

Managing regen energy



Dynamic Energy Supply **DEV 2.0**

Two factors are of particular importance to companies with regard to electric energy: a secure supply and low prices. The phasing out of atomic energy calls both these factors into question. When the big picture is broken down to a single electric drive or combined drives, power interruptions currently present a special challenge even to developed countries. The Dynamic Energy Supply for drives and servo controllers can at least be used to bypass and minimize the effects of short-term power interruptions.

Active supply module for DC links

- > for single axis and multi axes systems
- > no buttons, display indicators, other controls
 > provides support during power
- failures or interruptions
- > with a digital interface



Short-term UPS for drives

The Dynamic Energy Supply DEV acts as a short-term uninterruptible power supply to drive and servo controllers. The active capacity expansion for the DC link of the inverters stores an amount of energy that is defined according to the technical design. In case of a power failure, this is used to maintain the voltage level of the DC link at a level to bypass the interruption without disturbance and/or to bring the machine to a defined stop. The objective in each case is that the drive and all of the systems powered by it are either not affected by the power failure or that they are placed into a defined state, from where it may be restarted without effort.

Caring for the power grid and the drives

The energy storage is charged when the inverter is turned on by the charging routine that is designed for delicate operations to avoid excessive loads on the charging circuit of the inverter and to reduce power quality disturbances as much as possible. The DEV is fully operational after approx. eight seconds. Then it is ready to supply power to the DC link at any time when its voltage drops below 470 VDC.

Digital interface included

The Dynamic Energy Supply DEV is equipped with a digital interface with a 24 volt input to monitor its operation. The controller of the machine evaluates the signal and it initiates any predetermined procedures.

Technical specifications DEV 2.0

Parameter	Value	
Usable energy	approx. 2.000 Ws	
Continuous voltage DC link	850 VDC max.	
Momentary peak voltage DC link	950 VDC max. (30 s in 6 min.)	
Working voltage (ex-factory)	470 VDC (others available)	
Output power	18 kW max.	
Digital interface	24 VDC (to monitor operations)	
Built-in PTC discharge resistor		
Dimensions H x W x D	300 x 100 x 201 mm	
Weight approx.	6,9 kg	
Protection class	IP 20	

Voltage curve of the DC link

— without DEV 2.0





Dimensions and mounting holes (mm)







Simple connections I (bottom)

With only two cables, the DEV is extremely easy to connect. And it works.

Terminal 1: negative terminal of the DC link

Terminal 2: discharge resistor

Terminal 3: positive terminal of the DC link



Simple connections II (top)

- 1. Polarity protected interface for the connection of expansion modules
- 2. Digital interface to monitor proper operations
- 3. Safety relevant LED: flashes while the storage unit is charged



The small PTC braking resistor installed in the DEV is used as discharge resistor

Applications of the dynamic energy "insurance" DEV

Tools and parts are protected; valves are closed in time to prevent damage. Machines are stopped deliberately; robots are moved to their home position from where they can start without further effort.

In brief: The Dynamic Energy Supply DEV protects against additional expenses that may result from power failures. It acts like an insurance policy.



Expansion module EM 2.0

In some circumstances, the storage of the Dynamic Energy Supply DEV does not have sufficient capacity. This is when expansion modules are being used. They are simply connected with the DEV by means of the supplied cable with polarity protected plugs. Nothing else.

Before connecting the unit, the storage is safely discharged via the discharge resistor installed in the expansion modules. The number of connected expansion modules, i.e. the amount of stored energy is tailored to match the requirements of the application.



Storage expansion for the DEV

- > increasing the stored energy
 x-times
- > simple connection using a plug
- > no configuration or
- commissioning required
- > discharge resistor on board

Dimensions and mounting holes (mm)





Parameter	EM 2.0A20	EM 2.0A2020
Usable storage capacity approx.	2.000 Ws	4.000 Ws
Built-in PTC discharge resistor	+	+
Dimensions: H x W x D mm	300 x 100 x 201	300 x 100 x 201
Weight approx.	4,1 kg	6,2 kg
Protection class	IP 20	IP 20



Simple connections I (bottom) Ground terminals



Simple connections II (top)

- 1. Polarity protected interface for the connection of the DEV or additional expansion modules
- 2. Center polarity protected interface: discharge resistor
- 3. Safety relevant LED: flashes while the storage unit is charged

We look forward to hearing from you! www.brakeenergy.com



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