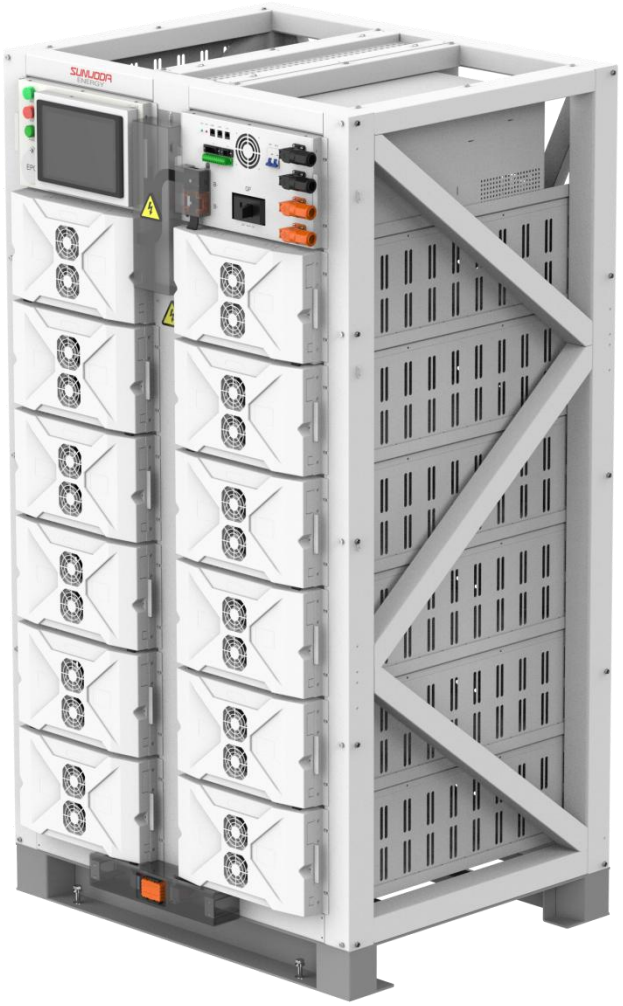
SUNWODA ENERGY



OASIS Rack Pro+

100~200kWh Battery Cabinet

Product Specification

Preface

Thank you sincerely for purchasing and exploring products developed and manufactured by Shenzhen Sunwoda Energy Technology Co., Ltd. (hereinafter referred to as "Sunwoda"). We genuinely hope that our products and this manual will meet your needs. Your valuable feedback is warmly welcomed, and we will continuously improve and enhance our offerings.

 The content is subject to change based on the latest physical product, and revisions may be made without prior notice.

Due to product version upgrades or other reasons, this document may be updated periodically. Unless otherwise agreed, this document serves solely as a product guide. All statements, information, and recommendations provided herein do not constitute any express or implied warranties.

This document and all information contained within are the exclusive property of Sunwoda. No party shall be granted any license to patents, copyrights, trademarks, or other intellectual property rights of the other party through implication, estoppel, or otherwise, based on this document.

For updates or additional information, please contact Sunwoda.

Content

Preface 1
Content 2
1. Introduction 3
    1.1 Overview 3
    1.2 Application Scenarios 3
2. Product Overview 4
    2.1 Specification 4
    2.2 Technical Parameter 7
3. Product Specification 8
    3.1 Battery Cell 8
    3.2 Battery PACK 9
    3.3 Battery Cluster 10
    3.4 Battery Management System 10
    3.5 Control Box 12
    3.6 Diagram of External Dimension 13

1. Introduction

1.1 Overview

OASIS Rack Pro+ industrial and commercial series products are high-security, high-reliability, standardized series products developed for industrial and commercial application scenarios. It adopts modular system configuration to flexibly match all kinds of industrial and commercial scenarios, and with a variety of energy storage inverters, it can support on-grid, off-grid, and on-off grid scenarios; and it supports parallel expansion, which is convenient for system expansion, and it can realize the shift of peaks and valleys and the staggered peaks of electricity consumption, and alleviate the pressure on the power grid.

Products include battery box, control box, battery management 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. Matching with energy storage inverters of different power bands can flexibly realize the functions of peak shaving and valley filling, emergency power backup and peak frequency regulation.

2. Product Overview

2.1 Specification

This product adopts integrated rack design, which is composed of PACK, control box, touchscreen and other devices. The nominal capacity of this energy storage cabinet is up to 240kWh, the electric core connection in single PACK adopts 1P20S, and the maximum support is 12 PACK in series connection, adopting 314Ah Li-FePO4 cell, the capacity of one PACK is 20kWh, and it can be reduced according to the needs of different configurations. PACK, the minimum capacity is 100kWh, 5 PACK, the whole machine can support parallel expansion.

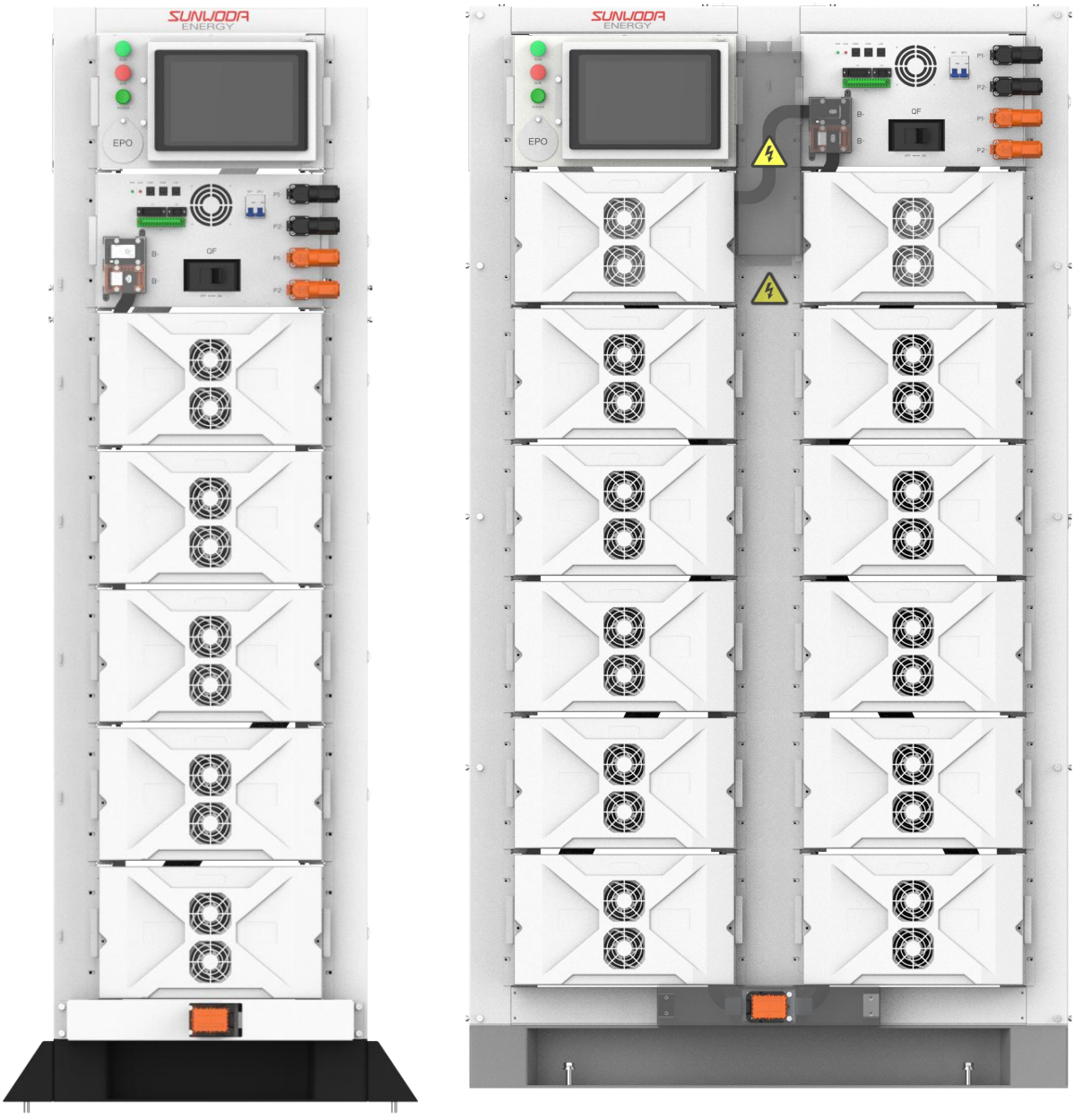


Figure 2.1.1 Product Rendering Diagram

Products of different capacities are achieved by reducing the number of PACK, which can support 5 to 12 PACK with a capacity of 100~240kWh. The positions where the PACK is removed will be covered by the outer panel. The front view is the same as a full configuration of 240kWh, with 5 PACK (a capacity of 100kWh) 、 6 to 8 PACK (a capacity of 120~160kWh). The positions of the control box and touch screen have been adjusted, as shown in the following figure.

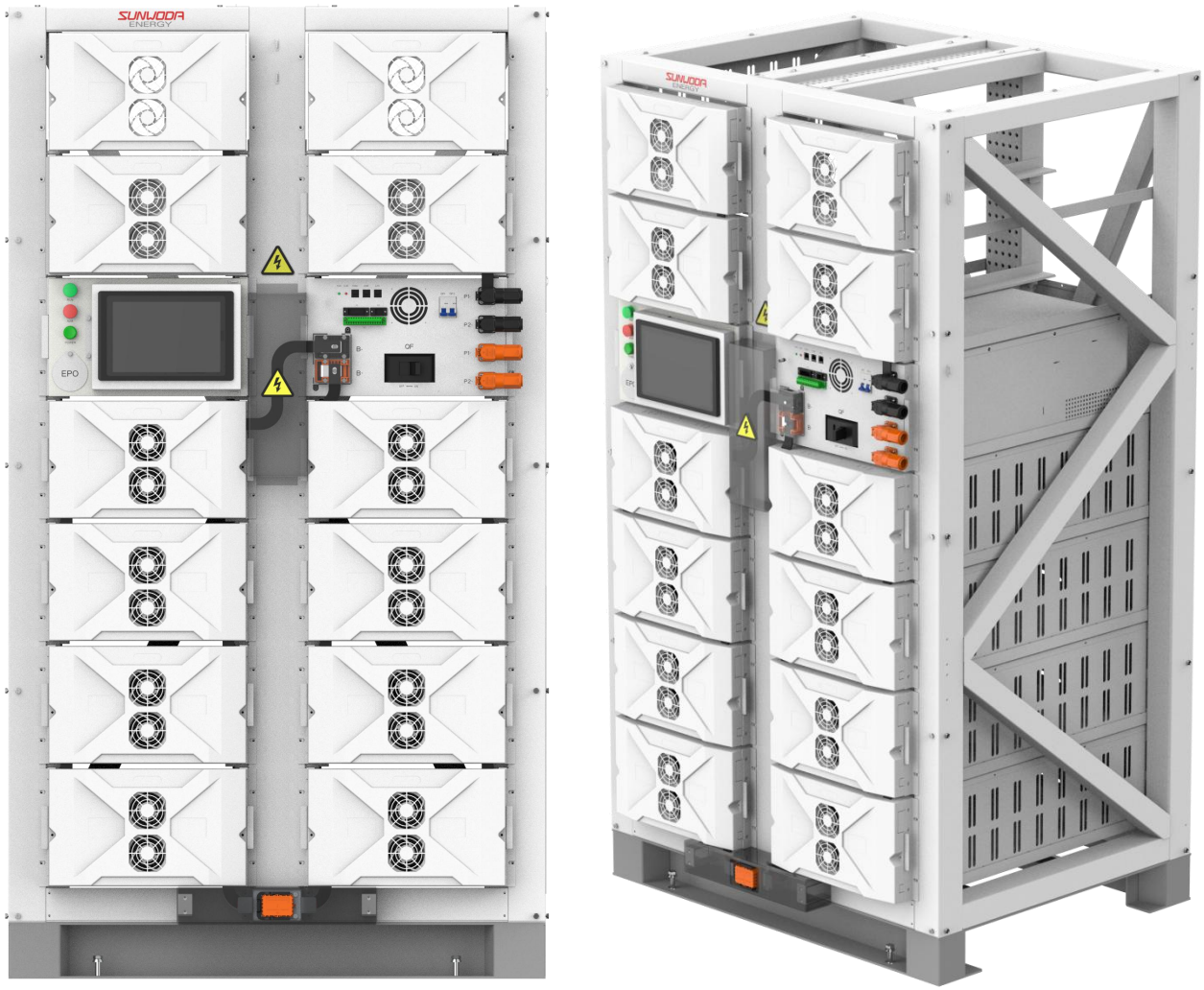


Figure 2.1.2 Product Layout Diagram of 6 to 8 PACK (with a capacity of 120~160kWh)

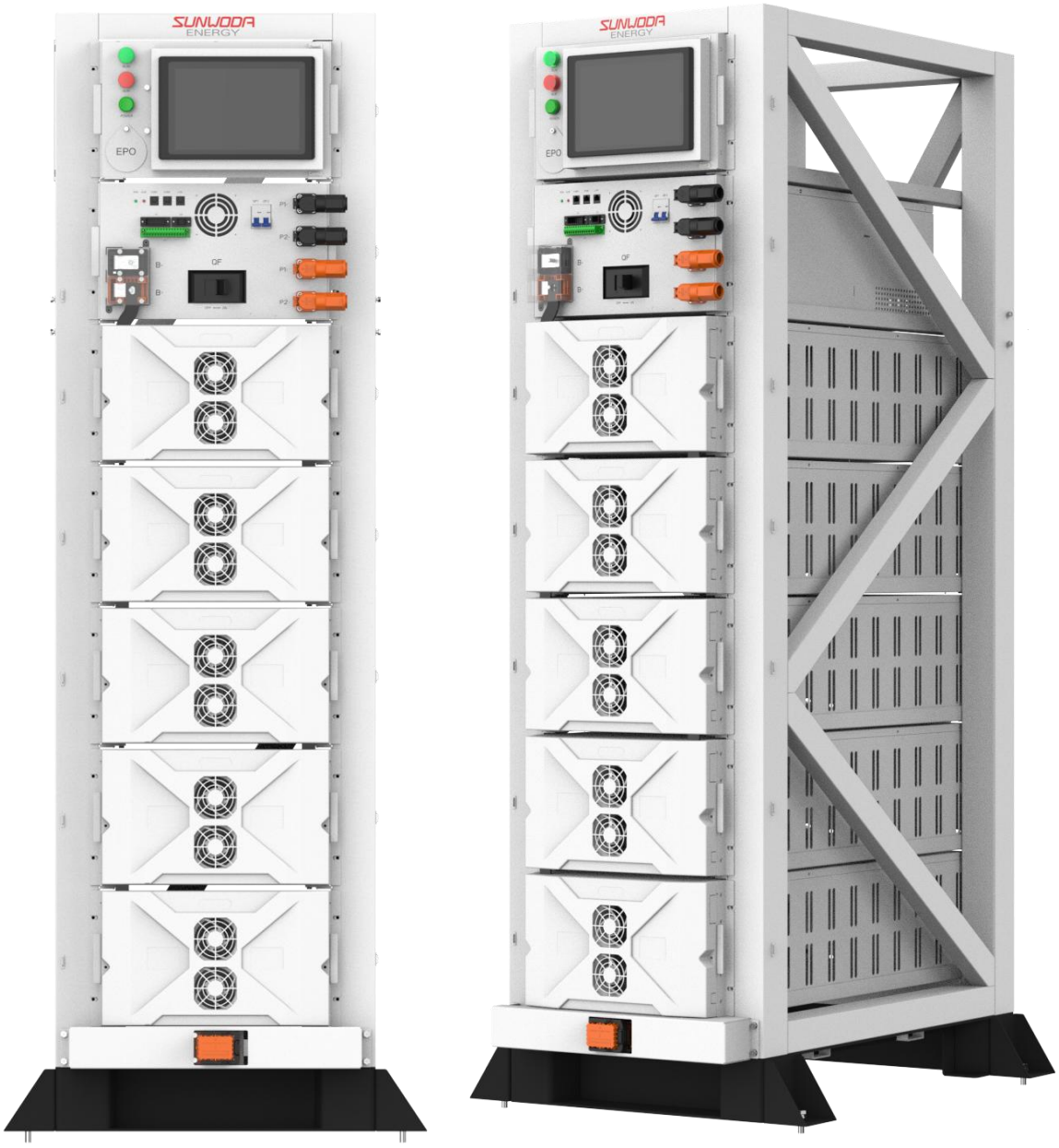


Figure 2.1.3 Product Layout Diagram of 5 PACK (with a capacity of 100kWh)

2.2 Technical Parameter

Product Series	OASIS Rack Pro+			
Product Model	CIESS-100-RP	CIESS-120-RP	CIESS-160-RP	CIESS-200-RP
Battery Side Parameter				
Cell Type	LFP			
Cell Specification	3.2V 314Ah			
PACK Capacity	20kWh			
PACK Quantity	5	6	8	10
Nominal Capacity	100kWh	120kWh	160kWh	200kWh
Nominal Voltage	320V	384V	512V	640V
Voltage Range	290~360V	348~432V	464~576V	580~720V
System Parameter				
Communication Interface	RS485、CAN			
Display	Touch Screen, Cloud Platform			
Protection Rating	IP20			
Cooling Method	Fan Cooling			
Installation Type	Indoor			
Ambient Temperature	0~55℃（＞45℃ derating）			
Humidity	0～95% （non-condensing）			
Noise	＜75dB			
Altitude	3000m			
Size (W*D*H)	1160*976*2060mm			
Weight	＜2100kg			

3. Product Specification

3.1 Battery Cell

The LiFePO4 (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 LiFePO4 Cell

Single Cell Specification

NO.	Parameter	Specification
1	Cell Chemistry	$LiFePO_4$
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℃～60℃
9	Charging Temperature	0℃～60℃
10	Discharging Temperature	-30℃～60℃
11	Size (W×D×H)	174*72*207mm
12	Weight	5.6kg
13	Energy Density	179Wh/kg
14	Calendar life	9000次（25℃，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 Parameter

Model Name	B064314S01
Configuration	64V，314Ah
Nominal Voltage	1P20S
Nominal Energy	64V
Nominal Charge/Discharge Current	20kWh
Max. Charge/Discharge Current	157A
Voltage Range	252A/280A
Storage Temperature	58~72V
Charging Temperature	-30℃~55℃
Discharging Temperature	0℃~55℃
Cooling Method	-30℃~55℃
Size (W×D×H)	Air-cooled
Weight	923*420*250mm
Model Name	141±3kg

Figure 3.2.1 PACK Schematic Diagram

3.3 Battery Cluster

This product contains one battery cluster, which can support 5 ~ 12 PACK, with a capacity range of 100 ~ 240 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	5	6	8	10
2	Series-Parallel Topology	1P100S	1P120S	1P160S	1P200S
3	Nominal Charge/Discharge Rate	0.5C			
4	Nominal Energy （kWh）	100	120	160	200
5	Nominal Voltage（V）	320	384	512	640
6	Operating Voltage （V） Range	290~360	348~432	464~576	580~720
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

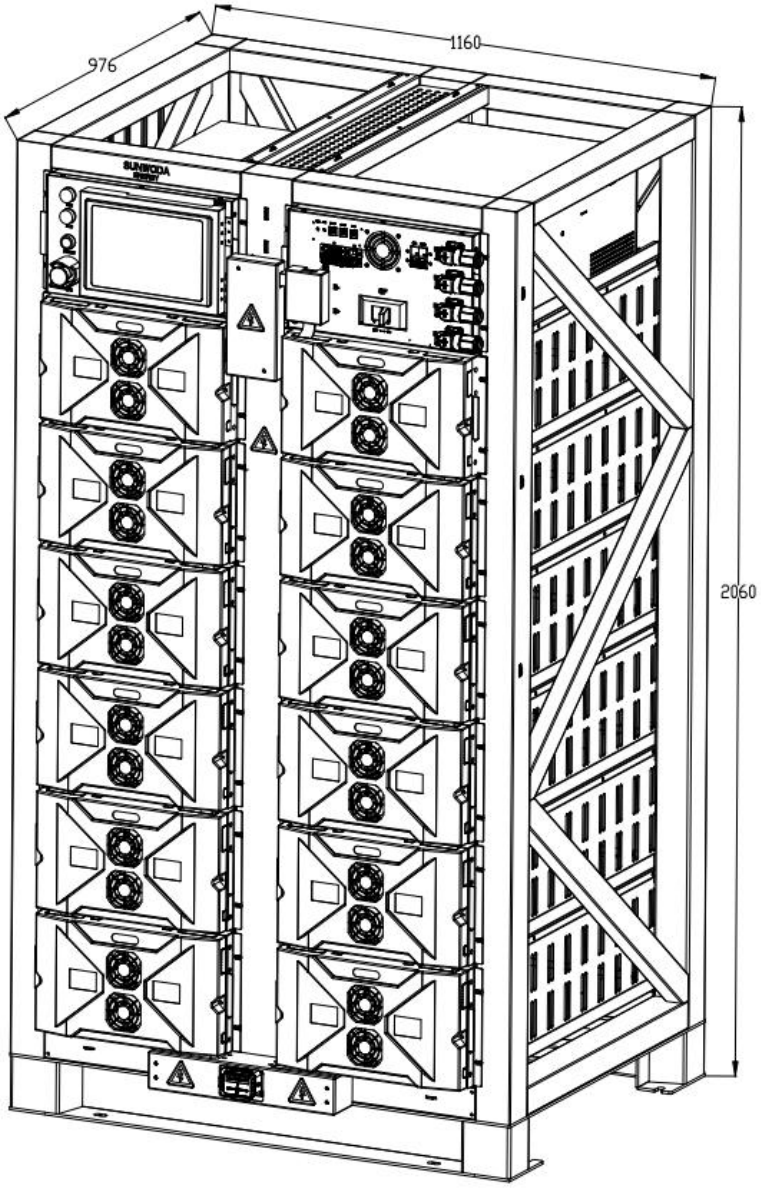
The Control box serves as the power control unit for the battery cluster, integrating critical components such as: BCM (Battery Cluster Manager), relays and contactors, fuses, hall current sensors, circuit breakers. It ensures circuit protection (on/off control) and is essential for the safe and functional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

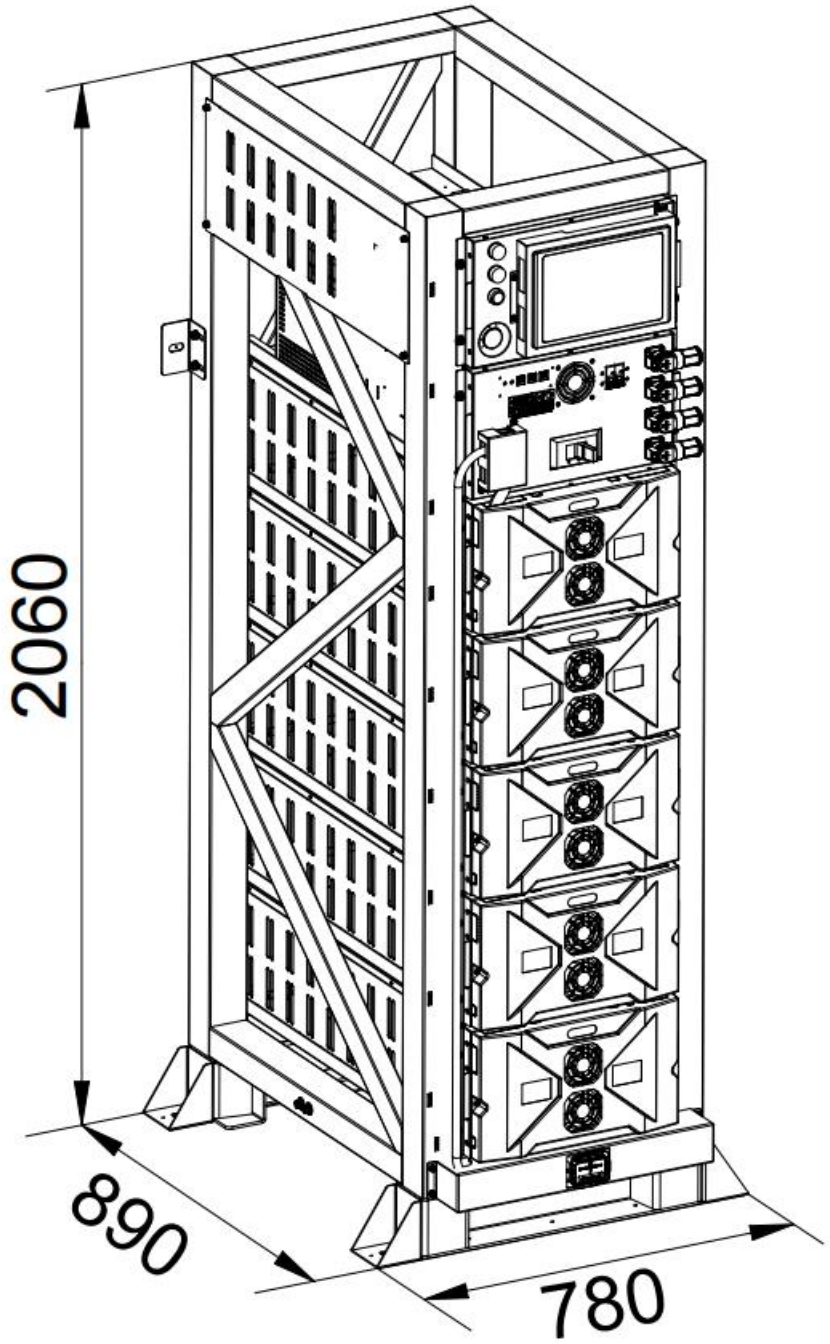
Control Box Parameters

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 Diagram of External Dimension




2060
890
780

Sunwoda Energy Technology Co., Ltd
Sunwoda Industrial Park, No.18 Tangjia South Road, Guangming New District, Shenzhen, China
www.sunwodaenergy.com