



Wanxiang A123 Ends the Era of Thermal Runaway with Semi-Solid-State and Immersion Cooling Technologies

Descrizione

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With nearly 50 energy storage fires reported globally in the past year, thermal runaway has emerged as the industry's most critical safety challenge.

DETROIT, Feb. 6, 2026 /PRNewswire/ - Wanxiang A123 Systems Corp. unveiled a next-generation safety solution at its "Gathering Stars, Smart Storage Future" event, introducing the Star Series semi-solid-state battery cells and Star River Series immersion cooling systems. Together, these technologies redefine energy storage safety from the microscopic materials level to full system architecture.

Traditional liquid lithium-ion batteries are inherently vulnerable to physical damage and thermal instability. In contrast, Wanxiang A123's Star Series semi-solid-state cell demonstrated unprecedented intrinsic safety. During a rigorous test in which ten steel needles punctured the cell simultaneously, the battery exhibited no fire, no smoke, and no thermal propagation.

This performance is enabled by Wanxiang A123's proprietary "Full-Domain Ice Sealing" technology, which immobilizes the electrolyte in a semi-solid state, dramatically reducing reactivity under mechanical stress. Additional protection is provided by an internal Safety Grid and an external Armor Coating, preventing internal short circuits even under extreme temperatures.

To address system-level thermal management and eliminate uneven heat distribution, the Star River Series employs advanced immersion cooling, fully submerging cells in a dielectric insulating coolant. Operational data shows that even at ambient temperatures of 45 °C, the temperature variance between cells remains below 2.6 °C. In the event of cell failure, the coolant acts as a liquid thermal shield, rapidly absorbing heat and physically blocking thermal propagation.

The platform is deployed across four specialized solutions tailored to high-risk and mission-critical applications. For data centers, the HVDC solution adopts an 800 V architecture, eliminating redundant

inverters and increasing system efficiency by more than 4%. For outdoor installations, IP68-rated cabinets ensure durability in extreme environments. Offshore and transport-constrained applications are addressed through a 5-ft modular container built on the 5HC shipping standard, resolving weight limitations, while a 20-ft high-integration container incorporates a proprietary zero-level lock structure and dual fire-suppression systems.

Further enhancing system intelligence, Wanxiang A123's Wireless BMS platform integrates pressure sensors capable of detecting internal pressure changes and issuing safety warnings up to 10 minutes earlier than conventional monitoring methods.

Together, the Star Series and Star River Series represent a comprehensive, next-generation safety architecture—signaling a decisive shift beyond conventional lithium-ion limitations and setting a new benchmark for safe, scalable energy storage.

For more information, please visit: <https://youtu.be/6DTs6cc8ypA?si=a-DrufW1XGboKSOP>

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