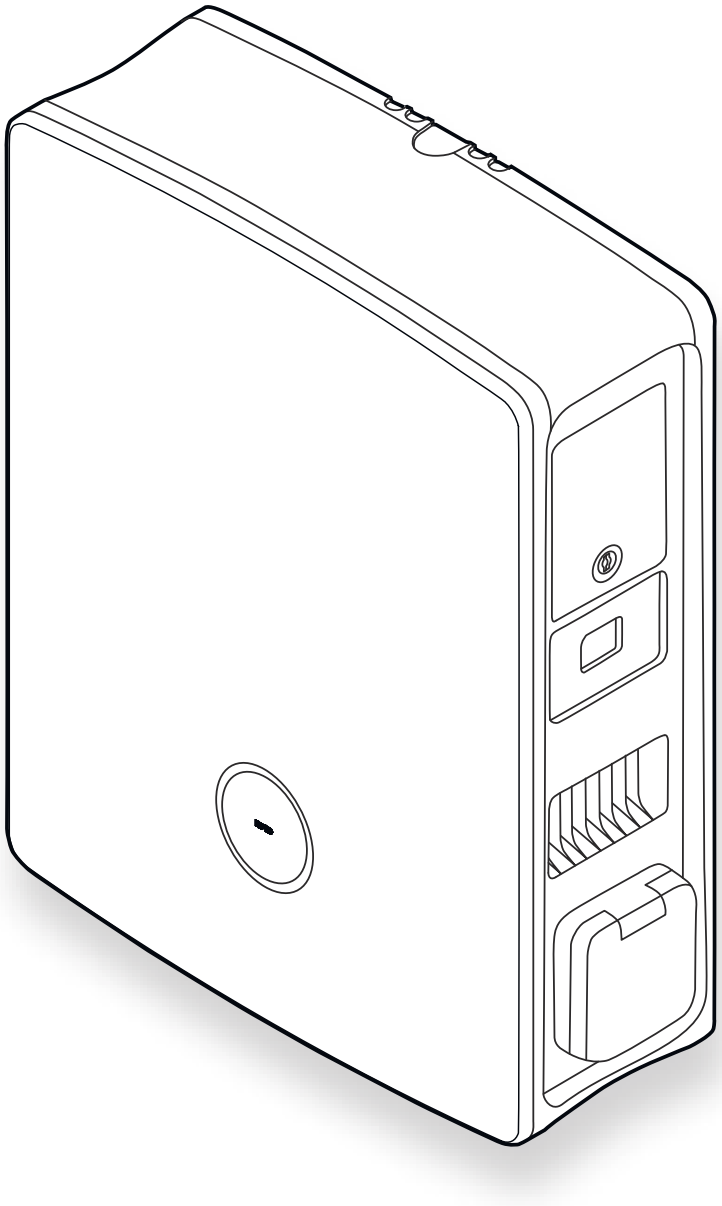
wallbox

ABL

Wallbox eM4 Twin

Installation manual



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Contents

Contact	2
Additional technical information	5
Intended use	5
Information in this document	5
Safety and user information	**6**
Safety instructions	6
Operating instructions	8
Introduction to the Wallbox eM4 Twin	**9**
Identifying your wallbox	9
The Wallbox eM4 Twin at a glance	10
How the HMI works	12
Information displayed in the energy meter	14
Forming charging groups and network topologies	15
Communication between a Controller and a backend via WLAN	16
External load shedding in accordance with VDE AR-N 4100	18
Components included with the wallbox	18
Accessories	19
Installation of the Wallbox eM4 Twin	**21**
Installation site requirements	21
Tools and accessories required	22
Inserting the power and data cables	24
Preparing the installation site	25
Preparing and fixing the wallbox in place	26
Electrical connection of the wallbox	27
Phase rotation within a charging group	29
Conversion from 3- to 1-phase operation of the Wallbox eM4 Twin	29
Data cable connections	31
Connecting a control cable in accordance with VDE AR-N 4100	31
Preparing and installing the LTE USB stick	32
Wallbox eM4 Twin start-up	33
Configuring the Wallbox eM4 Twin	**35**
Availability of the ABL Configuration App	35
Setting up communication via the ABL Configuration App	35
Onboarding – Configuration of an Extender wallbox for stand-alone operation	38
Onboarding – Configuring the Controller / Extender operating mode	39
Control Board settings and reboarding	40
Description of the charging process	**42**

Error resolution and maintenance 45
Support via the ABL Support page 45
Quick solution for general problems 46
Testing the RCCB/RCBO 47
Taking the Wallbox eM4 Twin out of operation 48
Replacing the RCCB flap 49
Replacing the lever lock in an RCCB flap 50
Replacing the charging socket flap 51
Replacing the housing cover 52
Resetting the wallbox and restoring to factory settings 53
Actions in case of internal errors, notes and warnings 54
Maintenance 57
Appendix 58
Technical specifications 58
Standards and guidelines 62
Overview of the radio modules used 63
Trademarks 63
Data cable recommendations 63
Definitions 64
Disposal advice 64
CE certification and declaration of compliance 65
Copyright and disclaimer 65
Dimensions 65
Drilling template illustration 66

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**. Please visit:

https://www.ablmobility.de/en

Intended use

The Wallbox eM4 Twin is a charging system for exclusive charging of electric-powered vehicles (BEV or PHEV) in mode 3 as specified in the IEC 61851-1 standard. It has a two charging sockets for connecting certified charging cables in accordance with IEC 62196-2 and is suitable for stationary installation indoors as well as outdoors, taking into account local rules and regulations and within the permissible ambient conditions. The wallbox can be installed and operated as a stand-alone solution or in conjunction with identical or compatible charging stations in a charging group. The electrical installation must be carried out by a qualified specialist electrical contractor. No prior knowledge is required in practical operation after commissioning. However, the safety information and instructions for use must be taken into account and adhered to at all times.

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.

Technical information	User	Specialist electrical contractor
• Installation manual (this document)	✗	✓
• Data sheets	✓	✓
• Operating manual	✓	✓
• Network setup for the Wallbox eM4	✓	✓

Safety and user information

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.

ATTENTION

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

Danger from electrical voltages

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 58).
- 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.
- Use of extension cables is not permitted.

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.

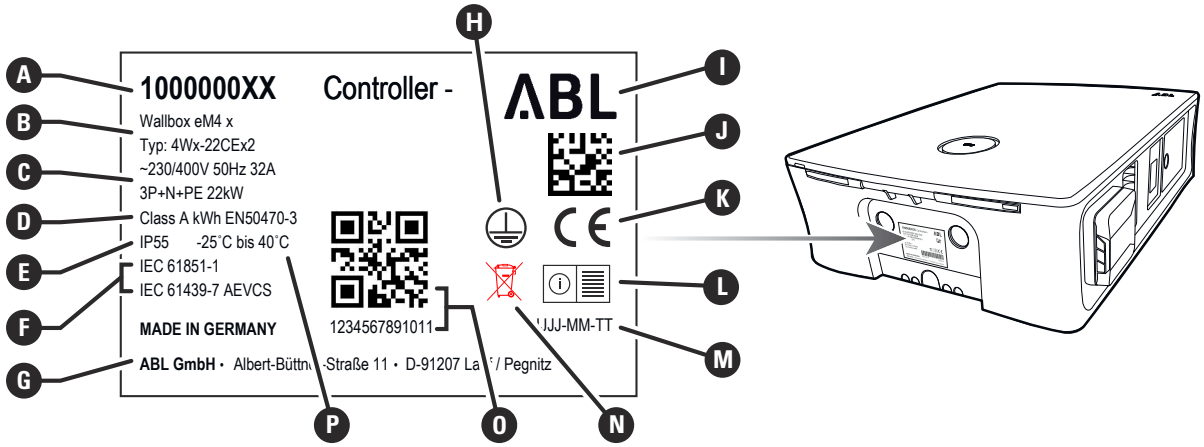
Further information on technical data is available in the appendix from page 58.

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)
- External power supply



Rating plate: sample illustration, deviations possible

A Product number and category (Controller or Extender)

B Type specification (eM4 Twin)

C Connection requirements

D Class of accuracy

S Degree of protection (housing)

F Standards

G Manufacturer and manufacturer's address

H Symbol protection class I

I Manufacturer's logo

J DataMatrix code/product number

K CE labelling

L 'Read instructions' advice

M Date printed

N Disposal advice

O Barcode/serial number

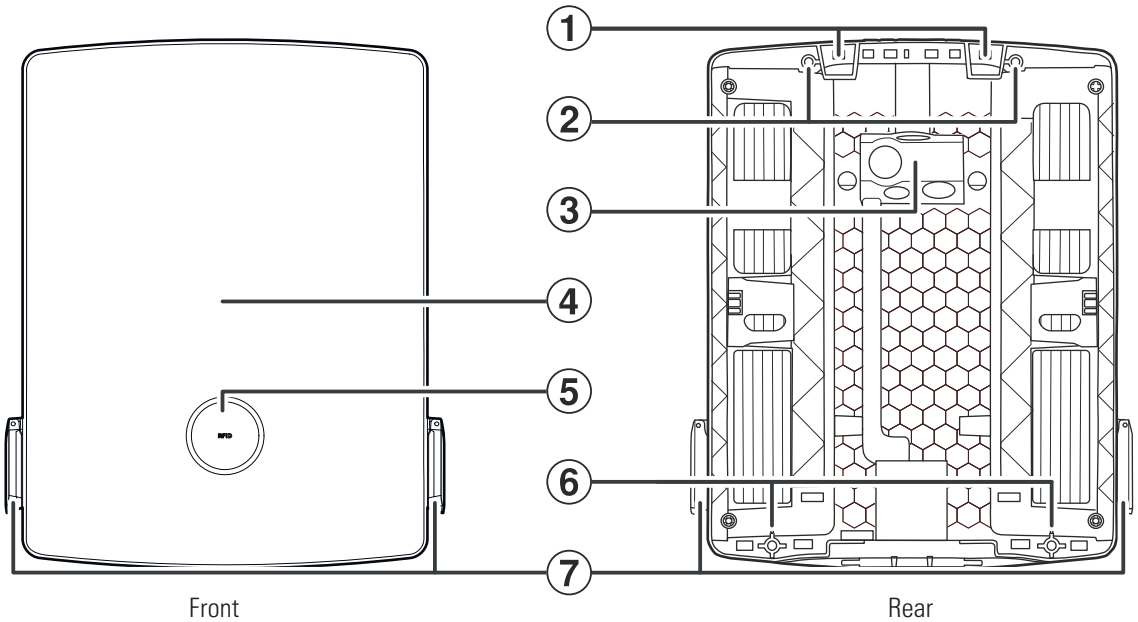
P Temperature range

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.



(1) Suspension points
Use these two suspension points on the upper edge of the rear to hang the eM4 Twin in the mounting rail (included in delivery) screwed to the mounting position (see "Preparing and fixing the wallbox in place" on page 26).

(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 26). 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.
The two smaller grommets are used for inserting a data cable for communication within a charging group or to lay a control cable in accordance with VDE AR-N 4100. These two inlets are marked DATA and EXT. CONTROL on the drilling template.
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 24).

(4) Housing cover
The housing cover protects the internal electronic components from unauthorised access and must always be closed and locked during operation. It can be locked/unlocked via the RCCB flaps ⑪ of the left and right power module ⑩.

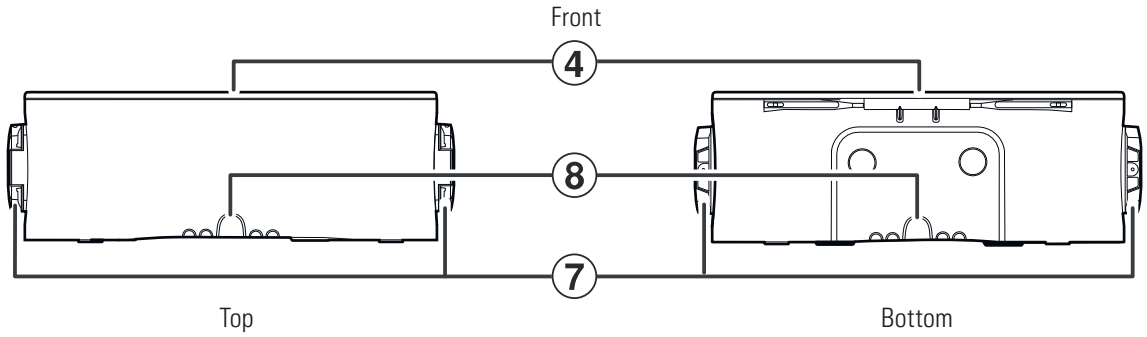
(5) Status display with RFID reader
The circular status indicator shows the states of the charge point by means of a multi-coloured LED ring. The RFID reader module for authorising the charging process is located centrally behind the status indicator (see also point ⑭).

(6) Wall mounting point
The wallbox is fixed in place by screwing it into the wall using the two lower attachment points (see page 27). The corresponding screws are supplied.

(7) Type 2 charging socket
Each power module ⑩ 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 19).

View from above and below

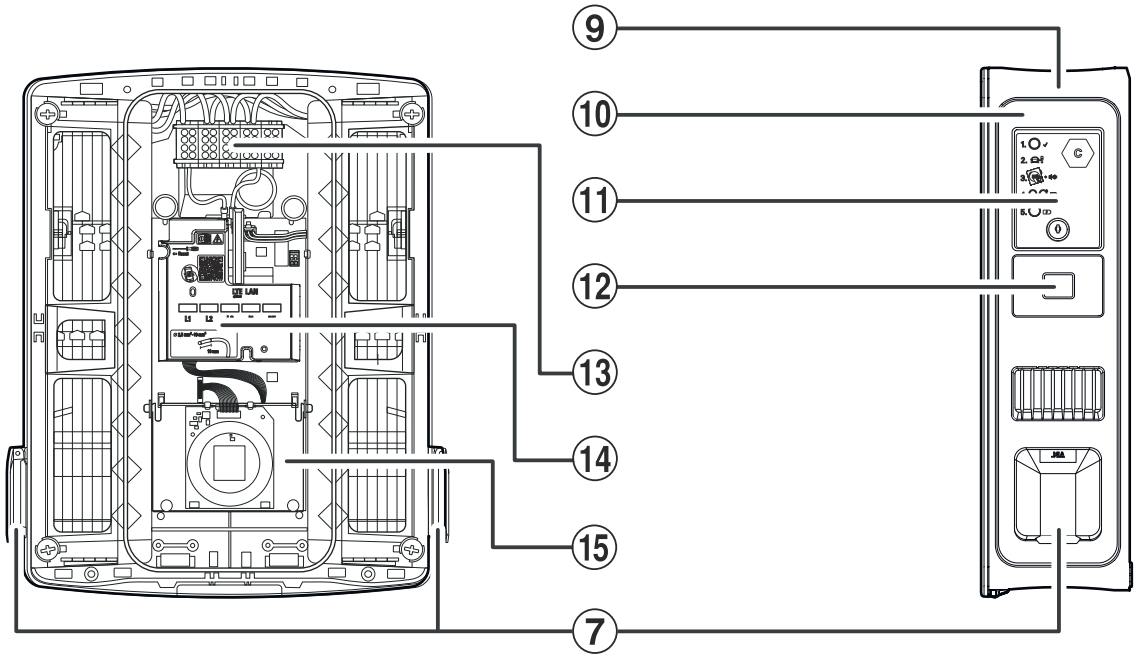
The following illustration shows the top and bottom of the Wallbox eM4 Twin.



⑧ Housing inlets
The inlets on the top and bottom can be opened with combination pliers or a similar tool and are used for inserting the power and data cable from above or below (see page 24).

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.



⑨ Housing
The wallbox housing integrates the two power modules ⑩ 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.

⑩ 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 ⑫ and the Type 2 charging socket ⑦.

⑪ RCCB flap
The RCCB flap protects the RCCB/RCBO of the power module and is locked and unlocked using the key supplied. The locking mechanism also locks the housing cover ④: To open the housing cover, both RCCB flaps must be unlocked and folded upwards.

⑫ 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 14.

⑬ 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 ⑭. 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 27).

⑭ 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 32).
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 53).
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 31).

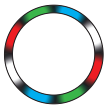
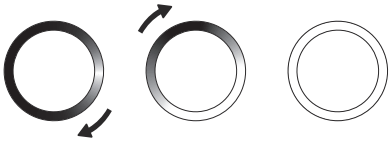
⑮ HMI module

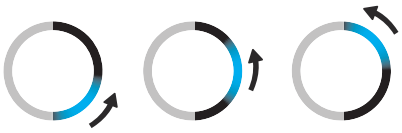
The HMI (Human Machine Interface) module of the wallbox displays the various states of the electronic components for monitoring and determining the status of the charge points via a multi-coloured LED ring and an acoustic signal generator (see next section).
It also includes the RFID reader module for 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 35).

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** 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** 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** 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** 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. (Illustration: Right-hand charge point)

	**Vehicle connected and recognised** If a vehicle has been connected and recognised, the half that corresponds to the charge point lights up static green. (Illustration: Right-hand charge point)
	**Authorisation required** If the charging operation has to be enabled using an RFID card, a blue chase light is shown dynamically on the status indicator. For the right-hand charge point, the chase light turns anti-clockwise (see illustration). 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)
	**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)

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 2).

	**Software reset performed** When you restart the wallbox using the reset button (see "Resetting the wallbox and restoring to factory settings" on page 53), selected LEDs on the status display will light up orange. In addition, the wallbox emits four long sound signals.

Factory reset performed
When you reset the wallbox to factory settings using the reset button or the help system of the **ABL Configuration App** (see "Resetting the wallbox and restoring to factory settings" on page 53), the status indicator will light up orange continuously. In addition, the wallbox emits six long sound signals.

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)

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 three display lines. In contrast to the top line, the values 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 or last electric energy consumed**
In this state, the second line shows the electric energy in kWh during the active (display: *Run*) or completed (display: *End*) charging process.

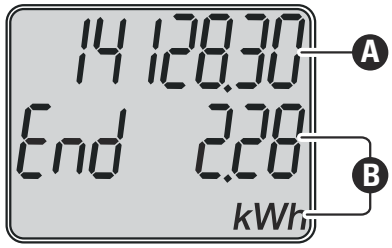
C **Charge point allocation**
After switching, the second line on the left-hand side shows the identification that was assigned to this charge point during installation.

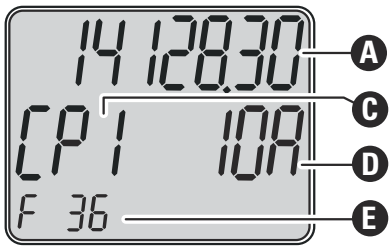
D **Maximum charging current**
In this state, the second line on the right-hand side shows the value for the maximum available charging current.

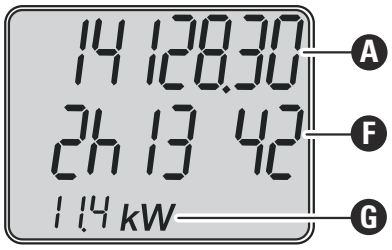
E **Malfunction display**
In this state, the third line shows the code for identifying a malfunction (error, note, warning) (see also "Actions in case of internal errors, notes and warnings" on page 54).

F **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.

G **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**.







ATTENTION

Display of internal energy meter errors

If an internal error occurs in the energy meter, the information in the second and third line of the display is replaced by a specific meter error code (example: *Err 0005*). In this case, contact **ABL Customer Service** (see "Contact" on page 2).

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:** 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 an external WLAN router or LAN. For external communication with a backend, you can use the internal WLAN or LAN interfaces of the Controller or the LTE USB stick.
- **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 an external WLAN router or LAN.

⚠ ATTENTION

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	
Internal WLAN interface	LAN	LTE	External WLAN router	LAN
✓			✓	
	✓		✓	
	✓			✓
		✓	✓	
		✓		✓

NOTE

Information for network communication

- The following protocols and ports must be set up for communication with the Internet (Controller–backend):
  - HTTP: 80
  - HTTPS: 443
  - NTP: 123
  - NTS: 4460
  - OCPP: 7890
  - ICMP
- The following protocols and ports must be set up for communication within the network (Controller–Extender):
  - DNS: 53
  - mDNS: 5353
  - UDP/TCP: 68, 1024, 4332, 5432, 11010
  - Multicast
- The network must assign each wallbox its own IP address (e.g. via DHCP).

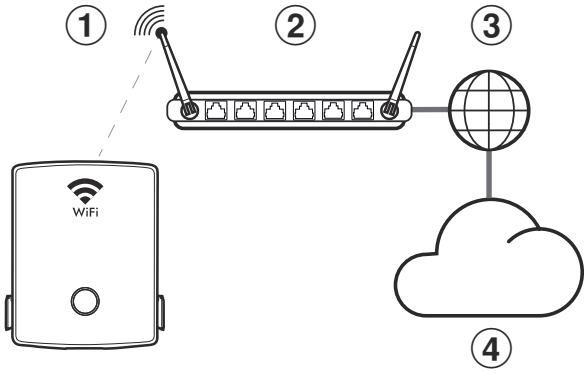
The network interfaces are presented below in detail and illustrated with the help of illustrations in practical use. Additional information on network communication can be found in the "Network setup for the Wallbox eM4" instructions via the following link.

www.ablmobility.de > Support > Downloads > Operation manuals

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 35 onwards).

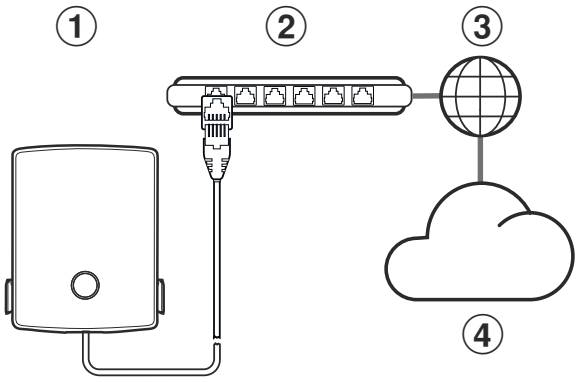
- Figure: The Wallbox eM4 Twin Controller ① is connected wirelessly to a WLAN network ②, which establishes communication with the selected backend ④ via the Internet ③.



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 shielded network cable (S/FTP, CAT 5e or higher) 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 35 onwards).

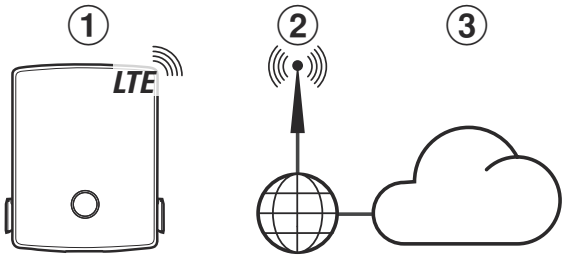
- Figure: The Wallbox eM4 Twin Controller ① is connected by cable to a LAN network ②, which establishes communication with the selected backend ④ via the Internet ③.



Communication between a Controller and a backend via 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 32.
- LTE communication with the backend must be set up in the ABL Configuration App (see page 35 onwards).

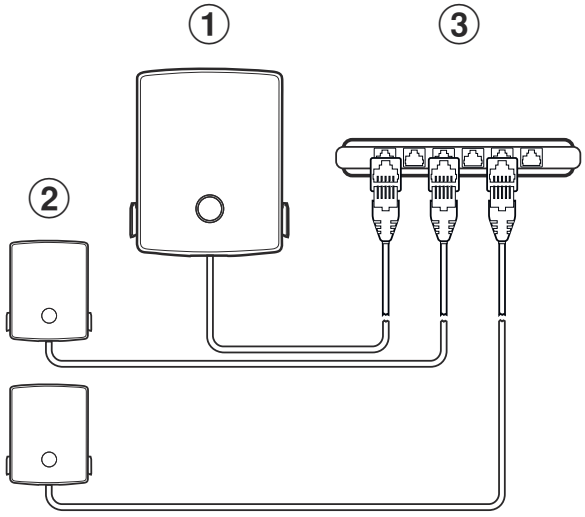
- Figure: The Wallbox eM4 Twin Controller ① communicates via the LTE USB stick with an LTE receiver ②, which establishes the connection to the selected backend ③.



Communication between a Controller and one or more Extenders via LAN

- The communication module of each Wallbox eM4 Twin includes a LAN interface.
- The connection is made via one shielded network cable (S/FTP, CAT 5e or higher) 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 24 and "Data cable connections" on page 31.
- Communication via LAN must be set up in the ABL Configuration App (see page 35 onwards).

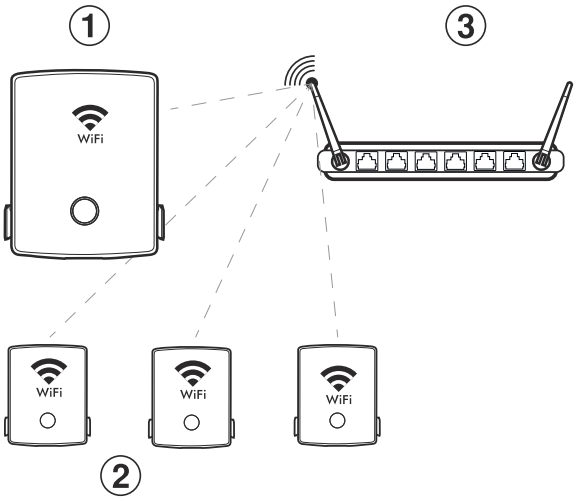
- Figure: The Wallbox eM4 Twin Controller ① and one or more Wallboxes eM4 Twin Extender ② are connected to a local router ③ via their LAN interfaces.
- Each wallbox must be assigned its own IP address via the router, either automatically via DHCP or manually.



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 35 onwards).

- **Figure:** 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.



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 is permitted up to a maximum of 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!

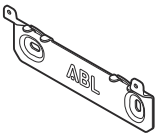
In a charging group, the control cable is connected to the Controller, which then regulates the current for all charge points in the group. In all other configurations (charging group with external control unit, stand-alone), the control cable must be connected to the wallbox with the first charge point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

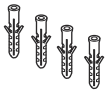


- TX30 wafer head screw, 6 × 140 mm, 2 pcs.

- TX30 plug screw, 6 × 60 mm, 2 pcs.

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

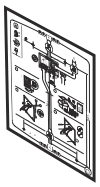
- Wall plugs 8 × 50 mm, 4 pcs.



- Key, 2 pcs.

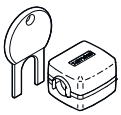
- Insulating cap, 4 pcs.

- 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.

- USB filter for interference suppression of data transmission via the LTE USB stick, 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

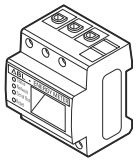
- LAKK2K1

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



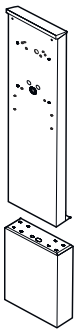
- 100000253

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

- 100000192

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

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



- EMH9999

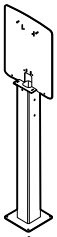
Precast concrete foundation for installing the mounting pole POLEMH3 or POLEM4 Twin

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

- 100000191 / 100000237

POLE Slim mounting pole made of galvanised sheet metal 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

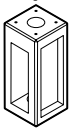
h = 1,469 mm, w = 395 mm, d = 210 mm



- 100000238

POLE Slim concrete foundation for installing a POLE Slim mounting pole

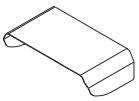
h = 600 mm, w = 260 mm, d = 260 mm



- WPR36

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

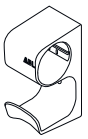
h = 142 mm, w = 515 mm, d = 285 mm



- CABHOLD

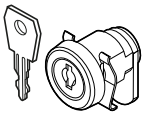
Cable holder with charging plug receptacle for installation on an exterior wall or the mounting poles POLEMH1/2/3, POLEM4 Twin, POLEM4 Single and POLE Slim

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

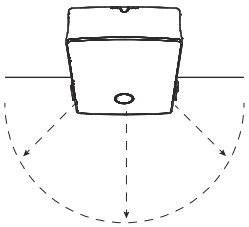
Danger from electrical voltages

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.

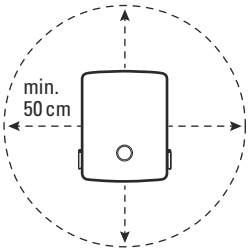
Installation site requirements

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 58) must be adhered to in order to guarantee the functionality of the wallbox at all times.

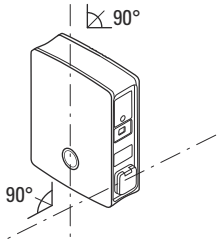
- The installation site must be freely accessible.



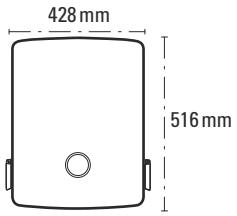
- A minimum distance of 50 cm from other technical installations must be maintained.



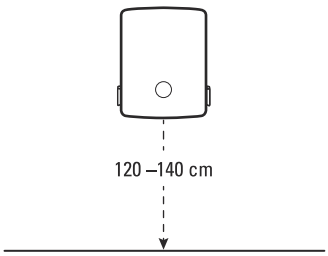
- The installation surface must be level and sufficiently load-bearing (minimum: weight of the wallbox plus two charging cables).



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

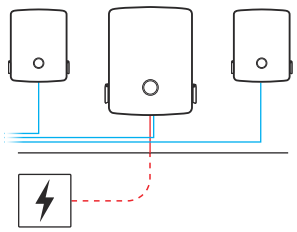


- The installation height must be at least 120 cm (ground to bottom edge of housing). An installation height of 120 to 140 cm (ground to bottom edge of housing) is recommended.



- 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.

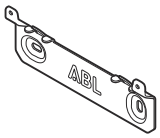
- For operation in a wired group installation, one shielded network cable (S/FTP, CAT 5e or higher) per wallbox must also be laid at the installation site (see "Data cable recommendations" on page 63, "Inserting the power and data cables" on page 24 and "Data cable connections" on page 31).



Tools and accessories required

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

- Installation rail, 1 pc.

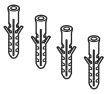


- TX30 wafer head screw, 6 × 140 mm, 2 pcs.

- TX30 plug screw, 6 × 60 mm, 2 pcs.

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

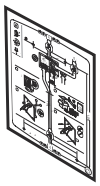
- Wall plugs 8 × 50 mm, 4 pcs.



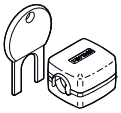
- Insulating cap, 4 pcs.

- Key, 2 pcs.

- Drilling template, 1 pc.



- Folding ferrite with key, 1 pc.



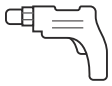
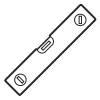
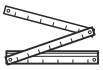
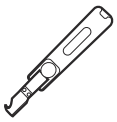
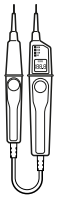
If you want to operate your Controller wallbox or a group installation with a backend, you will need the following components:

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

- SIM card of the backend operator, 1 pc.

- USB filter for interference suppression of data transmission via the LTE USB stick, 1 pc.

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.

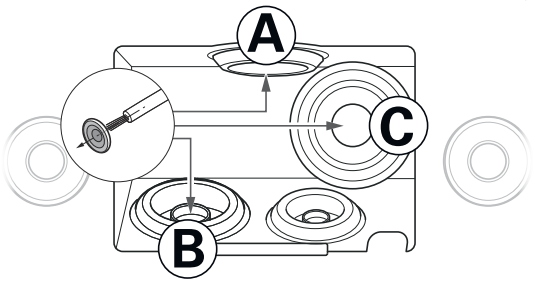
Power line in

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.

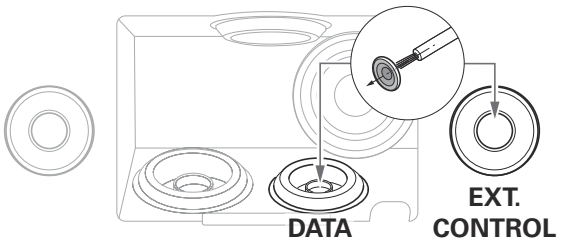


> **NOTE**
>
> **Recommended supply cable via inlet Ⓑ**
>
> It is generally recommended to insert the power line into the housing of the wallbox via inlet Ⓑ. If the power line is laid to the installation location from above, you should form a loop on the rear below the supply cable area and feed the 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 shielded network cable (S/FTP, CAT 5e or higher) with an RJ45 connector.
EXT. CONTROL	This inlet is intended for a two-core control cable in accordance with VDE AR-N 4100.

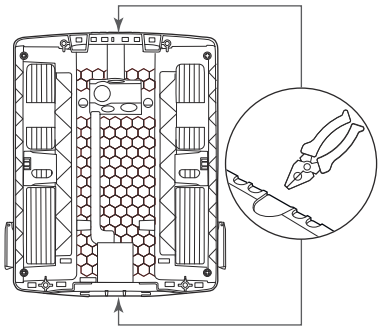


Pre-stamped inlets in the housing edge

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

Danger from electrical voltages

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

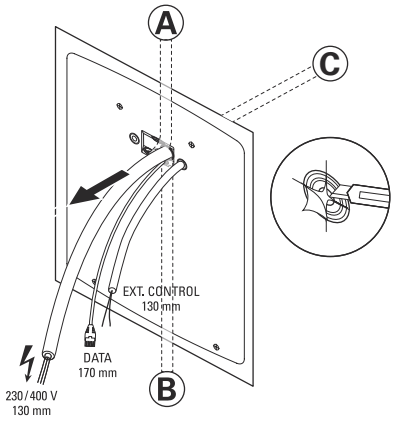
5 Cover or bar access to adjacent components under voltage

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

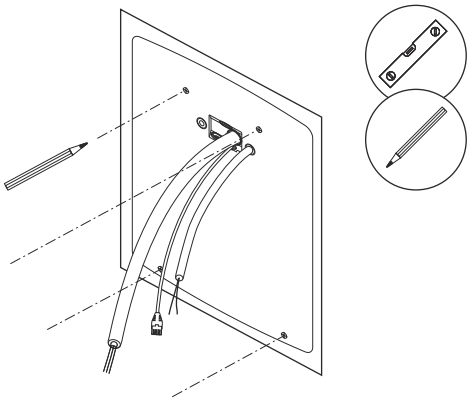
ATTENTION

Length of data and control cable

The following specifications apply to the total length of the data and control cables:

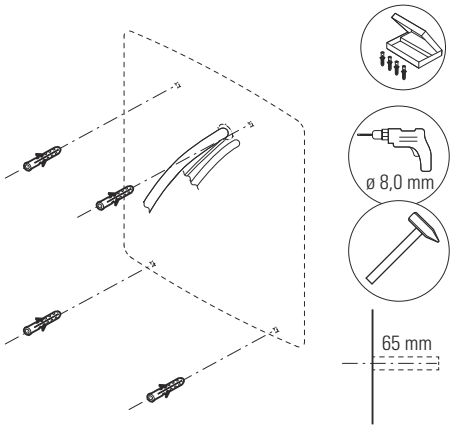
- The length of the data cable between the tapping point (router, switch, etc.) and the wallbox is permitted up to a maximum of 100 metres.
- The length of the control cable between the tapping point (ripple control receiver, VDE-FNN control box, etc.) and the wallbox is permitted up to a maximum of 30 metres.

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



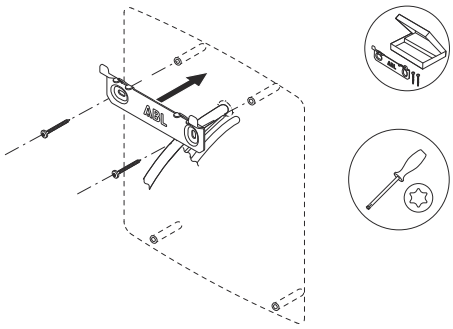
3 With the pencil, mark the fixing points in the mounting position.

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.

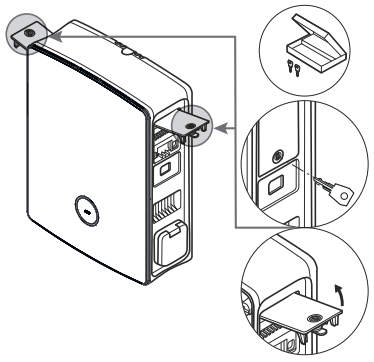
6 Screw the mounting rail into the two upper mounting points using the two TX30 plug screws and the Torx screwdriver.



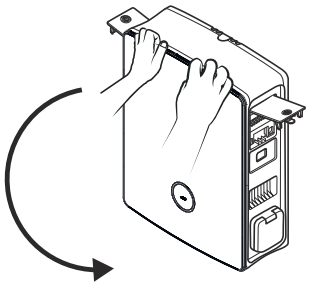
Preparing and fixing the wallbox in place

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

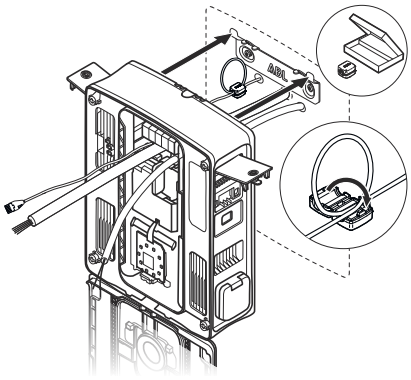
Removing the housing cover

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 52.

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

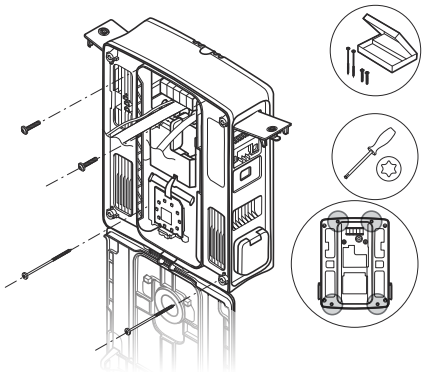
4 If you want to integrate the wallbox into a LAN network via a data cable, form a cable loop and enclose it with the folding ferrite before inserting it into the wallbox through the corresponding grommet in the supply cable area.

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

Danger from electrical voltages

- 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 RCCB/RCBO in the wallbox and, if present, in the domestic installation.

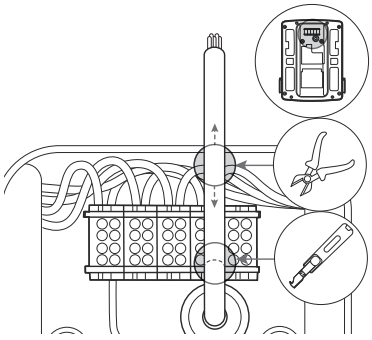
ATTENTION

Information on the upstream back-up fuse on site

- To connect a Wallbox eM4 Twin equipped with an RCCB to the mains, a miniature circuit breaker / MCB must be installed upstream in the domestic power distribution. According to IEC 60364-4-4, this MCB must have a short-circuit resistance (I^2t value) of ≤ 75,000 A^2s.
- To connect a Wallbox eM4 Twin equipped with RCBO to the mains, a back-up fuse must be installed upstream in the domestic power distribution.

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

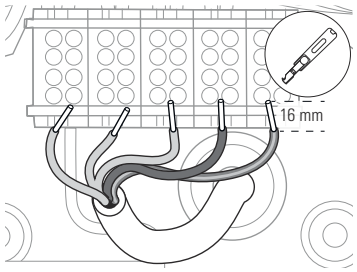
1 Shorten the power line to the required length for the terminal block using side cutters.



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

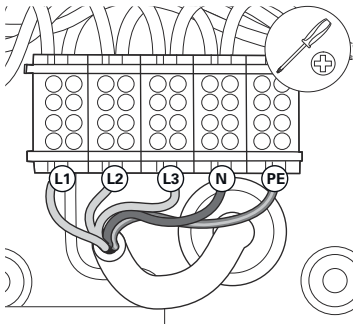
3 Remove the insulation of the individual conductors to a length of 16 mm.

- 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).



ATTENTION

Checking the connection

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

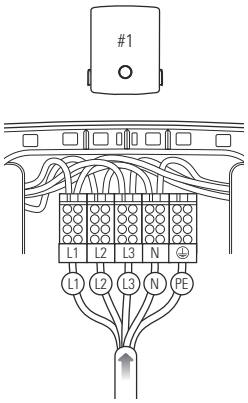
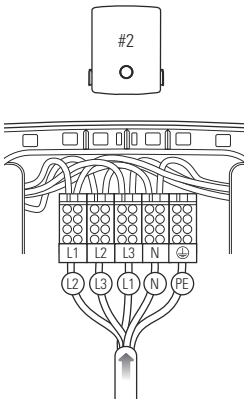
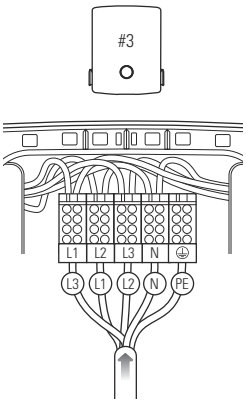
DANGER

Danger from electrical voltages

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

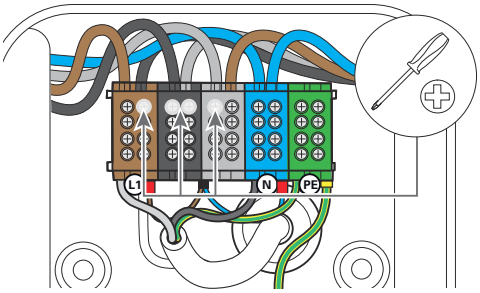
Danger from electrical voltages

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

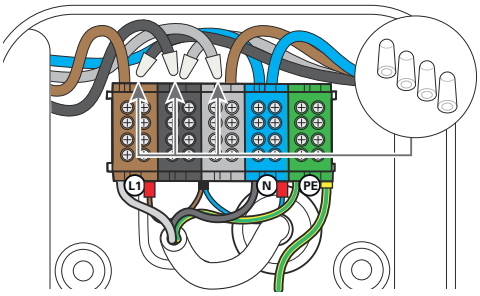
Proceed as follows to convert the Wallbox eM4 Twin to single-phase operation:

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

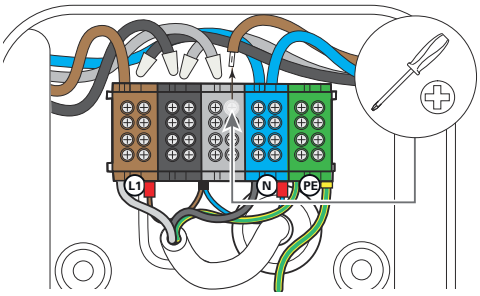
Terminal block	Cable colour
Brown	Black
Black	Black & grey
Grey	Grey



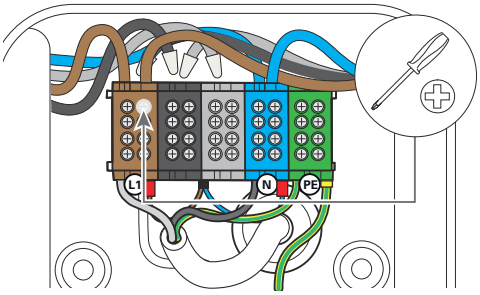
2 Pull cables out of the terminals and insulate the cable ends with the four insulating caps supplied.



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 38.

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

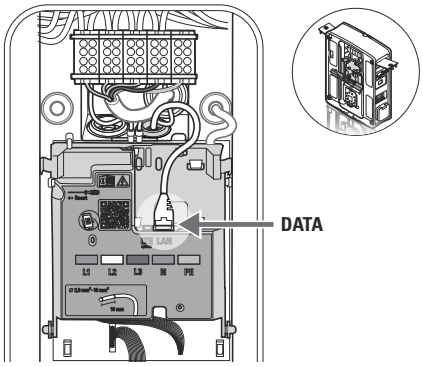
Data cable connections

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 63).

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

1 Connect the RJ45 plug of the shielded network cable (S/FTP, CAT 5e or higher) 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 18).

The following requirements apply to the control cable:

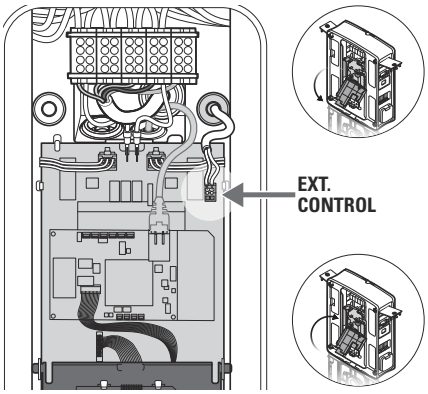
- Solid conductor, 0.5 to 1.5 mm², stripping length: 9 mm
- Fine-stranded conductor, 0.5 to 1.5 mm² / 0.5 to 1.0 mm² with ferrules, stripping length: 9 mm

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.



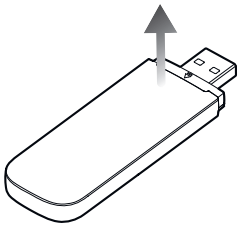
After establishing the electrical connection of the control cable, the remote disconnection function must be activated via the ABL Configuration App. To do this, please refer to the sections starting on page 38.

Preparing and installing the LTE USB stick

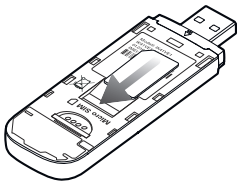
The Controller variants of the Wallbox eM4 Twin are supplied with an LTE USB stick for wireless communication with a backend. The SIM card is provided by the backend provider and must first be inserted in the LTE USB stick. Then plug the LTE USB stick into the USB interface of the Controller and set up the communication via the **ABL Configuration App** (see page 39 onwards).

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

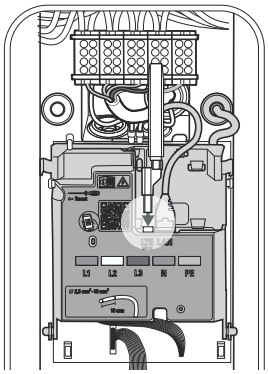
1 Open the LTE USB stick supplied by removing the cover.



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 filter and then both components 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

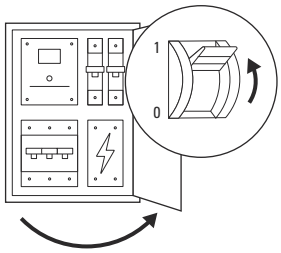
To commission the wallbox, the power supply cable must be connected to the electricity grid.

DANGER

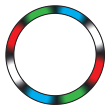
Danger from electrical voltages

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

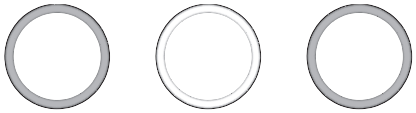
1 Switch on the upstream back-up fuse for the wallbox in the domestic power distribution.



- 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 35).



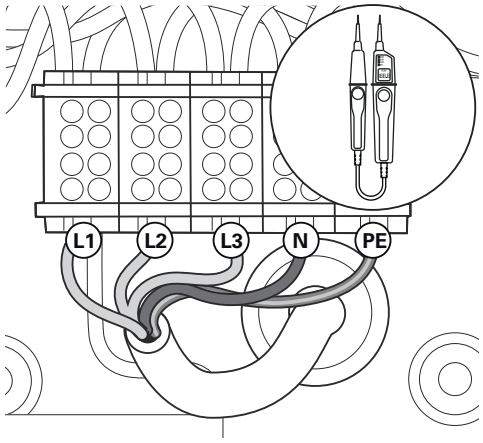
ATTENTION

Checking the RCCB/RCBO and the back-up fuse

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

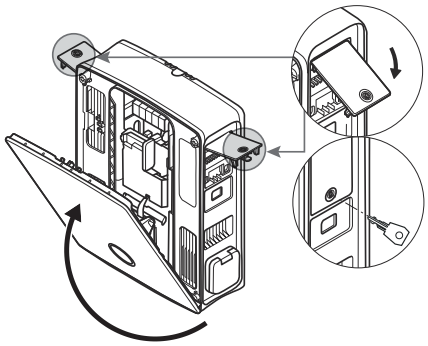
2 Measure the voltage at the terminals of the terminal block using the voltage tester.

- 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).

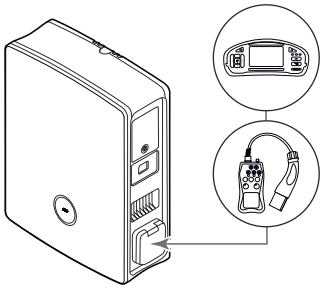


3 Fold the housing cover upwards so that it locks into the housing.

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



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



⚠ ATTENTION

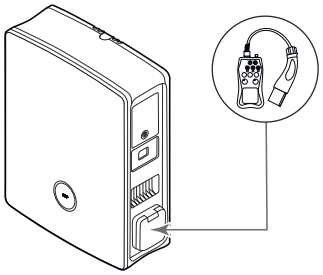
Carrying out all necessary tests for start-up

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/RCBO tripping current and tripping time
- Rotating field testing

as well as additional tests according to local regulations.

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



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 35).

ⓘ 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.

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 (only for **Extender as standalone** operating mode)
- Monitoring of charging processes, operating statuses, faults, etc.
- Starting and stopping charging (only for **Extender as standalone** operating mode)
- 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 Store**
Android	Android 10 or higher	**Google Play Store**

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 40.

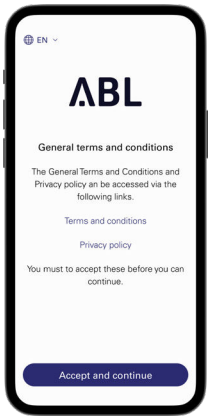
NOTE

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 start 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

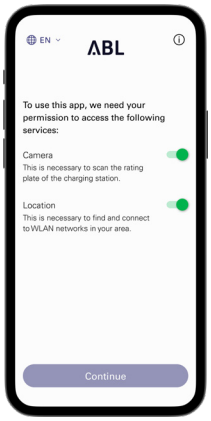
Selecting the user language

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

3 After accepting the T&Cs, you must grant the app various permissions to access functions on your mobile device.

- **Camera:** Grant this permission to scan the barcode on the rating plate 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.

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 of this screen.

Controller wallbox

- Use the **Reset to factory settings** option to reset all of the wallbox's parameters to the factory default. You can then start a new configuration (see below).
- The **Support** option will redirect you to the ABL support website (see "Support via the ABL Support page" on page 45).

Extender Wallbox

- The ⓘ button will take you directly to the support website (see "Support via the ABL Support page" on page 45).

4 In the next step, select the desired mode:

→ **Start new configuration:** Tap this option to perform a new configuration for the operating modes **Controller / Extender** or **Extender as standalone** (see next step).

→ **Existing configuration:** Tap this option to change the parameters of a previously created configuration in the **Control Board**. You can find further information starting on page 40.

NOTE

Safety instructions for the configuration

To carry out a configuration, you must now confirm that you have the technical training of a qualified electrician and knowledge of the relevant regulations.

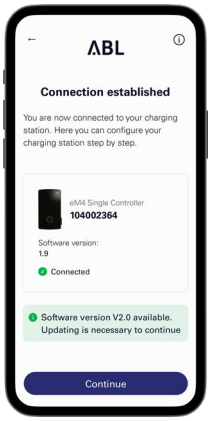
5 To start a new configuration, establish a local wireless connection between the mobile device and the wallbox as follows:

→ Scan the serial number on the rating plate of the wallbox with the camera.

→ Alternatively, tap the **Enter serial number manually** option and enter it.

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.



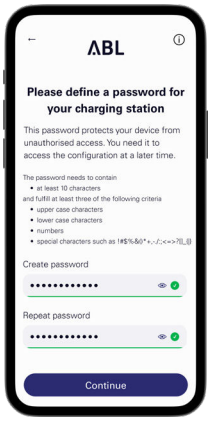
NOTE

Updating the software version

After the connection is established and during operation, the **ABL Configuration App** regularly checks whether up-to-date software is available for the wallbox. If a message to this effect appears, you must install this update before you can continue.

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.

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 40.

- 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

⚠ ATTENTION

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 a qualified specialist electrical contractor.

- 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.

Configuration 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 the app uses to communicate with the wallbox. When operating without a connection to the infrastructure network, communication is possible in the vicinity of the wallbox via its internal WLAN interface.
Configuration parameters > Max. load per charging point	Enter the maximum charging current that is delivered at this charge point here.
Configuration parameters > Phase imbalance 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).
Configuration parameters > 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 the **EN1** connection of the wallbox (see "Connecting a control cable in accordance with VDE AR-N 4100" on page 31).
Access control	Specify whether charging processes need to be authorised via RFID or whether the wallbox can be used for free charging. If access authorisation via RFID is activated, you must also add optionally available RFID media (app, key fobs, cards).
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 **Done** 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 up to 30 charge points and is then responsible for the static or (in conjunction with the ABL Energy Meter) 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

In **Controller / Extender** operating mode, you must set the parameters below for all charging points within the group.

Parameter	Description
Network settings	Connect the Controller wallbox to an existing infrastructure WLAN.
Backend integration	Specify whether you want to connect to a backend via **WLAN** (see above: Connection with infrastructure WiFi necessary), **LAN** or **LTE**. Then select a template, provided your backend provider is stored in the app's database, or enter the access and communication data manually.

Parameter	Description
Network settings	Specify whether the Controller is to be connected to further Extenders via the infrastructure WiFi or via LAN.
Grouping	You can add more Extenders to the Controller here and name them as needed to create a charging group.
Infrastructure settings > Static load management	Without the ABL Energy Meter, set the maximum available charging current for the Controller and each Extender wallbox in the charging group. The resulting maximum charging power is then statically distributed to all charge points in the charging group.
Infrastructure settings > Dynamic load management	With the ABL Energy Meter, which you can integrate here, you can set up the dynamic adjustment of the charging currents, taking into account the building load: The available charging power is then distributed dynamically and in the selected ratio to the charge points in the charging group, depending on the consumers.
Infrastructure settings > 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 the **EN1** connection of the wallbox (see "Connecting a control cable in accordance with VDE AR-N 4100" on page 31).
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 **Done** button: The charging group is now configured and offers the option to adjust the parameters just set as well as other operating parameters again via the **Continue to Control Board** button.

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 in the **Control Board** (in the **Settings** menu, see next page) and via the reset button on the main module of the wallbox (see "Resetting the wallbox and restoring to factory settings" on page 53).

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).

- For quick access, log in via the QR code generated at the end of each onboarding process.
- If you use the same device as for the initial setup, you can open the **Control Board** without entering your login information.
- If you are using a new device or have reinstalled the app, you must re-enter your login information to open the **Control Board**.

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

Parameter	Description
Only for **Extender as standalone**: Start / stop charging	Start or stop the charging process for the charge point, provided a vehicle is connected.
Lock / unlock charging cable	Permanently lock the connected charging cable in the charging socket of the wallbox and unlock it again at a later date. **Please note:** In a charging group, you can perform this function globally for all wallboxes.
Overview/Diagnostics	View various information about the charge point (such as charging current and status as well as operational readiness, etc.) as well as faults and errors in operation.
Only for **Controller / Extender**: Settings > Grouping	Add further Extenders to the loading group, remove Extenders that are already registered and change the order of the Extenders within the loading group.
Settings > Infrastructure settings	View and change the current settings for maximum fuse protection of the charging station, phase imbalance detection and load shedding.

Parameter	Description
Only for **Controller / Extender**: Settings > Network	View and change the current settings for the backend integration.
Only for **Extender as standalone**: Settings > Network	View and change the current settings for the infrastructure WLAN.
Only for **Extender as standalone**: Settings > Access control	Remove RFID media that have already been configured and add new media for authorisation.
Only for **Extender as standalone**: Settings > Password management	Allows you to view and change the current password for the charging station.
Settings > Update	Allows you to install new software on the wallbox as soon as it is available.
Settings > Reset to factory settings	Reset all parameters and settings of the wallbox(es) to the factory settings: this automatically breaks up configured charging groups.
Settings > Language	Switch the user language of the app between **DE**, **EN**, **ES**, **FR**, **IT** and **NL** after the initial setup.
Settings > Help & FAQ	Redirects to the ABL support website.
Only for **Extender as standalone**: Settings > Download 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.

When you leave the **Control Board**, the connection to the Controller/Extender wallbox is terminated.

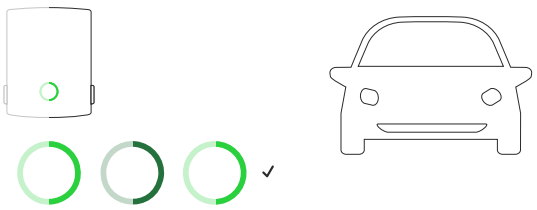
Description of the charging process

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

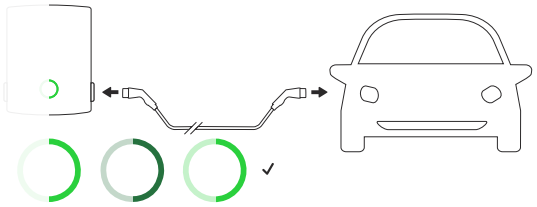
- When the charge point of the wallbox is ready for charging, the status indicator pulsates green (display: 1 cycle).



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

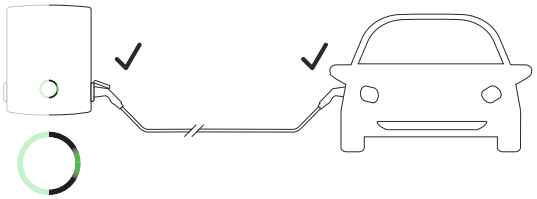
→ Open the charging inlet at the vehicle and plug in the charging connector.

→ Open the charging socket lid on the wallbox and plug in the charging connector.



3 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

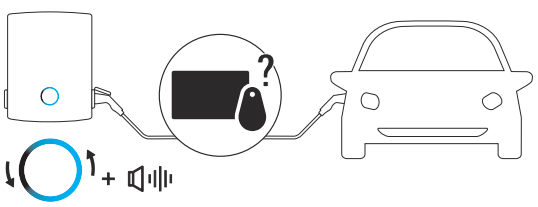
Depending on the model version, the Wallbox eM4 Twin can be configured differently during installation.

- **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 **4** to **6**. If authorisation is not required, go to step **8**.

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

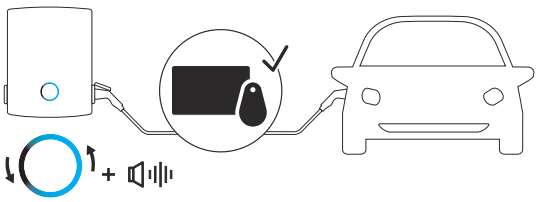
- If the charging operation has to be enabled using an RFID card, a blue chase light is shown dynamically on the status indicator.
  - Anti-clockwise: right charge point
  - Clockwise: left charge point



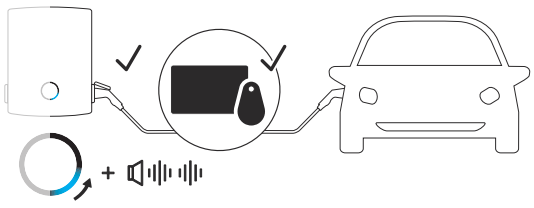
5 Hold a valid RFID card in front of the status indicator.

6 Pay attention to the wallbox's acoustic signals.

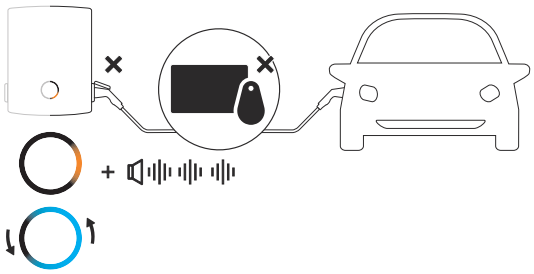
- If the RFID card has been read successfully, the wallbox emits a short sound signal and the wallbox checks the authorisation of the RFID card.



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



- If the authentication is not successful, the status indicator lights up orange and the wallbox emits three long sound signals.



NOTE

The authentication of the RFID card is not successful

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

- Remove the charging connector from the charging socket of the wallbox and wait until the status indicator pulsates green again. Then repeat steps **2** to **6**.
- **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.

ATTENTION

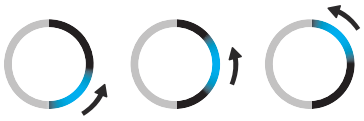
RFID card not readable

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

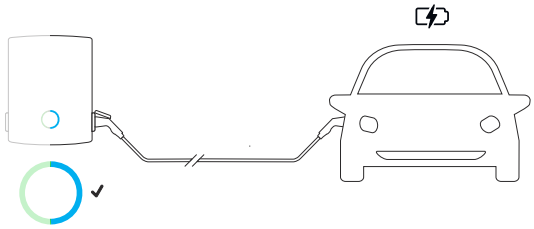
- Remove the RFID card from its protective cover or card holder to register at the RFID reader.
- Do not make any modifications to the RFID card: The card must never be perforated, stamped, folded, have stickers attached, or otherwise be manipulated mechanically.
- Make sure that the RFID card corresponds to a standard that is supported by the wallbox. For more information, see the "RFID Standard" lines in the section "Technical specifications" from page 58.

7 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

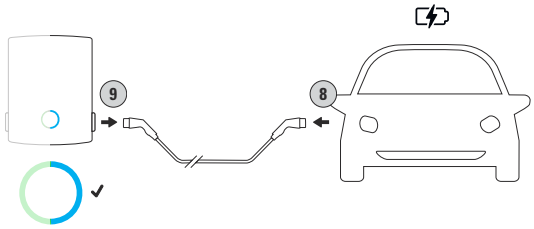
The status indicator for the charge point also lights up solid blue under the following circumstances:

- 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.

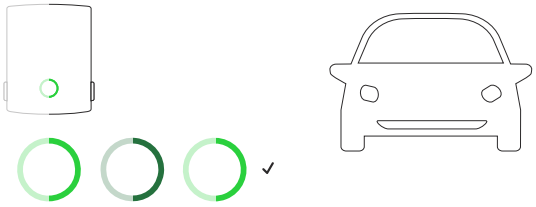
8 Unplug the charging connector from the electric vehicle's charging inlet and close it.

9 Unplug the charging connector from the charging socket and store the charging cable.

- The charge point lid closes automatically.



10 The wallbox is ready for operation and awaits the next charging procedure. (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.

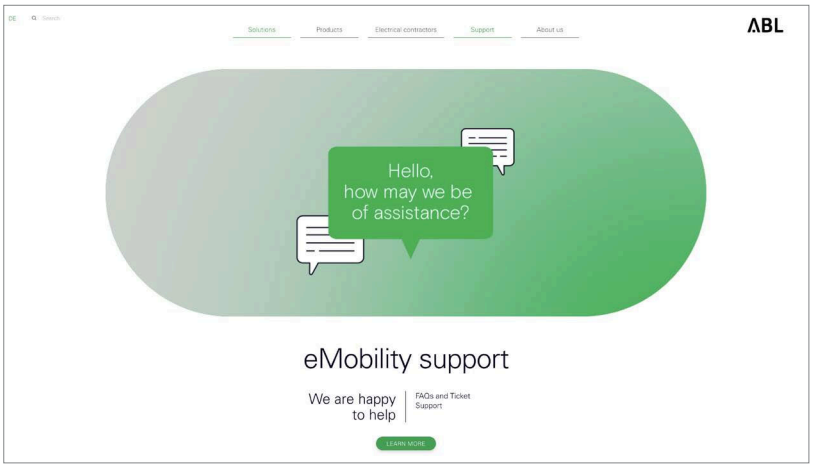
Support via the ABL Support page

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 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. Generate a ticket if you... • ...have specific questions or your product is defective. • ...want to order spare parts for the Wallbox eM4 Twin. The replacement of selected spare parts is described from page 49. • ... have questions about start-up. • ... 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 **Support** > **Ticket 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 vehicle is connected to the wallbox via the charging cable, but the status indicator for the charge point continues to pulsate green: The vehicle is not recognised. (Display: 1 cycle).

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

Danger from electrical voltages

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 status indicator for the charge point pulsates red. (Display: 1 cycle).

Cause and suggested solution

- The wallbox has detected an error that prevents or interrupts charging operations. The status indicator of the charge point pulsates red until the fault has been cleared.
  - 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 first and then the charging plug into the wallbox.
  - If the error persists, remove the charging cable from the vehicle and the wallbox. Unlock and open the charge point's RCCB flap, switch the RCCB/RCBO off (position **0**) and on again (position **I**) and lock the RCCB flap again (see also "Taking the Wallbox eM4 Twin out of operation" on page 48). Then reconnect the charging cable to the vehicle and then to the wallbox.
  - If the error persists, remove the charging cable from the vehicle and the wallbox and switch off the RCCB/RCBO for the charge point. Also switch off the upstream back-up fuse for the wallbox in the domestic power distribution (**0**). Next, switch on the upstream back-up fuse in the domestic power distribution first and then the RCCB/RCBO of the wallbox (position **I**). Finally, reconnect the charging cable to the vehicle and then to the wallbox.
  - Should the wallbox have to be repaired or replaced, please contact the dealer from whom you purchased your wallbox.

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 back-up fuse 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 2).
  - Should the wallbox have to be replaced, please contact the dealer from whom you have purchased your wallbox.

ATTENTION

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

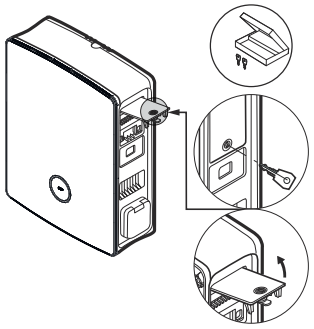
Should the wallbox keep displaying error messages, please take it out of operation (see further below) and contact **ABL Customer Service** (see "Contact" on page 2).

Testing the RCCB/RCBO

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

Proceed as follows to test the RCCB/RCBO:

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



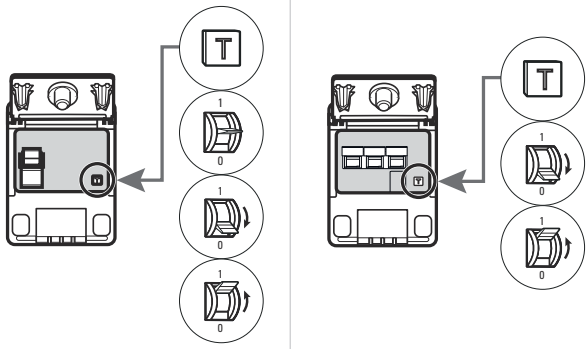
2 Locate and press the push button engraved **T**.

- An RCCB/RCBO must now trip and flick its pivot lever into the centre position.
- An RCBO must now trip and flick its pivot lever to position **0**.

3 Switch the RCCB/RCBO back on.

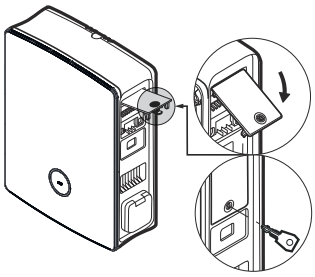
→ Now flip the pivot lever of the RCCB first to the **0** position and then back to the **I** position.

→ Set the pivot lever of the RCBO back to position **I**.



RCCB RCBO

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



5 Repeat this process for the second RCCB/RCBO.

DANGER

Danger from electrical voltages

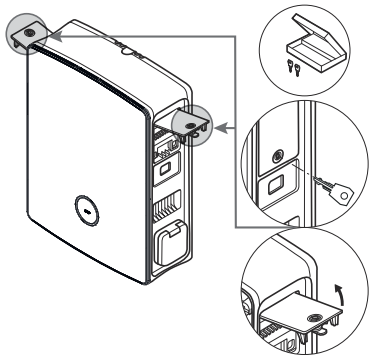
Should an RCCB/RCBO malfunction during testing, you must not continue to operate the wallbox under any circumstances!

- Take the wallbox out of operation (see next section) and contact **ABL Customer Service** (see "Contact" on page 2).

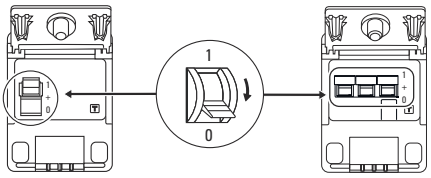
Taking the Wallbox eM4 Twin out of operation

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

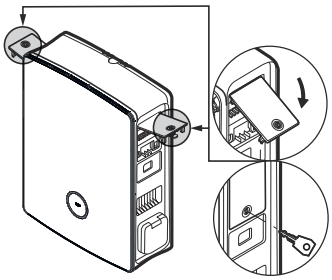


2 Flip the pivot levers of both RCCB/RCBO to the **0** position.

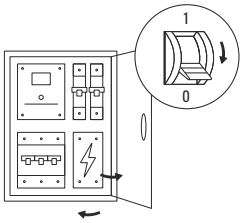


RCCB RCBO

3 Close the RCCB flaps again and lock them with the key.



4 Open your domestic power distribution box, disconnect the wallbox's power supply cable from the electricity grid via the upstream back-up fuse, secure the back-up fuse against being switched on again and close the distribution box.



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

DANGER

Danger from electrical voltages

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

DANGER

Danger from electrical voltages

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	–

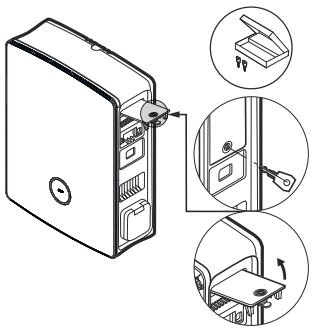
NOTE

Ordering spare parts

To order spare parts, you will need to create a support ticket in the **Support** > **Ticket Support** > **Spare parts** section of the ABL website (see "Support via the ABL Support page" on page 45).

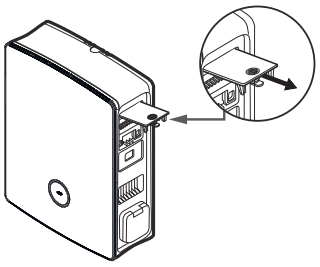
Proceed as follows to replace an RCCB flap on the Wallbox eM4 Twin:

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



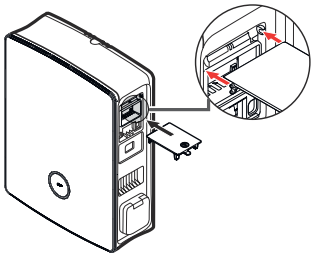
2 Hold the RCCB flap open at an angle of 90° and pull it off using minimal force.

- The RCCB flap will pop out of the hinge mount in the housing.

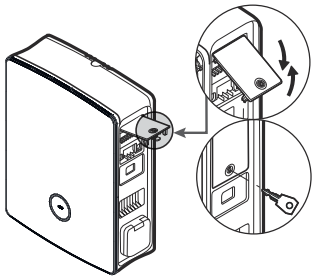


3 Place the two outer hinge pins of the new RCCB flap on the hinge mounts and press them into the housing using minimal force.

- 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

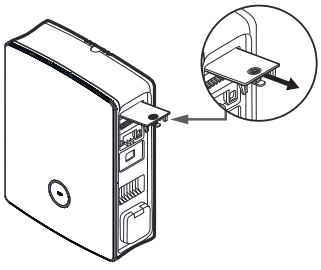
Changing the lock system

ABL offers different types of locks for the Wallbox eM4 Twin, which can be ordered as accessories (see "Accessories" on page 19).

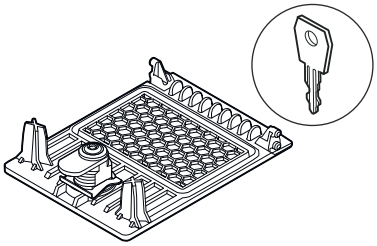
- **Locking circuit A:** In locking circuit A there are 10 packages to choose from, each with 10 individual locks with the same closure. A group key is not offered.
- **Locking circuits B to H:** In locking circuits B to H, 7 packages are offered, each with 10 individual locks with different closures.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

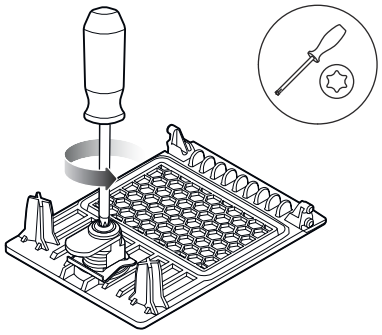


2 Move the locking cylinder to the locked position (tongue pointing downwards) and remove the key.

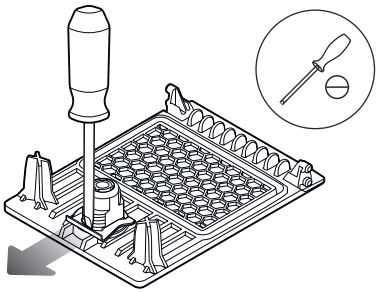


3 Place the RCCB flap on the front.

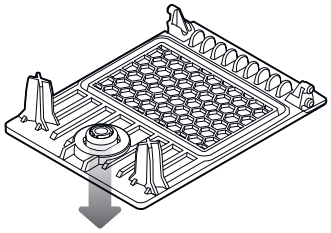
4 Loosen the screw for the locking cylinder with a Torx T15 screwdriver.



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.

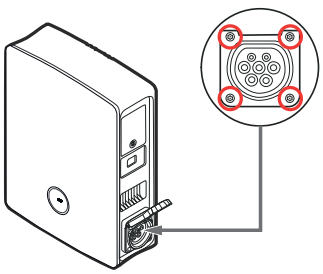
	End customer	Specialist electrical contractor
Construction	✗	✓

Required components:

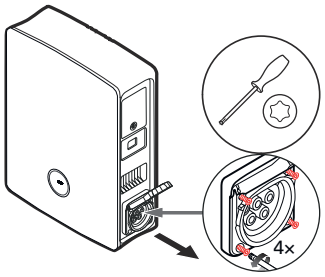
Number / spare part	100000261 / Spare part eM4 charging socket flap
Accessories	–
Tool	Torx TR 20 screwdriver, Torx 20 with hole

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

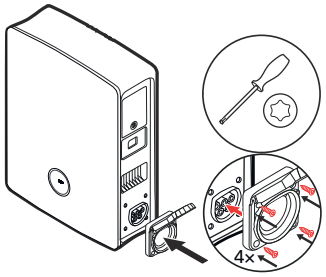
1 Open the charging socket flap and locate the four TR 20 screws in the frame of the charging socket flap.



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.

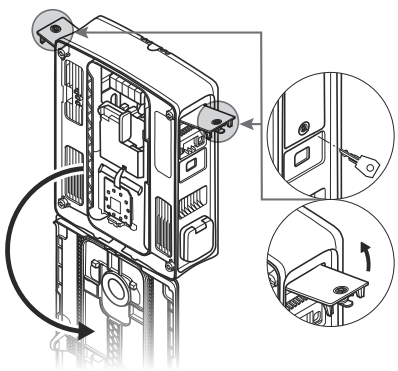
	End customer	Specialist electrical contractor
Construction	✗	✓

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:

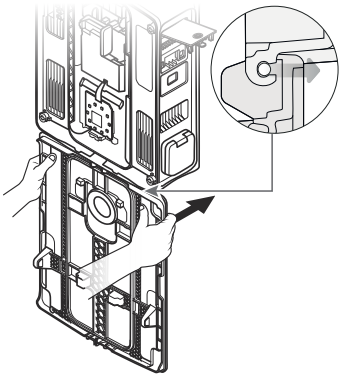
1 Unlock both the side RCCB flaps using the key supplied and flip them up to unlock the housing cover.



2 Open the housing cover to the front.

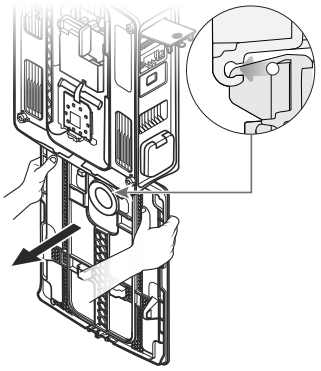
3 Grasp the housing cover by the two corners in the hinge area and push first one and then the other side backwards with moderate force.

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



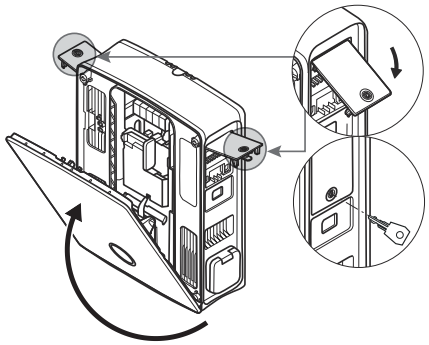
4 Place the hinge pin of the new door on the wallbox's hinge alignment and pull first one and then the other side forward with moderate force.

- The hinge pin 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 upstream back-up fuse in the domestic power distribution

For a simple reset, switch off the power to the wallbox for about 30 seconds via the upstream back-up fuse 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, you can restart a Controller wallbox via the Reset to factory settings option; in the Control Board, you can access this option via the Settings menu: After restarting the wallbox, all configuration parameters are reset to the factory default and must be set up again.

NOTE

Accessing the help system on an Extender wallbox

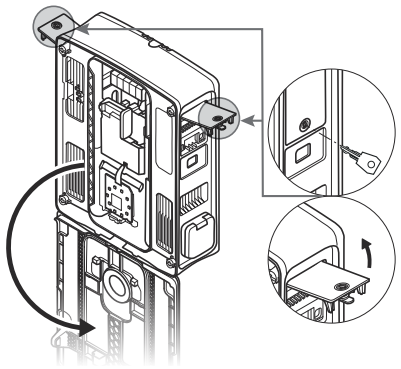
If you tap the ⓘ button while the **ABL Configuration App** is connected to an Extender wallbox, you will be redirected directly to ABL's support website.

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:

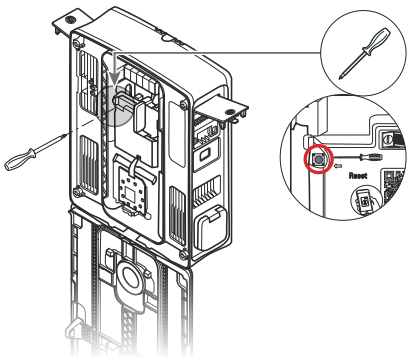
1 Unlock both the side RCCB flaps using the key supplied and flip them up to unlock the housing cover.



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**.

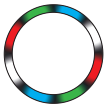


4 Insert an insulated screwdriver and press the reset push-button for the desired duration.

- **< 3 seconds:** Simple reset (no parameter change)
- **< 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:

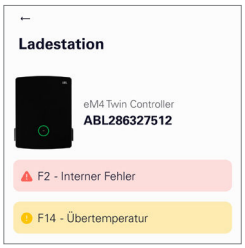
- **< 3 seconds:** Ready for charging
- **< 10 seconds:** Ready for reconfiguration



Actions in case of internal errors, notes and warnings

Malfunctions may occur during configuration and operation of the Wallbox eM4 Twin. While certain malfunctions have no effect on the charging operation and are only displayed in the form of notes and warnings, 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
Wallbox HMI		In the event of an error that reduces the charging current or stops charging operation, the charge point status indicator will pulsate red (illustration: right-hand charge point).
Wallbox energy meter		In the event of a malfunction (error, note and warning), the identification code is displayed in the third line of the charge point energy meter window.
ABL Configuration App		Every malfunction (error, note and warning) is documented in detail in the app. If required, you can download a diagnostic report to the mobile device.

ATTENTION

Checking the internal RCCB/RCBO 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/RCBO 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	• Check internal RCCB/RCBO for the charge point and switch on again • 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	• Check internal RCCB/RCBO for the charge point and switch on again • Disconnect the charging connector from the EV and reconnect it • Perform restart by pressing reset push button (< 3 seconds) • Check wallbox with vehicle simulation adapter • Get EV checked by specialist workshop
F4	Internal communication error	Charging not possible	• Perform restart by pressing reset push button (< 3 seconds)

Code	Error description	Effect	Action
F5	Locking error	Charging not possible	Locking not possible: • Disconnect the charging plug from the charging socket of the wallbox and reconnect it • Check the charging plug for dirt • Use a different charging cable Unlocking not possible: • Switch the wallbox off • 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 • Use a different charging cable
F7, F8	Controller pilot signal out of valid range	Charging not possible	• Disconnect the charging connector from the EV and reconnect it • Use a different charging cable
F9	Overcurrent detected	Charging not possible	• Disconnect the charging connector from the EV and reconnect it • 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 • Perform restart by pressing reset push button (< 3 seconds)
F13	Control by default at terminal **EN1** (note)	Reduced charging current	• Check setting for external load shedding in **ABL Configuration App** • Check external control unit (e.g. FNN control box or similar)
F14	Overtemperature	Charging not possible or reduced charging current	• Ensure better shading of the wallbox at the installation site
F15	Phase imbalance detected	Reduced charging current	• Get EV checked by specialist workshop • Limit the maximum charging current to 16 or 20 A in the **ABL Configuration App** (Extender stand-alone only).
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	• Check internal RCCB/RCBO for the charge point and switch on again • Perform restart by pressing reset push button (< 3 seconds)
F48, F49	Mains voltage error (warning)	Charging still possible	• Check the installation and mains connection of the wallbox

Code	Error description	Effect	Action
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 WiFi coverage on site • Check LAN cabling • Perform restart by pressing reset push button (< 3 seconds)
F100 […] F106	Other error	Charging may not be possible	• Update the wallbox's software using the ABL Configuration App • Check WiFi coverage on site • Check LAN cabling • Perform restart by pressing reset push button (< 3 seconds)
F120 […] F123	Energy meter error	Charging may not be possible	• Check internal RCCB/RCBO for the charge point • 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 upstream back-up fuse 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 2).

Maintenance

Except for testing the integrated or upstream RCCB/RCBO, 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 with RCCB

Product number	100000002
Type	4WT-22CNS2
Rated voltage	230/400 V
Rated frequency	50 Hz
Rated current	32 A
Maximum output	2 × 11 kW or 1 × 22 kW
Connection system	Lockable Type 2 charging socket in acc. with IEC 62196-2, 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 on-site), 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 kA (tripping characteristic C)
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 above 120% 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
Use (in accordance with IEC 61439-7)	AEVCS
Earthing system	TN-S
Operating temperature	-25°C to 40°C
Storage temperature	-25°C to 70°C
Relative humidity	5 to 95%, no condensation
Class of protection	I
Degree of protection (housing)	IP55
Overvoltage category	III
Degree of pollution	3

Product number	100000002
Impact strength	IK10
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

eM4 Twin Extender series with RCCB

Product number	100000004
Type	4WT-22ENS2
Rated voltage	230/400 V
Rated frequency	50 Hz
Rated current	32 A
Maximum output	2 × 11 kW or 1 × 22 kW
Connection system	Lockable Type 2 charging socket in acc. with IEC 62196-2, 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 on-site), 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 kA (tripping characteristic C)
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 above 120% 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
Use (in accordance with IEC 61439-7)	AEVCS
Earthing system	TN-S
Operating temperature	-25°C to 40°C
Storage temperature	-25°C to 70°C
Relative humidity	5 to 95%, no condensation
Class of protection	I
Degree of protection (housing)	IP55

Product number	100000004
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 Wallboxes eM4 Twin Controller with RCCB and eM4 Twin Extender with RCCB are also available as variants with shutter charging sockets. The corresponding product numbers can be found in the following table:

Controller with RCCB and shutter	100000317	4WT-22CNH2
Extender with RCCB and shutter	100000318	4WT-22ENH2

eM4 Twin Controller series with RCBO

Product number	100000323
Type	4WTA22CNS2
Rated voltage	230/400 V
Rated frequency	50 Hz
Rated current	32 A
Maximum output	2 × 11 kW or 1 × 22 kW *
Connection system	Lockable Type 2 charging socket in acc. with IEC 62196-2, 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 on-site), 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 kA (tripping characteristic C)
Rated diversity factor (RDF)	1.0
FI/LS switch per charge point	Residual current breaker with overcurrent protection, C32, 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 above 120% 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

Product number	100000323
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
Use (in accordance with IEC 61439-7)	AEVCS
Earthing system	TN-S
Operating temperature	-30°C to 50°C
Storage temperature	-30°C to 70°C
Relative humidity	5 to 95%, no condensation
Class of protection	I
Degree of protection (housing)	IP55
Overvoltage category	III
Degree of pollution	3
Impact strength	IK10
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

* With derating of power output depending on external temperature and conditions

eM4 Twin Extender series with RCBO

Product number	100000324
Type	4WTA22ENS2
Rated voltage	230/400 V
Rated frequency	50 Hz
Rated current	32 A
Maximum output	2 × 11 kW or 1 × 22 kW *
Connection system	Lockable Type 2 charging socket in acc. with IEC 62196-2, 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 on-site), 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 kA (tripping characteristic C)
Rated diversity factor (RDF)	1.0
FI/LS switch per charge point	Residual current breaker with overcurrent protection, C32, 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 above 120% 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

Product number	100000324
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
Use (in accordance with IEC 61439-7)	AEVCS
Earthing system	TN-S
Operating temperature	-30°C to 50°C
Storage temperature	-30°C to 70°C
Relative humidity	5 to 95%, no condensation
Class of protection	I
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

* With derating of power output depending on external temperature and conditions

The Wallboxes eM4 Twin Controller with RCBO and eM4 Twin Extender with RCBO are also available as variants with shutter charging sockets. The corresponding product numbers can be found in the following table:

Controller with RCBO and shutter	100000321	4WTA22CNH2
Extender with RCBO and shutter	100000322	4WTA22ENH2

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 61439-7:2020	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

Overview of the radio modules used

Module		Band	Frequency	Frequency range	Subclass of Class 1[3] according to Commission decision 2000/299/EC	Transmitting power
RFID			13.56 MHz	13.553 – 13.567 MHz	116 (Spectral mask: I.2)	< 10 mW
LTE	FDD LTE	B1	2100 MHz	1920 – 1980 MHz	9 a	< 200 mW
		B3	1800 MHz	1710 - 1785 MHz		
		B7	2600 MHz	2500 – 2570 MHz		
		B8	900 MHz	880 – 915 MHz		
		B20	800 MHz	832 – 862 MHz		
		B28	700 MHz	703 – 748 MHz		
	UMTS/HSPA/ HSPA+	B1	2100 MHz	1920 – 1980 MHz		< 250 mW
		B8	900 MHz	880 – 915 MHz		
	GSM/EDGE/ GPRS		900 MHz	880 – 915 MHz		< 2000 mW
			1800 MHz	1710 – 1785 MHz		
WLAN			2400 MHz	2400 – 2483.5 MHz	22	< 100 mW

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

Designation	Cross section	Number
Cat5e S/FTP	from at least 0.14 mm²	1 cable each for the connection between a wallbox and a LAN port on the local router or switch
Cat6 S/FTP		

⚠ ATTENTION

Selecting suitable data cables

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

Definitions

Abbreviation	Explanation
BEV	Battery Electric Vehicle: Electric vehicle with battery
DC	Direct current: Direct current
DHCP	Dynamic Host Configuration Protocol: Protocol for network communication
eM	Electric Mobility
EMC	Electromagnetic compatibility
EV	Electric vehicle: Electric vehicle
FDD	Frequency Division Duplex: Radio communication technique
FNN	Network Technology/Network Operation Forum, committee within the VDE
GPRS	General Packet Radio Service: Service for data transmission in GSM networks
GSM	General System for Mobile Communications: Mobile communication standard
HMI	Human Machine Interface
HSPA	High Speed Packet Access: Extension of the UMTS mobile radio standard
IEC	International Electrotechnical Commission: International organisation for standards in the field of electrical engineering and electronics
ISO	International Organization for Standardization: International association of standards organisations
LED	Light Emitting Diode
LTE	Long-term evolution, digital mobile standard
MCB	Miniature Circuit Breaker: Circuit breaker / back-up fuse
MID	Measuring Instruments Directive: Measuring Instruments Directive
OCPP	Open Charge Point Protocol: application protocol for communication between EV charging stations and a central management system
PHEV	Plug-in Hybrid Electric Vehicle: vehicle with plug-in hybrid drive
RCBO	Residual Current operated Circuit-Breaker with Overcurrent protection: combined residual current circuit-breaker and miniature circuit-breaker
RCCB	Residual Current operated Circuit-Breaker: Residual Current Devices
RCM	Residual Current Monitor: residual current meter
RFID	Radio Frequency Identification: method for automatic identification by radio
'T' button	Testing button
UMTS	Universal Mobile Telecommunications System: Mobile communication standard
VDE	German Association for Electrical, Electronic & Information Technologies
WLAN	Wireless Local Area Network: local wireless network

Disposal advice

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

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

CE certification and declaration of compliance

Hereby, ABL GmbH declares that the radio equipment type eM4 Twin, eM4 Single, eM4 Home is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address:

www.ablmobility.de/en > Support > Downloads > Compliance declarations > Wallboxes > Wallbox eM4 Twin

Copyright and disclaimer

Version 0301501_EN_f, Version: 13.02.25

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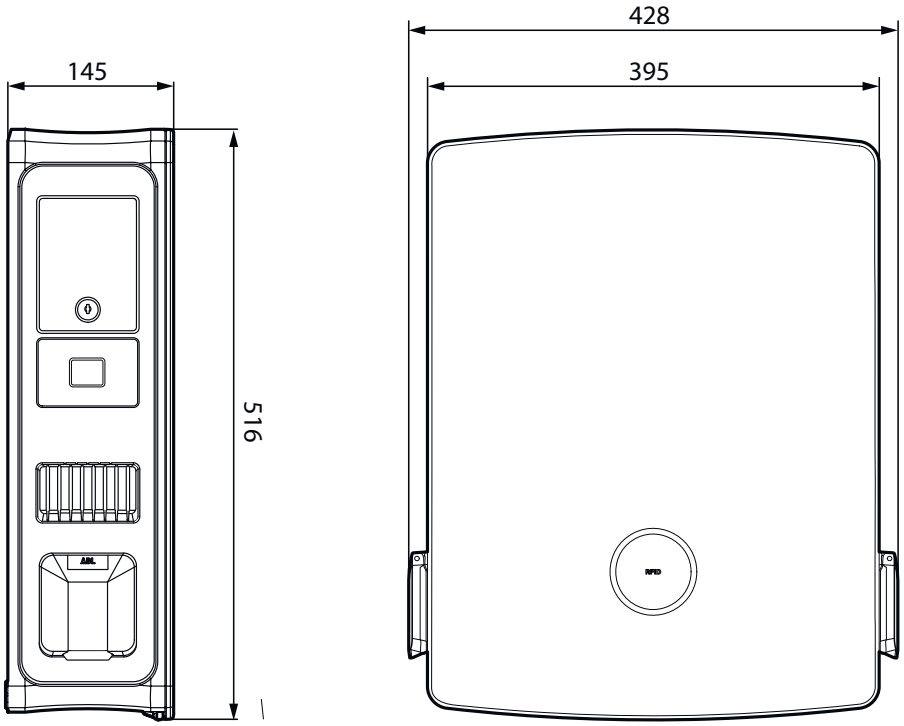
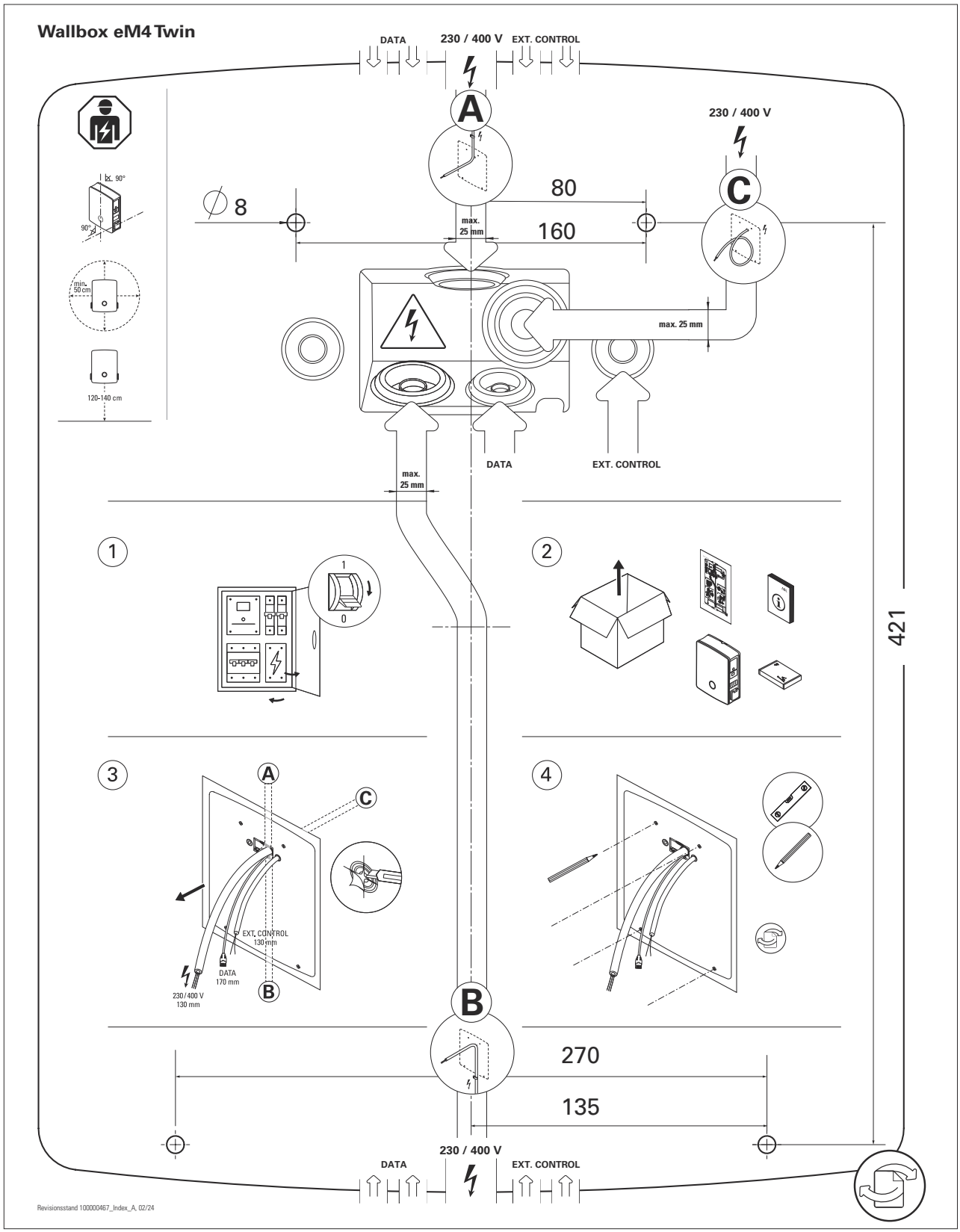
- The manufacturer does not take responsibility for any loss and/or damage that occurs because of the data or possible misinformation contained in this manual.

Dimensions



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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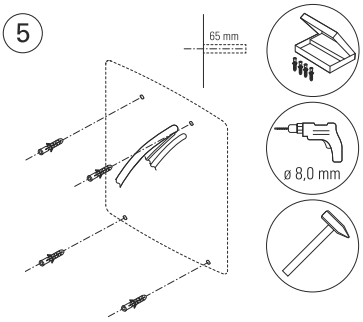

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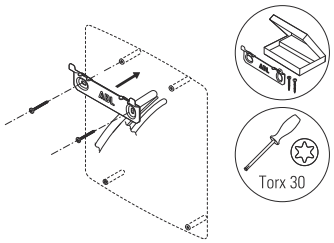

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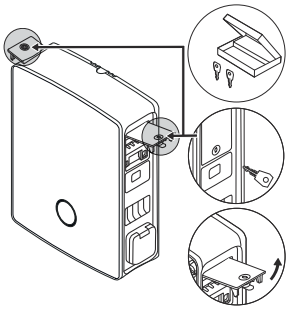

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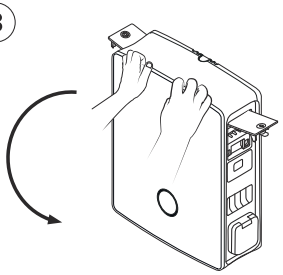

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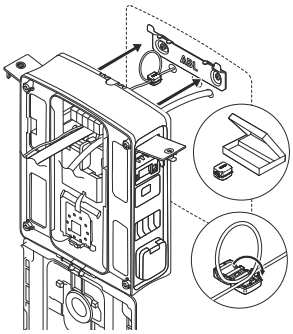

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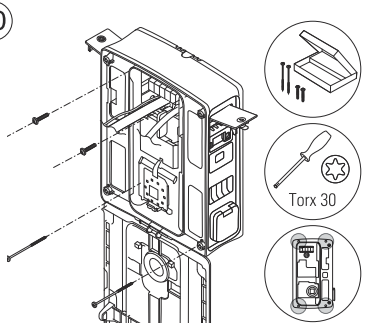

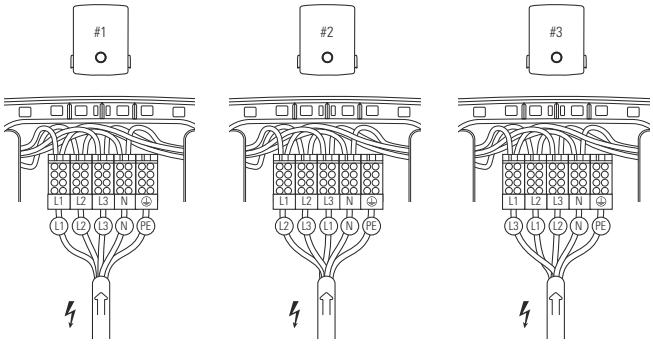

#4	eM4 Twin	L1	L2	L3
	ϟ	L1	L2	L3
#5	eM4 Twin	L1	L2	L3
	ϟ	L2	L3	L1
#6	eM4 Twin	L1	L2	L3
	ϟ	L3	L1	L2
#7	eM4 Twin	L1	L2	L3
	ϟ	L1	L2	L3
#8	eM4 Twin	L1	L2	L3
	ϟ	L2	L3	L1
#9	eM4 Twin	L1	L2	L3
	ϟ	L3	L1	L2
#10	eM4 Twin	L1	L2	L3
	ϟ	L1	L2	L3
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20
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MADE IN GERMANY

wallbox

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