

DZ125261L7 Outdoor Liquid Cooling Grid-Connected Cabinet Specifications

Product Series	Outdoor liquid cooling grid-connected integrated cabinet
model	DZ125261L7
Customer name or code	
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1. Preface

DZ125261L7 is an integrated outdoor cabinet-type energy storage system developed for industrial and commercial energy storage scenarios. It integrates batteries, high-voltage boxes, power distribution systems, PCS, control systems, fire protection systems, temperature control systems and EMS monitoring systems.

2. DZ125261L7

2.1 Model Description

- The first two digits are letters D Z to represent the Didu product code, string type outdoor cabinet
- The 3rd to 5th digits represent the rated power (unit: kW)
- The 6th to 8th digits represent the rated power (unit: kWh)
- The 9th and 10th letters indicate the configuration mode

2.2. Product Overview

- DZ125261L7 string-type outdoor energy storage cabinet integrates energy storage batteries, power conversion system PCS, battery management system BMS, energy management system EMS , fire protection system, temperature control system, power distribution and protection system , etc., realizing an integrated design.
- The modular design supports rapid capacity expansion and customized capacity adaptation, and supports the AC -side parallel operation of multiple energy storage cabinets , meeting the flexible expansion needs of large- capacity energy storage projects.
- Supports front and rear maintenance design , reduces floor space and maintenance channels, improves space utilization , and facilitates transportation and installation.
- The battery management system (BMS) monitors battery voltage, current, temperature and other information in real time to achieve precise control and balanced management. It has multiple protection functions such as overvoltage, overcurrent and overheating to ensure safe operation of the battery.
- The energy management system EMS supports local control and cloud monitoring functions. Users can view the operating status of the energy storage cabinet in real time and manage it through the remote platform.
- With an IP 54 protection rating, it can adapt to complex outdoor environments. The optimized temperature control system and cluster-level fire protection system ensure the stable operation of the energy storage cabinet in harsh environments such as high temperature and high humidity.

2.3 Application Scenarios and Operation Strategies

- Peak shaving and valley filling: Set charging and discharging strategies based on electricity price periods. When electricity prices are in valley/flat periods, the energy storage cabinet can be set to automatically charge and enter standby mode after being fully charged. When electricity prices are in peak periods, the energy storage cabinet automatically discharges, realizing arbitrage on electricity price differences and improving the economic benefits of the energy storage system.
- Dynamic capacity expansion: By flexibly adjusting capacity to replace traditional physical expansion, fixed asset investment in substation expansion or line reconstruction can be significantly reduced. At the same time, it can quickly respond to sudden load demands, using energy storage charging and discharging to suppress power fluctuations, delay the risk of overload of transmission and distribution equipment, and significantly improve the grid's regulation flexibility and power supply reliability.

- Demand management: Industrial and commercial users' electricity bills include a "demand charge" based on both electricity consumption (kWh) and peak power (kW). During peak demand periods, load fluctuations can lead to excessively high peaks, increasing costs. Energy storage systems can shift peak demand to off-peak times, optimizing the electricity consumption curve and reducing peak power consumption and electricity bills.



picture 1 Product appearance of outdoor energy storage cabinet

2.4. System topology

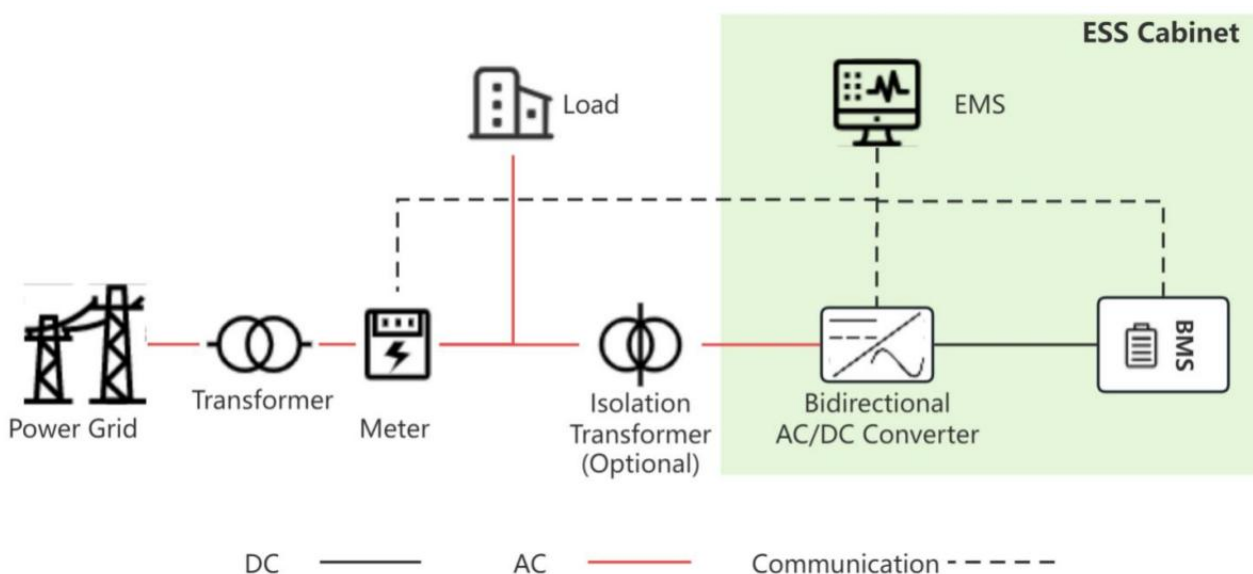


Figure 2 System solution block diagram

The battery management system of the outdoor cabinet energy storage system adopts a two-layer structure, consisting of 1BCU responsible for unified management, each BCU has 5 below individual BMU responsible for management. The basic system structure of the 1P 52 S module is as follows:

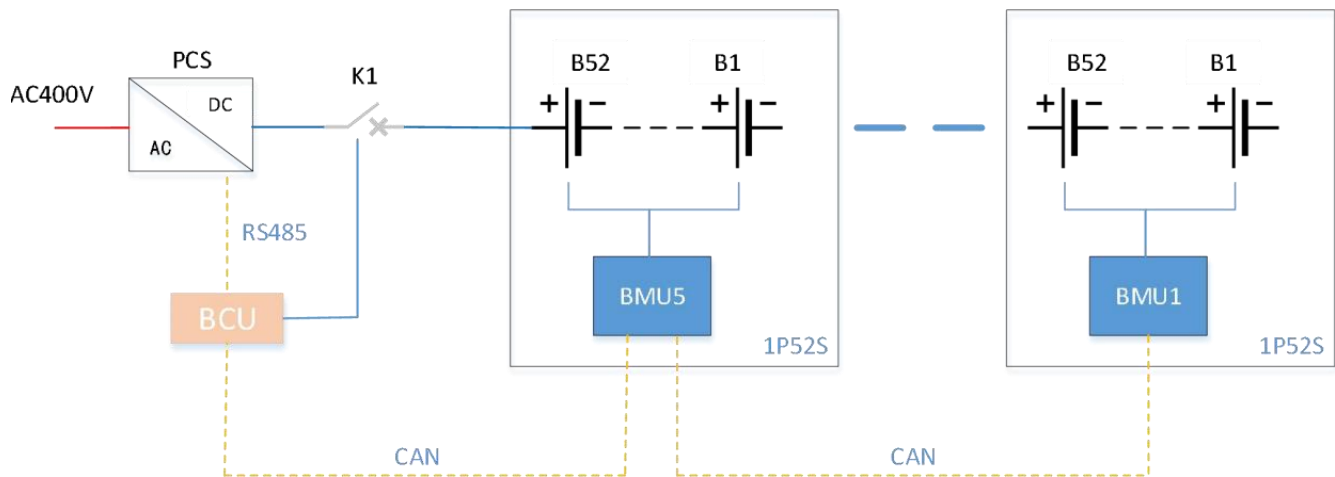


Figure 3 Battery Management System Solution Block Diagram

2.5 Product Features

✧ Safe and reliable

- Adopt high Battery#52 ce lithium ir Battery#52 te (LFP) battery, which is Battery#52 eliable.
- Four-fold safety protection: combustible gas detection, waterproof detector, temperature-sensitive aerosol fire extinguishing device, second-level battery health detection and early warning technology, multiple safety measures.

✧ Stable and efficient

- It is suitable for the peak-valley price difference mode, and the voltage is in the high-efficiency inverter range, so the charging and discharging system is more efficient.
- The string design allows different battery clusters to work independently without circulating current, resulting in higher battery utilization and longer service life. When a battery cluster or PCS module fails, the faulty branch will not affect the operation of other branches.
- Intelligent temperature control system ensures the optimal temperature environment, low temperature difference of battery cells, longer life and lower system power consumption.

✧ Convenient operation and maintenance

- Real-time cloud-based monitoring enables unmanned operation and over-the-air upgrades; EMS has functions such as data collection, alarm and protection, power output prediction, energy storage charging and discharging optimization, and controllable load management, and uploads operating data and alarm status to the cloud in real time.
- Pre-assembled in the factory, all-in-one highly integrated, easy to transport and operate and maintain.
- The outdoor energy storage cabinet adopts a modular design, supports parallel connection, and is flexible and convenient to expand.

2.6. Product Parameters

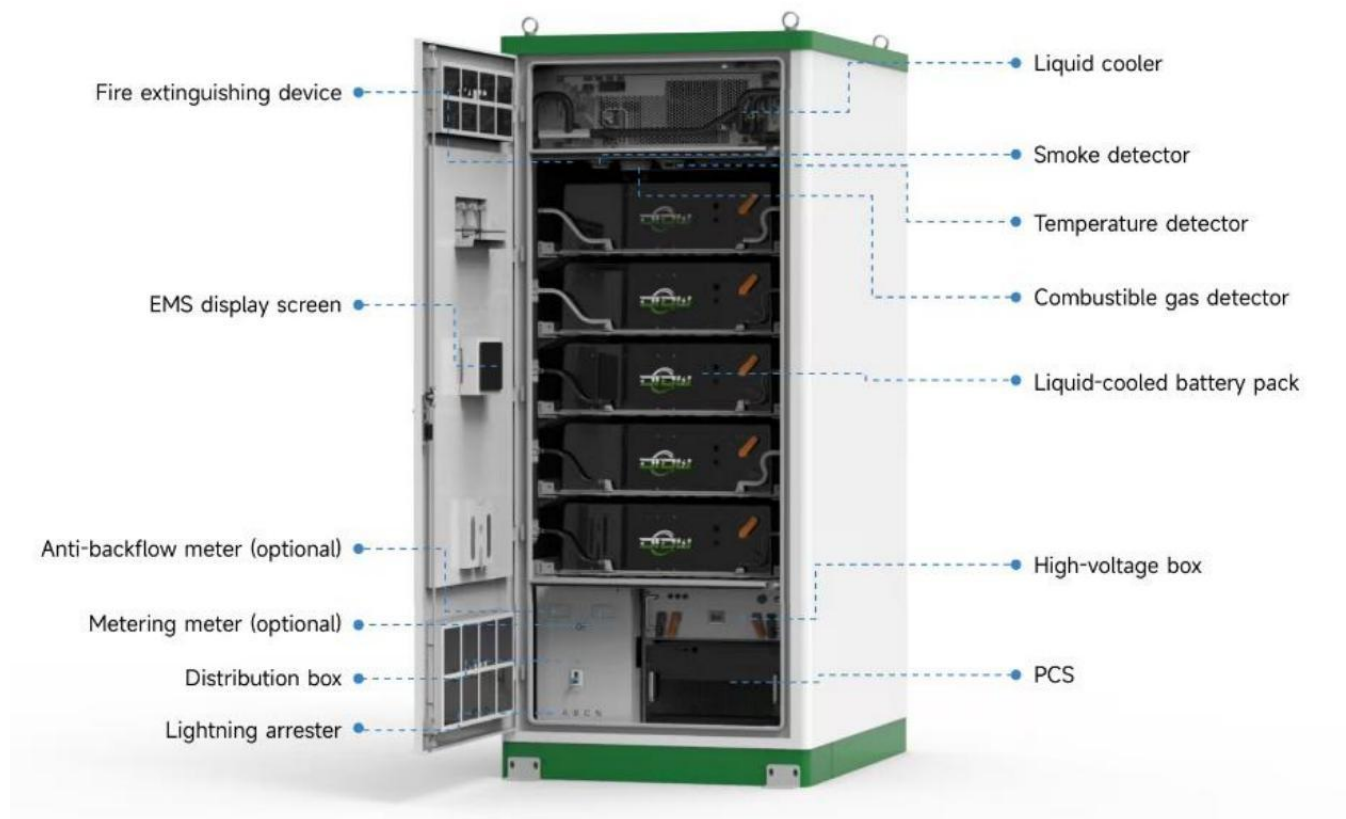
Table 1 System parameters

model	DZ125261L7
DC battery parameters	
Battery rated capacity	261 kW h
Battery rated voltage	832 V
Battery voltage range	780 V - 936 V
Battery Type	LFP
Battery capacity	314 Ah
Battery life cycle	8,000 cycles (0.5P, 5%~95%DOD, 70%SOH)
Battery standard charge/discharge current	0.5 P
Battery pack series and parallel connection	1P260S
Module cooling method	Liquid Cooling
AC parameters	
Rated AC power	125 kW
Maximum power	138kW
Maximum current	200A
Rated AC voltage	400V
AC voltage range	±15%
Rated AC frequency	50/60Hz
Wiring method	Three-phase four-wire
Current distortion rate THDI	< 3% (rated power)
Power Factor	≥0.99/-1~1
Voltage total harmonic distortion THDU	< 3% (linear load)
PCS cooling method	Air cooling
Maximum efficiency	98.5%
System parameters	
Energy cycle efficiency	≥ 90 %
Protection level	IP54
Corrosion resistance level	C3 is the default, C4/C5 are optional
Fire Fighting	Aerosol/perfluorohexanone (optional)
Isolation method	Not isolated (transformer optional)
relative humidity	0~95% (non-condensing)
Ambient temperature	-30℃ ~ 55℃ (derating above 45℃)
Altitude	< 3000m (derating applies over 2000m)
BMS Communication	CAN2.0b

EMS Communications	4G/CAN/RS485
Dimensions (W*D*H)	1050 * 1330 * 2400mm
Weight (approx.)	2.5t
Annual decay rate	<3%
Warranty	5 years

2.7. Environmental control system

The energy storage system is equipped with environmental control units such as aerosol fire extinguishing devices, combustible gas alarm controllers, lightning arresters, door magnetic sensors, etc., which can fully control the system operation status.



Picture 4 Schematic diagram of outdoor energy storage cabinet environmental control

Note: The component positions are for reference only and are subject to actual design.