Managing DC Energy

Dynamic Storage-Manager

KSM
Dynamic Storage-Manager KSM

The KSM 4.0 is the heart of a system which provides you with numerous advantages. Hereby it basically helps you to earn more money. Either by directly saving electrical energy or by increasing the productivity of your machine or system. The KSM 4.0, in many cases, can lead to an acceleration of the process and with it an increase in the amount of produced parts per time unit. Or it intercepts voltage dips which usually cause standstills and/or a loss of data. It can reduce peak loads and keep up the energy supply to the system in case of planned and unplanned mains interruptions: for seconds, minutes or even longer. Because it manages different storage media, which are can be chosen based on the applications requirements. And all of that maintenance-free.

The Friend of DC Links

In the center of the system is the Dynamic Storage-Manager KSM 4.0. It is the connection between the electric storage units and the DC-grid, which in Drive Controllers are called DC-Links. The KSM 4.0 is always being connected directly to the DC-Link of the drive controller. No matter which task the DC-Link will bring, the Dynamic Storage-Manager will fulfill it. And it will do it fast. So fast, that humans and machines wouldn’t even notice if the KSM 4.0 would not communicate with the drive controller or the higher-level control.

It charges with regen energy from the system and supplies it once needed or once being told to do so. Just so that it is best for the application. Or for the mains, where unwanted effects of high power loads can be leveled and avoided. Consistently used, this can save a lot of costs.

Hereby it supports the drives electronics, especially in short cycles, in a way that the service life of the drives electronics is drastically extended and unplanned standstills are minimized. This support can even have the effect that the system can be accelerated if the mechanical parts of the system are made for faster cycles. Faster machines, higher quantities, higher productivity and more profit!

Especially when being used with batteries, the KSM 4.0 shows its strength as an absolutely uninterruptable power supply for DC-grids, and with it for drive controllers and thus electric drives. Voltage dips as well as planned or unplanned mains interruptions lose their threat. And if a 24 voltage Emergency Energy Supply NEV is added to the system, even the device, that are in need of a 24 voltage grid, such as controls, industry-PCs, sensors, brakes and many more stay active.

Technical Data KSM 4.0

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuous voltage DC-Links</td>
<td>540 VDC</td>
</tr>
<tr>
<td>Peak current max. (6s)</td>
<td>60 A</td>
</tr>
<tr>
<td>Continuous current max.</td>
<td>20 A</td>
</tr>
<tr>
<td>Storage voltage level max.</td>
<td>260 VDC (230 VAC connected voltage level of the drive controller)</td>
</tr>
<tr>
<td>Power up to</td>
<td>15,6 kW, parallel connection of devices possible</td>
</tr>
<tr>
<td>Measurements H x W x D</td>
<td>340 x 102 x 187 mm</td>
</tr>
<tr>
<td>Digital I/Os</td>
<td>+</td>
</tr>
<tr>
<td>Bus connection</td>
<td>RS422/RS485</td>
</tr>
<tr>
<td>Weight approx.</td>
<td>6.0 kg</td>
</tr>
<tr>
<td>Protection class</td>
<td>IP 20</td>
</tr>
</tbody>
</table>

Energy and Cycles per KSM 4.0:

<table>
<thead>
<tr>
<th>Storage</th>
<th>Energy</th>
<th>Number of cycles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elcos</td>
<td>1.3 up to 32 kJ</td>
<td>&gt; 100 mio.</td>
</tr>
<tr>
<td>Supercaps</td>
<td>40 up to 900 kJ</td>
<td>&gt; 1 mio.</td>
</tr>
<tr>
<td>Batteries</td>
<td>3,000 up to 18,700 kJ</td>
<td>&gt; 1,000</td>
</tr>
</tbody>
</table>

Surveillance Functions

> Digital I/Os for storage surveillance and contactor control
> Bus communication for further analysis and control possibilities
The System
KSM

The requirements of the drive controllers DC-Link, thus of the drive system, are crucial for the composition of the KSM 4.0 system. The required power, amount of energy and cycles, which are given by the application, are decisive.

Important: None of the used storage media requires maintenance. The entire system works maintenance-free.

Applications

1. Managing Regen Energy
Short cycles, many repetitions: The classic case of a buffer functionality, which the KSM 4.0 perfectly manages. It leads to a calm voltage level in the DC-Link.

2. Reducing peak loads
Short power peaks stress the mains. The KSM 4.0 provides the necessary energy on command and smoothes the grid.

3. Managing failures of the mains
In case of a failure of the mains the KSM 4.0 keeps the system running – for the whole time the amount of energy in its storage was designed. And not only one or multiple drives, but also for the peripheral devices on the 24 VDC-grid via the NEV.

4. Enabling grid-independent operation
If the power from the mains is only available every now and then, the KSM 4.0 delivers the required energy with its connected storages. The same applies here: Not only for one or multiple drives but also for the peripheral devices via the NEV.
Managing DC Energy

Energy management systems and safe brake resistors for electric drive technology

We offer:

- **Tested product quality**
- **Certified processes**
  - we undergo regular inspections by third parties
- **Individual application support**
  - owing to our modular system we can offer more than 60,000 solutions
- **Machine-specific implementation**
  - we match our products with your machines
- **High reaction rate**
  - we provide you with a suitable offer in the shortest possible time
- **Short delivery times**
  - all components are in stock
- **On-time deliveries every time**
  - we deliver on schedule in optimal lot sizes
- **Reliable partner**
  - we strive for long-term business relationships
- **Direct customer relationships**

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We look forward to hearing from you!

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