

Sodium-ion high-voltage battery

Modular residential energy storage system

The Revolta HV battery is an energy storage system designed for maximum safety, based on lithium-free sodium-ion battery cells. The modular storage system can be flexibly configured with a variable number of independent battery modules.



Modular & flexible

Freely configurable with 1 to 10 battery modules (2.2 to 22 kWh)

Flexible spatial arrangement – adapts to the available installation space



100% lithium-free

Battery cells based on sodium-ions (Na⁺) with most modern cathode chemistry



Maximum safety

Unique high-frequency technology controls each battery cell individually

No cell mismatch – avoids overheating

High-precision cell monitoring and balancing

Built-in CO-sensor



Highly efficient

Virtually lossless balancing ensures complete usage of full capacity of all cells

High system voltage ensures maximum inverter efficiency – even for small storage systems

Gentle charge-rates lead to highest battery cell efficiency

Optimal efficiency even at low charge/discharge power levels

Ultra-low standby losses – will last for more than a year without power



Easy handling & installation

Easy installation

Plug-and-play over-the-air commissioning

Flexible tool-free system expansion



Maximum energy density

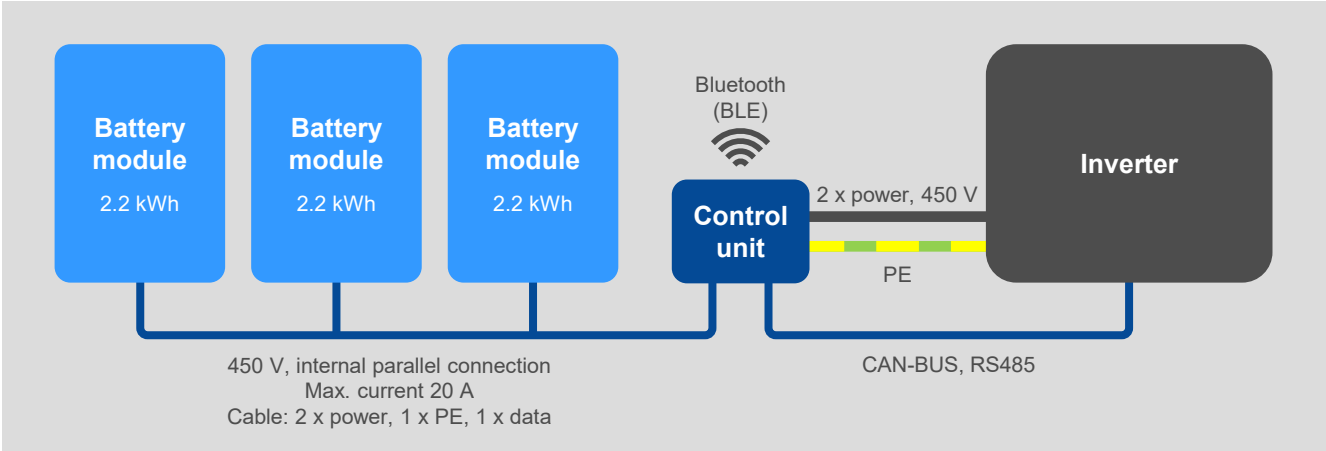
Smaller footprint than a DIN A4 sheet of paper

Significantly lighter than comparable battery modules – only 19 kg

System configuration

The Revolta high-voltage battery storage system consists of 1 to 10 independent battery modules and a control unit that serves as the interface between the system and the respective inverter. With its compact design and flexible module arrangement, the system adapts seamlessly to the available installation space.

The control unit is integrated into the last battery module. Thanks to its constant nominal voltage of 450 V – independent of the number of modules – the Revolta sodium battery system ensures maximum inverter efficiency. The system is commissioned using the Revolta smartphone app.



Technical data

Battery module	HV-2.2 NA
Battery cell chemistry	Sodium-ion, Lithium-free, Cobalt-free
Usable Energy	2.2 kWh
Energy density	156 Wh/l, 113 Wh/kg
Nominal voltage	450 V DC

Electrical data per module	HV-2.2 NA
Continuous charging / discharging power	0.6-1.2 kW depending on SOC
Efficiency	> 95 %
Nominal voltage	450 V DC
Operating voltage	300 – 585 V DC
Current	Max 2.0 A
Overvoltage Class	II

Safety	HV-2.2 NA
Galvanic insulation / shut-down time	No high voltage in standby / < 1 ms
Monitoring precision	10 mV per cell
Reverse polarity	Automatic protection
Temperature control	Temperature sensor for each cell
Over-current protection	Automatic current-limitation of system current
Sensors and alarms	Voltage, current, temperature and CO sensors, optical and acoustic alarm

General data	HV-2.2 NA
Dimensions (length x width x height)	284 mm x 186 mm x 260 mm
Weight	19 kg
Cooling	Natural convection
Ingress protection	IP65
Noise emission	< 40 dB
Certification	VDE-AR-E 2510-50, IEC 62619:2022, IEC 62477-1, CE, UN38.3

System	
Number of battery modules	1-10
Usable Energy	2.2-22 kWh (2.2 kWh per module)
System charging/ discharging power	1.2-12 kW (1.2 kW per module)
Maximum system current	20 A (self-limiting)

Communication	
Between battery modules and control unit (CU)	serial communication
From CU to inverters	CAN Bus 2.0, CAN FD, RS 485
Commissioning	Via Revolta app / Bluetooth (BLE)