12V 400Ah $LiFePO_4$ Battery Pack

Specification Sheet

Electric	
Battery Type	Lithium Iron Phosphate (LFP)
Nominal Voltage	12.8 V
Nominal Capacity	400 Ah
Stored Energy	5120 Wh
Internal Resistance	≤ 12.5 mΩ
Cycle Life	>3000 cycles
Self Discharge	< 3% per month
Energy Efficiency	> 98%
Communication	CAN / Wifi / Bluetooth / UART
Standard Charge	
Charge Voltage	14.4 V ± 0.2 V
Charge Mode	CC/CV : Constant Current / Constant Voltage
Continuous Charge Current	200 A
Maximum Charge Current	400 A
BMS Charge Cut-off Voltage	14.8 V ± 0.1V
Standard Discharge	
Continuous Discharge Current	400 A
Maximum Discharge Current (<30s)	800 A
Peak Discharge Current (150ms)	1600 A
BMS Discharge Cut-off Voltage	10 V
Environment	
Charge Temperature Range	0°C to +55°C
Discharge Temperature Range	-40°C to +55°C
Storage Temperature	0°C to +50°C @60±25% RH
IP Protection Level	IP67
Mechanical	
Cell Type	Prismatic
Casing Material	ABS
Dimensions (L x W x H)	382x356x426 mm
Weight	Appox 70 kg
Terminal	M8 bolt
Certifications	UN 38.3, CE & UKCA (battery) UL1642 (cells) IEC62133

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Key Features

Core Technology

- Full dielectric immersion heating for uniform temperature distribution (±2°C)
- Prismatic LPF and LTO cells submerged in thermally conductive fluid

Performance & Lifespan

- 3,000+ cycles at 100% Depth of Discharge (DoD)
- Ultra-low internal resistance (<0.5mΩ) for stable power delivery
- Flat voltage discharge curve (12.8V–13.2V) under load

Safety & Reliability

- Zero thermal runaway risk (inherently stable $LiFePO_4$ chemistry)
- No toxic components: Lead-free, acid-free, rare-earth-free
- Zero degassing during operation

Smart Management

- Active balancing BMS (>1.5A current) for cell longevity
- Real-time diagnostics: Per-cell voltage/temperature monitoring
- State-of-Charge (SoC) accuracy: ±1%

Environmental Robustness

- Operational range: -40°C to +55°C
- Supports high-pulse discharge (e.g., 1000A cold-cranking)

Certifications & Compliance

- UN 38.3, CE, UKCA (battery pack), UL1642 (cells), IEC62133

Applications

- Electric vehicles and utility systems
- Robotics and AGVs
- Solar and wind energy storage
- Marine applications
- Street lighting
- CCTV and security systems
- UPS and backup power
- Telecom infrastructure
- Medical equipment

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