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|  | 产品规格书<br>Product Specification | 文件编号 Serial NO. :<br>GZ-SR-JSIS-0086 |
|                                                                                   |                                | 版 本 REV: A02                         |
|                                                                                   | 215kWh-规格书                     | Total page 共 13 页                    |

# 苏州普厉特智能科技有限公司

Suzhou Preta Intelligence and Technology Co., Ltd.

## 215kWh-交流液冷工商储能柜规格书

215kWh-AC Liquid Cooled Industrial and Commercial Energy Storage Cabinet Specification

|                |     |            |            |
|----------------|-----|------------|------------|
| 编写<br>Edit     | 王瑞  | 日期<br>Date | 2024.10.25 |
| 审核<br>Review   | 黄志军 | 日期<br>Date | 2024.10.25 |
| 批准<br>Approval | 王瑞  | 日期<br>Date | 2024.10.25 |

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文件发行/修订履历 Document Issuance/Revision History

| 版本<br>Version | 修改内容<br>Content Modification                                          | 修改/创建人<br>Modification /<br>Creator | 日期<br>Date |
|---------------|-----------------------------------------------------------------------|-------------------------------------|------------|
| A01           | 新版发行                                                                  |                                     | 2024.07.23 |
| A02           | 系统效率由 86%修订为 88%，循环次数由 6000 次修订为 8000 次，消防系统由气溶胶/全氟己酮修订为气溶胶。重新核算产品重量。 |                                     | 2024.10.21 |
|               |                                                                       |                                     |            |
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|                                                                                   |                                | 版 本 REV: A02<br>Total page 共 13 页    |
|                                                                                   | 215kWh-规格书                     |                                      |

## 目 录 Contents

|                                                 |    |
|-------------------------------------------------|----|
| 一、户外机柜介绍 Introduction to outdoor cabinets ..... | 5  |
| 1.1 户外机柜应用 Outdoor cabinet applications .....   | 5  |
| 1.2 户外机柜组成 Components of Outdoor Cabinets ..... | 6  |
| 二、户外机柜系统规格 Outdoor cabinet specifications ..... | 7  |
| 三、户外机柜系统配置 Rack system configuration .....      | 11 |
| 3.1 系统组成 System composition .....               | 11 |

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## 一、户外机柜介绍 Outdoor Cabinet Introduction

### 1.1 户外机柜应用 Outdoor Cabinet Applications

215KWh(240S1P-768V)是由苏州普厉特智能科技有限公司自主研发的产品，可并网运行，离网运行，在智能电网中的储能环节，能有效调控电力资源，很好地平衡昼夜及不同季节的用电差异，调剂余缺，保障电网安全，是可再生能源应用的重要前提和实现电网智能化管理的有效手段。储能系统由电池簇，高压箱，消防、液冷系统等组成。

215KWh(240S1P-768V) are self-developed products of Suzhou Preta Intelligence and Technology Co., Ltd, which can be operated on-grid and off-grid, and in the energy storage segment of the smart grid, it can effectively regulate the electric power resources, and well balance the difference of day and night and different seasons' electricity consumption. In the smart grid, energy storage can effectively regulate the power resources, balance the power consumption during day and night and in different seasons, transfer the surplus and shortage, and ensure the safety of the power grid. The energy storage system consists of battery clusters, high voltage box, fire protection, liquid cooling system and other components.

储能系统运用于并网模式时，如下图 1-1 连接所示。

When the energy storage system is used in grid-connected mode, as shown in Figure 1-1.

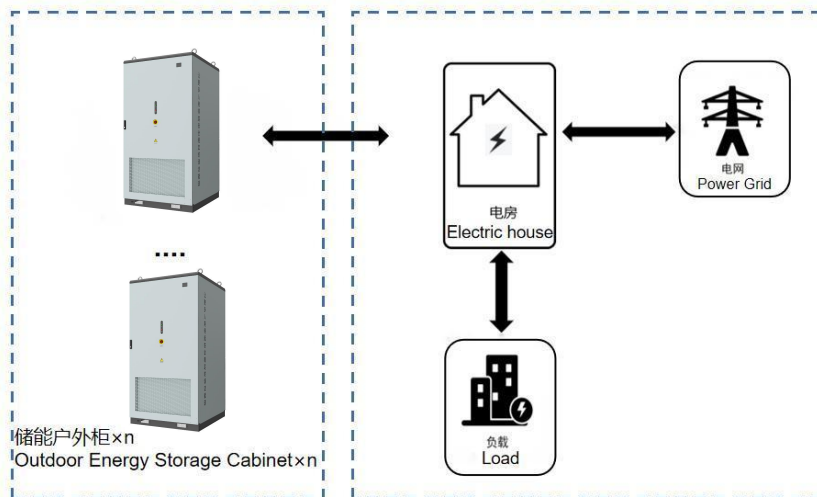


图 1-1 并网模式 Figure 1-1 Grid-side mode

储能系统运用于离网模式时，需要手动离网，如下图 1-2 连接所示。

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|                                                                                   | 215kWh-规格书                     | Total page 共 13 页                    |

When the energy storage system is used in off-grid mode, it needs to be manually disconnected from the grid, as shown in Figure 1-2 below.

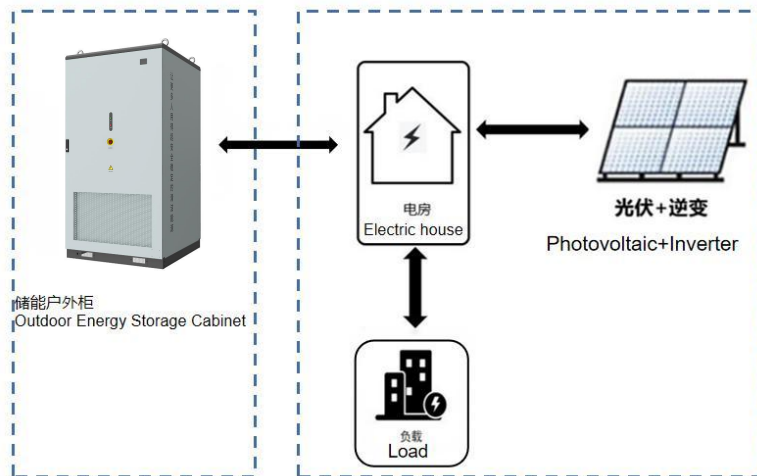


图 1-2 离网模式 Figure 1-2 Off-grid mode

## 1.2 户外机柜组成 Components of Outdoor Cabinets

户外机柜储能系统，主要有以下几部分组成：电池簇、高压箱、PCS（储能变流器）、液冷系统、消防系统、照明系统、配电系统等设备。如下图 1-3 所示。

The outdoor cabinet energy storage system mainly consists of battery cluster, high voltage box, liquid cooling system, fire fighting system, lighting system and power distribution system. As shown in Figures 1-3 below.

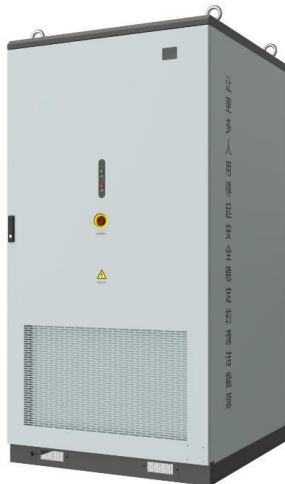


图 1-3 Figure 1-3 户外机柜储能系统 Outdoor cabinet energy storage system

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## 二、户外机柜系统规格 Outdoor cabinet specifications

表 1-1 Table 1-1 户外机柜参数 Outdoor cabinet parameters

| 项目<br>Item                         |                                                      | 215kWh                   |
|------------------------------------|------------------------------------------------------|--------------------------|
| 直流电池参数<br>DC Battery<br>Parameters | 电芯类型<br>Cell Type                                    | GSP71173204F-280Ah, 3.2V |
|                                    | 电池系统配置<br>Battery System<br>Configuration            | 1P240S                   |
|                                    | 电池箱型号<br>Battery Pack Model                          | 液冷60S电池包                 |
|                                    | 电池箱组合方式<br>Battery Pack<br>Combination<br>Method     | 1P60S                    |
|                                    | 额定电压 (V)<br>Rated Voltage(V)                         | 768                      |
|                                    | 电池电压范围<br>(Vd.c.)<br>Battery Voltage<br>Range(Vd.c.) | 672~852                  |
|                                    | 电池系统能量<br>(kWh)<br>Battery System<br>Energy(kWh)     | 215                      |
|                                    | 额定电流 (A)<br>Rated Current(A)                         | 140                      |
|                                    | 最大电流 (A)<br>Maximum<br>Current(A)                    | 160                      |
|                                    | 充放电倍率<br>Charge/Discharge<br>Rate                    | 0.5C                     |

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|                                                                                   |                                | Total page 共 13 页                    |

|                                                   |                                                                     |                                                |
|---------------------------------------------------|---------------------------------------------------------------------|------------------------------------------------|
|                                                   | 冷却方式<br>Cooling Method                                              | 液冷<br>Liquid cooling                           |
| 交流参数（并<br>网）<br>AC parameters<br>(grid-connected) | 额定充放电功率<br>（kW）<br>Rated<br>Charge/Discharge<br>Power(kW)           | 100                                            |
|                                                   | 最大充放电功率<br>（kW）<br>Maximum Charging<br>and Discharging<br>Power(kW) | 110                                            |
|                                                   | 额定充放电电流<br>（A）<br>Rated<br>Charge/Discharge<br>Current(A)           | 145                                            |
|                                                   | 额定电网电压（V）<br>Rated Grid<br>Voltage(V)                               | 400                                            |
|                                                   | 允许电网电压范围<br>Permissible Grid<br>Voltage Range                       | 300~440                                        |
|                                                   | 额定电网频率（V）<br>Rated Grid<br>Frequency                                | 50Hz                                           |
|                                                   | 电流总谐波畸变率<br>Total Harmonic<br>Distortion Rate of<br>Current         | <3%（额定功率下）<br><3% (at rated power)             |
|                                                   | 功率因数<br>Power Factor                                                | >0.99                                          |
|                                                   | 功率因数范围<br>Power Factor Range                                        | -1~1                                           |
|                                                   | 过载能力<br>Overload Capacity                                           | 1.1Pn,长期（@50℃）<br>1.1 Pn times long-term(@50℃） |
| 交流参数（离                                            | 额定输出电压（V）                                                           | 400                                            |

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|                                                 |                                                        |                                    |
|-------------------------------------------------|--------------------------------------------------------|------------------------------------|
| 网)<br>Communication<br>parameters (off<br>grid) | Rated Output<br>Voltage(V)                             |                                    |
|                                                 | 电压偏差<br>Voltage Deviation                              | ±2%                                |
|                                                 | 电压总谐波畸变率<br>Total Harmonic<br>Distortion of<br>Voltage | <3%(线性负载)<br><3% (linear load)     |
|                                                 | 系统效率<br>System Efficiency                              | ≥88% (标准工况, 25℃, 0.5C)             |
|                                                 | 循环次数 (次)<br>Cycle Times(times)                         | ≥8000@EOL70% (标准工况, 25℃, 0.5C)     |
|                                                 | 通讯接口<br>Communication<br>Interface                     | LAN/485                            |
|                                                 | 工作温度 (°C)<br>Working<br>Temperature(°C)                | -20~55                             |
|                                                 | 噪音 (dB)<br>Noise level(dB)                             | ≤75                                |
|                                                 | 尺寸 (宽*深*高)<br>(mm)<br>Dimensions<br>(W*D*H)(mm)        | 1175*1300*2310                     |
|                                                 | 重量 (kg)<br>Weight (kg)                                 | ≈2280                              |
| 保护<br>Protection                                | 直流输入 DC Input                                          | 断路器+Fuse<br>Circuit Breaker + Fuse |
|                                                 | 交流输入 AC Input                                          | 断路器 Circuit Breaker                |
|                                                 | 过压保护<br>Overvoltage<br>protection                      | DC Type II/AC Type II              |
|                                                 | 消防系统<br>Fire Protection<br>System                      | 气溶胶Aerosol                         |

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|                                                                                   | 215kWh-规格书                     | 版 本 REV: A02                         |
|                                                                                   |                                | Total page 共 13 页                    |

| 进线方式<br>Inlet Method               | 底部进线/顶部进线<br>Top inlet/Bottom inlet                |                                    |
|------------------------------------|----------------------------------------------------|------------------------------------|
| 环境要求<br>Environmental Requirements | 允许环境温度 (°C)<br>Permissible Ambient Temperature(°C) | -20~55                             |
|                                    | 允许环境湿度 (%RH)<br>Permissible Ambient Humidity(%RH)  | 0~85                               |
|                                    | 工作海拔 (米)<br>Working Altitude(m)                    | ≤2000                              |
|                                    | 防护等级<br>Protection Class                           | IP54                               |
|                                    | 冷却方式<br>Cooling Method                             | 智能液冷<br>Intelligent Liquid Cooling |

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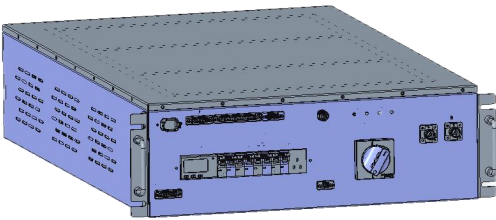
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|                                                                                   |                                | Total page 共 13 页                    |

### 三、户外机柜系统配置 Outdoor Cabinet System Configuration

#### 3.1 系统组成 System Composition

表 3-1 table 3-1 Outdoor cabinet system composition table

| 项目名称 Item                                            | 示意图 Schematic diagram                                                               | 备注 Remark                                |
|------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------|
| 户外机柜<br>Outdoor Cabinet                              |   | 215kWh                                   |
| 高压/配电一体箱<br>High voltage/distribution integrated box |  | 内部安装 BCU<br>Internal installation of BCU |
| 储能变流器<br>Power Conversion System                     |  | Mars-100KT                               |

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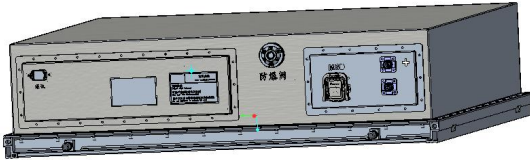
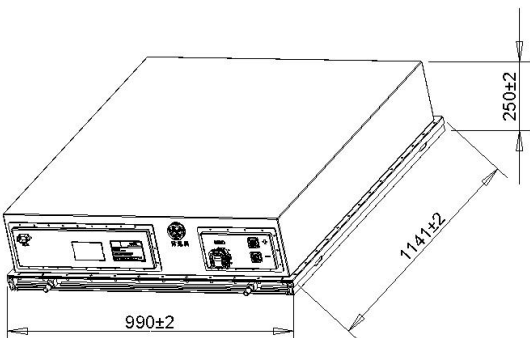
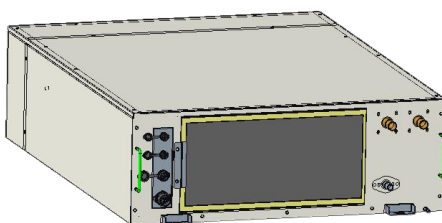
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|                                                                                   |                                | Total page 共 13 页                    |

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|-------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| 60S1P 液冷电池箱<br>60S1P Liquid Cooled Battery Pack |   | 280Ah<br>53.76kWh                                                                                            |
| 液冷系统<br>Liquid-cooled System                    |                                                                                     | 制冷量 5kW<br>Refrigerating capacity 5kW                                                                        |
| 消防系统<br>Fire Protection System                  |                                                                                    | 气溶胶，集检测与消防一体<br>(可按实际需求)<br>Aerosol , integrating detection and firefighting<br>(according to actual demand) |
| EMS                                             | 能量管理系统 Energy Management System                                                                                                                                       | EMS 是储能电站的神经中枢<br>和能量管理中心<br>EMS is the nerve centre and<br>energy management centre of                      |

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|--------------|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
|              |                                                                                    | an energy storage plant                                                                                   |
| 线缆<br>Cables | 动力线束 Power Cables                                                                  | 用于电池箱间及外部高压DC<br>端连接<br>For connection between<br>battery boxes and external<br>high-voltage DC terminals |
|              | 通讯线束 Communication Cables                                                          | 用于户外机柜管理系统供电、<br>通讯控制<br>Used for power supply and<br>communication control of<br>Rack management system  |
| BMS          |  | 电池管理系统<br>Battery Management System<br>EES-LIB-M-0005V-PB-072-0<br>64-ESS01-CSC                           |

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