

Brief instructions | 26.02.2024

# ABB-free@home®

## How-to charger integration

## **Brief instructions**

Connection of a wallbox to ABB-free@home® with the example of the Terra AC Wallbox



## Description:

How can you connect a wallbox to ABB-free@home® and use it?

| 1.1 | Wallboxes to ABB-free@home <sup>®</sup> | .3 |
|-----|---|----|
| 1.2 | Wallboxes to ABB-free@home <sup>®</sup> | .4 |
| 1.3 | Wallboxes to ABB-free@home <sup>®</sup> | .5 |
| 1.4 | Wallboxes - Installing add-on           | .6 |
| 1.5 | Wallboxes - Setting up add-on           | .8 |
| 1.6 | Wallboxes - Setting up add-on           | 10 |
| 1.7 | Wallboxes - Setting up add-on           | 12 |
| 1.8 | Wallbox - Utilisation                   | 13 |

## 1.1 Wallboxes to ABB-free@home<sup>®</sup>

#### Introduction:

The connection of wallboxes to ABB-free@home<sup>®</sup> is made via an add-on. An add-on is an app/a software module that can be selected and installed in the configuration interface of the System Access Point under "Extensions".

Prerequisites:

- A set up ABB-free@home<sup>®</sup> system with a System Access Point 2.0 (SAP/S.13)
- The System Access Point has the latest Firmware (at least 3.2.4)
- The local API is activated in the System Access Point in the area of settings/ABBfree@home<sup>®</sup> settings/system
- The installed wallbox supports protocol OCPP 1.6 (JSON)
- The wallbox does not require an Internet connection
- The wallbox has the latest Firmware
- Wallbox and ABB-free@home<sup>®</sup> are located in the same local network via WLAN or LAN.

#### **Functions:**

After successful coupling, the wallbox can be operated and used in actions via the ABB-free@home<sup>®</sup> app and from ABB-free@home<sup>®</sup>. Only the basic functions are supported:

- Activating/deactivating charging
- Display of connecting status to the vehicle
- Limitation of the charging current
- Activating/deactivating free charging

The respective apps of manufacturers may offer a greater range of functions.

Examples:

Applications in connection with the ABB-free@home<sup>®</sup>:

- Viewing the status of the charging process e.g. in the app
- Use in actions
  - "If X, then activate charging"
  - "If Y, then deactivate charging"
- Using time programs, e.g. for "Charging" or "Activating free charging"
- Scenes: e.g. during "Activate charging" switching the garden illumination or other participants off.

## 1.2 Wallboxes to ABB-free@home<sup>®</sup>



#### Notice

- Not all manufacturers of wallboxes adhere 100% to the standard OCPP 1.6. That is why an impairment of the function range may occur in individual cases.
- Due to the numerous wallboxes available on the market, Busch-Jaeger does not perform tests of third-party manufacturers. The use of the add-on is nonbinding and without guarantee.
- The how-to refers to the connection of an ABB Terra AC Wallbox. The ability to connect, the sequence and the range of functions of the use of other wallboxes can deviate from the example.

## Use/Operation:

If RFID tags are used for legitimation, the charging process must first be activated via ABB-free@home<sup>®</sup> and then started via the RFID tag. The deactivation in ABB-free@home<sup>®</sup> offers additional protection, e.g. at longer absence during holidays.

If the charging process is to take place by ABB-free@home<sup>®</sup> without RFID tags, the wallbox is to be configured in operating mode "Free charging". Enabling/disabling then takes place from the ABB-free@home<sup>®</sup>.

## 1.3 Wallboxes to ABB-free@home<sup>®</sup>

#### Overview:

■ Wallbox and ABB-free@home<sup>®</sup> are located in the same local network via WLAN or LAN. If OCPP brokering is used, an Internet connection is required.



#### **OCPP Brokering**

The ABB-free@home<sup>®</sup> system supports the so-called OCPP brokering. This makes the integration into ABB-free@home<sup>®</sup> possible, also when the wallbox is connected with a backend for accounting purposes. The SysAP then transmits all invoicing-relevant information to the backend.

The connection of ABB-free@home<sup>®</sup> to the wallbox takes place locally and does not require an Internet connection. If OCPP brokering is used, an Internet connection is required.

The local connection to the wallbox can be secured with a password. This must be allocated in the app of the manufacturer and entered in the add-on. The local communication takes place unencrypted. The connection to backend/brokering on the other hand is encrypted.

| The login data are available at the | OCPP Broker          |   |
|-------------------------------------|----------------------|---|
| accounting service.                 | OCPP Broker URL      |   |
|                                     | OCPP Broker Passwort | ۲ |

## 1.4 Wallboxes - Installing add-on

| Ś  | free@home configuration<br>Integrate & configure your free@home system  | > |
|----|---|---|
| 53 | House structure<br>Setup your home                                      | > |
|    | Devices, scenes and groups<br>Configure, position and link your devices | > |
| ٢  | Timer<br>Time-controlled events   | > |
| Â  | Actions<br>Event-based actions  | > |
|    | Panels and remote controls<br>Configure your panels and remote controls | > |
| ₽Ø | Notification center Solution Center                                     | > |

1. Login to the configuration interface and selection of menu item "free@home configuration".

| <        | My system Extensions                        |                |   |     |   |
|----------|---|----------------|---|-----|---|
|          | Busch-Jaeger Elektro \wedge                 |                |   |     |   |
| ER       | free@home System A<br>Connected devices: 28 | ccess Point    | free@home<br>Connected devices: 5               |     | free@home wireless<br>Connected devices: 23<br>Channel: 26  |
|          | 1000  |                |   |     | Search devices  |
| $\odot$  | 10000000                                    |                |   |     |   |
| Â        | free@home@ - Alarm<br>Connected devices: 6  | Stick          | User administration<br>Adding and editing users | (i) | Information / Documentation<br>View basic system information and<br>generate detailed project documentation |
| •        |   | Search devices |   |     |   |
| <b>7</b> | Help & Support                              |                |   |     |   |
|          | Play and support for you system             | r free@home    |   |     |   |

2. Change to the add-on store (Extensions).



3. Select add-on "EV charger" [1] and install [2]. Exit the pop-up window via "x".

| <        | My system  |   |   |
|----------|--|---|---|
| 0        | Busch-Jaeger Elektro   |   |   |
| EN       | free@home System Access Point<br>Connected devices: 28                                 | free@home<br>Connected devices: 5   | free@home wireless<br>Connected devices: 23<br>Channel: 26                  |
|          | 10000  |   | Search devices  |
| ٢        |  |   |   |
| Â        | Free@home@ - Alarm Stick<br>Connected devices: 6                                       | Adding and editing users  | (i)   |
| •        | Search devices   |   |   |
| <b>9</b> | Pleip 6 Support<br>Help and support for your free@hame<br>system                       |   |   |
|          | Other A  |   | 2   |
|          | Amazon Alexa<br>Connect your free@home system with the Amazon<br>Alexa voice assistant | EV Charger<br>The Addon allows to connect an AC wallbax to the<br>free@home.system. You will be able to chack your<br>charger studue and control in vio the free@home.<br>both the charge of the charger of the charger of the<br>communicate with the wallbax. | Miele<br>Integrate your Miele home appliances into your<br>free@home system |
|          |  | communicate with the wallbox.   |   |

4. After the successful installation, the add-on is displayed in the "My system" area and additional settings can be made.

## 1.5 Wallboxes - Setting up add-on

| < 1      | My system Extensions   |   |   |
|----------|--|---|---|
|          | Busch-Jaeger Elektro   |   |   |
| 7        | free@home System Access Point<br>Connected devices: 28                                 | free@home<br>Connected devices: 5   | free@home wireless<br>Connected devices: 23<br>Channel: 26                |
|          | 1000   |   | Search devices  |
| Ì        | fragBhamati - Alarm Stick  | liter administration  | Information / Documentation   |
| Â        | Connected devices: 6   | Adding and editing users  | information / Decementation   |
| -        | Search devices   |   |   |
| <b>7</b> | Plep & Support<br>Help ond support for your freelightoms<br>system                     |   |   |
|          | Other A  |   | 7   |
|          | Amazon Alexa<br>Connect your free@home system with the Amazon<br>Alexa voice assistant | EV Charger<br>The Addon allows to connect an AC wallbas to the<br>free@home system. You will be able to check your<br>Next Ago. The Addon utilizes OCPP to (JSON) to<br>communicate with the wallbas.       | Hele<br>Integrate your Mele home oppliances into your<br>free@home system |
|          | Amazon Alexa<br>Connect your free@home system with the Amazon<br>Alexa voice dastidant | EV Charger<br>The Addien allows the cannect on AC wellbas to the<br>heighting teaching. You will a violate to be addient<br>Net Age. The Adden utilities OCPP 16 (JSON) to<br>communicate with the wellbas. | Miele<br>Integrate your Miele home appliance<br>free@home system          |

5. Open the add-on with a "Click" for additional settings.

| enarger  |  |
|--|--|
| tings Information  | Log  |
| Name<br>EV Charger   |  |
| Status<br>Active   |  |
| Description<br>The Addon allows to connu-<br>be able to check your chan<br>The Addon utilizes OCPP 1 | ect an AC wallbox to the free@home system. You will<br>rger status and control it via the free@home Next App<br>.6 (JSON) to communicate with the wallbox. |
| Version<br>1.3.5   | 13   |
| Author<br>ABB  |  |
| License<br>MIT   |  |
|  | Start  |
|  |  |

6. The add-on can be activated/deactivated via "Start". The basic settings are made in the bottom area.

| EV Charger ×               |                                     |  |  |  |
|----------------------------|-------------------------------------|--|--|--|
| Settings Information Lo    | g                                   |  |  |  |
| General<br>OCPP Server URL | ① ws:// <sysap-ip>:33033</sysap-ip> |  |  |  |
| Charger settings           | Ū.                                  |  |  |  |
| Serial number *            | (1)                                 |  |  |  |
| Charger ID                 | 0 2                                 |  |  |  |
| Password                   | ©3                                  |  |  |  |
| Maximum charge limit (A) * | · - 16 + (F)                        |  |  |  |
| Connection state           | connected                           |  |  |  |
| OCPP broker<br>OCPP broker |                                     |  |  |  |
| OCPP broker URL            | (6)                                 |  |  |  |
| OCPP broker password       | ۲                                   |  |  |  |
|                            | Ð                                   |  |  |  |

- [1] For serial number/see manufacturer app
- [2] Wallbox ID as offered by the wallbox manufacturer
- [3] Password that was allocated in the OCPP configuration of the wallbox
- [4] Charging limit that was set in the wallbox setup
- [5] Status of connection
- [6] OCPP broker access data to the extent used



Where can you find the above-mentioned details on the example of the Terra AC wallbox/Terra config app

#### Wallboxes - Setting up add-on 1.6

## Example of the Terra AC wallbox/Terra config app

| TA CIV/22 / 2 / 20 T 20 20                        | -                 |   |  |  |   |   |
|---|-------------------|---|--|--|---|---|
| TACW224242010238                                  | Location          | Name                                      | Location                                 | Name                                       | Connections   | OCPP Server   |
| Disconnect  |                   | TACW224242010238                          | Current                                  | configu                                    | red server  |   |
| Save as a template                                | Firmware<br>1.6.5 | • Up to date                              | By default,<br>Enable the<br>a third-par | the charge<br>external set<br>ty server. C | er is linked to the<br>erver if you woul<br>Only one server c | ABB server.<br>d like to configure<br>an be configured. |
| User settable max current                         | Connections       | Not configured                            | Server Info<br>ABB                       | D  |   |   |
| 32 A of 32 A max. charging current                | OCPP Server       |   | Default                                  |  |   |   |
| Phase connection order                            |                   |   | Enable Ex                                | ternal Serv                                | ver   |   |
| L1 connected to                                   | Energy management |   | Available S                              | Servers                                    |   | >   |
| L1 L2 L3<br>L2 connected to L2 L3 connected to L3 |                   | <ul> <li>Modbus not configured</li> </ul> | Select serv                              | /er  |   |   |
| 2   | Input/output      |   | Custom se                                | erver - avai                               | lable on your de  | vice only   |
| Location Name<br>- TACW2242420T0238               | -                 | <ul> <li>Not configured</li> </ul>        | Add and co                               | onfigure cu                                | stom server   |   |
| Firmware  | Cards<br>Enabled  |   |  |  |   |   |
| 1.6.5 • Up to date                                | Schodulo          |   |  |  |   |   |
| Connections                                       | -                 | Not configured                            |  |  |   |   |
| Not configured                                    |                   |   |  |  |   |   |
| OCPP Server<br>testabb_ecc                        | CONFIRM CO        | DNFIGURATION                              |  | _  |   |   |

- 1. Connect with the wallbox [1]. 2. OCPP server settings. Transmit name in add-on [2].

3. Activate external server [1]. Select user-defined setting [2].

| 10:52 ₩ ~ ~ M % C 99% ■          | 10:52 ₩ ~ ~ M % % % 99% ■      | Cancel Configure A Charger  |
|----------------------------------|--------------------------------|---|
| ULFF-Seiver                      | UUFF-Seivei                    | Applying Configuration<br>Please wait while the charger is being configured |
|                                  |                                | OCPP Server   |
| Server-URL                       | Server-URL                     | Energy Management   |
| ws://192.168.0.98:33033          | ws://192.168.0.98:33033        | Input/Output  |
|                                  |                                | Caros V   |
|                                  |                                | Connections   |
|                                  |                                | Storing Configuration   |
| Server requires a password 🛛 🗨 📢 | Server requires a password 🛛 📢 | Successful configuration!   |
| Password                         | Password                       |   |
| ••••••                           | ••••••                         |   |
| Confirm password                 | Confirm password               |   |
| 0                                | 0                              |   |
| CONFIRM<br>CONFIGURATION         | CONFIRM<br>CONFIGURATION       | DONE  |
|                                  |                                |   |

- Input of server URL (IP address of the System Access Point). In format ws://xxx.xxx.xxx:33033".
- 5. Confirm/apply the configuration.
- 6. The transmission must take place without an error message.

### 1.7 Wallboxes - Setting up add-on

#### Overview

| 10:52 📫 🖻            | N 97. C 99% | C C (1) 192.168.0.98       | * 0 0 0 :          |                            |                              |
|----------------------|-------------|----------------------------|--------------------|----------------------------|------------------------------|
| ÷                    |             | EV Charger                 | ×                  | <b>Configure a</b>         | charger                      |
| טנדד-שנו ענו         |             | Settings Information Log   |                    | , <b>, ,</b>               |                              |
|                      |             |                            | <b>-6</b>          | TACW2242420T0238           | (i                           |
|                      |             | <u> </u>                   | тор                | 660                        | Disconnec                    |
|                      |             | De                         | alete              |                            |                              |
| Server-URL           |             | General                    | well-even in 32022 | Save as a template         | E Choose template            |
| ws://192.168.0.98    | :33033      | OCH Selver OKE             | ) wa.n.~ayaupip    |                            |                              |
|                      |             | Charger settings           | 1                  | - 32 A c                   | of 32 A max. charging curren |
|                      |             | Serial number *            |                    |                            |                              |
|                      |             |                            |                    | Phase connection order     |                              |
| Server requires a pa | ssword 🛑    | Charger ID                 |                    | L1 connected to            | 13                           |
|                      |             | Password 2                 |                    | L2 connected to L2         | L3 connected to L3           |
| Password             |             |                            |                    |                            |                              |
|                      | O           | Maximum charge limit (A) * | - 32               | Location                   | Name<br>TACW2242420T0238     |
|                      |             | Connection state           | connected          |                            |                              |
| Confirm password     |             | OCPP broker                | L                  | 1.6.5                      | • Up to date                 |
|                      | o           | OCPP broker                |                    |                            |                              |
|                      |             | OCPP broker URL            |                    | Connections                | Not configured               |
| CONFIE               |             |                            |                    |                            |                              |
|                      |             | OCPP broker password       | ۲                  | OCPP Server<br>testabb_ecc |                              |
| III O                | <           |                            | •                  |                            |                              |
|                      |             | (                          | <b></b>            |                            |                              |

- [1] Serial number/ID from wallbox app
- [2] Password of wallbox app
- [3] Maximum charging current from wallbox configuration
- [4] Status of the connection between wallbox and System Access Point.
- [5] In case of irregularities, check the network connection and, if necessary, stop the connection occasionally and restart it again.
- [6] The exchange of communication between the wallbox and the System Access Point can be viewed in the protocol area.
- [7] Configuration/supplementation of additional wallboxes

## 1.8 Wallbox - Utilisation

After successful coupling, the wallbox can be positioned in the floor plan and used like any other participant.



1. In the area "Devices, scenes and groups" of the configuration interface the wallbox is pulled into the floor plan like any other participant.



 After being located in the floor plan, the wallbox can be operated via app (charging/activating/deactivating) [1] and the status [2] viewed. In parallel, the charging current [3] can be limited or activated via setting "Free charging" [4].

| < Add action            |       | ×          |
|-------------------------|-------|------------|
| Options                 |       | Live-Modus |
| Free vending            |       | ~          |
| on on                   |       |            |
| O off                   |       |            |
| Upon                    |       |            |
| On occurrence of the e  | event |            |
| Cancellation of the eve | ent   |            |
| Switching delay [s]     |       |            |
| _                       | 0     | +          |
|                         | Save  |            |

3. Aside from the basic operation, the wallbox can also be integrated in actions or scenes.



#### Notice

The operation of add-on and RFID are "AND" linked. If RFID tags are used, the charging process must first be activated via ABB-free@home<sup>®</sup>. If the charging process is to take place by ABB-free@home<sup>®</sup> without RFID tags, the wallbox is to be configured in operating mode "Free charging". Enabling/disabling then takes place from the ABB-free@home<sup>®</sup>.



#### Busch-Jaeger Elektro GmbH A member of the ABB Group

Freisenbergstraße 2 D-58513 Lüdenscheid, Germany

https://new.abb.com/en

Customer service: Tel.: +49 2351 956-1600