KCM Energy Storage Device

Sustainable drive design and protection of man and machine at failures are important design goals at Kollmorgen. The KCM energy storage modules achieve great effects with little effort: KCM-S reduces operating costs and protects the environment through the recovery of braking energy, especially in applications with many short start-stop cycles. KCM-P bridges short power failures and eliminates machine downtime and costly restarting or ensures that the machine is brought to a defined state after a power failure. Connection and commissioning are simple - simply connect to the DC-link, no adjustment is needed. Save money and enjoy protection immediately!

Benefits	Features
• Reduces operating costs	• Energy savings through intelligent energy feedback • No machine stop at short power failures
• Higher safety	• Controlled braking after power failures • Protection of man and machine through controlled standstill
• Easy commisioning	• Easy connection to the DC link with two cables • No adjustment needed, ready for use immediately • No circuit feedback • Nearly unlimited capacity thanks to expansion modules

KCM-S Dynamic Storage Device

Using Braking Energy Efficiently

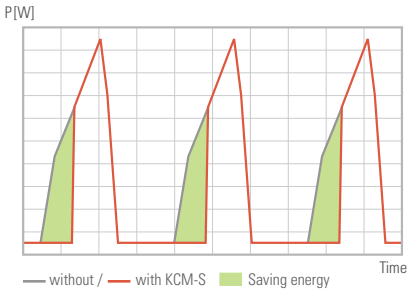
Costs are lowered and resources are spared - this isn't a contradiction. With Kollmorgen's dynamic storage module KCM-S, you use the released brake energy and save your budget and the environment. Installation is extremely simple: the KCM-S is simply connected parallel to the intermediate circuit. Ready. No need for alignment or control elements. For higher outputs, the expansion modules KCM-E are available. Your drive is always green with KCM-S.

Saving Energy with Intelligent Energy Feedback

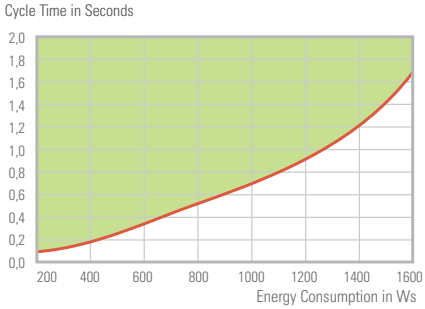
- High level of energy savings, particularly in applications with short cycle times
- Easy connection to the DC-link
- Easy commissioning - ready for use right away, no need for alignment or control elements
- Nearly unlimited power output range thanks to the expansion modules

Higher Efficiency and Lower Operational Costs

The active dynamic braking energy storage device KCM-S will only be energized and charged when the brake is applied on the drive. As there is no connection to the mains supply on the input side, circuit feedback is ruled out.
KCM-S automatically calculates the value of the use-voltage UKCM. Energy that would lead to an increase in voltage higher than this threshold value will be stored in the KCM-S buffer module. If the voltage in the intermediate circuit falls below the threshold value, the KCM-S pumps energy back which would be pulled from the network without KCM-S. At this point energy is saved. If the level of energy falls below the dynamic set charging voltage, KCM-S switches itself off and waits for the next instance of braking, when the capacitor is loaded once again. The shorter the cycle time, the more efficiently KCM-S works.



Saving Energy with KCM-S



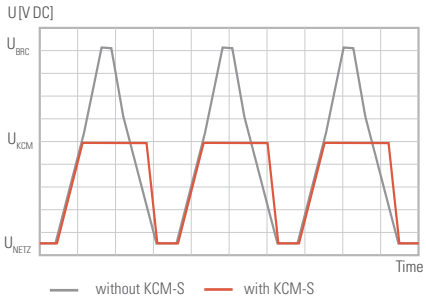
Energy Hub-/Cycle Time Diagram
at 40 °C ambient temperature

For High Energy Requirements: Expansion Modules KCM-E

The expansion module KCM-E increases the capacity by 2000 Ws or 4000 Ws in each case. Several expansion modules can easily be connected to each other via the reverse polarity protected connection cable provided.

KCM-S is simply connected to the DC-link. An internal PTC brake resistor safely absorbs energy peaks.

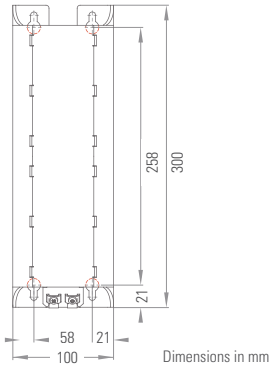
In order to increase the total capacity, the expansion modules KCM-E are simply connected in parallel. A discharge resistor is integrated.



Voltage Curve in the DC-Link

Performance Data

	KCM-S	KCM-E20	KMC-E40
Electrical storage capacity	1600 Ws	2000 Ws	4000 Ws
Continuous voltage of the DC-link circuit	max. 850 V DC		
Peak voltage of the DC-link circuit	max. 950 V DC (30 s in 6 minutes)		
Maximum output	18 kW	18 kW	18 kW
Protection type	IP20		
Dimensions H x W x D	300 x 100 x 201 (mm)		
Weight	6,9 kg	4,1 kg	6,2 kg



Dimensions in mm

KCM-P Static Energy Storage Device

The Power Insurance for Your Machine

A stable power supply is the basis for the safe operation of machines, for high productivity and first-class quality. The Kollmorgen static energy storage device KCM-P bridges temporary power failures or provides the drive with energy for controlled run down in the defined operating stop. Minimal downtime and protection of the machine and the workpiece from damage: KCM-P is the back-up energy for single and multi-axis drives.

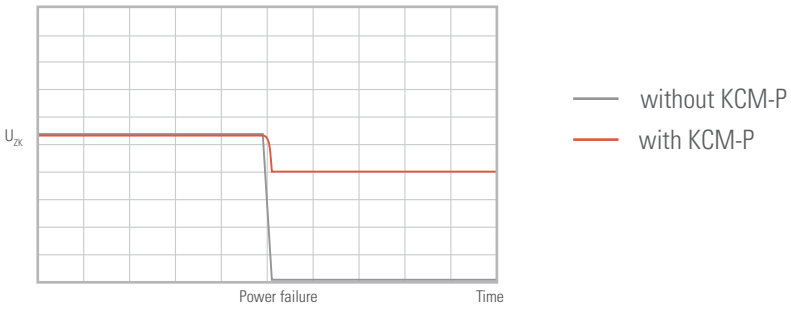
KCM-P: The static energy store reduces downtimes and increases productivity

- Secures productivity through uninterrupted operation during short-term power failures
- The machine restarts quickly: KCM-P provides the drive with energy after a power failure until the machine has reached a defined state after stop.
- Easy system integration: A power failure signal is emitted on the digital interface for evaluation by the machine control
- Easy connection to the DC-link with two cables.
- Easy commissioning - ready for use right away, no need for alignment or control elements
- The smooth loading routine doesn't strain the converter and doesn't generate any circuit feedback
- Nearly unlimited power output range due to cascadable expansion modules

The Energy Reserve Ensures Safe Operation

The static energy storage device KCM-P expands the capacity of the converter in the DC-link. It holds a certain amount of energy that keeps the voltage on the DClink to an operational level for a defined amount of time during power failures.
After switching on the converter the energy store is charged in a controlled manner by a loading routine and is ready for use after around 8 seconds. The smooth loading routine does not strain the converter's charging connection and does not generate any negative circuit feedback.
During power failures, the digital interface emits a signal for evaluation and introducing more measures by the machine control.

KCM-P is simply connected in parallel to the DC-link of the converter. During power failures, a signal is emitted on the digital interface for evaluation by the machine control.



Voltage on the DC-Link During Power Failure

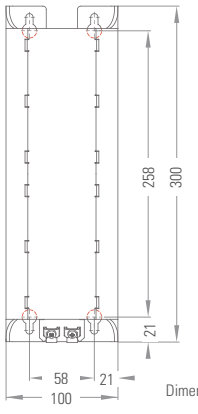
The energy reserves can increase almost unlimitedly with the expansion modules KCM-E. A discharge resistor is integrated into every module. The connection is made to connectors on the top side of the module using the cable protected against polarity reversal that is supplied.

For High Energy Requirements: Expansion Modules KCM-E

The expansion module KCM-E is connected parallel to KCM-P, and increases the capacity by 2000 Ws or 4000 Ws in each case. Several expansion modules can easily be connected to each other via the reverse polarity protected connection cable provided.

Performance Data

	KCM-P	KCM-E20	KMC-E40
Electrical storage capacity	2000 Ws	2000 Ws	4000 s
Continuous voltage of the DC-link circuit	max. 850 V DC		
Peak voltage of the DC-link circuit	max. 950 V DC (30 s in 6 minutes)		
Inception voltage from the factory	470 V DC		
Maximum output	18 kW	18 kW	18 kW
Protection type	IP20		
Dimensions H x W x D	300 x 100 x 201 (mm)		
Weight	6,9 kg	4,1 kg	6,2 kg



Dimensions in mm