



Commercial & Industrial ESS

Jiangsu Hanchu Energy Technology Co., LTD

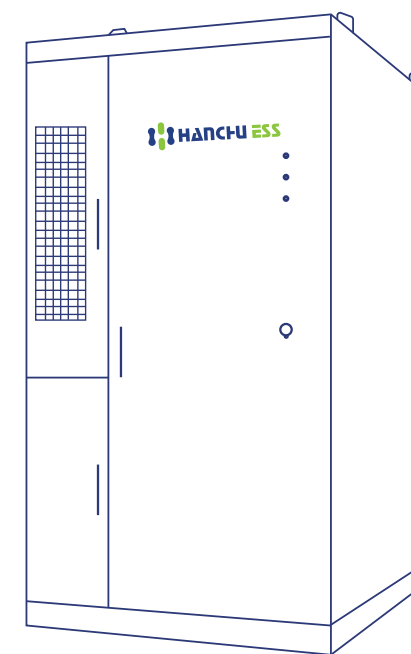
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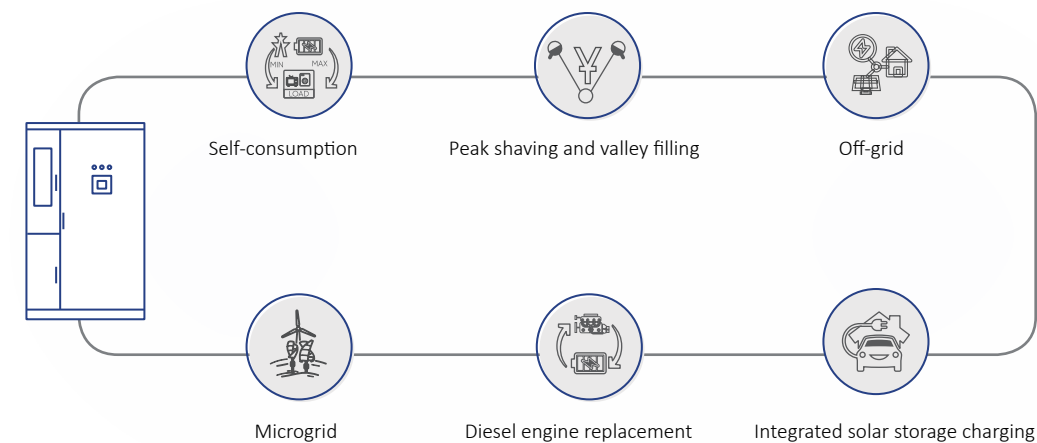


Hanchu ESS is a high-tech enterprise that specializes in the development of intelligent energy storage products, system integration, and the application of digital energy cloud platforms. The products of Hanchu ESS are widely used in various scenarios, including power generation, transmission and distribution, commercial, and residential sectors. Our goal is to provide global users with standardized digital energy storage products, solutions, and system technology services.

From design and research to production integration, Hanchu ESS independently handles all aspects of our commercial and industrial energy storage products. We take pride in our complete autonomy in developing and designing the core components of our products, particularly the PCS and EMS. These products possess core advantages and competitiveness in the market.

At Hanchu ESS, we are focused on the digital energy strategy, emphasizing research and development innovation. With products as our core, we drive our business through standardized project services and professional investment and operational management. Our aim is to become a leading All-in-one digital energy storage service provider, covering research, production, sales, investment, construction, and operation.

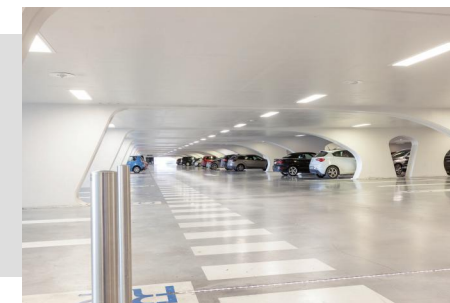
Functional Service



Applications

Commercial District

Distributed energy storage systems are ideal for commercial buildings with limited underground space. These systems offer flexible deployment options without occupying valuable land resources. By implementing distributed energy storage, customers can effectively reduce their electricity costs.

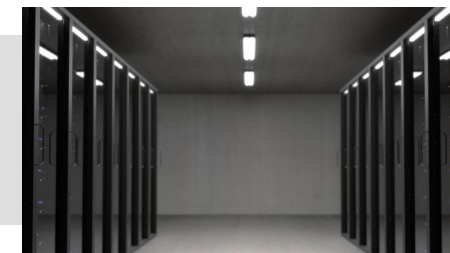


Industrial Park

The energy storage system, by implementing peak shaving and valley filling strategies, can reduce the electricity costs of industrial parks. During periods of grid restrictions, it provides emergency power supply to ensure the normal production and operation of businesses. Additionally, for industrial parks equipped with photovoltaic systems, it increases the consumption of renewable energy and improves the proportion of renewable energy utilization.

Data Center

Energy storage systems, with the integration of seamless grid-to-off-grid switching devices, can fulfill the secure and stable power supply requirements of data centers.

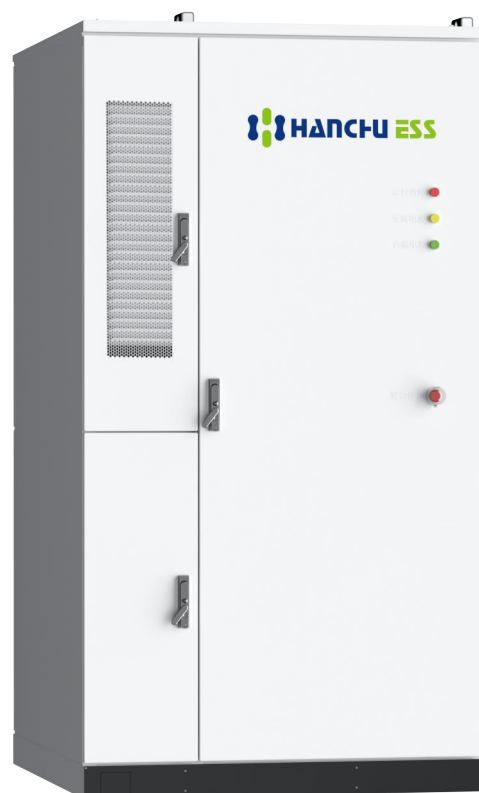


Microgrid Scenarios

To address areas without electricity access or with weak grid infrastructure, establishing a microgrid system centered around energy storage, wind, solar, and energy storage can replace existing diesel generator systems and provide clean energy supply.



(CESS-215K-A)



(CESS-372K-S)

Solutions

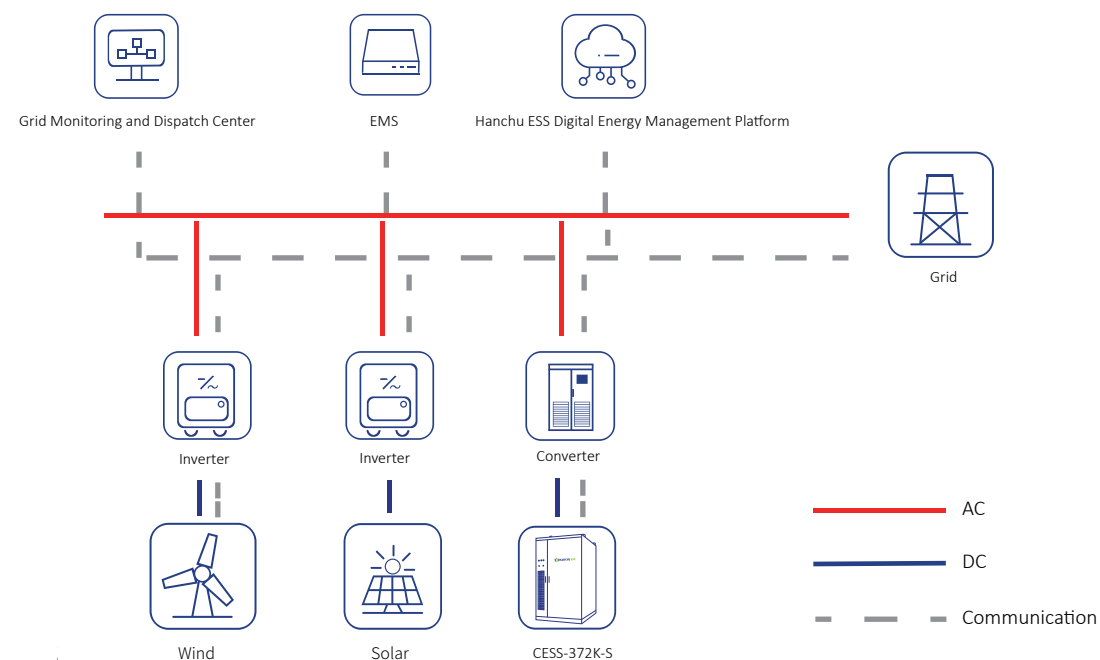
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Hanchu ESS Technology focuses on customer service and responds quickly to customer needs. The company places great importance on product safety, from selecting high-standard materials, designing a secure battery system, implementing high reliability system design, establishing comprehensive management systems, to implement stringent quality control measures. Hanchu ESS Technology continually enhances the safety of energy storage systems from multiple dimensions and aspects. We provide customers with a one-stop solution for energy storage, aiming to create higher value for our customers.

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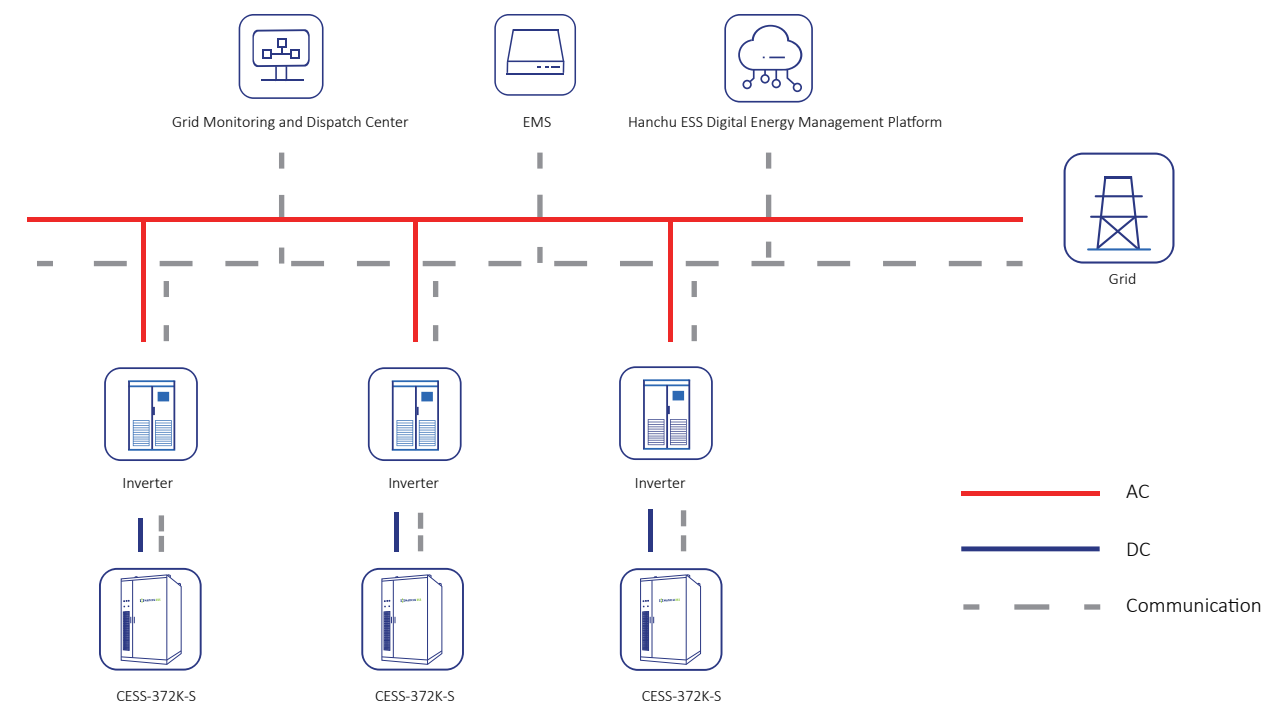
Integration of New Energy

Wind power, solar power, and other renewable energy sources have intermittent and fluctuating characteristics. Energy storage systems can store excess electricity generated during periods of high wind or solar generation and release it during periods of low generation or high electricity demand. This helps smooth out the fluctuations in renewable energy generation, reduces grid impact, improves the accuracy of power generation planning, and enhances the integration of renewable energy.



Capacity Expansion and Peak Shaving

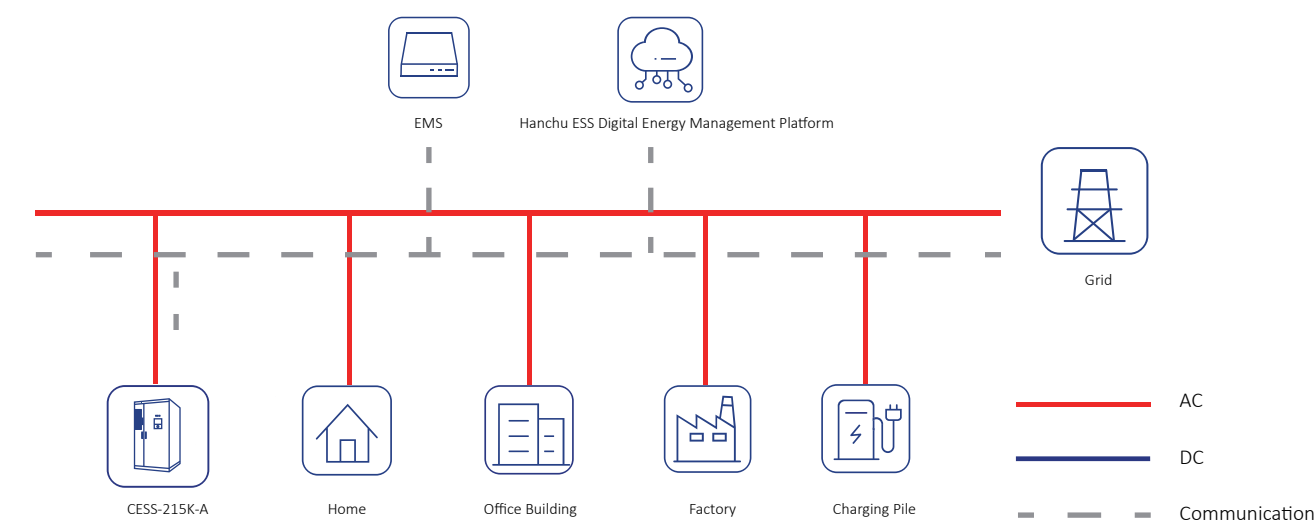
Dynamic Capacity Expansion and Peak Shaving: Addressing the issue of insufficient transformer capacity during peak electricity consumption periods for users.



Low Voltage User Side

Peak-Valley Arbitrage: Exploiting the price difference between peak and off-peak electricity periods to achieve cost savings in electricity bills for users.

Backup Power Supply: Providing emergency power supply to ensure uninterrupted operation of critical loads (through additional equipment such as ATS or STS).





Air-Cooling Outdoor Cabinet ESS



CESS-215K-A

Module Design

- Standardized structural design, menu-based functional configuration, adaptable to different usage scenarios, optional photovoltaic control module, and off-grid switching device, integrated photovoltaic energy storage system

Smart BMS & Cloud Platform

- Intelligent battery management system
- A powerful cloud platform system that enables real-time monitoring of the energy storage system

Flexible Combination

- Integrated AC/DC design with small footprint, flexible on-site configuration, and convenient parallel configuration of multiple systems

All-in-one Design

- Highly integrated, incorporating energy storage batteries, BMS, PCS, air conditioning, fire protection, EMS, and supervision system into one entity

High Safety

- Utilizing LFP cells for stability and safety
- High-standard reinforced structural design
- Multiple levels of safety warnings and protection, from cells to the overall system, ensuring safety and reliability

Excellent Protection

- IP54 for outdoor cabinet ESS
- Optimized ventilation ducts for efficient heat dissipation
- Safeguards against sand, dust, rain, and water ingress

Thermal Insulation design

- Air cooling system and insulation layer to ensure battery modules operate at suitable temperatures

Fire Protection Design

- Advanced dual fire protection system with fully fluorinated ketone fire suppression and water-based fire suppression, ensuring the safety and stable operation of the system



Specifications

Model	CESS-215K-A
AC Side	
Rated Power	100KW
Rated Voltage	400V
DC Side	
Charge/Discharge Rate	≤0.5C
Nominal Capacity	215.04KWh
Cell Type	LFP-280Ah
Voltage Range	672~864V
Nominal Voltage	768V
Maximum Charging Current	140A
Maximum Discharging Current	140A
General Data	
Operating Temperature	-25~60°(Decreased output above 45°)
Humidity	≤95%
Cooling type	Air Cooling
IP Rating	IP54
Communication	Ethernet/RS485
Safety Certification	IEC 62619/CE/UN38.3/MSDS/DGM
Dimensions (W*D*H)	1500*1200*2346mm
Weight	2500Kg

Liquid Cooling Outdoor Cabinet ESS



High Safety

- Utilizing LFP cells for stability and safety
- High-standard reinforced structural design
- Multiple levels of safety warnings and protection, from cells to the overall system, ensuring safety and reliability.

Modular Design

- Supports parallel operation of multiple units, covering a wide power range from 50 kW to 1 MW
- Multiple configuration options ranging from 2 to 5 hours

Flexible Combination

- Integrated outdoor cabinet design with a small footprint and flexible on-site configuration
- Convenient for multiple system installations

Thermal Insulation Design

- Liquid cooling system and insulation layer to ensure battery modules operate at suitable temperatures

Fire Protection Design

- Advanced dual fire protection system with fully fluorinated ketone fire suppression and water-based fire suppression, ensuring the safety and stable operation of the system

Excellent Protection

- Outdoor cabinet design with IP54 protection rating and battery pack with IP65 protection rating

Integrated Design

- Highly integrated design combining cells, BMS, EMS, and PCS



Specifications

Model	CESS-418K-S
DC Side	
Charge/Discharge Rate	≤0.5C
Nominal Capacity	417.99KWh
Cell Type	LFP-314Ah
Voltage Range	1164.8~1497.6V
Nominal Voltage	1331.2V
Maximum Charging Current	157A
Maximum Discharging Current	157A
Charging Temperature	0~55°
General Data	
Discharging Temperature	-20°~50°
Humidity	≤95%
Cooling Method	Liquid Cooling
IP Rating	IP54
Communication	CAN/RS485
Safety Certification	IEC 62619/CE/UN38.3/MSDS/DGM
Dimensions (W*D*H)	1250*1350*2346mm
Weight	3600Kg



CESS-61.4K



Module Design

- Standardized structural design, menu-based functional configuration, adaptable to different usage scenarios, optional photovoltaic controlmodule, and off-grid switching device, integrated photovoltaic energy storage system

Flexible Combination

- Integrated AC/DC design with small footprint, flexible on-site-configuration, and convenient parallel configuration of multiple systems

Smart BMS & Cloud Platform

- Intelligent battery management system
- A powerful cloud platform system that enables real-time monitoring ofthe energy storage system

High Safety

- Utilizing LFP cells for stability and safety
- High-standard reinforced structural design
Multiple levels of safety warnings and protection, from cells to theoverall system, ensuring safety and reliability



Specifications

Model	CESS-30KW/61.4KWH
AC Side	
Rated Power	30KW
Rated Voltage	400V
DC Side	
Nominal Charge/Discharge Rate	0.5C
Nominal Capacity	100Ah
Cell Type	LFP
Voltage Range	480~700.8V
Nominal Voltage	614.4V
Maximum Charging Current	50A
Maximum Discharging Current	50A
General Data	
Operating Temperature	0~55°
Humidity	≤95%
Cooling Type	Natural
IP Rating	IP20
Communication	Ethernet/RS485/CAN
Safety Certification	IEC62619/CE/UN38.3
Dimensions (W*D*H)	500*600*2200mm
Weight	650Kg

20ft Liquid Cooling Container ESS



Specifications

Model		ESS-3.44M-2h-S
Cell Type		LFP-280Ah
Nominal Capacity		3.44MWh
Voltage Range		960~1401.6V
Nominal Voltage		1228.8V
Charging Current		140A
Discharging Current		140A
Cell Combination		1P48S8S*10
Weight		35T
Dimensions		6058*2438*2896mm
Temperature	Charging	0-55°
	Discharging	-20°-55°
Humidity		≤95%
Cooling Type		Liquid Cooling
IP Rating of Enclosure		IP54
Communication		CAN/RS485

Bidirectional AC/DC Converter



Highly Efficient and Flexible

- Maximum operating efficiency of over 99%
- Supports up to 16 parallel operation in full mode, with automatic current sharing and less than 5% imbalance

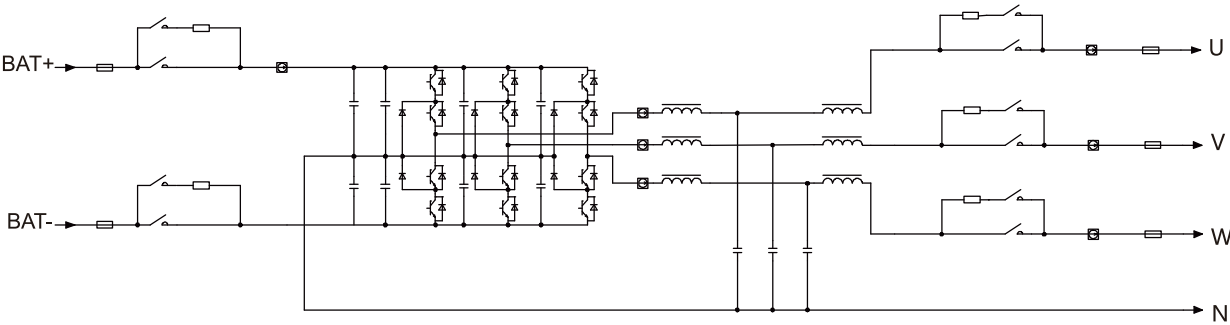
Safe and Reliable

- Comprehensive and reasonable EMC design
- Supports multi-channel control, comprehensive fault protection functions

Intelligent Collaboration

- Supports DC input from batteries, photovoltaic systems, and other sources
- Supports constant voltage, constant current, constant power operation modes, and also supports boost/buck MPPT operation

Electrical Schematic Diagram



Specifications

Model	100KW
DC side	
Voltage Range	650-950V(3P4L)
Maximum Operating Current	150A
Number of Battery Branches	1
AC side (grid-connected)	
Nominal Voltage	400V
Wiring Configuration	3P4L
Nominal Power	100KW
Maximum Power	110KW
Nominal Current	145A
Power Factor	0.99
Power Factor Adjustment Range	1(lead)~1(lag)
Current Distortion Rate	<3% (nominal power)
DC Component	0.50%
Overload Capacity	110% long term
Maximum Discharge Efficiency	>98.2%
AC side (off-grid)	
Nominal Output Voltage	400V
AC Voltage Harmonic	< 3% (Linear load)
Frequency	50±5Hz
AC Output Power	100KW
Device protection	
Features	Battery reverse connection protection, DC overcurrent protection, AC overcurrent protection AC overvoltage protection, Surge protection, Grid monitoring
System Specifications	
Dimensions	484*661*256.5mm
Weight (kg)	47KG
Altitude	Decreased output above 2000m
Operating Temperature	-30℃ -55℃
Storage Temperature	-45℃ -70℃
Humidity	< 95% RH, non-condensing
Cooling Type	Intelligent Air Cooling
IP Rating	IP20
Communication Interface	CAN/RS485
Standards	GB/T 34120-2017, GB/T 34133-2017, EN 62477, EN IEC 61000
Grid Compatibility	L/HVRT, active and reactive power control
Certification	CE\CQC

Energy Management System EMS

Energy management system EMS is a set of energy storage management system developed by Hanchu ESS Technology. EMS can be applied to the grid side's power generation, transmission, distribution, usage and other links to achieve grid/off-grid control, peak loading, demand control, smooth out renewable energy fluctuations, dynamic capacity expansion, and optimize energy storage benefits.

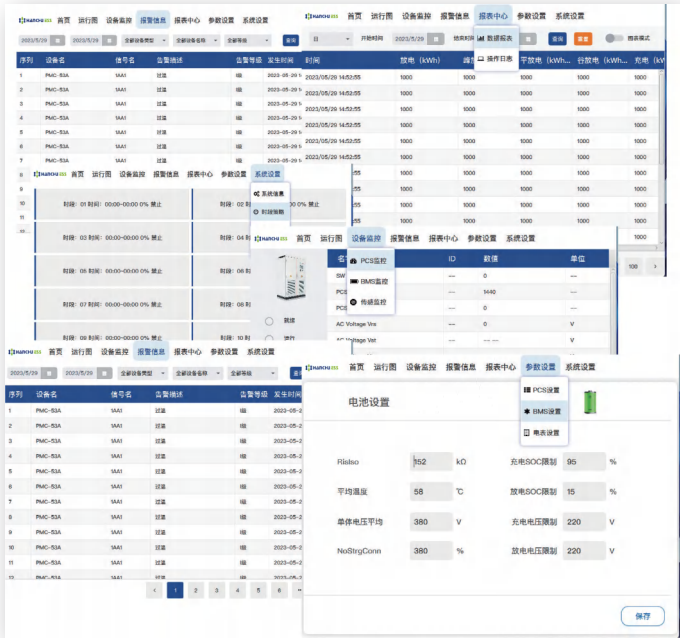


Scope of Application

- Energy control of microgrid systems
- Energy control for commercial and industrial peak loading
- Photovoltaic energy storage system energy control
- Energy control of multi-energy complementary systems

System Characteristics

- Standard power dispatching interface, supports a variety of communication protocols
- Real-time monitoring of various types of equipment (inverter, battery data, etc.) operation status
- Statistical analysis of reports and alarms
- Alarm, communication, operation logs and other event records
- Task management, inspection records, work order and other maintenance management
- User-friendly operation interface, simple and convenient to manage, easy to operate
- Support mobile APP and remote operation



Energy Storage Controller EL1.0



EL1.0 is an embedded energy storage controller developed by Hanchu ESS Technology. EL1.0 can collect data of local devices through various interfaces, and ensure the safe, reliable, efficient and economical operation of the energy storage system through internal control strategies.

Cloud-edge Collaboration

Cloud edge integrated design, local collection, cloud platform centralized monitoring

EMS Policy

Peak loading, demand control, backflow prevention, independent operation, intelligent strategy

Data Acquisition

Multi interfaces, highly integrated

Widely Used

Cover a variety of application scenarios, including but not limited to energy storage, photovoltaic, wind power



Specifications

Model	EL1.0
Interface	
Power Input	DC24V, <2A
SD	SD card interface
USB-HOST	USB flash drive interface (used for software upgrade)
RST	Reset button (used for resetting the local controller)
Communication Interface	2 Ethernet channels, 8 RS485 channels, 2 CAN channels, 1 4G channels
Analog Input	6 channels
Digital Input	16 channels (support passive dry contact input signal)
Digital Output	16 channels, support normalized open or close
Indicator	Power light, running light, warning light, communication light etc.
RF	Wireless antenna interface
GPS	GPS antenna interface
Communication Protocols	
Ethernet	Modbus TCP, IEC61850 MMS
RS485	Modbus RTU
CAN	Compatible with multi-manufacturers' BMS
Functions	Dynamic pressure regulation, peak loading, demand control, dynamic expansion (can be customized)
General Data	
Operating Temperature Range	-25-60°C
Operating Humidity Range	0%RH to 95%RH, non-condensing
Maximum Working Altitude(m)	4000
Display	7 inches/ 10.1 inches display
Weight (kg)	1.84
Dimensions (W*D*H/mm)	440*120*44
IP Rating	IP20



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