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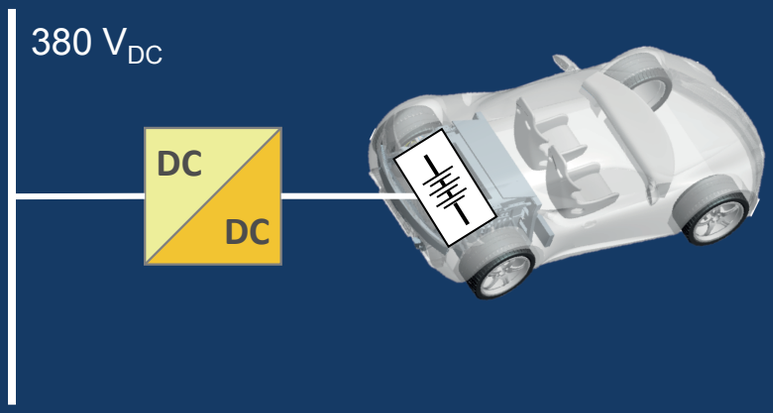
DC Fast Charging System
for Local DC Microgrids



DC Fast Charging System

for Local DC Microgrids

Description

The **DC Fast Charging System** is designed for the use with a local **DC Microgrid**. Compared to DC charging from the common AC grid, this setup allows the high power direct current charging of electric and hybrid vehicles with higher efficiency, employing smaller, cost-saving DC/DC-converters and reducing overall conversion losses.

The **DC Fast Charging System** consists of single modular converters, providing easy scalability for increasing power demand with advancing battery technology.

The **Bidirectional Converters** allow the use of vehicle batteries as additional buffer storage for the grid, for example to accept surplus solar energy.

Coupled with a local **DC Microgrid**, energy produced from renewable sources can be directly used to charge electric vehicles. This facilitates completely emission-free electric driving from solar energy.

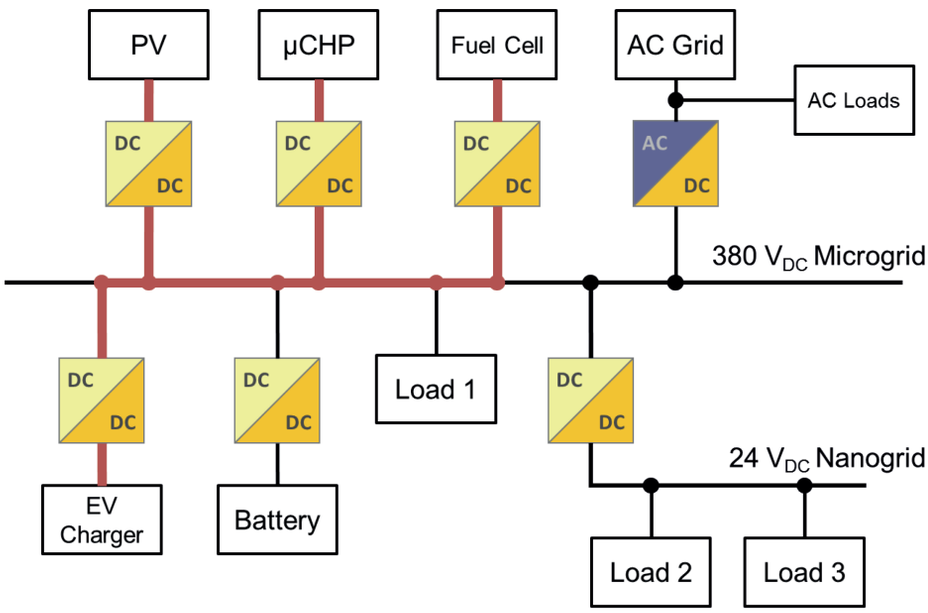
Technical Data

Grid Input Voltage	Up to 450 V
Phases per module	4
Maximum Current (per module)	40 A
Maximum Power (per module)	18 kW
Efficiency of individual modules	Up to 99 %

Features

- *IGBT half-bridge buck topology*
- *Fully modular design allowing scalability towards user needs*
- *Bidirectional operation possible, enabling use of vehicle battery as battery storage for the grid*
- *Additional safety through fuses for every phase (input and output)*
- *Control outputs to drive precharge and main relays*
- *Temperature monitoring*
- *Overcurrent protection*
- *Air cooled*

Implementation Into DC Microgrid



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