

# DC Wallbox Selection Guide

A compact DC electric vehicle charger with up to a 25kW output

RENEWABLE TECHNOLOGIES





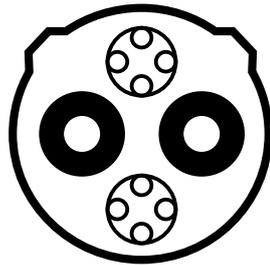
## Why should you pick the Delta DC Wallbox?

The Delta DC Wallbox is a 25kW DC electric vehicle charger. It provides DC charging at an affordable price and is great for commercial, fleet, and large residential uses. It is also very well suited as a mid-point between slow AC charging, and 50+ kW charging which is significantly more expensive.

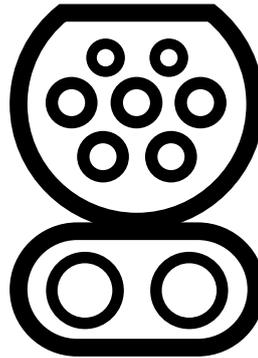
- Compact Size
- 25kW output
- Easy Installation
- Delivers up to 100-150km of additional range per hour plugged in

## What connection type should you choose?

There are three DC plug types available on the market (not including Tesla) that car manufacturers have standardised on. CCS2 or Combo 2 is a combination of a Type 2 (Mennekes) plug and 2 DC pins. CCS1 also is a combination of a Type 1 (J1772) plug and 2 DC pins. CHAdeMO is a Japanese charging standard, that has seen some use in Australia. We recommend purchasing the CCS2 & CHAdeMO unit. Cables are interchangeable if required. There are also adapters available to enable Tesla vehicles to charge at the DC Wallbox.



CHAdeMO  
(Japan / US)



Type 2 CCS  
(Europe)

## What are the differences between a DC Wallbox and a 3-Phase AC Charger?

The Delta DC Wallbox provides DC current to directly charge the batteries in electric vehicles, as opposed to AC chargers which utilise the rectifier in the vehicle to turn AC from the supply into DC to charge the battery. In most cases, the rectifier in the vehicle is limited to between 3 and 11 kW, using a single phase of AC power. Example models currently on the Australian market include Audi A3 e-tron, BMW 330e, BMW 740e, BMW i8, BMW X5 xDrive40e, Jaguar I-Pace, Mercedes-Benz C 350e, Mercedes-Benz E 350e, Mercedes-Benz GLE 350e, Mercedes-Benz S 500e, Mitsubishi Outlander PHEV, Nissan Leaf, Porsche Cayenne S E-Hybrid, Porsche Panamera 4 E-Hybrid, Volvo XC90 T8.

A small number of manufacturers have elected to put three phase rectifiers in some of their vehicles which permits effective use of three phase AC charging at around 22kW, which is a similar rate to what the DC Wallbox will deliver over DC. These vehicles are the BMW i3, Renault Zoe, and Tesla Model X and Model S. For all other Electric Vehicles presently on the market, the internal rectifier can only make use of one of the three phases on one of these charging units, which reduces the effective charging rate to ~7kW.

Faster charging of a vehicle with a single-phase rectifier, therefore, requires a DC charger, and a suitable matching DC inlet on the vehicle. Vehicles in the Australian market with DC inlets that can be served from the DC Wallbox at time of writing are: BMW i3, Tesla Model S and X (with adapter), Jaguar I-Pace, Nissan Leaf, Outlander PHEV (2017 +). This line up of vehicles will expand in upcoming years.

## Can you monetise the usage of a DC Wallbox?

If monetisation is required we recommend using third-party billing solution providers, with expertise in the electric vehicle space. There are currently multiple companies in the Australian market that provide subscription-based monetisation and energy monitoring programs. Another method of monetisation is to recoup the costs indirectly, such as by incorporating the cost of power into the cost of parking, or (in the context of a shopping centre or apartment complex) passing the cost through to tenants or body corporate. In the context of a regional local council, deploying a DC Wallbox will typically create more opportunities for electric car drivers to stop and use goods and services from local businesses.

### Part number

Model Code	Plug Type	Communication Enabled
EVDE25D4DUM	CHAdeMO & CCS2	Ethernet (standard)

## Do I need to mount my DC Wallbox on a wall?

The DC Wallbox can be combined with an optional freestanding post if wall-mounting locations are not available at the installation site. What connection type should you choose?

Recommended part number:  
**EVPEBKT02**



## Do you need an isolator upstream of your Delta DC Wallbox?

As a safe installation practice and to support safe maintenance practices, NHP recommends one to be installed.

Recommended part number:  
**ISO463MG**



## What are the upstream requirements?

NHP recommends installation of a 3 pole 63A C Curve MCB with 30mA RCD protection installed upstream of the DC Wallbox.

Recommended C Curve MCB:  
**DTCB6363C**



Recommended RCCB:  
**DSRCD46330A**



## What if charging at 100-150km of additional range per hour plugged in isn't enough?

If charging at 25kW to gain an additional 100-150km of range per hour isn't enough there are larger DC Chargers available. NHP provides a fixed 50kW DC charger and a modular 50kW to 150kW DC charger to meet your needs.

The Delta DC Quick charger is a 50kW DC charger, that provides vehicles with 200-300km of additional range per hour of charge. It comes standard with CCS2 and CHAdeMO plugs.

*Please consult NHP for help with Delta Quick Charger part selection and pricing*



The Delta Ultrafast charger is a modular DC charger. The unit has up to a 150kW output that is reachable using 10kW DC modules. The base unit is 50kW, which would give a car an additional range of 200km to 300km. The Ultrafast charger provides the ability to upgrade to meet future charging demands. As standard, the Ultrafast charger comes equipped with CCS2 & CHAdeMO DC Plugs, and a Type 2 three phase AC plug that allows for charging at up to 43kW.

*Please consult NHP for help with Delta Ultrafast charger part selection and pricing.*



**NHP Electrical Engineering Products**

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