

# eMH2 Wallbox

Operating Manual

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# 1. SAFETY INFORMATION



- Sections marked with this symbol draw attention to electrical voltages that represent a danger to life and limb: Actions contrary to these safety notices may lead to severe or fatal injury
- Actions marked with this symbol must not be carried out under any circumstances
- Sections marked with this symbol draw attention to further hazards that may lead to damage to the Wallbox itself or to other electrical devices
- Actions marked with this symbol must be carried out with special care
- Sections marked with this symbol draw attention to further important information and special features that are necessary for the reliable operation of the device
- Actions marked with this symbol should be carried out as required

# 1. SAFETY INFORMATION



- You must read the installation manual before opening the electronic components cover
- You must read the operating manual before opening the housing cover
- You must heed all warnings and follow all instructions and safety notices
- Persons with limited physical, sensory or mental abilities must use the Wallbox only if they are supervised and under instruction

# 1. SAFETY INFORMATION



- After opening the housing, dangerous voltages may be present on the inside of the Wallbox as well as on components you are able to touch
- Disregard of or actions contrary to the safety information and instructions contained in the comprehensive manuals and printed on the device may lead to electric shock, fire and/or severe injury
- Should you detect damage to the housing or charging cable, you must immediately discontinue installation of the Wallbox or take the already installed Wallbox out of operation via the upstream miniature circuit breaker in your domestic power supply and the internal RCCB. No further use of the Wallbox is permitted in this case

# 1. SAFETY INFORMATION

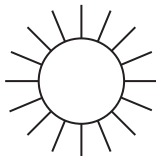


- This Wallbox represents the current state of technology and fulfills all current technical safety requirements, guidelines and standards

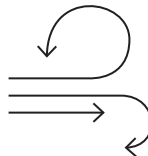
The following working steps must be carried out by a qualified specialist electrical contractor

- Installation
- Disassembly
- Modifying or taking the Wallbox out of operation
- Resolving malfunctions and errors

# 1. SAFETY INFORMATION



- The Wallbox is engineered for high ambient temperatures. It must always be ensured that the maximum operating temperature is not exceeded: p. 49
- Ideally, the installation site should be covered



- The installation site must offer sufficient air circulation



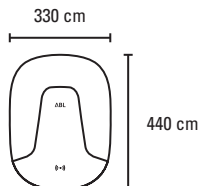
- The installation site must not be located in explosive atmosphere areas



The installation site

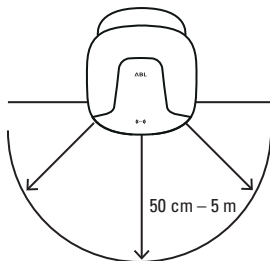
- is not located in areas subject to flooding or in close proximity to water
- is not being used to store objects or containers containing liquids

# 1. SAFETY INFORMATION



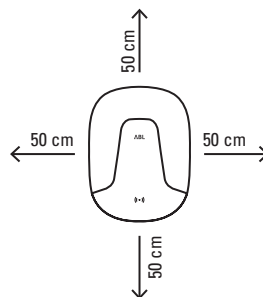
## The mounting area

- measures 440 x 330 mm (H x W)
- must have an even and firm surface. The entire rear surface of the Wallbox must be in contact with the mounting surface

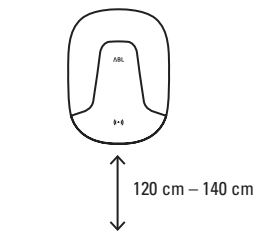


## The installation site

- provides for a distance between 50 cm and 5 m to the vehicle
- is not located in a confined space and must be freely accessible



- A minimum distance to other technical installations of 50 cm must be observed
- Radio transmitters must be at least 20 cm away from the Wallbox

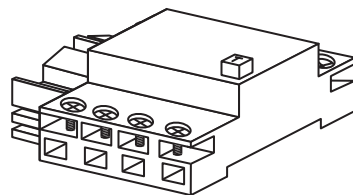
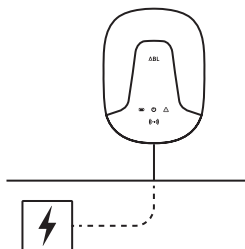


## Installation height

- is 120 to 140 cm from the floor to the lower edge of the housing
- is located at elevations of max. 2,000 meters AMSL

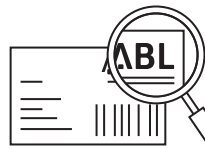
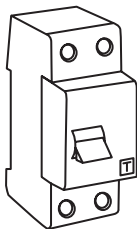


# 1. SAFETY INFORMATION



- All regulatory requirements for low voltage installations according to IEC 60364-1 and IEC 60364-5-52 apply
- The installation site must offer a sufficiently dimensioned power supply cable according to HD 60364-7-722:2012
- If necessary, a separate power supply must be installed that is intended exclusively for connecting the Wallbox and complies with the general requirements for cabling and building infrastructure
- The power supply cable may be installed above or below the wall surface
- Cable dimensions must be adjusted according to the prevailing conditions. The terminal blocks in the Wallbox are designed for cable dimensions from 1.5 mm<sup>2</sup> to 16 mm<sup>2</sup>

# 1. SAFETY INFORMATION



Your Wallbox features an internal Type A residual current circuit breaker and integrated DC fault current detection. The domestic power supply must

- be protected with a C-characteristic circuit breaker with no more than 32 A that is not followed by any other downstream electrical devices.
- always be connected to the protective earth conductor
- only be interrupted using the upstream circuit breaker and the internal residual current circuit breaker to disconnect the Wallbox completely from the power grid

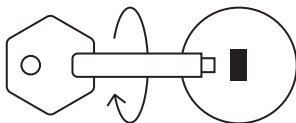
The identification on the product label indicates whether the Wallbox is approved to be installed and operated in your country.

Always applicable are the relevant country-specific and local safety regulations

- for the circuit breaker, its overvoltage protection and tripping type
- for the electricity supply, its rated voltage and rated current
- for electrical installations
- of the electricity grid operator

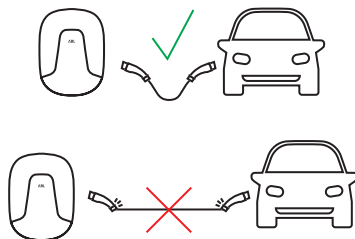
Depending on the desired rated power, the installation of the Wallbox may need to be registered with and/or approved by the local electricity grid operator before it is taken into operation

# 1. SAFETY INFORMATION



The housing cover of the Wallbox must be locked properly. Changes to, or the covering or taping up of the housing or the internal wiring

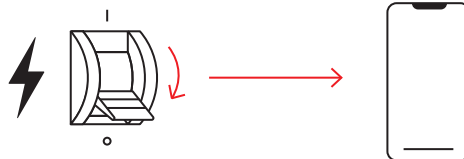
- represent a safety risk
- constitute a fundamental breach of the guarantee provisions
- may void the warranty with immediate effect



Only accessories intended for the Wallbox and supplied by the manufacturer must be used. The fixed charging cable of the Wallbox

- must not be extended with connectors, adapter cables or in any other way
- must not be under strain during charging operations

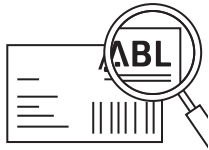
# 1. SAFETY INFORMATION



The Wallbox must be taken out of operation (p. 47) and technical support (p. 70) must be contacted if

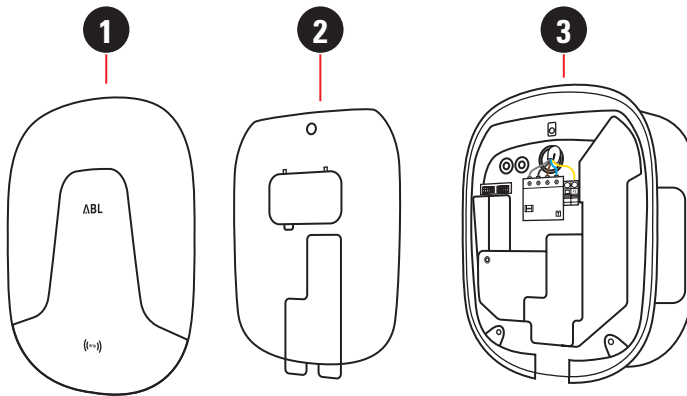
- the housing has been physically damaged
- the housing cover has been removed or can no longer be fixed to the housing
- it becomes obvious that sufficient protection against water and/ or foreign objects entering the device is no longer possible
- there is functional or visible damage to the fixed charging cable
- the Wallbox does not function properly or has been otherwise damaged
- Wallbox errors repeat or occur permanently

## 2. YOUR WALLBOX



- 1** Identify the product number on the type plate. The type plate is located on the underside of the Wallbox
  - 2** Look up the technical data for your model variant: p. 50
- Sections marked with this symbol draw attention to further hazards that may lead to damage to the Wallbox itself or to other electrical devices
  - Actions marked with this symbol must be carried out with special care

## 2. YOUR WALLBOX



### 1 Housing cover

Detachable outer plastic cover to be fixed to the housing base using hanging lip (upper edge) and locked using lockable screw (lower edge)

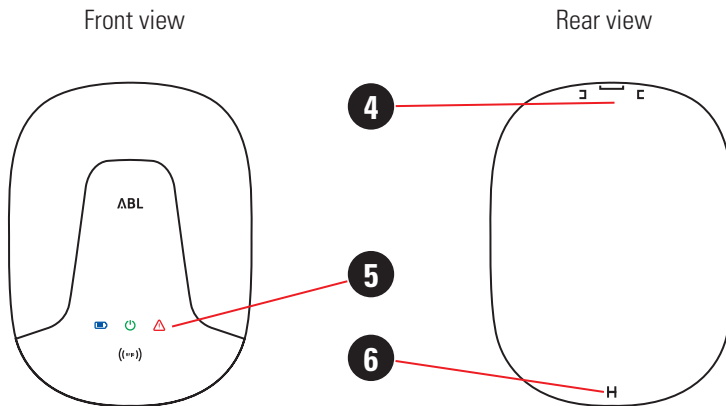
### 2 Electronic components cover

Internal cover for electronic module with integrated flap for manual access to the RCCB (residual current circuit breaker)

### 3 Housing base

Base with integrated electronic module, fixed charging cable with Type 2 charging plug or Type 2 charging socket and charging plug storage holder

## 2. YOUR WALLBOX



### 4 Plastic lip and guides

The plastic lip is for hanging the housing cover onto the housing base. The two guide pins ensure the correct vertical positioning of the housing cover

### 5 LED display

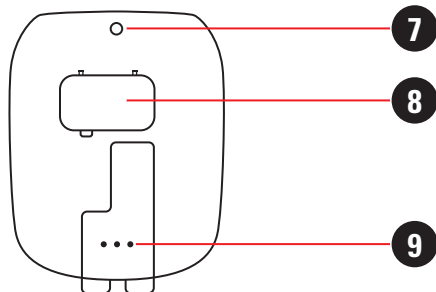
The multi-colored LED display is located in this part of the housing cover

### 6 Locking slot

The locking slot is for locking the housing cover to the housing base using the lockable screw

## 2. YOUR WALLBOX

Front view



### 7 Opening for M4 fixing screw

This opening is used to fix the electronic components cover to the housing base with a fixing screw (M4 x 10)

### 8 RCCB access flap

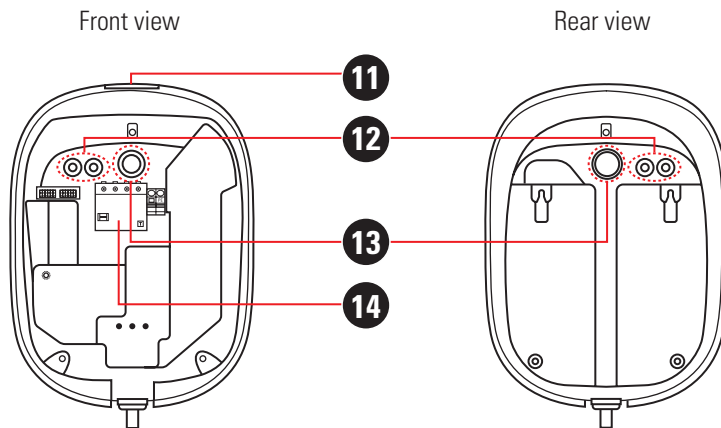
This flap provides access to the RCCB inside the Wallbox

### 9 LED display lenses

The LED display is shown through these lenses



## 2. YOUR WALLBOX



### 11 Housing cover slot

The plastic lip of the housing cover (4) is inserted into this slot

### 12 Grommets for data cables

These grommets seal the openings for data cables in the terminals area of the housing base

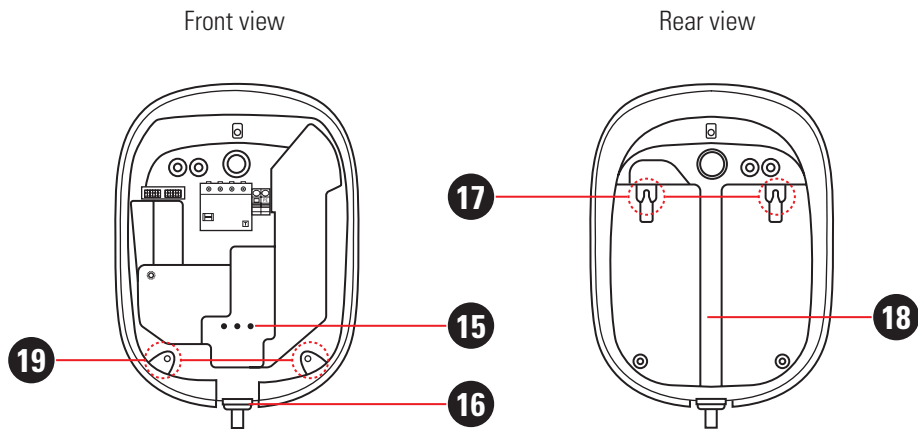
### 13 Power supply grommet

This grommet seals the opening for the power supply in the terminals area of the housing base

### 14 RCCB

The RCCB and the adjacent PE terminals are for connecting the power supply

## 2. YOUR WALLBOX



### 15 Opening for LED display

The LED display is shown through this opening

### 16 Lockable screw for housing cover

This lockable screw is for locking the housing cover. Its key is also included

### 17 Mounting screw slots

The housing base is fixed into position by hooking these two slots onto mounting screws

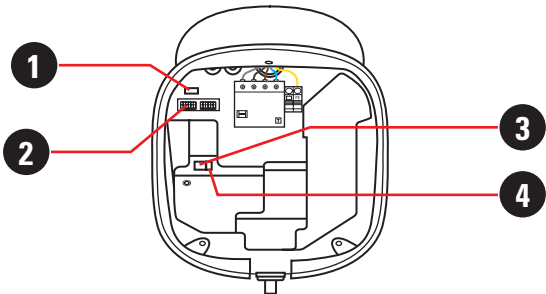
### 18 Cable guide

This cable guide is intended for a surface-mounted power supply cable

### 19 Openings for screw fixings

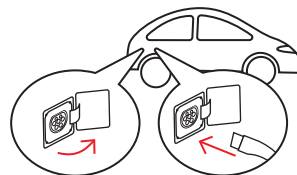
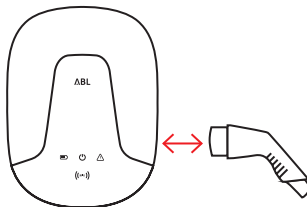
These openings are used to fix the housing base into position with two screws after it has been hooked onto the screw slots (17)

# 2. YOUR WALLBOX



Interface	Purpose	Master+	Master	Slave+	Slave
1 USB dongle or RJ12 dongle	<ul style="list-style-type: none"><li>· Configuration</li><li>· Charge control</li><li>· RFID</li></ul> Master / Slave system	•	•	•	•
2 Daisy chain circuit board	<ul style="list-style-type: none"><li>· Energy meter configuration</li><li>· Distribution</li><li>· RS485 Bus control</li><li>· RS485 energy meter</li></ul> Master / Slave system	•	•	•	•
3 Type A USB	<ul style="list-style-type: none"><li>· WIFI dongle</li><li>· SBC configuration</li><li>· Backend communication</li><li>· LTE dongle</li><li>· Backend communication</li></ul>	•	•		
4 RJ45 ethernet	SBC configuration Backend communication	•	•		

### 3. CHARGING PROCEDURE



- 1** The green LED pulsates:  
The Wallbox is ready for use

- 2** a) Wallbox with charging socket:  
Plug the charging connector  
into the charging socket of the  
Wallbox

b) Wallbox with charging cable:  
Remove the charging connector  
from its Wallbox compartment

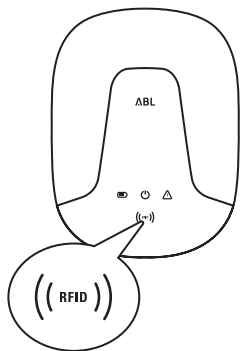
The charging socket and the  
compartment are located on the  
right hand side of the Wallbox

- 3** Open the vehicle's charging sock-  
et. Plug the charging connector  
into the charging socket



- 4** The green LED is ON:  
The Wallbox is awaiting authori-  
zation by the operator

# 3. CHARGING PROCEDURE



**5** Place the RFID card in front of the RFID icon on the lower part of the housing cover



**6** The green LED is ON.  
The blue LED pulsates.  
The Wallbox emits one short acoustic signal: The authorization status of the RFID card is being checked

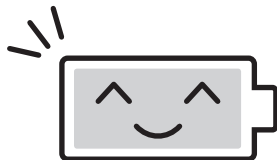


**7** a) The blue LED pulsates.  
The Wallbox emits two short acoustic signals: The RFID card has been approved



b) The red LED flashes. The Wallbox emits one long acoustic signal: The RFID card has been rejected

### 3. CHARGING PROCEDURE



- 8** The blue LED is ON:  
the vehicle requests the  
charging procedure to be  
initiated.  
The Wallbox initiates  
the charging procedure

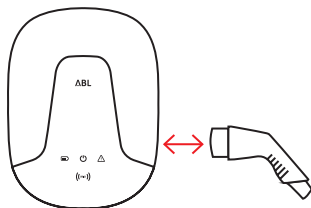
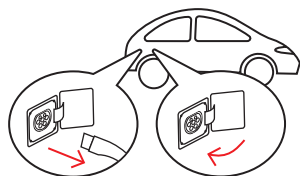


- 9** The blue LED pulsates:  
The charging procedure has  
been either paused or completed



- The Wallbox is engineered for the fastest possible charging procedure according to IEC 61851-1, Mode 3. Actual charging time depends on the vehicle to be charged
- Distinguishing between finished and paused charging procedures is only possible by checking the displays inside the vehicle.
- Unless there is a malfunction, the charging procedure is only ever terminated by the vehicle or the user. To terminate the charging procedure, use the appropriate vehicle controls. Should the vehicle not be fully charged even after a sufficiently long charging procedure, please contact technical support: p. 70

### 3. CHARGING PROCEDURE



- 10** Pull the charging connector from the vehicle's charging socket.  
Close the vehicle's charging socket

- 11** a) Wallbox with charging socket: Pull the charging connector from the charging socket on the Wallbox

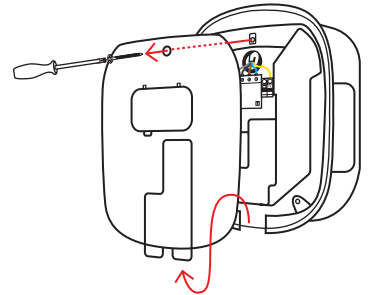
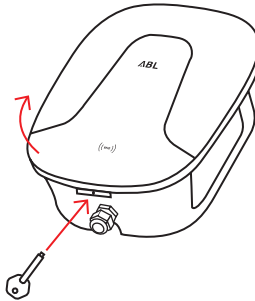
b) Wallbox with charging cable: Secure the charging connector in the Wallbox compartment

The charging socket and the compartment are located on the right hand side of the Wallbox



- 12** The green LED pulsates:  
The Wallbox is ready for the next charging procedure.

## 4. SOFTWARE UPDATE



- To update the systems software version, the Wallbox must be connected to the power supply: see Installation Manual
- Beware of electrical currents after removing the electronic components cover

- 1** Open the lockable screw on the underside of the Wallbox by turning with the housing cover key approx. 4 times
- 2** Flip up the cover, remove it and keep it in a safe place

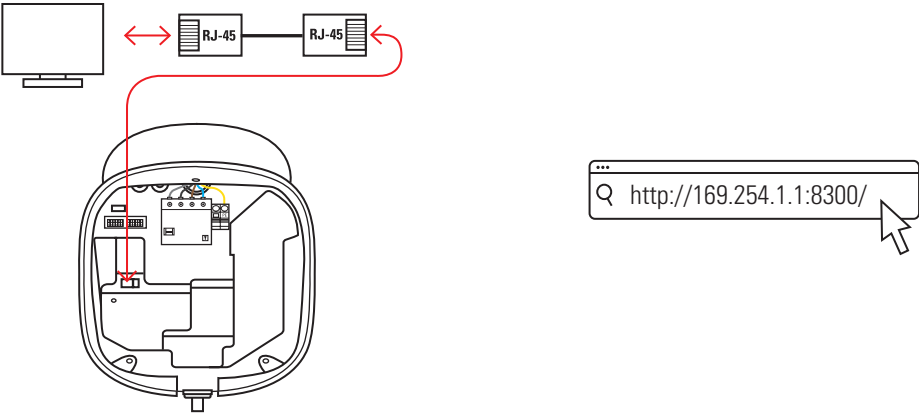
- 3** Remove the upper screw of the electronic components cover (M4 x 10 mm, TX20) and keep it in a safe place. Remove the electronic components cover and keep it in a safe place



The update data file is available for download at [www.abl.de](http://www.abl.de)



# 4. SOFTWARE UPDATE



- 4

Open the lockable screw on the underside of the Wallbox by turning with the housing cover key approx. 4 times
- 5

Connect the RJ-45 cable with the computer
- 6

Type the address `http://169.254.1.1:8300/` into your browser
- 7

In some cases, the computer's network card may have to be configured using the parameters listed below. The procedure required for this depends on the computer's operating system. Then repeat steps 4 and 5

Network	169.254.0.0
Subnet mask	255.255.0.0
Address	169.254.1.2

# 4. SOFTWARE UPDATE

ABL

Charge Point Administration

de auswählen

Übersicht

Konfiguration

Geräte

Produkte

Zertifikate

Diagnose

Logs

Wartung

Charge Point Übersicht

9

Systemstatus

Ladepunktstatus:

12

Hardwarestatus:

Hardware ist in Ordnung.

Verbindungsstatus :

Verbindung zum Netzwerk und zum Backend steht.

Stationsdaten

ChargeBox Id:

wallbox1

Model:

3W2215

Seriennummer de Station:

3W221554321

Seriennummer des Controllers:

808829000062

Systemdaten

Systemsoftware-Version:

1.4p2

Systemzeit:

2019/02/14 15:13:57 UTC

Uptime des Systems:

15 days

IP-Adressen:

172.31.0.56 (ppp0)

fe80:0:0:0:8a4a:eaff:fed6:ed91%2 (eth0)

172.16.80.179 (eth0)

0:0:0:0:0:0:1%1 (lo)

127.0.0.1 (lo)

Letzte Aufrufe:

172.16.2.237 - 2019/02/14 07:46:44 UTC

172.16.1.25 - 2019/02/13 10:59:44 UTC

172.16.3.141 - 2019/01/30 12:35:08 UTC

172.16.3.115 - 2019/02/14 15:11:57 UTC

172.16.80.201 - 2019/02/14 09:13:05 UTC

172.16.3.192 - 2019/02/11 14:56:43 UTC

172.16.2.119 - 2019/02/13 14:25:48 UTC

8 The browser displays the web administration interface

9 Open the 'Maintenance' tab

The currently installed system software version is displayed in the 'System Data' field

26

# 4. SOFTWARE UPDATE

ABL charge Point Administration

de auswählen

ÜbersichtKonfigurationGeräteProdukteZertifikateDiagnoseLogsWartung

Systemwartung

System Neustart

Soft Reset:

Neustart von Anwendung und Gerätetreibern. Das Betriebssystem läuft weiter.

Bis die Anwendung wieder läuft, können bis zu 60 Sekunden vergehen.

Neustart ausführen

Hard Reset:

Neustart des kompletten Systems inklusive Betriebssystem.

Bis das Betriebssystem und die Anwendung wieder laufen, können bis zu 60 Sekunden vergehen.

Neustart ausführen

Software-Update

Das Hochladen der neuen Software kann je nach Geschwindigkeit des Netzwerkes einige Minuten dauern. Nach dem erfolgreichen Hochladen aber vor dem eigentlichen Update-Vorgang wird Ihnen ein Zwischenmeldung angezeigt.

Bitte Aktualisierungsdatei auswählen.

10

Durchsuchen...

Keine Datei ausgewählt.

Hochladen

12

Systemdiagnose

Anfangs- und Enddatum für das Logfile setzen. Bei leeren Datumsangaben werden alle hinzugefügt.

Anfangsdatum (yyyy-mm-dd):

Enddatum (yyyy-mm-dd):

Generieren

Den Erstellen-Knopf zur Zusammenführung der Diagnose-Daten tippen. Sobald die Datei verfügbar ist, wird der Herunterladen-Knopf aktiv.

Herunterladen

10 In the 'Software Update' section, select the 'Browse...' button

12 In the 'Software Update' section, select the 'Upload' button

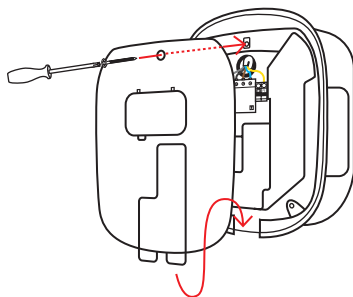
11 Select the current update data file. The update file is available for download at [www.abl.de](http://www.abl.de)

13 A new window will open and the upload process will start. The upload will take approx. 5 minutes

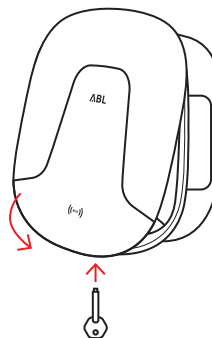
After the upload is complete, the updated system software version will be displayed in the 'System Data' section of the 'Overview' tab: p. 26

27

## 4. SOFTWARE UPDATE

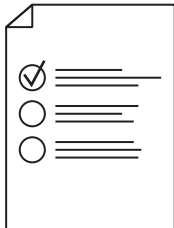


- 14** Replace the electronic components cover inside the housing base and fix it into place with its screw (M4 x 10 mm, TX20)



- 15** Hang the housing cover onto the upper edge of the housing base. Tighten the lockable screw by turning with the housing cover key approx. 4 times

## 5. RCCB



Maintenance of the Wallbox requires the six-monthly

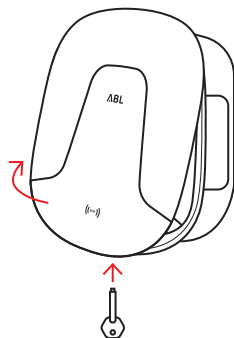
- testing of the RCCB's function
- visual inspection of housing surfaces and charging cable holder for any damage
- visual inspection of the charging cable and charging socket for any damage or deformation

The internal DC fault current detection conducts a self-test before each charging procedure: a manual check is not required. In case of an error, the LED display will show an error code (flash pattern): p. 33 ff..

In case of a fault

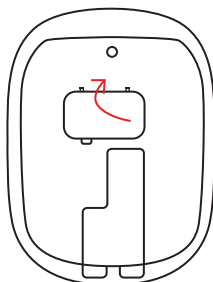
- take the Wallbox out of operation: p. 47
- contact technical support: p. 70

## 5. RCCB

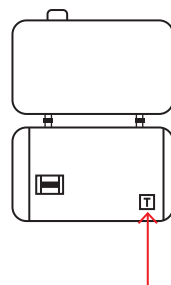


**1** Open the lockable screw on the underside of the Wallbox by turning with the housing cover key approx. 4 times

**2** Flip up the cover, remove it and keep it in a safe place

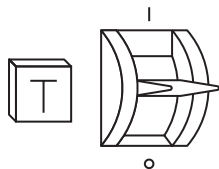


**3** Open the access flap of the internal electronic components cover

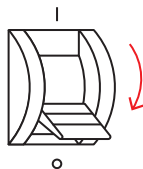


**4** Find the test (T) button and press it

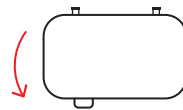
## 5. RCCB



- 5** The RCCB should now trip and automatically flip the pivot lever to the central position



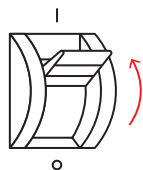
- 6** Flip the pivot lever to the O position.



- 8** Close the access flap of the internal electronic components cover



- If the 'T' button does not trip,
- take the Wallbox out of operation: p. 47
  - contact technical support: p. 70



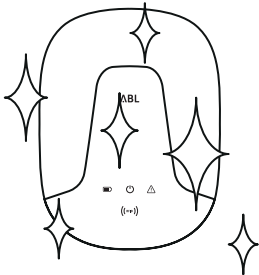
- 7** Now flip the pivot lever to the I position



- 9** Hang the housing cover onto the upper edge of the housing base. Tighten the lockable screw by turning with the housing cover key approx. 4 times

# 6. CLEANING AND CARE

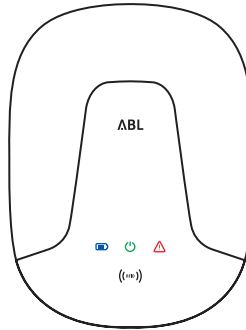
Cleaning agent	Yes	No
Dry cloth	•	
Cloth – dampened with mild soapy water, well-wrung	•	
Cleaners, glass cleaners, waxes, solvents – aggressive, chemical		•
Cleaning implements, sponges – abrasive		•
Pressure cleaner or similar device		•



Cleaning or maintenance of components located behind the electronic components cover is not necessary, or may not under any circumstances be performed by the user.



## 7. ERROR MESSAGES



- 1 The LEDs will illuminate and flash in a specific, repeating pattern



The system software for the Wallbox must always be up to date:  
p. 24

If the power supply for the Wallbox is faulty

- the Wallbox must be taken out of operation: p. 47
- contact technical support: p. 70

## 7. ERROR MESSAGES

### Error F1 Contactor is welded shut

**Description:** The Wallbox has detected that the contactor is welded shut. The contactor of the Wallbox does not open



Die LED flashes red once and then green four times

**Solution:** The Wallbox will switch off the RCCB inside the Wallbox 20 seconds after detecting the error. Then switch the RCCB back on again.

If the error repeats or persists,

- the Wallbox must be taken out of operation: p. 47
- contact technical support: p. 70

## 7. ERROR MESSAGES

### Error F2 Internal error

**Description:** The Wallbox has detected an internal fault



The LED flashes red once, green three times and then blue once

**Solution:** Switch the internal RCCB off and then back on again. If the error repeats or persists,

- the Wallbox must be taken out of operation: p. 47
- contact technical support: p. 70

## 7. ERROR MESSAGES

### Error F3 DC fault current detection

**Description:** The DC fault current detection has detected a fault



The LED flashes red once and then alternates twice between green and blue

**Solution:** a) The DC fault current detection self-test performed when the electric vehicle is connected has failed. The self-test is repeated at ca. 30 second intervals. After two failed self-tests, the charging procedure is terminated permanently. Then disconnect the charging connector from the charging socket

b) The DC fault current detection self-test performed during the charging procedure has failed. The self-test is repeated after ca. 30 seconds. If the fault recurs within ca. 60 seconds or if the self-test fails, the charging procedure is terminated permanently. Then disconnect the charging connector from the charging socket

If the error repeats or persists,

- the Wallbox must be taken out of operation: p. 47
- contact technical support: p. 70

## 7. ERROR MESSAGES

### Error F4 Bus communication not available

**Description:** Bus communication for the Wallbox is not available because of an internal communication error or a communication error in the Master / Slave system



The LED flashes red once, green once and then blue three times

**Solution:** Check the bus connections in the Master / Slave system. Then switch the circuit breaker off and back on again.

If the error repeats or persists,

- the Wallbox must be taken out of operation: p. 47
- contact technical support: p. 70

## 7. ERROR MESSAGES

### **Error F5** **The locking mechanism of the charging socket** **is inoperative**

**Description:** The charging socket does not lock.

- a) The self-test performed after the connector is plugged in has failed
- b) The locking mechanism of the charging socket has been opened during the charging procedure



Die LED flashes red once and then blue four times

**Solution:** a) the Wallbox performs a self-test. The self-test is repeated at ca. 30 second intervals. After two failed self-tests, the charging procedure is terminated permanently. Then disconnect the charging connector from the charging socket  
b) disconnect the charging connector from the charging socket

If the error repeats or persists,

- the Wallbox must be taken out of operation: p. 47
- contact technical support: p. 70

## 7. ERROR MESSAGES

### Error F6 Charging connector CS error

**Description:** The charging cable's rated current could not be detected. After plugging in, the coded resistance inside the connector is detected and the rated current of the charging cable is determined



The LED flashes red once, green twice and then blue twice

**Solution:** Remove the charging connector from the charging socket

If the error repeats or persists,

- the Wallbox must be taken out of operation: p. 47
- contact technical support: p. 70

## 7. ERROR MESSAGES

### Error F8 Faulty CP signal

**Description:** Communication with the electric vehicle is faulty because of  
a) a short-circuit between the pilot contact (CP) and the protective earth (PE) conductor  
b) a faulty communication interface of the electric vehicle



The LED flashes red once and then green twice

**Solution:** Check the charging cable and/or the charging socket at the Wallbox and at the electric vehicle for external damage. Then disconnect and reconnect the charging connector from the charging socket

If the charging cable and/or the charging socket shows damage and/or the error recurs or persists,

- the Wallbox must be taken out of operation: p. 47
- contact technical support: p. 70



## 7. ERROR MESSAGES

### Error F9 Overcurrent

**Description:** The electrical current monitoring module has detected that the charging current is exceeding the set maximum current



The LED flashes red once, green three times and then green and blue at the same time

**Solution:** The Wallbox automatically reinitiates the charging procedure after ca. 30 seconds. After two failed reinitiation attempts, the charging procedure is terminated permanently.

Disconnect the charging connector from the charging socket. Then check the electric vehicle and the Wallbox

If the error repeats or persists,

- the Wallbox must be taken out of operation: p. 47
- contact technical support: p. 70

## 7. ERROR MESSAGES

### Error F10 Excessive temperature

**Description:** a) The temperature monitor has detected a temperature above 80° Celsius inside the housing  
b) The  $\vartheta$  sensor is faulty



The LED flashes red once, green twice and then green and blue twice

**Solution:** a) The temperature monitor interrupts the charging procedure. No charging procedure is possible until the temperature inside the housing falls to below 60° Celsius. After 10 minutes, the charging procedure is reinitiated automatically  
b) check the electric vehicle and the Wallbox while switching the RCCB off and then back on again

If the error repeats or persists,

- the Wallbox must be taken out of operation: p. 47
- contact technical support: p. 70

## 7. ERROR MESSAGES

### Error F11 Contactor error

**Description:** The contactor inside the Wallbox doesn't close



The LED flashes red once, green once and then green and blue three times

**Solution:** The Wallbox automatically reinitiates the charging procedure after ca. 30 seconds. After two failed reinitiation attempts, the charging procedure is terminated permanently. Then disconnect the charging connector from the charging socket.

If the error repeats or persists,

- the Wallbox must be taken out of operation: p. 47
- contact technical support: p. 70

## 7. ERROR MESSAGES

### Error F15 Load imbalance

**Description:** Current monitoring has detected a load imbalance between the phases and has reduced the maximum charge current to 20 A



The LED flashes red once while the blue LED is ON

**Solution:** Charging operations are still possible. The maximum charging current is limited to 20 A until the charging connector is disconnected from the charging socket

If the error repeats or persists,

- connection and parameters of the Wallbox must be checked
- the rated current must be set to < 20 A
- contact technical support: p. 70

## 7. ERROR MESSAGES

### Error F16 Faulty phase current detection

**Description:** Data transfer to the integrated electrical current monitor is disrupted. The maximum charging current is limited to 10 A while this error occurs



The LED flashes red once while the blue LED is ON

**Solution:** Charging operations are still possible. The maximum charging current is limited to 10 A until the error is resolved.

If the error repeats or persists,

- the Wallbox must be taken out of operation: p. 47
- contact technical support: p. 70

## 7. ERROR MESSAGES

### Error F17 Elevated temperature

**Description:** The temperature monitor has detected a temperature above 60° Celsius inside the housing. The maximum charging current will be limited to 6 A until  $\vartheta < 60^{\circ}\text{C}$



The LED flashes red once while the blue LED is ON

**Solution:** Charging operations may continue. However, the charging current is reduced to 6 A until  $\vartheta < 60^{\circ}\text{C}$

If the error repeats or persists,

- more effective cooling and/or shading of the Wallbox at the installation site must be ensured or
- the Wallbox must be taken out of operation: p. 47
- contact technical support: p. 70

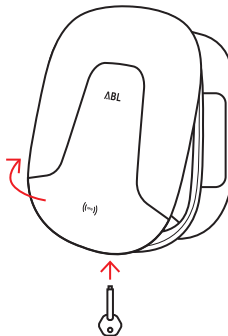
## 8. SHUTDOWN



The five golden rules of electrical installation must always be observed

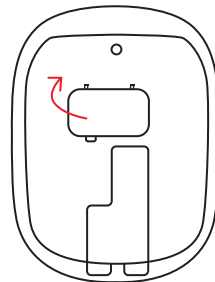
1. Cut power source
2. Secure all cut-off devices
3. Verify absence of voltage
4. Ground and short-circuit
5. Cover or bar access to adjacent components under voltage

- 1 Switch off the circuit breaker in the domestic power distribution

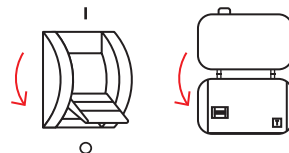


- 2 Open the lockable screw on the underside of the Wallbox by turning with the housing cover key approx. 4 times

- 3 Flip up the cover, remove it and keep it in a safe place

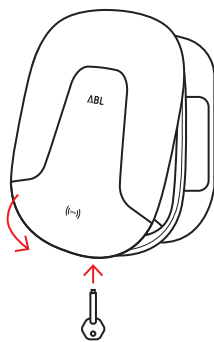


- 4 Open the access flap of the internal electronic components cover



- 5 Switch off the RCCB inside the Wallbox and close the access flap

## 8. SHUTDOWN



- 6** Hang the housing cover onto the upper edge of the housing base. Tighten the lockable screw by turning with the housing cover key approx. 4 times



- Now, charging procedures can no longer be performed
- The Wallbox can be taken back into operation at a later time

- 7** Switch on the circuit breaker in the domestic power distribution



# 10. GLOSSARY

Abbreviation	Explanation	Meaning
Backend	Server-based application	Manages the measurement records
Daisy Chain	Electrical Bus System	Wiring scheme of several hardware components
DC fault current detection	DC residual current monitoring module	Detects and reports fault currents
Dongle	Copy protection	Interface
EVCC	Electric Vehicle Charge Controller	Charge controller
RCCB	Residual Current Circuit Breaker	Personal protection against electric shock
LED	Light Emitting Diode	Light source
Master	Coordinating charging station	Coordinates the Slave charging stations
AMSL	Above Mean Sea Level	Reference surface for heights above sea level
RFID	Radio-Frequency Identification	Wireless access control
SBC	Single Board Computer	Controls components of the charging point
Slave	Coordinated charging station	Forwards information to the Master charging station

# 11. TECHNICAL SPECIFICATIONS

Model number	2W2241	2W2231
Type	Master	Slave
Power supply	max. 5x16²	max. 5x16²
Rated voltage	230/400V	230/400V
Rated current	32A	32A
Rated frequency	50Hz	50Hz
Upstream fuse	MCB, C, max 32A	MCB, C, max 32A
Terminal block	Direct connection to RCD, PE to terminal block	Direct connection to RCD, PE to terminal block
Connection system	Charging cable with Type 2 connector in acc. with IEC62196-2, ca. 6 m	Charging cable with Type 2 connector in acc. with IEC62196-2, ca. 6 m
Max. output	22kW	22kW
AC fault current detection	RCD, Type A, 30mA	RCD, Type A, 30mA
DC fault current detection	electronic, 6mA	electronic, 6mA
Charge controller	EVCC2	EVCC2
Communication EV	IEC61851-1	IEC61851-1
Operating status indicator	LED	LED
Error display	LED	LED
Operating temperature	-30 to 40°C	-30 to 40°C
Storage temperature	-30 to 85°C	-30 to 85°C
Relative humidity	5 to 95% - no condensation	5 to 95% - no condensation
Class of protection	I	I
Degree of protection (housing)	IP44/IP54 (plugged/unplugged)	IP44/IP54 (plugged/unplugged)
Impact strength	IK08	IK08
Overvoltage category	III	III
Degree of pollution	3	3
Dimensions	437 x 328 x 170 mm	437 x 328 x 170 mm
Weight (net)	ca. 8,5 kg	ca. 8,5 kg
Weight (gross)	ca. 10 kg	ca. 10 kg

# 11. TECHNICAL SPECIFICATIONS

Model number	2W2261 / 2W22BK	2W2251 / 2W22BE
Type	Master +	Slave +
Power supply	max. 5x16 <sup>2</sup>	max. 5x16 <sup>2</sup>
Rated voltage	230/400V	230/400V
Rated current	32A	32A
Rated frequency	50Hz	50Hz
Upstream fuse	MCB, C, max 32A	MCB, C, max 32A
Terminal block	Direct connection to RCD, PE to terminal block	Direct connection to RCD, PE to terminal block
Connection system	Charging cable with Type 2 connector in acc. with IEC62196-2, ca. 6 m	Charging cable with Type 2 connector in acc. with IEC62196-2, ca. 6 m
Max. output	22kW	22kW
AC fault current detection	RCD, Type A, 30mA	RCD, Type A, 30mA
DC fault current detection	electronic, 6mA	electronic, 6mA
Charge controller	EVCC2	EVCC2
Communication EV	IEC61851-1	IEC61851-1
Operating status indicator	LED	LED
Error display	LED	LED
Operating temperature	-30 to 40°C	-30 to 40°C
Storage temperature	-30 to 85°C	-30 to 85°C
Relative humidity	5 to 95% - no condensation	5 to 95% - no condensation
Class of protection	I	I
Degree of protection (housing)	IP44/IP54 (plugged/unplugged)	IP44/IP54 (plugged/unplugged)
Impact strength	IK08	IK08
Overvoltage category	III	III
Degree of pollution	3	3
Dimensions	437 x 328 x 170 mm	437 x 328 x 170 mm
Weight (net)	ca. 8,5 kg	ca. 8,5 kg
Weight (gross)	ca. 10 kg	ca. 10 kg

# 11. TECHNICAL SPECIFICATIONS

Model number	2W2240	2W2230
Type	Master	Slave
Power supply	max. 5x16²	max. 5x16²
Rated voltage	230/400V	230/400V
Rated current	32A	32A
Rated frequency	50Hz	50Hz
Upstream fuse	MCB, C, max 32A	MCB, C, max 32A
Terminal block	Direct connection to RCD, PE to terminal block	Direct connection to RCD, PE to terminal block
Connection system	Type 2 charging socket in acc. with IEC62196-2	Type 2 charging socket in acc. with IEC62196-2
Max. output	22kW	22kW
AC fault current detection	RCD, Type A, 30mA	RCD, Type A, 30mA
DC fault current detection	electronic, 6mA	electronic, 6mA
Charge controller	EVCC2	EVCC2
Communication EV	IEC61851-1	IEC61851-1
Operating status indicator	LED	LED
Error display	LED	LED
Operating temperature	-30 to 40°C	-30 to 40°C
Storage temperature	-30 to 85°C	-30 to 85°C
Relative humidity	5 to 95% - no condensation	5 to 95% - no condensation
Class of protection	I	I
Degree of protection (housing)	IP54	IP54
Impact strength	IK08	IK08
Overvoltage category	III	III
Degree of pollution	3	3
Dimensions	437 x 328 x 170 mm	437 x 328 x 170 mm
Weight (net)	ca. 8,5 kg	ca. 8,5 kg
Weight (gross)	ca. 10 kg	ca. 10 kg

# 11. TECHNICAL SPECIFICATIONS

Model number	2W2260 / 2W22BH	2W2250 / 2W22BD
Type	Master +	Slave +
Power supply	max. 5x16 <sup>2</sup>	max. 5x16 <sup>2</sup>
Rated voltage	230/400V	230/400V
Rated current	32A	32A
Rated frequency	50Hz	50Hz
Upstream fuse	MCB, C, max 32A	MCB, C, max 32A
Terminal block	Direct connection to RCD, PE to terminal block	Direct connection to RCD, PE to terminal block
Connection system	Type 2 charging socket in acc. with IEC62196-2	Type 2 charging socket in acc. with IEC62196-2
Max. output	22kW	22kW
AC fault current detection	RCD, Type A, 30mA	RCD, Type A, 30mA
DC fault current detection	electronic, 6mA	electronic, 6mA
Charge controller	EVCC2	EVCC2
Communication EV	IEC61851-1	IEC61851-1
Operating status indicator	LED	LED
Error display	LED	LED
Operating temperature	-30 to 40°C	-30 to 40°C
Storage temperature	-30 to 85°C	-30 to 85°C
Relative humidity	5 to 95% - no condensation	5 to 95% - no condensation
Class of protection	I	I
Degree of protection (housing)	IP54	IP54
Impact strength	IK08	IK08
Overvoltage category	III	III
Degree of pollution	3	3
Dimensions	437 x 328 x 170 mm	437 x 328 x 170 mm
Weight (net)	ca. 8,5 kg	ca. 8,5 kg
Weight (gross)	ca. 10 kg	ca. 10 kg

# 11. TECHNICAL SPECIFICATIONS

Model number	2W7242	2W7240
Type	Master	Master
Power supply	max. 3x16²	max. 3x16²
Rated voltage	230V	230V
Rated current	32A	32A
Rated frequency	60Hz	50Hz
Upstream fuse	MCB, C, max 32A	MCB, C, max 32A
Terminal block	Direct connection to RCD, PE to terminal block	Direct connection to RCD, PE to terminal block
Connection system	Charging cable with Type 2 connector in acc. with IEC62196-2, ca. 6 m	Type 2 charging socket in acc. with IEC62196-2
Max. output	7.2kW	7.2kW
AC fault current detection	RCD, Type A, 30mA	RCD, Type A, 30mA
DC fault current detection	electronic, 6mA	electronic, 6mA
Charge controller	EVCC2	EVCC2
Communication EV	IEC61851-1	IEC61851-1
Operating status indicator	LED	LED
Error display	LED	LED
Operating temperature	-30 to 40°C	-30 to 40°C
Storage temperature	-30 to 85°C	-30 to 85°C
Relative humidity	5 to 95% - no condensation	5 to 95% - no condensation
Class of protection	I	I
Degree of protection (housing)	IP44/IP54 (plugged/unplugged)	IP54
Impact strength	IK08	IK08
Overvoltage category	III	III
Degree of pollution	3	3
Dimensions	437 x 328 x 170 mm	437 x 328 x 170 mm
Weight (net)	ca. 8,5 kg	ca. 8,5 kg
Weight (gross)	ca. 10 kg	ca. 10 kg

# 11. TECHNICAL SPECIFICATIONS

Model number	2W7244	2W7241
Type	Master	Master
Power supply	max. 3x16 <sup>2</sup>	max. 3x16 <sup>2</sup>
Rated voltage	230V	230V
Rated current	32A	32A
Rated frequency	50Hz	50Hz
Upstream fuse	MCB, C, max 32A	MCB, C, max 32A
Terminal block	Direct connection to RCD, PE to terminal block	Direct connection to RCD, PE to terminal block
Connection system	Charging cable with Type 1 connector in acc. with IEC62196-2, ca. 6 m	Charging cable with Type 2 connector in acc. with IEC62196-2, ca. 6 m
Max. output	7.2kW	7.2kW
AC fault current detection	RCD, Type A, 30mA	RCD, Type A, 30mA
DC fault current detection	electronic, 6mA	electronic, 6mA
Charge controller	EVCC2	EVCC2
Communication EV	IEC61851-1	IEC61851-1
Operating status indicator	LED	LED
Error display	LED	LED
Operating temperature	-30 to 40°C	-30 to 40°C
Storage temperature	-30 to 85°C	-30 to 85°C
Relative humidity	5 to 95% - no condensation	5 to 95% - no condensation
Class of protection	I	I
Degree of protection (housing)	IP44/IP54 (plugged/unplugged)	IP44/IP54 (plugged/unplugged)
Impact strength	IK08	IK08
Overvoltage category	III	III
Degree of pollution	3	3
Dimensions	437 x 328 x 170 mm	437 x 328 x 170 mm
Weight (net)	ca. 8,5 kg	ca. 8,5 kg
Weight (gross)	ca. 10 kg	ca. 10 kg

# 11. TECHNICAL SPECIFICATIONS

Model number	2W22D1	2W22D2
Type	Master	Slave
Power supply	max. 5x16 <sup>2</sup>	max. 5x16 <sup>2</sup>
Rated voltage	230/400V	230/400V
Rated current	30A	30A
Rated frequency	50Hz	50Hz
Upstream fuse	MCB, C, max 32A	MCB, C, max 32A
Terminal block	Direct connection to RCD, PE to terminal block	Direct connection to RCD, PE to terminal block
Connection system	Type 2 charging socket in acc. with IEC62196-2	Type 2 charging socket in acc. with IEC62196-2
Max. output	22kW	22kW
AC fault current detection	RCD, Type A, 30mA	RCD, Type A, 30mA
DC fault current detection	electronic, 6mA	electronic, 6mA
Charge controller	EVCC2	EVCC2
Communication EV	IEC61851-1	IEC61851-1
Operating status indicator	LED	LED
Error display	LED	LED
Operating temperature	-30 to 40°C	-30 to 40°C
Storage temperature	-30 to 85°C	-30 to 85°C
Relative humidity	5 to 95% - no condensation	5 to 95% - no condensation
Class of protection	I	I
Degree of protection (housing)	IP54	IP54
Impact strength	IK08	IK08
Overvoltage category	III	III
Degree of pollution	3	3
Dimensions	437 x 328 x 170 mm	437 x 328 x 170 mm
Weight (net)	ca. 8,5 kg	ca. 8,5 kg
Weight (gross)	ca. 10 kg	ca. 10 kg



# 11. TECHNICAL SPECIFICATIONS

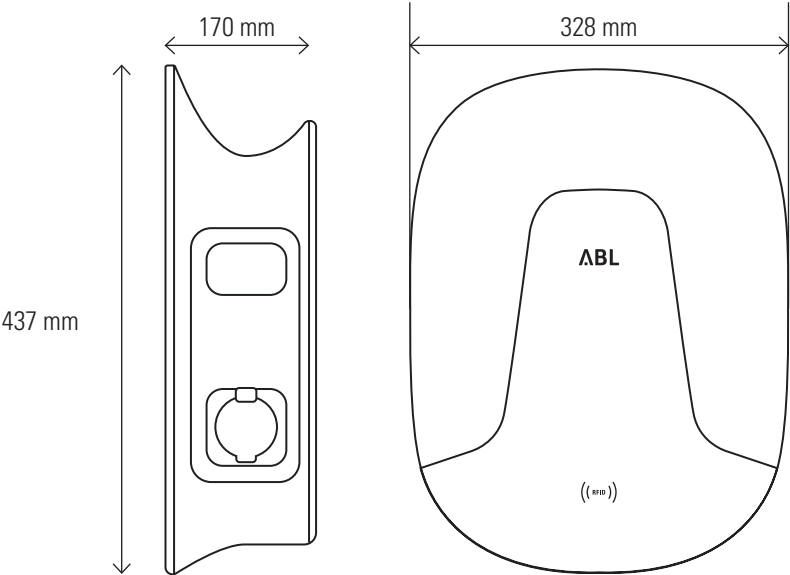
Model number	2W22D1	2W22D2
Type	Master	Slave
Power supply	max. 5x16²	max. 5x16²
Rated voltage	230/400V	230/400V
Rated current	30A	30A
Rated frequency	50Hz	50Hz
Upstream fuse	MCB, C, max 32A	MCB, C, max 32A
Terminal block	Direct connection to RCD, PE to terminal block	Direct connection to RCD, PE to terminal block
Connection system	Type 2 charging socket in acc. with IEC62196-2	Type 2 charging socket in acc. with IEC62196-2
Max. output	22kW	22kW
AC fault current detection	RCD, Type A, 30mA	RCD, Type A, 30mA
DC fault current detection	electronic, 6mA	electronic, 6mA
Charge controller	EVCC2	EVCC2
Communication EV	IEC61851-1	IEC61851-1
Operating status indicator	LED	LED
Error display	LED	LED
Operating temperature	-30 to 40°C	-30 to 40°C
Storage temperature	-30 to 85°C	-30 to 85°C
Relative humidity	5 to 95% - no condensation	5 to 95% - no condensation
Class of protection	I	I
Degree of protection (housing)	IP54	IP54
Impact strength	IK08	IK08
Overvoltage category	III	III
Degree of pollution	3	3
Dimensions	437 x 328 x 170 mm	437 x 328 x 170 mm
Weight (net)	ca. 8,5 kg	ca. 8,5 kg
Weight (gross)	ca. 10 kg	ca. 10 kg

# 11. TECHNICAL SPECIFICATIONS

Model number	2W72D2
Type	Slave
Power supply	max. 3x16²
Rated voltage	230V
Rated current	30A
Rated frequency	50Hz
Upstream fuse	MCB, C, max 32A
Terminal block	Direct connection to RCD, PE to terminal block
Connection system	Type 2 charging socket in acc. with IEC62196-2
Max. output	7.2kW
AC fault current detection	RCD, Type A, 30mA
DC fault current detection	electronic, 6mA
Charge controller	EVCC2
Communication EV	IEC61851-1
Operating status indicator	LED
Error display	LED
Operating temperature	-30 to 40°C
Storage temperature	-30 to 85°C
Relative humidity	5 to 95% - no condensation
Class of protection	I
Degree of protection (housing)	IP54
Impact strength	IK08
Overvoltage category	III
Degree of pollution	3
Dimensions	437 x 328 x 170 mm
Weight (net)	ca. 8,5 kg
Weight (gross)	ca. 10 kg

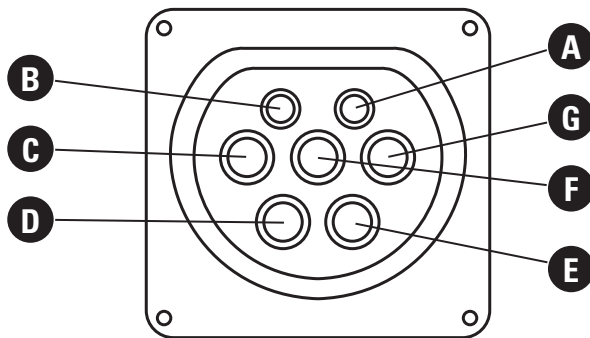
# 12. DIMENSIONED DRAWING

## WALLBOX eMH2 WITH CHARGING SOCKET



## 12. DIMENSIONED DRAWING

TYPE 2 CHARGING SOCKET

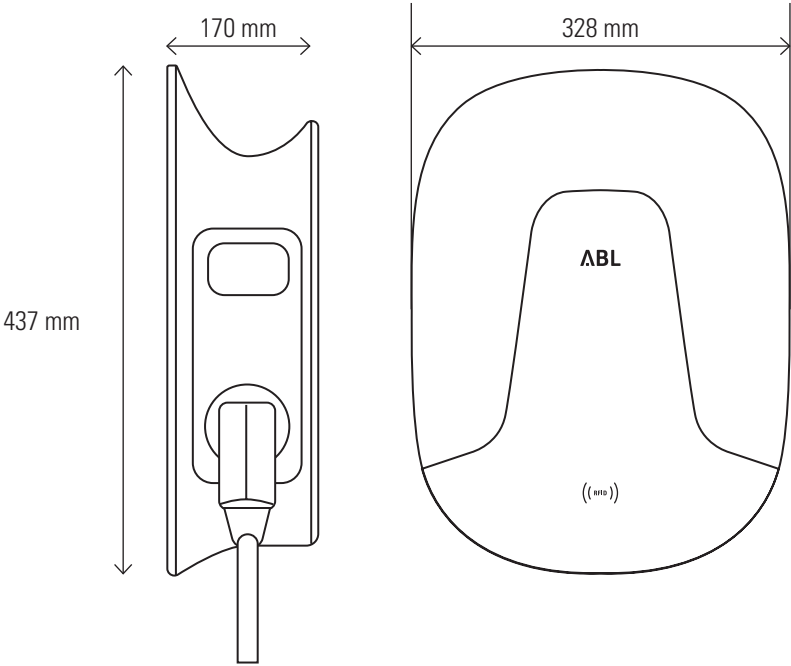


- A** CP - Control Pilot
- B** PP - Proximity Pilot
- C** L1 - Current-carrying conductor
- D** L2 - Current-carrying conductor

- E** L3 - Current-carrying conductor
- F** N - Neutral conductor
- G** PE - Protective Earth conductor

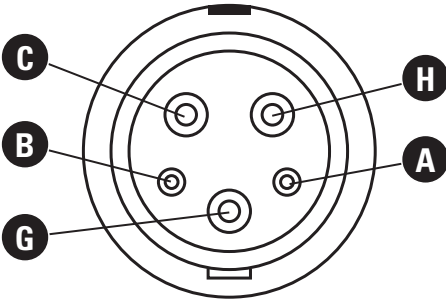
# 12. DIMENSIONED DRAWING

## WALLBOX eMH2 WITH CHARGING CABLE



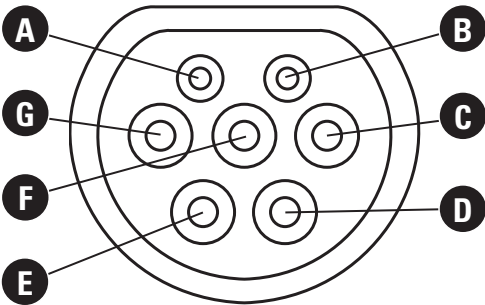
# 12. DIMENSIONED DRAWING

TYPE 1 CHARGING CABLE



- A** CP - Control Pilot
- B** PP - Proximity Pilot
- C** L1 - Current-carrying conductor
- D** L2 - Current-carrying conductor

TYPE 2 CHARGING CABLE



- E** L3 - Current-carrying conductor
- F** N - Neutral conductor
- G** PE - Protective Earth conductor
- H** L2 - Current-carrying conductor / N - Neutral conductor

# 13. STANDARDS AND GUIDELINES

## GENERAL GUIDELINES AND LAWS

2014/30/EU	EMC Directive
2014/35/EU	Low Voltage Directive
2011/65/EU	RoHS Directive
2012/19/EU	WEEE Directive
Electrical and Electronic Device Statute	

## DEVICE SAFETY STANDARDS

IEC 61851-1: 2017 Ed. 3.0	Conductive charging systems for electric vehicles – Part 1: General requirements
IEC/TS 61439-7: 2014	Part 7: Assemblies for specific applications such as marinas, campgrounds, market squares, electric vehicle charging stations
IEC 61000-6-2:2016	Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - immunity standard for industrial environments
IEC 61000-6-3:2006+AMD1:2010	Electromagnetic compatibility (EMC) - Part 6-3: Emission standard for residential, commercial and light-industrial environments
IEC 61000-6-7:2014	Electromagnetic compatibility (EMC) - Part 6-7: Generic standards - Immunity requirements for equipment intended to perform functions in a safety-related system (functional safety) in industrial locations
IEC 61851-21-2: 2018 Ed. 1.0	Conductive charging systems for electric vehicles - Part 21-2: EMC requirements for off-board charging systems for electric vehicles

## 14. CE CERTIFICATION AND COMPLIANCE DECLARATION



CE certification and compliance declaration

The eMH2 Wallbox carries the CE mark.

The associated compliance declaration is available for download at [www.abl.de](http://www.abl.de).



## 15. TRADEMARKS

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## 16. WARRANTY AND GUARANTEE PROVISIONS

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Delegate the task of final installation to a qualified and authorized specialist contractor: In case of installation faults that can be traced back to improper mounting and installation, all guarantee and warranty provisions are void. Proof of proper installation (by way of presenting receipts or similar) may be required before warranty/guarantee provisions come into force.

# 17. INTELLECTUAL PROPERTY & COPYRIGHT

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## 18. DISPOSAL ADVICE



For the preservation and protection of the environment, the prevention of pollution and in order to improve the recycling of resources, the European Commission has issued a guideline (WEEE-Guideline 2012/19/EC and EAG-VO) according to which electrical and electronic devices are taken back by the manufacturer in order to have them properly disposed of or recycled.

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

The materials are recyclable as marked. By re-using, recycling or through other forms of processing obsolete devices, you make an important contribution to environmental protection.

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