FLYWHEEL ENERGY STORAGE

Power Quality Storage
Superconducting flywheel-based energy storage system to improve power quality and reliability, e.g. in applications like distributed / volatile / renewable generation
- Load levelling
- Peak shifting
- Recuperation (cranes, trains, …)
- Island networks

UPS Storage
Superconducting flywheel-based energy storage system to supply power on demand, e.g. to bridge the time until a power generator starts. Compared to other UPS technologies, the Bilfinger Noell storage systems offer the benefit of
- No climatized room required
- Long life-time
- Low maintenance and operating costs
- Modularity and compactness
The storage devices have the following advantages

- High power in small foot-print
- No degradation even under high cycling rates
- Full real and reactive power capability
- System and charge status always transparent
- Low standby losses
- Environmentally friendly

The specific benefits are

- Renewable energy sources: Meet feed-in requirements of utilities
- Grid operators: Avoid costly line upgrades, provide balancing power
- Industry/transport: Reduce peak power consumption, enhance power quality, recuperation
- Island networks: Balance generation and load

Schematic Diagram

Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power up to</td>
<td>500 kVA</td>
</tr>
<tr>
<td>Capacity</td>
<td>5 kWh</td>
</tr>
<tr>
<td>Weight</td>
<td>2 t</td>
</tr>
<tr>
<td>Diameter</td>
<td>1.2 m</td>
</tr>
<tr>
<td>Height</td>
<td>2 m</td>
</tr>
<tr>
<td>Load cycles</td>
<td>up to 100%</td>
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<tr>
<td>Cycle life</td>
<td>very high</td>
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</tbody>
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Technologies

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