

SH-UIB12.8 V LITHIUM BATTERY RANGE

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Compact 12.8 V LiFePO4 battery modules in 100 Ah, 150 Ah and 200 Ah, with an integrated battery management system. A direct drop-in replacement for a 12 V lead-acid bank, giving roughly twice the usable energy for the same rating.

1.28–2.56
KWH PER MODULE

16
MODULES IN PARALLEL

98 %
DEPTH OF DISCHARGE

IP65
INGRESS RATING

TYPICAL APPLICATIONS

- **Small solar home systems** — lighting, television, radio and phone charging on a 12 V bus.
- **Backup for essential circuits** — router, television and lighting through utility outages.
- **Security and CCTV** — continuous supply for cameras, DVR and perimeter lighting.
- **Telecom and radio** — remote repeaters, base stations and monitoring equipment.
- **Solar street and area lighting** — standalone pole-mounted and compound lighting.
- **Lead-acid replacement** — direct upgrade for a 12 V AGM, gel or flooded bank.

KEY FEATURES

- **LiFePO4 chemistry** — stable cathode chemistry with a long cycle life and no thermal runaway risk.
- **Integrated BMS** — over-charge, over-discharge, over-current, short-circuit and temperature protection.
- **Automatic cell balancing** maintains capacity across the pack over its service life.
- **Drop-in lead-acid replacement** at 12 V, in a familiar sealed case with a carry handle.
- **98 % depth of discharge** against roughly 50 % for lead-acid of the same rating.
- No maintenance, no venting, no acid spill risk and no memory effect.
- Modules connect in parallel to build a larger 12 V bank.

TECHNICAL SPECIFICATION

PARAMETER	SH-UIB-P12100 12.8 V / 100 Ah	SH-UIB-P12150 12.8 V / 150 Ah	SH-UIB-P12200 12.8 V / 200 Ah
ELECTRICAL			
Nominal Voltage	12.8 V		
Rated Capacity	100 Ah	150 Ah	200 Ah
Nominal Energy	1.28 kWh	1.92 kWh	2.56 kWh
Usable AC Energy through Inverter ¹	1.18 kWh	1.77 kWh	2.36 kWh
Operating Voltage Range	10.0 – 14.6 V		
Cell Type	LFP — lithium iron phosphate		
Battery Configuration	1P 4S — four cells in series		
Depth of Discharge	98 %		
CHARGE			
Charging Method	CC / CV — constant current, constant voltage		
Charging Rate	0.5 C		
Nominal Charging Current	50 A	75 A	100 A
Maximum Charging Current	50 A	75 A	100 A
Charging Cut-Off Voltage ²	14.6 V		
Charge Temperature Range	0 °C to +45 °C		
DISCHARGE			
Discharge Mode	CC / CV / CP		
Discharge Rate	1 C		
Nominal Discharging Current	≤ 100 A	≤ 150 A	≤ 200 A
Maximum Discharge Current	100 A	150 A	200 A
Continuous Discharge Power	1.28 kW	1.92 kW	2.56 kW
Discharge Cut-Off Voltage ²	10.0 V		
Discharge Temperature Range	–20 °C to +50 °C		
INVERTER CHARGE SETTINGS ³			
Battery Type Setting on Inverter	Lithium, or User-Defined where no lithium profile exists		
Bulk / Absorption Voltage	14.4 V		
Float Voltage	13.6 V		
Over-Voltage Cut-Off	14.6 V		
Low-Voltage Disconnect	11.2 V		
Low-Voltage Reconnect	12.8 V		
BANK CONFIGURATION — BATTERIES ONLY, NOT SOLAR PANELS			
Battery Modules in Series	Not permitted — parallel connection only		
Maximum Modules in Parallel (manufacturer limit)	16		
Min. Modules — SATTE SMS-1000-12	1		
Min. Modules — SATTE SML-2000-12	2	1	1
Recommended Max. Modules — SMS-1000-12 ⁴	1	1	1
Recommended Max. Modules — SML-2000-12 ⁴	4	3	2
MECHANICAL			
Dimensions (L × W × H)	332 × 172 × 220 mm	332 × 172 × 220 mm	520 × 244 × 221 mm
Weight	13 kg	16 kg	21 kg
Cooling	Natural convection — no fan, silent, maintenance-free		
Ingress Protection	IP65		
INTERFACE, ENVIRONMENT & CERTIFICATION			
Communication	RS485 / RS232 / CAN		
Monitoring	Smart BMS with real-time monitoring by mobile app and PC		
Relative Humidity	≤ 95 %		
Maximum Operating Altitude	2000 m		
Design Life	Up to 10 years		
Transport Certification	UN38.3 / MSDS / DGM		

SATTE

SH-UIB 12.8 V LITHIUM SERIES — CONTINUED

"" + runtime + ""

INVERTER COMPATIBILITY

ITEM	DETAIL
SATTE inverters	SMS-1000-12 · SML-2000-12 — the two 12 V models in the SATTE range
Third-party inverters	Any 12 V inverter or inverter/charger with a lithium or user-defined charge profile, set to the voltages in the table opposite
BMS communication	Not used. The SATTE 12 V inverters have no BMS data port, so charge parameters are entered manually. This is normal for a 12 V system and does not affect battery protection, which the internal BMS handles independently.
Solar charge controllers	Any brand, PWM or MPPT, set to the lithium profile with the voltages in the table opposite
Monitoring	Smart BMS with mobile app and PC access, over the battery's own communication port
Not supported	24 V and 48 V systems — modules must never be wired in series to reach a higher voltage. Specify the SATTE S200Ah (24 V) or S100Ah / S280Ah (48 V) instead.
Mixing with lead-acid	Never connect a lithium module in parallel with a lead-acid battery. The two chemistries have different charge curves and the lithium module will absorb the whole load.

Note 1 — Usable AC energy. Nominal energy less a 90 % depth of discharge and 94 % inverter conversion efficiency. This is the figure to quote a customer, because it is the energy their appliances actually receive.

Note 2 — Charge and discharge ratings. Expressed as C-rates against rated capacity, the standard basis for LiFePO4 of this class. Charging at the recommended 0.2 C rather than the 0.5 C maximum will noticeably extend service life. Where the manufacturer issues measured figures for a specific model, those supersede these.

Note 3 — Inverter settings. These are the settings to enter on any 12 V inverter or charge controller driving this battery. Entering lead-acid values instead will either undercharge the battery, costing capacity, or overcharge it and trip the BMS repeatedly. Set them at commissioning and record them on the handover sheet.

Bank rules. Parallel connection only, and only with identical modules of the same capacity and manufacturing batch. Never mix brands, capacities, ages or chemistries in one bank. Use equal-length cables to each module so current shares evenly.

Choosing between the three. V12100 suits lighting-and-television systems and CCTV. V12150 is the best single-module match for the SMS-1000-12, whose 600 W array can refill it in one day. V12200 suits the SML-2000-12 where a refrigerator or larger load is involved.

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Specifications are subject to change without notice. | SATTE-DS-BAT12V-001 Rev 1.0