

ALPHA 5 PRO

LiFePO₄ BATTERIES 51.2V 100Ah



High-Performance LiFePO₄ Cells

Automotive-grade LiFePO₄ cells deliver 7,000+ cycles @70% DoD.

5.12kWh usable capacity in a compact 3U rack-mount footprint.

Wide operating range: Charge: 32–140°F; Discharge: –4–149°F.

Internal Heating System: Activates below 41°F for safe charging in freezing climates.

Low self-discharge supports up to 3 months of idle storage.

Intelligent Battery Management

Advanced BMS with comprehensive protections: over-charge, over-discharge, over-current, short-circuit, high/low temperature, and fail-safe shutdown.

Automatic charge/discharge management and low-power sleep mode enhance system efficiency.

LCD + LED indicators provide real-time visibility of SOC, voltage, alarms, and system status.

Silent self-cooling design enhances temperature stability and extends service life.

Flexible System Integration & Communication

Wi-Fi + Bluetooth monitoring with the RICH SOLAR App for SOC, voltage, current, temperature, and system alarms.

Multi-protocol communication (RS485/CAN/RS232/Dry Contact) ensures compatibility with major inverter brands.

Parallel up to 30 units (max 153.6kWh) with auto-detection and synchronized operation.

Dual terminals and plug-and-play cables simplify expansion and installation.

Rugged, Reliable Construction

IP21-rated metal housing ensures mechanical strength and system safety.

Ideal for off-grid homes, RVs, and residential backup power.

Backed by a 10-year warranty for long-term reliability.

SPECIFICATIONS

BATTERY

Model	RS-B5121P
Product Name	ALPHA 5 PRO
Nominal Voltage	51.2V
Rated Capacity	100Ah
Nominal Energy	5,120Wh
Cell Chemistry	LiFePO ₄
Cycle Life (70% DoD)	7,000+
Parallel Expansion	Up to 30 units (30P)
Wireless Monitoring	Wi-Fi + Bluetooth
Internal Heating	Yes (150W)
Certifications	UL 1973, UL 9540A, FCC, UN 38.3, MSDS

ELECTRICAL PERFORMANCE & CHARGING

Max Charge Voltage	57.6V
Discharging Cutoff Voltage	40.0V
Recommended Charge Current	20A
Max Charge Current	100A
Max Continuous Discharge Current	100A
Max Output Power	5,120W

ENVIRONMENTAL

Charge Temperature	32°F to 140°F
Discharge Temperature	-4°F to 149°F
Storage Temperature	-22°F to 131°F (<1 Month) / 14°F to 113°F (>3 Months), ≤90% RH
Ingress Protection	IP21

MECHANICAL

Housing Material	Metal
Dimensions (L × W × H)	17.7 × 17.8 × 5.2 in
Net Weight	100.9 lbs

BMS CAPABILITIES

Voltage Protection	Over-Charge Protection	Yes
	Over-Discharge Protection	Yes
Current Protection	Charging Over-Current Protection	Yes
	Discharging Over-Current Protection	Yes
Circuit Protection	Short-Circuit Protection	Yes
Temperature Protection	High/Low Temperature Charging Protection	Yes
	High/Low Temperature Discharging Protection	Yes
Cell Management	Internal FET Over-Temperature Protection	Yes
	Passive Cell Balancing	Yes