Battery Energy Storage System

mtu ENERGYPACK QS

Product highlights

Benefits
— Factory tested plug-and-play design
— Optimized system integration ability
— Highest power density
— Complete system within vandalism proof outdoor enclosure
— High safety & reliability
— Black start capability
— Grid-supporting & grid-forming mode
— Controlled switching between modes
— Supervision of the point of common coupling
  • Control of the external mains switch
  • Detection of power outages
  • Re-synchronization after grid recovery
— Various applications in combination with mtu Microgrid Controller
— Easy integration into Rolls-Royce Microgrid Solutions

Support
— Global product support offered

System configurations
— Power and capacity can be widely adjusted according to customer and project needs. Please see graph below and consult your local distributor for your individual configuration.

Options
— 50°C ambient temperature*
— Corrosion protection
— Touchscreen HMI display
— 50% overload capacity*
— Customer branding
  …and many more

* for selected configurations

Certifications
— CE conformity certification

Standards
— Battery storage is designed and manufactured in facilities certified to standards ISO 2008:9001 and ISO 2004:14001
— AS/NSZ on request
Battery energy storage systems

*mtu* - a Rolls-Royce solution - offers a wide portfolio of battery energy storage systems starting from 60 kVA up to 2,000 kVA and capacities up to 2,200 kWh. As integral part of flexible energy systems, energy from various distributed electricity sources can be stored in our battery energy storage systems. The *mtu* EnergyPacks are designed to improve reliability, quality and profitability of your individual energy system. For more information and solution consulting please contact your local distributor.

## Technical data - *mtu* EnergyPack QS

<table>
<thead>
<tr>
<th>Sections</th>
<th>Value</th>
<th>Unit</th>
<th><em>mtu</em> EnergyPack QS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Battery</strong></td>
<td>Cell chemistry</td>
<td></td>
<td>NCM</td>
</tr>
<tr>
<td></td>
<td>Nominal capacity</td>
<td>kWh</td>
<td>up to 550</td>
</tr>
<tr>
<td><strong>Cooling</strong></td>
<td>Max. ambient temperature</td>
<td>°C</td>
<td>45 (50°C)</td>
</tr>
<tr>
<td></td>
<td>Min. ambient temperature</td>
<td>°C</td>
<td>-20</td>
</tr>
<tr>
<td><strong>Electrical</strong></td>
<td>Nominal apparent power</td>
<td>kVA</td>
<td>up to 400</td>
</tr>
<tr>
<td></td>
<td>AC short circuit capability</td>
<td>kA</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>Max apparent power (1 min)</td>
<td>%</td>
<td>110% (150%) of S\textsubscript{nom}</td>
</tr>
<tr>
<td></td>
<td>Nominal voltage</td>
<td>V</td>
<td>400 V\textsuperscript{3}</td>
</tr>
<tr>
<td></td>
<td>Power factor range</td>
<td>cos(\phi)</td>
<td>0 ind...1...0 cap.</td>
</tr>
<tr>
<td></td>
<td>Black start capability</td>
<td></td>
<td>yes</td>
</tr>
<tr>
<td><strong>Housing</strong></td>
<td>Corrosion protection</td>
<td></td>
<td>C3 (C5M)</td>
</tr>
<tr>
<td></td>
<td>Height</td>
<td>mm</td>
<td>2,400</td>
</tr>
<tr>
<td></td>
<td>Length</td>
<td>mm</td>
<td>3,300</td>
</tr>
<tr>
<td></td>
<td>Width</td>
<td>mm</td>
<td>2,200</td>
</tr>
<tr>
<td></td>
<td>Protection class battery room</td>
<td></td>
<td>IP55</td>
</tr>
<tr>
<td><strong>Interface</strong></td>
<td>Supported communication protocol</td>
<td></td>
<td>Modbus-IP (Modbus-RTU, IEC 60870-5-104, IEC 61850, DNP3)</td>
</tr>
<tr>
<td></td>
<td>Supported communication channels</td>
<td></td>
<td>3G / 4G 100MB/s CAT5</td>
</tr>
<tr>
<td><strong>System</strong></td>
<td>Humidity</td>
<td>%</td>
<td>100% condensing</td>
</tr>
<tr>
<td></td>
<td>Max. operation elevation</td>
<td>m</td>
<td>2,000</td>
</tr>
<tr>
<td></td>
<td>Nominal round trip efficiency (^4) (w/o HVAC)</td>
<td>%</td>
<td>up to 88%</td>
</tr>
<tr>
<td></td>
<td>Weight</td>
<td>kg</td>
<td>up to 8,900</td>
</tr>
</tbody>
</table>

1) Weights and dimensions are estimates only. Please consult the factory for accurate weights and dimensions for your specific battery storage container.
2) Product options in brackets
3) Other voltage levels available on request
4) At nominal power, excluding losses of external cabling. Depending on configuration and C-Rate
Battery energy storage systems

Actual capacities and sizes may vary due to battery type and system configuration.
2C configurations with limited availability.

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Sound data

Consult your local distributor for sound data.

Warranty and performance guarantee

Consult your local distributor for information about warranty and performance guarantee.

Materials and specifications are subject to change without notice. Please consult your local distributor for further product information.

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Rolls-Royce Group
www.mtu-solutions.com/powergen

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