



INFINITE POWER

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HT 50kw PCS+106kwh Battery Commercial Energy Storage All In One Cabinet



Net Weight: 1876kg

Shenzhen Infinite Power Technology Co.,LTD

1 Scope of application

This product specification is applicable to the 50kW/106kWh medium-sized energy storage products independently developed by HT. It stipulates the scope of application, technical specifications, test standards, marks, packaging, transportation, storage and other precautions of this product.

2 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 one hand, the converter can invert the direct current of the energy storage battery into 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. Photovoltaic storage DC coupling, directly connected to photovoltaic panels.

■ Cell

The basic unit that realizes the mutual conversion of chemical energy and electrical energy is composed of positive electrode, negative electrode, separator, electrolyte, casing and terminals.

■ Battery Module

A battery assembly consisting of battery cells connected in series, parallel or series-parallel, with only one pair of positive and negative output terminals, should also include casings, management and protection devices and other components.

■ Battery Cluster

The battery assembly is a battery assembly that is connected in series, parallel or series-parallel by battery modules, and is connected to energy storage converters and auxiliary facilities to realize independent operation. It should also include battery management systems, monitoring and protection circuits, electrical and communication interfaces, etc. part.

■ Battery Management Unit, BMU

Manage a battery module, monitor battery status (voltage, temperature, etc.) , and provide a communication interface.

■ Battery Cluster Management Unit, BCMU

Manage a unit of energy storage, including all battery clusters in the battery system, be able to monitor and control all battery clusters in the system, and perform battery cluster capacity estimation, battery cluster remaining capacity (SOC) estimation, battery cluster fault diagnosis, balance control strategy, security Control strategies, etc. , can upload battery system information, status and battery alarm information.

■ Battery Management System , BMS

Manage a unit of energy storage, including all battery clusters in the battery system, be able to monitor and control all battery clusters in the system, and perform battery cluster capacity estimation, battery cluster remaining capacity (SOC) estimation, battery cluster fault diagnosis, balance control strategy, security Control strategies, etc. , can upload battery system information, status and battery alarm information.

■ Energy Management System

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

4.1 Product name: Medium-sized energy storage products

4.2 Product specification: 50kW/106kWh

4.3 Product model: HVS-R106P50-M

5 Product overview

5.1 Product introduction

The medium- sized energy storage system is an energy storage system independently developed by HT 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.

The application topology of medium- sized energy storage products is shown in the figure below.

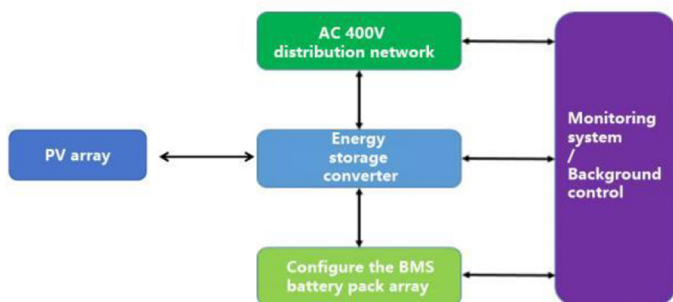


Figure 1 Application topology of medium- sized energy storage products

5.2 Product characteristic

■ Highly integrated

All in one design, small footprint, high site utilization;

Easy installation, integrated transportation, suitable for bottom and top hoisting conditions, and can be transported by forklift;

Convenient operation and maintenance, open the door separately for maintenance, other devices will not be disturbed, front maintenance design, high operability;

■ Easy to expand

Modular design, building block expansion, any combination of horizontal and vertical; Support 2 h, 4 h, 6 h power configuration, support AC, DC coupling parallel connection; Support kWh to MWh applications;

■ Standardization

Standardized design, standardized production;

Pre-installed in the factory, integrated and fast delivery, low on- site operation and maintenance costs;

■ Intelligent

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;

■ Safety

Full cell voltage monitoring, real- time insulation monitoring;

The battery is independently isolated, 2 h 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)	104
	Rated Voltage (V)	3.2
	Working voltage range(V)	2.5-3.65
Battery module	Monomer battery quantity	16
	Series and parallel	1P16S
	Working voltage range(V)	43.2-57.6
Battery system	Number of battery modules	10
	Battery in series and parallel mode	1P16S
	Working voltage range(V)	432-584
	Installed power (kWh)	106

Battery specifications

Item	Content
Rated Capacity(kWh)	53.2KWh*2
Cell type	Lithium Iron Phosphate
Cell configuration	10*16S1P*2
Rated voltage(V)	512V
Rated Capacity(Ah)	104Ah*2
Working voltage range(V)	432-584V
Rated charge and discharge current (A)	100A *2
Rated charge and discharge power (kW)	51 KW*2
communication method	CAN/RS485
cycle life (times)	6000
range of working temperature (°C)	-15-45
Relative humidity (%)	5%-85%
Maximum working altitude(m) Use beyond derating	2000m

Product system configuration list

No	Part name	Quantity	Unit
1	Cabinet	1	set
2	Air conditioning system	1	set
3	Distribution box	1	set
4	PCS	1	set
5	Fire equipment	1	set
6	Battery Inset box	20	set
7	High and low voltage wiring harness	1	set

Product system performance parameter characteristic table

Product specification	HVS-R16P100-M
System parameter	
DC side voltage rage	432V~584V
Output voltage	380V@AC
System configuration	1P160S
Rated power	50kW
Match PCS	50kW
Nominal energy of the battery system	106kWh
Battery upload request value	5%-95%
Battery protection value	2.7V-3.6V
Discharge energy	≥95.4kWh
Battery cycle efficiency	≥90%@AC
Dimensions(L* W* H)	1950*1180*2160mm
Weight	1500kg
IP Grade	IP54
Temperature range	-10-50℃
Humidity range	≤95% (non -condensing)
Maximum working altitude	3000m (> 2000m need to derate)
Battery temperature control method	Air cooling
Fire fighting system	Aerosol