



# FES-512 LiFePO4 Battery



Residential



Commercial



Industrial



Utilities and  
Telecom





## Residential, Commercial, or Utility Scale Energy Storage Systems



**FES-512**  
(4 Unit modules )

### **Fusion Energy Storage Systems (ESS)**

Designed for easy installation into residential, commercial, or utility scale projects.

Fusion ESS Lithium Iron Phosphate {LiFePO<sub>4</sub>} batteries are available as 51.2V-100Ah {5.12 kWh} modules and are designed to be connected in parallel up to 81.92 kWh of storage.

Our High-Performance LiFePO<sub>4</sub> energy storage system is easy to install, safe, and consistently reliable. It provides the lowest lifetime energy cost for both new solar customers and retrofit customers.

Fusion ESS can be integrated with industry standard solar charge controllers, inverters, and energy management systems. Financing solutions are available for any project size.



**PERFORMANCE SPECIFICATIONS**

Model Number	FES-512
Nominal Voltage	51.2V
Nominal Capacity	100 Ah (C5,25C)
Energy	5.12 kWh
Internal Resistance	≤40mΩ
Cycle Life	>10,000 @50% DOD >6,000 @80% DOD >2,000 @95% DOD
Retained Capacity	80% at 10,000 Cycles
Self Discharge Rate	<1% per month
Efficiency of Charge	100% @0.5C
Efficiency of Discharge	96~99% @1C

**CHARGE SPECIFICATIONS**

Charge Voltage	57.0±0.2V
Charge Mode	CC/CV 57.0V / Float 55.2V
Charge Current	≤ 100A = 1C
Charge Cut-off Voltage	45.0V ± 0.2V

**DISCHARGE SPECIFICATIONS**

Max Continuous Current	≤ 100A = 1C = 1Hr
Reserve Capacity @500W	> 10 Hours
Reserve Capacity @1000W	> 5 Hours
Discharge Cut-off Voltage	44.8V

**MECHANICAL SPECIFICATIONS**

Case	Steel
Dimensions (W x D x H)	(645.5mm x 300mm x 177 mm)
Weight (Incl. case)	44.1 kg

**ENVIRONMENTAL SPECIFICATIONS**

Charge Temperature	-5°C to 55°C @60±25% Relative Humidity
Discharge Temperature	-30°C to 55°C @60±25% Relative Humidity
Storage Temperature	0°C to 55°C @60±25% Relative Humidity
Ingress Protection Rating	IP65

**BMS TEMPERATURE PROTECTION**

BMS discharging turn on temperature	≥ 70°C or < -15°C
BMS discharging cut off temperature	< -20°C or >75°C
BMS charging turn on temperature	≤ -5°C or > 65°C
BMS charging cut off temperature	≤ -10°C or >70°C
PCB Temp over 95°C protecting	



**The 51.2V-100Ah (5.12kWh) FUSION ESS** Lithium Iron Phosphate (LiFePO4) battery module is specifically designed for high capacity and high performance residential, commercial, and utility scale energy storage systems.

These ESS battery modules can be placed parallel for energy storage systems up to 81.92 kWh of total capacity. These ESS will integrate with any inverter or solar charge controller.

**Features**

**Longer Cycle Life:** Offers a significant longer cycle life and longer float/calendar life than lead acid batteries helping to minimize replacement cost and reduce total cost of ownership. LiFePO4 batteries are designed for 10,000 cycles at 50% DOD, and 6,000 cycles at 80% DOD, and 2,000 cycles at 95% DOD.

**More Energy:** Delivers significantly more energy than lead acid batteries, even at high discharge rate while maintaining high energy capacity.

**Advanced BMS Protection:** Under/Over voltage and current protection ensuring safe and efficient operation.

**Safety:** Advanced LiFePO4 cell design includes various safeguards including high temp thermal fuse, and flame retardant additive.

**Increased Flexibility:** This LiFePO4 battery module is designed to be connected in parallel for applications up to 81.92 kWh. The modules are fitted into a cabinet for ground mount configuration with simply installation.

**Protective Weatherproof Cabinet:** Designed with a secure key lockable door with UV protective glass.

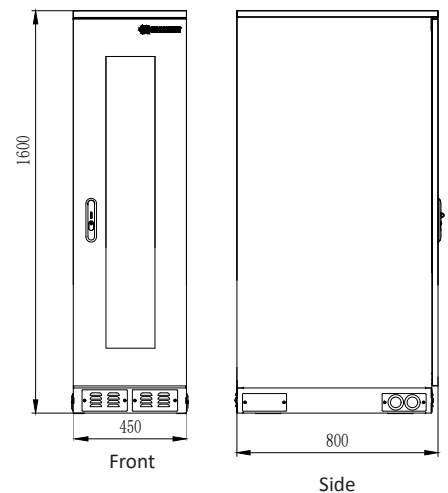
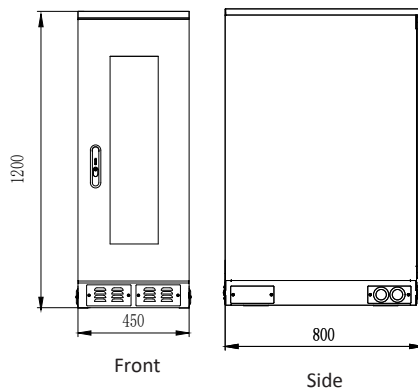
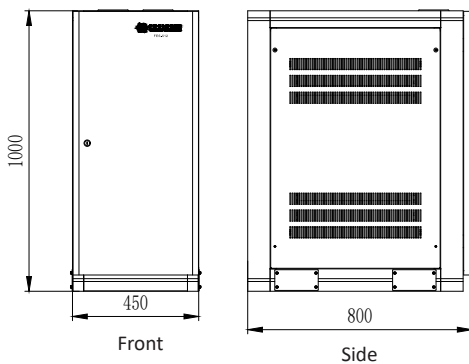
**Clear Visual Display:** LCD display showing voltage,current,SOC and temperature for each individual module.



(20.48 kWh ESS indoor cabinet)

(20.48 kWh ESS outdoor cabinet)

(30.72 kWh ESS outdoor cabinet)



**FEATURES**

- 10 Year Product Warranty \*conditions apply\*
- DoD up to 95%
- Scalable to 81.92 kWh
- 10,000 Cycle Life\* (80% Capacity)
- Safe LiFePO4 Chemistry
- Integrates with standard Inverter / Chargers
- Digital LCD condition indicator meter

Max Cabinet Size: 4 Modules (20.48 kWh)  
 Max System Size: 16 Modules (81.92 kWh)

**SUMMARY**

The FUSION ESS has been designed for easy installation into residential, commercial, and industrial applications.

The FUSION ESS 51.2V-100Ah (5.12 kWh) LiFePO4 battery modules can be connected in parallel for scalable systems up to 16 modules (81.92 kWh).

Multiple Systems can be operated in parallel allowing for flexible design for a wide range of project sizes.

The FUSION ESS modules offers the most advanced proprietary battery management system that allows for scalability without the use of additional battery management devices.

Model Number	<b>FES-512</b>					
Installed Energy (kWh)	5.12	10.24 (2 Units)	15.36 (3 Units)	20.48 (4 Units)	25.60 (5 Units)	30.72 (6 Units)
Max Power (kW)	5.12	10.24	15.36	20.48	25.60	30.72
Charge / Discharge (A)	100	200	300	400	500	600
DC Efficiency	96-99% @1C					
DC Voltage	51.2					
Weight (Incl. case)	44.1kg	88.2kg	132.3kg	176.4kg	220.5kg	264.6kg
Certificates	UL 1942, UL 1973 (Pending)					


**FES-512**

\*Cycle Life: All battery cycle life is impacted by numerous factors including depth of discharge (DOD), charge/discharge rates, charge/discharge current, operating temperature and the frequency of cycling.

**Contact Us**