

## INDUSTRIAL ENERGY STORAGE SOLUTIONS

# Plug & Play. Make BESS as easy and reliable **as a TV.**

A complete, ready-to-deploy battery energy storage package — cabinets, PCS, EMS, cloud platform and quick-plug connections, engineered for faster installation and higher return on investment.

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# Company Introduction

AI Energy is a global provider of commercial and industrial energy storage solutions. Our systems are engineered and produced through a joint-venture manufacturing platform established in 2012 — in 2025 alone, that platform deployed more than 2,300 C&I energy storage systems in overseas markets, serving customers across diverse applications and industries.

## Beyond ordinary battery cabinets

Unlike standard BESS offerings with basic BMS, PCS and EMS only, our all-in-one solution combines battery systems, PCS, flexible modular power distribution cabinets, communication & control systems, EMS, a cloud platform and quick-plug connections — a complete, ready-to-deploy package.

- **Plug-and-play by design.** Modular distribution cabinets adapt to almost any site. Aside from foundation work and basic cabling, on-site power distribution setup is dramatically simplified.
- **Faster, easier, better ROI.** The system features faster installation, easier integration and a superior return on investment.
- **Built for every scenario.** Energy arbitrage, FCR, microgrids, peak shaving, backup power and UPS — deployed quickly and operated securely.
- **Global reach.** Local sales and after-sales service networks span more than 35 countries, supporting customers from project design and commissioning through long-term operation and maintenance.

## Our manufacturing partner network

AI Energy hardware is sourced through a joint-venture manufacturing structure backed by a publicly listed BMS manufacturer — China's first BMS company to list, on the Shenzhen Stock Exchange (stock code 301157). This listed-company backing strengthens manufacturing standards, warranty assurance and supply chain stability across our product line.

**49%**
**PCS / BMS Manufacturing Base**

Guangdong manufacturing base — BESS R&D, EMS integration, global sales & after-sales service, operating since 2012.

**51%**
**BESS Cabinet Manufacturing**

Wholly-owned subsidiary responsible for cabinet manufacturing under the joint-venture agreement.

**SZSE 301157**
**Listed-Company Backing**

Strategic manufacturing and warranty-backing partner, listed on the Shenzhen Stock Exchange.

### Plug & Play — make BESS as easy and reliable as a TV

That's the design philosophy behind every AI Energy system: factory-prefabricated hardware, paired with application-ready intelligence, so deployment feels less like a construction project and more like plugging in an appliance.

# Application-Driven EMS for Higher Revenue

Hardware Prefabrication + Software Intelligence — from prefabricated hardware to intelligent energy assets.

AI Energy combines factory-prefabricated hardware with an application-ready EMS. The system communicates with mainstream grid-tied PV inverters, forecasts weather, reads dynamic tariffs and dispatches power quickly — turning BESS into a controllable, predictable and revenue-generating asset.

- PV Inverter Communication**  
 Compatible with up to 70% of mainstream grid-tied PV inverters.
- AI Weather Forecast**  
 Pre-charges before rainy days when PV cannot fill the battery.
- Dynamic Tariff Strategy**  
 Charges and discharges automatically by price thresholds.
- Ultra-Fast Response**  
 Dispatch faster than meter refresh for demand control and FCR.

## Key Application Scenarios

### PV + BESS Co-location

Coordinate PV, storage and grid limits.  
Improve self-consumption and arbitrage.

### EV Charging Station

Compensate peak charger load without a transformer upgrade.

### Plug & Play Delivery

Pre-assembled modules reduce onsite wiring and commissioning work.

### Dynamic Tariff Arbitrage

Charge at low/negative prices and discharge at high prices.

### FCR / Grid Services

Fast, stable power response for high-value ancillary services.

### Modular Distribution

Copper busbar box and waterproof switch boxes scale by project size.

## FAST RESPONSE — WORKED EXAMPLE

### STEP 1

**160 kW**

EV charger starts, full load



### STEP 2

**60 kW**

EMS dispatches BESS discharge



### RESULT

**≤ 100 kW**

Grid-side power, transformer protected

**Faster**

DEPLOYMENT

**Higher**

SYSTEM REVENUE

**Lower**

INTEGRATION RISK

**Faster**

INVESTMENT PAYBACK

# In-House Intelligent Control Platform

Combining ANYPORT edge hardware with the BESSMAN cloud platform to deliver unified monitoring, intelligent control and optimized energy performance.

Total in-house R&D and manufacturing for maximum reliability and safety.

## EDGE CONTROLLER

### ANYPORT

Enables sub-second local response, reliable on-site control and flexible logic execution across multiple scenarios. Powered by an i.MX 8 AI applications processor.

**BMS** — AI-enabled active balancing BMS. Automatically isolates faulty battery clusters to prevent fault propagation.

**Smart HV-Box** — high-voltage distribution and protection, tightly integrated with the edge controller.

**PCS** — PROFINET-based PCS. Ultra-fast response time via PROFINET communication.

## CLOUD PLATFORM

### BESSMAN

Global asset monitoring, AI-assisted predictive maintenance, solar generation forecasting and revenue optimization — in seamless synergy with the edge layer.

**Fleet visibility** — unified monitoring across every deployed site, from a single pane of glass.

**Predictive maintenance** — AI-assisted anomaly detection ahead of failure.

**Revenue optimization** — solar forecasting feeds directly into dispatch strategy.

## Seamless Synergy

- **Hardware-based hard real-time.** Powered by Siemens industrial PLC with PROFINET IRT (Isochronous Real-Time) —  $\mu$ s-level synchronization and  $<1\mu$ s jitter, ensuring ultimate determinism and stability for multi-unit coordinated control.
- **Massive parallel scalability.** Supports over 100 units in parallel, organized as 32 units per group, up to 6 groups via IRT slave networking, enabling unified dispatch and synchronous control for large-scale energy storage systems.
- **No network congestion under heavy load.** IRT isochronous real-time bus with dedicated time slots and bandwidth isolation guarantees stable control cycles for peak shaving, frequency regulation and grid-tie/off-grid switching.
- **Built for harsh environments.** Siemens industrial-grade hardware plus IRT redundancy delivers high anti-interference, long lifespan, low failure rate and minimized O&M risk.

# PV + BESS Energy Arbitrage

For negative tariffs and peak-valley price differences in dynamic tariff markets.

Designed for PV plants and C&I users in regions with low or negative electricity tariffs. The BESS absorbs surplus PV generation or low-price grid power during negative-tariff periods, and discharges during peak-price periods to maximize energy revenue and reduce curtailment.



**Pre-configured, factory-tested.**

BMS, PCS, EMS, application logic and cloud monitoring are pre-integrated and factory-tested before shipment, minimizing on-site commissioning work.

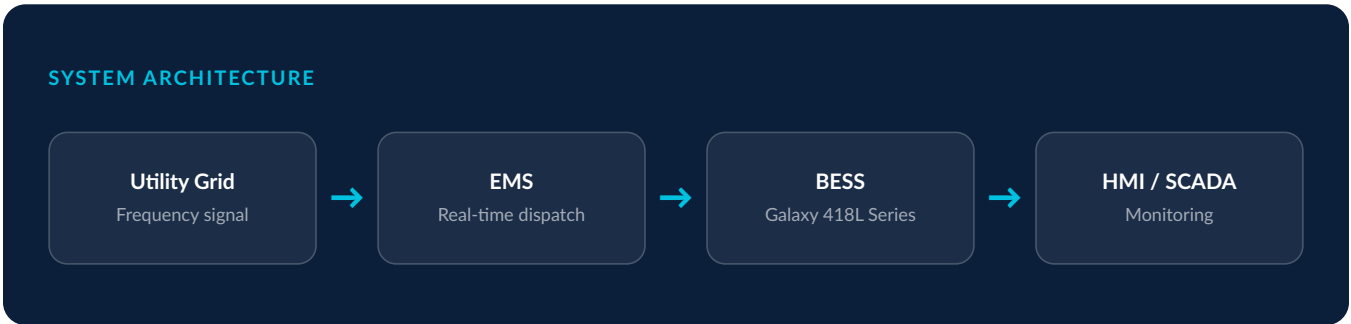
**2,300+ overseas projects in 2025.**

Across seven mature application scenarios, the fastest commissioning was completed in 38 minutes, while the longest took only one day.

# Grid Balancing (FCR / aFRR)

For FCR, aFRR and inertia support in ancillary service markets.

Designed for grid balancing applications such as FCR, aFRR and inertia support, the ultra-fast response BESS delivers rapid power injection and absorption to stabilize grid frequency. With high-speed PCS control, precise EMS dispatch and real-time monitoring, the system follows grid signals accurately and supports revenue generation from ancillary service markets.



**Ultra-fast response.**  
High-speed PCS control tracks grid frequency signals with the accuracy ancillary-service markets require.

**Real-time monitoring.**  
SCADA-level visibility keeps every dispatch cycle auditable and revenue-optimized.

# PV Self-Consumption

Store surplus solar power and reduce grid purchases.

A smart energy storage solution for PV-equipped factories and commercial facilities. The system stores surplus solar power during high PV generation periods and discharges when solar output is low or electricity demand is high, increasing PV self-consumption and reducing grid electricity costs.



**Third-party EMS compatible.**

Integrates with existing third-party EMS platforms already running at the facility.

**Lower electricity costs.**

Discharges precisely when solar output is low or demand is high, maximizing self-consumption.

# C&I Energy Arbitrage

Charge at low prices and discharge at peak prices.

Designed for industrial and commercial users in markets with dynamic electricity prices. The system automatically charges during low-price or valley-price periods and discharges during peak-price periods, reducing electricity costs and capturing arbitrage value.



**Automatic dispatch.**

The EMS charges and discharges automatically against dynamic price thresholds — no manual intervention required.

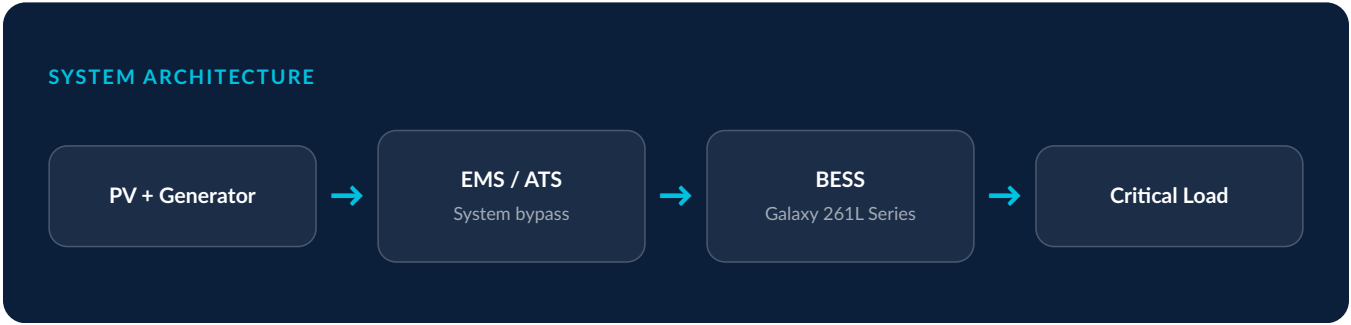
**Built for C&I scale.**

Sized for industrial and commercial facilities operating under time-of-use or spot-price tariffs.

# Microgrid

PV, BESS, diesel and grid power for stable supply.

Designed for microgrid applications in remote sites, weak-grid areas and facilities with frequent outages. The system integrates PV, BESS, diesel generators and grid power, enabling stable power supply, optimized energy use and seamless on/off-grid switching for uninterrupted operation.



**Seamless on/off-grid.**

Automatic transfer switching keeps critical loads powered through grid outages.

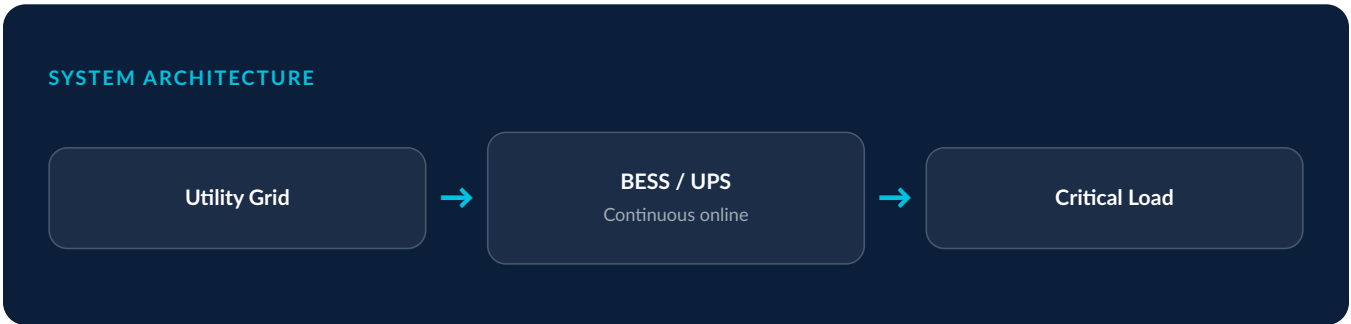
**Multi-source integration.**

PV, diesel generation and grid power are coordinated by a single EMS.

# Online UPS for Critical Loads

0 ms transfer time for mission-critical power.

Designed for critical loads that require continuous, high-quality power with no interruption. Unlike seamless switching systems that transfer within one grid cycle, the online UPS operates continuously with 0 ms transfer time, eliminating switching gaps and protecting sensitive equipment from grid instability. Ideal for data centers, medical facilities, laboratories, precision manufacturing and other mission-critical applications.



**Zero transfer gap.**

Continuous online operation removes the switching gap entirely – not just a fast transfer, but no transfer at all.

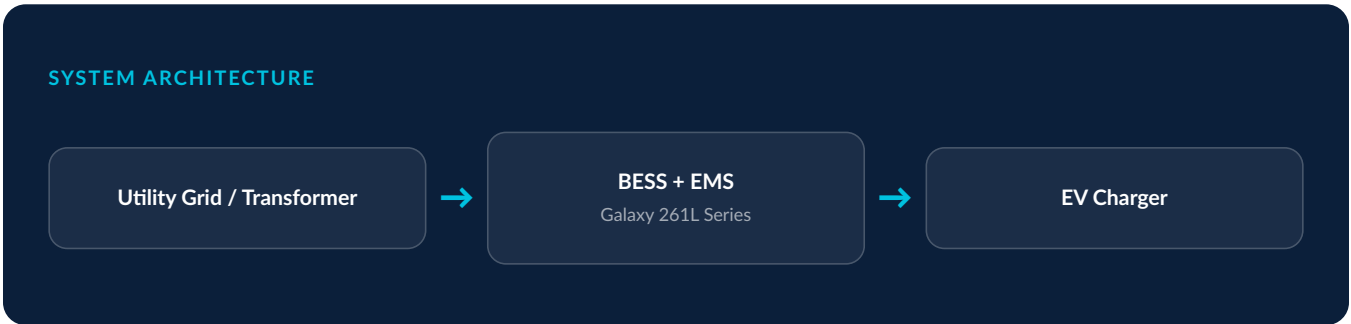
**Mission-critical ready.**

Purpose-built for data centers, medical facilities, laboratories and precision manufacturing.

# EV Charging with BESS

Fast capacity expansion without costly grid upgrades.

Designed for EV charging stations with limited grid or transformer capacity. Instead of costly and time-consuming grid upgrades, the BESS provides instant power capacity expansion by storing energy during low-demand or low-price periods and supporting fast chargers during peak charging demand. The system reduces grid impact, lowers demand charges and enables energy arbitrage for improved charging station profitability.



**No transformer upgrade.**

Peak charger load is compensated by the BESS instead of costly grid infrastructure work.

**Better station economics.**

Lower demand charges and energy arbitrage improve charging station profitability.

# Astrum 4200-10C

Nickel-Zinc AIDC UPS Battery Cabinet

MODEL AST-4200-10C



Manufactured by our technology partner.

- **10C Discharge & 2C Charge.** Supports ultra-high discharge and fast charging capability.
- **High Safety Performance.** Zero thermal runaway risk, ideal for high-level data centers and critical applications.
- **Comprehensive Protection.** Equipped with over/under current, voltage and temperature protection.

| BATTERY PACK                        |                                                                     |
|-------------------------------------|---------------------------------------------------------------------|
| Nominal Voltage (Vdc)               | 13.2 (1.65V × 8 cells)                                              |
| Number of Cells per Battery         | 8 cells                                                             |
| Operating Voltage Range (V)         | 10 – 15.2                                                           |
| Nominal Capacity (Ah)               | ≥ 90                                                                |
| Nominal Energy (kWh)                | 1.18                                                                |
| Cycle Life                          | 500 cycles (0.5C@100% DoD)                                          |
|                                     | 300 cycles (3C@100% DoD)                                            |
| Charge Voltage                      | CC to 15.2 Vdc; CV until 4.0 A cutoff                               |
| Charge Rate (A)                     | 20 to 180                                                           |
| Discharge Rate (A)                  | 40 to 900 (Max 10C)                                                 |
| Chemistry                           | Nickel-Zinc                                                         |
| Internal Resistance (mΩ)            | < 5                                                                 |
| Fire Resistance (Outer Shell)       | UL 94 V-0                                                           |
| Weight (kg)                         | 17.3                                                                |
| Dimensions (W×D×H) mm               | 291 × 176 × 184                                                     |
| BATTERY SYSTEM                      |                                                                     |
| Battery Units per String            | 36 modules per cabinet (36S1P)                                      |
| Nominal Voltage (Vdc)               | 475.2                                                               |
| Operating Voltage Range (V)         | 360 – 547.2                                                         |
| Watt per Cell @ Specific Time / EPV | 1006 W/cell                                                         |
| Total Power per String (kW)         | 289.728                                                             |
| Est. Run Time for Specific Load     | 5 min                                                               |
| Terminal                            | M6 × 1; 10 mm                                                       |
| SYSTEM BMS FUNCTIONS                |                                                                     |
| Monitoring                          | Manages charge/discharge; monitors voltage, temperature and current |
| Protection Features                 | Hi/low charge/discharge voltage, current and temperature            |
| Data Communications                 | Ethernet, USB, local server and cloud options                       |
| Configuration Options               | 36S1P / 37S1P / 38S1P / 39S1P optional                              |

# LUMEN 115L

100kW/115kWh Liquid-Cooling Sodium-ion Storage Cabinet

MODEL LUM-115L



Manufactured by our technology partner.

- **Excellent Low-Temperature Performance.** Reliable operation in cold conditions with enhanced thermal stability.
- **High Charge/Discharge Rate.** Supports fast energy exchange with stable high-current performance.
- **Fast Response & High Power.** Delivers instant response and strong power output for dynamic applications.

| DC SIDE PARAMETERS          |                                            |
|-----------------------------|--------------------------------------------|
| Battery Type                | NFPP-3V-160Ah (Sodium-ion)                 |
| System Configuration        | 1P240S (5 × 1P48S battery packs)           |
| Battery Capacity (kWh)      | 115.2                                      |
| Nominal Voltage (Vdc)       | 720                                        |
| Battery Voltage Range (Vdc) | 432 ~ 828                                  |
| Max Charge / Discharge Rate | ≤ 0.87C                                    |
| Cycle Life                  | > 3000 cycles                              |
| Round-Trip Efficiency       | 90%                                        |
| AC SIDE PARAMETERS          |                                            |
| Rated Grid Voltage (Vac)    | 400                                        |
| Grid Voltage Range (Vac)    | 340 ~ 460                                  |
| Rated Output Power (kW)     | 100                                        |
| Rated Output Current (A)    | 145                                        |
| Overload Capacity           | 1.1× long-term, 1.2× for 1 min (≤35°C)     |
| Rated Grid Frequency (Hz)   | 50/60 ±2.5                                 |
| AC Connection               | 3-phase 4-wire (3P4W)                      |
| Power Factor                | -0.99 ~ +0.99                              |
| Current THDi (Full Load)    | ≤ 3%                                       |
| SYSTEM PARAMETERS           |                                            |
| Dimensions (W×D×H) mm       | 1150 × 1435 × 2280                         |
| Weight (kg)                 | 2300                                       |
| Degree of Protection        | IP54                                       |
| Operating Temperature Range | -25°C ~ +55°C (>45°C derating)             |
| Relative Humidity           | 0 ~ 95% RH (non-condensing)                |
| Max Working Altitude (m)    | 2000                                       |
| Noise Level (dB)            | ≤ 75                                       |
| Thermal Management          | Intelligent liquid cooling                 |
| Fire Suppression System     | Pack-level + cluster-level aerosol         |
| Communication Protocol      | CAN, RS485, Modbus TCP                     |
| Compliance & Standards      | UN38.3, IEC 62619, CE-EMC, MSDS, IEC 63056 |

# Galaxy 261L-AIO

261kWh + 105/125kW Liquid-Cooling LFP Energy Storage Cabinet

MODEL GLX-261L-AIO



Manufactured by our technology partner.

- **Highly Integrated Design.** Pre-configured with 105kW/125kW PCS for a true “plug-and-play” experience.
- **Modular Scalability.** Simplified wiring and compact footprint for rapid on-site deployment.
- **Optimized Grid Interaction.** Built-in EMS for intelligent power scheduling and grid stabilization.

|                             | Galaxy<br>261L+105kW              | Galaxy<br>261L+125kW |
|-----------------------------|-----------------------------------|----------------------|
| DC SIDE PARAMETERS          |                                   |                      |
| Battery Type                | LFP, 314                          |                      |
| System Configuration        | 1P52S×5                           |                      |
| Battery Capacity (kWh)      | 261                               |                      |
| Battery Voltage Range (V)   | 728 ~ 910                         |                      |
| AC SIDE PARAMETERS          |                                   |                      |
| Rated Voltage (V)           | 230/400, 3W+N+PE                  |                      |
| Rated Power (kW)            | 105                               | 125                  |
| Max. Output Power (kVA)     | 115.5                             | 137.5                |
| Overload Capacity           | 110% long term                    |                      |
| Rated Grid Frequency (Hz)   | 50/60                             |                      |
| SYSTEM PARAMETERS           |                                   |                      |
| Dimensions (W×D×H) mm       | 1150 × 1435 × 2280                |                      |
| Weight of Unit (kg)         | 2680                              |                      |
| Max. Round Trip Efficiency  | 88%                               |                      |
| Degree of Protection        | IP54                              |                      |
| Corrosion Protection Level  | C3                                |                      |
| Relative Humidity           | 0 ~ 85% (non-condensing)          |                      |
| Operating Temperature Range | -20°C ~ 60°C (>45°C derating)     |                      |
| Max. Working Altitude (m)   | 3000                              |                      |
| Thermal Management          | Intelligent liquid cooling        |                      |
| Communication Protocol      | CAN, RS485, Modbus TCP            |                      |
| Compliance & Standards      | CE, IEC 62619, IEC 63056, UN 38.3 |                      |

# Galaxy 261L-DC Coupling

261kWh Liquid-Cooling LFP Energy Storage Cabinet with DC-DC Converter

MODEL GLX-261L-DC



Manufactured by our technology partner.

- **Flexible DC-side integration.** Built-in smart DC-DC module for direct coupling with existing PV systems.
- **Intelligent solar distribution.** Smart Power Manager prioritizes self-consumption and battery charging.
- **Non-invasive upgrade.** Enhances storage capacity without modifying or replacing existing grid-tied inverters.

| DC SIDE PARAMETERS                      |                                  |
|-----------------------------------------|----------------------------------|
| Cell Type (Ah)                          | LFP, 314                         |
| Battery Configuration                   | 1P52S × 5                        |
| Battery at DC Side (kWh)                | 261                              |
| System Output Voltage Range (V)         | 728 ~ 910                        |
| DC-DC CONVERTER – DC BUS SIDE           |                                  |
| Rated Voltage (V)                       | 1250                             |
| Operating Voltage Range (V)             | 600 ~ 1500                       |
| Overvoltage Protection (V)              | 1560 +20 (default)               |
| Undervoltage Protection (V)             | 550 +20 (default)                |
| Rated Current (A)                       | 100                              |
| Current Measurement Accuracy            | 1.5% F.S.                        |
| Voltage Measurement Accuracy            | 0.5%                             |
| DC-DC CONVERTER – PV INPUT              |                                  |
| Maximum DC Input Voltage (V)            | 1500                             |
| Max. Input Current per MPPT (A)         | 90                               |
| Max. Short-Circuit Current per MPPT (A) | 100                              |
| MPPT Voltage Range (V)                  | 600 ~ 1400                       |
| Number of MPPTs                         | 1                                |
| SYSTEM PARAMETERS                       |                                  |
| Dimensions (W × D × H) mm               | 1150 × 1435 × 2280               |
| Weight of Unit (kg)                     | 2850                             |
| Degree of Protection                    | IP54                             |
| Operating Temperature Range             | -20°C ~ 60°C (>45°C derating)    |
| Thermal Management                      | Intelligent liquid cooling       |
| Communication Protocol                  | RS-485, CAN, Ethernet (optional) |
| Compliance & Standards                  | CE, IEC 62619, UN 38.3, UL 1741  |

# Galaxy 261L+125kW Hybrid Inverter

261kWh Liquid-Cooling LFP Energy Storage Cabinet with Hybrid Inverter

MODEL GLX-261L-HYB125



Manufactured by our technology partner.

- **Multi-Source Integration.** Equipped with a 125kW hybrid inverter, compatible with PV, battery and diesel generator (DG).
- **Seamless UPS-Level Transfer.** Millisecond-level switching between on-grid and off-grid modes ensures zero downtime.
- **Black Start Capability.** Capable of restoring the system from a complete outage without external grid support.

## DC SIDE PARAMETERS (BATTERY)

|                                   |           |
|-----------------------------------|-----------|
| Cell Type (Ah)                    | LFP 314   |
| Battery Configuration             | 1P52S×5   |
| Battery at DC Side (kWh)          | 261       |
| System Output Voltage Range (V)   | 728 ~ 910 |
| Rated Battery Voltage (V)         | 832       |
| Max. Charge/Discharge Current (A) | 200       |

## PV SIDE PARAMETERS

|                                         |            |
|-----------------------------------------|------------|
| Max. PV Array Power (kWp) @ STC         | 250        |
| Max. DC Input Voltage (V)               | 1500       |
| MPPT Voltage Range (V)                  | 300 ~ 1500 |
| Rated DC Voltage (V)                    | 1080       |
| Start-up Voltage (V)                    | 400        |
| Max. DC Input Current per MPPT (A)      | 40         |
| Max. Short-Circuit Current per MPPT (A) | 55         |
| Number of MPPTs                         | 8          |
| Number of Strings per MPPT              | 2          |

## AC SIDE PARAMETERS

|                                  |                          |
|----------------------------------|--------------------------|
| Rated AC Output Power (kW)       | 125                      |
| Max. Apparent Power (kVA)        | 125                      |
| Rated Output Current @ 230V (A)  | 180.4                    |
| Max. Output Current @ 230V (A)   | 180.4                    |
| Rated AC Voltage / Range (V)     | 3/N/PE, 220/380, 230/400 |
| Rated Output Frequency (Hz)      | 50/60                    |
| Power Factor (cosφ)              | 0i ~ 1 ~ 0c              |
| Total Harmonic Distortion (THDi) | 3%                       |
| Max. Generator Input Power (kW)  | 125                      |

## SYSTEM PARAMETERS

|                                           |                                                              |
|-------------------------------------------|--------------------------------------------------------------|
| Dimensions (W×D×H) mm                     | 1150 × 1435 × 2280                                           |
| Battery Weight (kg)                       | 2985                                                         |
| Inverter Dimensions (H×W×D) mm            | 1027 × 895 × 342                                             |
| Degree of Protection (Battery / Inverter) | IP54 / IP66                                                  |
| Corrosion Protection Level                | C3                                                           |
| Relative Humidity                         | 0 ~ 85% (non-condensing)                                     |
| Operating Temperature Range               | -30°C ~ +50°C (>45°C derating)                               |
| Max. Working Altitude (m)                 | 3000                                                         |
| Thermal Management (Battery)              | Intelligent liquid cooling                                   |
| Display & Communication                   | LED indicators, WLAN + APP, RS-485, CAN, Ethernet (optional) |
| Compliance & Standards                    | CE, IEC 62619, IEC 63056, UN 38.3, UL 1741                   |

# Galaxy 418L-800V

418kWh Liquid-Cooling LFP Energy Storage Cabinet

MODEL GLX-418L-800V



Manufactured by our technology partner.

- **High-Voltage Direct Output.** Supports 690V/800V AC output, perfectly matching utility-scale PV inverter voltage levels.
- **Transformer-less Integration.** Eliminates the need for external step-up transformers, reducing system footprint and cost.
- **Voltage-Matched Synchronization.** 800V output aligns perfectly with mainstream PV inverters for lossless integration.

## DC SIDE PARAMETERS

|                           |               |
|---------------------------|---------------|
| Battery Type (Ah)         | LFP 314       |
| System Configuration      | 1P104S×4      |
| Battery Capacity (kWh)    | 418           |
| Battery Voltage Range (V) | 1164.8 ~ 1456 |

## AC SIDE PARAMETERS

|                           |                    |
|---------------------------|--------------------|
| Rated Voltage (V)         | 690/800 (optional) |
| Rated Power (kW)          | 210                |
| Max Output Power (kVA)    | 231                |
| Overload Capacity         | 110% long term     |
| Rated Grid Frequency (Hz) | 50/60              |

## SYSTEM PARAMETERS

|                             |                                   |
|-----------------------------|-----------------------------------|
| Dimensions (W×D×H) mm       | 1100 × 2525 × 2280                |
| Weight of Unit (kg)         | 4500                              |
| Max Round Trip Efficiency   | 88%                               |
| Degree of Protection        | IP54                              |
| Corrosion Protection Level  | C3                                |
| Relative Humidity           | 0 ~ 85% (non-condensing)          |
| Operating Temperature Range | -20°C ~ 60°C (>45°C derating)     |
| Max Working Altitude (m)    | 3000                              |
| Thermal Management          | Intelligent liquid cooling        |
| Communication Protocol      | CAN, RS485, Modbus TCP            |
| Compliance & Standard       | CE, IEC 62619, IEC 63056, UN 38.3 |

# Galaxy 418L-DC Coupling

418kWh Liquid-Cooling LFP Energy Storage Cabinet with DC-DC Converter

MODEL GLX-418L-DC



Manufactured by our technology partner.

- **Integrated DC-DC Module.** Connects directly to the DC bus of the existing PV system, bypassing redundant AC/DC conversion stages.
- **Maximized Round-Trip Efficiency.** Energy flows from PV to battery via DC-DC, significantly reducing conversion losses compared to AC-coupled systems.
- **Non-Interference Expansion.** Works in parallel with existing PV inverters without affecting their grid-tied certificates or AC-side configurations.

## BATTERY SIDE PARAMETERS

|                                 |               |
|---------------------------------|---------------|
| Cell Type (Ah)                  | LFP 314       |
| Battery Configuration           | 1P104S×4      |
| Battery at DC Side (kWh)        | 418           |
| System Output Voltage Range (V) | 1164.8 ~ 1456 |

## DC-DC CONVERTER – DC BUS SIDE

|                              |                    |
|------------------------------|--------------------|
| Rated Voltage (V)            | 1250               |
| Operating Voltage Range (V)  | 600 ~ 1500         |
| Overvoltage Protection (V)   | 1560 +20 (default) |
| Undervoltage Protection (V)  | 550 +20 (default)  |
| Rated Current (A)            | 200                |
| Current Measurement Accuracy | 1.5% F.S.          |
| Voltage Measurement Accuracy | 0.5%               |

## DC-DC CONVERTER – PV INPUT

|                                         |            |
|-----------------------------------------|------------|
| Maximum DC Input Voltage (V)            | 1500       |
| Max. Input Current per MPPT (A)         | 180        |
| Max. Short-Circuit Current per MPPT (A) | 200        |
| MPPT Voltage Range (V)                  | 600 ~ 1400 |
| Number of MPPTs                         | 2          |

## SYSTEM PARAMETERS

|                             |                                   |
|-----------------------------|-----------------------------------|
| Dimensions (W×D×H) mm       | 1100 × 2525 × 2280                |
| Weight of Unit (kg)         | 4350                              |
| Degree of Protection        | IP54                              |
| Corrosion Protection Level  | C3                                |
| Relative Humidity           | 0 ~ 85% (non-condensing)          |
| Operating Temperature Range | -20°C ~ 60°C (>45°C derating)     |
| Max Working Altitude (m)    | 3000                              |
| Thermal Management          | Intelligent liquid cooling        |
| Communication Protocol      | RS-485, CAN, Ethernet (optional)  |
| Compliance & Standards      | CE, IEC 62619, IEC 63056, UN 38.3 |

# Galaxy 836L

210kW/836kWh Modular Liquid-Cooled Battery Energy Storage Cabinet

MODEL GLX-836L



Manufactured by our technology partner.

- **0% battery degradation in the first year.**
- **690V/800V output.** Perfectly matches transformerless string PV inverters for seamless system integration.
- **3-hour fast commissioning.** Fully prefabricated modules for easy installation and rapid deployment.

## GALAXY 836L BATTERY PARAMETER

|                                       |                                           |
|---------------------------------------|-------------------------------------------|
| Cell Type (Ah)                        | LFP, 314                                  |
| Battery Configuration                 | 2P104S×4                                  |
| Battery at DC Side (kWh)              | 836                                       |
| System Output Voltage Range (V)       | 1164.8 ~ 1456                             |
| Dimensions of Battery Unit (W×H×D) mm | 1100 × 3300 × 2450                        |
| Weight of Battery Unit (kg)           | ≈ 7000                                    |
| Degree of Protection                  | IP54                                      |
| Corrosion Protection Level            | C3 / C4 (optional)                        |
| Relative Humidity                     | 0 ~ 85% (non-condensing)                  |
| Operating Temperature Range           | -20°C ~ 60°C (>45°C derating)             |
| Max. Working Altitude (m)             | 3000                                      |
| Cooling Concept                       | Smart liquid cooling                      |
| Fire Protection                       | Compliant with NFPA-855, NFPA 69, NFPA 68 |

## AC SIDE (ON-GRID)

|                              |                    |
|------------------------------|--------------------|
| Rated Voltage (V)            | 690/800 (optional) |
| Rated Output Power (kW)      | 210                |
| Max. Output Power (kVA)      | 236.5              |
| Overload Capacity            | 110% long term     |
| Maximum Discharge Efficiency | ≥ 98.5%            |

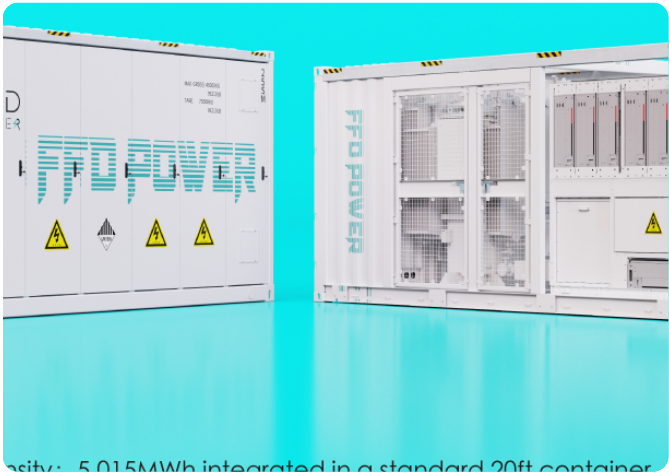
## GENERAL PARAMETERS

|                                     |                                             |
|-------------------------------------|---------------------------------------------|
| Range of Working Temperature        | -30°C ~ 60°C (>50°C frequency reduction)    |
| Working Altitude                    | ≤ 4000 m (derate above 3000 m)              |
| Cooling Method                      | Intelligent air cooling                     |
| Battery BMS Communication Interface | CAN, RS485                                  |
| Protection Level                    | IP66                                        |
| Certification                       | CE-EMC, CE-LVD, EN 61000-6-2, VDE 4105/4110 |

# Galaxy 5015 (String Type)

2.5 MW / 5.015 MWh Energy Storage Container System

MODEL GLX-5015-ST



Capacity: 5.015MWh integrated in a standard 20ft container.

Manufactured by our technology partner.

- **Ultra-High Energy Density.** 5.015MWh integrated in a standard 20ft container, cutting project land occupation greatly.
- **String PCS Architecture.** 12 independent string PCS units support refined cluster management of battery racks.
- **High System Availability.** Modular design isolates single PCS faults without system shutdown, boosting operational uptime.

| DC SIDE PARAMETERS                |                                          |
|-----------------------------------|------------------------------------------|
| Battery Type (Ah)                 | LFP 314                                  |
| Battery Configuration             | 12 Rack × 4 Pack × 1P104S                |
| Battery Capacity (kWh)            | 5015                                     |
| Battery Voltage Range (V)         | 1164.8 ~ 1456                            |
| AC SIDE PARAMETERS – PCS MODULE   |                                          |
| PCS Module                        | ESHV250K-A-G01 × 12                      |
| Rated AC Output Power (On-Grid)   | 2500 kW @45°C                            |
| Max. AC Output Power (kVA)        | 2750                                     |
| Rated Grid-tied Voltage (Vac)     | 690, 3P3W+PE                             |
| Grid Voltage Range (Vac)          | 586.5 ~ 759 (settable)                   |
| Grid Frequency Range (Hz)         | 50/60 (45~55 / 55~65)                    |
| Max. Output Current – On-Grid (A) | 2100                                     |
| Power Factor                      | > 0.99 (at rated power)                  |
| THDi                              | < 3% (at rated power)                    |
| Overload Capability               | 110% overload                            |
| SYSTEM PARAMETERS                 |                                          |
| Dimensions – BESS Container (mm)  | 2438 × 6058 × 2896 (20ft HQ)             |
| Dimensions – PCS Container (mm)   | 2438 × 6058 × 2896 (20ft HQ)             |
| Weight – BESS Container (kg)      | 44000                                    |
| Weight – PCS Container (kg)       | 19000                                    |
| Degree of Protection (Battery)    | IP54                                     |
| Operating Temperature             | -20°C ~ 60°C (>45°C derating)            |
| Max. Working Altitude (m)         | 3000 (>2000 customized)                  |
| Cooling (Battery)                 | Smart liquid cooling                     |
| Display                           | Touch screen                             |
| Fire Safety Equipment             | Fire alarm, C6F12O / C3HF7 / aerosol     |
| Communication Protocol            | Modbus-RTU / Modbus-TCP                  |
| Certification & Compliance        | UL9540A, IEC 62619, UN38.3, EN 61000-6-2 |

# Engineered for Every Scenario

Featured solutions are just the beginning — our expert team tailors complete, scalable BESS architectures for any scenario you envision.

## 52 kWh IP65 Modular Battery Solution

**Flexible long-duration storage, 52–418 kWh**

With a modular architecture, the system can be freely configured from 52 kWh, 104 kWh, 156 kWh up to 418 kWh, matching different project capacity requirements. Aluminum-plate heat dissipation removes the need for an active cooling system, reducing complexity, auxiliary power consumption and maintenance.

## VSG+ Seamless On/Off-Grid Switching

**Grid-to-island transfer without STS or extra switching gear**

Built-in fast switching logic transfers between grid-connected and off-grid operation within one grid cycle, without an external STS or additional switching equipment. Supports up to 40 energy storage cabinets in parallel — system capacity up to 4 MW — suited to large microgrids, industrial backup power and weak-grid applications.

## DC Coupling Solution for PV + Storage

**Add storage without new grid-connection approval**

By connecting PV modules and batteries on the DC side through a DC/DC converter, the system uses the existing grid-tied inverter to deliver power to the grid — higher efficiency, smoother PV energy storage and PV arbitrage, while helping customers avoid a new grid-connection application in many retrofit projects.

## 800V AC Output BESS Solution

**Compatible with 800V PV plants, no transformer required**

Directly matches common 800V PV plant architectures without requiring an additional transformer — reducing system cost, installation complexity and energy losses. Higher voltage output also reduces cable current, enabling smaller cable selection and lower cable cost in suitable project designs.

## PV + BESS Arbitrage — 800V & 400V Solutions



### IN UKRAINE

1050 kW / 2090 kWh

800V Solution for PV+BESS Arbitrage — delivered by our manufacturing partner network.



### IN ISRAEL

500 kW / 2410 kWh

400V Hybrid Solution for PV+BESS Arbitrage — delivered by our manufacturing partner network.

## PV + BESS Arbitrage — String Type & 800V Solutions



### IN ITALY

2.5 MW / 5 MWh

String Type Solution for PV+BESS Arbitrage — delivered by our manufacturing partner network.



### IN SAUDI ARABIA

2520 kW / 5016 kWh

800V Solution for PV+BESS Arbitrage — delivered by our manufacturing partner network.

# Grid Balancing & Uninterrupted Power Supply



## IN NORWAY

1.25 MW / 2.61 MWh

Grid Balancing (FCR) — delivered by our manufacturing partner network.



## IN CZECH REPUBLIC

1.5 MW / 3.13 MWh

BESS for Uninterrupted Power Supply — delivered by our manufacturing partner network.

# Grid Balancing (FCR)



IN FINLAND  
3.5 MW / 7 MWh

Grid Balancing (FCR) — delivered by our manufacturing partner network.



IN SWEDEN  
500 kW / 1044 kWh

Grid Balancing (FCR) — delivered by our manufacturing partner network.

## VSG Solution for Microgrid



IN MIDDLE EAST  
1500 kW / 3132 kWh

VSG Solution for Microgrid — delivered by our manufacturing partner network.



IN ROMANIA  
1000 kW / 2610 kWh

VSG Solution for Microgrid — delivered by our manufacturing partner network.

# C&I Arbitrage

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IN MIDDLE EAST  
2.2 MW / 5.1 MWh

C&I Arbitrage – delivered by our manufacturing partner network.



IN BULGARIA  
1.05 MW / 2.33 MWh

C&I Arbitrage – delivered by our manufacturing partner network.

## EV Charging Station



IN GERMANY  
105 kW / 215 kWh

EV Charging Station — delivered by our manufacturing partner network.



IN GERMANY  
315 kW / 645 kWh

EV Charging Station — delivered by our manufacturing partner network.

## UPS Solution for Data Center



IN CHINA  
3 MW / 6 MWh

UPS Solution for Data Center – delivered by our manufacturing partner network.



IN USA  
650 kW / 3133 kWh

Back-Up Solution for Data Center – delivered by our manufacturing partner network.

# Deployed Across the Globe

Our manufacturing partner network is present in 35+ countries, with local sales and after-sales service supporting every stage from design to long-term O&M.

35+

COUNTRIES SERVED

2,300+

SYSTEMS DEPLOYED IN 2025

38 min

FASTEST COMMISSIONING

7

SALES & SERVICE CENTERS

## Regions With Active Deployments

|             |                           |                |                            |
|-------------|---------------------------|----------------|----------------------------|
| Ukraine     | PV + BESS Arbitrage       | Israel         | PV + BESS Arbitrage        |
| Italy       | PV + BESS Arbitrage       | Saudi Arabia   | PV + BESS Arbitrage        |
| Norway      | Grid Balancing (FCR)      | Czech Republic | Uninterrupted Power Supply |
| Finland     | Grid Balancing (FCR)      | Sweden         | Grid Balancing (FCR)       |
| Middle East | Microgrid & C&I Arbitrage | Romania        | VSG Microgrid              |
| Bulgaria    | C&I Arbitrage             | Germany        | EV Charging Station        |
| China       | UPS for Data Center       | USA            | Back-Up for Data Center    |

### More project references available upon request

Detailed case studies, site data and customer references for any application scenario can be provided on request – get in touch with our team.

# Certifications

Our hardware is engineered and certified to the international standards each market requires.

Below is a representative product certification held by our manufacturing partner, whose facilities produce the hybrid inverter and BESS hardware in this catalog.

| SGS · CERTIFICATE OF CONFORMITY |                                                                   |
|---------------------------------|-------------------------------------------------------------------|
| Certificate Number              | 2622/0535-M71-CER                                                 |
| Product                         | Hybrid Inverter                                                   |
| Models                          | Merco 3600W · 4600W · 5000W                                       |
| Rated Voltage / Frequency       | 230 Vac / 50 Hz, single phase                                     |
| Standard                        | EN 50549-1:2019 – Connection to LV Distribution Networks (Type B) |
| Issued By                       | SGS Tecnos, S.A.U. — Madrid, Spain                                |
| License Holder                  | Shenzhen FFD Power Technology Co., Ltd                            |
| First Issued                    | 10 August 2023                                                    |
| Valid Until                     | 22 December 2027                                                  |

Certificate status and validity can be verified at [sgs.com/terms\\_and\\_conditions](https://sgs.com/terms_and_conditions). Full certification documentation is available on request.

## Service, Support & Worldwide Peace of Mind

Backed by a manufacturing and service network spanning 35+ countries.



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FOCUS

Industrial Energy Storage Solutions

For technical datasheets, project references or a tailored quotation, reach out to our team directly — we'll route your inquiry to the right specialist.