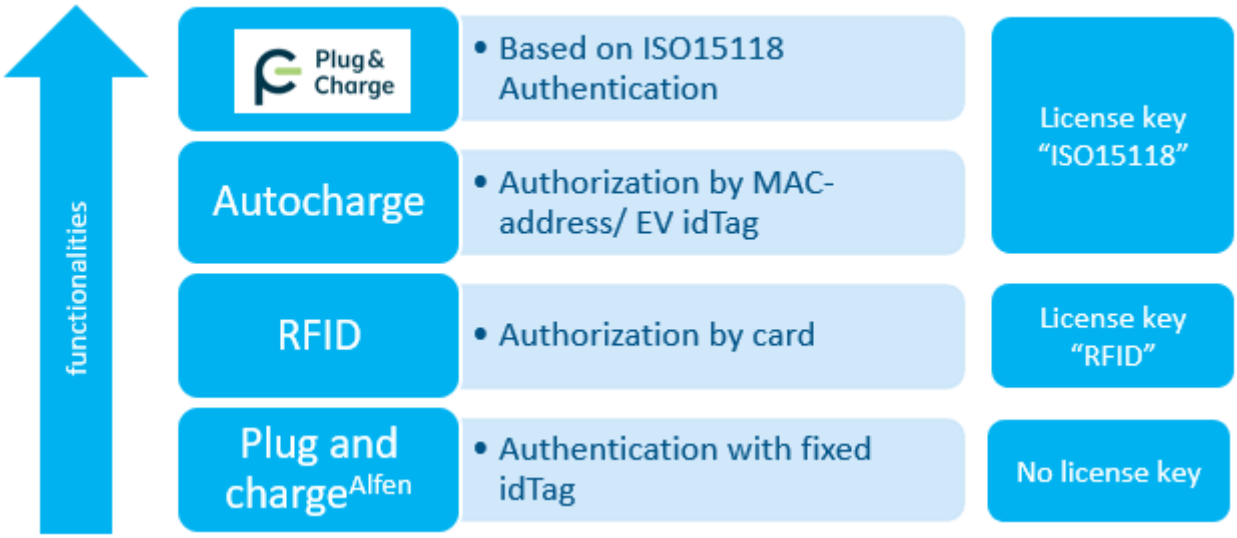
ACTIVATING AUTOCHARGE USING ALFEN CHARGING EQUIPMENT

In this document for CPOs, Alfen explains the purpose of Autocharge and how to activate it on an Alfen charger.

WHAT IS AUTOCHARGE

Autocharge is a way of authorizing a charge session without using the RFID card. Autocharge is possible because there is digital communication between the charger and car. It uses a unique identifier to authorize the charging session without swiping cards at the charger.

Advantages of Autocharge: only the CPO (OCPP back office) and charger are needed. The figure below shows the different ways of authorization with Plug &Charge^{Alfen} (just plug-in and the car starts charging) at the bottom. A common way of authorizing is by using a RFID card, a more seamless way (for regular customers) is Autocharge (just set up once) while the most sophisticated way is Plug & Charge^{ISO15118}.



Using Autocharge

Autocharge needs a one-time 2-step setup per EV driver per CPO, but after this initial setup an RFID card is not needed.

Requirements

To enable Autocharge, the following requirements need to be met:

- Connection between charger and back-office
  - OCPP 1.6
  - OCPP 1.6 SE
- Charger with ISO15118 support (such as an Alfen Twin 5 (Plus) with the Alfen Hardware Platform and firmware version 1.2.0 or higher)
- Active license key

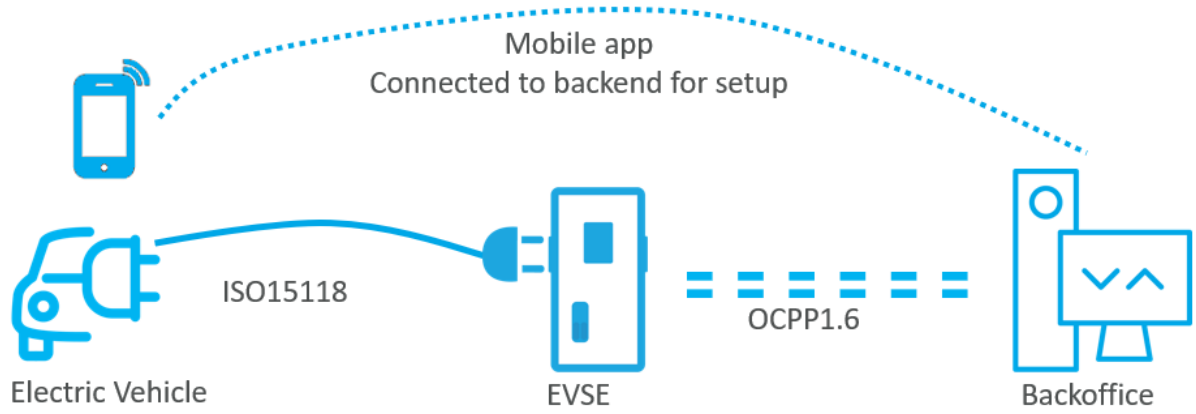
ALFEN
POWER TO ADAPT

Setting up Autocharge

Autocharge uses a unique EV idTag for authorization, with Authorize.req. To enable Autocharge, just set the OCPP key “AutochargeEnabled” to “True.”

The EV owner must initialize Autocharge, which needs to be facilitated by a mobile App solution, with the following steps:

1. Make sure the EV meets the requirements and then initialize in two steps:
    - Session 1 - obtain EV idTag
    - Session 2 - verify that the idTag is unique and fixed
2. Link payment card (bank card, credit card, RFID card or else) idTag to EV idTag
3. Make EV idTag valid

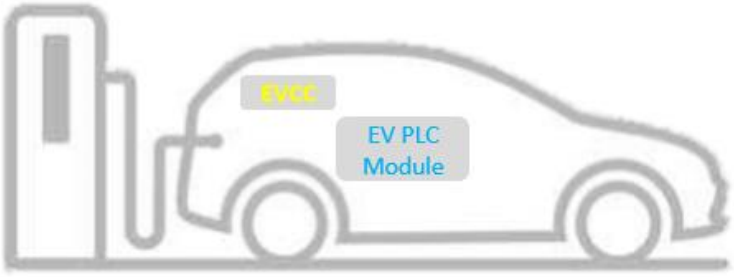


Note: If for some reason the EV idTag is invalid, starting an Autocharge transaction will not work. Alfen Charging stations will report via the UI to the user and via OCPP to the back office that the idTag is invalid. If for some reason the EV idTag is not fixed Alfen can exclude those vehicles by means of an exclusion list in the firmware.

As a CPO it is important to identify vehicles that have rolling EV idTags (EV idTag renewed every session) and non-unique EV idTags (multiple EV’s carrying the same EV idTag) as for these cars and users the implementation will lead to (billing) issues. Please share detailed information of the EV’s, so they can be added to the exclusion list.

Some EV's are already excluded to start the Autocharge authorization. The UI will instruct users to present their tag or start charging via other authorization means.

Generating a Unique EV idTag



ISO15118 and DIN SPEC 70121 require the HomePlug Green Phy protocol. While establishing the connection between EV and charging station, the MAC addresses of both the EV communication controller and the EV PLC node are obtained. The two MAC addresses are used to generate a unique EV idTag (Base32 encoded).

EVCC MAC	:	EV PLC MAC		Base32 encoded EV idTag
00:07:32:7B:3C:28		:02:26:00:00:00:22	Base32 encode	AADTE6Z4FABCMAAAAARA

Benefit for CPOs

Since the Autocharge functionality is only useable with Autocharge enabled-chargers connected to the backoffice on which the initiation process is done, a CPO can offer this functionality as an extra benefit in their proposition to EV drivers. It is to be expected that Autocharge will boost the occupancy rate of these Autocharge-enabled chargers.