



# OASIS A200

## All-in-One

125kW/200kWh Battery Storage System

Product Specification



## **Preface**

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# **1. Introduction**

## **1.1 Overview**

OASIS A200 All-in-One is a high-safety, high-reliability, and standardized product developed for commercial and industrial energy storage applications. Featuring a modular system configuration, it flexibly adapts to diverse scenarios and supports grid-connected applications. With parallel scalability, this system allows for power capacity expansion. This energy storage solution is ideal for applications requiring continuous grid stability, including peak load shifting, frequency regulation, grid load balancing and energy arbitrage.

Products include battery box, control box, energy storage converter (PCS), battery management system, fire protection system, etc.

## **1.2 Application Scenarios**

Primarily used in commercial and industrial energy storage settings, including but not limited to: Industrial parks\ Financial institutions\ Educational facilities\ Commercial buildings\ Gas stations\ Residential complexes.

## 2. Product Overview

### 2.1 Specification

This product adopts the integrated cabinet design, composed of PACK, PCS, fire protection, air conditioning and other components. The nominal capacity of this energy storage integrated cabinet is 125kW/200kWh. The battery connection mode of a single PACK is 1P20S, 10 packs are connected in series, and 314Ah lithium iron phosphate battery is used. A PACK capacity of 20kWh, PCS total fixed power of 125kW, the whole machine can support parallel expansion.



Figure 2.1.1 Product Rendering Diagram

## 2.2 Technical Parameter

Product Series	OASIS A200 All-in-One
Product Model	CISS-A-200
Battery Side Parameters	
Cell Type	LFP
Cell Specification	3.2V 314Ah
PACK Capacity	20kWh
Nominal Capacity	20kWh
Nominal Voltage	640V
AC Side Parameters	
Rated Output Power	125kW
THDi	<3% (at rated power)
Nominal Voltage	400V (300~440V)
Nominal Frequency	50/60Hz (±5Hz)
System Parameters	
Communication Interface	RS485、CAN
Display	Touchscreen, Cloud Platform
Protection Rating	IP55
Cooling Method	Industrial Air Conditioning
Installation Type	Outdoor
Corrosion Resistance	C3
Ambient Temperature	-30°C ~ 55°C (>45°C derating)
Humidity	0 ~ 95% (non-condensing)
Noise	<75dB
Altitude	3000m
Size (W×D×H)	1150*1375*2200mm
Weight	<2400kg

### 3. Product Specification

#### 3.1 Battery Cell

The LiFePO<sub>4</sub> (lithium iron phosphate) prismatic aluminum-shell cell (3.2V/314Ah) features a rigid casing to resist mechanical impacts and human misuse, ensuring intrinsic safety. Each cell integrates a pressure relief vent to safely release internal pressure during overcharging, over-discharging, short circuits, or thermal runaway, preventing explosions and minimizing hazards.

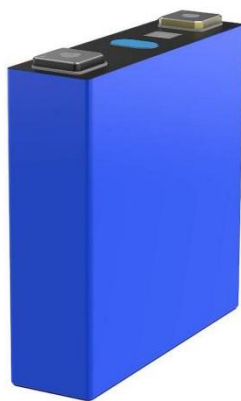


Figure 3.1.1 Schematic of 3.2V 314Ah LiFePO<sub>4</sub> Cell

#### Single Cell Specifications

No.	Parameter	Specification
1	Cell Chemistry	LiFePO <sub>4</sub>
2	Nominal Capacity	314Ah
3	Nominal Voltage	3.2V
4	Nominal Energy	1004.8Wh
5	Operating Voltage Range	2.5~3.65V
6	Nominal Charge/Discharge Rate	0.5C
7	Max. Charge/Discharge Rate	1C
8	Storage Temperature	-40°C~60°C
9	Charging Temperature	0°C~60°C
10	Discharging Temperature	-30°C~60°C
11	Size (W×D×H)	174*72*207mm
12	Weight	5.6kg
13	Energy Density	179Wh/kg
14	Calendar life	9000 cycles (25°C, 0.5C/0.5C, 90%DOD, 70% EOL)

### 3.2 Battery PACK

The modular battery PACK is designed for rapid installation, maintenance, and safety:

- (1) Modular Design: Enables quick deployment and servicing.
- (2) Terminal Identification: Clear "+/-" markings on terminals for easy connection and inspection.
- (3) Laser Welding: Low-impedance, high-strength connections ensure reliability.
- (4) BMS Passive Balancing: Cost-effective solution with proven field performance.
- (5) Safety: Dedicated expansion space above pressure relief vents to prevent explosive pressure buildup during thermal runaway.
- (6) Thermal Management: Forced air cooling maintains optimal operating temperatures.

PACK Parameters

Model Name	B064314S01
Configuration	1P20S
Nominal Voltage	64V
Nominal Energy	20kWh
Nominal Charge/Discharge Current	157A
Max. Charge/Discharge Current	252A/280A
Voltage Range	58~72V
Storage Temperature	-30°C~55°C
Charging Temperature	0°C~55°C
Discharging Temperature	-30°C~55°C
Cooling Method	Forced Air Cooling
Size (W×D×H)	923*420*250mm
Weight	141±3kg



Figure 3.2.1 Battery PACK Schematic Diagram

### 3.3 Battery Cluster

The system contains 1 battery cluster composed of 10 PACK in series, delivering a total energy capacity of 200 kWh.

Cluster Features:

- (1) Single-cluster series configuration supports high-voltage output and eliminates circulating current risks.
- (2) The cabinet adopts a frame structure, and the battery packs are connected by high-voltage power copper rows and low-voltage communication harnesses which meet the electrical isolation requirements.
- (3) The structure is safe and reliable, and the mechanical strength is sufficient to ensure that there is no shaking or deformation of the equipment after installation.
- (4) The electrical clearance and creepage distance are designed with full consideration of the system operating voltage, overvoltage category, pollution level and insulation materials.

Cluster Parameter

No.	Parameter	Specification
1	Configuration	10 PACK in series
2	Series-Parallel Topology	1P200S
3	Nominal Charge/Discharge	0.5C
4	Nominal Energy	200 kWh
5	Nominal Voltage	640V
6	Operating Voltage Range	580~720V
7	Communication Protocol	CAN、RS485
8	Balancing Method	Passive Balancing

### 3.4 Battery Management System

The product adopts a three-tier architecture, which consists of a Battery Management Unit (BMM), a Battery Cluster Management Unit (BCM), and a Local Control Unit (LCU) from the bottom to the top.

Each battery insertion box is equipped with a set of BMM, each BMM is responsible for collecting the single cell voltage and temperature of each battery box, and has the function of equalization. the

BMM communicates with the BCM using CAN bus, and the BCM collects the data of the BMM in polling mode.

Each battery cluster is equipped with 1 set of BCM, which is installed in the high-voltage control box, summarizes the data detected by BMM through CAN protocol, analyzes the total voltage and current of the battery cluster, and then interacts with the higher-level equipment based on CAN communication.

Each battery cluster is equipped with a set of LCU, which is installed on the cabinet door, integrates display and control functions, supports CAN/RS485/LAN communication, and is used for real-time monitoring of the energy storage system, energy deployment, safety management and data analysis.

The battery management system is capable of realizing functions such as battery status monitoring, operation status control, insulation monitoring, equalization management, protection alarm and communication, etc. Through real-time supervision of the battery system, it ensures normal, stable and safe operation of the system. Battery management system includes:

First-level management (BMM): with the function of monitoring the voltage and temperature of single cell within the battery module. BMM is the smallest component management unit of the battery management system (BMS), and provides the internal information of the battery module to the battery cluster management system (BCM) through the communication interface.

Second-level management (BCM): It is a real-time monitoring and management system composed of electronic circuit equipment, which can effectively manage the charging and discharging process of the battery pack in a safe manner, and provide alarm and emergency protection against possible failures, so as to ensure the safe, reliable and stable operation of the battery.

Three-level management (LCU): for energy storage system data acquisition and collaborative management, charging and discharging strategy and energy scheduling to improve economic efficiency. Acquisition and analysis of fire signals and other signals in the cabinet, fault warning and diagnosis, to ensure system safety.

### 3.5 Control Box

The Control box serves as the power control unit for the battery cluster, integrating critical components such as: BCM (Battery Cluster Manager), relays and contactors, fuses, hall current sensors, circuit breakers. It ensures circuit protection (on/off control) and is essential for the safe and functional operation of the battery cluster.

Control Box Parameter

Rated Voltage	1000Vdc
Maximum Current	350A
Communication Interfaces	CAN、RS485、LAN
Protection Rating	IP20
Size (W×D×H)	420*923*250mm
Weight	40kg



Figure 3.5.1 Schematic Diagram of Control Box

### 3.6 Energy storage converter (PCS)

The energy storage converter (PCS) is a device that realizes the bidirectional conversion of AC and DC power. It is suitable for all kinds of energy storage batteries to exchange energy with the power grid in the form of charging and discharging, for the control and management of energy storage components. Under the control of the management system of the energy storage power station, it can realize the "peaking and valley filling" of the grid load and fast secondary frequency modulation. When combined with intermittent distributed energy (wind power, photovoltaic), it can smooth the volatility of intermittent energy, so that the load characteristics of intermittent energy tend to be controllable "grid-friendly load".

Table 3.6.1 PCS specification parameter table

Item	Specification Parameter	
DC Side	Operating Voltage Range	580V~1000V
	Full Power Voltage Range	580~1000V
	Input Path Number	1
	Max. Current	216A
AC Side (On-grid)	Rated Voltage	400V
	Voltage Deviation	-15%~+15%
	AC Output Type	3W+N+PE
	Rated Output Power	125kW
	Max. Output Power	150kW
	Max. Current	217 A
	Rated Frequency	50/60Hz
	Power Factor	0.99
	Power Factor Range	-1 (Leading) ~1(Lagging)
	THDi	<3% (Rated Power)
	Overload Capacity	1.2Pn, 1min
	Max. Efficiency	98.9%
	DC Side (Off-grid)	Rated Output Voltage
THDu		<3% (Linear Load)
Rated Frequency		50 Hz
Rated Output Power		125kW
System Parameter	Size (W*D*H)	444mm×720mm×220mm
	Weight	58 kg
	Altitude	4000m (>3000m derating)
	Temperature	-40°C~60°C (>45°C derating)
	Humidness	0~95%RH, Non-condensing
	Cooling Mode	Intelligent Air Cooling
	Ingress Protection	IP20
	Communication Interface	CAN/RS485

## **3.7 Fire Protection System**

### **3.7.1 Temperature Sensor + Smoke Sensor + Flood Sensor**

Built-in temperature sensor, smoke sensor and flood sensor, when the detected temperature, smoke and humidity reach a certain threshold, trigger the system alarm.

### **3.7.2 Aerosol Fire Protection**

Cabinet fire-fighting, aerosol fire extinguishing device is installed in the cabinet, using gas thermal runaway detector for detection, electric + thermal dual-start mode, rapid response and fast action.

### **3.7.3 Explosion-proof Valve + Water Fire Fighting Interface**

In order to guarantee the reliability of fire fighting, our company is equipped with explosion-proof valve and water fire fighting interface. When the cabinet is overcharged, over-discharged, short-circuited, thermal runaway and other explosions, the explosion-proof valve can be the first time to respond to maintain the balance of pressure within the cabinet at the same time to avoid an explosion, but also through the cabinet door fire fighting interface to inject cold water, the shortest possible time to control the system temperature of the cabinet, to avoid the accident from further expanding.

## **3.8 Temperature Control System**

Battery working environment temperature requirements are high, in order to ensure that the battery works in the best environmental temperature, the cabinet is equipped with a wall-mounted industrial air conditioner which can ensure the battery box dissipate heat uniformly, and ensure that the ambient temperature inside the cabinet is controlled within the range suitable for the cell temperature. The built-in air conditioner thermostat can be set up in accordance with the highest and lowest temperature values, automatically start the refrigeration and heating function. In order to ensure that the air conditioner can dissipate heat evenly to each battery box, a special cooling duct is set up to ensure that the temperature inside the cabinet is balanced.

In order to solve the heat dissipation problem, mainly take two ways:

(1) Battery module design heat dissipation channel, and in front of the module with the appropriate power of fan, to ensure the temperature inside the module quickly transferred to the outside.

(2) High-voltage box and PCS in the lower layer of the cabinet, and the upper layer of the battery box is isolated in separate bins, PCS cooling using independent air-cooled cooling, to ensure the temperature is the same as the battery module.

(3) The outdoor cabinet is equipped with industrial-grade air-conditioning and cooling channels to ensure the ambient temperature inside the whole cabinet.

The power supply voltage of the air conditioner is AC 220V, which is provided by the utility power; the main communication mode of the air conditioner is RS485, and the signal is output to the control box to communicate with the system.

Air Conditioning Parameter

Item	Parameter	Note
Power Supply	220V ± 15%, 50Hz	
Maximum Running Current	12A	
Cooling Power	3000W	
Heating Power	2500W	
Communication Port	RS485	
Size(W*D*H)	550*250*1350mm	
Weight	62kg	

### 3.9 Outdoor Cabinet

#### 3.9.1 Basic Overview

Battery clusters, air-conditioning, fire fighting and other equipment are integrated into the cabinet with independent self-power supply system, temperature control system, fire fighting system and other automatic control and safety guarantee devices to ensure that the system is always in a good temperature and optimal performance operating state.

#### 3.9.2 Cabinet Design

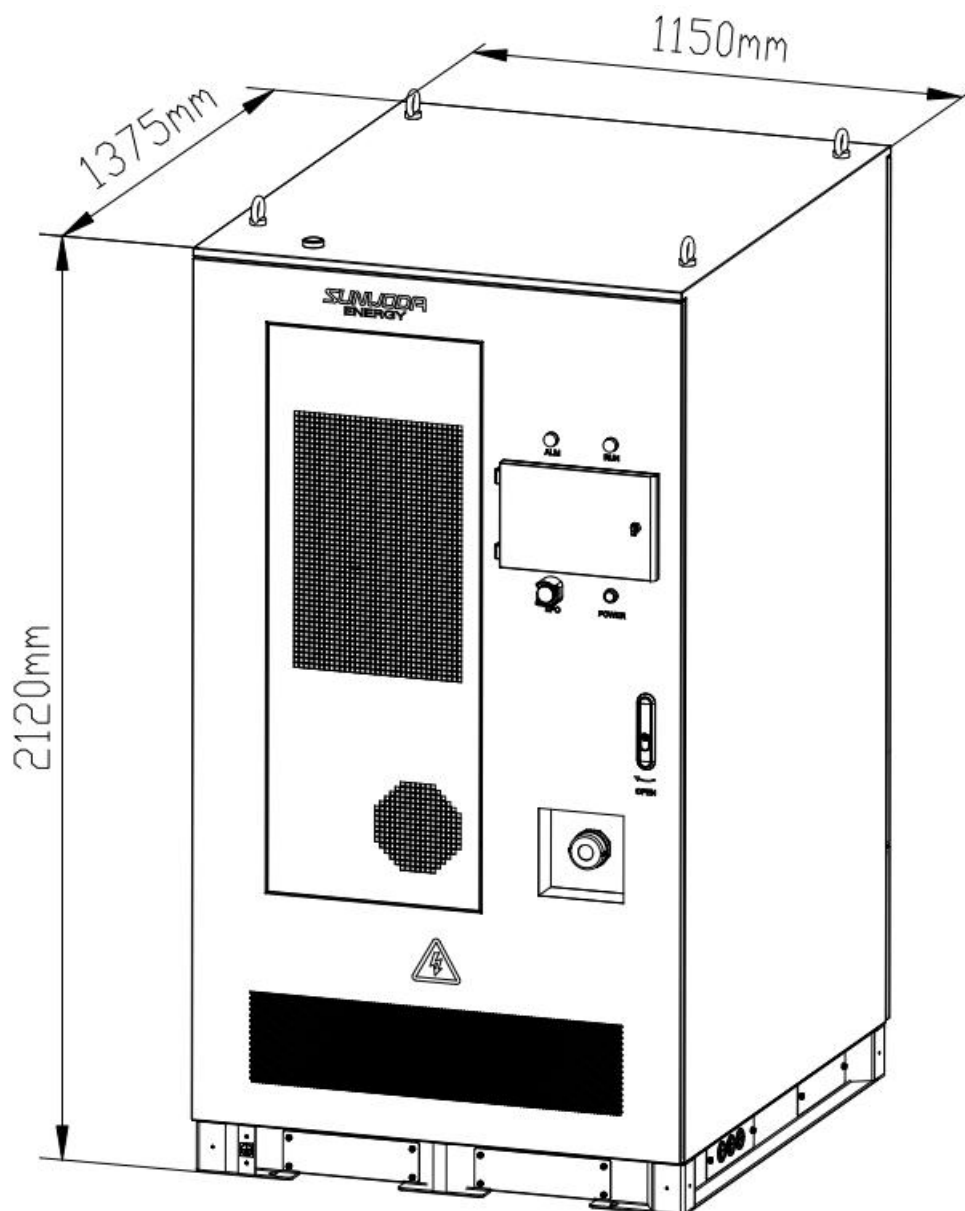
In order to ensure sufficient strength and design life requirements, SGCC plate thickness of the cabinet is made into 1.5mm, and the double-layer design of zinc-rich primer powder coating and top powder coating is designed to make the shell have good anticorrosion and weathering performance. Outdoor cabinet shell tape in the range of 200°C will not produce residual glue.

Outdoor cabinet has excellent fireproof performance, cabinet protection grade IP55, with the ability

to prevent sand, water, moisture, salt spray, etc.; seismic performance to meet the requirements of transportation standards.

The power and non-main power cables inside the cabinet have good insulation and high flame retardant performance.

### 3.9.3 Diagram of External Dimension







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