

OTS01-H215L Medium Energy Storage Product Specification



1. Scope of application

This product specification is applicable to the 100kW/215kWh medium-sized energy storage products independently developed by Probenergy. It stipulates the scope of application, technical specifications, test standards, marks, packaging, transportation, storage, and other precautions of this product.

2. Reference standard

Standard	Standard name
GB 2900.11-1988	Battery terminology
GB/T36558-2018	General technical specifications for electrochemical energy storage systems in power systems
GB/T 36547-2018	Technical regulations for connecting electrochemical energy storage system to power grid
GB/T 36548-2018	Test specification for electrochemical energy storage system connected to grid
GB 51048-2014	Code for Design of Electrochemical Energy Storage Power Station
GB/T 50064-2014	Code for design of overvoltage protection and insulation coordination for AC electrical installations
GB/T 50065-2011	Design code for grounding of AC electrical installations.
NB/T 42091-2016	Technical specifications for lithium-ion batteries used in electrochemical energy storage power stations.
GB 51048-2014	Code for Design of electrochemical Energy Storage Power Station
GB/T 36276-2018	Lithium-ion batteries for power storage
GB/T34131-2017	Technical specification for lithium-ion battery management system for electrochemical energy storage power station
GB/T 36549-2018	Operation index and evaluation of electrochemical energy storage power station
GB/T25294-2010	General technical requirements for power integrated control cabinets
GB 50171-2012	Specifications for wiring construction and acceptance of panels, cabinets, and secondary circuits of electrical installations
GB/T 10125-1997	Artificial atmosphere corrosion test Salt spray test
GB/T 4208-2017	Enclosure rating (IP code)
GB/T 1804-2000	General tolerances Tolerances for untolerated linear and angular dimensions
GB 50116-2013	Code for design of automatic fire alarm system
GB 50370-2005	Code for design of gas fire extinguishing system
GB 50263-2007	Specifications for construction and acceptance of gas fire extinguishing system
GB 50166-2007	Code for construction and acceptance of automatic fire alarm system
GB 30122-2013	Stand-alone heat-sensitive fire detector
GB 15322.5-2003	Combustible Gas Detector

3. Technical term

■ Power Conversion System , PCS

The energy storage converter is an important part of the smart grid, and it is a bidirectional converter that realizes the charge and discharge control of the energy storage battery. On the alternating current to supply power to the load or input it into the grid; on the other hand, the converter can rectify the alternating current of the grid into direct current to charge the energy storage battery.

■Cell

The energy management system is a computer system, including software and hardware platforms that provide battery system management and PCS control, as well as application software that ensures the safe and economical operation of power distribution and electrical equipment in the energy storage system.

■Fire Fighting System, FFS

Detect the fire signal of the battery system in real time and can send out a fire alarm signal to prevent the fire from spreading and start automatically.

4. Product model and its meaning

4.1Productname : Medium-sized energy storage products

4.2Productspecification : 100kW/215kWh

4.3 Productmodel: OTS01-H215L

5. Product overview

5.1 Product introduction

The medium-sized energy storage system is an energy storage system independently developed by Probenergy and applied in industrial and commercial scenarios. It can be directly connected to the AC low-voltage side to provide reliable power support for various equipment and systems.

The energy storage system adopts lithium iron phosphate battery, which has high energy density and long cycle life. The cabin adopts an outdoor cabinet design, which can be flexibly expanded, and the system is easy to maintain and repair. The local data monitoring is configured in the cabinet to realize the comprehensive management of the equipment in the system, which can be controlled independently or connected to the station-level control system to realize multi-machine linkage. Through the status monitoring and data recording of the equipment in the cabinet, early warning and rapid positioning of system failures are realized.

The energy storage system has an intelligent temperature control function, which can improve system efficiency and battery cycle life; the modular design is easy for system expansion and flexible deployment.

Intelligent temperature control to improve system energy efficiency;

Intelligent operation and maintenance management, intelligent fault analysis, intelligent strategy optimization and upgrade, intelligent early warning;

Support multiple operating modes and strategies, adapt to various application scenarios such as station areas, solar storage, storage and charging, micro-grid, etc., and realize peak shaving and valley filling, dynamic expansion, reactive power compensation, reverse power control, demand response, and virtual power stations , power scheduling, peak shaving and frequency modulation control, AGC response and other functions;

5.2 Special Features

■ Safety

Full cell voltage monitoring, real-time insulation monitoring;

The battery is independently isolated, 2h fireproof and heat preservation;

Gas fire extinguishing and cooling, comprehensive inspection of smoke temperature and gas;

Big data active analysis and early warning;

■ Reliability

-20-50°C wide temperature adaptability, high wind resistance level, high earthquake resistance level;

IP55 high protection level;

Cluster-level fault isolation;

One-to-one fine temperature control;

Independent charge and discharge management, distributed unit management.

5.3 Product battery configuration

Item	Name	Specification
Battery monomer	Rated Capacity(Ah) Rated	280
	Voltage(V)	3.2
	Working voltage range(V)	2.5-3.65

5.4 Product system performance parameter characteristic table

Product specification	OTS01-H215L
system parameter	
DC side voltage range	600V~876V
Output voltage	380V@AC
System configuration	1P240S
Rated power	100kW
Match PCS	100kW
Nominal energy of the battery system	215kWh
Discharge energy	≥200kWh
Battery cycle efficiency	≥90%@AC
Dimensions(L*W*H)	1280*1000*2400mm
Weight	2400kg
IP Grade	IP55
Temperature range	-20-50°C
Humidity range	≤95% (non-condensing)
Maximum working altitude	2000m (> 2000m need to derate)
Battery temperature control method	Liquid cooling
Fire fighting system	Aerosol/perfluorohexanone
System communication protocol	Modbus -RTU/TCP
Certified	GB/36276
Cell parameter	
Rated capacity	280Ah
Rated energy	896Wh
Dimensions	71*173*207mm
Battery box parameter	
Grouping	1P30S
Nominal voltage	96V
Nominal energy	26.88kWh
Dimensions	1089.5*485*245mm
Weight	200kg
System composition	
Battery system	8 sets battery box
BMS management system	1 set
Fire fighting system	1 set, customizable

Liquid Cooler	1 set, 3kW
Cabinet	1 set
PCS	1set, 100kW
Distribution box	1 set

✘ This product produces no sound or light pollution during normal use.

8. Product warning signs

The warning signs on and inside the cabinet of medium-sized energy storage products contain important information for safe operation of medium-sized energy storage products.

9. Precautions for use

The operator must be completed by professional technicians, and must follow the relevant regulations of the local or electric power industry; pay attention to the positive and negative poles, and do not reverse the positive and negative poles to avoid hazards.

Before using the product, please read the user manual and product warning labels carefully.

- 1) When using this product for the first time, please check whether the device is damaged or in other dangerous states; and check and confirm whether other external devices or circuit connections are in a safe state;
- 2) When using the product for the first time, you should conduct visual inspection, wiring inspection, control power inspection, and communication inspection. If you find that the product shell is seriously damaged or has abnormal phenomena such as peculiar smell, you cannot continue to use it, and you should return the product to the manufacturer;
- 3) The product is a direct current high voltage, except for professionals, other people should stay away from it without permission, and must not touch or operate it;
- 4) Before any installation and maintenance work, first disconnect the circuit breaker on the grid side, then disconnect the DC switch on the battery side, and use relevant equipment for testing;
- 5) Do not expose to rain or throw the product into water. Otherwise, the function of the internal protection circuit of the battery will be lost and abnormal chemical reactions will occur, and the battery may generate heat, smoke, deform or burn;
- 6) Do not damage the product and battery. It is forbidden to chisel into the battery with metal, hammer or beat the product and battery, or otherwise damage the product, otherwise the battery will heat up, smoke, deform or burn; energy storage products, which may cause death by electric shock or fire;
- 7) Forbidden to open the door of the battery cabinet or related equipment, which may cause electric shock accidents.