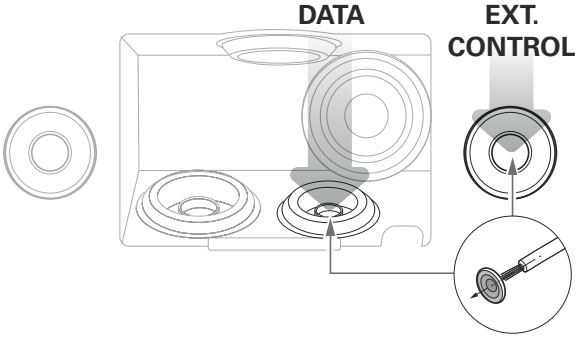
It is generally recommended to insert the power line into the housing of the wallbox via inlet Ⓑ. If the power line is laid to the installation location from above, you should form a loop on the rear below the supply cable area and feed the cable into inlet Ⓑ from below.

### Data and control cables

The grommets in the inlets for the data cabling within a group (DATA) and for a control cable of the local energy supplier in accordance with VDE AR-N 4100 (EXT. CONTROL) are also designed as "push-out" membranes and can be pierced with the data or control cables.

DATA This inlet is intended for a data cable (CAT5 or better) with an RJ45 connector.

EXT. CONTROL This inlet is intended for a two-core control cable in accordance with VDE AR-N 4100.

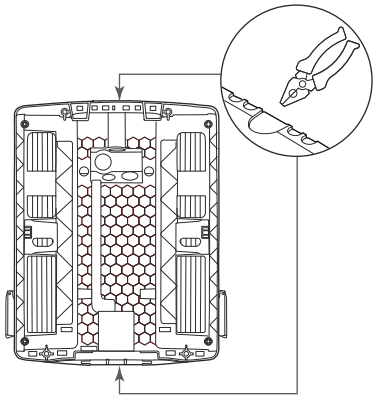


### Pre-stamped inlets in the housing edge

The housing features pre-stamped inlets in the middle of the upper and lower edge, which can be opened with universal pliers or a similar tool and are used for inserting the power and data cable.

Decide before carrying out the installation how the power and data cables should be fed into the wallbox.

- Carefully remove the desired plastic tabs before starting the installation.
- You can combine the inlets as required: even if you want to feed the power line through the inlet at the top edge or directly through the rear, you can run the data and control cables via the lower inlets.



## 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!**

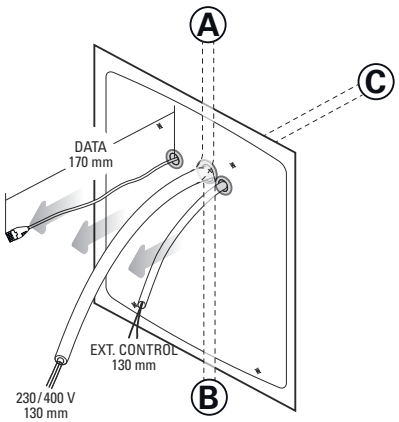
Dangerous electrical currents

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** Prepare the drilling template for the cables, if necessary.
→ If directly inserting the power line from behind, cut the grommet marked Ⓒ on the drilling template.
→ If inserting the data and control cables, cut the grommets marked DATA and EXT. CONTROL on the drilling template.



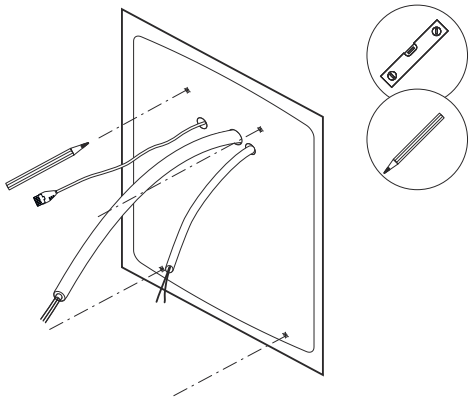
**NOTE**

**Recommended cable lengths for wiring in the wallbox**

ABL recommends the following cable lengths to ensure problem-free connection in the wallbox:

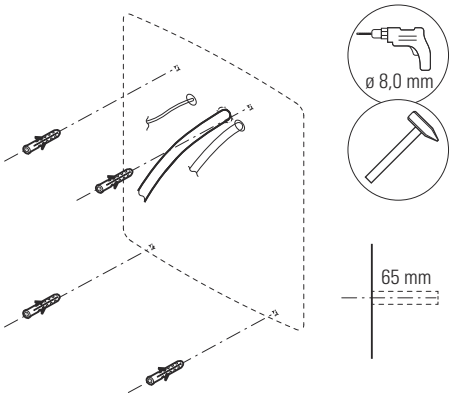
- Power line: at least 130 mm
- Data cable: at least 170 mm
- Control cable: at least 130 mm

**2** Using the spirit level, align the drilling template level and plumb on the mounting surface.



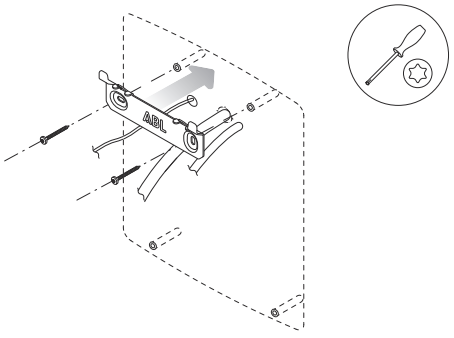
**3** With the pencil, mark the fixing points in the mounting position.

**4** Pre-drill the marked fixing points with the electric drill and drill bit (∅ 8 mm).



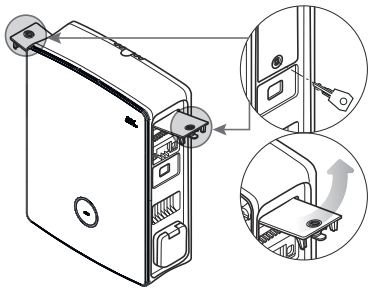

**5** Drive the wall plugs into the fixing points with the hammer.

**6** Screw the mounting rail into the two upper mounting points using the two TX30 plug screws and the Torx screwdriver.

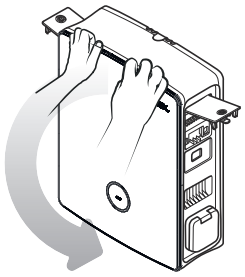


## Preparing and fixing the wallbox in place

Continue to prepare the wallbox:



1 Unlock both the side RCCB flaps using the key supplied and flip them up to unlock the housing cover.



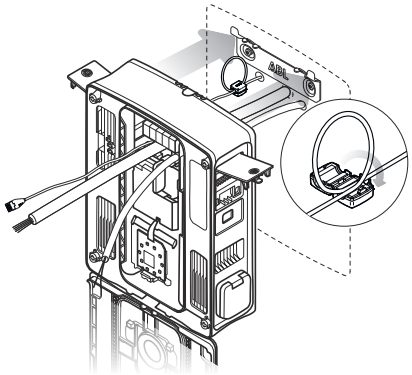
2 Grasp the upper edge of the housing cover with your fingertips and open the housing cover to the front.

**NOTE**

Removing the housing cover

To make installation easier, you can remove the housing cover mechanically from the wallbox. This procedure is described in the section "Replacing the housing cover" on page 56.

3 Feed the power line and, if necessary, the data cable into the wallbox through the corresponding grommets in the supply cable area.

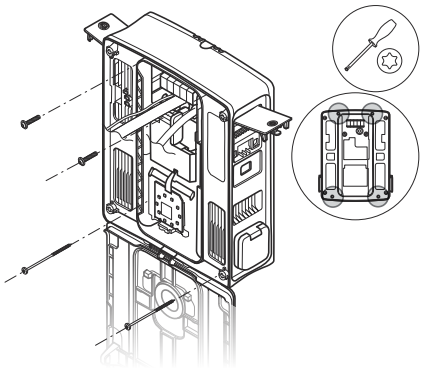


4 If you want to integrate the wallbox into a LAN network via a data cable, form a cable loop and enclose it with the folding ferrite before inserting it into the wallbox through the corresponding grommet in the supply cable area.

5 Lay the loop of the data cable on the rear of the wallbox and hang the wallbox in the two tongues of the mounting rail using the suspension points on the back.

**6** Fix the wallbox in place with the remaining screws supplied.

- Screw the two TX30 half-round head screws through the upper attachment points in the mounting rail.
- Screw the two TX30 wafer head screws into the wall via the lower attachment points.



## Electrical connection of the wallbox

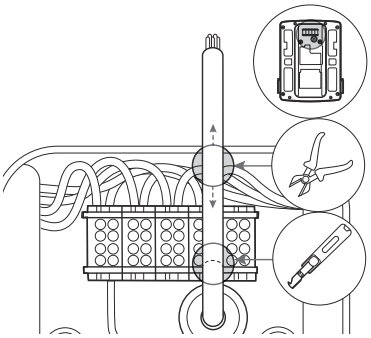
**DANGER!**

Dangerous electrical currents

- Electrical connection must be carried out by a qualified specialist electrical contractor!
- Ensure also that the power supply cable remains disconnected from the electricity grid.
- Deactivate the RCCBs in the wallbox and, if present, in the domestic power distribution.

Proceed as follows to connect the power line inside the wallbox:

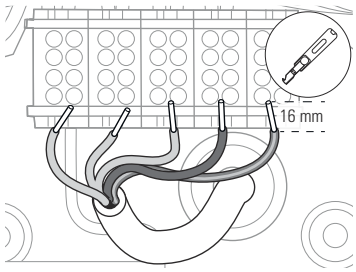
**1** Shorten the power line to the required length for the terminal block using side cutters.



**2** Remove the sheath from the power line with the stripping tool.

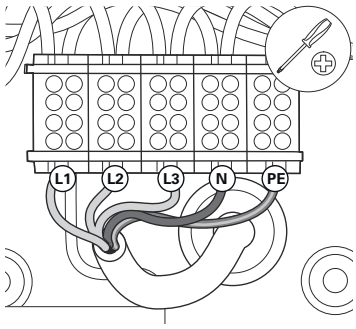
**3** Remove the insulation of the individual conductors to a length of 16 mm.

- End ferrules must be fitted on flexible conductors.




**4** Insert the individual conductors into the terminals and tighten them using the Phillips screwdriver (torque: 2.1 Nm).

- Use the connection diagram on the communication module as a guide to allocate the individual conductors.
- In a charging group, you will need to modify the connection diagram to avoid a phase imbalance (see next section).



**WARNING!**

Checking the connection

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

**DANGER!**

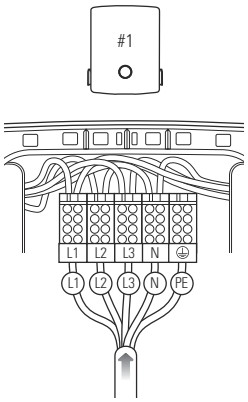
Dangerous electrical currents

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!

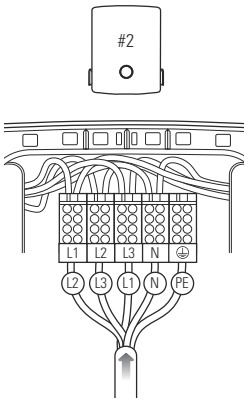
## Phase rotation within a charging group

To avoid a phase imbalance in a charging group, the phase rotation must be adjusted according to the following diagram during the electrical installation of the Wallbox eM4 Twin:

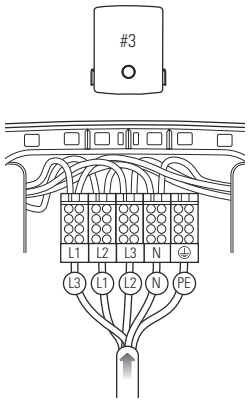
Wiring diagram Wallbox 1, 4, 7 etc.




Wiring diagram Wallbox 2, 5, 8 etc.




Wiring diagram Wallbox 3, 6, 9 etc.




| Wallbox | eM4 Twin – 1 | | | | | eM4 Twin – 2 | | | | | eM4 Twin – 3 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Terminal block | L1 | L2 | L3 | N | PE | L1 | L2 | L3 | N | PE | L1 | L2 | L3 | N | PE |
| Supply | L1 | L2 | L3 | N | PE | L2 | L3 | L1 | N | PE | L3 | L1 | L2 | N | PE |
| **Wallbox** | **eM4 Twin – 4** | | | | | **eM4 Twin – 5** | | | | | **eM4 Twin – 6** | | | | |
| Terminal block | L1 | L2 | L3 | N | PE | L1 | L2 | L3 | N | PE | L1 | L2 | L3 | N | PE |
| Supply | L1 | L2 | L3 | N | PE | L2 | L3 | L1 | N | PE | L3 | L1 | L2 | N | PE |
| **Wallbox** | **eM4 Twin – 7** | | | | | **eM4 Twin – 8** | | | | | **eM4 Twin – 9** | | | | |
| Terminal block | L1 | L2 | L3 | N | PE | L1 | L2 | L3 | N | PE | L1 | L2 | L3 | N | PE |
| Supply | L1 | L2 | L3 | N | PE | L2 | L3 | L1 | N | PE | L3 | L1 | L2 | N | PE |

...

**NOTE**

Phase rotation in a single-phase mains system

The connection diagram shown above applies to 3-phase mains systems. If you are using a single-phase mains system, the L1 supply cable must always be connected in each wallbox!

## Conversion from 3- to 1-phase operation of the Wallbox eM4 Twin

The Wallbox eM4 Twin is prepared for three-phase charging ex works. If required, however, it can also be converted to single-phase operation.

The following working steps are also available as a video: Click here to watch the video.

**DANGER!**

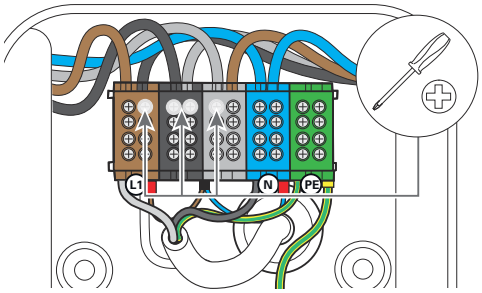
Dangerous electrical currents

- 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 RCCBs in the wallbox and, if present, in the domestic power distribution.

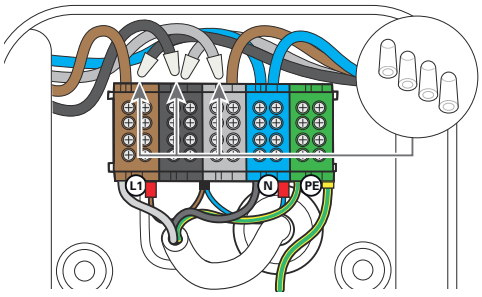
Proceed as follows to convert the Wallbox eM4 Twin to single-phase operation:

**1** Use a Phillips screwdriver to loosen the following cables which are screwed from the top into the top row of the terminal block.

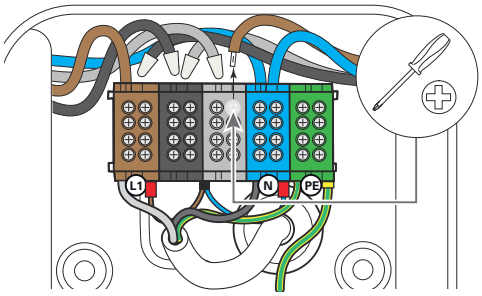
| Terminal block | Cable colour |
|---|---|
| Brown | Black |
| Black | Black & grey |
| Grey | Grey |



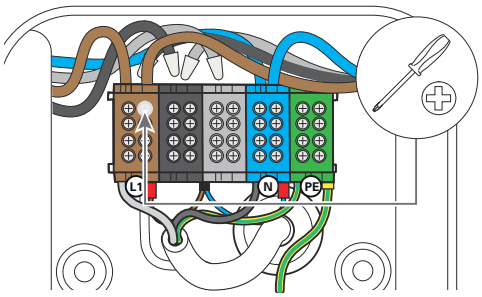

**2** Pull cables out of the terminals and insulate the cable ends with the four insulating caps supplied.




**3** Loosen the brown cable from the top row of the grey terminal block and pull it out of the terminal block.



4 Screw the brown cable into the top row of the brown terminal block: There should now be two brown cables connected here, one going to the left and one to the right power module.




The charge points of the Wallbox eM4 Twin are now electrically set up for single-phase operation.

In addition to the electrical conversion, however, you must also set up the wallbox for 1-phase operation via the ABL Configuration App. To do this, please refer to the sections starting on page 42.

To switch the wallbox back to three-phase operation at a later time, complete the steps detailed above in reverse order. The terminal block assignment for three-phase operation is as follows:

| Terminal block | Cable colour | | Power module |
|---|---|---|---|
| Brown | Brown | → | Left-hand charge point |
| | Black | → | Right-hand charge point |
| Black | Black | → | Left-hand charge point |
| | Grey | → | Right-hand charge point |
| Grey | Grey | → | Left-hand charge point |
| | Brown | → | Right-hand charge point |

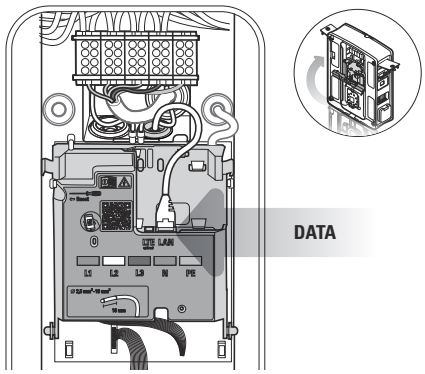
## Data cable connections

In group installations, a Controller wallbox can control additional Extender charge points. The Controller wallbox then centrally configures and controls all communication within the group, connection to a backend, charge current distribution, and many other functions.

For wiring up, the internal LAN interfaces of the Controller and Extender variants must be connected in a star configuration using data cables (see "Data cable recommendations" on page 65).

Please follow these steps to set up the data cabling for the Wallbox eM4 Twin:

1 Connect the RJ45 plug of the data cable to the LAN interface on the upper edge of the communication module.



**NOTE**

Continuation of the wiring diagram

Connect all wallboxes in the charging group via their LAN interfaces. To bring together all wallboxes, they must be connected centrally to a router or switch in the local network infrastructure.

- Attach the supplied folding ferrite to a cable loop of the data cable. It is recommended that you lay the cable loop outside the housing and lay it on the rear of the wallbox during installation.
- If the wallbox is already installed, you can also connect the cable loop with the folding ferrite inside the wallbox.

## Connecting a control cable in accordance with VDE AR-N 4100

According to the Application Rule VDE AR-N 4100, a wallbox must provide the possibility of remote disconnection by the local energy supplier. The Wallbox eM4 Twin offers a spring terminal for this purpose, which is located in the right-hand area of the main module behind the communication module (see also "External load shedding in accordance with VDE AR-N 4100" on page 19).

The following requirements apply to the control cable:

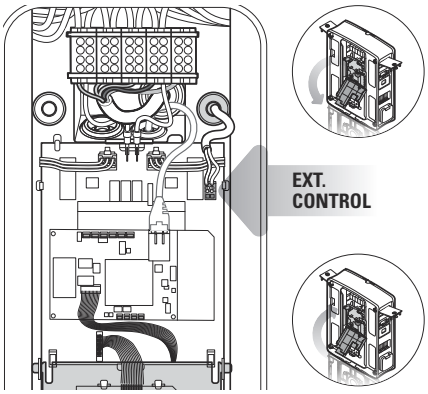
- Solid conductor, 0.5 to 1.5 mm², stripping length: 9 mm
- Fine-stranded conductor, 0.5 to 1.5 mm² / 0.5 to 1.0 mm² with ferrules, stripping length: 9 mm

Proceed as follows to connect the control cable to the Wallbox eM4 Twin:

1 Open the communication module to the front.

2 Connect the control cable inserted via the EXT. CONTROL grommet to the terminal EN1.

3 Fold the communication module back up so that it clicks into place.




After establishing the electrical connection of the control cable, the remote disconnection function must be activated via the ABL Configuration App. To do this, please refer to the sections starting on page 42.

## Preparing and installing the LTE USB stick

The Controller variants of the Wallbox eM4 Twin are supplied with an LTE USB stick for wireless communication with a backend. The SIM card is provided by the backend provider and must first be inserted in the LTE USB stick. Then plug the LTE USB stick into the USB interface of the Controller and set up the communication via the ABL Configuration App (see page 43 onwards).

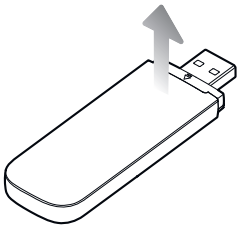
**NOTE**

Pre-configuration of the reev ready variants

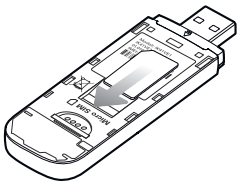
In the reev ready variants, the LTE USB stick including the SIM card is plugged into the Controller wallbox ex works and is pre-configured for communication with the reev dashboard.

Proceed as follows to prepare for communication with the backend via LTE:

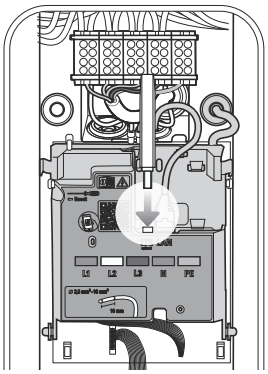
1 Open the LTE USB stick supplied by removing the cover.



2 Insert the SIM card of the backend provider in the LTE USB stick and close the cover.



3 Insert the LTE USB stick into the USB socket of the communication module in the Wallbox eM4 Twin.



**NOTE**

SIM card format compatibility

The LTE USB stick supplied is designed for the micro SIM card format (12 × 15 mm). If the backend operator supplies a different card format (mini or nano), you will need a SIM card adapter.

## Wallbox eM4 Twin start-up

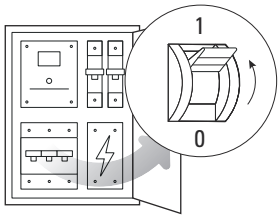
To commission the wallbox, the power supply cable must be connected to the electricity grid.

**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 for the wallbox in the domestic power distribution box.




- During the boot phase, the LEDs of the status indicator will light up green, red, white and blue.

- The status indicator will then pulsate dynamically in white: This means the wallbox is waiting to be configured by a qualified specialist electrical contractor (see "Configuring the Wallbox eM4 Twin" from page 38).

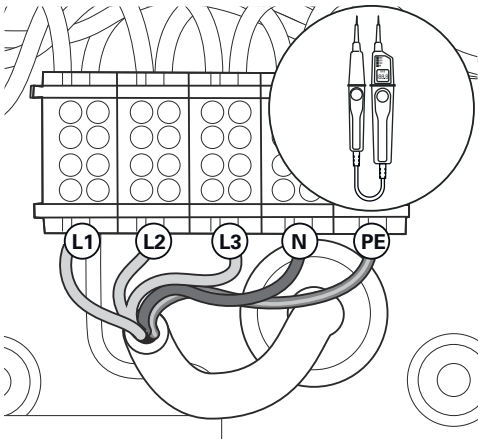
**WARNING!**

Checking the RCCB and MCB

If the status indicator does not give any visual feedback, check the upstream RCCB and MCB in the domestic power distribution as well as the RCCB of the Wallbox eM4 Twin protected by the RCCB flaps (see "Interior and side view" on page 11).

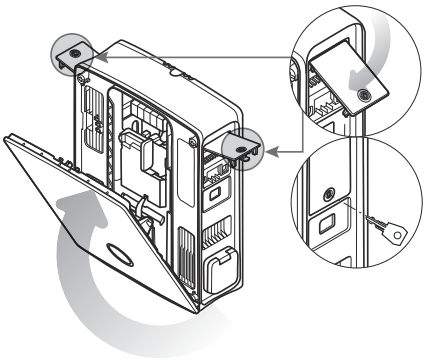
**2** Measure the voltage at the terminals of the terminal block using the voltage tester.

- 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** Fold the housing cover upwards so that it locks into the housing.

**4** Fold down the two side RCCB flaps and lock them with the key.



The mechanical and electrical installation of the Wallbox eM4 Twin is now complete and the wallbox can be set up via the ABL Configuration App (see next chapter starting on page 38).

**NOTE**

Removing the protective films

The housing cover and the windows of the two energy meters of the Wallbox eM4 Twin are covered with films to protect them during transport. To allow better readability of the HMI and the meter displays and to avoid microplastic, it is recommended that you remove the protective films from the housing once the installation is complete and dispose of them properly.

**WARNING!**

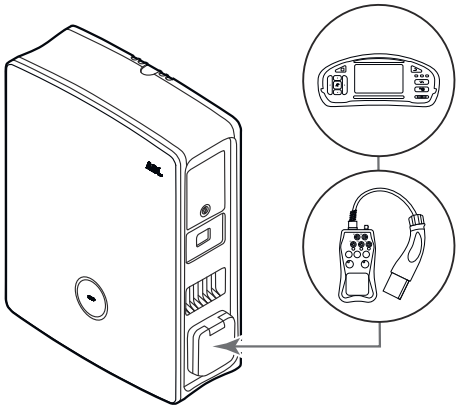
Carrying out all necessary tests for start-up

After setting up via the ABL Configuration App, you must carry out all the tests prescribed for the installation site on the wallbox and the electrical installation to complete the start-up. These include the following tests:

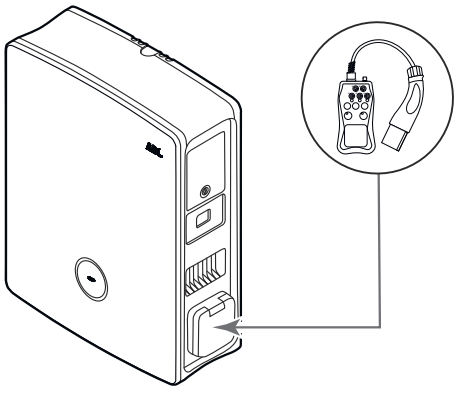
- Effectiveness of protective earth conductor connections
- Insulation resistance
- Loop impedance
- Voltage drop
- RCCB tripping current and tripping time
- Rotating field testing

as well as additional tests according to local regulations.

→ Use an installation tester and a vehicle simulation adapter to conduct the prescribed tests.



→ Use a vehicle simulation adapter to conduct a functional test of the charging function.



# Configuring the Wallbox eM4 Twin

The Controller and Extender variants of the Wallbox eM4 Twin are prepared for use as a single wallbox (stand-alone) or for operation in a group installation. The desired operating mode is selected in the **ABL Configuration App**, which also performs the following tasks:

- Generally simple and quick configuration
- Setting up the network topologies
- Grouping Controllers/Extenders to create a charging group
- Setting technical parameters (such as maximum charging current, phase imbalance, etc.)
- Settings for the backend connection
- RFID management
- Monitoring of charging processes, operating statuses, faults, etc.
- Starting and stopping charging
- Permanent locking/unlocking of the charging cable
- Updating the software of the charging station, etc.

## Availability of the ABL Configuration App

The **ABL Configuration App** is offered as an app for mobile devices such as smartphones and tablets. You can download the app for the following operating systems on a mobile device:

| Platform | Operating system | Link |
|---|---|---|
| Apple | iOS 15 or higher / iPadOS 15 or higher | Apple App Store |
| Android | Android 10 or higher | Google Play Store |

Alternatively, you can find more information under the following link:

www.ablmobility.de/en > Partner > Electrical contractors

**NOTE**

Storage requirements for installation

To install the **ABL Configuration App**, free memory space of at least 200 MB is required on the mobile device.

## Setting up communication via the ABL Configuration App

To configure the Controller and Extender variants of the Wallbox eM4 Twin in the **ABL Configuration App**, you must first set up wireless communication between your mobile device and the WLAN network of your wallbox: This process is described below.

Once the wireless connection is set up, you can assign a specific password that allows you to access and change the current configuration at a later date: This process is called **reboarding** and is described starting on page 44.

**NOTE**

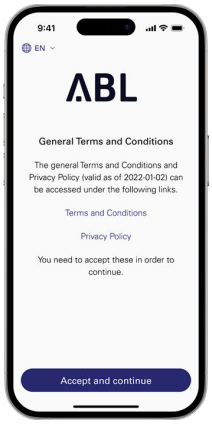
Displaying the setup in the app

The steps in the **ABL Configuration App** are illustrated based on an Apple iPhone screen: However, the basic operation in iPadOS and Android is identical.

Proceed as follows to connect the **ABL Configuration App** to a Wallbox eM4 Twin:

1 Open the **ABL Configuration App** on your mobile device.

2 After displaying the home screen, a screen on ABL's Terms and Conditions and Privacy Policy will appear.
→ Tap **Accept and continue** to continue with the configuration.




**NOTE**

**Accepting the Terms and Conditions and Privacy Policy**

When opening the **ABL Configuration App** for the first time, after reinstalling the app or when ABL makes changes to the stored documents, you must agree to the ABL Terms and Conditions and Privacy Policy on this screen.

- You will not be able to use the **ABL Configuration App** without actively consenting to these.
- If required, you can access, save and print the **Terms and Conditions** and **Privacy Policy** in text form (PDF) via the respective links.

**NOTE**

**Selecting the user language**

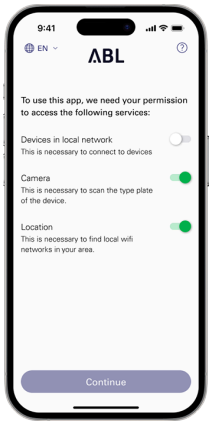
You can switch the user language of the app between **DE** and **EN** at the top left of the screen for confirming the Terms and Conditions and Privacy Policy.

- If your mobile device is set to a language other than **DE** or **EN**, the interface will be set automatically to **EN**.

3 A dialogue box will then appear in which you will need to grant various permissions:

- **Devices in local network:** Grant this permission to be able to establish a wireless connection between your mobile device and the wallbox.
- **Camera:** Grant this permission to scan the barcode on the rating plate on the underside of the wallbox housing with the camera.
- **Location:** Grant this permission to find and connect to WLAN networks in your area.

→ Finally, tap **Continue**.



## NOTE

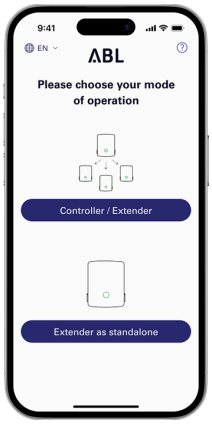
### Location sharing on Apple devices

On iOS 13 / iPadOS 13 and later versions, data for wireless communication can only be accessed if you allow the **ABL Configuration App** to use Location Services on the mobile device. This is a technical policy from Apple, but the location data will not be used by ABL in the app or shared with third parties.

**4** In the next step, select the desired operating mode for your system.

→ Tap **Controller / Extender** to set up a Controller and associated Extender wallboxes to operate together in a charging group and more. You can find further information on page 43.

→ Tap **Extender as standalone** to set up an Extender wallbox for standalone operation without a Controller and backend connection. You can find further information on page 42.




## NOTE

### Access to the app's help system

You can access the app's help system via the ⓘ button, which is displayed in the top right-hand corner of the screen for selecting the operating mode.

Controller wallbox:

- If you tap **Reset to factory settings**, all of the wallbox's parameters are reset to the factory default. You can then start the setup again.
- If you tap **Support**, you will be redirected to the support website (→ "Support via the ABL Support page" on page 48).

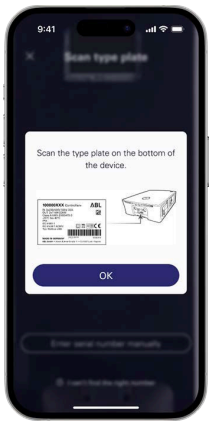
Extender wallbox:

- If you tap the ⓘ button, you will be redirected to the support website (→ "Support via the ABL Support page" on page 48).

**5** You can now establish a local wireless connection between the mobile device and the wallbox.

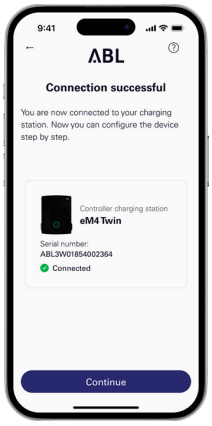
→ Tap **OK** to use the camera to scan the serial number, which is located on the rating plate on the underside of the wallbox housing.

→ Alternatively, you can enter the serial number manually on the following screen.



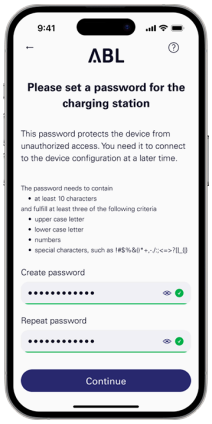
6 After the connection has been successfully established, the wallbox is displayed along with its serial number and the status **Connected**.

→ Tap **Continue** to protect your wallbox from unauthorised access using a custom password.




7 Enter your password in the **Create password** field, taking into account the specified requirements, and confirm it by entering it again in the **Repeat password** field.

→ Tap **Continue** to continue configuring the wallbox.




After setting up the access password, you can now start configuring the operating mode you selected in **step 4**.

## NOTE

### Access to wallbox configuration

You can use the password you have created to access the current configuration of the wallbox at any time in order to change it: This process is called reboarding and is described in the section "Control Board settings and reboarding" from page 44.

- Please note that the password you have created is not stored in your mobile device's Keychain, but is output as a QR code (login credentials) during setup.
- You can also write down the password if necessary and keep it in a safe place for reboarding.

## Onboarding – Configuration of an Extender wallbox for stand-alone operation

An Extender Wallbox eM4 Twin can be configured to operate as a stand-alone charging station. The **Extender as standalone** operating mode is recommended for:

- Private households
- Individual parking spaces for companies and/or customers
- Applications with a limited user group for which itemised billing is not required

**WARNING!**

**Configuration of the wallbox by a qualified specialist electrical contractor**

Before you can start configuring the wallbox, the **ABL Configuration App** displays a safety warning: The internal parameters of the wallbox may only be changed by qualified specialist electrical contractors.

- To continue, you must confirm that are professionally trained and have knowledge of the relevant regulations of a specialist electrical contractor by tapping the radio button.

Configuring the **Extender as standalone** operating mode within the **ABL Configuration App** is basically self-explanatory or prescribed via the internal structure of the app. Therefore, simply follow the instructions in the app to adjust the parameters of the Extender wallbox:

| Parameter | Description |
|---|---|
| Network settings | This is where you can connect the wallbox to an infrastructure network (WLAN or LAN), which you then use to access the wallbox with the app. When operating without a connection to the infrastructure network, communication is possible in the vicinity of the wallbox via its internal WLAN interface. |
| Max. load per charging point | Enter the maximum charging current that can be delivered by the charging station here. |
| Phase-shift detection | You can switch the wallbox's phase imbalance detection on or off here. If it is active, you must preset the maximum possible current difference between the individual phases (16 A or 20 A). |
| Load shedding | Activate the function that allows external systems (e.g. under TAB 4100) to temporarily limit or switch off the charging infrastructure. For this function, a control cable must be connected to terminal **EN1** of the wallbox (see "Connecting a control cable in accordance with VDE AR-N 4100" on page 34). |
| Access control | Specify whether charging processes need to be authorised via RFID or whether the wallbox can be used for free charging. If you activate access authorisation via RFID, you must also configure optionally available RFID media (app, key fobs, cards) on the wallbox. |
| QR-Code / Login credentials | To complete the configuration, you can output the access data (WLAN SSID / password) here as a QR code or write it down to make this information available to the owner and/or operator of the wallbox. |

To complete the configuration, tap the **Continue** button: The wallbox is now configured and offers the option to adjust the parameters just set as well as other operating parameters via the **Continue to Control Board** button.

## Onboarding – Configuring the Controller / Extender operating mode

A Wallbox eM4 Twin Controller can be set up to control additional Extender wallboxes up to a total of 30 charge points and is then responsible for the static or dynamic load management within the charging group, releasing and blocking charging stations and much more.

The **Controller / Extender** operating mode is recommended for:

- Medium to large charging parks in companies, in semi-public and public spaces, and in the housing industry
- Charging groups in private and semi-public use for which central billing is required

If you selected the **Controller / Extender** option when selecting the operating mode (see **step 4** in the section "Setting up communication via the ABL Configuration App"), you must set up the parameters below for all charge points within the group after entering the password to protect the wallbox.

| Parameter | Description |
|---|---|
| Network settings (Upstream) | This is where you can firstly specify whether you want to connect to a backend and then whether you wish to establish this connection via WLAN, LAN or LTE. |
| Network settings (Downstream) | Specify here whether you wish the Controller to be connected to further Extenders and whether you want this connection to be established via WLAN or LAN. |
| Grouping | You can add more Extender wallboxes to the Controller here and name them as needed to create a charging group. |
| Static load management | Register additional Extender charging stations with the Controller and set the maximum charging current per wallbox: here, the maximum available static charging power is distributed evenly to all charge points in the charging group. |
| Dynamic load management | Set up the dynamic adjustment of the charging currents here, taking into account the building load. For this function, you will need the ABL Energy Meter, which is available as an accessory. |
| Load shedding | Activate the function that allows external systems (e.g. under TAB 4100) to temporarily limit or switch off the charging infrastructure. For this function, a control cable must be connected to terminal **EN1** of the wallbox (see "Connecting a control cable in accordance with VDE AR-N 4100" on page 34). |
| Backend settings | You can select a template here, provided your backend provider is stored in the app's database. Alternatively, enter the access and communication data for your provider manually. |
| QR-Code / Login credentials | To complete the configuration, you can output the access data (WLAN SSID / password) here as a QR code or write it down to make this information available to the owner and/or operator of the wallbox. |
| Software update | Install a new software version for the **ABL Configuration App** here as soon as there is one available. |

To complete the configuration, tap the **Continue** button: The wallbox is now configured and offers the option to adjust the parameters just set as well as other operating parameters via the **Continue to Control Board** button.

You can also change individual parameters at a later date by editing the current configuration (see next section). If you want to set up the entire charging group from scratch, you will need to perform a factory reset of the Controller wallbox: This function is available via the Support button in the **ABL Configuration App** and resets the Controller and all connected Extenders to their factory defaults.

## Control Board settings and reboarding

To complete the configuration of the selected operating mode, you can switch to the Control Board of the ABL Configuration App on the last screen. Here you can check all the settings you have made so far and change them if necessary, as well as set up further parameters for operation.

Using the reboarding process, you can also open the Control Board at a later date to adjust all settings of the wallbox(es).

- If you use the same device as during the initial setup, you can open the Control Board without entering your login credentials.
- If you are using a new device or have reinstalled the app, you must re-enter your login credentials to open the Control Board. Alternatively, you can scan the QR code generated at the end of each onboarding process to log in.

The following parameters can be adjusted in the Control Board, regardless of the selected operating mode.

| Parameter | Description |
|---|---|
| Start/stop charging | Start or stop the charging process for a charge point, provided a vehicle is connected. |
| Lock charging cable | Permanently lock the connected charging cable in the charging socket of the wallbox and unlock it again at a later date. |
| Monitoring | Allows you to access various information such as charging current, charging status, readiness for operation, etc., as well as faults. |
| Software update | Allows you to install new software on the wallbox as soon as it is available. |
| Network settings | Adjust the network settings for communication via WLAN and/or LAN or set them to offline. |
| RFID management | Remove RFID media that have already been configured and add new media for authorisation. |
| Diagnosis | View information on faults and malfunctions during operation. |
| Change language | Switch the user language of the app between DE and EN after the initial setup. |
| Send configuration report | Allows you to generate a report of all current settings (charging currents, RFID UIDs, phase imbalance, etc.) and then send it by email. |

Only in Controller / Extender mode:

| | |
|---|---|
| Add additional extenders | Register additional Extender charging stations with the Controller. Please note, however, that the maximum limit of 30 charge points that can be managed via a single Controller still applies. |

# Description of the charging process

After setting up via the **ABL Configuration App**, the setup is complete and the Wallbox eM4 Twin is ready for charging. We recommend carrying out an initial charging process with a vehicle during start-up to ensure the functionality of the wallbox.

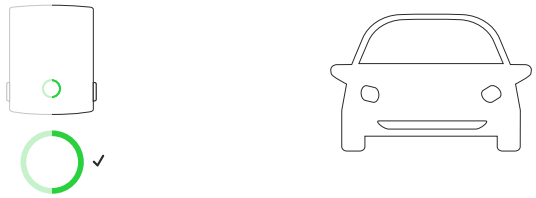
The charging procedure is described below using the right-hand charge point as an example. For the left-hand charge point, the steps are identical, but the status indicator is mirrored.

Proceed as follows:

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

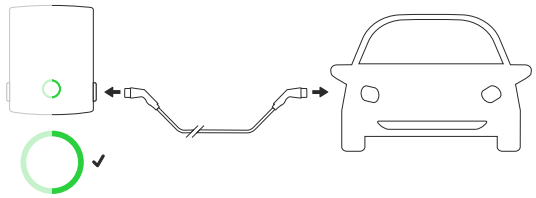
**2** Check the status indicator of the charge point.
Display: 1 cycle)

- When the charge point is ready for charging, the status indicator pulsates green.



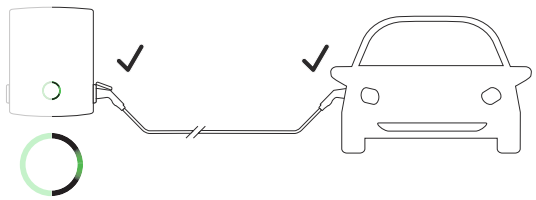
**3** Prepare the charging cable of the wallbox and the vehicle's charging inlet.

- Open the charging inlet at the vehicle and plug in the charging connector.
- Open the charging socket lid on the wallbox and plug in the charging connector.



**4** Check the status indicator of the charge point.

- When the vehicle is connected and recognised, the status indicator lights up static green.



**NOTE**

**Authorisation of the charging process with the Wallbox eM4 Twin**

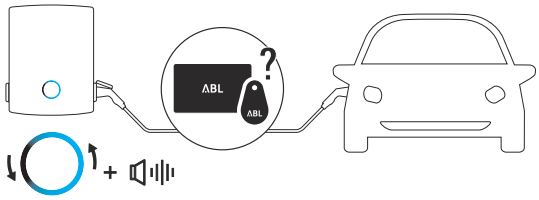
Depending on the model version, the Wallbox eM4 Twin can be configured differently during installation.

- **Controller:** A Controller can be operated as a stand-alone wallbox or with a backend.
- **Controller with Extender:** A Controller can be operated with one or more Extender wallboxes as a group in a backend or without a backend.
- **Stand-alone Extender:** An Extender configured for stand-alone operation is operated without a backend.

If it is necessary to authorise the charging operation via an RFID card, carry out the following steps **5** to **7**. If authorisation is not required, go to step **8**.

**5** Check the status indicator of the wallbox (Display: 1 cycle).

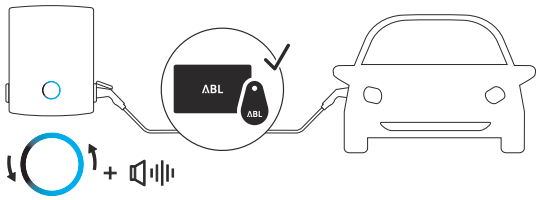
- If the charging operation has to be enabled using an RFID card, a blue chase light is shown dynamically on the status indicator.
  - » Anti-clockwise: right charge point
  - » Clockwise: left charge point



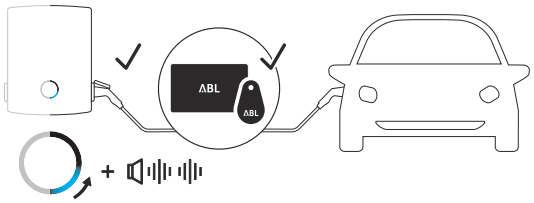

**6** Hold a valid RFID card in front of the status indicator.


**7** Pay attention to the wallbox's acoustic signals.

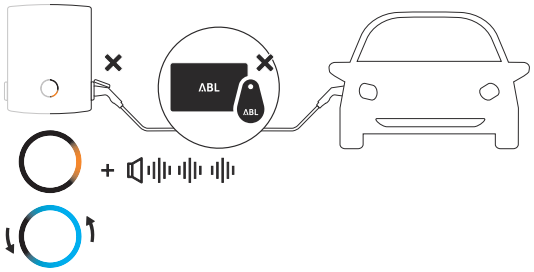
- If the RFID card has been read successfully, the wallbox emits a short sound signal and the wallbox checks the authorisation of the RFID card.




- After successful authorisation, the wallbox emits two further short sound signals and activates the charging operation.




- If the authorisation is not successful, the status indicator for the charge point lights up orange for a short period and the wallbox emits three long sound signals.
- The blue chase light is then displayed again: Hold a valid RFID card in front of the status indicator.




**NOTE**

The authorisation of the RFID card is not successful

If the RFID card could not be verified, do one of the following:

- **Operating the wallbox with a backend:** Please contact the issuer of the RFID card.
- **Operating the wallbox without backend:** Make sure that the RFID card has been registered to the relevant wallbox. You can find further information on this topic in section "Configuring the Wallbox eM4 Twin" from page 38.

**WARNING!**

RFID card not readable

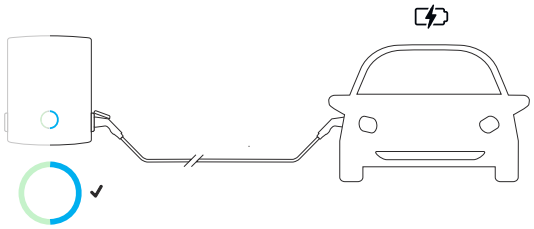
If the antenna of your RFID card is blocked or damaged, the card cannot be recognised.

- Remove the RFID card from its protective cover or card holder to register at the RFID reader.
- Do not make any modifications to the RFID card: The card must never be perforated, stamped, folded, have stickers attached, or otherwise be manipulated mechanically.
- Make sure that the RFID card corresponds to a standard that is supported by the wallbox. For more information, see the "RFID Standard" lines in the section "Technical specifications" from page 62.

**8** Check the status indicator of the charge point.
(Right-hand charge point display: 1 cycle)

- After a request by the vehicle, the charging operation in process is displayed dynamically via the blue status indicator for the charge point.

- When the charging operation is complete, it is automatically terminated by the vehicle, and the status indicator for the charge point lights up solid blue.



**NOTE**

No charging request or interruption of the charging operation

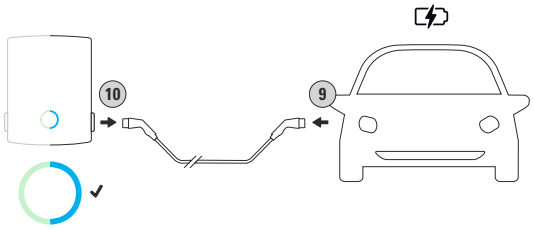
The status indicator for the charge point also lights up solid blue under the following circumstances:

- The charging operation has not yet been started or has been paused by the vehicle.
- The charging operation has not yet been started or has been paused by the internal load management.

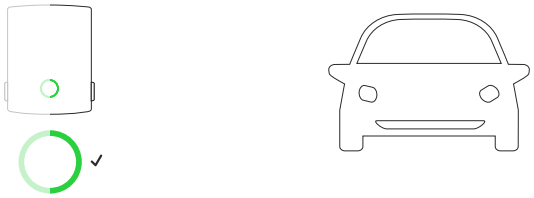
**9** Unplug the charging connector from the electric vehicle's charging inlet and close it.

**10** Unplug the charging connector from the charging socket and store the charging cable.

- The charge point lid closes automatically.




**11** The wallbox is ready for operation and awaits the next charging procedure.
(Right-hand charge point display: 1 cycle)



# Error resolution and maintenance

Under certain circumstances, malfunctions may occur during operation of the Wallbox eM4 Twin that prevent or restrict charging. In addition, components may be damaged and must then be repaired or replaced if necessary.

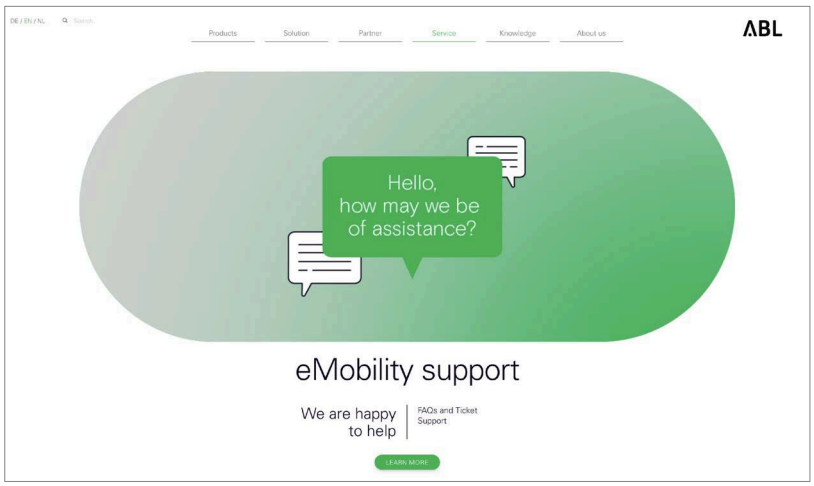
## Support via the ABL Support page

If any problems occur, you can get help quickly and easily via the Support area on the ABL website.

Visit the following web address: **https://www.ablmobility.de/en/service/support/**

or

Scan this QR code




Scroll further down the web page to access the different help sections:

| | |
|---|---|
| Quick support | In this section, you will find answers to key questions and topics such as KfW funding programmes, power adjustment of a wallbox, etc. |
| Ticket system | You can create a ticket here that will be processed by ABL Support as quickly as possible. Generating a ticket is self-explanatory.<br>Generate a ticket if you...<br>■ ...have specific questions or your product is defective.<br>■ ...want to order spare parts for the Wallbox eM4 Twin. The replacement of selected spare parts is described from page 52.<br>■ ... have questions about start-up.<br>■ ... want to initiate a return. |
| FAQs | This is where we answer frequently asked questions that our Service team receive from the **Home**, **Work** and **Public** sectors. |

**NOTE**

Ordering spare parts

To order spare parts, you will need to create a corresponding support ticket in the Service > Support > Spare parts section of the ABL website. In addition to your address data, enter the product number of the spare part and the desired quantity. If you do not know the product number, you can include a product description of the spare part and, if necessary, send a file with additional information (e.g. a photo). In the even of queries, the service team will contact you.

## Quick solution for general problems

In the event of a problem, you do not need to contact ABL Support immediately, as in most cases there is a simple solution. You should therefore always check the following points first before generating a ticket.

**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 inlet and the charging plug from the wallbox's charging socket. Then plug the charging connector back into the vehicle's charging port first and then the charging plug into the wallbox's charging socket.
  - 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. Remove the charging cable and replace it if necessary.

**Description**

The wallbox's HMI does not work and the energy meters do not display any information.

Cause and suggested solution

- The wallbox is not connected to the electricity grid.
  - Check the upstream circuit breaker in your domestic power distribution and switch it back on if required.
  - Check the supply cable and repair it if necessary.
- The wallbox is defective.
  - Contact ABL Customer Service (see "Contact" on page II).
  - Should the wallbox have to be replaced, please contact the dealer from whom you have purchased your wallbox.

**WARNING!**

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

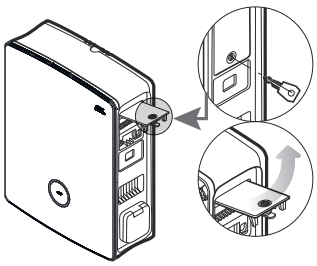
Should the wallbox keep displaying error messages, please take it out of operation (see further below) and contact ABL Customer Service (see "Contact" on page II).

## Testing the RCCB

To ensure the continuing safe operation of the wallbox, you must test the function of both internal RCCBs according to locally applicable regulations (e.g. every 6 months in Germany): each RCCB has a push button with which to initiate the test function.

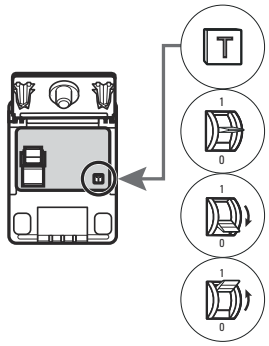
Proceed as follows to test the RCCB:

**1** Unlock the side RCCB flap using the key supplied and flip it up.



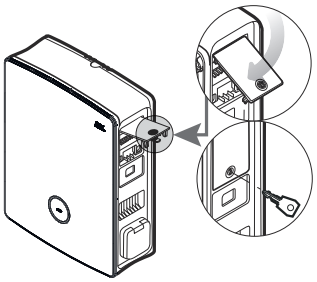
**2** Locate and press the push button engraved **T**.

- The RCCB must now trip and flick its pivot lever into the centre position.




**3** Now flip the toggle switch first to the **0** position and then back to the **I** position.

**4** Close the RCCB flap again and lock it with the key.



**5** Repeat this process for the second RCCB.

**DANGER!**

Dangerous electrical currents

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

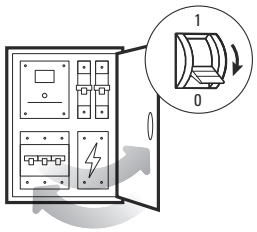
- Take the wallbox out of operation (see next section) and contact **ABL Customer Service** (see "Contact" on page II).

## Taking the Wallbox eM4 Twin out of operation

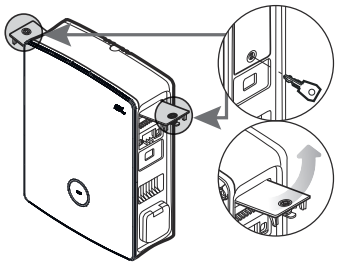
In case of severe malfunctions or damage to the device, you must take the Wallbox eM4 Twin out of operation. To do so, proceed as follows:

**1** Open your domestic power distribution box, disconnect the power supply cable from the electricity grid via the MCB, secure the MCB against being switched on again and close the distribution box.

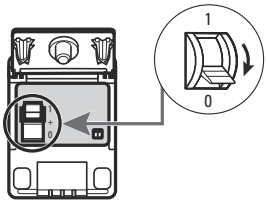
- The Wallbox eM4 Twin is now powered off.



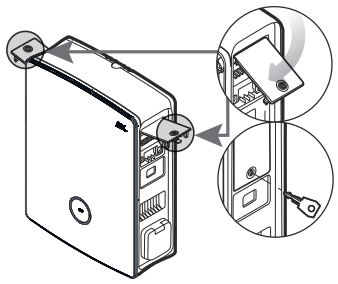

**2** Unlock the side RCCB flaps using the key supplied and flip them up.



**3** In addition, flip the pivot levers of both RCCBs to the **0** position.




**4** Close the RCCB flaps again and lock them with the key.



The Wallbox eM4 Twin can now be dismantled by a qualified specialist electrical contractor if necessary.

**DANGER!**

Dangerous electrical currents

Note that the Wallbox eM4 Twin is only powered off when the upstream MCB in the domestic power distribution is switched off (position **0**). The wallbox's two RCCBs only disconnect the power modules from the mains, but the internal electronic components remain connected to the mains.

**DANGER!**

Dangerous electrical currents

Always make sure the supply cable is voltage-free before you start dismantling the wallbox.

## Replacing the RCCB flap

You can replace the side RCCB flaps in the power modules if they are damaged or otherwise need to be replaced.

| | End customer | Specialist electrical contractor |
|---|---|---|
| Construction | ✓ | ✓ |

Required components:

| | |
|---|---|
| Number / spare part | 100000256 / Spare part eM4 RCCB flap ABL |
| Accessories | Key for RCCB flap, supplied with the wallbox and the spare part |
| Tool | – |

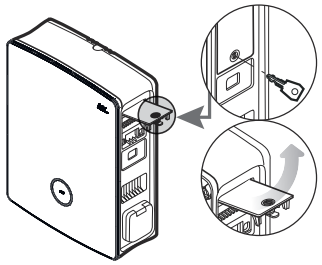
**NOTE**

Ordering spare parts

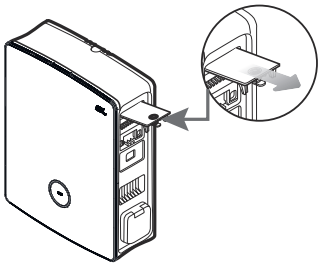
To order spare parts, you will need to create a support ticket in the **Service** > **Support** > **Spare parts** section of the ABL website (see "Support via the ABL Support page" on page 48).

Proceed as follows to replace an RCCB flap on the Wallbox eM4 Twin:

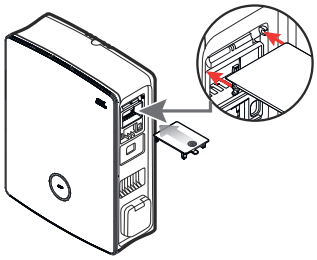
1 Provided that the RCCB flap to be replaced is mechanically intact, unlock it with the key and fold it upwards.



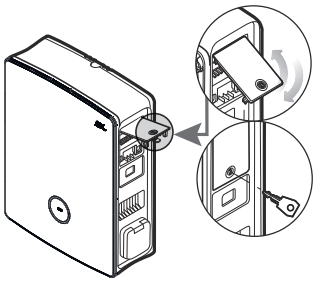
2 Hold the RCCB flap open at an angle of 90° and pull it off using minimal force.
- The RCCB flap will pop out of the hinge mount in the housing.



3 Place the two outer hinge pins of the new RCCB flap on the hinge mounts and press them into the housing using minimal force.
- The hinge pins will snap into the hinge mounts.



4 Check the replaced RCCB flap to ensure that it moves freely and then lock it with the key.



## Replacing the lever lock in an RCCB flap

You can replace the lever lock in one of the side RCCB flaps if the lock is defective or if, for example, you want to set up an individual locking circuit for a charging park or similar.

| | End customer | Specialist electrical contractor |
|---|---|---|
| Construction | ✓ | ✓ |

Required components:

| | |
|---|---|
| Number / spare part | 100000257 / Spare part eM4 lock 1 key |
| Accessories | Key for RCCB flap /lever lock, supplied with the wallbox and the spare part |
| Tool | Torx T 15 screwdriver, slotted screwdriver of suitable size |

**NOTE**

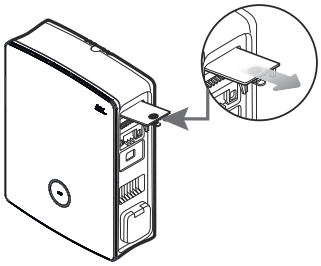
Changing the lock system

ABL offers different types of locks for the Wallbox eM4 Twin, which can be ordered as accessories (see "Accessories" on page 20).

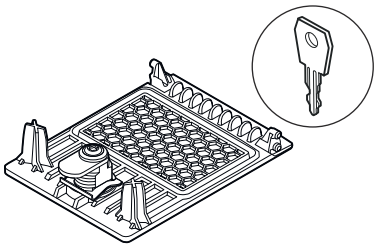
- **Locking circuit A:** In locking circuit A there are 10 packages to choose from, each with 10 individual locks with the same closure. A group key is not offered.
- **Locking circuits B to H:** In locking circuits B to H, 7 packages are offered, each with 10 individual locks with different closures. A group key is supplied for each package.

Proceed as follows to replace the lock in an RCCB flap:

1 Follow steps 1 and 2 in the section "Replacing the RCCB flap" to remove one or both RCCB flaps.

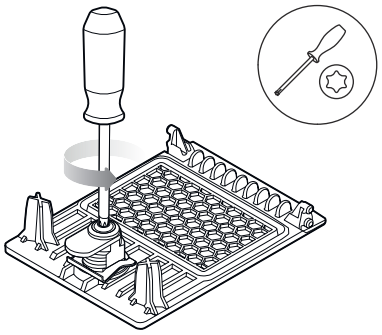


**2** Move the locking cylinder to the locked position (tongue pointing downwards) and remove the key.

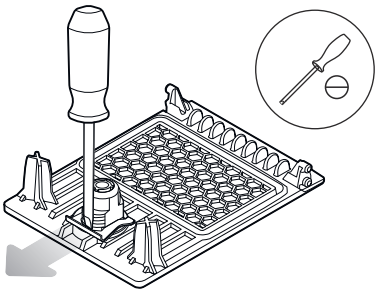


**3** Place the RCCB flap on the front.

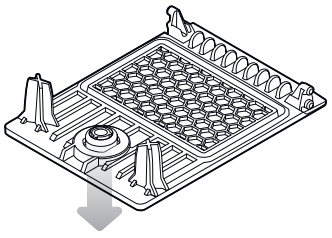
**4** Loosen the screw for the locking cylinder with a Torx T15 screwdriver.



**5** Remove the bracket for the lock with the slotted screwdriver.



**6** Push the lock downwards out of the opening in the RCCB flap.



Now proceed in reverse order to install the replacement lock in the RCCB flap.

## Replacing the charging socket flap

You can replace the flaps of the Type 2 charging sockets if they are damaged or no longer close reliably.

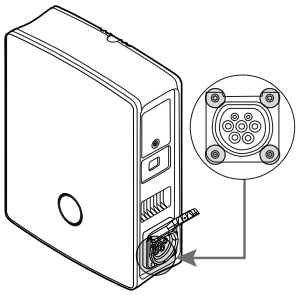
| | End customer | Specialist electrical contractor |
|---|---|---|
| Construction | ✗ | ✓ |

Required components:

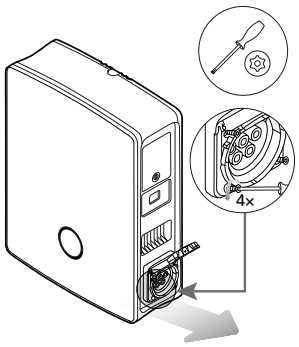
| | |
|---|---|
| Number / spare part | 100000261 / Spare part eM4 charging socket flap |
| Accessories | – |
| Tool | Torx TR 20 screwdriver, Torx 20 with hole |

Proceed as follows to replace the flap of a charging socket:

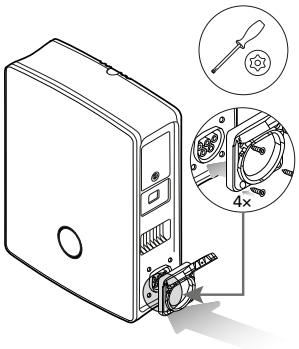
**1** Open the charging socket flap and locate the four TR 20 screws in the frame of the charging socket flap.



**2** Loosen the four screws with a Torx TR 20 screwdriver and pull the charging flap off the wallbox.




**3** Place the new charging flap over the frame of the Type 2 socket on the housing and screw it in place with the four screws supplied and the screwdriver.




This completes the replacement of the charging socket flap. If necessary, repeat the procedure for the wallbox's second charging socket.

## Replacing the housing cover

You can replace the housing cover of the Wallbox eM4 Twin if it is damaged or no longer closes reliably.

**DANGER!**

Removing the housing cover during installation

If necessary, you can also remove the housing cover during installation of the wallbox. Please note, however, that the wallbox must never be connected to the electricity grid when the housing cover is removed.

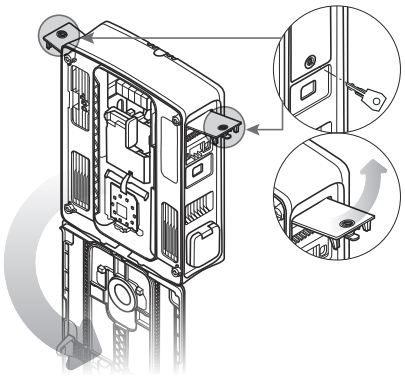
| | End customer | Specialist electrical contractor |
|---|---|---|
| Construction | ✗ | ✓ |

Required components:

| | |
|---|---|
| Number / spare part | 100000259 / Spare part eM4 TW front ABL |
| Accessories | Key for RCCB flap, supplied with the wallbox |
| Tool | – |

Proceed as follows to replace the wallbox housing cover:

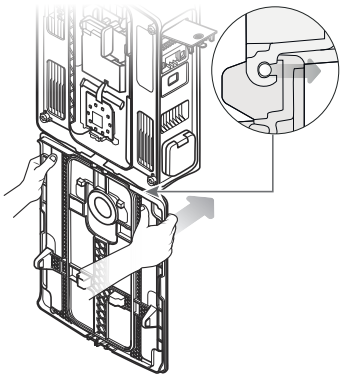
**1** Unlock both the side RCCB flaps using the key supplied and flip them up to unlock the housing cover.



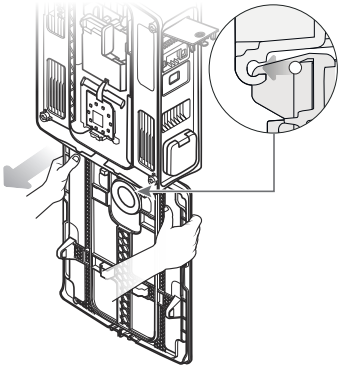
**2** Open the housing cover to the front.

**3** Grasp the housing cover by the two corners in the hinge area and push first one and then the other side backwards with moderate force.

- The axle will pop out of the hinge alignment in the housing and the housing cover can be removed.

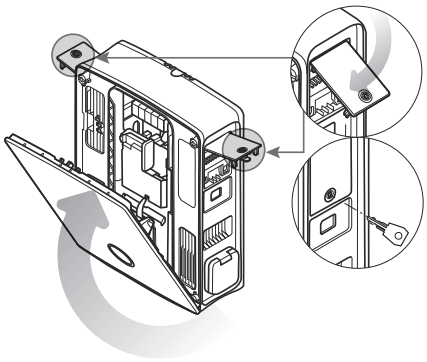


4 Place the axle of the new door on the wallbox's hinge alignment and pull first one and then the other side forward with moderate force.
   - The axle will snap into the wallbox's hinge alignment.



5 Check that the new housing cover moves freely and fold it upwards so that it locks into the housing.

6 Fold down the two side RCCB flaps and lock them with the key.



This completes the replacement of the housing cover.

## Resetting the wallbox and restoring to factory settings

If an error occurs during operation or configuration, you can reset the Wallbox eM4 Twin without changing the current configuration parameters. Alternatively, you can reset the wallbox to its factory settings to set up a completely new configuration or to initialise a configured wallbox for sale.

### Reset via the MCB in the domestic power distribution

For a simple reset, switch off the power to the wallbox for about 30 seconds via the MCB connected upstream in the domestic power distribution. After you have restored the power supply, the wallbox will restart without making any changes to the configuration parameters.

### Resetting the wallbox via the ABL Configuration App

The ABL Configuration App provides access to its integrated help system via the ⓘ button. This button ⓘ is displayed at the top right of the screen for selecting the operating mode. If you tap the button during onboarding or in the Control Board, you can restart a Controller wallbox via the Reset to factory settings option. After restarting, all configuration parameters are reset to the factory default.

**NOTE**

Accessing the help system on an Extender wallbox

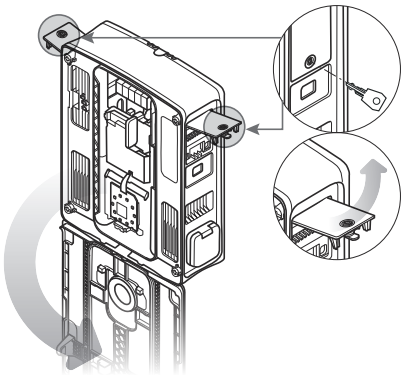
If you tap the ⓘ button while the ABL Configuration App is connected to an Extender wallbox, you will be redirected directly to ABL's support website.

### Resetting or restoring the wallbox via the reset pushbutton

There is a reset pushbutton on the main module of the wallbox which you can use to restart the hardware or reset the wallbox to its factory settings, depending on how long you press the button.

Proceed as follows to trigger the reset pushbutton on the Wallbox eM4 Twin:

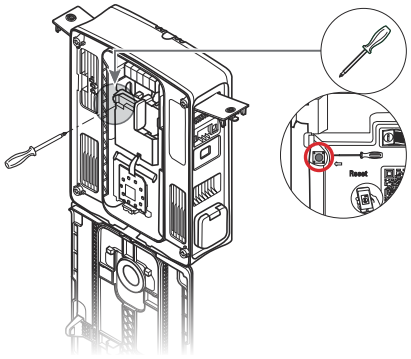
**1** Unlock both the side RCCB flaps using the key supplied and flip them up to unlock the housing cover.



**2** Open the housing cover to the front.

**3** Locate the reset pushbutton, which is set back on the main module of the wallbox.

- The access is marked on the sticker of the communication module with a screwdriver and the word ← Reset.




**4** Insert an insulated screwdriver and press the reset pushbutton for the desired duration.

- < 3 seconds: Reset
- < 10 seconds: Restore to factory settings

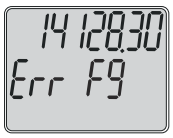
**5** The wallbox restarts after a short moment and changes to the corresponding operating mode after the boot phase:

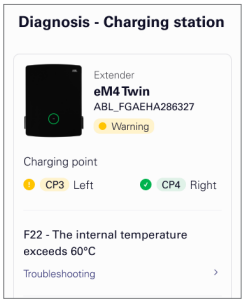
- < 3 seconds: Ready for charging
- < 10 seconds: Ready for reconfiguration

## Measures for handling errors and warnings

Malfunctions may occur during configuration and operation of the Wallbox eM4 Twin. While certain malfunctions have no effect on the charging operation, other errors can lead to a reduction in the charging current or prevent the charging operation.

For the Wallbox eM4 Twin, malfunctions are documented as follows:

| Description | Visualisation example | Description |
|---|---|---|
| HMI of the wallbox in the event of malfunction |  | In the event of a malfunction, the status indicator of the faulty charge point pulsates red.<br>(Illustration: Right-hand charge point) |
| Wallbox energy meter |  | In the event of a malfunction or warning, the identification code is displayed cyclically in the second line of the energy meter window for the affected charge point. |

| Description | Visualisation example | Description |
|---|---|---|
| ABL Configuration App |  | Every malfunction and warning is documented in detail in the app. In addition to a reference to the affected charge point, the app provides access to a diagnostic report and troubleshooting instructions. |

**WARNING!**

**Checking the internal RCCB of the wallbox**

If the status indicator of the HMI flashes red but no display is shown in one or both energy meter windows, check the internal RCCB of the wallbox and move it to the position I if necessary.

Below you will find a list and brief description of the errors, their effect on the charging operation and measures for troubleshooting:

| Code | Error description | Effect | Action |
|---|---|---|---|
| F1 | Contactor/relay does not open | Charging not possible | ■ Perform restart by pressing reset push button (< 3 seconds) |
| F2 | Internal error | Charging not possible | ■ Perform restart by pressing reset push button (< 3 seconds) |
| F3 | DC residual current detected | Charging not possible | ■ Disconnect the charging connector from the EV and reconnect it<br>■ Perform restart by pressing reset push button (< 3 seconds)<br>■ Check wallbox with vehicle simulation adapter<br>■ Get EV checked by specialist workshop |
| F4 | Internal communication error | Charging not possible | ■ Perform restart by pressing reset push button (< 3 seconds) |
| F5 | Locking error | Charging not possible | **Locking not possible:**<br>■ Disconnect the charging plug from the charging socket of the wallbox and reconnect it<br>■ Check the charging plug for dirt<br>■ Use a different charging cable<br>**Unlocking not possible:**<br>■ Switch the wallbox off<br>■ Disconnect the charging plug from the charging socket of the wallbox |
| F6 | Proximity pilot signal out of valid range | Charging not possible | ■ Disconnect the charging connector from the EV and reconnect it<br>■ Use a different charging cable<br>■ Perform restart by pressing reset push button (< 3 seconds) |

| Code | Error description | Effect | Action |
|---|---|---|---|
| F7, F8 | Controller pilot signal out of valid range | Charging not possible | ■ Disconnect the charging connector from the EV and reconnect it<br>■ Use a different charging cable<br>■ Perform restart by pressing reset push button (< 3 seconds) |
| F9 | Overcurrent detected | Charging not possible | ■ Disconnect the charging connector from the EV and reconnect it<br>■ Perform restart by pressing reset push button (< 3 seconds)<br>■ Get EV checked by specialist workshop |
| F11 | Contactor/relay does not close | Charging not possible | ■ Disconnect the charging connector from the EV and reconnect it<br>■ Perform restart by pressing reset push button (< 3 seconds) |
| F13 | Control by default at terminal **EN1** | Reduced charging current | ■ Check setting for external load shedding in **ABL Configuration App**<br>■ Check external control unit (e.g. FNN control box or similar) |
| F14 | Overtemperature | Charging not possible or reduced charging current | ■ Ensure better cooling of the wallbox at the installation site |
| F15 | Phase imbalance detected | Reduced charging current | ■ Disconnect the charging connector from the EV and reconnect it<br>■ Disconnect the charging plug from the charging socket of the wallbox and reconnect it<br>■ Limit the maximum charging current to 16 or 20 A in the **ABL Configuration App** |
| F32 | Internal communication error | Charging not possible | ■ Perform restart by pressing reset push button (< 3 seconds) |
| F33 [...] F35 | Update error | Charging still possible | ■ Update the wallbox's software using the **ABL Configuration App** |
| F36 | RFID error | Charging may not be possible | ■ Perform restart by pressing reset push button (< 3 seconds) |
| F40, F41 | Meter time-out | Charging not possible or reduced charging current | ■ Perform restart by pressing reset push button (< 3 seconds) |
| F48, F49 | Mains voltage error | Reduced charging current | ■ Check the installation and mains connection of the wallbox |
| F50 | Internal communication error | Charging not possible | ■ Perform restart by pressing reset push button (< 3 seconds) |
| F51 | No WLAN/LAN connection available | Charging possible | ■ Check WLAN coverage on site<br>■ Check LAN cabling<br>■ Perform restart by pressing reset push button (< 3 seconds) |

| Code | Error description | Effect | Action |
|---|---|---|---|
| F100 [...] F106 | Other error | Charging may not be possible | ■ Update the wallbox's software using the ABL Configuration App<br>■ Check WLAN coverage on site<br>■ Check LAN cabling<br>■ Perform restart by pressing reset push button (< 3 seconds) |
| F120 [...] F123 | Energy meter error | Charging may not be possible | ■ Check internal RCCB for the charge point<br>■ Perform restart by pressing reset push button (< 3 seconds) |

- If the error or warning cannot be remedied or reset by one of the measures described above, switch off the power to the wallbox(es) for about two (2) minutes via the MCB connected upstream in the domestic power distribution.
- If the error or warning still cannot be remedied or reset even after doing this, contact ABL Customer Service (see "Contact" on page II).

## Maintenance

Except for testing the integrated or upstream RCCBs, the Wallbox eM4 Twin is basically maintenance-free. However, we still recommend the wallbox is regularly cleaned and the function of its charging sockets 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 surfaces and indicators of the wallbox.
- The wallbox must under no circumstances be cleaned with a pressure cleaner or similar device.
- Check the charging sockets of the wallbox at regular intervals for any defects, damage or mechanical wear.

# Appendix

## Technical specifications

### eM4 Twin Controller series

| | |
|---|---|
| Product number | 100000002 |
| Rated voltage | 230/400 V |
| Rated frequency | 50 Hz |
| Rated current | 32 A |
| Maximum output | 2 × 11 kW or 1 × 22 kW |
| Connection system | Type 2 charging socket, 2 pcs. |
| Phase system | 3-phase (reconfigurable to 1-phase) |
| Terminal blocks | Direct connection to the terminal block, supply cables up to a maximum of 10 mm² or cable diameters ≤ 25 mm |
| Upstream fuse | 32 A (required onsite), C characteristic recommended |
| Rated insulation voltage (Ui) | 4 kV |
| Rated impulse voltage (Uimp) | 4 kV |
| Rated impulse withstand current (Ipk) | 6 kA |
| Rated short-time withstand current (Icw) | 5 kA |
| Conditional rated short-circuit current (Icc) | 6/10 kA |
| Rated diversity factor (RDF) | 1.0 |
| Residual current circuit breaker for each charge point | RCCB, Type A, 30 mA |
| DC residual current detection for each charge point | DC-RCM, $I_{\Delta n\ d.c.} \geq 6$ mA |
| Overcurrent protection for each charge point | Integrated into firmware, disconnection at 125% after 10 seconds |
| Energy meter per charge point | MID compliant |
| Load switching for each charge point | Installation contactor, 4-pole, 40 A |
| Weld detection | No charging possible with welded contactors |
| Temperature monitoring | Internal, charging current reduction or shut down |
| Optional ventilation function of the vehicle | Not supported |
| RFID standard | ISO14443A/B, UID only (4-byte/7-byte), ISO 15693 and ISO 18092 |
| Access control | RFID, QR code or smartphone app |
| Backend communication | LAN, WLAN, LTE |
| Supported protocols for external systems | OCPP 1.5 + 1.6, OCPP Smart Charging, Modbus TCP |
| Communication Controller / Extender | LAN, WLAN |
| Load shedding / external release contact | Terminal for connecting a control cable, e.g. in accordance with VDE-AR-N 4100 |
| Operating temperature | -25°C to 40°C |
| Storage temperature | -25°C to 70°C |
| Relative humidity | 5 to 95%, no condensation |
| Class of protection | II |
| Degree of protection (housing) | IP55 |
| Overvoltage category | III |
| Degree of pollution | 3 |
| Impact strength | IK10 |

| | |
|---|---|
| Product number | 100000002 |
| Power dissipation | 8 W |
| Maximum elevation | ≤ 2,000 m AMSL |
| Dimensions (H × W × D) | 515 × 428 × 145 mm (width without overhangs: 395 mm) |
| Weight per wallbox | Approx. 10.5 kg |

The Wallbox eM4 Twin Controller is also available as a variant with a shutter charging socket. In addition, all variants of the Wallbox eM4 Twin Controller are available as reev ready variants, which are ready for operation with the back-end solutions from reev. The basic technical data are identical in each case; the corresponding product numbers can be found in the following table:

| Controller with shutter | Controller with Shutter and reev ready |
|---|---|
| 100000023 | 100000184 |

**eM4 Twin Extender series**

| | |
|---|---|
| Product number | 100000004 |
| Rated voltage | 230/400 V |
| Rated frequency | 50 Hz |
| Rated current | 32 A |
| Maximum output | 2 × 11 kW or 1 × 22 kW |
| Connection system | Type 2 charging socket, 2 pcs. |
| Phase system | 3-phase (reconfigurable to 1-phase) |
| Terminal blocks | Direct connection to the terminal block, supply cables up to a maximum of 10 mm² or cable diameters ≤ 25 mm |
| Upstream fuse | 32 A (required onsite), C characteristic recommended |
| Rated insulation voltage (Ui) | 4 kV |
| Rated impulse voltage (Uimp) | 4 kV |
| Rated impulse withstand current (Ipk) | 6 kA |
| Rated short-time withstand current (Icw) | 5 kA |
| Conditional rated short-circuit current (Icc) | 6/10 kA |
| Rated diversity factor (RDF) | 1.0 |
| Residual current circuit breaker for each charge point | RCCB, Type A, 30 mA |
| DC residual current detection for each charge point | DC-RCM, $I_{\Delta n\ d.c.} \geq 6$ mA |
| Overcurrent protection for each charge point | Integrated into firmware, disconnection at 125% after 10 seconds |
| Energy meter per charge point | MID compliant |
| Load switching for each charge point | Installation contactor, 4-pole, 40 A |
| Weld detection | No charging possible with welded contactors |
| Temperature monitoring | Internal, charging current reduction or shut down |
| Optional ventilation function of the vehicle | Not supported |
| RFID standard | ISO14443A/B, UID only (4-byte/7-byte), ISO 15693 and ISO 18092 |
| Access control | RFID, QR code or smartphone app |
| Backend communication | Via Controller wallbox |
| Supported protocols for external systems | OCPP 1.5 + 1.6, OCPP Smart Charging, Modbus TCP |
| Communication Controller | LAN, WLAN |
| Load shedding / external release contact | Terminal for connecting a control cable, e.g. in accordance with VDE-AR-N 4100 |

| | |
|---|---|
| Product number | 100000004 |
| Operating temperature | -25°C to 40°C |
| Storage temperature | -25°C to 70°C |
| Relative humidity | 5 to 95%, no condensation |
| Class of protection | II |
| Degree of protection (housing) | IP55 |
| Overvoltage category | III |
| Degree of pollution | 3 |
| Impact strength | IK10 |
| Power dissipation | 7 W |
| Maximum elevation | ≤ 2,000 m AMSL |
| Dimensions (H × W × D) | 515 × 428 × 145 mm (width without overhangs: 395 mm) |
| Weight per wallbox | Approx. 10.5 kg |

The Wallbox eM4 Twin Extender is also available as a variant with a shutter charging socket. In line with the Controllers, the Extender wallboxes are also available as reev ready variants. The basic technical data are identical in each case; the corresponding product numbers can be found in the following table:

| Extender with shutter | Extender with shutter and reev ready |
|---|---|
| 100000024 | 100000185 |

## 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 |
| 2014/53/EU | Radio Equipment 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 |
| IEC 61439-7 | Switchgear combinations for specific applications such as marinas, campsites, marketplaces, charging stations for electric vehicles |
| IEC 62955 | Residual direct current detecting device (RDC-DD) to be used for mode 3 charging of electric vehicles |

## Trademarks

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

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

## Data cable recommendations

A shielded data cable of the following type is recommended for wiring up the LAN interface in the Wallbox eM4 Twin:

| Designation | Cross section | Maximum length | Number |
|---|---|---|---|
| Cat5e S-FTP<br>Cat6 S-FTP | from at least 0.14 mm² | 30 metres | 1 cable each for the connection between a wallbox and a LAN port on the local router or switch |

**WARNING!**

Selecting suitable data cables

Please note that these are recommendations only: The cable cross-section may have to be adjusted depending on the cable length and the ambient conditions.

## Definitions

| Abbreviation | Explanation |
|---|---|
| CP | Control Pilot: Contact or control signal for communication between the charging station and the vehicle |
| DC | Direct Current |
| DHCP | Dynamic Host Configuration Protocol: Communication protocol for automatically assigning IP addresses and the DNS server to the clients in a network |
| eM | Electric Mobility |
| EMC | Electromagnetic compatibility |
| FNN | Network Technology/Network Operation Forum, committee within the VDE |
| LED | Light Emitting Diode |
| PP | Proximity Pilot: Contact or signal for determining the rated current and for locking the connected charging cable and charging plug in accordance with IEC 61851 |
| RCCB | Residual Current operated Circuit Breaker |
| RCM | Residual Current Monitor |
| RFID | Radio Frequency Identification |
| 'T' button | Testing button |
| VDE | German Association for Electrical, Electronic & Information Technologies |

## Copyright and disclaimer



Version 0301501_EN_a, Version: 26.04.23



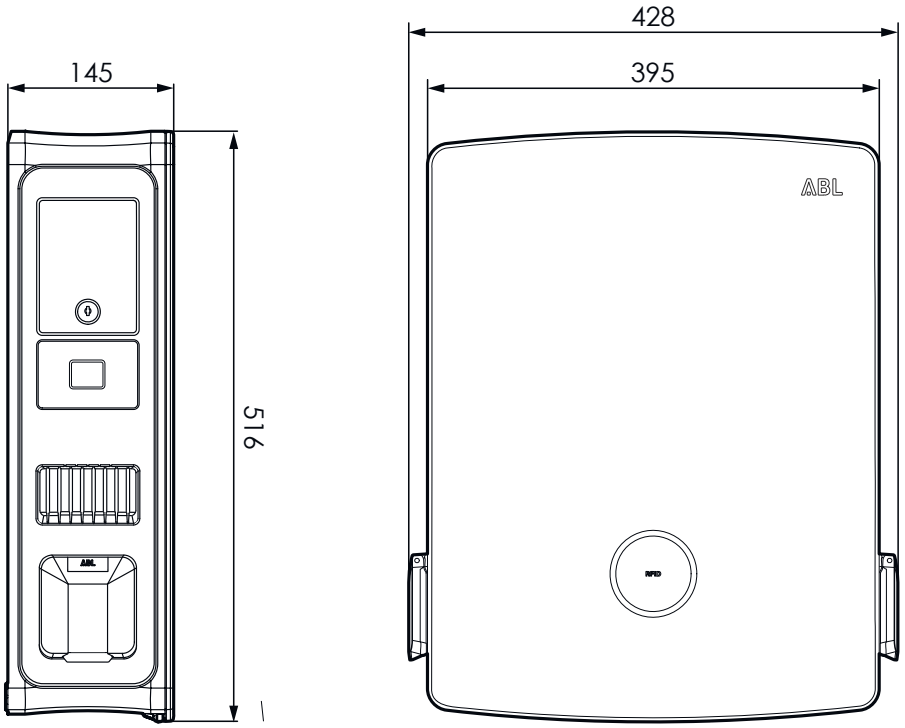
- Any information contained in this manual may be changed without prior notice and does not represent any obligation on the part of the manufacturer.
- Illustrations in this manual may show designs different from the delivered product and do not represent any obligation on the part of the manufacturer.
- The manufacturer does not take responsibility for any loss and/or damage that occurs because of the data or possible misinformation contained in this manual.

## 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.

## Dimensions



# CE certification and compliance declaration

CE The Wallbox eM4 Twin carries the CE mark. A copy of the declaration of compliance is displayed below. In addition, you can find a digital copy of the declaration of conformity on the ABL website at www.ablmobility.de/en in the section Service > All downloads > Compliance declarations.

ZERTIFIKAT / CERTIFICATE

ABL

## EU – KONFORMITÄTSERKLÄRUNG
## EC – DECLARATION OF CONFORMITY

| | |
|---|---|
| **Name des Herstellers**<br>**Name of manufacturer** | ABL GmbH<br>Albert-Büttner-Straße 11<br>91207 Lauf an der Pegnitz, Germany |
| **erklärt, dass das Produkt**<br>**declares that the product** | Ladestation für Elektrofahrzeuge,<br>Charging station for electric vehicles |
| **Type-Nr.**<br>**Ref. No.** | Wallbox eM4 |
| **Varianten:**<br>**variants:** | siehe Seite 3<br>see page 3 |
| **Die Forderungen folgender europäischer Richtlinien erfüllt:**<br>**is in conformity with the following European Directives:** | ☒ RED-Richtlinie / Radio Equipment 2014/53/EU<br>☒ RoHS Richtlinie / RoHS Directive 2011/65/EU<br>☐ |

**Angewendete (harmonisierte) Normen für die Konformitätsvermutung mit der Richtlinie 2011/65/EU:**
**Applied standards for presumption of conformity with Directive 2011/65/EU:**

EN IEC 63000:2018

**Angewendete Normen für die Konformitätsvermutung mit der Richtlinie 2014/53/EU:**
**Applied standards for presumption of conformity with Directive 2014/53/EU:**

EN 300 328 V2.2.2:2019
EN 300 330 V2.1.1:2017
EN 301 511 V12.5.1:2017
EN 301 908-1 V11.1.1:2016
EN 301 908-2 V11.1.2:2017
EN 301 908-13 V11.1.2:2017

Artikel 3, (1), a) der Richtlinie 2014/53/EU verlangt in Bezug auf die Sicherheitsanforderungen, die Einhaltung der Niederspannungsrichtlinie 2014/35/EU. Eine Konformitätsvermutung wird durch die anwendbaren Bereiche folgender Normen bestätigt:
Article 3, (1), a) of Directive 2014/53/EU demands, with regards to safety requirements, compliance with the Low Voltage Directive 2014/35/EU. A presumption of conformity is confirmed by the applicable scope of the following standards:

EN IEC 61851-1:2019
DIN IEC TS 61439-7:2014
IEC 62196-2:2016
IEC 62955:2018

**ABL GmbH**

Geschäftsführung: Dr. Stefan Schlutius,
Sabine Spiller-Schlutius, Ferdinand Schlutius

Registergericht Nürnberg HRB 40102

Albert-Büttner-Str. 11
D-91207 Lauf / Pegnitz

T +49 9123 188 0
F +49 9123 188 188

info@abl.de

www.abl.de
www.ablmobility.de

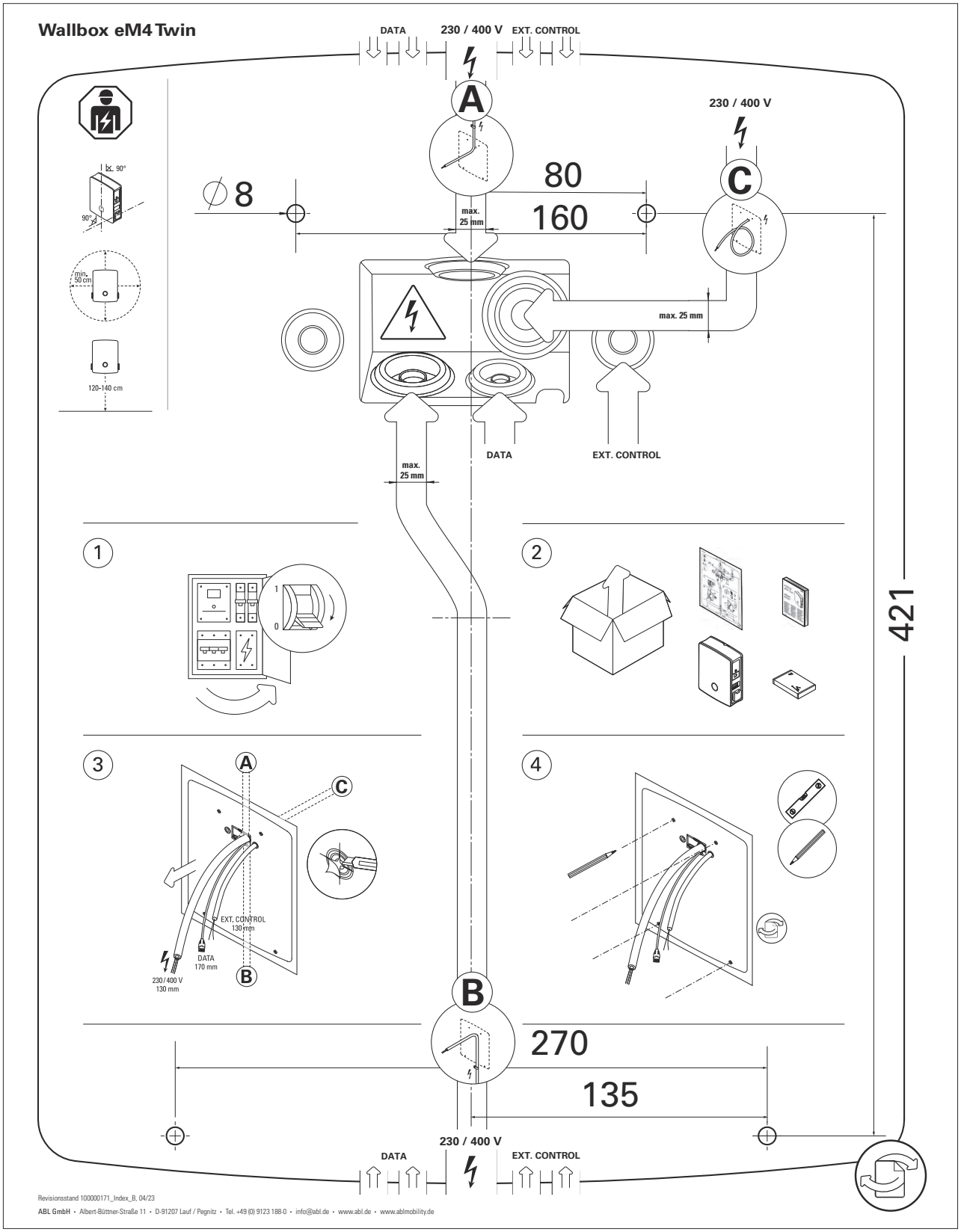


USt-IdNr. DE 350 290 458
ILN 40 11721 00000 8

WEEE-Reg.Nr. DE54480074

## Drilling template illustration

The Wallbox eM4 Twin comes with a drilling template (see illustration below) for marking the mounting points and illustrates the basic steps for installation. Should the supplied drilling template have been lost, you can obtain the drilling dimensions from the illustration on the front.

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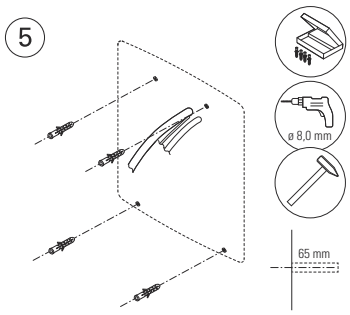
5

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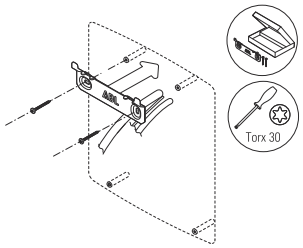


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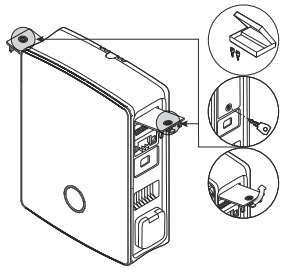

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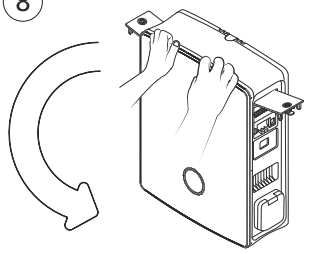

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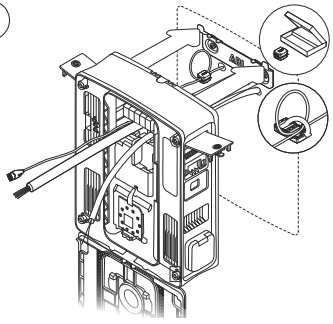

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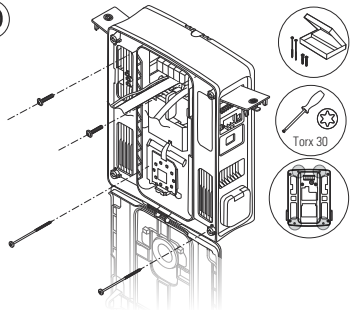


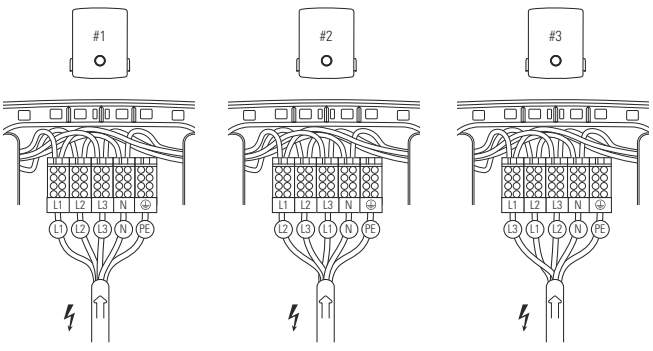


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| #4 | eM4 Twin | L1 | L2 | L3 |
| | ϟ | L1 | L2 | L3 |
| #5 | eM4 Twin | L1 | L2 | L3 |
| | ϟ | L2 | L3 | L1 |
| #6 | eM4 Twin | L1 | L2 | L3 |
| | ϟ | L3 | L1 | L2 |
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| | ϟ | L3 | L1 | L2 |
| #10 | eM4 Twin | L1 | L2 | L3 |
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20 PAP

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ABL GmbH

Albert-Büttner-Straße 11
91207 Lauf an der Pegnitz
Germany

+49 (0) 9123 188-0
+49 (0) 9123 188-188

info@abl.de
www.ablmobility.de