HIGH PERFORMANCE FLYWHEEL ENERGY STORAGE

ADAPTIVE
BALANCING POWER

Boosted Energy

The extra power for your electrification, everywhere

GREEN TECH
MADE IN
GERMANY

www.adaptive-balancing.de

Innovation for maximum efficiency

Our high-performance flywheels store
and release electric energy 6-fold accumulated

Optimized for efficiency

- High-tech hollow cylinder
- Carbon fiber winding
- Ultra-robust construction
- Magnetic bearings in high vacuum

High-Performance

- 18.000 revolutions per minute
- > 92% round-trip efficiency
- 350 kW discharge power per unit
- 25 yrs lifespan / > 1 Mio charging cycles
- International patent protection

Rapid Integration

- Modular and scalable: from low-voltage stand-alone up to grid scale on higher grid levels
- Fully assembled system for fast installation
- Smart grid enablement of renewable energies, optional with integrated energy management
- Ultra-fast charging in low voltage grids without grid extension, also integrable with 3rd-party HPC-Stations

Scalable buffered energy with
350 kW total power – everywhere.

ADAPTIVE Amperage flywheel energy storage delivers the extra power you need:

- For accelerated charging infrastructure deployment
- To smooth out grid fluctuations
- To efficiently use renewable energy








For decarbonization and
on-demand power, anywhere.

Buffer-stored energy:
An innovation with many advantages

Sustainable
No battery chemicals:
A plus for sustainability

Efficient and CO2-reduced
Smart energy management
including renewables

Faster and cost-efficient
No network expansion,
no transformer needed

Smart Energy Management
Demand-driven power
boosting up to 350 kW

For every need
Modular, scalable and
for hybrid systems storage

Fully integrable
Works with any dispenser
(e.g. Hypercharger)
or as All-in-One solution

Practically everywhere
Simple grid connection from
40 kW/ 63 Ampere onwards

Flexible and fast
Space-saving, also for
garages and underground

Rapid and reliable
EU supply chains and
proven rapid-installation

Sustainable high performance even with insufficient power grid: An efficient contribution to decarbonization.

With us your charging infrastructure projects will be complete:

We compensate for an insufficient network with kinetic high-performance buffer storage. Because the growth of electromobility requires an intelligent and sustainable charging infrastructure.

- Ultra-fast charging with up to 350 kW peak
- Smart energy management and boosting
- Fast and flexible installation
- Sustainable system, can be integrated with renewable energies
- High-performance flywheel technology Made-in-Germany

Ultra-fast charging everywhere: Enabling new and upgrading existing charging infrastructure

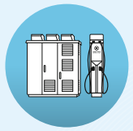
Up to 350 kW power – even where the power grid is otherwise insufficient. Our flywheel energy storage units are sustainable, durable and contain no battery chemicals. We reliably manufacture in Germany, have established regional supply chains and do not compete with battery procurement.

GreenTech Made in Germany.

Our Products

ADAPTIVE Amperage DC for grid scale energy storage systems, DC rail systems and local DC grids.

ADAPTIVE Amperage AC for power quality, battery protection and power boosting of third party ultra-fast charging stations.



ADAPTIVE Boosted Charger for public and fleet ultra-fast charging and local renewable energy generation charging stations.

ADAPTIVE Pantograph Booster for fully automated high power charging of public transport busses during regular stops.

Four powerful arguments

0% Battery chemicals
With our system, fire and groundwater risks can be neglected. In other words: faster approvals and more safety.

CO_2-footprint
Almost all of our suppliers are based in Germany and Europe, which means less CO_2 is being released during transportation.

25 years lifetime
Our flywheel energy storage is built to last for 25 years or more than 1 million charging cycles, with low maintenance.

100% recyclable
At the end of its service life, the ADAPTIVE high-performance storage system can be recycled and returned to the circular economy.

Ultra-fast charging everywhere. Even where networks are not sufficient.

Public spaces and commercial fleets often need High Power Charging with more than 150 kW, perfectly integrated into daily routines and thight schedules.

GreenTEC Campus, Northern Germany

- Integrated in local Smart Grid, including Renewables
- 240 kW ultra-fast charging
- 2 charging points
- Benefits: Offering ultra-fast charging on touristic route without high-voltage connection; efficient use of local wind energy

Bensheim, Central Germany

- First buffered-flywheel charging in German public transport
- 240 kW ultra-fast charging
- Roof-mounted pantograph
- Benefits: Cost savings through smaller-battery busses and efficiency gains through on-route processes

Heavy-duty transportation

- Ultra-fast hub charging and Megawatt charging
- Process-oriented charging
- Avoiding costly downtimes

Stable power grids

- Resilient grids with increasing share of renewable energies
- Preventing blackouts
- Allowing for black start capabilities
- Micorgrid operation of individual network sections
- Efficient operation of DC systems for industry and rail

We are here to make it happen.

ADAPTIVE Balancing Power was founded in 2016 by engineers from Technical University of Darmstadt, Germany. The company's mission is to provide sustainable energy storage solutions for a safe and CO_2-reduced future for everyone.

ADAPTIVE develops and builds high-performance energy storage systems and ultra-fast charging solutions Made-in-Germany. The company is mainly using local and regional supply chains, has been awarded multiple times and its technology is protected by international patents.

ADAPTIVE
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