

## SolarTech Power Solutions

# Inverter for converting low voltage to high voltage



## Overview

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What are HV-LV DC-DC converter modules?

HV-LV DC-DC converter modules provide power flow between the 400-volt (high voltage) and 12-volt (low voltage) power nets or 800-volt (high voltage) and 12-volt (low voltage) power nets on hybrid electric (HEV), plugin hybrid electric (PHEV), and battery electric vehicles (BEV).

How can a high-voltage power conversion system improve efficiency and density?

There are a lot of challenges to delivering efficient power conversion in high-voltage applications. However, component, topology and system-level innovations can significantly increase the high-voltage power-conversion system's efficiency and density, while simplifying designs.

Can a distributed DC grid system improve high-voltage power conversion?

A distributed DC grid system could greatly simplify high-voltage power conversion and increase system availability and reliability. Beyond system architecture innovations, control system innovations are another way to simplify and improve high voltage power-conversion systems.

How many volts does a power converter need?

These modules can be unidirectional or bidirectional, allowing power flow in either direction. Power levels from 1 kW to 3 kW are typical, with systems requiring components rated at 40 volts on the 12-volt power net and 650 volts to 1200 volts for the high voltage power net of the converter.

How can topology innovations improve power conversion in high-voltage systems?

In addition to component-level innovations, topology innovations can help you simplify power conversion in high-voltage systems. The AC/DC rectifier is a great example of how wide band-gap technologies can elevate well-known

topologies to improve power density and reduce design weight.

What is a DC/DC converter?

TIDA-00281, TIDA-01505. TIDA-00366 PMP7797, PMP8657 What is th DC/DC Converter?

The DC/DC converter provides transfer of energy between the higher voltage battery system and the lower voltage (typically 12V) systems. The higher voltage supplies large loads such as traction motor, air-conditioning, and starters.

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