

BESS

PRODUCT BROCHURE



LIVOLTEK

BESS-1MW/2MWh~40MW/80MWh



• Application Scenario



Large-Scale Industrial & Commercial

- Demand-Side Response (DSR): Enables industrial & commercial users to participate in grid DSR programs. Reduces power demand during peak periods through energy storage systems, obtains demand response incentives, and lowers electricity costs.
- Peak-Valley Arbitrage: Leverages electricity price differentials between peak and off-peak periods. Stores energy during low-rate periods and discharges during high-rate periods, significantly reducing electricity costs and improving energy utilization economics.
- Power Supply Assurance: Provides stable power supply for large industrial & commercial users, ensures normal operation of production equipment, and minimizes impacts from grid fluctuations or outages.



Renewable Energy Generation Project Support

- Output Smoothing: Effectively mitigates intermittency and volatility of solar/wind energy. Ensures stable & reliable power output while enhancing grid integration quality of renewable energy.
- Storage Capacity Expansion: Increases renewable energy absorption capacity, reduces wind/solar curtailment, and improves overall economic returns of renewable projects.



Grid-Side Energy Storage

- As a critical component of grid-side energy storage stations, provides frequency regulation, voltage regulation, peak shaving and valley filling services to enhance grid operational efficiency and stability.
- Engages in grid demand-side response to optimize load distribution and reduce grid operational costs.

• Product Features

High Efficiency & Flexibility

- High-efficiency PCS with maximum conversion efficiency >98.5%, system round-trip efficiency (RTE) >90%.
- Modular PACK/PCS design minimizes fault loss and ensures high system availability.
- Smart energy scheduling forms optimal strategies to maximize revenue.
- Full liquid cooling with intelligent temperature control reduces auxiliary power consumption.

Investment Efficiency

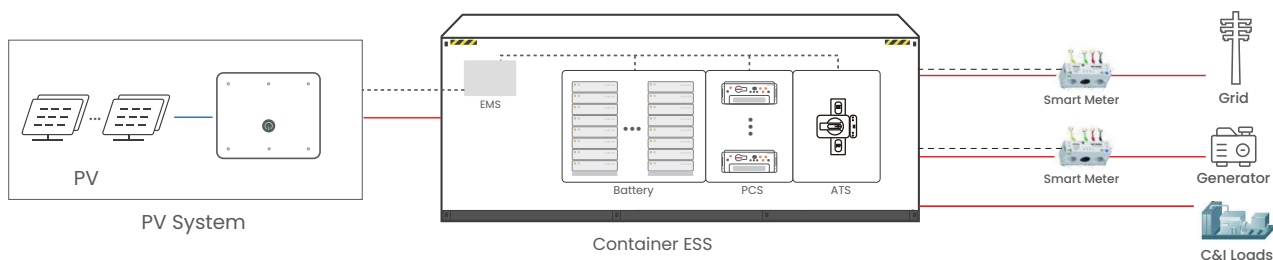
- Independent cluster management eliminates inter-cluster circulation current, boosting power output.
- Integrated AC/DC design increases system cycle efficiency by 2%.
- 3°S' integrated system design with pre-installation and pre-commissioning reduces on-site workload.
- Intelligent liquid cooling enhances efficiency and extends battery cycle life.

Safety & Reliability

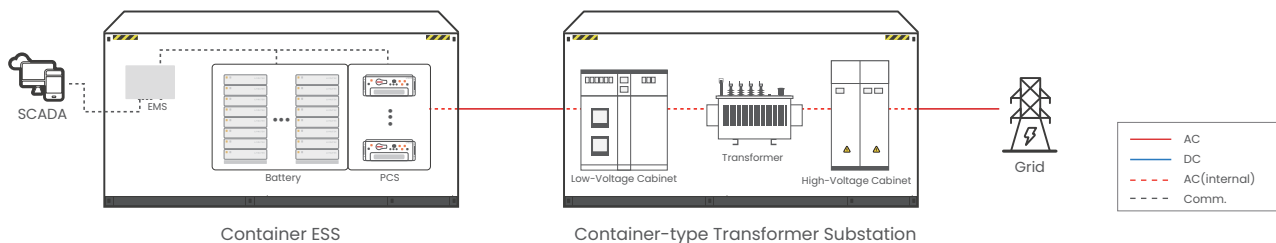
- Modular design enhances system reliability and stability.
- AI-based cell health management monitors anomalies and prevents thermal runaway risks at the source.
- Three-tier overcurrent protection (pack/cluster/PCS) enables hierarchical precision shutdown.
- Accurate thermal runaway prediction with immediate fire suppression eliminates explosion risks.

Intelligence & User-Friendliness

- Equipped with advanced BMS and EMS for real-time monitoring, automated charge/discharge optimization, and secure operation.
- Supports remote monitoring & control via mobile APP/PC for real-time status tracking and operations.
- Real-time status monitoring & fault logging enable predictive alerts and precise fault localization.



Low Voltage Storage System Solution

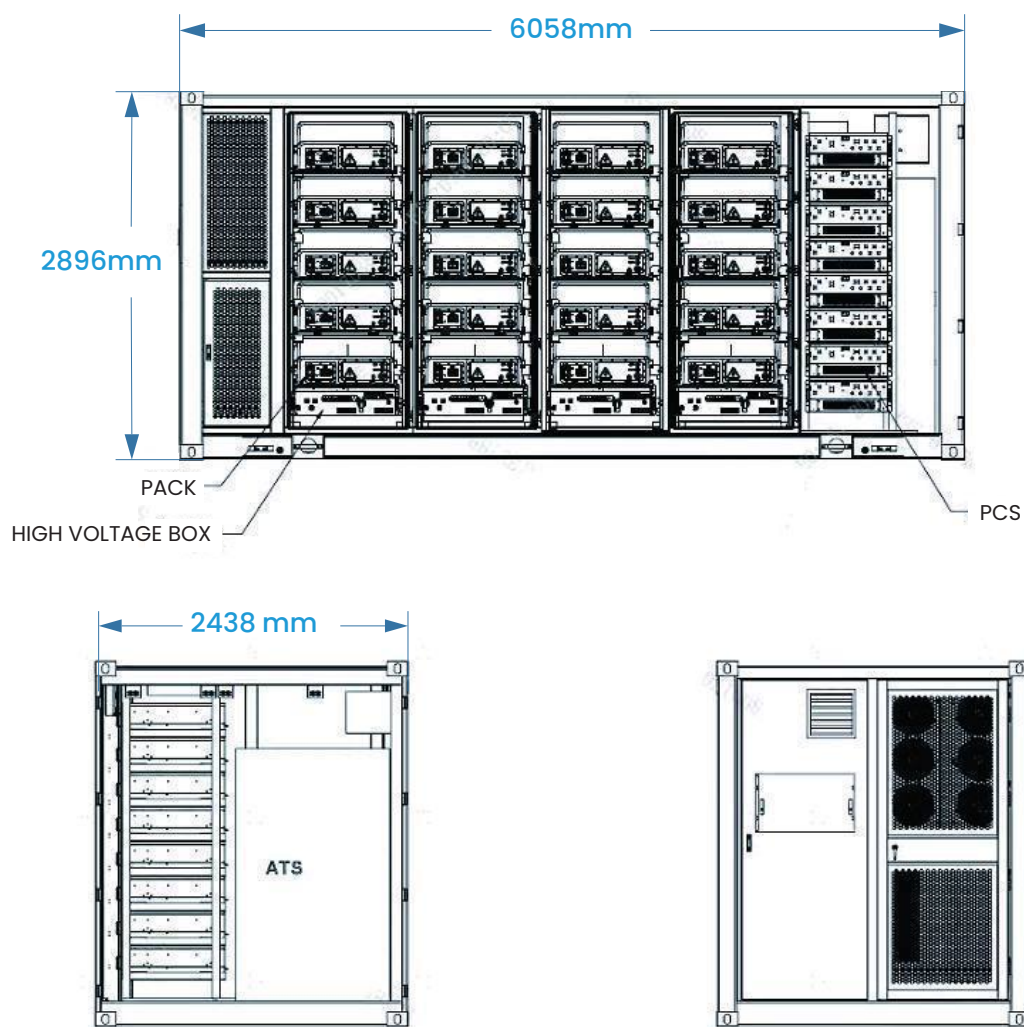


Medium Voltage Storage System Solution

Model	BHF-P1000X2090
DC Parameters	
Max. Capacity	2090 kwh
Cell Type	LFP, 3.2V/314Ah
Battery Configuration	260S8P
Cooling	Intelligent Liquid Cooling
Operating Voltage	741~936V
C Rate	<0.5P
AC Parameters	
Rated Power	1000KVA
Overload Capability	110% common; 110%~124%1min;125%~129%10s
Rated AC Voltage	380VAC/400VAC/3W+PE/3W+N+PE
Max. AC Current	1588A
Rated Frequency	50/60Hz
Output THDi	≤3%
System Parameters	
Operating Temperature	-30°C~60°C (>45°C derating)
Operating Humidity	0~95%(non-condensing)
Max. Operating Altitude	<4000m(>2000m derating)
Communication	RS485/CAN/Ethernet/4G
Noise	<75dB
Ingress Protection	IP55
Fire Suppression System	Flammable gas detector, Smoke detector, Heat detector, Sounder beacon, Alarm bell, Warning sign, Extinguishant abort button, Ventilation system, Pressure relet port, Manual automatic switching and emergency starting device(Default)Sprinkler, Vent panel, Aerosol(Optional)
Certificates and Approvals	IEC 61000, IEC 62619, IEC 63056, IEC 62477, IEC 62933, RoHS, UN38.3

• Product Structure and Packaging

Product Structure Schematic



Packaging and Shipping Dimensions

Equipment Dimensions (W*H*D)	Packaging	Packaging Dimensions (W*H*D)	Packaging Weight	Loading Capacity (PCS) for 20ft Container
6058*2896*2438mm	container	6058*2896*2438mm	≈20t	1

Container-type Transformer Substation

A pre-fabricated integrated power system combining high-voltage equipment, transformers, and low-voltage devices. Designed for oil-immersed transformers, residential communities, small-to-medium factories, mining/oil fields, and temporary construction sites. Serves as a critical node in power distribution systems, compatible with renewable energy sources (e.g., photovoltaic/wind power) for grid interconnection, and provides stable self-sufficient power in temporary infrastructure projects.

Key features: High efficiency, compact size, robust structure, reliable operation, easy maintenance, and mobility. Its small footprint significantly reduces construction costs.



Product Features

Integrated Design for High Efficiency & Convenience

- **Modular Structure:** High/low-voltage distribution equipment, transformers, and intelligent monitoring systems integrated into standard containers, enabling "plug-and-play" functionality to significantly reduce on-site installation time.
- **Flexible Layout:** Modular assembly supports customized configurations to meet diverse capacity and functional requirements (e.g., PV/storage grid integration, wind power).

Robust Materials & Protective Performance

- **Enclosure Material:** International-standard container-grade steel with anti-corrosion and salt spray-resistant coatings, suitable for extreme temperatures (-40°C to $+60^{\circ}\text{C}$).
- **Protection Rating:** IP54-rated high/low-voltage compartments for dust-proof and waterproof performance.
- **Fire Resistance:** Compartment fire resistance >1 hour, compliant with electrical safety standards.

Intelligent O&M Management

- **Smart Monitoring:** Configurable intelligent substation control devices enable real-time measurement, protection, and data monitoring of electrical equipment.

Customization & Rapid Delivery

- **Dimensional Customization:** Standard 20ft models, with non-standard 10~40ft options for space-constrained sites.
- **Functional Extensions:** Optional explosion-proof design, noise reduction layers, and anti-vibration bases for mining, coastal, and high-altitude environments.
- **Fast Delivery:** Standardized production reduces lead time by 30%, meeting urgent project timelines.

Energy Efficiency & Cost-Effectiveness

- **Eco-Friendly Process:** Low-pollution, energy-efficient production with environmentally friendly anti-corrosion treatments.
- **Cost Optimization:** Prefabricated manufacturing cuts on-site costs, with lifecycle maintenance expenses reduced by >20%.

Comprehensive Application Scenarios

- **Renewable Energy:** Grid integration for PV plants, wind farms, and energy storage systems.
- **Urban Grids:** Temporary power supply, legacy substation retrofits, and commercial complex distribution.
- **Industrial Sites:** Power supply for harsh environments (mines, oil fields, chemical parks).

• Product Standards and Certifications

The product complies with the following standards

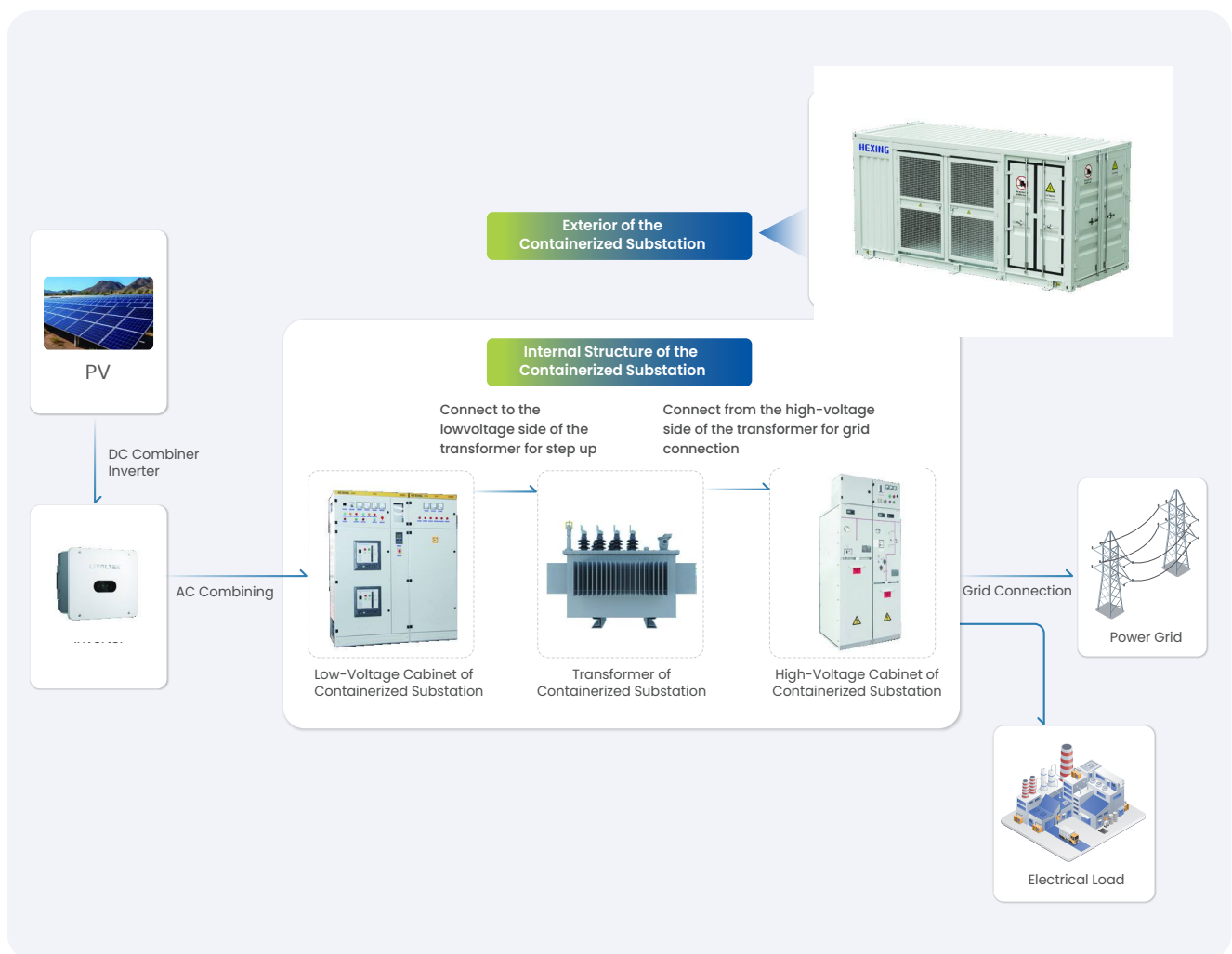
GB17467-2020

DL/T537-2018

IEC62271-202:2022

High-voltage switchgear and controlgear – Part 202: High-voltage/Low-voltage prefabricated substations

• Containerized Substation System Diagram



• Technical specifications

Product Parameters

Project (Unit)		Parameter		
Box transformer specifications (KVA)	2000kVA		4000kVA	
Rated voltage(KV)	12KV	40.5KV	12KV	40.5KV
Rated frequency (Hz)	50/60Hz	50/60Hz	50/60Hz	50/60Hz
High voltage side configuration	12KV high voltage ring main unit	40.5KV high voltage ring main unit	12KV high voltage ring main unit	40.5KV high voltage ring main unit
Transformer capacity (KVA)	2000KVA	2000KVA	4000KVA	4000KVA
Cooling method	Oil immersed (dry type optional)	Oil immersed (dry type optional)	Oil immersed (dry type optional)	Oil immersed (dry type optional)
Low voltage side configuration	Low voltage fixed switchgear (0.4/0.8KV)	Low voltage fixed switchgear (0.4/0.8KV)	Low voltage fixed switchgear (0.4/0.8KV)	Low voltage fixed switchgear (0.4/0.8KV)
Outer box specifications	20-foot standard container	20-foot standard container	20-foot standard high cabinet	20-foot standard high cabinet
Equipment size (L*W*H)	6058*2438*2591 mm	6058*2438*2591 mm	6058*2438*2896 mm	6058*2438*2896 mm
weight	12t	15t	14t	18t

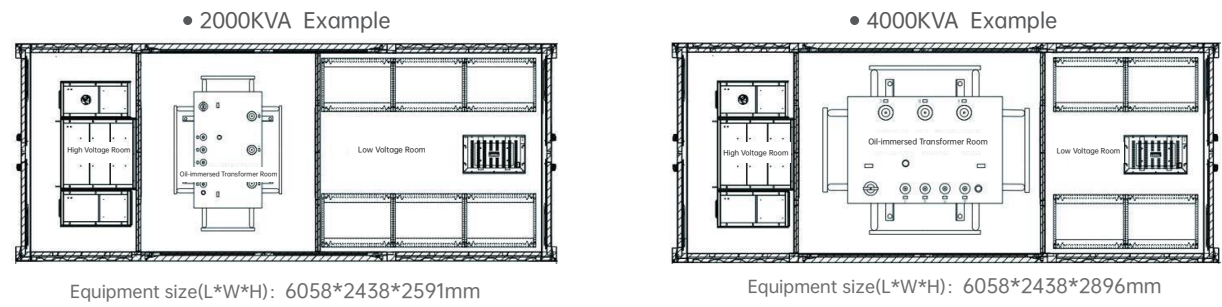
Containerized transformer configuration list

1-1	Component Name	YB□-12(Model Specifications)	unit	quantity	Remark
1	High voltage ring main unit	HXGN-12/C+M+V	tower	1	
2	transformer	2000 ~ 4000KVA/12KV	tower	1	
3	Low voltage switchgear	GGD-800*600*2200	tower	3	Configure according to project requirements
4	Standard container shell	20-foot standard container	tower	1	

1-2	Component Name	YB□-40.5(Model Specifications)	unit	数量	备注
1	High voltage ring main unit	HXGNQ-40.5/C+M+V	tower	1	
2	transformer	2000 ~ 4000KVA/40.5KV	tower	1	
3	Low voltage switchgear	GGD-800*600*2200	tower	3	Configure according to project requirements
4	Standard container shell	20-foot standard container	tower	1	

• Product structure and packaging

Product structure example diagram





● 16 Global Factories

● 28 Subsidiary Companies

● 7 Branch Offices

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