Installation and Configuration Manual — KEBA KeContact P30 x-series

Version:2023.3.1

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1. Introduction

1.1. Legal provisions

The information contained in these documents is the property of FENECON GmbH. Publication, in whole or in part, requires the written consent of FENECON GmbH.

Subject to changes and printing errors!

1.2. Qualification of the installing electrician

A qualified electrician is a person who has the necessary experience and training:

- Setting up, switching on, switching off, disconnecting, short-circuiting and repairing circuits and devices
- Standard maintenance and use of protective devices in accordance with current safety standards
- First aid/emergency care
- Current knowledge of local regulations, standards and guidelines

1.3. Symbols used

Before reading the manual, you should familiarize yourself with the different types of safety warnings. You should also familiarize yourself with the importance of the safety warnings.

1.4. Darstellungskonventionen

	This symbol indicates an imminent danger. If this danger is not avoided, it can lead to death or serious injury.
	This symbol indicates a potentially dangerous situation. If this dangerous situation is not avoided, it may result in minor or moderate injury.
	This symbol indicates a warning. Failure to observe this warning may result in damage and/or destruction of the system.
	This symbol indicates a note. It is recommended that the note be observed.

Table 1. Darstellungskonventionen

2. Product description

2.1. Scope of delivery

After you have received the delivery, check that all components have been included. Check the scope of delivery for damage. If anything is missing or damaged, please contact the supplier immediately. The following components are included in the delivery:

- KEBA KeContact P30 x-series charging station
- 11 kW or 22 kW with integrated 4-meter connection cable and type 2 plug or
- 22 kW with type 2 socket, for connecting your own cable
- Installation instructions — Type 2 charging station KEBA 11/22 kW 4 m/socket

2.2. Prerequisites

The following is required to use the charging station:

- FEMS App KEBA KeContact P30 x-series

The "FEMS App KEBA KeContact P30 x-series" is not included in the scope of delivery. This must be purchased separately if not already available.

3. Commissioning

To install the KEBA charging station, please follow the instructions in the "KeContact KC-P30 Charging Station Installation Manual".
Installation manual — KEBA KeContact KC-P30

The "Configuration Manual" for the x-series should also be read and internalized:
Configuration manual — KEBA KeContact P30 x-series

This quick guide refers to the original user manuals.
It serves as an installation aid for qualified electricians in the area of communication interfaces, but is not a substitute for studying the user manuals.

3.1. Ethernet connection

The network connection is made via the LSA terminal block X4.

Please note that the Ethernet connection X3 (here: RJ45) was designed as a service port. This is not suitable for a permanent, stable connection to the FENECON Energy Management System.

To connect to the LSA terminal block X4, the network cable must be disconnected and the cables connected to pins 1-4.
The assignment type of the customer network must be observed.

Pin	-568A Pair	-568B Pair	-568A Color	-568B Color
1 (Tx+)	3	2	white/green stripe	white/orange stripe
2 (Tx−)	3	2	green/white stripe or green	orange/white stripe or orange
3 (Rx+)	2	3	white/orange stripe	white/green stripe
4 (Rx−)	2	3	orange/white stripe or orange	green/white stripe or green

Figure 1. Diagram for the network connection

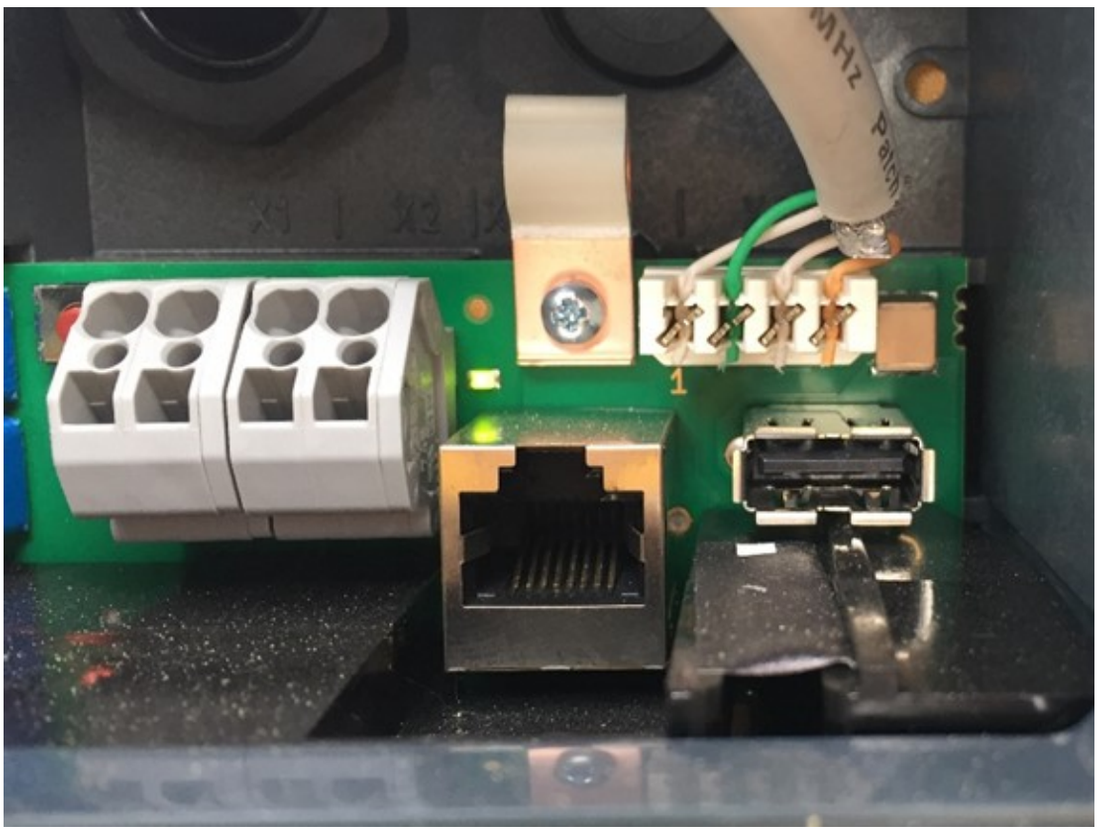


Figure 2. Example of the network connection

There are two ways in which your KEBA KeContact P30 x-series can obtain an IP address. The setup via static IP address or via DHCP is described below.

In a network, IP addresses are typically assigned automatically via DHCP. In many cases, this is done by the internet router. The IP addresses are automatically replaced after a few weeks/months. This then leads to a communication failure between FEMS and the charging station. To prevent this, the IP can be set to a static address.

3.2. Setting a fixed IP address

We recommend setting up a static IP address for use cases with only one KEBA KeContact P30 x-series.

Due to a double assignment of the DIP switch D2.6, either a static IP address or conformity with § 14a (Energy Industry Act) can be set up.

A static IP address can be assigned via the first four DIP switches D2.1 - D2.4 (bottom row). As soon as a static IP address has been set, DIP switch D2.6 must also be set at the same time.

DIP switch	Function	Illustration
DSW2.1 **DSW2.2** **DSW2.3** **DSW2.4**	Not valid for P30 x-series. If there are multiple charging stations in a network, the charging stations must be assigned an address. The last two digits of the IP address (192.168.25.**xx**) can be specified with the DIP switches DSW2.1 to DSW2.4. Each DIP switch has a specific value when it is set to "ON". A DIP switch set to "OFF" has the value 0. **DSW2.1** = ON = value: **1** **DSW2.2** = ON = value: **2** **DSW2.3** = ON = value: **4** **DSW2.4** = ON = value: **8** The address is obtained by adding the values of the DIP switches and increasing the result by 10: **Sum of the DIP switch values + 10** Thus, the addresses **11 to 25** can be set.	 Example for IP address xxx.xxx.xx.**21** **DSW2.1** = ON = **1** **DSW2.2** = ON = **2** **DSW2.3** = OFF = **0** **DSW2.4** = ON = **8** Address = **1** + **2** + **0** + **8** + 10 = **21**

Figure 3. Setting the lower switch panel for a static IP address

The FENECON Energy Management System is configured by default to try to reach the charging station at the static IP address 192.168.25.11.

For this configuration, the DIP switches D2.1 and D2.6 must be set to "ON".

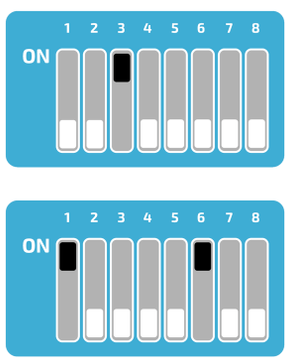


Figure 4. Preconfigured static IP address

3.3. Assigning an IP address via DHCP

We recommend setting up via a DHCP server (here: Dynamic Host Configuration Protocol) from the second charging station onwards.

After connection to the customer network, the wallbox is assigned an IP address using DHCP. This IP address can be determined in the DHCP server, e. g. the router, or can be read on the display when the wallbox is started.

DIP switch	Function	Illustration
DSW2.1 DSW2.2 DSW2.3 DSW2.4	Not valid for P30 x-series. By default, the charging process is carried out independently by the charging station without a higher-level control system. The charging station attempts to obtain an IP address via a DHCP server, if needed. This also corresponds to the basic settings for charging stations without a network connection.	

Figure 5. Setting the lower switch panel for DHCP

An IP address can only be assigned via DHCP if the DIP switches of the second switch panel D2.1 to D2.4 are set to "OFF".

To be able to access the wallbox via its IP address for testing purposes, your computer must be in the same network. Open an internet browser and enter the IP address identified.

Example: `http://123.123.123.123`

After entering your login data (included in the scope of delivery), a website opens that looks like this:

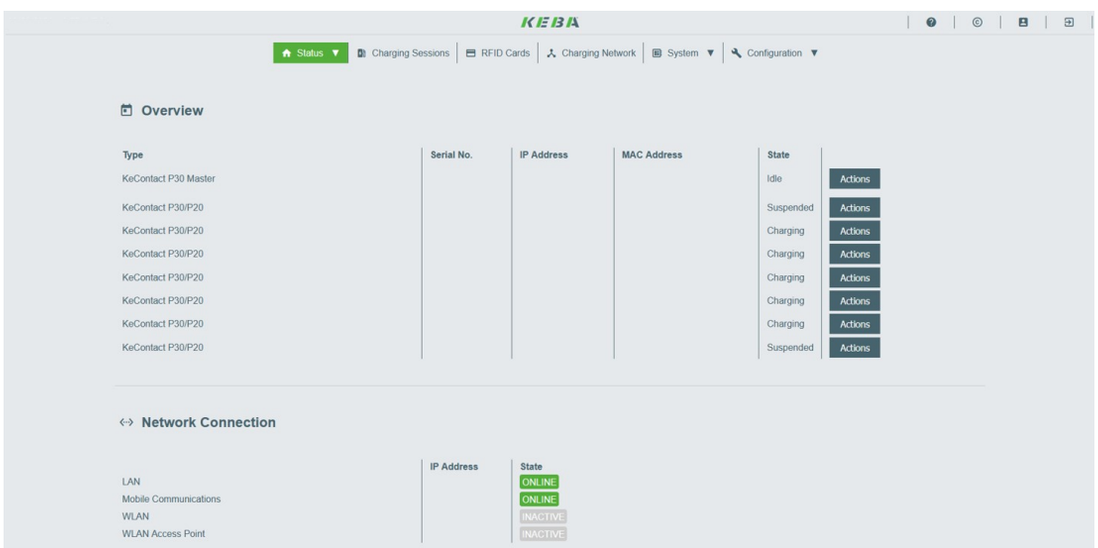


Figure 6. KEBA software

The web interface of the KEBA x-series offers numerous setting options. Among other things, the authorizations of the RFID cards can be managed and an automatic charging report can be created, which is used for billing the charging sessions. Further information can be found in the configuration manual for the KEBA x-series: Configuration manual — KEBA x-series

3.4. Configuration of the DIP switches

Various settings such as IP assignment and control can be made via the DIP switches. In the following illustration you can see the two positions of the switches.

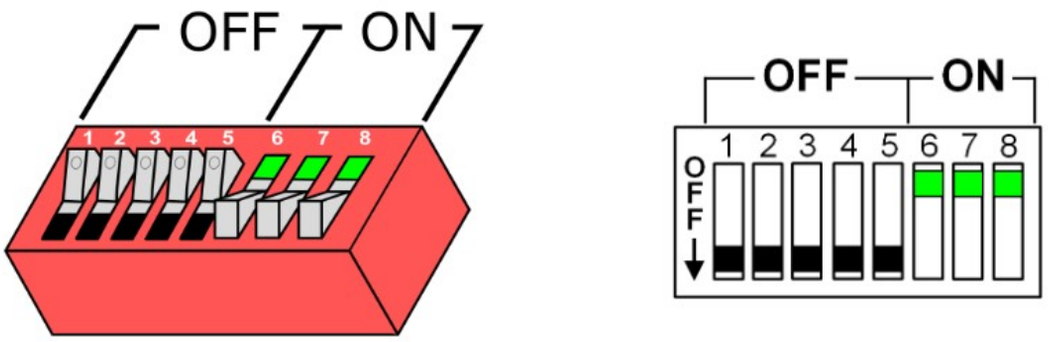


Figure 7. DIP switch

The DIP switches can be accessed by removing the front cover. Here you will find two different switch panels, which are explained in more detail below.

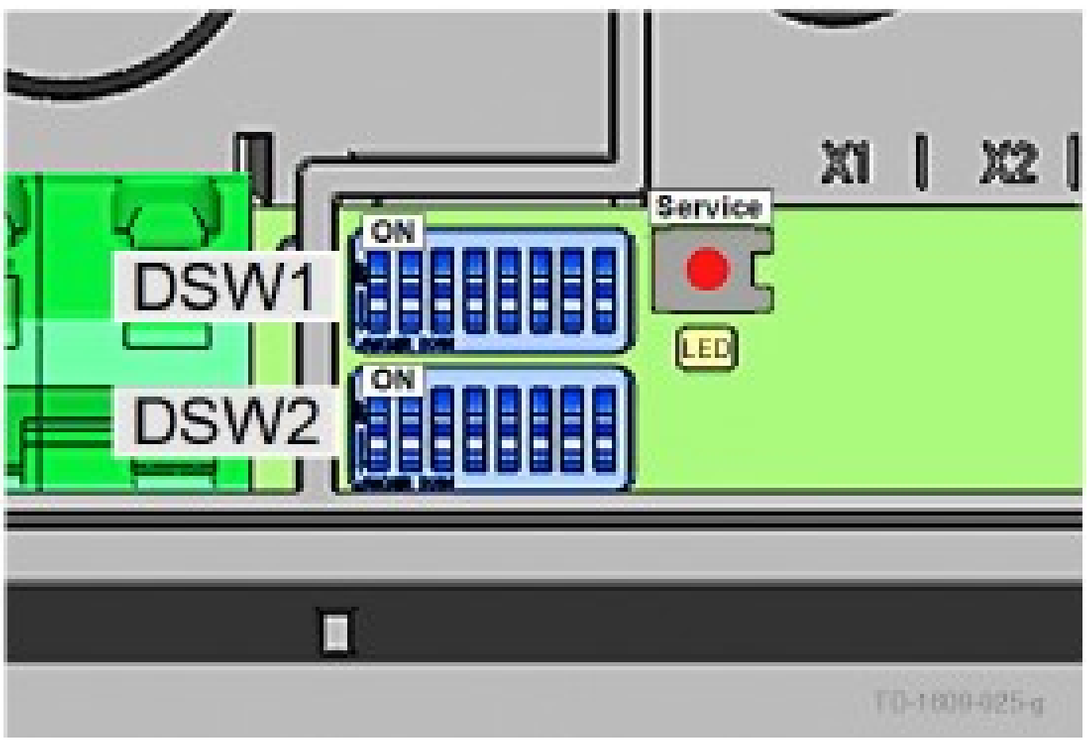


Figure 8. DIP switch DSW

We differentiate here between the top panel "DSW1" and the bottom panel "DSW2".

3.4.1. Setting the charging station control functions

The first three DIP switches on the upper DSW1 panel are used to control and forward signals from the charging station.

Of these three switches, we only need D1.3, which is used to activate the smart home interface via UDP, allowing the FEMS to set the charging specifications for the charging station via the UDP protocol. D1.1 and D1.2 remain in the "OFF" position.

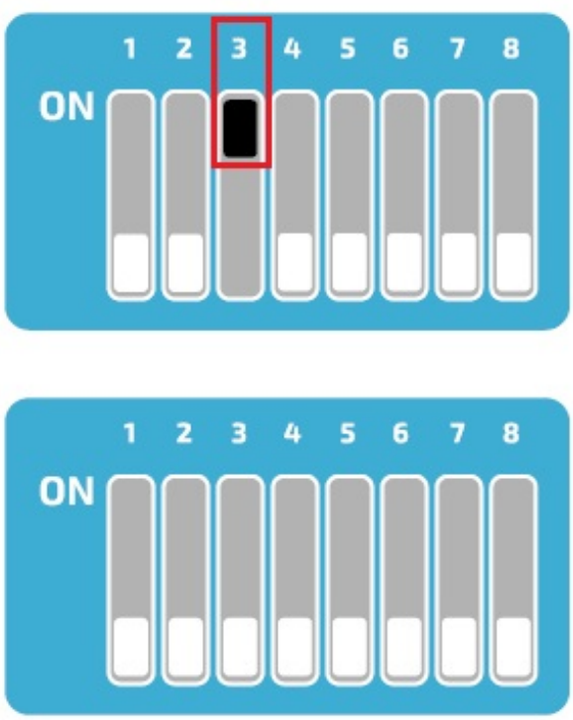


Figure 9. Setting the upper switch bar for UDP

3.4.2. Setting the permissible amperage

DIP switches D1.6 - D1.8 are used to set the permissible current, which determines the maximum charging power of the charging station, provided the vehicle to be charged supports this charging power.

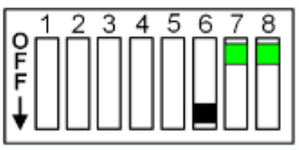
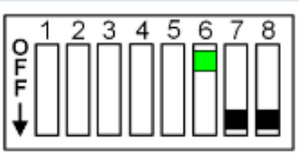
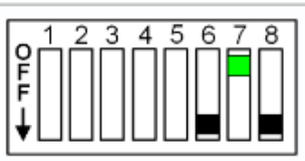
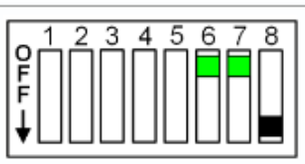
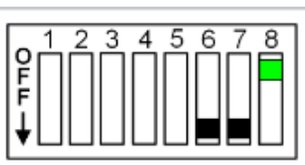
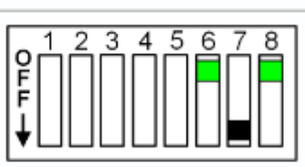
DIP switch	Amperage	Illustration
DSW1.6 DSW1.7 DSW1.8	8 A Setting available from software ≥1.18.00 / firmware ≥3.10.56 (for details see „10.3 Display software/firmware version“)	
DSW1.6 DSW1.7 DSW1.8	10 A	
DSW1.6 DSW1.7 DSW1.8	13 A	
DSW1.6 DSW1.7 DSW1.8	16 A	
DSW1.6 DSW1.7 DSW1.8	20 A	
DSW1.6 DSW1.7 DSW1.8	25 A	
DSW1.6 DSW1.7 DSW1.8	32 A	

Figure 10. Setting the amperage

3.4.3. Further DIP switches

However, all other DIP switches have no function in conjunction with the FEMS or can influence the connection, e. g. D2.8.
They therefore remain in the "OFF" switch position after commissioning.

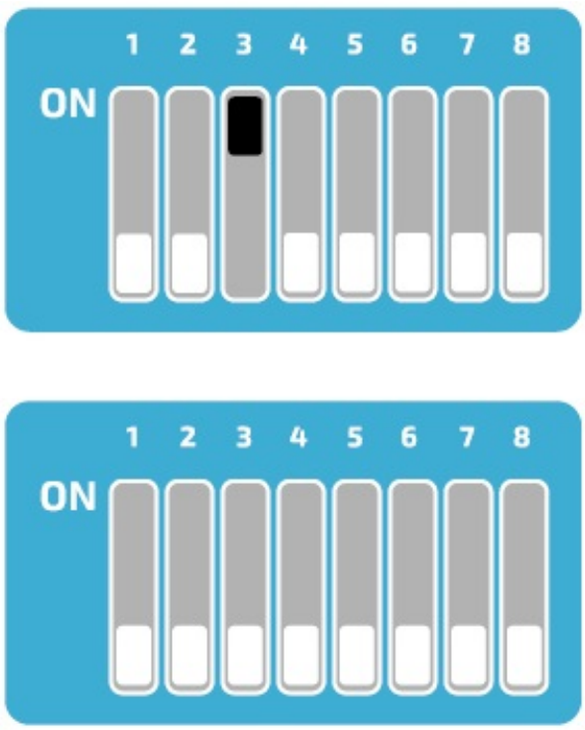


Figure 11. Setting the DIP switches for a wallbox

3.4.4. Charging network

The Keba KeContact P30 c-series can be used as a slave in a charging network with a Keba KeContact P30 x-series. In this case, the x-series takes over the management of the RFID authorization. To enable communication between the charging stations, the DIP switch D2.5 must be activated on all charging stations (x-series and c-series). In addition, the c-series must have received a dynamic IP address from the DHCP server. If there is no charging network (only one charging station is available), the DIP switch D2.5 does not need to be activated.

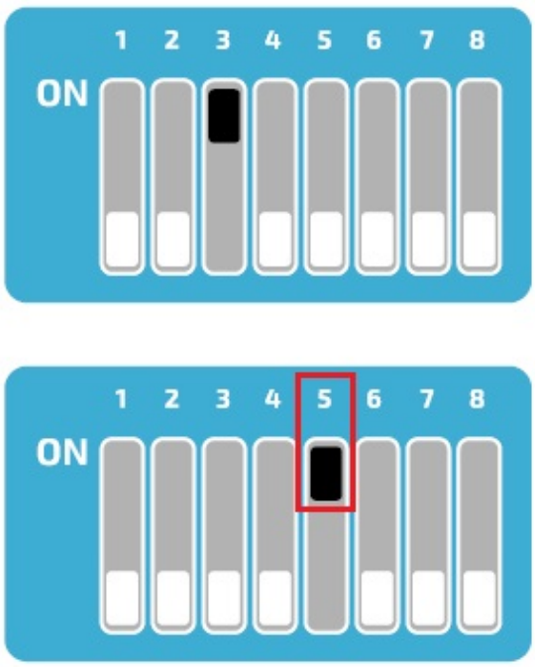


Figure 12. Setting the DIP switches for a charging network

3.5. § 14a of the German Energy Industry Act (EnWG)

From 01/01/2024, all wallboxes & charging stations in the private sector must be controllable by the grid operator in accordance with § 14a of the German Energy Industry Act. Depending on the manufacturer, your wallbox can be dimmed to the required 4.2 kW charging power and/or switched off for the required period of time.

Currently, the proper dimming of wallboxes & charging stations is not achieved via the FENECON energy management, but via solutions provided by the wallbox manufacturers.

Prerequisites

All §-14a-compliant KEBA KeContact Series that can be integrated into the FEMS Online Monitoring are listed below.

Wallbox model type	§-14a conformity (e. g. potential-free contact X1, Modbus TCP, OCPP)
KEBA KeContact P30 X-Series	✅
KEBA KeContact P30 C-Series	✅
KEBA KeContact company car wallbox	✅
KEBA KeContact PV Edition	✅

Table 2. 14a-compliant KEBA KeContact Series models

A KEBA KeContact can currently be properly integrated into the FENECON Energy Management System via the potential-free contact X1.

Connection of the control box

The device is configured via the potential-free contact X1 of the compatible KeContact charging station.

Connect the control box to the input and output terminals of the potential-free contact X1 as shown in the Circuit diagram for the potential-free contact X1.

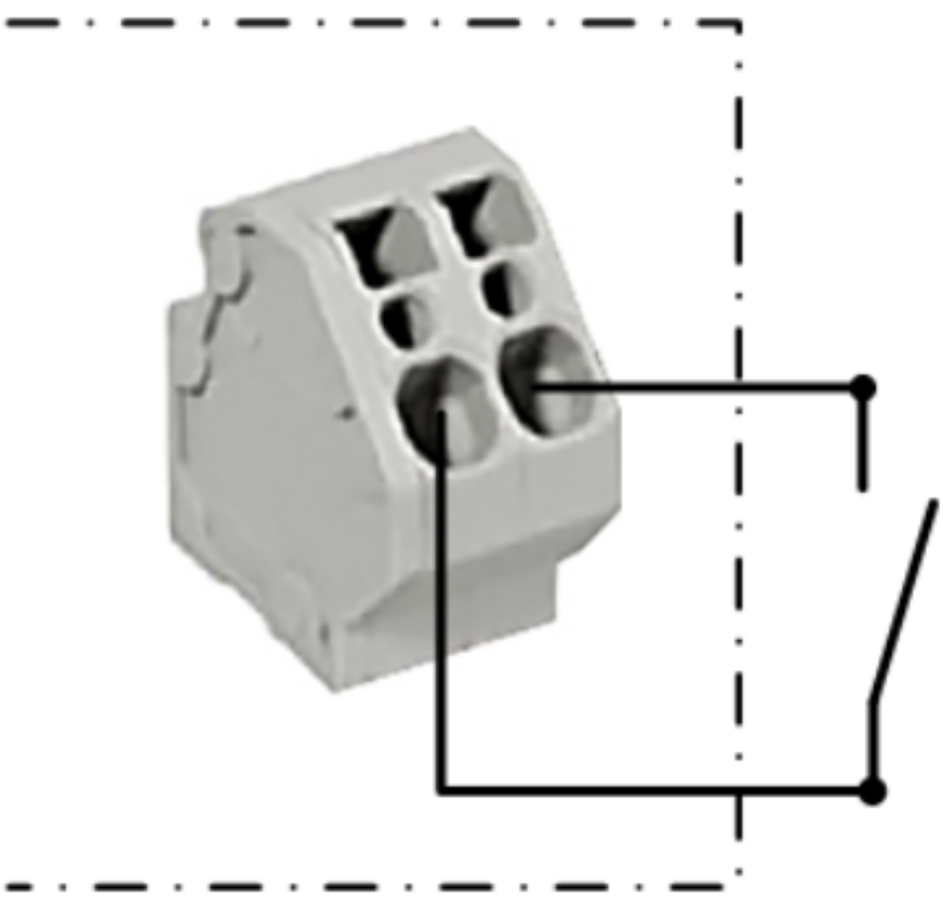


Figure 13. Circuit diagram for the potential-free contact X1

To enable control by external components (here: control box), the DIP switch D1.1 must be set to "ON".

The wallbox then needs to be restarted.

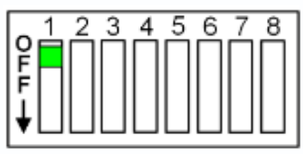
DIP switch	Function	Illustration
DSW1.1	Using the external enable input X1 for starting a charging process. DSW1.1 ON: LCharging enabled when X1 is closed. Whether charging is enabled also depends on the RFID authorization. For details, see 7.4 Enable input X1. DSW1.1 OFF: Input X1 is not connected. For all device variants for Great Britain/United Kingdom, the factory setting must not be changed, as otherwise the tamper detection will no longer function correctly.	

Figure 14. DIP switches for contact X1

Setting up the EnWG-compliant amperage

From software version 1.18 or firmware version 3.10.56, the available charging current for the KeContact P30 series can be set to 0 A or 6 A in accordance with EnWG using the DIP switches.

In software version 1.17.2, the EnWG-compliant current was predefined to 8 A. For further information, please refer to the KEBA KeContact manuals or visit KEBA KeContact FAQ.

To reduce the charging current to a specific value, set DIP switch D2.6 to the desired position.

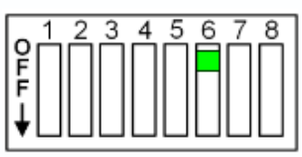
DIP switch	Function	Illustration
DSW2.6	Not valid for P30 e-series. When the enable contact X1 is opened or closed, the available charging current is reduced to a certain value. The enable input X1 must be activated (**DSW1.1** = ON). **DSW2.6** = OFF = value: **0A** **DSW2.6** = ON = value: **6A** (valid from software ≥1.18.00 / firmware ≥3.10.56, older versions use **8A**)	 Example: Current limitation ON

Figure 15. Charging current via DIP switch D2.6

Activating DIP switch D1.1 results in new dependencies for starting a charging process using RFID authorization.

RFID	DSW 1.1	Description
Off	**OFF**	Permanent charging enabled – charging is possible at all times.
Off	**ON**	Charging enabled when X1 is closed.
On	**OFF**	**P30 a-seriesb-series and c-series (without charging network)** Charging enabled when X1 is closed **OR** RFID authorization is correct. The state of X1 is no longer checked during the charging process. The charging process can only be ended early using an RFID card. *If no RFID cards have been taught in, charging is possible at all times, whether X1 is open or closed.*
On	**ON**	**P30 a-seriesb-series and c-series (without charging network)** Charging enabled when X1 is closed **AND** RFID authorization is correct. *If no RFID cards have been taught in, charging is enabled when X1 is closed.*
On	**OFF**	**P30 c-series (in a charging network) and x-series** Charging enabled when RFID authorization is correct. *Charging is not possible without an RFID card.*
On	**ON**	**P30 c-series (in a charging network) and x-series** Charging enabled when X1 is closed **AND** RFID authorization is correct. *Charging is not possible without an RFID card.*

Figure 16. Requirements for initiating a charging process

The configuration is now complete.

4. Install FEMS App KEBA KeContact P30 x-series

In the FEMS App Center you will find all installable FEMS Apps — such as the FEMS App KEBA KeContact P30 x-series.

In the user manual FEMS App Center you will find detailed instructions on how to use the FEMS App Center. It also describes how to register and redeem a license key.

There are two ways to install an app via the FEMS App Center. Only the [Direct installation] is described below, whereby a license key is registered and redeemed in the FEMS.

4.1. Direct Installation

To install the FEMS App KEBA KeContact P30 x-series directly, go to the overview of the FEMS App Center.

Only apps from the "Available" category can be installed.

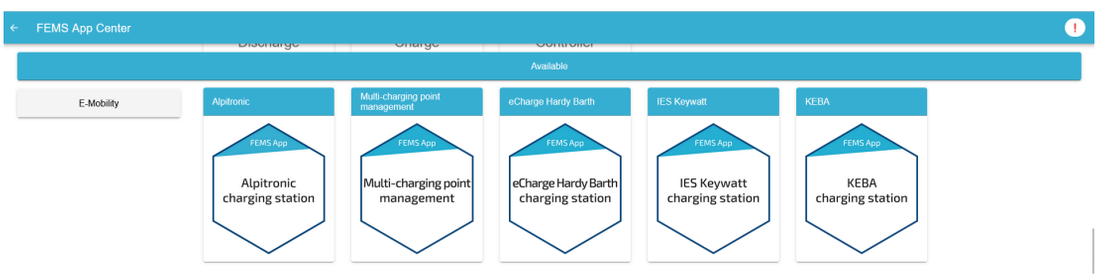


Figure 17. App installation — Variant 2: Step 1

Select the FEMS App KEBA KeContact P30 x-series by clicking on it.

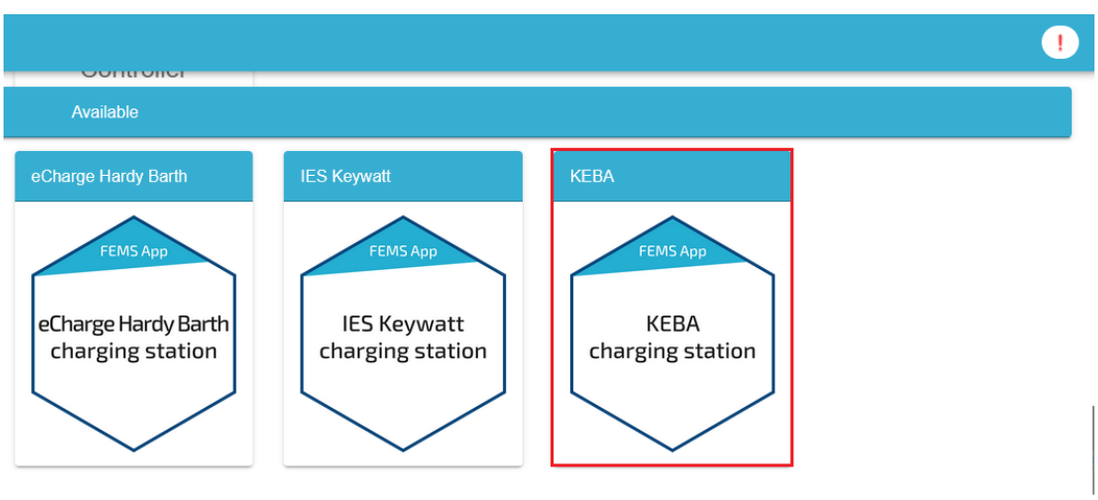


Figure 18. App installation — Variant 2: Step 2

You will then be taken to the app overview.

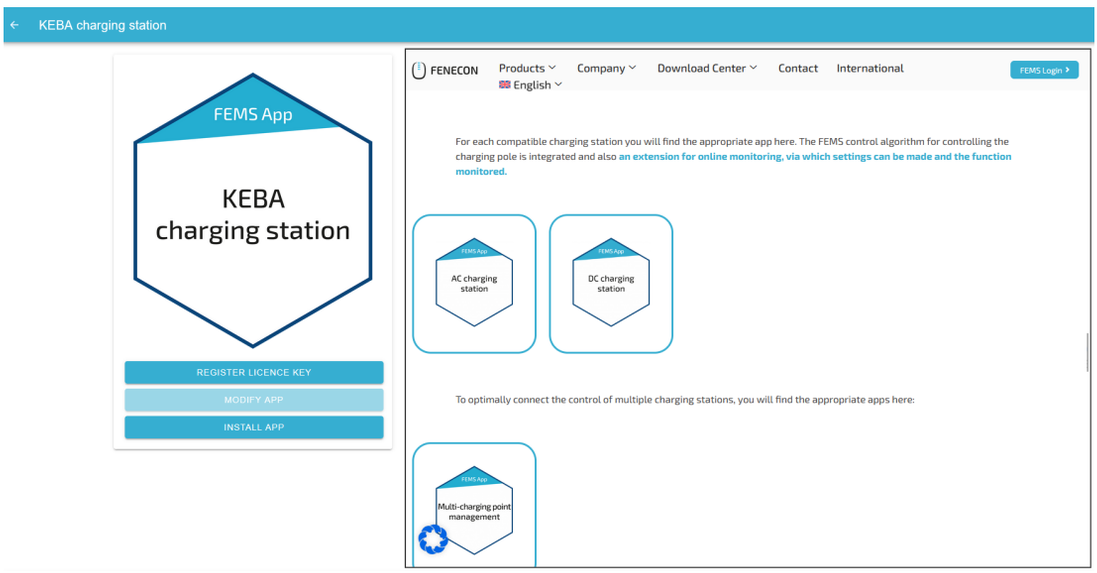


Figure 19. App installation — Variant 2: Step 3

Click on the "Install app" button.

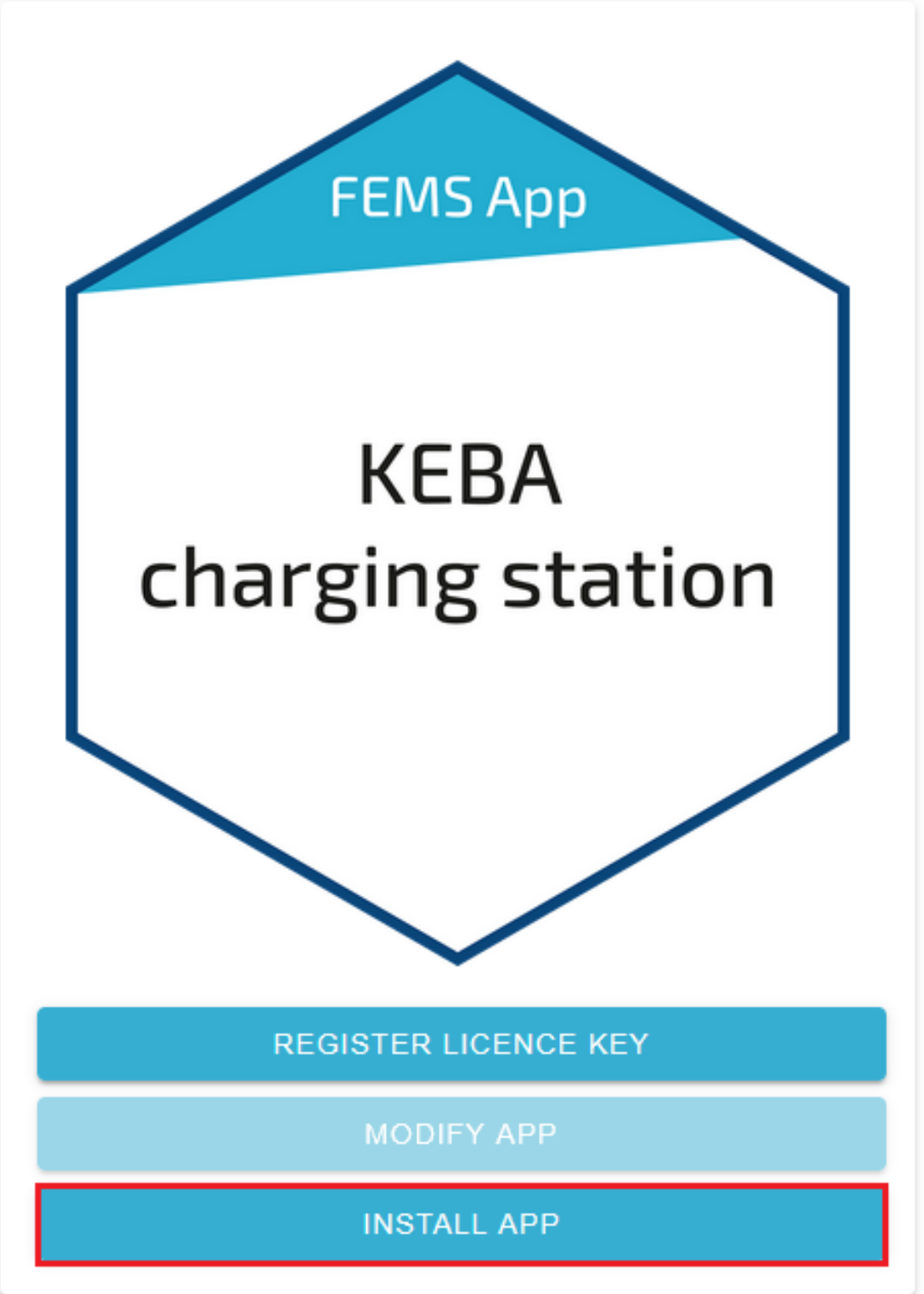


Figure 20. App installation — Variant 2: Step 4

An input mask for redeeming a license key appears.

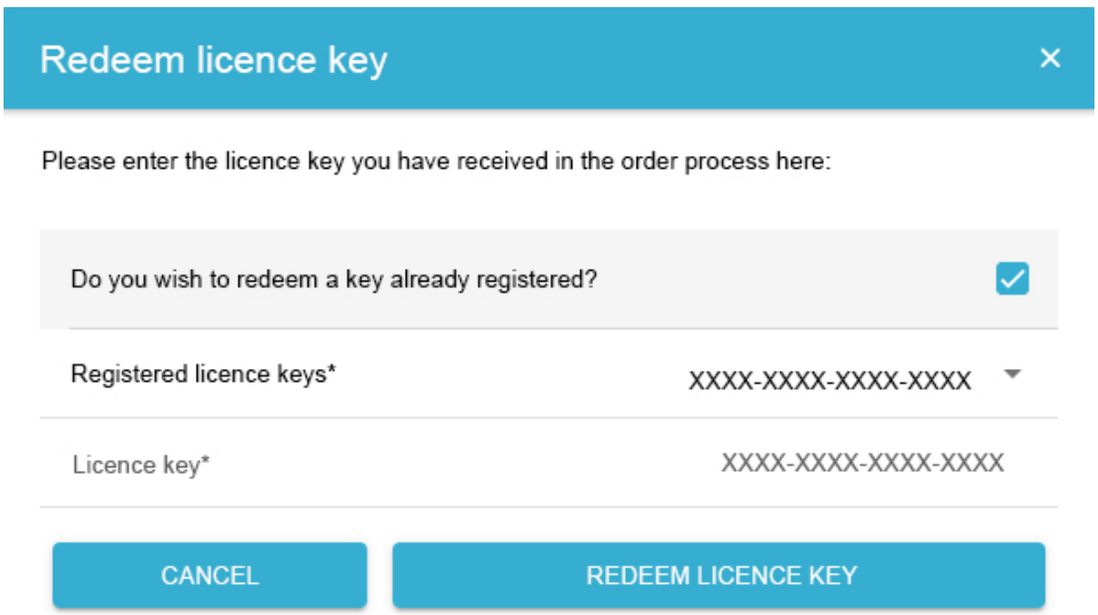


Figure 21. App installation — Variant 2: Step 5

You have two options here.

4.1.1. Redeem already registered license key

If you want to redeem an already registered license key, select it (1). Then click on the button of the same name to redeem the selected license key (2).

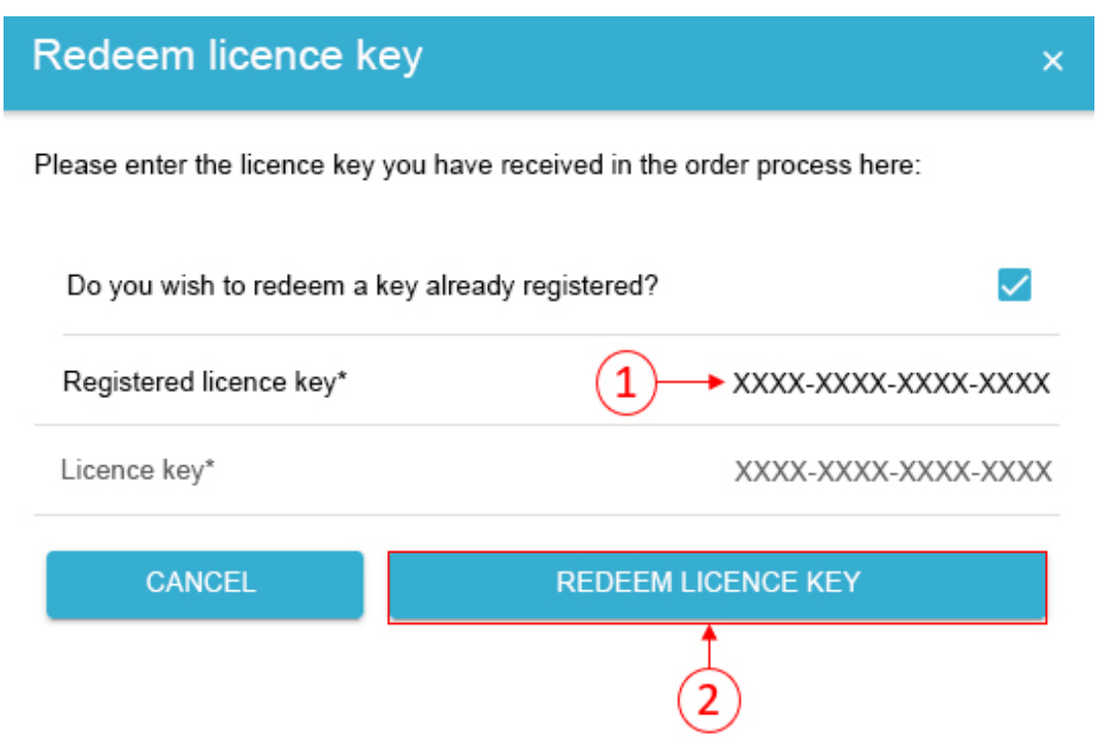


Figure 22. App installation — Variant 2: Step 5a

4.1.2. Redeeming a new license key

If you have not yet registered a license key or wish to redeem a new license key, enter the 16-digit key in the corresponding field (1) and then click on "Validate license key" (2). The entered license key is then checked for validity.

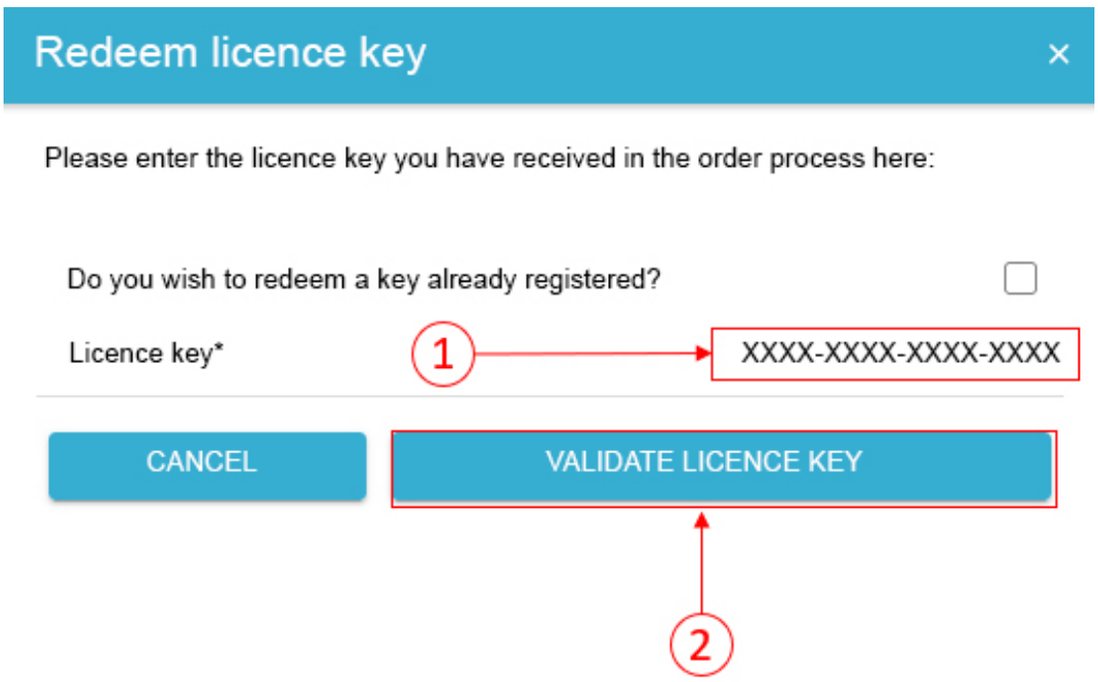


Figure 23. App installation — Variant 2: Step 5b

If the license key is valid, it can be redeemed by clicking on the button of the same name. If the license key is recognized as invalid, please check your entry and try again.

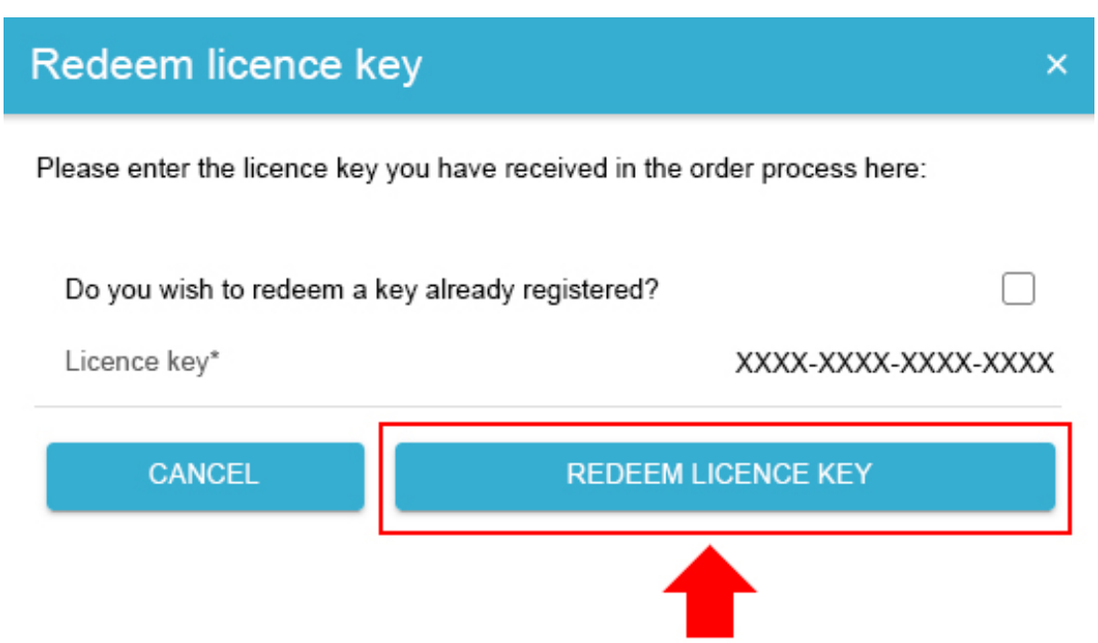


Figure 24. Redeeming a new license key: Step 6

You will then be taken to the installation wizard for FEMS App KEBA KeContact P30 x-series.

Please select the correct series for your KEBA KeContact under Product series.

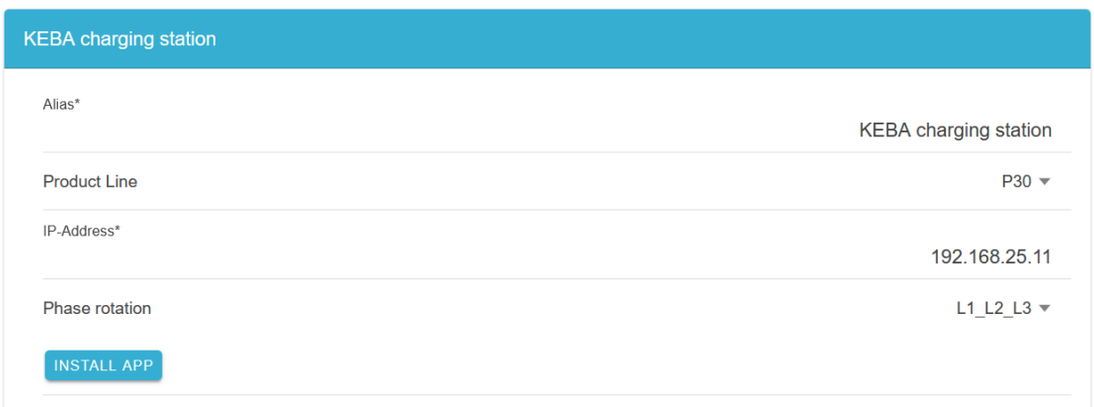


Figure 25. App installation — Variant 2: Step 7

The KEBA KeContact P30 Series is selected as standard.

Some of the input fields are pre-filled. Nevertheless, enter your data if it differs from the default values (e. g. IP address). Otherwise, the default values can be retained (e. g. port, Modbus unit ID).

Mandatory fields are marked with *

Check your entries and make sure that they are correct. Otherwise the respective app will not work properly!

In the next step, you can set a phase rotation.

Please note that phase rotation is only included from FEMS release 2024.11.2 or later.

The phase connection L1_L2_L3 is selected as standard.

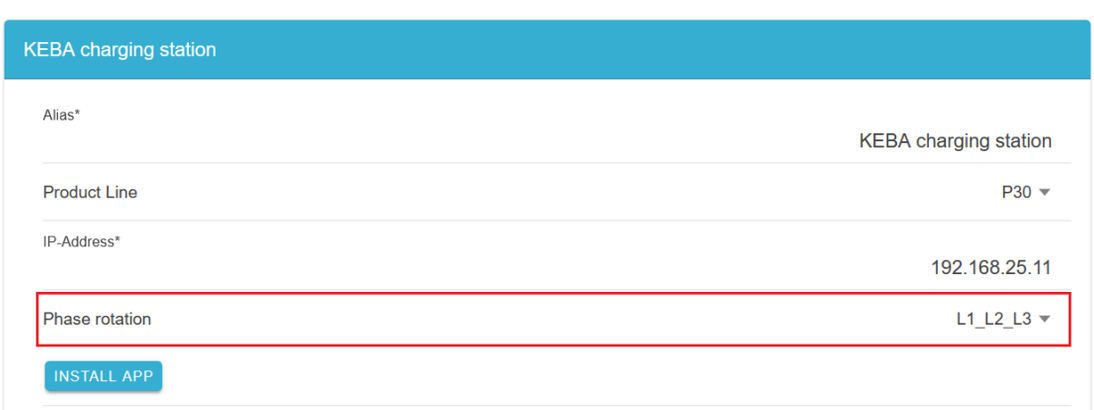


Figure 26. App installation — Phase rotation: Step 1

If your phase connection differs from this, you can select a different phase connection using the drop-down button.

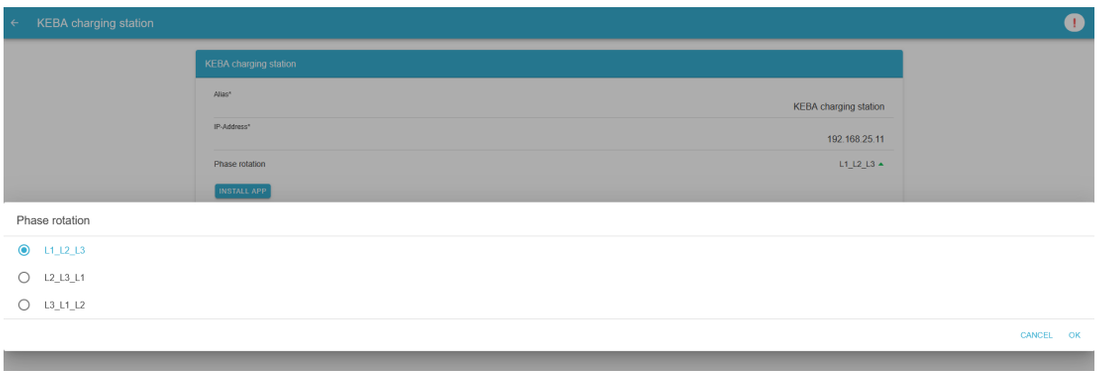


Figure 27. App installation — Phase rotation 2: Step 2

Confirm with "OK".

Then click on "Install app".

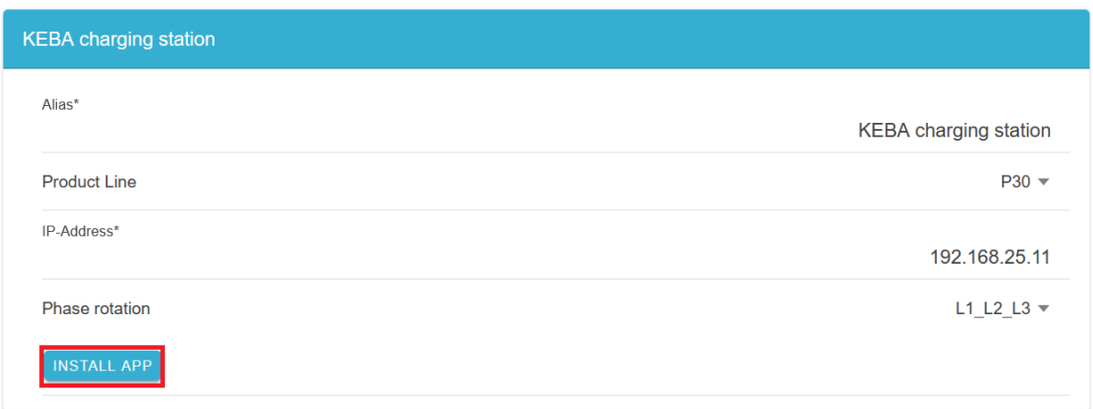


Figure 28. App installation — Variant 2: Step 8

Once the installation process is complete, the new app appears in the overview of the FEMS App Center in the "Installed" category.

4.2. Edit FEMS app

Apps that have already been installed can be subsequently edited to change configuration settings. To do this, select the respective app in the FEMS App Center overview and click on the "Edit app" button. Detailed instructions are found in the user manual FEMS App Center.

The FEMS App KEBA KeContact P30 x-series has been successfully installed.

5. Contact

For support, please contact:

FENECON GmbH
Gewerbepark 6
94547 Iggensbach

Phone — Service: +49 (0) 9903 6280 0
E-Mail — Service: service@fenecon.de

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