

# Working principle of small flywheel energy storage system

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## ENERGY STORAGE SYSTEM

**Product Model**  
HJ-ESS-215A(100KW/215KWh)  
HJ-ESS-115A(50KW 115KWh)

**Dimensions**  
1600\*1280\*2200mm  
1600\*1200\*2000mm

**Rated Battery Capacity**  
215KWH/115KWH

**Battery Cooling Method**  
Air Cooled/Liquid Cooled



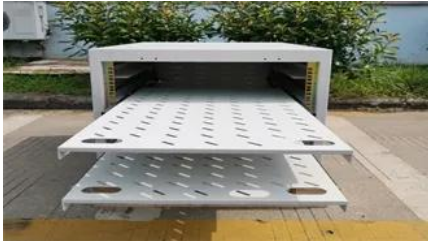
## Overview

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Flywheel Energy Storage Systems (FESS) rely on a mechanical working principle: An electric motor is used to spin a rotor of high inertia up to 20,000-50,000 rpm. Electrical energy is thus converted to kinetic energy for storage.

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### FESS Flywheel Energy Storage Systems

In a flywheel energy storage system, the rotor is connected to a motor/generator. This motor/generator can either accelerate the rotor to store energy or decelerate the rotor to convert the stored energy

### How Flywheel Energy Storage Systems Work

Facilities like data centers, hospitals, and manufacturing plants use flywheel-based UPS systems to protect sensitive equipment from brief power outages or voltage sags. In a power



### Flywheel Energy Storage (FES) Systems

At its core, an FES system utilizes the kinetic energy of a rotating flywheel. This kinetic energy is converted and stored, ready to be harnessed when needed. The fundamental principle

### Technology: Flywheel Energy Storage

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## [Flywheel Energy Storage System, Springer Nature Link](#)

Flywheel energy storage stores electrical energy in the form of mechanical energy in a high-speed rotating rotor. The core technology is the rotor material, support bearing, and

## Flywheel Energy Storage

Charging energy is input to the rotating mass of a flywheel and stored as kinetic energy. This stored energy can be released as electric energy on demand. The rotating mass is supported by magnetic



## [A review of flywheel energy storage systems: state of the art and](#)

Energy storage systems (ESS) play an essential role in providing continuous and high-quality power. ESSs store intermittent renewable energy to create reliable micro-grids that run

## [Flywheel Energy Storage System: What Is It and How Does It](#)

In a flywheel energy storage system, electrical energy is used to spin a flywheel at incredibly high speeds. The flywheel, made of durable materials like composite carbon fiber, stores energy in the



## [The most complete analysis of flywheel energy storage for new energy](#)

It uses a high-speed rotating flywheel to store energy in the form of kinetic energy. When energy is urgently lacking or needed, the flywheel slows down and releases the stored

energy.

## **Flywheel energy storage**

First-generation flywheel energy-storage systems use a large steel flywheel rotating on mechanical bearings. Newer systems use carbon-fiber composite rotors that have a higher tensile strength than



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