DC-Grid Manager 2.0
for DC Microgrids in Buildings
Description

With the presented DC-Grid Manager a complete cognitive, plug and play solution with an self-parametrisering and automatically configuration for local DC micro grids in buildings is available. The DC-Grid Manager combines the entire power electronics to generate, store and use renewable energy from independent PV-strings or fuel cells with a very high efficiency in only 2HU of 19” system, which can be easily installed.

The DC-Grid Manager has eight flexibly configurable channels connected to the common DC-Bus. Each channel can interface to a different device (e.g. PV string, battery system or fuel cell). The function of each channel can be configured with software. For example, when connected to a PV string, the channel can operate as maximum power point tracker (MPPT). For applications requiring higher power, the channels can be connected in parallel.

Voltage regulation in the DC-Grid Manager is performed by an advanced voltage droop control.

Technical Data

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of individual DC ports</td>
<td>8</td>
</tr>
<tr>
<td>Number of common DC ports</td>
<td>1</td>
</tr>
<tr>
<td>Maximum Current of individual DC ports</td>
<td>20 A</td>
</tr>
<tr>
<td>Maximum Power @ 380 V (per DC port)</td>
<td>8 kW</td>
</tr>
<tr>
<td>Efficiency of individual DC ports</td>
<td>up to 99%</td>
</tr>
<tr>
<td>MPPT voltage range</td>
<td>50-430 V</td>
</tr>
<tr>
<td>Battery storage voltage range</td>
<td>50-430 V</td>
</tr>
<tr>
<td>Dimension (19” (2 height units))</td>
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</tr>
</tbody>
</table>

Features

- 8x 8 kW bidirectional DC/DC converters
- Flexible channel configuration for the connection of PV strings, battery storage and other renewable energy sources
- Temperature monitoring
- Overcurrent protection
- Integrated mechanical switches for each channel
- Air cooled
- Low cost design approach (no SiC, minimum ceramic capacitors)

NEW features:

- Programmable droop characteristic
- Software-defined Power
- Power as a Service

Typical DC Grid Architecture