

## ALL IN ONE BATTERY WITH INVERTERS



All-in-one battery and inverter system integrates a battery, inverter, solar charge controller, and energy management system into a single unit, which simplifies installation and improves efficiency by allowing components to work together seamlessly. During the day, it converts solar panel energy (DC) to AC power for use or stores excess energy in the battery. At night or during an outage, it draws from the battery and converts the stored DC energy into AC power to run appliances.

### How it works?

- **Energy capture:** Solar panels capture sunlight and produce direct current (DC) power.
- **Internal conversion and management:** Inside the all-in-one unit, the built-in components handle the power flow:
  - A charge controller charges the battery with DC energy from the solar panels.
  - An inverter converts the DC power from the solar panels or battery into usable alternating current (AC) power for the home's appliances.
- **Energy storage:** When there is more solar energy than needed, the unit stores the excess DC energy in the connected battery for later use.
- **Backup power:** When the grid power goes out, the system automatically switches to using the battery's stored DC energy, converting it to AC power to keep your appliances running without interruption.
- **Efficiency and simplicity:** Because all components are integrated, they are optimized to work together, which is often more efficient and less complex than a system with separate parts. This removes the guesswork of compatibility and simplifies the connection points, requiring only connections to the solar array, batteries, and AC power.

### What are the key components within the single unit?

- **Solar charge controller:** Manages the flow of DC power from the solar panels to charge the battery safely and efficiently.
- **Inverter:** Converts the stored DC power from the battery into the AC power used by household appliances.
- **Battery management system (BMS):** Monitors and protects the battery, ensuring it operates within safe parameters.
- **Energy management software:** Controls the overall flow of energy, making decisions about whether to power a load directly, charge the battery, or use grid power.
- **Power management:** The unit intelligently manages power based on your needs and available energy:

- **During the day:** It prioritizes using solar power to run your home and will charge the battery if there is more power being produced than is needed.
- **At night or during outages:** It automatically switches to the battery to provide AC power, so your home stays running without interruption.
- **Grid connection (for hybrid systems):** If the system is grid-connected, it can also draw power from the utility grid to charge the battery when solar is insufficient or send excess power back to the grid.

#### What are the benefits of all-in-one systems?

- **Simplicity and efficiency:** Integrating the components into a single unit often results in a more efficient system with fewer energy conversion steps (DC coupling) and simpler installation.
- **Space saving:** All the components are in one compact unit, which saves space.
- **User-friendly:** These systems are often designed with user-friendly interfaces and are easier to set up and maintain.

### WALL MOUNT LITHIUM BATTERY



#### 51.2V 100Ah 5.12kwh Wall Mount Solar Battery Storage, Expand to 10.24kWh, 15.36kWh

A wall-mounted lithium battery is a home energy storage system that is designed to be installed directly on a wall to save space. It stores electrical energy, often from solar panels or the power grid, to provide backup power during outages, optimize energy usage, and reduce reliance on the main power supply. These units often integrate the battery, inverter, and charge controller into a single, space-saving unit for easier installation and are compact, efficient, and often feature a modular design for easy expansion.

#### What are the key features and benefits?

- **Space-saving design:** Mounting the unit on a wall frees up valuable floor space, making it ideal for homes or offices with limited room.
- **Integrated system:** Many models are all-in-one units that combine the battery, power inverter, and charge controller, simplifying the overall installation process.

- **Energy management:** These systems intelligently manage energy flow, prioritizing solar power to charge batteries and power the home, which can lower electricity costs.
- **Fast charging:** Lithium-ion batteries can charge quickly, with some models reaching full charge in a few hours.
- **Long lifespan:** They are durable, with a long cycle life (often 6,000 cycles or more), and are maintenance-free, offering an extended operational life compared to traditional batteries.
- **Reliable backup power:** The stored energy provides a reliable backup power source for essential appliances during a grid outage.
- **Scalability:** Many systems can be expanded by connecting multiple modules in parallel to increase energy storage capacity as needed.

## **RACK MOUNT LITHIUM BATTERY**

The advertisement features a central graphic with the following elements:

- Specifications:** 20/25/30/35/40/46/51kWh High Voltage Rack LiFePO4 Battery, 51.2V 100Ah.
- Features:** Easy Installation, 10 Year Warranty, 6000 Cycles Lifespan.
- Compatibility:** Built-in BMS, Compatible 91% Inverters Protocol. Logos for GROWATT, Solis, GOCOME, S0FAR, Deyo, SUNSHINE, and SMA.
- Visuals:** Two black rack-mounted battery units, one shown from the front and one from the side.

A rack-mounted lithium battery for solar is a modular, high-density energy storage unit designed to be installed into a standard 19-inch equipment rack, commonly used in solar power systems. These batteries are built to save space and provide reliable backup power, with advanced features like built-in battery management systems (BMS) for safety and efficiency. They offer a long cycle life and are a flexible and scalable solution for residential, commercial and industrial applications.

### **What are the key characteristics?**

- **Modular and scalable:** The batteries are built as individual modules that can be combined in a rack to create a system of the required size, making it easy to add or replace units.
- **19-inch rack standard:** Their design conforms to standard server racks, making them easy to integrate into existing power systems in data centres, telecommunications, and commercial or residential applications.
- **Built-in BMS:** Each module has an integrated Battery Management System to monitor cell voltage and temperature, balance cells, and ensure safe and efficient operation against hazards like overcharging and short circuits.
- **High performance:** They offer high energy density, fast charging times, and a long cycle life (e.g., 6,000 cycles at 80% depth of discharge) compared to traditional lead-acid batteries.
- **Safety features:** Modern designs include advanced safety features such as built-in fire arresters, rapid shutdown (RSD), and circuit breakers to protect against thermal events.
- **Space-efficient:** Mounting batteries in a rack vertically saves floor space compared to standalone battery banks.

### **Applications**

- **Residential solar:** Storing solar energy for use during the night or power outages.

- **Commercial and industrial:** Providing backup power for critical systems in data centres, telecom facilities and other applications where continuous power is essential.
- **Off-grid systems:** Serving as the core energy storage component in remote or off-grid solar power setups.

## STACKED LITHIUM BATTERY



**51.2V 100AH**  
stacked lithium battery pack

**LiFePO4:**  
Higher safe performance and longer cycle life.

**Multiple Protection:**  
Built-in smart BMS, Breaker and Fuse

**Flexible Installation:**  
Moveable Type Floor Mounted

**Wide Compatibility:**  
Compatible with leading inverter brands.

**High Scalability:**  
Support 8 also connected in parallel for extension capacity up to 400kWh.

**Long Warranty:**  
10 years

**Fire Extinguishing Gel Inside**

**Up to 8 PCS Battery Packs can be connected in parallel**



5.12kWh, 10.24kWh, 15.36kWh, 20.48kWh, 25.6kWh, 30.72kWh, 35.84kWh, 40.96kWh

**Transparent Acrylic Plate**



Transparent Acrylic Plate

**Connection diagram**



A stack-mounted lithium battery for solar is a modular energy storage system that combines multiple individual battery units, often called modules, stacked vertically to create a larger system. This design allows users to easily expand their energy capacity by adding more stackable units and is known for its space-saving vertical footprint. These systems are commonly built with LiFePO<sub>4</sub> (lithium iron phosphate) cells, feature a built-in battery management system (BMS) for safety and efficiency and are compatible with various solar inverters.

### Key features

- **Modular design:** Multiple individual battery modules are connected to create a single, larger energy storage system.
- **Scalability:** You can start with a smaller system and add more stacks to increase capacity as your energy needs grow.
- **Space-saving:** The vertical stacking design makes them a more compact and space-efficient solution compared to traditional battery banks.
- **Ease of installation:** They are designed for flexible installation and are often simpler to connect than traditional systems.
- **Integrated safety:** A smart Battery Management System (BMS) is built into each unit to monitor and protect the battery cells, ensuring safe and reliable operation.
- **High compatibility:** Many models are designed to communicate with various brands of solar inverters.
- **Chemical composition:** They typically use safe and reliable LiFePO<sub>4</sub> (lithium iron phosphate) cells, which offer a long service life.