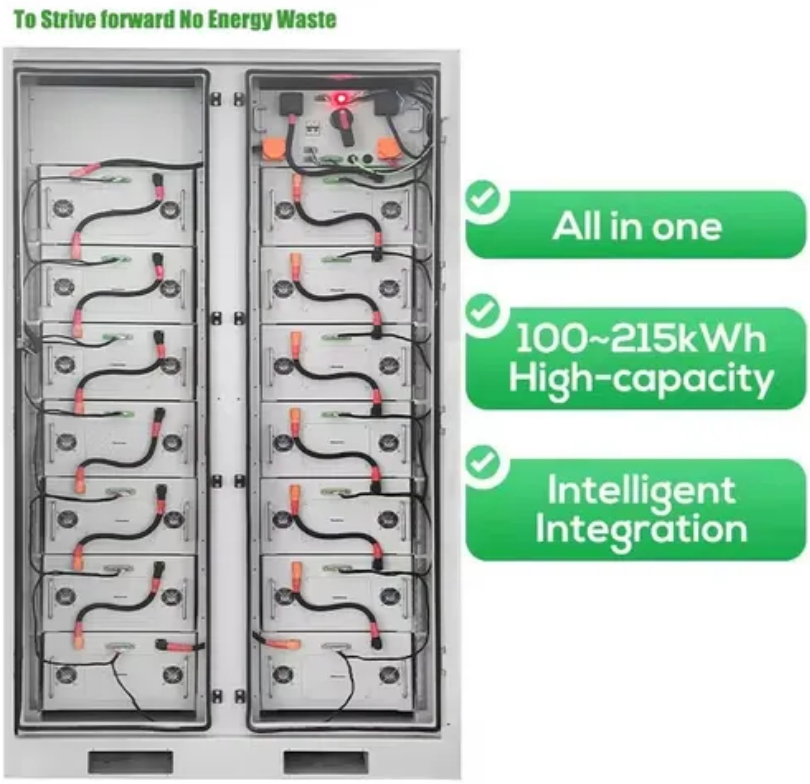
SolarInnovate Energy Solutions

# Inverter high voltage charging



## Overview

What is the difference between a battery charger and an inverter?

The inverter converts direct current (DC) from the battery into the alternating current (AC) required by the electric motor to turn the wheels. The charger performs the same task in reverse: the AC voltage is turned into DC voltage in order to charge the battery in a hybrid plug-in vehicle or an all-electric vehicle.

How does a charge-inverter work?

This charge-inverter allows for both the slow charge and rapid charge function, at no cost, while at the same time offering significant reductions in terms of weight and size. In addition, with its unique architecture that incorporates a voltage step-up, the charger-inverter offers a very high output, and increases autonomy by around 10%.

What are the advantages of 800V inverter?

There are two main advantages in using 800V systems, improving inverter’s efficiency: faster charging as more power is transferred in less time and reduced power losses in the cabling. Meanwhile, improved performance (i.e., power) for electric powertrains can be achieved through either higher current or higher voltage.

What is a traction inverter?

These inverters, called traction inverters, usually transfer power in the tens-of-kilowatts range (+50kW). The power switches used in these full-bridge topologies are insulated gate bipolar transistors (IGBTs). Typical voltage levels for the power switches are 600V to 1200V.

What type of power switch is used in a three-phase inverter?

The power switches used in these full-bridge topologies are insulated gate bipolar transistors (IGBTs). Typical voltage levels for the power switches are

600V to 1200V. Considering the high power levels and voltage levels, a three-phase inverter uses six isolated gate drivers, as shown in Figure 2.

How does Valeo Charger-inverter work?

In addition, with its unique architecture that incorporates a voltage step-up, the charger-inverter offers a very high output, and increases autonomy by around 10%. Valeo’s innovation is to use the inverter and the electric motor windings when the battery is charging.

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