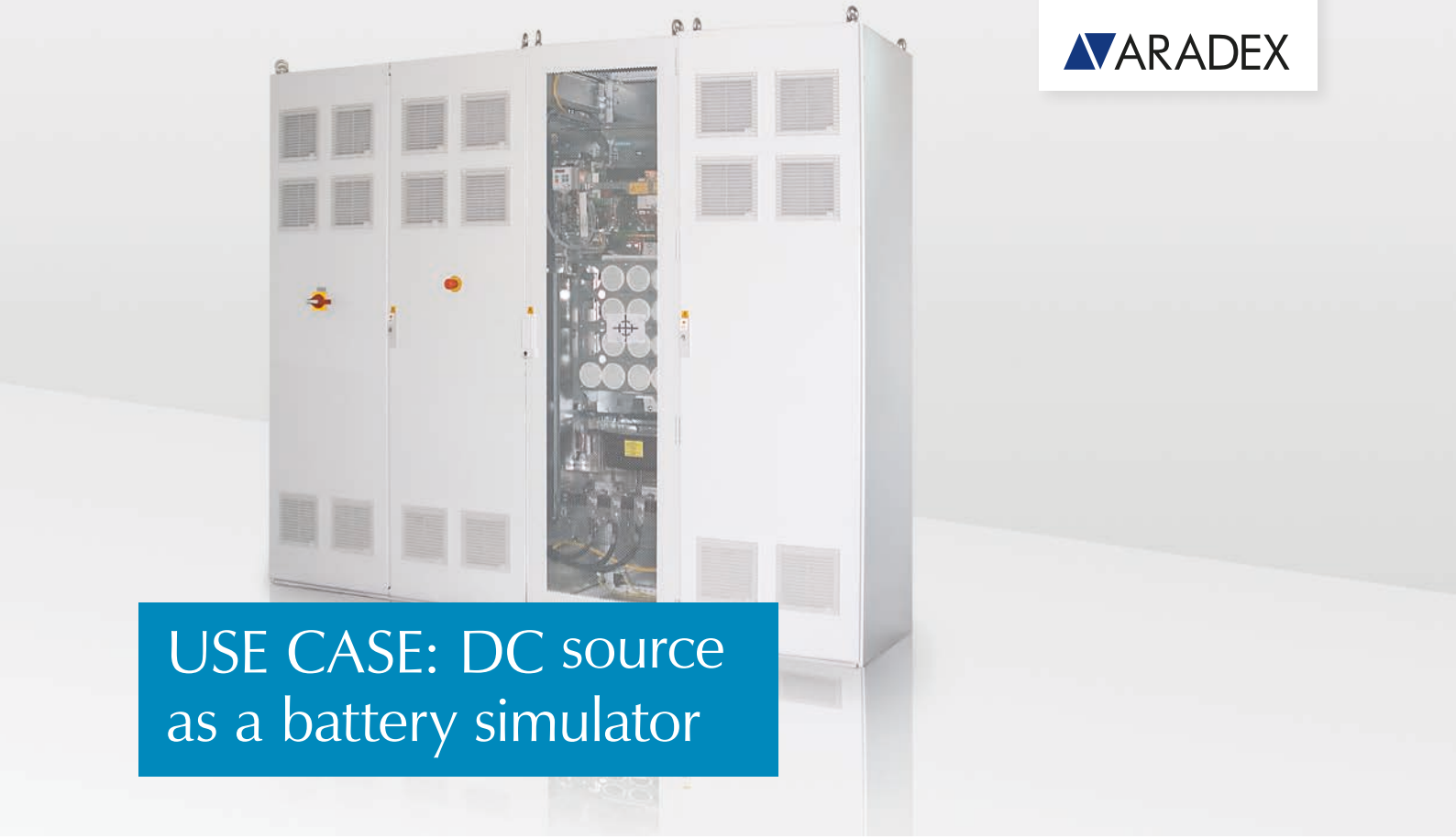


USE CASE: DC source as a battery simulator

High-performance DC sources from ARADEX reproducibly simulate high-voltage batteries, supercaps and fuel cells as well as the DC voltage circuit of hybrid drives.

Application areas

+ The DC source is used as a battery simulator in test benches for the drive components of hybrid and electric vehicles.
+ Hardware-in-the-loop (HIL) environment for tests of individual components or even all components in an electric drive train, e.g. electric motors, power electronics, energy stores, DC/DC converters, ...
+ The highly dynamic DC source makes it possible to systematically test short voltage dips or voltage overshoots in the vehicle on-board system.
+ Electric motors and hybrid drives are tested and validated by simulating different battery configurations.
+ As a laboratory power supply for use in development laboratories for electric components.

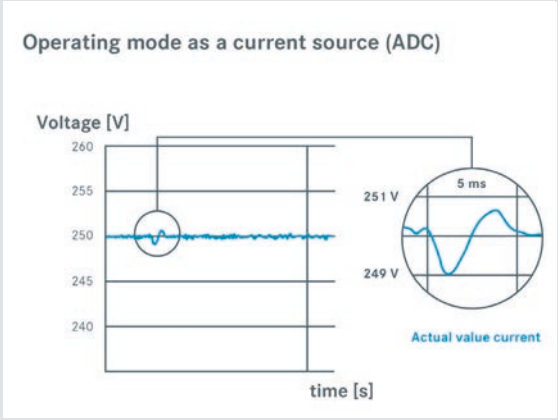
Function modes

The battery simulator can be operated as a current source as well as a voltage source:

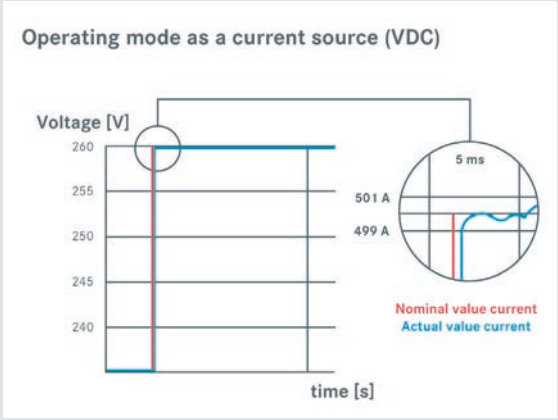
+ The DC source is used current-controlled and voltage-limited to charge batteries, for example.
+ When voltage-controlled and current-limited, the device can simulate a battery, a supercap or a DC intermediate circuit in a hybrid drive, for example.
+ In addition to the two above-mentioned modes, a power limitation is also possible

Advantages

+ Voltages from 10 V to 1050 V and currents of +/- 900 A are possible.
+ Highly dynamic and precise control of the voltage. This prevents bothersome interferences in the on-board network of a vehicle when quickly changing loads occur, thereby allowing realistic testing of the electrical power users and generators.
+ As a result of the parallel connection of the used VECTODRIVE inverters, the performance range can be individually adapted to the application. At the same time, the current is symmetrized throughout all used VECTODRIVE.
+ Regenerative due to 2-quadrant operation, which minimizes power consumption.
+ Optional: Electrical isolation between the mains side and the DC side ensures safe and effective operation.



Course of the actual current and the nominal current in the event of a sudden load variation from 0 to 500 A DC.



The task is to continuously keep the voltage at 250 V DC. The load with a very low-inductance structure and electromechanical switching contacts (contactor) is activated suddenly

Performance data 200 kVA DC source	
max. output power	200 kVA
max. output current	600 A DC
max. output voltage	690 V DC

Performance data 50 kVA DC source	
max. output power	50 kVA
max. output current	100 A DC
max. output voltage	550 V DC

Interested? Give us a call:

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