Energy Storage Solution

LFP Battery Container

- Compact design of standard 10-ft shipping container for easy transportation and installation
- Built-in fire protection system, compliant with UL 9540A safety test standard
- Battery system with built-in controls, offering flexible scalability from 708 kWh to 7.78 MWh

Ancillary Services

Solar Plus Storage

Energy-Heavy Industries

Microgrids

Fully-Integrated Battery Solutions

Redefining Safety and Performance with Effortless Installation, Remarkable Scalability, and Integrated Fire Protection System

Delta's LFP battery container is designed for grid-scale and medium to large-scale industrial energy storage applications. Built on a standard 10-ft shipping container with compact design and simple installation procedure, the battery system can be rapidly deployed. LFP battery container is high energy density, offering scalability from 708 kWh to 7.78 MWh. This flexibility allows it to accommodate varying spatial and capacity requirements for different sites, optimizing land utilization.

In addition, LFP battery container features redundant communication support for the installation site with built-in controls, enhancing the communication stability of the energy storage system. It also incorporates several sensors and a fire protection system to ensure the safety of the energy storage system.

Features

High Energy Density with **Flexible and Scalable** Configuration

- High energy density, effectively utilizing space
- Flexible configuration ranging from 708 kWh to 7.78 MWh battery capacity

Built-in Fire Protection System Enhancing **Inherent Safety**

- Real-time cell monitoring: temperature and voltage of each cell
- Dual-redundant environmental sensors: smoke, heat, humidity, flammable gas, and flood
- Fire protection system: detection system, gas venting system, aerosol fire extinguisher and fire sprinkler system

Easy Transportation and Installation

- Whole-container transport without the need to remove battery modules
- Containers connected by flexible duct connectors on the top, tolerating positioning errors and reducing on-site installation time

Integrated Control and Monitoring

- Built-in controls seamlessly integrate batteries and PCSs without the need for additional equipment and space
- Built-in Human-Machine Interface (HMI): on-site access to real-time field information
- Dual-redundant communication enhanced of communication stability and monitoring efficiency

Product Configuration and Design

Battery System

Container Connector

- Flexible duct connector design for flexible installation
- Quick installation of busbars, auxiliary power cables and communication cables

Embedded HVAC

- Built-in air conditioning system for optimal thermal management
- Installation of additional cooling equipment is not required, saving both space and cost

Quick Wiring Design

- On-site work can be performed without opening containers to avoid the risk of exposure to water vapor and foreign particles
- Simplified wiring allows for shorter work duration, allowing for cost savings

Reinforced Storage Container

- Three-layer structure composed of double steel plate and fireproof rock wool boards (fire retardant up to 60 minutes)
- Cables and wires in accordance with IEC 6033
- IEEE 693 Recommended Practice for Seismic Design of Substations
- Corrosion protection according to ISO 12944 C5M (C5H optional)
- Access control for vandalism prevention

Battery Container

Redundant Detection System

- Smoke detectors
- Flammable gas detectors
- Heat detectors
- Door sensors
- Flood detectors
- Humidity sensors

Battery Module Protetcion

- Real-time monitoring of each battery cell
- Big data for aging/abnormality detection
- Insulation design of battery module
- Built-in fuse
- Cell balancing mechanism

Fire Safety Protection

- Gas venting system
- Aerosol fire extinguisher
- Fire sprinkler system
- Fire alarm siren & strobe

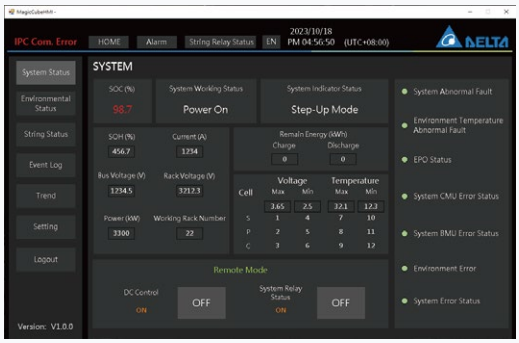
Safety Certification

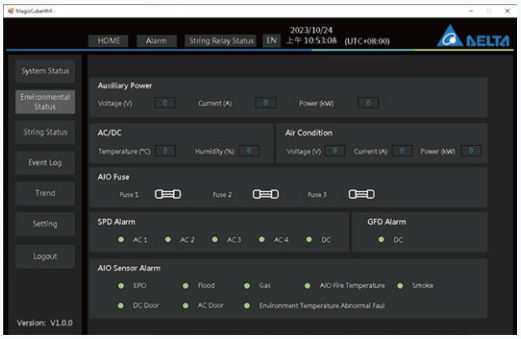
- UL 9540A
- UL 1973
- IEC 62619 including fire propagation
- UN 38.3
- IEC 60730
- IEC 61000 -6-2/ -6-4
- IEC 62477
- CE / UKCA Mark

Software Interface

Human Machine Interface (HMI)

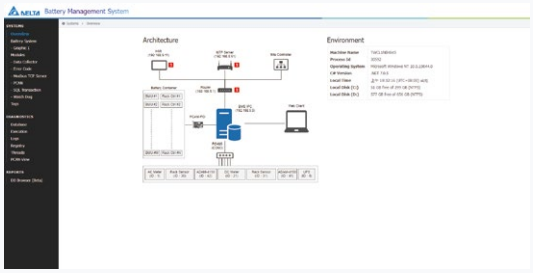
- **Easy Commissioning**
  On-site view of real-time information on the battery system
- **Real-Time Monitoring**
  Operation information, environment status, UPS status, warnings, and battery information (e.g. SoC, SoH, voltage, current, temperature), etc
- **Convenient Maintenance**
  Service mode option enables technicians to maintain the battery system easily





Battery Management System (BMS)

- **Clear Overview of Battery Status**
  Intuitive UI for real-time display of battery string parameters
- **Quick Diagnosis and Debugging**
  Easy access to error codes, database, daily logs, and entry records



System Overview

Battery Analysis Reports

Specifications

Type	Single Container (IEC Version)		Battery System (IEC Version)
	AIO	Battery	
Model Name	**EBSU-CE2818SX$_1$PP0Y$_1$ EBSB-CE2818SX$_1$PS0Y$_1$**	**EBSB-CE2818S3PP0Y$_1$ EBSB-CE2818S4PP0Y$_1$**	**EBSU-CE2818SX$_2$PP0Y$_1$ EBSB-CE2818SX$_2$PS0Y$_1$**
Installed Capacity	0 to 1416 kWh		1770 kWh to 7788 kWh
Rated Power	-		757 kW to 3333 kW
Battery Cell	LFP 280 Ah Cell		
DC Voltage Range	1089 to 1386 Vdc		
String Configuration	396S-1P		
Modules per String	18		
Max. Charge/Discharge Current	3080 A		
Recommended DoD	95%		
Auxiliary Power	220/380 Vac (3P4W) ±5%		
Communication Interface	Ethernet		
Communication Protocol	Modbus		
Environment			
Environment Condition	Outdoor		
Altitude	< 2000m		
Operating Temperature	-30 °C to +50 °C		
Ambient Humidity	0 to 100 % RH (non-condensing)		
Storage Temperature	1 month: -20 °C to +45 °C, <70% RH ; 1 year: 0 °C to +35 °C, <70% RH		
Ingress Protection	IP54; Type 3R, NEMA 3R compliance		
Corrosion Resistance	Compliant with Severity-1 (IEC 60068-2-52); Passed 720-hour salt mist test (ISO 9227), ISO 12944 Level C5M		
Container Standard	ISO 668		
Seismic Level	IEEE 693 (0.5 G, 2% damping)		
Operation			
Measurement Accuracy	Voltage: ±0.5 %; Current: ±1 % ; Temperature: ±2 °C; SoC: ≤5 %		
HMI	For monitoring and maintenance		
BMS Log	90 days		
BMS Power Backup	UPS power backup for 60 minutes		
Time Calibration	NTP time synchronization		
Safety Protection			
Fire Safety Equipment	Gas-venting system, aerosol fire extinguisher and fire sprinkler system		
Detection Sensors (per Container)	Heat (x2), smoke (x2), gas (x2), flood (x2), humidity (x4), door (x4)		
Mechanical Information			
Dimension (W x D x H)	2438 × 2990 × 2896 mm (per Container)		
Weight	AIO Container: 12,000 kg (with 2 battery strings) Battery Container: 16,000 kg (with 4 battery strings)		

* Where X_1 can be 0,1,2, which indicates the number of battery strings.
* Where X_2 can be a number from 5 to 22, which indicates the number of battery strings.
* Where Y_1 is a serial number indicating the battery system version.

Smarter. Greener. Together.

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More Information

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