

MINI Wallbox

INSTRUCTIONS FOR USE. ORIGINAL MINI ACCESSORIES.



E

MINI Wallbox Instructions for use

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1 Information

1.1 Symbols used

A

Denotes instructions that draw your attention to dangers.



Denotes instructions that draw your attention to special features.

Denotes the end of the instruction or warning text.

1.2 Safety information



- Read the safety information carefully and familiarise yourself with the device before you attempt to install, operate or service it.
- Danger from electricity. The MINI Wallbox must be installed, commissioned and serviced by appropriately trained, qualified and authorised electricians ⁽¹⁾, who bear full responsibility for complying with the current standards and installation regulations.
- Please note that vehicles or national regulations may require additional overvoltage protection. Please refer to your national connection and installation standards.
- Check that all screw and clamp connections are secure before commissioning the device.
 The terminal block must never be left open unattended. Fit the cover on the terminal block if you leave MINI Wallbox unattended during the installation work.
- Do not make any unauthorised changes or modifications to MINI Wallbox.
- You must not carry out any repair work to the MINI Wallbox. This work may only be carried
 out by the manufacturer or a trained expert (for example replacing the MINI Wallbox).
- Do not remove any identifiers such as safety symbols, warnings, model plates, labels or cable markings.
- The MINI Wallbox does not have a main switch. The RCCB and circuit breaker on the building installation are used as the mains isolator.
 - $^{(1)}$ People who, as a result of their training, skills and experience and their knowledge of the relevant standards can assess the work and identify possible dangers. \P



- Do not pull the vehicle connector plug by the cable, and instead use the handle on the vehicle connector plug to remove it from the vehicle socket.
- Ensure that the vehicle connector plug is not mechanically damaged (kinked, jammed, or run over) and that the contact area does not come into contact with heat sources, dirt or water.
- Do not touch the contacts on the vehicle connector plug.
- Always carry out an inspection for signs of damage before the charging cycle. Pay
 particular attention to dirt and moisture on the vehicle connector plug, cuts in the cable or
 chafing areas on the insulation. Ensure that the cable output is firmly secured to the MINI
 Wallbox.
- Do not clean the MINI Wallbox with a water jet (hosepipe, pressure washer, etc.).
- Ensure that the MINI Wallbox is not damaged by being handled incorrectly.
- Do not open the cover on the terminal block if the MINI Wallbox is installed outdoors and it is raining or snowing.
- Danger of breaking the plastic housing (protection class IK09).
- Do not use countersunk screws to secure the device.
- Only tighten the screws to the specified torque.
- The installation surface must be completely level (max. 1 mm difference between the support and fastening points). Do not bend the housing ◀

Information for trained personnel who may open the housing: Danger of damage. Electronic components may be destroyed if touched. Conduct an electrical discharge procedure before handling modules by touching a metallic, earthed object. If you fail to follow the safety information, there is a risk of death, injury and damage to the device. The manufacturer cannot accept any liability for resultant claims.

1.3 CE declaration of conformity

The CE declaration of conformity can be downloaded from the following link.

https://www.bmw.com/supportwallboxgen3

1.4 Declaration of conformity for electromagnetic compatibility: Federal Communications Commission Part 15

The MINI Wallbox complies with all the specifications from Part 15 of the Federal Communications Commission. Operating the MINI Wallbox is subject to the following conditions: (1) This device must not cause any harmful interference, and (2) This device must accept all received interference, including interference which may cause it to malfunction.

1.5 Information about Directive 2014/94/EU

You must comply with national regulations (for example the Charging Column Regulation in Germany) for implementing the EU Directive (2014/94/EU) relating to the mandatory technical specifications for sockets and vehicle couplings for charging electric or plug-in hybrid vehicles in areas accessible to the general public. This regulation concerns charging points on public property and for example car parks at business premises or for customers. Charging points in private car ports or on private garage entrances are not publicly accessible charging points in the sense of the regulation.

1.6 Intended use

The MINI Wallbox is a charging station for indoor and outdoor use for charging electric or plug-in hybrid vehicles. Do not connect any other devices to it, for example electric tools. The MINI Wallbox is designed for installation on a wall or column. You must comply with the relevant national regulations for installing and connecting the MINI Wallbox. The intended use of the device in all cases includes compliance with the ambient conditions for which this device was developed. The MINI Wallbox was developed, manufactured, tested and documented on the basis of the relevant safety standards. If you follow the instructions and safety information for its intended use, the product will not pose any danger of material damage or to people's health. This device must be earthed. In the event of an error, the earth connection will reduce the risk of an electric shock. Follow the instructions in this manual to the letter. Otherwise, sources of danger may be created or safety equipment may be rendered inoperable. In addition to the safety information in this manual, you must also comply with the safety and accident prevention regulations for the specific device.

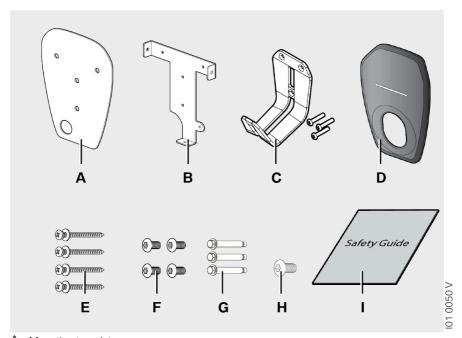
1.7 About this manual

This manual and the functions described in it are valid for devices of the following type: MINI Wallbox:

- 61 90 5 A1E 1C1
- 61 90 5 A1E 1C2
- 61 90 5 A1E 1C3
- 61 90 5 A1E 1C4
- 61 90 5 A1E 1C5

The illustrations and explanations contained in this manual refer to a typical version of the device. Your version of the device may differ from this.

1.8 Package



- A Mounting template
- B Mounting bracket
- C Cable holder
- D Housing cover
- E Wood screws No. 8 (4 x)
- F Torx T30 fastening screws (4 x)
- G Countersunk screws 1/4" (3 x)
- H Torx T20 security screw
- I Safety guide

1.9 Warranty

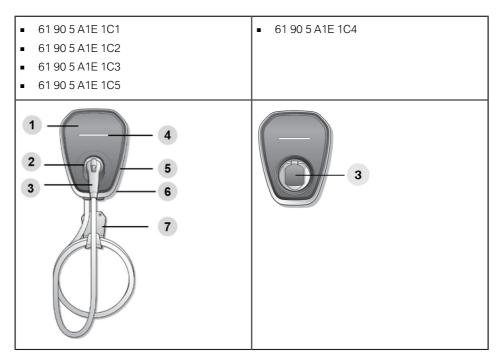
Further information about the warranty terms and conditions is available from MINI Service. However, the following cases are not covered by the warranty.



- Defects or damage caused by installation work not carried out as described in this document.
- Defects or damage caused by using the product for purposes other than those described in this document.
- Costs and damage caused by repair work not carried out by an electrician authorised by a MINI sales outlet or an authorised service workshop. ◀

2 Overview

2.1 Displays and controls



- 1. Housing cover
- 2. Vehicle plug connector holder
- 3. Vehicle plug connector (L)/Charging socket with shutter (R)
- 4. LED display
- 5. Terminal block cover
- 6. Mounting bracket
- 7. Cable holder

3 Requirements

3.1 General criteria for site selection

The MINI Wallbox is designed for indoor and outdoor use. Therefore, it must be ensured that the site you select complies with the installation conditions and provides suitable protection for the device.

- Ensure that you comply with local regulations for electrical installations, fire safety and accident prevention as well as keeping local rescue and escape routes clear.
- Do not install the MINI Wallbox at locations:
 - Which are used as escape and rescue routes.
 - Which are inside zones where there is an explosion risk,
 - At which the MINI Wallbox is exposed to ammonia or ammonia gases.
 - At which the MINI Wallbox may be damaged by falling objects,
 - At which the MINI Wallbox is on a footpath used by people who may trip over the connected vehicle connector plug,
 - At which the MINI Wallbox may be struck by a water jet,
 - At which the installation surface does not have the requisite capacity to withstand the mechanical stresses.
- If possible, install the MINI Wallbox so that it is not exposed to direct sunlight to prevent excessive temperatures on components of the MINI Wallbox reducing the charging current or interrupting the charging cycle.
- Ensure that the ambient temperatures comply with the specifications, see section entitled "Technical Data".
- Ensure that you comply with the national and international installation standards and regulations.

3.2 Specifications for the electrical connection

When it is delivered, the MINI Wallbox is set to a maximum charging current of 6 A. Ensure that you set the maximum current for the installed circuit breaker using the DIP switch (see section entitled "Power settings").

3.3 Choice of RCCB

The connection cable must be wired into the existing building installation and comply with the national statutory regulations. For versions:

- 61 90 5 A1E 1C1
- 61 90 5 A1F 1C4

The following considerations must be made:

- Every MINI Wallbox must be connected using its own residual-current-operated circuit breaker (RCCB). No other circuits may be connected to this RCCB.
- RCCB at least type A (30 mA trip current).
- Additional measures have been taken in the device to protect it from a direct current (DC) error (> 6 mA DC).
- These measures satisfy the requirements of IEC 62955. This means that there is no general
 necessity to use a residual current device (RCD) type B, unless one is explicitly required by the
 applicable installation regulations.

3.4 Choice of circuit breaker

When selecting the circuit breaker, you must also take into account the increased ambient temperatures in the control cabinet. In certain circumstances, this may require the charging current to be reduced to increase the system's availability. Set the rated current to suit the required charging capacity, the available connecting rating and the details on the model plate.

An RCD type B (40 A min. and 400 V min.) must be used for the following versions:

- 61 90 5 A1E 1C1
- 61 90 5 A1E 1C2
- 61 90 5 A1E 1C4

An RCD type B (50 A min. and 250 V min.) must be used for the following versions:

- 61 90 5 A1E 1C3
- 61 90 5 A1E 1C5

3.5 Choice of connection cable

When selecting the connection cable, take into account the possible reduction factors and increased ambient temperatures in the MINI Wallbox's internal connection zone, see temperature details for the connection terminals. In certain circumstances, this may require the cable cross-section to be increased and the temperature resistance of the connection cable to be adjusted.

3.6 Mains isolator

The MINI Wallbox does not have a main switch. The RCCB and circuit breaker on the building installation are used as the mains isolator.

4 Installation

4.1 Installation requirements

- Comply with the local installation regulations.
- Acclimatisation: If there is a temperature difference of more than 15 °C between transport and the selected installation site, the MINI Wallbox must be allowed to acclimatise unopened for at least two hours. Opening the MINI Wallbox immediately may result in condensation forming in its interior and causing damage when the device is switched on. In certain circumstances, damage caused by condensation formation may also not appear until after the installation. Ideally, the MINI Wallbox should be stored for several hours at the installation site before installation. If this is not possible, the MINI Wallbox should not be stored in low temperatures (< 5 °C) overnight outdoors or in a vehicle.</p>

4.2 List of tools

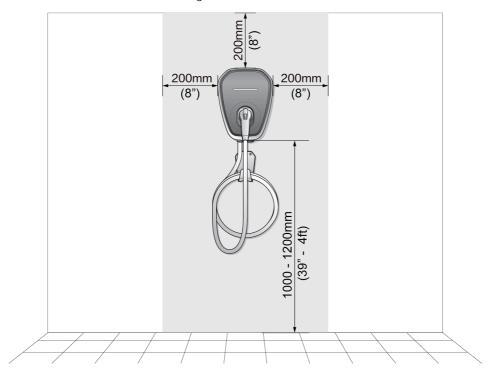
- Measuring tool and pen
- Drill
- Torx T30 screwdriver
- Torx T20 security screwdriver
- Cross-head screwdriver No. 2
- Crimping tools

4.3 Recommended installation site

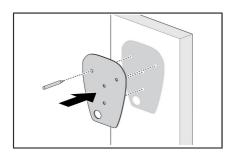
When selecting the installation site, consider access from the charging socket to the vehicle and the direction in which the vehicle is normally parked.

4.4 Required spacing

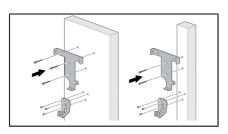
Refer to the illustration below for choosing the installation site.



4.5 Install the MINI Wallbox



1. The product is a stationary, wall-mounted device. It contains a mounting template to mark the screw positions for the mounting bracket and the optional cable holder.



- 2. Secure the mounting bracket to the wall. We recommend the following screw types:
- Masonry walls:

 $1/4^{\prime\prime}$ countersunk screws. Tightening torque: 8.8 Nm (78 lb in)

- Drywalls supported by wooden posts: Wood screws No. 8, at least 2" in length. Tightening torque:
- 3 Nm (26 lb in)



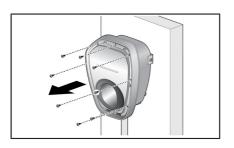
- 3. Align the screw holes using the mounting bracket and product.
- 4. Install and secure the product on the mounting bracket using the Torx T30 screws supplied.

Tightening torque: 1.5 Nm (13 lb in)

4.6 Remove the covers



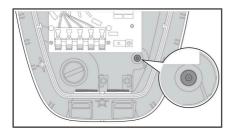
5. Remove the housing cover.



6. Use a T20 screwdriver to remove the screws which secure the terminal block cover.
Tightening torque: 1.4 Nm (12 lb in)

7. Remove the terminal block cover.

4.7 Secure the anti-theft screw

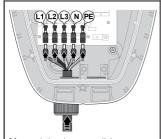


8. Secure the anti-theft screw.

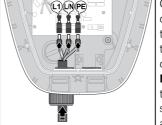
5 Connect the terminals

Use a suitable cable with wire-end ferrules.

- 61 90 5 A1E 1C1
- 61 90 5 A1E 1C2
- 61 90 5 A1E 1C4
- 61 90 5 A1E 1C3
- 61 90 5 A1E 1C5



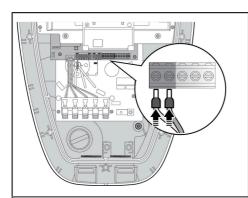
Note: It is also possible to use a single-phase connection for the MINI Wallbox. To do so, connect terminals L1, N and PE



Connect each terminal to the correct connection on the input terminal strip. Then secure the terminal for the input cable correctly.

Note: Select a suitable cable to comply with all current local, state and national regulations and standards for electrical systems. Ensure that the circuit breaker is switched off before installation.

5.1 Input X1 (optional)



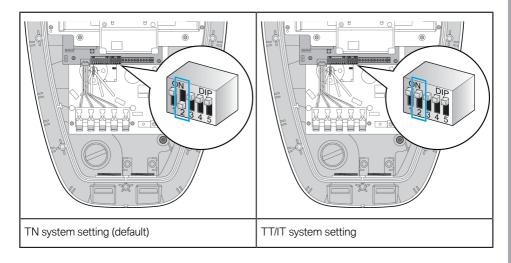
Connect the cable to connection X1.

The enabling input is designed for use with a floating contact. The enabling input allows the Wallbox to be controlled by external components.

Note: The safe isolation of dangerous voltages must be guaranteed.

6 DIP switch settings

6.1 Setting the earth system



6.2 Power settings

When it is delivered, the MINI Wallbox is set to a maximum charging current of 6 A.

The following settings apply to these versions:

• 61 90 5 A1E 1C1 • 61 90 5 A1E 1C2 • 61 90 5 A1E 1C4

Configuration	Max. rated current	Configuration	Max. rated current
000	0A	100 00 00 00 00 00 00 00 00 00 00 00 00	16A
001 0N 0N 0N 0N 0N 0N 0N 0N 0N 0N 0N 0N 0N	6A	101 101 112345	20A
010 0N 0N 0DP	10A	110 000 112345	24A
011 0N 0N 0DB 12345	12A	111 ON DIP 1 2 3 4 5	32A

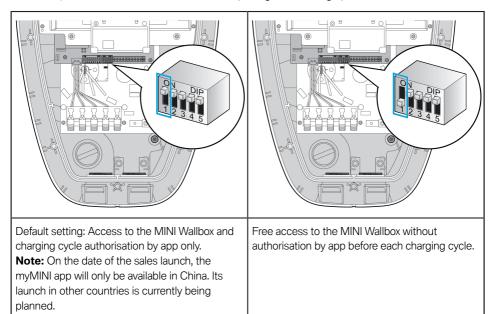
The following settings apply to these versions:

■ 61 90 5 A1E 1C3 ■ 61 90 5 A1E 1C5

Configuration	Max. rated current	Configuration	Max. rated current
000 000 000 000 000	OA	100 ON DIP	20A
001 001	6A	101 ON DIP	24A
010 0N 0N 0N 0N 0N 13 4 5	12A	110 ON DIP	32A
011 0N 0N 0N 0N 0N 0N 0N 0N 0N 0N 0N 0N 0N	16A	111 ON DIP	40A

6.3 Authorisation settings

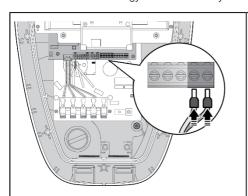
The MINI Wallbox is set at the factory so that all charging cycles must be authorised using an app. If you do not wish to have to authorise every charging cycle and enable free access to the MINI Wallbox at all times, the DIP switch must be set to "OFF" (see figure on the right)



7 Local load management

7.1 Connection of external energy meters

Connect the external energy meter to enable you to monitor your home connection.



Connect the shielded, twisted connection cable (> 0.5 mm², max. 30 m) to the RS485 interface.

Pin definition:

A (Rx/ Tx+): Pin 4

B (Rx/ Tx-): Pin 5

 61 90 5 A1E 1C1 61 90 5 A1E 1C2 61 90 5 A1E 1C4 	• 61 90 5 A1E 1C3 • 61 90 5 A1E 1C5	
Signal (1)(2)(3) N METER (1)(2)(3) N	Signal L1)(LN) METER L1)(LN)	Connect the meter to the power supply. Refer to the specific instructions supplied in the meter's operating instructions.

7.2 Phase assignment

The phase assignment between the Wallbox and household connection can be set using DIP switches.

The phase assignment between the Wallbox and household connection/meter can be set using DIP switches 2 and 3

DIP switch setting	Phase assignment household connection/meter -> Wallbox	Configuration	Phase assignment household connection/meter -> Wallbox
OO DIP	L1 -> L1 L2 -> L2 L3 -> L3	10	L3 -> L1 L1 -> L2 L2 -> L3
01	L2 -> L1 L3 -> L2 L1 -> L3		

7.3 Function to monitor asymmetric loads

The maximum current value for an asymmetric load can be defined using DIP switches 4 and 5.

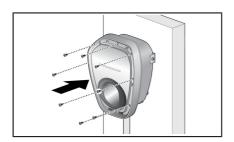
DIP switch setting	Maximum current	DIP switch setting	Maximum current	
OO DIP	Function to monitor asymmetric loads disabled (factory setting)	10 DIP	16A	
O1	10A	11 ON DIP DIP 24 5 69 8 9	20A	

7.4 Household connection monitor

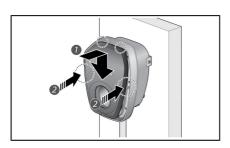
The limit value for the size of the household connection can be defined using DIP switches 6 to 9.

DIP switch setting	Maximum current	DIP switch setting	Maximum current
0000	Local load management disabled (factory setting)	0110	80A
0001	20A	0111	100A
0010	25A	1000	125A
0011	35A	1001	150A
0100	50A	1010	200A
0101	63A		

8 Commissioning



Install the terminal block cover Tightening torque: 1.0 Nm (8.7 lb in)



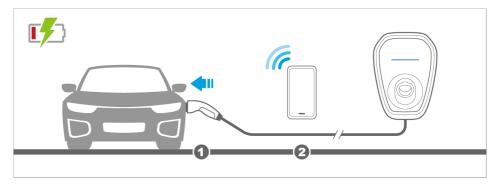
Install and lock the housing cover.

9 Operation

The MINI Wallbox is supplied as standard with its access control by app enabled. Please change the DIP switch setting if you do not wish to use access control by app. Further information is available in section "5.3 Authorisation settings". **Note:** On the date of the sales launch, the app will only be available in China. Its launch in other countries is currently being planned.

9.1 Starting the charging cycle with access control enabled

- 1. Connect the vehicle connection plug to the vehicle charging socket.
- 2. Use the app to authorise and start the charging cycle.



9.2 Stopping the charging cycle with access control enabled

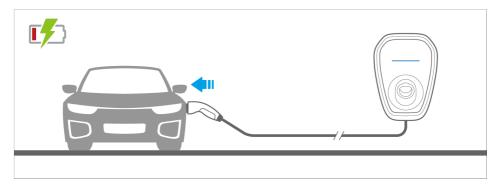
- 1. Stop the charging cycle on the vehicle or using the app.
- 2. Disconnect the vehicle connection plug from the vehicle charging socket.
- 3. Place the vehicle connection plug back into the cable holder on the MINI Wallbox.



Note: Further information about ending the charging cycle is available in your vehicle owner's manual.

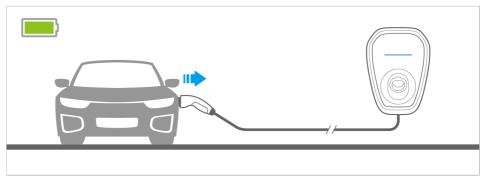
9.3 Starting the charging cycle with access control disabled

- 1. Connect the vehicle connection plug to the vehicle charging socket.
- 2. The vehicle will start the charging cycle automatically.



9.4 Stopping the charging cycle with access control disabled

- 1. Stop the charging cycle on the vehicle.
- 2. Disconnect the vehicle connection plug from the vehicle charging socket.
- 3. Place the vehicle connection plug back into the cable holder on the MINI Wallbox.



Note: Further information about ending the charging cycle is available in your vehicle owner's manual.

9.5 Wallbox service app

Your installer or MINI service partner can use the service and installation app to configure the device, download the charging history and diagnostic data, update the firmware and rectify errors. The DIP switch must be set correctly (see section 5 DIP switch settings) to use Wallbox service app. The app is available in all relevant app stores.

Functions:

- Charging history
- Installation guide
- Power settings
- Firmware update
- Diagnostic data
- Device restart



10 LED display

LED display	Status
No display	MINI Wallbox has no power supply.
Blue, from left to right continuously	MINI Wallbox initialisation process running.
Blue, steady	Vehicle is not connected. Wallbox is ready to charge. Ready status.
Blue, slow-moving	Vehicle charging.
Green, flashing (1x)	User login or authorisation successful.
Red, flashing (1x)	User login or authorisation failed.
Red, steady	Error.
Red, right-hand LED element	Bluetooth module failed.

11 Troubleshooting

Situation	Action
LED display has no power supply.	No supply voltage – check the RCCB and circuit breaker and switch them on if necessary. Error on the MINI Wallbox – contact your local dealer.
The charging cycle is not started.	1. The vehicle connection plug has not been inserted correctly – remove the vehicle connection plug and reconnect it. 2. The vehicle has been programmed so that the charging cycle starts at a later time. 3. The vehicle does not require any power – check the vehicle status. 4. The app connection is not working correctly.
The vehicle connection plug cannot be disconnected.	The charging cycle has not been ended by the vehicle.
LED display lit in red.	Switch off the supply voltage to the MINI Wallbox using the appropriate mains isolator. Disconnect the vehicle connecting plug and switch on the supply voltage again. If the situation persists, contact your local dealer.

12 Technical data

Part number	61 90 5 A1E 1C1	61 90 5 A1E 1C2	61 90 5 A1E 1C3	61 90 5 A1E 1C4	61 90 5 A1E 1C5
Vehicle connection plug	Type 2 plug	GB/T plug	SAE J1772 plug	Type 2 shutter	SAE J1772 plug
Input/Output values	220-240 V/ 380-415 V, 32 A, 50-60 Hz, three-phase 220-240 V, 32 A, 50-60 Hz, single-phase	220-240 V/ 380-415 V, 32 A, 50-60 Hz, three-phase 220-240 V, 32 A, 50-60 Hz, single-phase	240 V, 40 A, 60 Hz, single- phase	220-240 V/ 380-415 V, 32 A, 50-60 Hz, three-phase 220-240 V, 32 A, 50-60 Hz, single-phase	240 V, 40 A, 50-60 Hz, single-phase
Input wiring	L1, L2, L3, N, PE	L1, L2, L3, N, PE	L1, L2, PE	L1, L2, L3, N, PE	L1, N, PE
Earthing system		TT/ TN/ IT			
Rated current (rated current can be adjusted using DIP switch)	0 A, 6 A, 10 A, 12 A, 16 A, 20 A, 24 A, 32 A	0 A, 6 A, 10 A, 12 A, 16 A, 20 A, 24 A, 32 A	0 A, 6 A, 12 A, 16 A, 20 A, 24 A, 32 A, 40 A	0 A, 6 A, 10 A, 12 A, 16 A, 20 A, 24 A, 32 A	0 A, 6 A, 12 A, 16 A, 20 A, 24 A, 32 A, 40 A
Cable length	5 m	5 m	25 ft	N/A	5 m
Cable feed	Surface- mounted	Surface- mounted	Surface- mounted	N/A	Surface- mounted
Minimum connection cross- section	3 x 8.4 mm ²	3 x 8.4 mm ²	6 AWG	3 x 8.4 mm ²	6 AWG

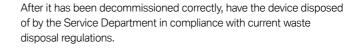
Part number	61 90 5 A1E 1C1	61 90 5 A1E 1C2	61 90 5 A1E 1C3	61 90 5 A1E 1C4	61 90 5 A1E 1C5
Internal fault current detection	Alternating current: 15~30 mA Direct current: 3~6 mA	Alternating current: 15~30 mA Direct current: 3~6 mA	Alternating current: 20mA	Alternating current: 15~30 mA Direct current: 3~6 mA	Alternating current: 20mA
Protection against electric shock	Class II				
Housing ingress protection (for indoors and outdoors)	IP65	IP65	NEMA 3S	IP65	IP65
Dimensions (W x H x D)	270x370x185 mm				
Weight	6 kg	6 kg	8 kg	6 kg	6 kg
Electrical protection from	Overcurrent, short-circuit, overvoltage, undervoltage, earth faults, excess temperature.				

Interfaces	
Display	LED
Communication	Bluetooth
Ambient conditions	
Operating temperature	-40°C ~ +50°C
Temperature properties	This is not a safety device, it is only a function. The specified operating temperature range must not be exceeded. The device supplies the charging current continuously within the specified operating temperature ranges. To increase the charging availability, the charging current is reduced from 32 A to 24 A, 16 A and 6 A if the temperature is exceeded. After this, the charging cycle may also be shut down. Once the temperature has dropped, the charging cycle is continued and the charging current is adjusted to the configuration.
Storage temperature	-40 °C to +80 °C
Humidity	95 % relative humidity, non-condensing
Height	3,000 m
Cooling	Natural cooling
Impact protection	IK09
Overvoltage category	OVC III
Action after a power outage	Random delay between 5 and 100 seconds before the charging cycle is restarted after a power outage

Note: The available charging capacity depends on the vehicle, infrastructure and general settings.

13 Waste disposal







Electrical and electronic devices and the accessories must be disposed of separately from general household waste. Information about this is provided on the product, in the instructions for use or on the packaging.

The materials may be recycled as shown by the symbols. You can make a major contribution to protecting our environment by reusing, recycling the material or other forms of recycling end-of-life devices.

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