BMW Wallbox Connect

Instructions for use
Content

NOTES 9
   Safety instructions 9
   Intended use 10
   About this manual 11
   Guarantee 11

OPERATION 12
   Displays and controls 12
   Starting the charging process 13
   Ending the charging process 14
   Storage of the charger cable 14
   Status LED information 15
   BMW Digital Charging Service (BMW DCS) 16
   BMW iV App 19
   Restarting 20

AUTHORIZATION 21
   RFID cards 21
   RFID authorization 21
   Configuring the authorization function 22

CONFIGURATION 25
   Web interface 25

FAULTS 40
   Troubleshooting 40
   Possible causes of error in the event of a fault 42

MAINTENANCE 44
   Cleaning 44
   Maintenance and repair 44

DISPOSAL 45

SOFTWARE UPDATE 46
Imprint

Bayerische Motorenwerke Aktiengesellschaft
Munich, Germany
www.bmw.com
Translation of the original instructions
Copyright ©2019 BMW AG Munich

This documentation contains information protected by copyright. All rights are reserved, especially the right to copying and distribution. No part of the documentation may be reproduced or processed using electronic systems, copied, or distributed in any form whatsoever (by photocopying, scanning, or any other process) without the written agreement of Bayerische Motorenwerke Aktiengesellschaft.

Violations create an obligation to pay compensation.
Information about this manual

We are delighted that you have decided to purchase a BMW Wallbox.

Please read the instructions for this device carefully before you charge your vehicle. Please always keep this document ready to hand, close to the Wallbox, because it contains important information about charging the high-voltage battery of electric or plug-in hybrid vehicles.

The installation manual must be used for installing the Wallbox, as well as for storage and transportation. The manual contains all the technical data as well as the permitted ambient conditions.

Have fun and enjoy your BMW Wallbox.

Your BMW AG

Symbols used

At various points in the manual, you will find instructions and warnings of possible dangers. The symbols used have the following meanings:

- **WARNING**
  Means that death or serious injury may occur if the appropriate precautions are not taken.

- **CAUTION**
  Means that material damage or slight injury may occur if the appropriate precautions are not taken.

- **ATTENTION**
  Means that material damage may occur if the appropriate precautions are not taken.

- **ESD**
  This warning draws attention to the potential consequences of contact with electrostatically sensitive components.

- **Note**
  Refers to procedures which do not present any danger of creating injury.

- **This lightning symbol represents an electric shock hazard. Access only for qualified and authorized electricians.**
Safety instructions

WARNING

▷ Electrical danger
Installation, commissioning, maintenance and retrofitting of the Wallbox must be carried out by appropriately trained, qualified, and authorized electricians\(^1\), who are fully responsible for complying with the applicable standards and installation regulations. For details, see installation manual.

▷ Electrical danger/Danger of fire!
Never use defective, worn, or dirty charger cable connectors.

▷ Electrical danger!
If the status LED is permanently red, disconnect the Wallbox from the power supply until the device has been replaced. The voltage at the charger cable can no longer be switched off.

▷ The owner (end customer) must ensure that the Wallbox is only ever operated when it is in perfect condition.

▷ Never probe the connector with your fingers.

▷ It must be possible to observe the device if children are playing in the vicinity.

▷ The Wallbox must be inspected regularly for defects on the charger cable connector (including charger cable) and for damage to the casing (visual inspection).

▷ Repair work on the Wallbox is not permitted for the end customer, and may be carried out only by the manufacturer or by a specialist qualified for the task (replacement of the Wallbox)!

▷ A damaged Wallbox must be switched off immediately and replaced.

▷ Do not undertake any unauthorized conversions or modifications of the Wallbox!

▷ Do not remove any markings such as safety symbols, warnings, performance rating plates, identification plates, or cable markings!

▷ The Wallbox does not have a power switch of its own! The connector plug serves as the mains isolator; if there is no plug, the mains isolator is the outlet fuse in the distributor.

▷ Extension cables must not be used to connect an electric or plug-in hybrid vehicle to the Wallbox.

▷ Only electric or plug-in hybrid vehicles or their chargers may be connected. No other electrical loads (e.g. power tools, etc.) must be connected!

▷ Use only the plug (and not the cable itself) to pull the charger cable out of the plug holder.

▷ Ensure that the charger cable does not become mechanically damaged (kinked, trapped, or driven over) and that the contact area does not come into contact with heat sources, dirt or water.

▷ A visual inspection for damage should always be conducted before a charging process. For this, the contact area of the charging plug in particular should be checked for dirt and moisture, the charger cable checked for cuts or abrasions to the insulation, and the cable outlet of the Wallbox checked for firm seat.

\(^1\) Persons who, on the basis of their specialist training, knowledge, and experience, as well as knowledge of the applicable standards, can assess the tasks assigned to them and recognize possible dangers.
CAUTION
▷ Ensure that the Wallbox is not damaged by inappropriate handling (casing cover, internal parts, etc.).
▷ Use only the charger cable connector (and not the cable itself) to pull the charger cable out of the plug connector.
▷ Ensure that the charger cable does not become mechanically damaged (kinked, trapped, or driven over) and that the contact area does not come into contact with sources of heat, dirt or water. ◄

ATTENTION
▷ If it is raining or snowing, and the Wallbox is mounted outdoors, do not open the connector panel cover!
▷ Before opening the covers, a charging process which is underway must be ended, and the vehicle must be disconnected. ◄

Intended use

The Wallbox is a charging station for indoor and outdoor use, by means of which electric or plug-in hybrid vehicles can be charged. Connecting other devices, e.g. electrical tools, is not permitted! The Wallbox is intended to be fitted to a wall or a mounting pillar. For installation and connection of the Wallbox, the applicable national regulations must be complied with.

In all cases, intended use of the device includes compliance with environmental requirements for which this device was developed.

The Wallbox was developed, manufactured, tested, and documented in compliance with the applicable safety standards. Therefore, if instructions provided for intended use and the safety instructions are complied with, under normal circumstances, no risks arise from the product in terms of material damage or the health of persons.

This device must be grounded. In the case of a fault, the ground connection reduces the risk of an electric shock. It is fitted with a connector plug with ground connection, or else optionally has a fixed connection and is connected to a ground conductor. The equipment connector plug must be inserted into the socket which is provided for the purpose and which was installed in compliance with local regulations.

In all cases, the instructions in this manual must be followed exactly. Otherwise, sources of danger could be created, or the safety devices could be made ineffective. Independently of the safety instructions provided in this manual, the safety and accident prevention regulations corresponding to the individual application case must be complied with.

Because of technical or legal restrictions, not all variants/options are available in all countries.
About this manual

This manual and the functions described are valid for devices of the type:

▷ BMW Wallbox Connect

The images and explanations in this manual are based on a typical model of the device. The execution of your device may be different from this.

This manual is intended for the following groups:

▷ End customers (users of the Wallbox)
▷ Commissioning technicians, service technicians

Guarantee

BMW Service will provide information on the currently applicable guarantee terms. However, the cases listed below are excluded from the guarantee.

▷ Defects or damage caused by installations which were not carried out as per the requirements in the BMW Wallbox Connect installation instructions.
▷ Defects or damage caused because the product was not used as per the requirements in the BMW Wallbox Connect operating instructions.
▷ Costs and damage of repairs not performed by a specialized electrician authorized by a BMW sales outlet or authorized contracted service workshop.
**OPERATION**

Displays and controls

BMW Wallbox Connect

Functions:
- Charging of electric or plug-in hybrid vehicles
- Network connection using LAN, WLAN/Wi-Fi (2.4 GHz)
- Local smartphone App
- RFID functionality
- Domestic connection monitoring (outlet fuse for meter) using a directly connected Modbus-RTU (RS485) or Modbus-TCP electricity meter
- Communications module for BMW DCS (BMW Digital Charging Service)
- Switching between immediate charging and intelligent charging (possible only in combination with BMW DCS)

1. Status LED
2. Display online connection
3. RFID status display
4. RFID read area
5. Charging mode indicator (immediate charging/intelligent charging)
6. Capacitive touch button
7. Holder for charger cable connector plug
8. Charger cable connector plug
Starting the charging process

<table>
<thead>
<tr>
<th>RFID authorization required:</th>
<th>For a Wallbox with activated RFID functionality, please comply with the instructions in section RFID authorization.</th>
</tr>
</thead>
<tbody>
<tr>
<td>In the rest state or after completion of authorization, the status LED displays continuous blue.</td>
<td>Now connect the vehicle, if unconnected, to the Wallbox.</td>
</tr>
<tr>
<td>While internal self-tests are carried out, the status LED displays orange for several seconds.</td>
<td></td>
</tr>
<tr>
<td>After successful self-testing, the status LED again shows blue.</td>
<td>The vehicle is now successfully connected and authorized. From this point, the charging process can be started from the vehicle.</td>
</tr>
<tr>
<td>While the charging process is active, the status LED flashes blue.</td>
<td>The charging process is started by the vehicle, and depending on the setting in the vehicle, it can also start with a delay.</td>
</tr>
</tbody>
</table>
Ending the charging process

The charging process is ended by unlocking the vehicle and disconnecting the charger cable. For details of this, please refer to the instructions of the vehicle manufacturer. The charging process can also be ended by disconnecting using the RFID card used for the authorization.

1. Disconnect the charger cable from the vehicle, and wind the charger cable around the Wallbox.

Storage of the charger cable

1. Wind the charger cable around the Wallbox.
2. For safe storage, insert the charger cable connector into its holder 1.

Note
Depending on the design of the Wallbox, it may differ in appearance from the image shown.
Status LED information

**Status LED sections**
The status LED provides information about the current operating state of the Wallbox. It consists of 4 sections, S1 to S4, which can illuminate in different colors, or flash individually or in combinations.
The status LED is visible only when the power supply has been activated, and is suppressed if the Wallbox is not yet authorized.
Unless stated otherwise, all 4 sections illuminate together.

<table>
<thead>
<tr>
<th>Limited charging current because of domestic connection monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>If the &quot;domestic connection monitoring&quot; function is used, sections S1 and S2 of the status LED flash orange slowly when the connection to the energy meter is lost. The charging current is reduced to 10 A until the connection to the energy meter is re-established.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Temperature shut-off</th>
</tr>
</thead>
<tbody>
<tr>
<td>If the permitted temperature limit of the Wallbox is exceeded, then the charging process is temporarily interrupted, and sections S3 and S4 of the status LED flash orange slowly. After a cooling phase, the charging process continues automatically.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Software update</th>
</tr>
</thead>
<tbody>
<tr>
<td>During an update, all four sections flash orange slowly. No charging is possible during this time.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Commissioning mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>When commissioning mode is active, sectors S2 and S3 of the status LED light up orange.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Faults</th>
</tr>
</thead>
<tbody>
<tr>
<td>If faults have occurred, these are indicated using the status LED and special color codes. For details, see section Troubleshooting.</td>
</tr>
</tbody>
</table>
BMW Digital Charging Service (BMW DCS)

Availability

The availability of the BMW Digital Charging Service is country-specific. For further information, see https://charging.bmwgroup.com/web/360electric-international/home.

Synchronizing the Wallbox with the BMW Digital Charging Service

No vehicle must be connected.

The BMW Digital Charging Service server must be accessible. Indicator 1 described in the next section lights up white, and the BMW Digital Charging Service is displayed in the Web interface as “Reachable;” see section CONFIGURATION. Synchronization must first be activated in the charging portal.

After the synchronization has been started via the portal, capacitive touch button 3 on the Wallbox, described in the next section, lights up white and must be pressed on the Wallbox for confirmation. After synchronization is complete, indicator 1 described in the next section lights up green. Follow in detail the further instructions of the charging portal.

Indicators for BMW DCS functions

1 Online connection indicator
2 Charging mode indicator (immediate charging/intelligent charging)
3 Capacitive touch button
Online connection (intelligent charging)

In “Intelligent charging” mode, the charging current is preset by the server based on the set customer preference, in the form of a charging schedule.

<table>
<thead>
<tr>
<th>No connection possible to the BMW Digital Charging Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>If no symbol is visible, the communication module has not yet been started (start-up of the communication module lasts about three minutes) or the BMW Digital Charging Service is not yet available in your region.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Server accessible, but not logged on</th>
</tr>
</thead>
<tbody>
<tr>
<td>If the communication module in the Wallbox started correctly, and there is a connection to the Internet (BMW DCS server accessible), indicator 1 lights up white.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Connection established to server</th>
</tr>
</thead>
<tbody>
<tr>
<td>While the connection to the server is being established, indicator 1 flashes green. When the connection to the server has been established successfully, indicator 1 lights up green.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Internet connection not available</th>
</tr>
</thead>
<tbody>
<tr>
<td>If no connection to the BMW Digital Charging Service is possible, even though the Wallbox was already synchronized with the server, indicator 1 lights up orange. This can be caused by the following:</td>
</tr>
<tr>
<td>▶ The server is not working.</td>
</tr>
<tr>
<td>▶ There is no Internet connection.</td>
</tr>
</tbody>
</table>

EN-US
### Charging mode

After plugging-in and authorization, the charging process starts using a low charging current. As soon as the Wallbox receives an optimized charging schedule via the online connection, “Intelligent charging” is active. If no optimized charging schedule is received, the Wallbox automatically goes into “Immediate charging” mode.

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Intelligent charging is active</strong>&lt;br&gt;Indicator 2 lights up <strong>white</strong>.</td>
</tr>
<tr>
<td></td>
<td><strong>Smart charging is requested from the BMW DCS</strong>&lt;br&gt;Indicator 2 flashes <strong>white</strong> until a charging schedule is transmitted by the BMW DCS.</td>
</tr>
<tr>
<td></td>
<td><strong>Immediate charging is active</strong>&lt;br&gt;Indicator 2 lights up <strong>green</strong>.</td>
</tr>
<tr>
<td></td>
<td><strong>Communication module ready</strong>&lt;br&gt;If no vehicle is connected to the Wallbox, it is only displayed that the communication module is ready for operation, but not synchronized with BMW DCS. Indicator 2 lights up <strong>blue</strong>.</td>
</tr>
<tr>
<td></td>
<td><strong>Internal fault</strong>&lt;br&gt;If there is no connection to the integrated communication module, the indicator lights up <strong>orange</strong>.</td>
</tr>
</tbody>
</table>

**Note**<br>Charging schedule optimization takes place only in “Intelligent charging” mode.
Changing the charging mode

**Capacitive touch button**

1. During an active charging session, press the capacitive touch button 3 to change between “Immediate charging” and “Intelligent charging”.

**Note**

- The change between “Immediate charging” and “Intelligent charging” is possible only during an active charging session and with successful vehicle mapping (correct RFID card used, vehicle is charging).
- For “Intelligent charging,” the charge current limitation must be deactivated in the vehicle.
- The button becomes visible only when it is possible to change the charging mode.

**BMW iV App**

The BMW Wallbox can be controlled via the BMW iV app after integration into a network. This function is available only within the local network; control over the Internet is not possible.

Among other things, the BMW iV App can be used to start or stop charging processes. It is also possible to vary the current of a running charging process.

There is no direct exchange of data or information between the BMW iV app and the BMW Digital Charging Service (BMW DCS). Manual interventions in controlled charging processes and/or charging schedules may lead to a reduction in efficiency of the DCS functionality.

The latest features and descriptions can be found in the respective app stores. The BMW iV app for iOS and Android operating systems has been developed and is available from the iTunes Store and the Google Play Store.

Additional or updated information about the BMW iV app is available on the BMW Service page for charging products at [https://charging.bmwgroup.com/web/wbdoc/bmw-iv-app](https://charging.bmwgroup.com/web/wbdoc/bmw-iv-app).

**Note**

A special operating mode, the showroom mode, is available for this device. The charging function is deactivated in this operating mode. Further information can be found in the installation instructions.
Restarting

Service button

⚠️ Information about opening the cover:

Risk of damage! Electronic components may be destroyed by being touched!

Before working with assemblies, carry out an electrical discharge by touching a metallic, grounded object!

Before opening the covers, a charging process which is underway must be ended, and the vehicle must be disconnected.

1. Remove the casing cover, see section Removing the casing cover.
2. Remove the connector panel cover, see section Removing the connector panel cover, to access the Service button.
3. After completing the work, install the connector panel cover and the casing cover. Follow the instructions in sections Installing the connector panel cover and Installing the casing cover.

1. Press the Service button until the first signal tone sounds (approx. two seconds). The device then restarts.

⚠️ ATTENTION

Pressing the Service button for too long (approx. 5 seconds), may delete the RFID cards.
AUTHORIZATION

As delivered, the authorization function is deactivated. The supplied RFID cards are programmed in the factory. If required, the authorization function must be activated on the web interface; see section CONFIGURATION.

RFID cards

The four supplied RFID cards are used to authorize the users to the Wallbox. All RFID cards have different colors which can also be assigned to a vehicle through the BMW DCS service (BMW Digital Charging Service).

1 RFID master card (white)
2 RFID user card (red, green, blue)

RFID authorization

The RFID sensor is used for contact-free authorization of a user to allow charging at the Wallbox using RFID cards as per ISO 14443 and ISO 15693.

1 Status LED
2 RFID status indicator
3 RFID read area
<table>
<thead>
<tr>
<th><strong>Authorization required</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>The RFID status indicator 2 and the frame of the RFID read area 3 flash <strong>white</strong> slowly.</td>
</tr>
</tbody>
</table>

| **1.** Hold the RFID card in front of the RFID read area 3. |

<table>
<thead>
<tr>
<th><strong>Authorization successful</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Successful authorization is indicated by a sound with rising tone, and the RFID status indicator 2 lights up <strong>green</strong> for 2 seconds.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Authorization unsuccessful</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>An unsuccessful authorization attempt is indicated by a sound with falling tone, and RFID status indicator 2 lights up <strong>red</strong> for 2 seconds.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Charging process authorized</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>If the charging process is not started within <strong>60 seconds</strong> of a successful authorization, then the authorization is automatically canceled. During the authorization period status LED 1 lights up <strong>blue</strong>. Within this period, no activation or deactivation using another card is possible.</td>
</tr>
<tr>
<td><strong>1.</strong> Now connect the vehicle. From this point, the charging process can be started from the vehicle.</td>
</tr>
</tbody>
</table>

### Configuring the authorization function

**Note**

As delivered, the authorization function is deactivated. The supplied RFID cards are saved in the whitelist of the Wallbox. For the subsequent processes, it is necessary to remove the casing cover and the connector panel cover of the Wallbox, in order to gain access to the **Service button**.

**Note**

The display for the charging mode must show **blue** before you can configure the RFID function.

**Note**

For configuration of the authorization function, no electric vehicle may be connected.
Service button

⚠️ Information about opening the cover:

Risk of damage! Electronic components can be destroyed by touching!

Before working with assemblies, carry out an electrical discharge by touching a metallic grounded object!

Before opening the covers, a charging process which is underway must be ended, and the vehicle must be disconnected.

1. Remove the casing cover, see section Removing the casing cover.

2. Remove the connector panel cover, see section Removing the connector panel cover, in order to obtain access to the service button.

3. After completing the work, install the connector panel cover and the casing cover.
   Follow the instructions in sections Installing the connector panel cover and Installing the casing cover.

Activating the RFID function

The authorization function can be activated or deactivated via the web interface of the Wallbox Connect, without deleting the whitelist, see section CONFIGURATION. The whitelist is the list of saved cards.

Programming the RFID master card

1. Press the service button until the 2nd signal tone is heard (about 6 seconds). All already saved RFID cards (including the master card) are now deleted, and an automatic restart is carried out.

2. After the restart, as soon as the read area is displayed, within 60 seconds hold the RFID master card to be programmed in front of the RFID read area, and wait for the signal tone. The RFID master card is now programmed. Keep this card carefully. The RFID master card can also be used to authorize a charging process.
Programming another RFID user card

Note

The following process is not possible if a vehicle is connected.

1. End any charging process which is in progress, and disconnect the vehicle from the Wallbox.
2. Hold the RFID master card in front of the RFID read area, and wait for the signal tone.
3. Within 5 seconds, hold the new RFID user card in front of the RFID read area, and wait for the signal tone. The RFID status display changes to orange.
4. Within 5 seconds, hold the RFID master card in front of the RFID read area again for confirmation, and wait for the signal tone. The RFID user card is now programmed, and the RFID status display changes back to white.

Deleting all RFID cards from the memory

1. Press the service button until the 2nd signal tone is heard (about 6 seconds). All saved RFID cards (including the master card) are now deleted, and an automatic restart is carried out.
2. Now restart programming the RFID master card if the RFID function is to continue to remain activated.

Deactivating the RFID function

Note

The authorization function can be activated or deactivated via the web interface, without deleting the whitelist, see section Menu - Configuration.
CONFIGURATION

To simplify configuration, the Wallbox Connect has a built-in WLAN/Wi-Fi hotspot. For configuration, you can connect from a mobile phone, tablet, laptop, PC, or WLAN/Wi-Fi repeater. The hotspot can be converted for further connection to a WLAN/Wi-Fi client, in order to link the Wallbox into an existing home network. If a LAN connection is used, then the WLAN/Wi-Fi can be completely deactivated.

All information required for the connection via the built-in hotspot and the further setting up of the Wallbox is located on a configuration label provided with the delivery.
This configuration label is in an envelope together with the RFID cards.
If you change the default settings, then they must also be recorded.

Note
Take good care of this label. Without this information, it is not possible to reset the password if it has been forgotten.

Web interface

Note
For connection via the integrated WLAN/Wi-Fi hotspot, you will find the IP address on the configuration label.

Note
The IP address of the BMW Wallbox Connect in the integrated WLAN/Wi-Fi hotspot may change due to a software update. Observe the release notes of the software.

The IP address **http://11.0.0.1** is valid only for release version 1.1.8. If you updated the software on your device, use **http://192.168.2.1**.

Please note that these two IP addresses work only with the integrated WLAN/Wi-Fi hotspot of the BMW Wallbox. If the device is accessed from the home network, the IP address is assigned by the router (DHCP), where the corresponding IP address must also be read out.
Accessing the Web interface/Logging in

1. In the address line of your Internet browser, enter the IP address or the DNS name of the Wallbox.
   Example DNS names: mywallbox.bmw
   Example IP address: http://192.168.0.10

2. Enter the data for the first login:
   Username: admin
   Password: Serial number of the Wallbox

3. After the first login, the password must be changed.

If you have forgotten your password, you can reset the device using the "Forgot your password?" button.

For this, you need the "recovery password", which you will find on the supplied configuration label. If you are signed onto the Web interface, you will also find this password under the user settings.

After entering it, you are requested to specify your user settings again.
Main menu

- Status (system overview)
- System (software update, data logging)
- Configuration
- Configuration Wizard

Program symbols

- Help (access to the manual)
- (C) = License information for the software components which are in use
- User (change password)
- Log off

Menu - Status

System overview

<table>
<thead>
<tr>
<th>Overview</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
</tr>
<tr>
<td>WALLBOX</td>
</tr>
</tbody>
</table>

- Type of device
- Serial number of the Wallbox
- IP address of the Wallbox which is currently displaying the web interface
  
  The address displayed in brackets refers to the second available interface (LAN or WLAN/Wi-Fi).
- MAC address of the Wallbox (of the interface which is currently in use)
- Status of the BMW DCS host connection to the Wallbox (e.g. Online, Reachable)
- Synchronization of the Wallbox with the BMW DCS host
<table>
<thead>
<tr>
<th>Status</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Idle</td>
<td>Ready for operation, no vehicle plugged in</td>
</tr>
<tr>
<td>Charging</td>
<td>Active charging process; power being transferred to vehicle</td>
</tr>
<tr>
<td>ReadyForCharging</td>
<td>Vehicle is plugged in; currently no active charging process</td>
</tr>
<tr>
<td>Suspended</td>
<td>Charging process paused due to a superordinate system</td>
</tr>
<tr>
<td>RecoverFromError</td>
<td>Recovery of operational readiness after error</td>
</tr>
<tr>
<td>TokenProgrammingMode</td>
<td>Programming mode for RFID user cards active</td>
</tr>
<tr>
<td>UnrecoverableError</td>
<td>Error</td>
</tr>
<tr>
<td>ServiceMode</td>
<td>Device is in commissioning mode</td>
</tr>
<tr>
<td>Degraded</td>
<td>Safety-related power reduction</td>
</tr>
</tbody>
</table>

**Note**

In order to synchronize the Wallbox with the BMW Digital Charging Service, please follow the instructions in section [BMW Digital Charging Service (BMW DCS)](#).
Menu - System

Software update

Note

This section refers to the manual update function of the BMW Wallbox itself. In addition, the software can be updated via the BMW Digital Charging Service (BMW DCS).

1. From the Internet, download the necessary software update file (*.keb file).
2. In the System main menu, select the Software Update option.
3. Select the downloaded file and press the Upload & Install button.

There are two possibilities for updating the software for the BMW Wallbox Connect:

➢ The Wallbox is connected to the internet:
If the device is connected to the internet, it will automatically search for an update and show a corresponding notification and the version information. The update can be initiated via the Download & Install button. The internet connection must remain active for the duration of the download.

➢ The Wallbox is not connected to the internet:
If the device is not connected to the internet, the software (*.keb file) must first be manually downloaded and saved to a compatible device (e.g. notebook).
Connect the device to the network of the Wallbox. Open a browser on your device and navigate in the web interface of the Wallbox to the menu item System - Software Update. Select the file by using Choose a file and confirm the installation via Upload & Install.

The update may take an hour or more, depending on its size and extent. Wait until the update process has completed successfully and verify the function of the Wallbox.

During the update, the communication module may restart several times. This restart may be displayed via the Connection symbol on the front of the casing.

It is not possible to charge a vehicle during the update. During the update, the status LED flashes orange. Other, briefly appearing display variants, e.g. flashing of the status LED in blue/red, are also possible.
Note

For further information on the download of the latest software, see section SOFTWARE UPDATE.
Data logging

During operation, some data are stored for fault analysis; these can be of assistance for analysis in the event of a fault. These data can be displayed via the **Data logging** menu option, and downloaded for passing on.

1. Press the **Download All** button, in order to save all logging information as a compressed file.

**Restart**

A restart can be triggered using the **Restart System** button.

When the system is restarted, it can take several minutes until a connection with the BMW DCS is recreated.
Menu - Configuration

Note

The connection settings for the BMW DCS (BMW Digital Charging Service) are pre-configured, and cannot be changed.

The following configuration settings relate exclusively to additional functionality which can be defined by the user, depending on the use. Connection settings can also be carried out for which a successful Internet connection may be required (e.g. proxy settings).

Network connection

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WLAN/Wi-Fi Connection</td>
<td>ON; OFF</td>
<td>Enables or disables the connection of the Wallbox to an existing WLAN/Wi-Fi network.</td>
</tr>
<tr>
<td>WLAN/Wi-Fi SSID</td>
<td>Character string</td>
<td>Name of the WLAN/Wi-Fi network with which a connection is to be established.</td>
</tr>
<tr>
<td>Available Networks</td>
<td>Selection dialog</td>
<td>Shows the available networks. The right-hand button updates the selection.</td>
</tr>
<tr>
<td>Password</td>
<td>Character string</td>
<td>Password to connect to the selected network.</td>
</tr>
<tr>
<td>LAN DHCP Server</td>
<td>ON; OFF</td>
<td>Defines whether the Wallbox should act as a local DHCP server at the Ethernet interface.</td>
</tr>
</tbody>
</table>
Authorization & time sync

The values printed in bold in the table are the standard settings.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorization</td>
<td>ON; OFF</td>
<td>Activates or deactivates the authorization function of the power charging station. Activate this function only if you wish to use the RFID cards. The supplied RFID cards are programmed in the factory. For programming or deactivating the RFID cards, see section Configuring the authorization function. If the function is activated, then the local whitelist (see section RFID authorization) is used, or the requests are passed on to the BMW DCS host. If the function is deactivated, then charging may be carried out without authorization.</td>
</tr>
<tr>
<td>Browser Time</td>
<td></td>
<td>If necessary, the BMW Wallbox can be synchronized with the time of your terminal device.</td>
</tr>
</tbody>
</table>
### WLAN/Wi-Fi hotspot

The hotspot built into the Wallbox is activated as standard. The name of the network is the serial number of the Wallbox; this will be found on the type plate on the side. The preset password is unique for this Wallbox and does not have to be changed. You will find this information on the attached configuration label.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enable Hotspot</td>
<td>ON; OFF</td>
<td>Activates or deactivates the hotspot.</td>
</tr>
<tr>
<td>Hotspot SSID</td>
<td>Serial number</td>
<td>Name of the WLAN/Wi-Fi network. By default, this value is the serial number, but it can be changed as required.</td>
</tr>
<tr>
<td>Hotspot Password</td>
<td>12-character string</td>
<td>This password is unique for your Wallbox, but it can be changed as desired.</td>
</tr>
<tr>
<td>Channel</td>
<td>11</td>
<td>Channel used for the hotspot.</td>
</tr>
</tbody>
</table>
External TCP meter for monitoring domestic connection

The use of this function is described in detail in the installation manual.

As standard, the function is deactivated. If meters with a network interface were installed in your system (Modbus TCP), then these must be configured here. The maximum charging current must be set using the DIP switches in the Wallbox. The description of this, and the supported meter types, will be found in the installation manual. For additional supported meter models, please check whether current software and manuals are available; see section SOFTWARE UPDATE.

Note

The meters and, if required, the gateway must be configured as per manufacturers’ instructions. The IP address of the meters must be in the same subnet as the Wallbox.
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic Connection Monitoring</td>
<td>ON; OFF</td>
<td>Activates or deactivates domestic connection monitoring</td>
</tr>
<tr>
<td>Domestic Connection TCP Meter</td>
<td>ON; OFF</td>
<td>Defines whether the specified external domestic connection TCP meter is to be used</td>
</tr>
<tr>
<td>Manufacturer</td>
<td>Dropdown menu</td>
<td>Manufacturer of the external domestic connection TCP meter</td>
</tr>
<tr>
<td>IP Address</td>
<td>IP address</td>
<td>IP Address of the external domestic connection TCP meter or gateway</td>
</tr>
<tr>
<td>TCP Port</td>
<td>Character string</td>
<td>Port number of the external domestic connection TCP meter or gateway</td>
</tr>
<tr>
<td>Test Connection</td>
<td></td>
<td>The “Test Connection” button allows you to check the connection by using the configured meter.</td>
</tr>
<tr>
<td>Solar TCP Meter</td>
<td>ON; OFF</td>
<td>Defines whether the specified external solar TCP meter is to be used</td>
</tr>
<tr>
<td>Manufacturer</td>
<td>Dropdown menu</td>
<td>Manufacturer of the external solar TCP meter</td>
</tr>
<tr>
<td>IP Address</td>
<td>IP address</td>
<td>IP Address of the external solar TCP meter or gateway</td>
</tr>
<tr>
<td>TCP Port</td>
<td>Character string</td>
<td>Port number of the external solar TCP meter or gateway</td>
</tr>
<tr>
<td>Test Connection</td>
<td></td>
<td>The “Test Connection” button allows you to check the connection by using the configured meter.</td>
</tr>
<tr>
<td>RS485 Modbus Address</td>
<td>Character string</td>
<td>This setting must be set only in the case of a Modbus gateway. Use the corresponding RS485 Modbus address here.</td>
</tr>
</tbody>
</table>

**Proxy**

If a proxy server is used in your network for your connection to the Internet, then under the menu option **Proxy** the parameter **Proxy Server** must be activated. The additional setting options required for this then appear.
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proxy Server</td>
<td>ON; OFF</td>
<td>Defines whether the specified proxy server is to be used</td>
</tr>
<tr>
<td>Address</td>
<td>IP address</td>
<td>IP address of the proxy server</td>
</tr>
<tr>
<td></td>
<td>Example: 192.168.123.23</td>
<td></td>
</tr>
<tr>
<td>Port</td>
<td>Port number</td>
<td>Port number of the proxy server</td>
</tr>
<tr>
<td></td>
<td>Example: 1080</td>
<td></td>
</tr>
<tr>
<td>Username</td>
<td>Character string</td>
<td>Usernames for the proxy server</td>
</tr>
<tr>
<td>Password</td>
<td>Character string</td>
<td>Password for the proxy server</td>
</tr>
</tbody>
</table>
## USB Settings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allow USB init</td>
<td>ON; OFF</td>
<td>Allows the entire current configuration and the log files to be saved to an empty USB stick when it is inserted.</td>
</tr>
<tr>
<td>Allow USB config</td>
<td>ON; OFF</td>
<td>Allows the configuration to be changed when a USB stick with a CFG folder and a corresponding configuration file is inserted. If the function &quot;Allow USB init&quot; has been activated, the folder with the necessary configuration files is created automatically when a USB stick is inserted.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allow USB init</td>
<td>ON</td>
<td>Allows the entire current configuration and the log files to be saved to an empty USB stick when it is inserted. Modify this setting only if you are fully aware of its functionality. The default setting is &quot;OFF&quot;.</td>
</tr>
<tr>
<td>Allow USB config</td>
<td>ON</td>
<td>Allows the configuration to be changed when a USB stick with a CFG folder and a corresponding configuration file is inserted. If the function &quot;Allow USB init&quot; has been activated, then the folder with the necessary configuration files is created automatically when a USB stick is inserted. Modify this setting only if you are fully aware of its functionality. The default setting is &quot;OFF&quot;.</td>
</tr>
<tr>
<td>Allow USB update</td>
<td>ON</td>
<td>Allows to install update files from a USB stick, if inserted into the slot inside the connector panel.</td>
</tr>
</tbody>
</table>
Menu - Configuration Wizard (Wallbox Connect)

The Configuration Wizard is a guided configuration process to provide fast and easy access to the configuration of the BMW Wallbox Connect. Once the configuration is complete, you can adjust advanced settings in the “Configuration” menu.
FAULTS

Note
Additional and updated information such as operating and installation instructions are available on the Service page at [https://charging.bmwgroup.com/web/wbdoc/](https://charging.bmwgroup.com/web/wbdoc/).

Note
If the error code displayed here is not listed, then please contact BMW Service.

Troubleshooting

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>Possible cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status LED does not illuminate</td>
<td>1. No power supply – check the fault current protection and line protection switches, and activate if required.</td>
</tr>
<tr>
<td></td>
<td>2. Fault with Wallbox - contact your service partner as required.</td>
</tr>
<tr>
<td>Charging process does not start</td>
<td>1. The charger cable connector is not correctly inserted – unplug charger cable connector and plug in again.</td>
</tr>
<tr>
<td></td>
<td>2. The charger cable connector may be dirty or damaged in the locking area – clean the charger cable connector or have it replaced.</td>
</tr>
<tr>
<td></td>
<td>3. The vehicle does not require energy or it has a fault – check the vehicle.</td>
</tr>
<tr>
<td></td>
<td>4. Authorization not carried out correctly - follow the instructions in the manual.</td>
</tr>
<tr>
<td></td>
<td>5. The vehicle is programmed for a later starting time for charging.</td>
</tr>
<tr>
<td></td>
<td>6. Intelligent charging is active and the charging plan has scheduled charging for later.</td>
</tr>
<tr>
<td>Vehicle not fully charged/</td>
<td>1. Current reduction because of excessive temperature from vehicle or Wallbox – protect vehicle and Wallbox from direct solar radiation during the charging process (carport, garage). Visual inspection of the plug connector for dirt, wear, or damage. Contact your service partner as required.</td>
</tr>
<tr>
<td>extended charging duration</td>
<td>2. No release or limited charging current through iV app.</td>
</tr>
<tr>
<td></td>
<td>3. The charging schedule provides for this – check the settings in the BMW DCS portal.</td>
</tr>
<tr>
<td></td>
<td>4. Local load management of the Wallbox is active because of increased domestic power consumption.</td>
</tr>
<tr>
<td></td>
<td>5. Vehicle settings are incorrect, e.g. charging mode or departure time.</td>
</tr>
<tr>
<td>PROBLEM</td>
<td>Possible cause</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Charger cable connector cannot be unplugged | 1. The charging process was not ended by the vehicle – end the charging process as per vehicle manufacturer's instructions.  
2. The charger cable connector may not be able to unlock under tensile load – push the charger cable connector in, and unlock again on the vehicle. |
| Status LED flashes red                | 1. Fault – first check the possible causes in the event of a fault, see section Possible causes of error in the event of a fault.  
Switch off the supply voltage to the Wallbox using the appropriate power cut-off device. Disconnect the charger cable, and switch the supply voltage back on. |
| Status LED shows permanent red       | 1. The Wallbox cannot switch off the voltage at the charger cable – restart the Wallbox. If the problem continues, then disconnect the Wallbox from the mains and replace it.  
2. Ground conductor is not connected - connect the ground conductor correctly.  
3. Ground conductor has too high a resistance - connect the ground conductor correctly.  
4. The CCID test was not successful - if the problem continues, replace the Wallbox. |

**Resetting a fault**

If an interruption occurs during the connection or charging process, then the Wallbox attempts to restart the process automatically (5 times max.).

If the charging process cannot be started, then this must be acknowledged by a normal ending of the charging process or possibly by restarting the Wallbox. If a fault repeatedly occurs for no good reason, contact your service partner.
## Possible causes of error in the event of a fault

### General fault (indicated by colors red/white)

<table>
<thead>
<tr>
<th>Fault 1 [0001]</th>
<th>&quot;white/white/white/red&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The vehicle was disconnected during the Wallbox self-test (status LED shows orange).</td>
<td></td>
</tr>
<tr>
<td>2. The charger cable connector was unplugged during the charging process: The charger cable connector was not locked correctly – unplug the charger cable connector and plug it in correctly, ensuring that the locking is correct.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fault 3 [0011]</th>
<th>&quot;white/white/orange/orange&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature shut-off: The permitted temperature in the Wallbox has been exceeded. After a brief display of the fault code, the status LED sections S3 and S4 flash orange, until the Wallbox has cooled down.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fault 5 [0101]</th>
<th>&quot;white/red/white/red&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Wallbox has recognized an impermissible load instead of an electric or plug-in hybrid vehicle: Only standard-compliant electrically operated vehicles may be charged. Remove the impermissible load and restart the charging process.</td>
<td></td>
</tr>
</tbody>
</table>

### Power unit fault (indicated by colors red/blue)

<table>
<thead>
<tr>
<th>Fault 8001 [0001]</th>
<th>&quot;blue/blue/blue/red&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not possible to switch the charging voltage on; internal process fault or defective hardware: Reconnect vehicle or restart Wallbox. If this occurs repeatedly, contact Service.</td>
<td></td>
</tr>
</tbody>
</table>
### Fault 8002 [0010]

"blue/blue/red/blue"

Input voltage is outside permitted range. Cross-section too small or line too long: Reduce preset current or have an electrician strengthen the line. Voltage limits (min. - max.): 160 V - 280 V Possibly check with your energy supplier what the maximum mains voltage tolerances are.

### Fault 4003 [0011]

"blue/blue/red/red"

Overcurrent detected in the vehicle: The vehicle has not stayed within the permitted maximum current, and was switched off – if the problem continues, have the vehicle checked in a workshop.

### Fault 8005 [0101]

"blue/red/blue/red"

Fault current monitoring: A fault was recorded during the self-test, or else the monitoring has been triggered because of an excessive fault current. Check your charging cable for damage or check for water accumulation in the plug. A lightning strike in the vicinity may also cause a triggering.

### Fault 8007 [0111]

"permanent red strip"

Safety monitoring: A problem relating to the internal safety circuits has been recognized. It may no longer be possible to open the contacts of the charging protection. In this condition, the Wallbox is unable to carry out any automatic reconnection attempts. The Wallbox must be restarted from the mains side.
MAINTENANCE

Cleaning

ATTENTION
Risk of damage!
Avoid potential damage from:

- Aggressive solvents and cleaning agents
- Scouring materials
- Cleaning with a water jet, e.g. high pressure cleaner
- Excessive pressure

Follow the instructions for the cleaning agent.

If necessary, clean the casing of the Wallbox using a damp cloth. Persistent dirt can be removed using a mild, solvent-free, non-scouring cleaning agent.

Note
We recommend using tested cleaning and care agents from BMW:

Matt Paint Special Cleanser for casings; item number 83 12 2 285 244.
Glass cleaner, for high gloss surfaces; item number 83 12 2 288 901.

Maintenance and repair

In the event of questions or problems, please contact the electrical installation company that installed your system. Repairs may be carried out only by specialist personnel. Before you contact your service partner:

1. Check the troubleshooting measures in this manual and in the manual for your vehicle.
2. Note the model variant and the serial number. The type plate 1 is located on the side of the Wallbox.
DISPOSAL

After correctly decommissioning the device, please have the device disposed of by Service or else in compliance with all currently applicable disposal regulations.

Disposal information
The symbol of the "crossed-out" waste bin means that electrical and electronic devices, including accessories, must be disposed of separately from general household garbage. Instructions are to be found on the product, in the instructions for use, or on the packaging.
The materials can be recycled according to their designation. Through re-use, material recycling, or other forms of recycling old equipment, you will be making an important contribution to the protection of our environment.
SOFTWARE UPDATE

The software can be updated using this web interface. Further information can be found in the section CONFIGURATION.

The software can also be updated using the USB connection inside the device. Detailed instructions for the recommended procedure can be found on the BMW Service page for charging products (https://charging.bmwgroup.com/web/wbdoc/).

The latest software and the corresponding instructions can be downloaded from the Internet at https://charging.bmwgroup.com/web/wbdoc/. A new software version may, for example, take into account modified standards, or improve the compatibility with new electric or plug-in hybrid vehicles.

Note

For the BMW Wallbox Connect, there is also the option of carrying out a remote software update via the BMW DCS.
This product is UL-certified. It complies with the applicable UL, CSA, and ANCE standards for North America, Canada, and Mexico. For further information, see https://charging.bmwgroup.com/web/wbdoc/.

**FCC INFORMATION**

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

**ATTENTION:**

Changes or modifications which were not expressly approved by the responsible authority may impede the right to use the device.

**NOTE:**

This device was tested, and it complies with the limits for a digital device of class B as per part 15 of the FCC regulations. This limit is intended to provide appropriate protection against harmful interference in a residential situation. This device generates and uses high frequency energy, and if it is not installed in compliance with the instructions, it can result in interference to radio communication. However, there is no guarantee that there will be no interference in a specific installation. If this device causes interference to radio or television reception (this can be determined by switching the device off and on), then the user should attempt to prevent the interference through one or more of the following measures:

- Align the reception antenna differently.
- Increase the distance between device and receiver.
- Connect the devices to a different power circuit than the one to which the receiver is connected.
- Request assistance from the dealer or from an experienced radio/television technician.

**CANADA**

This class B digital apparatus complies with Canadian ICES-003.
This product is NOM-certified.

**MEXICO**
Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
Removing the casing cover

1. On the underside of the Wallbox, push the two locking mechanisms 1 of the casing cover upwards. The casing cover should jump outwards a little at the bottom.

2. On the underside, swing the casing cover forwards slightly 2.

3. Now unhook the casing cover upwards 3.

Note
In order to avoid scratches or other damage, store the casing cover in its packaging.
Removing the connector panel cover

**ESD**

Risk of damage! Electronic components can be destroyed by touching!

Before working with assemblies, carry out an electrical discharge by touching a metallic grounded object! 👈

1. Loosen the four bolts with which the connector panel cover 1 is mounted.

![Diagram of connector panel cover 1 being loosened]

**WARNING**

Electrical danger!

The terminal cover 3, next to the connector panel 2, may be removed only by an appropriately trained, qualified, and authorized electrician! 👈

2. Remove the connector panel cover. The connector panel 2 is now accessible.

![Diagram showing removal of connector panel cover and access to connector panel 2]
Installing the connector panel cover

Note
Verify that an up-to-date version of the software is available before you install the connector panel cover. For further information, see section SOFTWARE UPDATE.

Note
The Wallbox must not be used permanently if this cover is absent or damaged. Alternative covers are not permitted.

Attachment bolts
1. Replace the connector panel cover 1.
2. Attach the connector panel cover again using the four bolts.

Casing marking
1. Tighten the four bolts until the casing markings at right and left on the connector panel cover close flush with the casing.
2. The connector panel cover must be correctly sealed by the casing.

For self-tapping bolts, an increased torque application is required: 3.5 Nm.
Installing the casing cover

Note
This cover is not essential for the safe operation of the Wallbox.

Attaching the casing cover

1. Attach the casing cover at the top, and ensure that the hooks of the casing cover are correctly inserted 1.
2. Press the cover downwards, and then tilt the casing cover 2 towards the back. The casing cover must slide into the lower guides with very little resistance.

ATTENTION
Ensure that the casing cover sits correctly into the casing guide on all sides. Only a small uniform gap should be present.

Locking mechanisms

1. Press the lower part of the casing cover onto the Wallbox until the locking mechanisms 1 engage fully.
| N | Network connection..................................................................................................................................................... 32 |
| O | Online connection......................................................................................................................................................... 17 |
| P | Programming an RFID user card............................................................................................................................. 24 |
|   | Programming the RFID master card....................................................................................................................... 23 |
|   | Proxy................................................................................................................................................................................. 36 |
| R | Removing the casing cover....................................................................................................................................... 49 |
|   | Removing the connector panel cover..................................................................................................................... 50 |
|   | Repair.............................................................................................................................................................................. 44 |
|   | Restart.......................................................................................................................................................................... 31 |
|   | RFID............................................................................................................................................................................... 21 |
|   | RFID cards..................................................................................................................................................................... 21 |
| S | Safety instructions........................................................................................................................................................... 9 |
|   | Service button........................................................................................................................................................ 20, 23 |
|   | Software update............................................................................................................................................................ 29 |
|   | Starting the charging process................................................................................................................................... 13 |
|   | Status LED...................................................................................................................................................................... 15 |
|   | System overview........................................................................................................................................................... 27 |
| T | Temperature shut-off................................................................................................................................................... 15 |
|   | Type plate........................................................................................................................................................................ 44 |
| U | USB settings.................................................................................................................................................................. 38 |
| W | WLAN/Wi-Fi hotspot.................................................................................................................................................... 34 |