



Delta 25kW DC wallbox Plug&Charge Mode Authentication Tutorial

This document for OCPP backend operators and describes how authentication works for the Delta AC Mini Plus and the DC Wallbox chargers.

This document is only valid for AC Mini Plus chargers that are running firmware version v2.08 or higher and DC Wallbox chargers that are running firmware v01.38/v01.39.

OCPP 1.5 vs OCPP 1.6

Currently (as of firmware version v2.08 for ACMP and v01.38/v01.39 for DCWB), the three custom OCPP configuration keys listed in this document can be changed through OCPP 1.5 and OCPP 1.6 back ends. However, both the ACMP and DCWB only support plug and charge modes and authorization cache under an OCPP 1.6 backend. Therefore, Delta recommends connecting all chargers if possible, to an OCPP 1.6 backend to take advantage of all of the different online and offline authentication modes.

User authentication if OCPP is turned off

If the installer sets 'Backend' to 'None' in the configuration tool, user authentication for the AC Mini Plus and DC Wallbox will be directly set in the configuration tool. The options are "Delta Card" (use the 2 RFID cards that came with the charger) and "Plug and Charge" (no authentication required, start charging as soon as vehicle is plugged in)

Step 2: Set OCPP Parameters

Backend* None

Next

Step 3: Set Authentication Mode

Authentication Mode* Delta Card

Delta Card

Plug and charge (No authorization required)

Back Next

User authentication if OCPP is turned on

If the installer sets 'Backend' to 'OCPP' in the configuration tool, user authentication for the AC Mini Plus and DC Wallbox will depend on two factors:

- A) The value of certain OCPP configuration keys that is set by the backend operator
- B) Whether the charger is in an online or offline mode

There are two ways to activate plug&charge mode under the OCPP is enabled.

- 1) Remote setting from the backend (Supported by DC wallbox and AC mini plus)
- 2) Local setting via a USB stick (Supported by DC wallbox only)

(1) [Remote setting from the backend \(Supported by DC wallbox and AC mini plus\)](#)

Scenario 1: OCPP is turned on and the charger is online

In the first scenario, the installer has connected the ACMP or DCWB to an OCPP backend. In this case, the most important OCPP configuration key will be "AuthorizationRequired". A summary of the functionality of the key is shown in the following table:

Key Name	Value	Functionality
AuthorizationRequired	"true" - Default	"OCPP Authentication mode": Charger will have standard OCPP authentication. It will be up to the OCPP backend provider to authenticate RFID cards by responding to "Authorize" from the charger

	"false"	"Plug and Charge" mode: The charger will start charging as soon as a car is plugged in and will use the string in the "NonAuthorizedTag" key for the idTag field of StartTransaction messages
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Scenario 2: OCPP is turned on and the charger is offline

When the ACMP or DCWB goes offline, the charger looks at a different OCPP configuration key – "OfflinePolicy" for charging authentication. A summary of the functionality of the key is shown in the following table:

Key Name	Value	Functionality
OfflinePolicy	"0" - Default	"OCPP Offline Authentication mode": When a car is plugged in, the charger will use standard OCPP offline authentication methods - LocalList and AuthenticationCache (described in the next subsection)
	"1"	"Plug and Charge" mode: When a car is plugged in while charger is offline, charger will charge without any authentication. The charger will use the string in the "NonAuthorizedTag" key for the StartTransaction idTag
	"2"	"No service" mode: If OfflinePolicy is set to "2", charging will not be allowed at all when the charger is offline. In this mode, the charger will light all 4 LEDs to indicate to the user that charging is unavailable.

Tag ID used by the charger in a plug and charge mode

When the ACMP or DCWB is in a plug and charge mode (either online or offline), the idTag field in the StartTransaction message will be defined by the "NonAuthorizedTag" OCPP configuration key. The functionality of this key is described below:

Key Name	Value	Functionality
NonAuthorizedTag	Up to the user to set. Default - serial number of the charger	The value of this key will determine the idTag in all StartTransaction messages when the charger is in plug and charge mode

Important notice!

It is very important to understand in the current design, it is binding of "AuthorizationRequired" and "offlinepolicy", which means only two operation modes are valid:

- 1) Both online and offline is requiring RFID identification: (AuthorizationRequired: true, Offlinepolicy:0)*
- 2) Both online and offline is in Plug&Charge: (AuthorizationRequired: false, Offlinepolicy:1)*



(2) Local setting via a USB stick (Supported by DC wallbox only)

Step1: On the laptop, go to online configuration tool (<http://evcs.deltaww.com/ConfigTools/>) and make a regular configuration file with OCPP enabled (Authentication Mode:3).

Step 2: On the laptop, use a text editor to open the configuration file and add additional three lines to set values.

Step 3: Copy the configuration file to a USB stick (filesystem must be FAT/FAT32), then proceed regular uploading process.

Parameter name	Value	Functionality
OCPP AuthorizationRequired:	"0"	Plug & charge
	"1"	Authorization required
OCPP offline policy:	"0"	Authorization required (accept locallist)
	"2"	Plug & charge
OCPP NonAuthorizedTag:	Input a valid whitelisted idtag	

An example which the setting of plug&charge is showing below:

Max Charging Power:25
Max Charging Duration:255
Max Charging Energy:255
Max Charging SoC:100
3G APN:live.vodafone.com
LAN DHCP:0
OCPP Model:2
OCPP Charge Box ID:TESTID
OCPP Server URL:ws://ocpp16.ezqc.jp:9002/
OCPP local list:1
OCPP offline policy:2
OCPP AuthorizationRequired:0
OCPP NonAuthorizedTag:04bc3029
Authentication Mode:3
Default Language:0
UTC Time Zone:+01:00
USB Key:0000
Model Name:EVDE25E4DUM

Important notice!

It is very important to understand in the current design, it is binding of "AuthorizationRequired" and "offlinepolicy", which means only two operation modes are valid:

- 1) Both online and offline is requiring RFID identification: (OCPP AuthorizationRequired: 1, OCPP offline policy:0)*
- 2) Both online and offline is in Plug&Charge: (OCPP AuthorizationRequired: 0, OCPP offline policy:2)*

Local List and Authorization Cache

When the ACMP or DCWB is offline and the value of “OfflinePolicy” is set to “0”, the charger will be in OCPP offline authentication mode. This means that the charger will only authenticate charge sessions through a RFID swipe if the RFID card is in charger’s Local List or Authorization Cache.

Local List

Local List is a list of identifiers that is synchronized by the OCPP backend. When the charger goes offline, the charger will look to the list of RFIDs in the Local List for authentication. The OCPP backend can send valid and non-valid RFID cards to the charger using the “SendLocalList” message while the charger is online.

Authorization Cache

Authorization Cache is a record that the charger updates autonomously when an OCPP backend successfully authorises an RFID card. If the charger goes offline, the charger uses this record to authenticate previously authenticated RFID cards. The cache on the ACMP and DCWB can store roughly 5000 RFID cards. Once the charger’s cache storage is full, the charger will start removing the oldest cards from its cache to store newer cards. Authorization Cache can be turned on and off through the “AuthorizationCacheEnabled” OCPP configuration key and is on by default (from firmware version v2.08 and onwards for ACMP and v36 and onwards for DCWB).

Changing and checking the value of OCPP Configuration Keys

To change a configuration key, use the OCPP “ChangeConfiguration” message. Full details of the message is in section 6.9 of the OCPP 1.6 Protocol.

To check the value of the charger’s configuration keys, use the OCPP “GetConfiguration” message. Full details of the message is in section 6.23 of the OCPP 1.6 Protocol. Note: you can input a list of strings to get multiple values back at once.