

Power and Energy Solutions

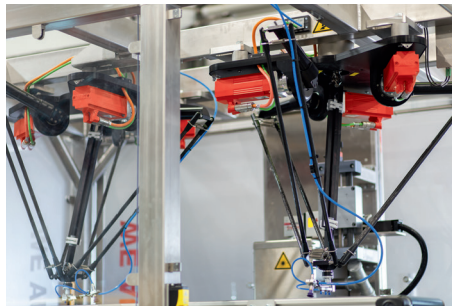


Potential uses / typical applications



Plant automation

- Storage/retrieval systems
- Vertical drives
- Gantry cranes



Machine automation

- Injection molding machines
- Handling machines
- Highly dynamic robots



Mobile applications

- "Short-distance" shuttles (SRS)
- Floor conveyor vehicles
- Small electrically powered vehicles

The advantages at a glance



Reduction of the connected load

The energy storage unit provides up to 90% of the peak loads. This reduces the connected load by up to a factor of 10 – resulting in smaller cable cross sections, contactors, and transformers.



Maximum availability

In the event of a power failure, the residual energy in the energy storage unit ensures that the system can be shut down in a controlled manner, the current movement cycle can be brought to an end, or the power failure can be bridged completely.



Cost reduction

Thanks to the bridging of power failures, expensive repairs or cleaning operations for the system can be avoided. Smaller power connection components and energy savings of 20 to 30% also reduce costs.

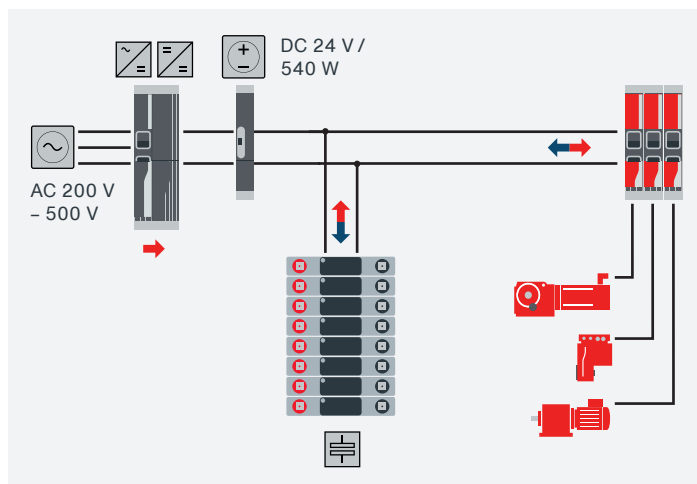


High efficiency

Local energy management means the energy remains in the system. The continuous, low supply system consumption reduces the EMC load.

Overview of the technology

The "PowerMode" topology is designed for direct connection of an energy storage unit in the DC link. This is possible thanks to the MDP92 power supply module, which enables precise control of the DC link voltage. During motor operation, the energy storage unit delivers almost any peak load the inverters need. In regenerative operation, the DC link voltage increases and the energy storage unit is charged. The stored energy is then available for the next movement cycle. Electrolytic capacitors or supercapacitors with energy contents of 4 kW to 6600 kW are used as energy storage units.



General technical features

- Connection to 3 × AC 200 – 500 V with MDP92 power supply module
- Connection to DC 48 – 800 V with MDE90 DC/DC converter module
- Precise control of the DC link or storage voltage from DC 0 – 800 V
- 10 – 25 kW rated power (MDP92), 20 – 75 A nominal current (MDE90), overload capacity of up to 160% for 60 s
- Parallel connection of up to four units possible

Energy storage units using electrolytic capacitor and supercapacitor technology

- MDC90 capacitor modules with electrolytic capacitors for particularly dynamic applications with extremely high cycle rates, energy content 4 – 16 kW
- EKV energy modules with supercapacitors for decentralized, modular installation in IP54 protective housing, energy content 8 – 1100 kW
- ESS energy storage system with supercapacitors in control cabinet housing for applications with high power and energy requirements, energy content 1200 – 6600 kW

MOVIKIT® Power and Energy Solutions software modules

- MOVIKIT® software modules enable particularly fast and smooth startup. The interaction with the energy storage unit and its monitoring are completely automatic.

