



Energy Storage

FREEN-BSH

SODIUM
Na⁺

High voltage sodium-ion battery systems

The Freen-BSH series features high-voltage rechargeable sodium-ion battery modules tailored for industrial and commercial applications where performance, safety, and efficiency are non-negotiable. Their floor-mounted design and modular build make integration simple across a wide range of energy storage scenarios, from grid support to renewables integration.



your wind your power your way



Outstanding Efficiency

Round-trip efficiency exceeds 97%, allowing maximum utilization of every kilowatt stored.



Sodium-ion Technology

A fire-safe, and sustainable alternative with stable performance across various conditions.



Extended Durability

Engineered for over 5,000 full charge and discharge cycles, supporting long-term system value and reduced maintenance.



Scalable Configuration

Modular design supports tailored energy system sizing for various project scales and technical requirements.



Wide Operating Temperature Range

With a discharge temperature range of -40°C to +60°C, the FREEN-BSH series excels in extreme climates.



Minimal Maintenance

Built-in fan cooling, a safety-focused design, and CAN-based system communication ensure minimal maintenance requirements.

With a nominal voltage of 575 V and modular configurations, compatible with modern inverters, Freen-BSH systems provide high power output, extended cycle life, and dependable operation.

BATTERY MODULE	FREEN-BSH-10HV	FREEN-BSH-20HV	FREEN-BSH-30HV	FREEN-BSH-40HV	FREEN-BSH-50HV	FREEN-BSH-60HV
Cell type	Sodium-ion	Sodium-ion	Sodium-ion	Sodium-ion	Sodium-ion	Sodium-ion
Module quantity	1	2	3	4	5	6
Rated capacity	17.5 Ah	35 Ah	52.5 Ah	70 Ah	87.5 Ah	105 Ah
Nominal energy	10.08 kWh	20.16 kWh	30.24 kWh	40.32 kWh	50.4 kWh	60.48 kWh
Usable energy	10 kWh	20 kWh	30 kWh	40 kWh	50 kWh	60 kWh
Nominal voltage	575 V	575 V	575 V	575 V	575 V	575 V
Operating voltage	385-760 V	385-760 V	385-760 V	385-760 V	385-760 V	385-760 V
Max. charging current	8.75 A	17.5 A	26.25 A	35 A	43.75 A	52.5 A
Max. discharging current	8.75 A	17.5 A	26.25 A	35 A	43.75 A	52.5 A
Rated charge / discharge power	5 kW	10 kW	15 kW	20 kW	25 kW	30 kW
Max.charging power	10 kW	20 kW	30 kW	40 kW	50 kW	60 kW
Max.discharging power	10 kW	20 kW	30 kW	40 kW	50 kW	60 kW
Dimensions, mm (W / D / H)	952 × 208 × 745	2 x 952 × 208 × 745	3 x 952 × 208 × 745	4 x 952 × 208 × 745	5 x 952 × 208 × 745	6 x 952 × 208 × 745
Battery module weight	123 kg	246 kg	369 kg	492 kg	615 kg	738 kg
Mounting method	Floor moutend	Floor moutend	Floor moutend	Floor moutend	Floor moutend	Floor moutend
Installation location	Indoor	Indoor	Indoor	Indoor	Indoor	Indoor
Storage temperature range	-10 – +35 C°	-10 – +35 C°	-10 – +35 C°	-10 – +35 C°	-10 – +35 C°	-10 – +35 C°
Operating temperature range	Charge -10 – +55 C° Discharge -40 – +60 C°	Charge -10 – +55 C° Discharge -40 – +60 C°	Charge -10 – +55 C° Discharge -40 – +60 C°	Charge -10 – +55 C° Discharge -40 – +60 C°	Charge -10 – +55 C° Discharge -40 – +60 C°	Charge -10 – +55 C° Discharge -40 – +60 C°
Degree of protection	IP65	IP65	IP65	IP65	IP65	IP65
Cooling concept	built-in fan	built-in fan	built-in fan	built-in fan	built-in fan	built-in fan
Communication	CAN	CAN	CAN	CAN	CAN	CAN
Relative humidity	<70%	<70%	<70%	<70%	<70%	<70%
Round-trip efficiency	> 97%	> 97%	> 97%	> 97%	> 97%	> 97%
Life cycle	>5000 times	>5000 times	>5000 times	>5000 times	>5000 times	>5000 times

* parallel modules connection

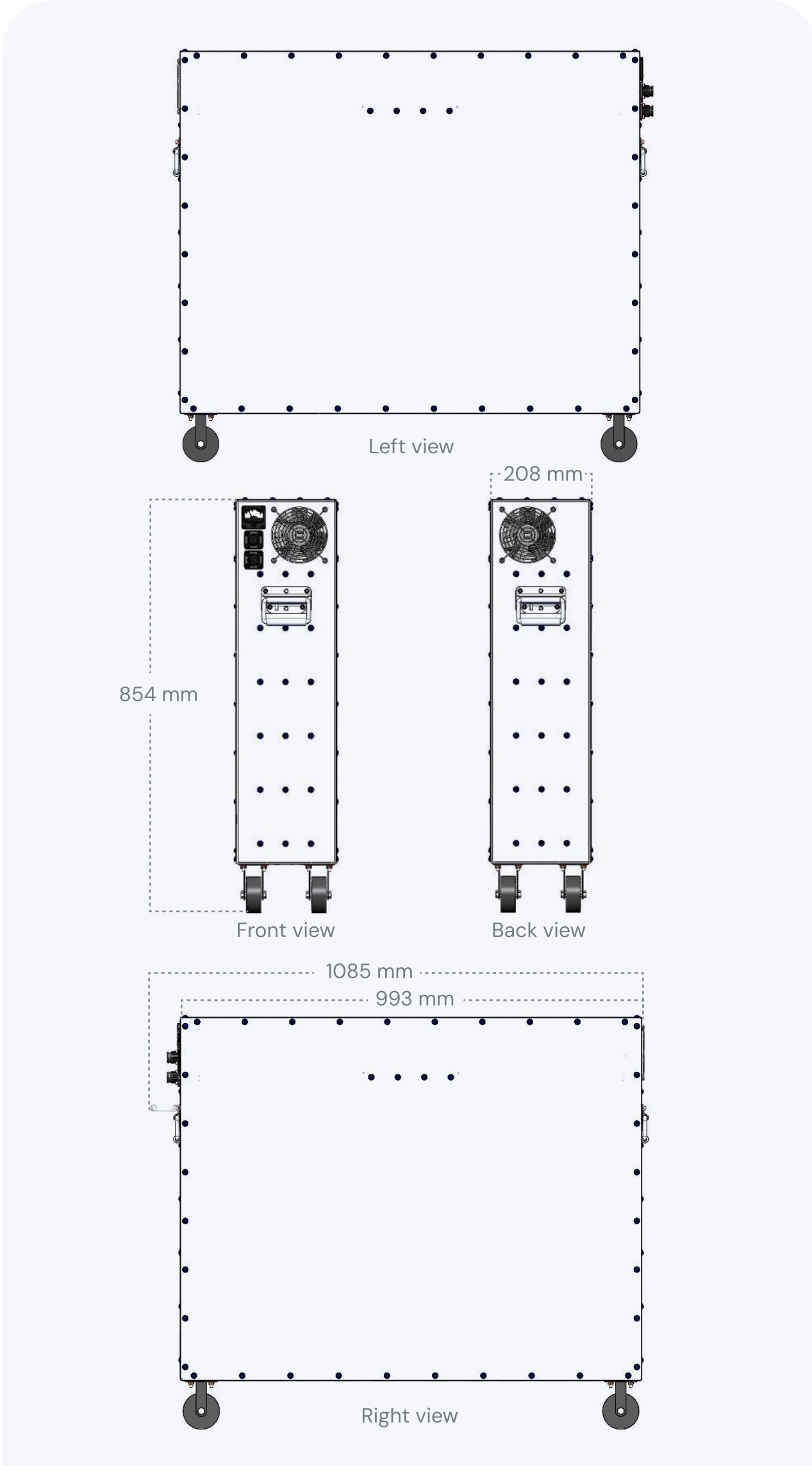
Custom Configuration Example

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FREEN-BSH-100HV (parallel modules connection)

BATTERY MODULE	FREEN BSH
Cell type	Sodium-ion
Module quantity	10
Rated capacity	175 Ah
Nominal energy	100.8 kWh
Usable energy	100 kWh
Nominal voltage	575 V
Operating voltage	385-760 V
Max. charging current	87.5 A
Max. discharging current	87.5 A
Rated charge / discharge power	50 kW
Max. charging power	100 kW
Max. discharging power	100 kW
Dimensions, mm (W / D / H)	952 × 2080 × 745
Battery module weight	1230 kg

Drawings



Engineered Safety

Freen-BSH batteries are engineered with safety and reliability at their core.


To minimize the risk of internal short circuits, overheating, or fire, we apply a strategy of partial capacity utilization, keeping the battery consistently undercharged and under discharged. This approach greatly reduces the likelihood of thermal runaway, even during high-voltage and high-load operations. Each module is structurally reinforced to withstand mechanical stress and prevent the ingress of moisture or oxygen, which could trigger exothermic reactions.

The result: a stable, safe, and resilient high-voltage energy storage system built for long-term performance.

Contact Us



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