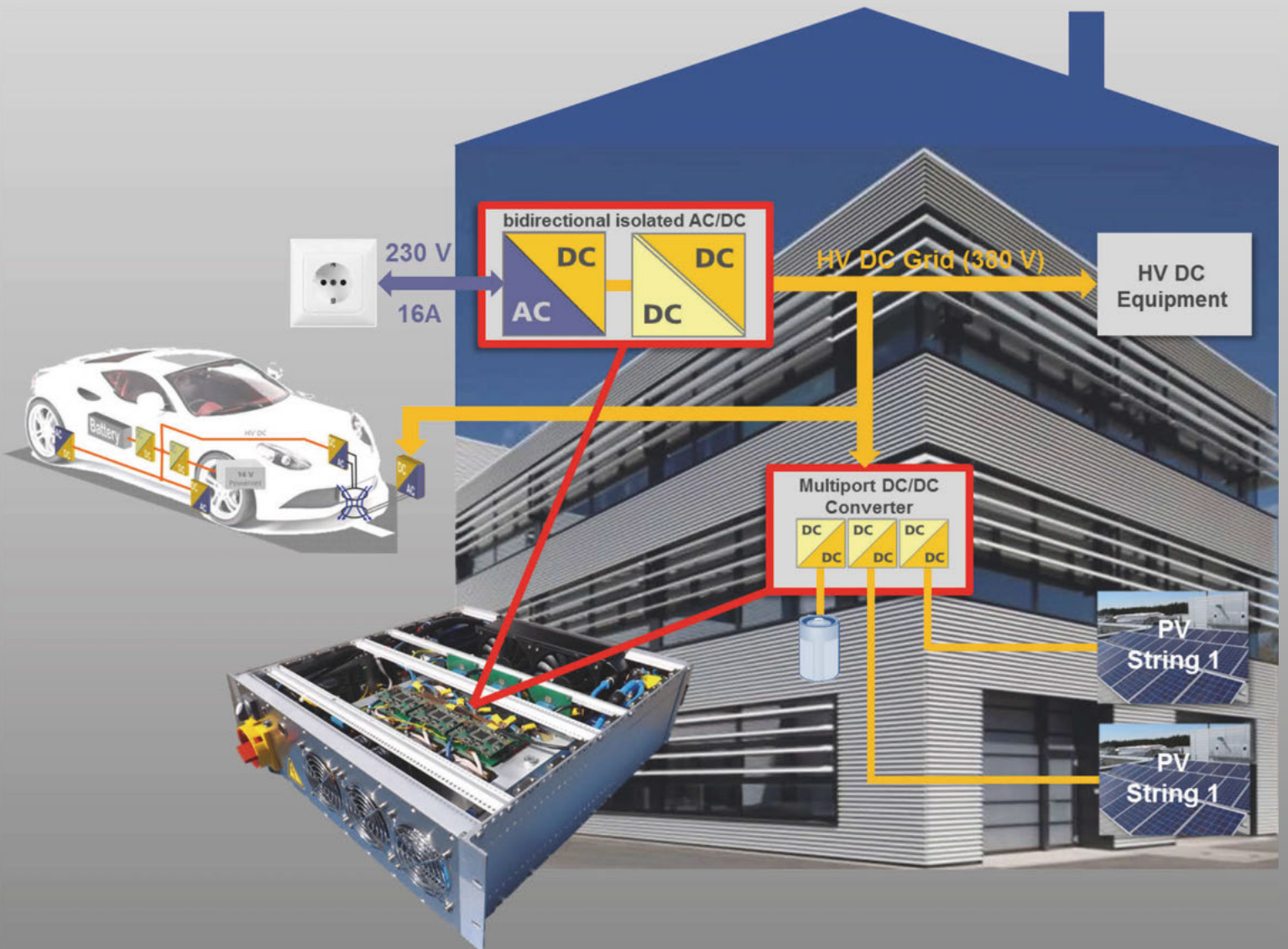


DC Micro Grid Control System for optimized usage of renewable energy in buildings





DC Micro Grid Control System for optimized usage of renewable energy in buildings

Description

With the presented **DC Micro Grid Control System** a complete plug-and-play solution for managing battery based local DC grids in buildings is available. The DC Micro Grid Control System combines the entire power electronics to generate, store and use renewable energy from two independent PV-strings with very high efficiency in only 3HU of a 19" system. The control system can be easily installed within the rack of a high voltage battery. Moreover, for safety reasons the entire DC grid, what means as well the PV strings and the HV battery, is galvanically isolated from the AC mains. Usage of locally generated renewable energy together with the DC Micro Grid Control System gives the following benefits:

- Efficiency advantages of local DC grids
- Size of local energy storage (battery) can be optimized
- New features: e.g. faster charging of electric cars without additional effort for AC mains infrastructure

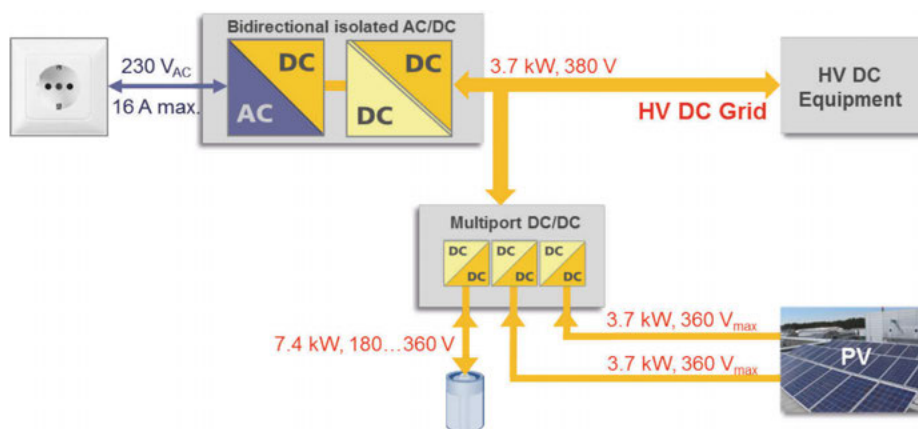
Technical Data

Number of individual DC ports	3
Number of common DC ports	1
Maximum current of individual DC ports	25 A
Maximum power @ 300 V (per DC port)	7.4 kW
Maximum power AC/DC-converter	3.7 kW
Efficiency of individual DC ports	up to 98.5%
HVDC grid voltage	380 V ... 450 V
DC port voltage range	0 V ... (HVDC-10 V)
Dimension	19" (3 height units)

Features

- Galvanic isolation of local DC grid from AC mains
- 1x 3.7 kW bidirectional AC/DC
- 2x 3.7 kW MPPT DC/DC for 2 PV strings
- 1x 7.4 kW bidirectional DC/DC for battery connection
- Temperature monitoring
- Over current protection
- Integrated NS (Network & System) protection switch
- Additional fuses for each port
- EMI filters for each port
- Air cooled
- Low cost design approach (no SiC, minimum ceramic capacitors, no external current sensors)
- Easy to use interface via CAN

Typical DC grid architecture



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www.e2sg-project.eu

