Heidelberg Wallbox Home Eco

Safety instructions

00.999.3028/01
A Safety instructions

Safety instructions ........................................................................................................................................... A.1.1

1 Safety instructions for the Wallbox "Home Eco" .................................................................................. A.1.1
   1.1 Note to the owner and operator of the charging system .............................................................. A.1.1
   1.2 Intended use ......................................................................................................................................... A.1.1
   1.3 Notes for people with a pacemaker (PM) or implantable cardioverter defibrillator (ICD) ........ A.1.3
   1.4 Working on the charging system without risk .................................................................................. A.1.3
   1.5 Installation and tests .......................................................................................................................... A.1.4
   1.6 Specifications ...................................................................................................................................... A.1.7
   1.7 Protective devices ............................................................................................................................... A.1.8
   1.8 Operator control elements .................................................................................................................. A.1.9
   1.9 Declaration of Conformity .................................................................................................................. A.1.9
1 Safety instructions for the Wallbox "Home Eco"

1.1 Note to the owner and operator of the charging system

- Read the operating manual before starting up the charging system.
- Ensure that all persons working on or using this charging system
  - have read the operating manual,
  - follow the regulations and instructions for working without risk.
- Keep the equipment documentation at a location where it is always accessible to the operators of the charging system.
- Ensure that no unauthorized persons can access the charging system.

1.2 Intended use

The charging system is intended for use in private and semiprivate areas, e.g. private properties, corporate parking areas, or depots.

Do not use the charging system where explosive or combustible substances (e.g. gases, liquids, or dusts) are stored or are present.

The charging system is intended exclusively for charging electric vehicles.

- Charging in accordance with type 3 of IEC 61851-1
- Plug-and-socket connectors in accordance with IEC 62196
- The charging system is intended for use only in TT, TN-C, and TN-C-S networks. The charging system must not be operated in IT networks.

The charging system is not suitable for charging vehicles with outgassing batteries (e.g. lead-acid batteries).

The charging system is operated as an individual station without a superordinate control system. The charging system is intended exclusively for stationary installation.

The charging system may only be operated and used by persons who have read the operating manual.

The electrical installation, start-up, and maintenance of the charging system may only be performed by qualified electricians who have been correspondingly authorized by the operator.

The qualified electricians must have read and understood the equipment documentation and must comply with its instructions.
Requirements regarding the qualification of electricians
Knowledge of and compliance with the 5 safety rules for working with electrical installations:
- isolate.
- secure against reactivation.
- check absence of voltage.
- ground and short-circuit.
- cover or block off live parts in the vicinity.
Reactivation is carried out in reverse order.
- Knowledge of the general and special safety regulations and accident prevention regulations.
- Knowledge of the relevant electrotechnical regulations e.g. checks associated with commissioning and the requirements for operating facilities, rooms, and special types of equipment - power supply for electric vehicles.
- Ability to recognize risks and to avoid potential hazards.
When installing and handling the charging system, the user, the operator, and the electrician must comply with the national regulations on safety and accident prevention.
Improper use and non-compliance with the operating manual may jeopardize:
- your life
- your health
- charging system and vehicle.
Safety devices on the charging system
- must not be removed,
- must not be manipulated,
- must not be bypassed,
- before each use, it must be checked that the equipment (e.g. housing, connecting line, charging coupler) is undamaged,
- must be repaired or replaced as necessary, in order to preserve the functional properties.
Ensure that:
- safety identifications, e.g. yellow-colored marks,
- danger signs and
- safety lights
remain easily visible and retain their effectiveness.
- When operating the charging system, do not use any extension cables, cable reels, multisocket power strips, or travel adapters.
- Do not insert any objects into the charging coupler of the charging system.
- Protect the socket-outlets and plug-in connections against moisture and water or other liquids.
1.3 Notes for people with a pacemaker (PM) or implantable cardioverter defibrillator (ICD)

Charging systems from Heidelberg that are operated as intended, comply with the European guideline on electromagnetic compatibility regarding radiated interference.

Should people with a pacemaker (PM) or implantable cardioverter defibrillator (ICD) wish to conduct activities on charging systems and their devices in the intended manner, Heidelberg is not in a position to make any statement regarding the suitability of such medial devices. Heidelberg is not able to assess the pacemakers or concerned implantable cardioverter defibrillators with regard to their susceptibility to electromagnetic radiation. This is something that only the manufacturers of the pacemaker or implantable cardioverter defibrillator can do.

Heidelberg therefore recommends only allowing the people in question to work on its charging systems after consultation with the manufacturer of the pacemaker/defibrillator and the relevant insurance company. Ensure at all times that no health or safety risks are involved.

Note

People with a pacemaker or defibrillator may not work on or stand near the charging systems and their devices, e.g. to perform maintenance operations or rectify any faults.

1.4 Working on the charging system without risk

Before plugging the charging coupler into the vehicle

- The connecting line of the charging system must be completely unwound.
- Check whether the housing of the charging system, the connecting line, the charging coupler, and the connectors are undamaged.
- Take hold of the plug-in connection of the charging system only on the charging coupler and not on the charging cable.
- Ensure that no-one can trip e.g. over the charging cable.
During the charging process

- Keep unauthorized persons away from the charging system.
- When the charging system is connected, you must not clean or wash the vehicle with a high-pressure cleaner because the plug-in connection is not sealed against pressurized water.

In case of malfunctions or failure of the charging system

- Disconnect the charging system from the power supply by switching off the respective circuit breaker in the building. Leave a sign with the name of the person authorized to switch on the circuit breaker.
- Call in a qualified electrician immediately.

Electrical devices

- The housing of the charging system must always be kept closed.

1.5 Installation and tests

Information for selecting protective devices for basic and fault protection against touching directly or indirectly

- Electrical circuit breakers
The charging system must be protected with circuit breakers in compliance with the respective national regulations. This depends, for example, on the required tripping time, internal network resistance, conductor cross-section, conductor lengths, and the preset rating of the charging system.

The short-circuit protection of the conductor must have a characteristic that permits 8-10-fold of the $I_{\text{nom}}$ value and must not exceed a maximum nominal current of 16 A, depending on the preset rating of the charging system.

- Residual-current circuit breaker
For reasons of personal safety, national regulations may stipulate an upstream RCD with an $I_{\text{r.m.s.}}$ of 30 mA AC. Choose a suitable RCD that complies with the national regulations. For this, please refer to the comments in the sections DC and AC residual-current detection.

- DC residual-current detection
The charging system is equipped with 6 mA DC residual-current detection. The charging system switches itself off if there is a residual current that is greater than or equal to 6 mA DC. Details of this are given in the Diagnostics section.

- AC residual-current detection
The charging system is equipped with integrated AC residual-current detection as a convenience function.
This residual-current detection switches off the charging system, at the latest, if there is a residual current greater than 30 mA AC. Details of this are given in the Diagnostics section.

Notwithstanding this convenience function, a short-acting RCD must be connected upstream of the charging system, if necessary. The AC residual-current detection is not a substitute for an RCD.

Information on initial inspections after installation and repeat inspections
National regulations may stipulate inspections of the charging system before start-up and at regular intervals. Perform these inspections in accordance with the respective rules and regulations. Information is given below on how these inspections can be performed.

• PE conductor test
After the installation and before switching on for the first time, test the continuity of the PE conductor. For this, connect the charging coupler to a test adapter for vehicle simulation in accordance with EN 61581-1. Measure the resistance of the PE conductor between the PE conductor socket of the adapter and the connection point of the PE conductor in the building’s electrical cabinet. The value of the PE conductor for a total conductor length (connecting line to the charging system and the vehicle charging cable) of up to 5 m must not exceed 300 mΩ. For longer cables, the value can be increased in accordance with the applicable national regulations. In any case, the resistance must not exceed a value of 1 Ω.

• Insulation test
Two insulation measurements are required because the charging system is equipped with a disconnecting relay. The charging system must be disconnected from the power supply for this. Therefore, before the measurement, switch off the supply voltage using the circuit breaker in the building’s electrical cabinet.

1. Measurement of the primary side of the charging system.
Measure the insulation resistance on the primary side of the charging system at the connection point of the power supply line to the charging system in the building’s electrical cabinet. The value must not exceed 1 MΩ.

   Note
The Wallbox has a surge protector. This may be considered in the course of making measurements.

2. Measurement of the secondary side of the charging system.
For this, connect the charging coupler to a test adapter for vehicle simulation in accordance with EN 61581-1.
Measure the insulation via the measuring sockets on the test adapter. The value must not exceed 1 MΩ.

- Alternatively, the differential current method can be used in conjunction with measurement of the PE conductor current. In both cases, the value must not exceed 3.5 mA.

For these measurements, connect the charging coupler to a test adapter for vehicle simulation in accordance with EN 61581-1. The measurements must be carried out with the adapter in the C mode. Measure the differential current at the connection point of the power supply line to the charging system in the building's electrical cabinet.

- Test of the power-off condition in case of a short-circuit ($Z_{L-N}$)

For these measurements, connect the charging coupler to a test adapter for vehicle simulation in accordance with EN 61581-1. The measurements must be carried out with the adapter in the C mode. Carry out the measurements on the measuring sockets of the test adapter. The values must comply with those of the selected circuit breaker.

- Test of the power-off condition in case of a fault ($Z_{L-PE}$)

For these measurements, connect the charging coupler to a test adapter for vehicle simulation in accordance with EN 61581-1. The measurements must be carried out with the adapter in the C mode. Carry out the measurements on the measuring sockets of the test adapter with a suitable instrument. The values must comply with those of the selected circuit breaker.

- Test of the integrated DC residual-current detection

For these measurements, connect the charging coupler to a test adapter for vehicle simulation in accordance with EN 61581-1. The measurements must be carried out with the adapter in the C mode. Carry out the measurements on the measuring sockets of the test adapter with a suitable instrument. If the residual current is greater than 6 mA DC, the charging system must disconnect the charging coupler from the power supply. The fault indicator on the charging system must be activated.

- Test of the integrated AC residual-current detection

For these measurements, connect the charging coupler to a test adapter for vehicle simulation in accordance with EN 61581-1. The measurements must be carried out with the adapter in the C mode. Carry out the measurements on the measuring sockets of the test adapter with a suitable instrument. If the residual current is greater than 30 mA AC, the charging system must disconnect the charging coupler from the power supply. The tripping time must be less than 40 ms. The
fault indicator on the charging system must be activated. If the upstream RCDs are correctly dimensioned, this is does not trip.

- **Test of the upstream RCD**
  Due to the integrated AC residual-current detection, the upstream RCD must be tested at the connection point of the power supply line to the charging system in the building's electrical cabinet. The RCD must trip in accordance with the national regulations.

### 1.6 Specifications

<table>
<thead>
<tr>
<th>Designation</th>
<th>Technical specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regulations</td>
<td>IEC 61851-1</td>
</tr>
<tr>
<td>Charging capacity type 3</td>
<td>up to 11 kW</td>
</tr>
<tr>
<td>Nominal voltage</td>
<td>230 V / 400 V / 1/3 AC</td>
</tr>
<tr>
<td>Nominal current</td>
<td>up to 16 A</td>
</tr>
<tr>
<td></td>
<td>adjustable from 6 A to 16 A in 2 A increments</td>
</tr>
<tr>
<td>Nominal frequency</td>
<td>50 Hz</td>
</tr>
<tr>
<td>Connection method</td>
<td>Spring clip method</td>
</tr>
<tr>
<td>Charging connection/charging coupler</td>
<td>Type 2</td>
</tr>
<tr>
<td>Length of charging cable</td>
<td>3.5, 5 m or 7.5 m</td>
</tr>
<tr>
<td>Operation/status information</td>
<td>Pushbutton with LED</td>
</tr>
<tr>
<td>Protection rating</td>
<td>IP54</td>
</tr>
<tr>
<td>Residual current detection</td>
<td>AC 30 mA, DC 6 mA</td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>-25 °C to +40 °C</td>
</tr>
<tr>
<td>Ventilation</td>
<td>No ventilation required</td>
</tr>
<tr>
<td>Protection class</td>
<td>I</td>
</tr>
<tr>
<td>Overvoltage category</td>
<td>III</td>
</tr>
<tr>
<td>Weight</td>
<td>approx. 8 kg</td>
</tr>
</tbody>
</table>

Tab. 1
1.7 Protective devices

The following components are protective devices:
1. Housing
2. Charging cable
3. Protective cover
4. Charging coupler

Checking the protective devices
1. Before every charging process, make a visual inspection of the protective devices for damage.
2. Have a qualified electrician make regular electrical function tests in accordance with the national regulations.
1.8 Operator control elements

The charging system can be operated with a single button/LED combination (Fig. 2/1). An optional external blocking device (e.g. key switch) can be connected to the internal interface.

**Functions of the LED**
The LED indicates the operating state of the charging system. Detailed information on the operating states is given in the operating manual.

**Functions of the button**
The functions of the button are described in the operating manual.

**Starting the charging process**
The charging process starts automatically as soon as the charging coupler is plugged in and the vehicle requests a charging process.

**Stopping the charging process**

- **Note**
The charging process cannot be stopped with the button. There are 3 ways of stopping the charging process.
  - Stop the charging process with the operating controls in the vehicle. Instructions on this are given in the vehicle's operating manual.
  - Disconnect the charging system from the power supply by switching off the respective circuit breaker in the building.
  - Disable the charging system using the optional external blocking device.

**Optional external blocking device**
If an external blocking device (e.g. key switch) is connected, the charging process is only started when the Wallbox has been enabled by the external blocking device.

1.9 Declaration of Conformity

The Declaration of Conformity and the CE marking on the product are valid for the following EU Member States:

- Austria
- Belgium
- Bulgaria
- Croatia
- Cyprus
- Czech Republic
- Denmark
- Estonia
- Finland
- France
- Germany
- Greece
- Hungary
- Ireland
- Italy
- Latvia
- Lithuania
- Luxembourg
- Malta
- Netherlands
- Poland
- Portugal
- Romania
- Slovakia
- Slovenia
- Spain
- Sweden
- United Kingdom
EU-Konformitätserklärung gemäß der EU-Niederspannungsrichtlinie 2014/35/EU, Anhang IV und weiteren europäischen Richtlinien

Hiermit erklären wir, dass die Bauart des

Erzeugnis: Ladesystem Mode 3
Modell/Typ: Wallbox Home Eco

folgenden einschlägigen Bestimmungen in der derzeit gültigen Fassung entspricht:

- Niederspannungsrichtlinie 2014/35/EU
- EMV-Richtlinie 2014/30/EU
- RoHS-Richtlinie 2011/65/EU

Angewandte harmonisierte Normen, insbesondere:

- EN 61851-1
- EN 61000-6-2
- EN 61000-6-3

bezieht sich auf den Auslieferungszustand des Ladesystems.

(Rainer Hundsdörfer)
Chairman of the management board

(Frank Kopp)
Head of Research and Development, Authorized representative in terms of technical documents

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Fig. 3 Declaration of Conformity
EU conformity declaration in accordance with the EU Low-voltage Directive 2014/35/EU, Annex IV, and other European directives. We hereby declare that the design of the product:

- Meets the following pertinent stipulations as per the version valid at the present time:
  - Low-voltage Directive 2014/35/EU
  - EMC Directive 2014/30/EU
  - RoHS Directive 2011/65/EU

Harmonisation standards used, in particular:
- EN 61851-1
- EN 61000-6-2
- EN 61000-6-3

1) Applies only to safety-related condition of the Charging System upon dispatch as stated.

(Rainer Hundstorf)  
Chairman of the management board  
Head of Research and Development  
Authorised representative in terms of technical documents

Safety instructions

EU-producentenklarering i andet om formodene lige og yderligere europæiske direktiver
Vi erklærer hermed, at konstruktionen af produktet:

- er i overensstemmelse med de nedenfølgende bestemmelser i den for tiden gældende udgave:
  - Læsværnordre 2014/35/EU
  - EMC-direktiv 2014/30/EU
  - RoHS-direktiv 2011/65/EU

Anvendte harmoniserede normer, især:
- EN 61851-1
- EN 61000-6-2
- EN 61000-6-3

1) refererer til ladesystemets leveringsstand ved angivne forskel.

(Rainer Hundstorf)  
Chairman of the management board  
Head of Research and Development  
Authorised representative in terms of technical documents

EU-vastuumenmuukausi, vakuutus

EU-verklaring van conformiteit overeenkomstig de EU-richtlijn inzake spanningsgrenzen 2014/35/EU, Bijlage IV en andere Europese richtlijnen.

Hiermee verklaren wij dat de constructie van het produkt:

- voldoet aan de volgende geldende bepalingen:
  - Richtlijn inzake spanningsgrenzen 2014/35/EU
  - EMC-richtlijn 2014/30/EU
  - RoHS-richtlijn 2011/65/EU

Toegespote geharmoniseerde normen, in het bijzonder:
- EN 61851-1
- EN 61000-6-2
- EN 61000-6-3

1) heeft betrekking op de leveringstoestand van het opheldersysteem.

(Rainer Hundstorf)  
Chairman of the management board  
Head of Research and Development  
Authorised representative in terms of technical documents

EU-declaratie van Conformiteit overeenkomstig de EU-richtlijn inzake spanningsgrenzen 2014/35/EU, Bijlage IV en andere Europese richtlijnen.

Hierbij verklaren wij dat de constructie van het produkt:

- voldoet aan de volgende geldende bepalingen:
  - Richtlijn inzake spanningsgrenzen 2014/35/EU
  - EMC-richtlijn 2014/30/EU
  - RoHS-richtlijn 2011/65/EU

Toegespote geharmoniseerde normen, in het bijzonder:
- EN 61851-1
- EN 61000-6-2
- EN 61000-6-3

1) heeft betrekking op de leveringstoestand van het opheldersysteem.

(Rainer Hundstorf)  
Chairman of the management board  
Head of Research and Development  
Authorised representative in terms of technical documents

Fig. 4
Safety instructions

EU declaration of conformity

A.1.12

00.999.3028/01

Fig. 5

A.1.12

00.999.3028/01
Fig. 6

EU-megvalósítási nyilatkozata[1] a 2014/35/EU számú, a kifejlesztési villamoságú termékek üzemeltetési szabályok irányelv IV. melléklete és továbbá európai uniós előírások szerint Ezennel kijelentjük, hogy az alábbi termékkivetélessorozat:

Termék:

Modelltípus: megfelelő a következő rendszerű rendelkezések jelenlegi érvényes kiadásainak:

- 2014/35/EU számú, kifejlesztési villamoságú termékek üzemeltetési szabályok irányelv
- 2014/35/EU számú, elektromágneses zavarozó eszköz
- 2011/65/EC számú, veszélyes anyagok elektromos berendezésekben való alkalmazásának korlátozásáról szóló (RoHS) irányelv

A következő harmonizált standardok alkalmazhatók:

- EN 61851-1
- EN 61900-2-2
- EN 61900-3-3

1) a töltőrendszer kisüzemítésekor érvényes állapotára vonatkozik.

(Rainer Hundsdörfer) (Frank Kripp) Chairman of the management board Head of Research and Development, Authorized representative in terms of technical documents

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BG

Декларация за съответствие на EC[1] съгласно Директива за ниско напрежение на ЕС 2014/35/ЕС, приложение IV и други европейски директиви

С настоящото декларираме, че конструкцията на

Производ:

отговаря на следните релевантни разпоредби във валидния настоящем текст:

- Директива за ниско напрежение 2014/35/ЕС
- Директива за електромагнитна съвместимост 2014/30/ЕС
- Директива 2011/65/ЕС (RoHS 2)

Приложени гармонизирани стандарти, по-специално:

- EN 61851-1
- EN 61900-2-2
- EN 61900-3-3

1) отнесе се за състоянието при доставка на въздушната система.

(Rainer Hundsdörfer) (Frank Kripp) Chairman of the management board Head of Research and Development, Authorized representative in terms of technical documents

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HR

EU izjava o skladnosti[1] u skladu s Prilogom IV Direktive 2014/35/EU Európskog parlamenta i Vijeća o električnoj opremi namijenjenoj za uporabu unutar određenih naponskih granica i s ostalim direktivama EU-a Ovim izjavljujemo da konstrukcija

Proizvod:

Modello: ispunjava zahtjeve sljedećih normativnih akata u onom njihovu izdaju koja je vrijedna u trenutku izrade proizvoda:

- Direktiva 2014/35/EU o električnoj opremi namijenjenoj uporabi u određenim naponskim granicama
- Direktiva 2014/30/EU o elektromagnetnoj kompatibilnosti
- Direktiva 2011/65/EU o ograničenju uporabe određenih opasnih tvari u električnoj i elektroničkoj opremi

Pretjecajni harmonizirani standardi, osobito:

- EN 61851-1
- EN 61900-2-2
- EN 61900-3-3

1) odnosi se na stvarne u kojem je sustav za punjenje isporučen.

(Rainer Hundsdörfer) (Frank Kripp) Chairman of the management board Head of Research and Development, Authorized representative in terms of technical documents