GRID
INFRASTRUCTURE SOLUTIONS

ALL-IN-ONE ESS



Applications:

This All-in-One ESS containerized battery system is a fully integrated, liquid-cooled energy storage solution that combines lithium iron phosphate batteries (314Ah), PCS, intelligent BMS, HVAC, fire suppression, and auxiliary systems within a single outdoor-rated enclosure. Engineered for high efficiency (>90%) and long service life (>8000 cycles), it features multi-level protection and streamlined deployment for safe, stable operation in a wide range of power system applications.

Features:

- **Flexible Configuration:** Supports 2-hour, 4-hour, and 8-hour discharge durations to meet diverse energy storage and grid application needs.
- **High Energy Density:** Equipped with next-generation 314 Ah cells, this the system delivers over 4 MWh in a standard container, maximizing energy density and reducing installation and operating costs.
- **Liquid Cooling System:** The system employs full liquid cooling with intelligent temperature control to optimize thermal management and minimize auxiliary power use.
- **Designed for Scalability:** The energy storage container features a modular structure for easy assembly, disassembly, and transport, enhancing both mobility and deployment flexibility.
- **Versatile Enclosure:** Ventilated, weather-sealed doors allow for ventilation, easy access, and reliable outdoor performance across multiple applications, such as on-grid, power generation, user-side, and microgrids.

Lead Time:

Approximately **12-24 months** after drawings approved.

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ALL-IN-ONE ESS

Basic Parameters	
Product Model	Y104R04C10-BV
Thermal Management Methods	Liquid Cooling for Battery Module, HVAC for Battery Compartment, Forced Convection for Inverter
Operating Ambient Temperature	-20ºC to +50ºC (-4ºF to +122ºF)
Altitude	De-rated over 3,000 meters
Electrical Parameters	
Energy	4.180 MWhDC (314Ah × 3.2V × 104 Cells × 40 Modules)
Usable Energy	3.887 MWhAC
Configuration	2.090 MWAc (2 hr) / 1.045 MVAc (4 hr) / 0.523 MWAc (8 hr)
Discharge/Charge Duration	2 hours / 4 Hours / 8 Hours
Inverter Size	2.150 MVA (2 hr) / 1.075 MVA (4 hr) / 0.645 MVA (8 hr)
Grid Voltage	690 V(AC), 3-Phase Delta
Grid Frequency	50 / 60 Hz
Round Trip Efficiency	86-88% (AC Bus, Beginning of Life, and 25ºC)
Aux Power Consumption	27 kW (Peak), 20 kW (Avg.), 5 kW (Idle) - 2 hr
Aux Power Factor (PF)	0.7
External Aux Transformer Size (Optional)	55 kVA (comes with 55 kVA Internal Aux Transformer as Standard)
Mechanical Parameters	
Size / Dimensions	33.07ft × 8.00ft × 9.65ft (10.08m × 2.44m × 2.94m)
Weight	~99.031 lbs (~44,920 kg)
Design Life	20 Years
Ingress Rating	IP54, NEMA Type 3X
Noise	<70 dB(A) (at 5 meters)
Seismic Rating	Foundation Brackets to Meet Requirements in All Seismic ones (EEE 693-2018)
System Safety	Fire Alarm Control Panel, Fire and Smoke Detector, Explosive Gas Detection, Active Ventilation, Dry Piping for Water Suppression, 2-Hr Firewall, SPD, AC and DC Circuit Breakers
Controls	
Protocol & Interfaces	Protocols: Mobius TCP, DNP3, OPC UA, REST API Interfaces: RTU/RTAC
Plant Controller	Energy Management System for Both Local and Cloud-Based Controller
Certification	
Standards	UL 9540, UL 9540A, UL 1973, UL 1741, UL 1741SA, IEEE 1547.1, G99, UN 38.3, UN 3536, IEC 62477, RoHS, REACH, IEC 61000, IEC 62477, EN 50549, UK G99

GRID INFRASTRUCTURE SOLUTIONS
5 Park Plaza, Suite 640
Irvine, CA 92614

Email: sales@grid-infrastructure.com
Phone: +1 (949) 570-8998
Website: grid-infrastructure.com