



World's First
Mass-Produced Immersion ESS

ONE-STOP SOLUTION PROVIDER FOR

GREEN POWER⁺ GREEN AIDC

SGHS

Powered by **KJRTRONG**

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ABOUT SGHS



SGHS is an innovative energy company specializing in Battery Energy Storage Systems (BESS) and AIDC infrastructure, delivering turnkey solutions from concept to commissioning.

For ADC, SGHS provides integrated solutions spanning power infrastructure, energy storage, supply systems, critical redundancy, and full system integration. For BESS, its applications cover grid stabilization, peak shaving, renewable integration, backup power, and energy trading—delivered via both EPC and technology partnership models to align with diverse project structures.

SGHS operates a vertically integrated service chain spanning design engineering, manufacturing, testing and validation, logistics, onsite commissioning, and lifecycle O&M support. Backed by deep technical expertise and flexible financing, the company delivers reliable, scalable energy solutions that drive long-term value.

TURN ENERGY COSTS INTO REVENUE

The SGHS Battery Energy Storage System (BESS) transforms your energy infrastructure from a cost center into a high-performance financial asset.

- 01 **Energy Arbitrage:** Buy power when rates are low and release it when prices peak.
- 02 **Peak Shaving:** Slash demand charges to significantly reduce your operational overhead.
- 03 **Renewable Integration:** Unlock the full ROI of your solar and clean energy assets.
- 04 **Grid Services:** Generate new revenue streams through frequency regulation and grid balancing.
- 05 **Energy Security:** Ensure mission-critical continuity with reliable backup power.

PROJECT EXECUTION MODEL



FULL IMMERSION LIQUID COOLING TECHNOLOGY

Our pioneering immersion liquid cooling technology directly contacts battery cells with dielectric coolant, circulating this flame-retardant fluid through integrated cooling and refrigeration systems. This approach efficiently dissipates heat at the source while virtually eliminating the risks - batteries operate fully submerged in insulating coolant, fundamentally preventing thermal runaway events.



Full Immersion Liquid Cooling effectively mitigates thermal runaway.

BMS with real-time internal resistance and short-circuit monitoring for early detection and proactive protection.

Complete air isolation, eliminating combustion media and preventing open flames.

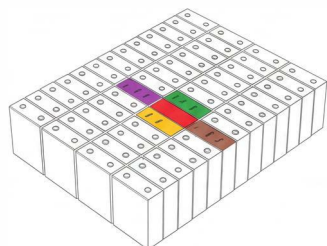
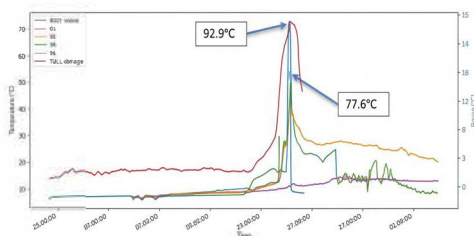
Kortrong LOS dielectric coolant rapidly circulates to remove localized heat and prevent thermal runaway propagation.

Intelligent fire suppression system actively detects anomalies and releases inert gas to maintain safe internal conditions.

Full Immersion Liquid Cooling

- ★ 1. Eliminates battery fire risk completely
- ★ 2. Achieves cell-level thermal uniformity, resolving system inconsistency
- ★ 3. Higher energy density lowers CAPEX
- ★ 4. Ultra-efficient cooling cuts auxiliary power consumption
- ★ 5. Cell-to-cell $\Delta T \pm 2^\circ\text{C}$, Ex 2°C . Extend lifespan: +30% vs. air-cooled, +13.6% vs. plate liquid-cooled.
- ★ 6. Triple-tier thermal defense; dielectric coolant, inert gas, and water deluge, providing industry-leading thermal containment at $<80^\circ\text{C}$

International Standard Thermal Runaway Propagation Test Verified



APPLICATION SCENARIOS



Flexible AIDC

- **Mission-Critical Power:** Delivering highly stable power quality for demanding AI computing loads.
- **Green Integration:** Seamless orchestration of high-penetration renewable energy sources.
- **TCO Optimization:** Driving maximum energy efficiency and operational cost reduction.
- **Energy Independence:** Ensuring robust energy security and localized grid independence.
- **ESG Compliance:** Accelerating carbon reduction to meet stringent sustainability targets.
- **Critical Redundancy:** Providing uninterrupted backup power for core AI Infrastructure.

Small C&I Storage

- **Onsite Renewables:** Maximizing local consumption of solar and clean energy sources.
- **Power Stabilization:** Guaranteeing a continuous, high-quality power supply for factories.
- **Opex Reduction:** Lowering demand charges and overall utility energy expenditures.
- **Demand Management:** Intelligent peak shaving and dynamic load optimization.
- **Resiliency Backup:** Providing seamless power transition and protection during outages.



Island Multi-Energy Microgrid

- **Off-Grid Independence:** Establishing fully self-sustained regional power ecosystems.
- **Renewable Penetration:** Harmonizing large-scale wind and solar power generation.
- **Decarbonized Generation:** Drastically reducing diesel reliance and fuel logistics costs.
- **Community Resilience:** Delivering reliable, stable electricity to remote and isolated areas.



IMMERSION-COOLED ALL-IN-ONE ESS

125kW/261kWh / 522kWh



Inherent Safety



Reliability in Harsh
Environments



Cell $\Delta T \leq 2^{\circ}\text{C}$

	KES-125/261-AL/I-AB-D	KES-125/261-AM-AB-A
AC Side		
Max. Current	209 A	
Rated Voltage	400V / 3P+N+PE	
Off-Grid Support	Yes	
DC Side		
Battery Cell	LFP 3.2V / 314 Ah	
DC Voltage Range	700 V – 950 V	
Rated DC Voltage	832 V	
Thermal Management	Flow immersion liquid cooling	Plate heat exchanger liquid cooling
Fire Suppression	Kortrong special gas fire suppression + Immersion-based + cabinet level detection & monitoring	Kortrong special gas fire suppression + PACK Immersion-based + cabinet-level detection & monitoring
General		
Enclosure Rating	IP55	
Weight	3.5 t	
Dimensions (W×D×H)	1450 mm × 1400 mm × 2350 mm	
Certifications and Compliance	IEC 62619 / IEC 62477 / IEC 61000 / EN 50549 / UL 1975 / UL 9540A / UN38.3 / C99	

LIQUID-COOLED BATTERY CONTAINER

5MWh



Enhanced
Performance
Optimization



Safe & Reliable



Intelligent O&M

System Parameters

Rated Capacity	5MWh
Battery Voltage Range	1000V - 1500V
Battery Type	LFP 3.2V / 314Ah
Battery Module	332.8V / 104.5kWh
Cluster Grouping Method	4 × 1P104S
Grouping Method	12 × 1P416S
BMS Balancing	Support
Protection Level	IP54
Cooling Method	Liquid Cooling

General

Dimension (W × D × H)	6058mm × 2438mm × 2896mm
Weight	43t
Certifications and Compliance	IEC 62619 / IEC 61000 / UN38.3

TYPICAL CASES



100MW/200MWh
Hebi



100MW/200MWh
Xinyang



100MW/200MWh
Huangchuan



300MW/600MWh
Northwest China



120kW/233kWh
Sweden



1MW/2MWh
Denmark



70MW/140MWh
Meizhou



99.12kWp PV 120kW/416kWh
Liangmaoshan



1.08MW/2.097MWh
Foshan



480kW/1.72MWh
Zaochuang



3.72MW/6.67MWh
Chongqing



8.8MW/35MWh
Anyang



📍 DRC Multi-energy Complementary Microgrid Project

Project Scale: Integrated 32MWp PV + 25MW/50MWh Grid-Forming ESS with Multi-Source Microgrid Control



📍 Sweden C&I Ancillary Service Project

Project Scale: 720 kW / 1398 kWh in total capacity



📍 Tongxin Grid-Side Standalone BESS Project

Project Scale: 1 GW / 2 CWh



📍 Foshan Grid-Side Standalone ESS Project

Project Scale: 300MW/600MWh total capacity, including 50MW/100MWh utilizing Kortron Immersion Liquid Cooling ESS



3 GWh+ in immersion-cooled deployments worldwide.

From Africa, Europe, Southeast Asia, and the Middle East to Latin America and beyond.

LET'S POWER THE FUTURE TOGETHER

Reliable Energy Infrastructure. Proven Technology. Trusted Partnership.

Whether your project involves AI Data Centers, Battery Energy Storage Systems (BESS), industrial power solutions, or critical infrastructure, SGHS delivers complete turnkey solutions designed for long-term performance, safety, and scalability.

We look forward to discussing how we can support your next project.



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