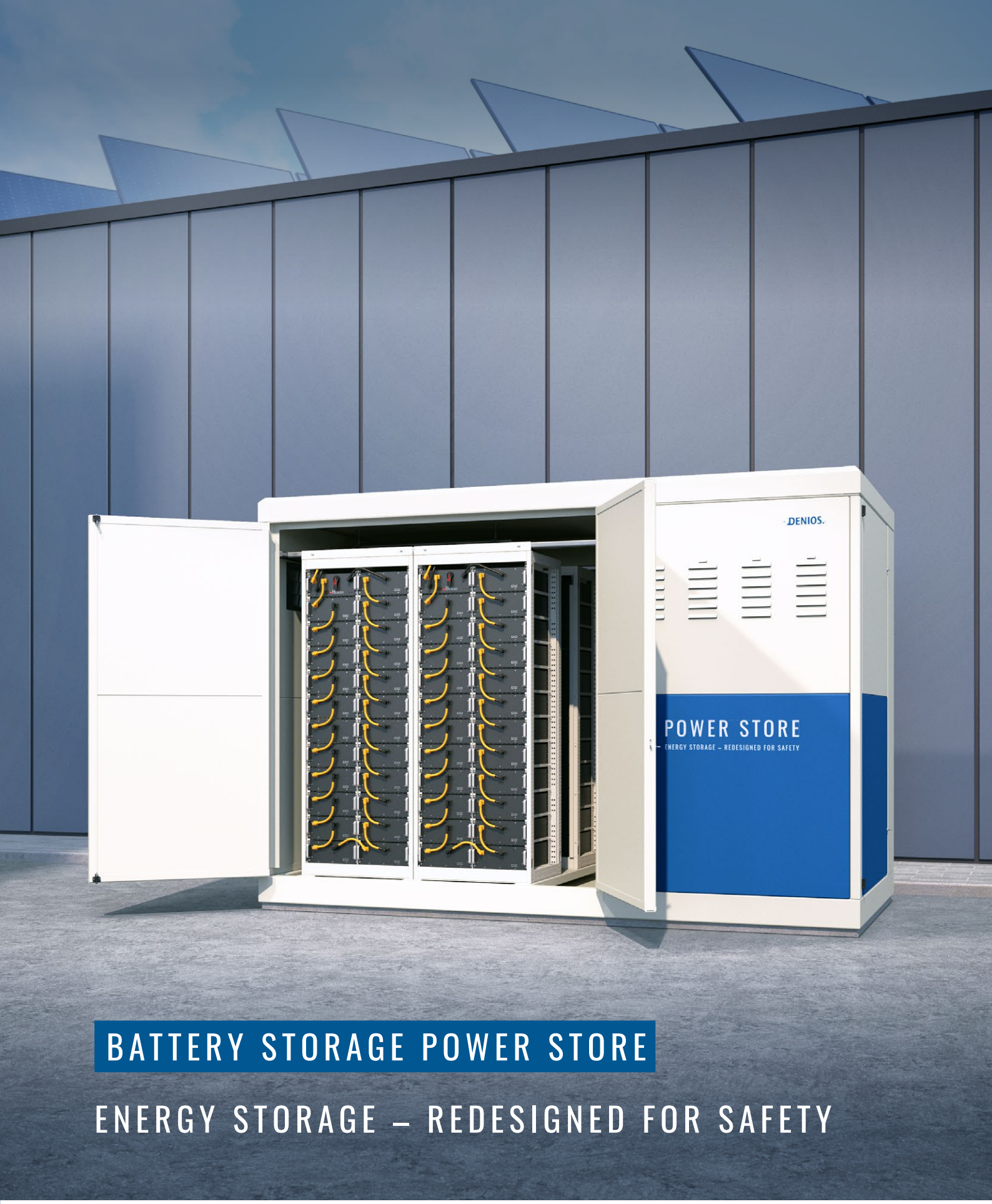

BATTERY STORAGE POWER STORE

ENERGY STORAGE – REDESIGNED FOR SAFETY

THE PERFECT BATTERY STORAGE SYSTEM FOR
HIGH SAFETY REQUIREMENTS IN LIMITED SPACE

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DENIOS
ENVIRONMENTAL PROTECTION
& WORK SAFETY

POWER STORE

THE OPTIMAL SOLUTION FOR YOUR REQUIREMENTS AT A GLANCE

The POWER STORE has been specifically designed for modern battery storage technology and demanding safety requirements. With comprehensive safety features, it ensures reliable protection in the event of thermal runaway. With state-of-the-art lithium iron phosphate (LFP) technology, it offers a long lifespan. Its compact design makes it ideal for limited space conditions.

SAFETY FEATURES

THE MULTI-LEVEL PROTECTION CONCEPT OF THE SAFETY CONTAINER

The container's safety features follow a multi-level protection concept that effectively minimises various hazards.

1 **Seperate areas for battery and technical room**
Thanks to spatial separation, the battery storage remains optimally protected - from fires in the periphery and the associated risk of thermal runaway, while increasing air conditioning efficiency.

2 **Fire-resistant consturction of the battery room**
The battery room is insulated with Sepcial fire protection panels.

3 **Temperature control**
An integrated air conditioning system always ensures the optimal operating temperature of the battery storage system..

4 **Detection technology**
Modern sensors such as gas detectors and fire alarms enable timely alerting.

5 **Spill pallet**
The spill pallet, manufactured according to StaWaR, prevents electrolytes or contaminated extinguishing water from entering the environment.

6 **Technical ventilation**
In the event of battery outgassing, the technical ventilation activates automatically to prevent a dangerous gas concentration inside the container..

7 **Pressure relief**
In the event of a gas leak or explosion in the battery storage system, the pressure relief reduces the overpressure in a controlled manner. This keeps the doors securely closed and emergency services protected.

8 **Semi-stationary extinguishing system with spill pallet drainage**
The fire department can use the external connection to the fire suppression system without having to open the doors - a significant safety advantage.

SAFE & EFFICIENT ENERGY STORAGE – THE PERFECT COMBINATION

Our battery storage system combines state-of-the-art battery technology, a high-performance inverter, and a specially designed safety container into a well-thought-out solution. This combination ensures maximum safety, high efficiency, and reliable energy storage - ideal for a wide range of applications. Below you will find an overview of the technical specifications.

TECHNICAL SPECIFICATION

The technical specifications include the container, battery technology and inverter.

GENERAL

TECHNICAL DATA	POWER STORE 4	POWER STORE 8
Operating mode	Grid-connected operation, grid-forming operation	
Communication standards	LAN-Ethernet, RJ45, RS485 (Modbus RTU)	
Dimensions (LxWxH) (m)	4,10 x 2,00 x 2,80	6,60 x 2,00 x 2,80
Weight (kg)	7.600	13.700
Colour	RAL 9002 (grey-white)	
Temperature control	air cooled	
Safety features	Detection technology, semi-stationary extinguishing system, pressure relief, technical ventilation, spill pallet, fire-rated battery room	
Warranty	2 years product warranty - safety container 5 years product warranty - battery storage technology 10 years performance warranty	

BATTERY

TECHNICAL DATA	POWER STORE 4	POWER STORE 8
Nominal capacity	109 - 436 kWh	545 - 872 kWh
Useable capacity (90% DoD)	98 - 392 kWh	490 - 785 kWh
Rated voltage	736 V_{dc}	
Max. AC current	148 A	
Max. C-Rate	1C	
Cell type	Li-Ion (LFP) Pouch	
Expected cycles @90% DoD | 65% SoH | 1C/1C	7.300	
Storing temperature	-20 °C to +60 °C	
Operating temperature	+10 °C to +40 °C	
Humidity	5 % bis 95 %, non condensing	
Max. installation height	2.000 m NN	
Weight battery module	48 kg	
Certificates / Norms	CE / UN 38.3 / IEC 62619 / IEC 63056 / UL 1973 / UL 9540A / VDE 2510-50 / EN 61000-6-2 / EN 61000-6-4	

INVERTER

TECHNICAL DATA		POWER STORE 4	POWER STORE 8
Rated power		88 – 352 kW	
Max. AC current		128 A	
Max. DC current		155 A	
AC current range		180 V to 528 V	
DC current range		585 V to 1.000 V	
Grid type		3P/PE , TN-C, TN-C-S	
Rated current		380 / 400 / 415 V_{ac}	
Frequency		50 Hz	
AC power factor / range		1 / 0,3i … 0,3c	
Max. efficiency		98,6 %	
Operating temperature		-25 °C bis +60 °C*	
Weight		69 kg	
Topology		transformerless	
Noise emission		< 70 dB(A)	
Certificates / Norms	EU regulations	2014/30/EU / 2014/35/EU / 2011/65/EU	
	Equipment	IEC 62109-1 / IEC 62109-2 / IEC 62116 / IEC 61727 / IEC 62477-1 / IEC 61439-1 / IEC 61439-2	
	EMC	EN 61000-6-2 / EN 61000-6-4 / EN 61000-3-12 / EN 61000-3-11	
	Environment	IEC 60068-2-1 / -2-2 / -2-30 / -2-78 / -2-14 / -2-6 / -2-27 / -2-75	
	Grid codes	DIN VDE V 0126-1-1 / VDE AR-N 4105:2018 / VDE AR-N 4110:2018 / TOR Erzeuger Typ A/B / UTE C15-712-1 VFR 2019 / C10/11 / G99 / EN 50549-1/-2	

*Derating from +17,5 °C and +42,5 °C

PROFITABILITY ANALYSIS

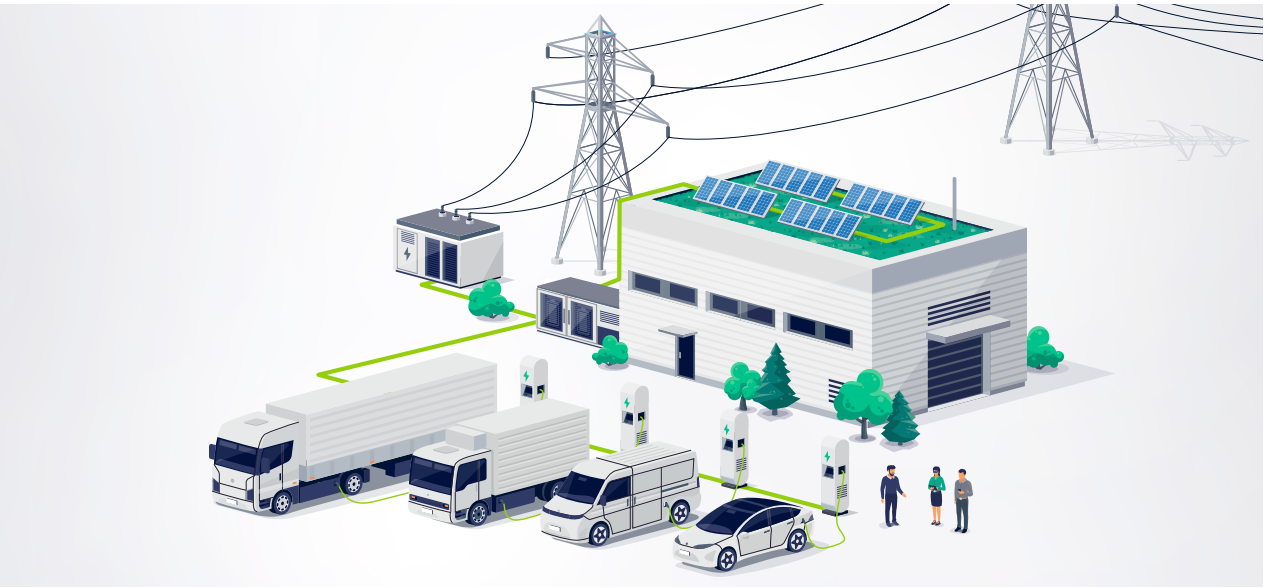
We identify the optimum battery storage size for your company - including a detailed profitability analysis

- You will receive a checklist from us with the necessary data
- We analyze your consumption, generation, and procurement profile – including a simulation option for PV systems that have not yet been installed
- You will receive a comprehensive report with the most cost-effective storage solution and a profitability forecast

APPLICATIONS OF BATTERY STORAGE

INTELLIGENT ENERGY STORAGE FOR MAXIMUM EFFICIENCY

The POWER STORE offers a wide range of options for efficient electricity usage. Whether for Peak Shaving, Self-consumption Optimisation, or intelligent control of charging stations - our battery storage system can be perfectly customised to your needs and contributes sustainably to reducing your energy costs. Discover the wide range of possible applications.



SELF-CONSUMPTION OPTIMISATION

The battery storage system stores surplus energy (e.g. from a PV system) and provides it when needed. This maximises self-consumption and minimises reliance on the grid.

CHARGING STATION CONTROL

Various charging station types are already integrated. The charging power is dynamically adjusted to the available battery capacity and grid load in order to optimise the use of resources and reduce peak loads.

MULTI-USE

The battery storage capacity is flexibly used for Self-consumption Optimisation and Peak Shaving. This is achieved either through time-based allocation or targeted capacity assignment.

SETPOINT SPECIFICATION & EXTERNAL CONTROL

Additional controls can be integrated via a Modbus interface. Applications such as Energy Trading can be implemented in collaboration with partner EMS solutions.

TIME-OF-USE

By taking variable energy tariffs into account, the battery storage system can be controlled to store energy during low-cost periods and avoid expensive grid usage.

PEAK SHAVING

By strategically charging and discharging energy, costly peak loads can be avoided. This reduces grid fees and lowers operating costs.

ENERGY STORAGE – REDESIGNED FOR SAFETY

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Brochure **'Safely store, charge and test of lithium batteries'**

- the safe handling of lithium batteries
- fire protection containers from DENIOS
- how to safely store and test lithium batteries

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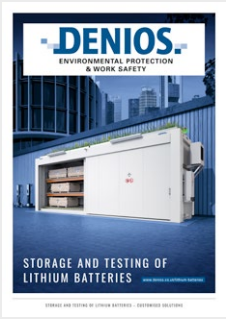

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ACADEMY

The DENIOS Academy is where our experts share their knowledge in a practical way. Our extensive training program regularly offers courses on the safe handling of lithium batteries.

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SERVICE

We take care of the professional and periodic maintenance and servicing of fire-protected safety cabinets and room systems for lithium batteries.

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