Supermicro Battery Energy Storage System (BESS)

Self-Contained Energy Storage Solution Optimized for Safety and Performance

Reliable Power Source for Mission-Critical AI Data Centers

- **Efficient Design:** Advanced liquid-cooled, high density design improves energy efficiency
- **Cost-Effective Utilization:** Stores excess low-cost energy for discharge during high-cost/demand hours
- **Grid Stability:** Power smoothing reduces power fluctuations from AI workloads via real-time management
- **Zero-Downtime Reliability:** Instant-switching backup power ensures uninterrupted operations
- **Advanced Management:** Systematic thermal control design and management provides consistent, dependable, and long-life performance

High-Performance, Cost-Effective Solution

The Supermicro Battery Energy Storage System (BESS) is purpose-built to support mission-critical AI data centers. This industry-leading, high-density, structurally optimized solution features advanced liquid cooling technology that dramatically improves cost and energy efficiency. In fact, its modularity and rapid-deployment capabilities enable effortless scaling to match the explosive growth of AI data center infrastructures.

Safe-First Battery Storage for AI Data Centers

Designed and manufactured with a safety-first mindset, the Battery Energy Storage System features patented battery cell technology that addresses major Li-ion safety risks through cell-level management, propagation mitigation, and multi-layer fire barriers. This comprehensive mechanical and software-enabled safety system is ideal for any mission-critical data center environment.

Energy Efficiency & Reliability

BESS incorporates peak shaving and power smoothing as proactive energy management methods that enhance energy efficiency and grid stability. Peak shaving stores excess energy during periods of low-cost and abundance for discharge during high-cost or high-demand hours, while power smoothing mitigates rapid power fluctuations from AI workloads through real-time management. In addition, it delivers instant-switching backup power capability, ensuring continuous and stable supply for mission-critical data centers.

Advanced Management and Monitoring

The BESS features a comprehensive thermal management system engineered to deliver consistent, reliable, and long-lasting performance. High-precision thermal control and performance optimization are achieved through real-time local and cloud-based monitoring of power parameters and system health, combined with multi-level battery protection and balancing.

Battery Energy Storage System (BESS)

Available Color	White
Dimensions	8,980 (W) x 2,100 (D) x 2,750 (H) mm
Weight	34 metric tons (75,000 lbs.)
Battery Type	Lithium Iron Phosphate (LFP)
Power Rating	1.5 MW
Energy Rating	3.1 MWh
Rated Voltage	1382 VDC
Voltage Range	1080 - 1500 VDC
Charge / Discharge Rating	1120 A / 1120 A @25°C
Cooling Method	Liquid cooling

Auxiliary Power Interface	480 VAC/3Ph/4W & 120VAC/1Ph/3W
Certifications	Fully-certified internationally (UN, RoHS, UL, IEEE, NFPA)
Fire Suppression System	• Clean agent system (FK 5-1-12 Perfluorohexane) • Dry-pipe water sprinkler system
Explosion Prevention	Gas detection with NFPA 69 explosion prevention
Management Software	Cloud-based Energy Management System (EMS)
Operating Temperature	-30°C to 45°C
Battery Life	Up to 20 years