JDENERGY 奇点能源

RELIABLE CLEAN POWER FOR EVERYONE

JDENERGY
奇点能源

JD Energy Storage
Empower A Better Low-carbon Life

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Leader In Distributed Energy Storage

JDENERGY
奇点能源

Singular point is a temporal and spatial starting point.

JD Energy, committed to providing advanced energy solutions for the sustainable development of human beings to solve the problem of space-time imbalance of clean energy with innovative and cutting-edge energy storage technologies.

Weizeng (David) Liu Phd, The Founder, Chairman of The Board and Chief Executive Officer of JD Energy.,Ltd.

David Liu A Phd Graduated From Xi'an Jiaotong University, Senior Engineer, Has Over 18 Years of Experience In Research, Development, Management and Project Industrialization of Electric and Electronic Industry, and Has Served as SVP and CTO of TBEA Xi'an Electric Technology Limited Company (Hereafter as TBEA Xi'an), President of TBEA Research Institute, CEO of TBEA Xi'an, Director In Extra High Voltage Flexible DC Transmission, Flexible AC Transmission SVG, Intelligent Micro-Grid Energy Router. He Presided Over and Participated In 4 National 863 Projects and Obtained 38 Invention Patents. The Products Researched and Developed By Dr. David Liu Include ±800kV Extra High Voltage Flexible Converter Valve, Energy Router, High Voltage SVG and Photo-Voltaic Grid-Connected Inverter, Etc., Covering Almost All The AC and DC Applications In Residential, Industrial and Commercial and Main Electric Transmission Grid From 400v~±800kV.

Contents




About Us

Xi'an JD Energy Co., Ltd was incorporated in 2018 and was jointly founded by renowned electrical and electronic experts **together with decade experienced R&D PhdS and engineers.** Committed to technology research and product development of core equipment of advanced energy storage system, providing cutting edge solutions and services for renewable energy application globally to support the development of **renewable energy and help to achieve carbon neutrality.**

With the mission of "Reliable Clean Power for Everyone", JD Energy aims at promoting global energy structure transfor-mation, increasing the proportion of clean energy, and providing sustainable lighting and power for electricity short-**age area with efficient energy storage and conversion tech-**nology, and integrating the research of internet of things and big data technology to improve human survival and living **environment with clean and stable power.**

Corporate Culture

Mission

Reliable clean power for everyone

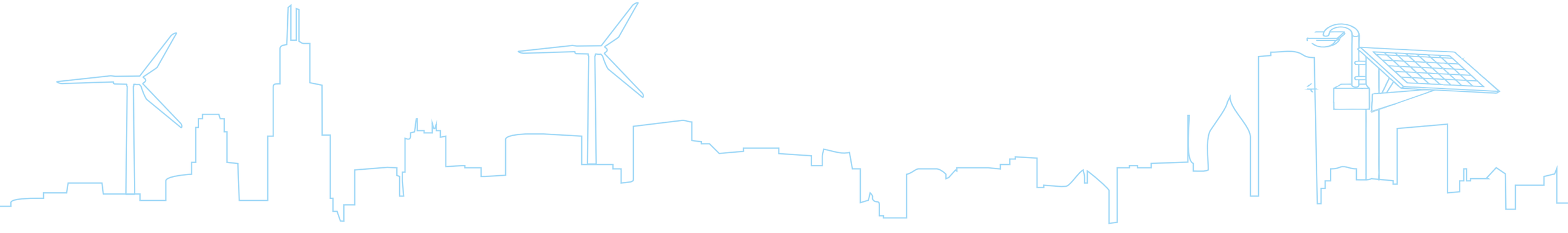
Vision

Being 100 GWh energy storage service provider

Values

Focus，Improve，Open，Contribute

History and Milestones



2018

2018.11 JD Energy was established by the founder, PhD Liu Weizeng.

2019

2019.02 Formed Startup Team.

2019.04 Determined distributed energy as development direction.

2020

2020.07 Developed eBlock–the first energy block in ESS industry.

2020.09 Won the first bid Grid–Side ESS project.

2020.12 Received the Angel Round financing.

2021

2021.04 Launched the global first intelligent distributed BESS block and JD Energy awarded the best integrator in China ESS industry and well–known by its labeling technology - intelligent ESS block.

2021.06 The first Grid–Side energy storage pilot project of energy block eBlock connected to the power grid and passed all the whole station performance tests by China Electric Power Research Institute.

2021.12 Completed CNY of 300 million Round–A financing, by IDG, MEGMEET and Source Capital.

2021.12 Singed contract for the first 100MWh shared energy storage project.

2022

2022.03 Successfully delivered, connected and operated the largest C&I BESS power station in southwest area of China.

2022.05 The 20 MW/40 MWh energy storage project at North Hebei Renewable Energy Base of the State Grid has been delivered and commercially operated.

2022.07 Launched eMind2000 cloud platform.

2022.09 Launched new generation products: eBlock372 for Utility scale and eBlock200 for C&I.

2022.09 Completed Round A+ financing, received investment from CD Capital and Fenghe Fund.

2022.10 Won the bid for the 1,050 MW/2,100 MWh project of Lot II of Energy China for energy storage equipment procurement.

2022.12 The world's largest modular Grid–Side 100MW/200MWh energy storage station was commercial operated.

2022.12 Awarded the "2022 Enterprises with Investment Value", "2022 ZY ZONE Top 100 Future Unicorn Enterprises", "2022 Excellent Chinese Companies in Science and Technology Innovation" and "2022 Most Influential Enterprise Award".

2023

2023.03 Launched "Starry Sky" Ecol Partnership to fully empower its partners.

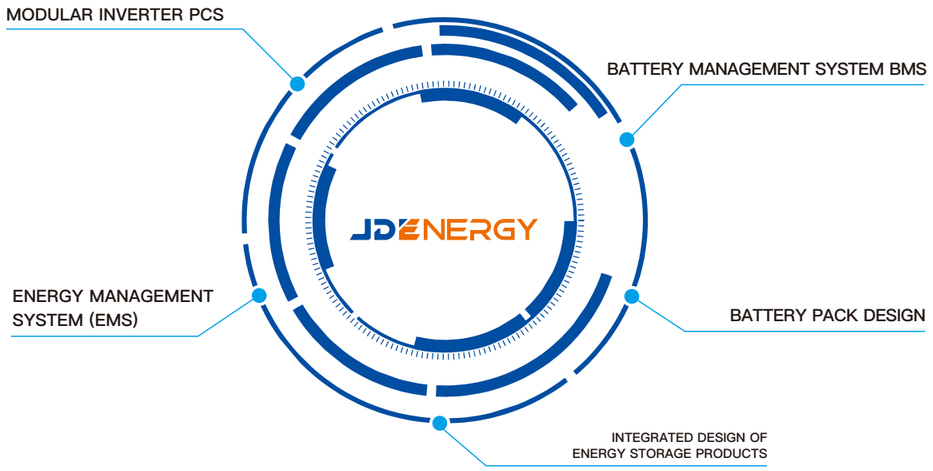
2023.04 Launched new generation product: eBlock 745KWh/4h.

2023.04 Completed nearly RMB 800 million Round–B financing, lead by CITIC Goldstone Investment, and followed by Jinyi Capital and Hillhouse Capital.

2023.05 Established an operation and maintenance platform for energy storage power stations, providing full life–cycle services.

Technological Innovation Capability

With its strong technical team that consists of more than 100 experienced experts well-known in the electricity and electronics industry , JD Energy established a complete electrochemical energy storage and electric power and electronics laboratory, not only independently researched and developed highly integrated eBlock system consists of battery pack,thermal management system, liquid cooling system, power conversion system, battery management system, JD Energy is a GWh energy storage station integrator with its eBlock product. It has been granted over 100 invention patents and technical certifications, passed the evaluation of High-Tech Enterprises and obtained The National High-Tech Enterprise Certificate, and won the First Prize in the 10th China Innovation and Entrepreneurship Competition (Shaanxi Zone), awarded the 2022 Innovation Enterprise Award for Peak Carbon Dioxide Emissions and Carbon Neutrality and won other awards such as 2022 Top 10 Chinese Energy Storage Integrators In Shipment Volume.




HIGH-TECH ENTERPRISE CERTIFICATE

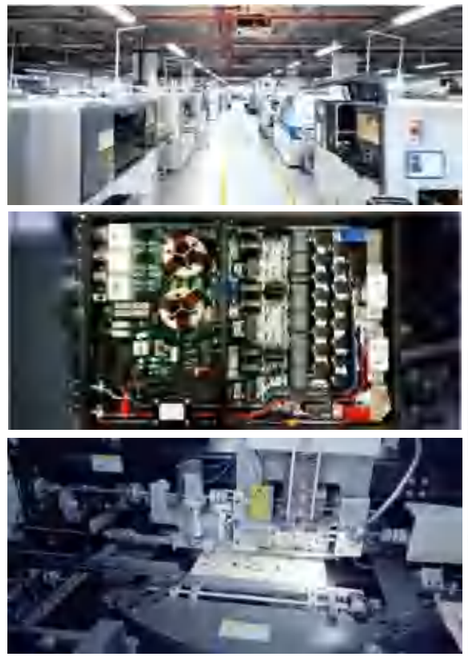

UTILITY MODEL PATENTS 24+


TECHNICAL INVENTION PATENTS 18+


COMPUTER SOFTWARE CERTIFICATE 16+


HVRT CERTIFICATION 22 +

Manufacturing and Delivery Capability



10GWh
DISTRIBUTED ENERGY BLOCK MANUFACTURING AND DELIVERY CAPABILITY

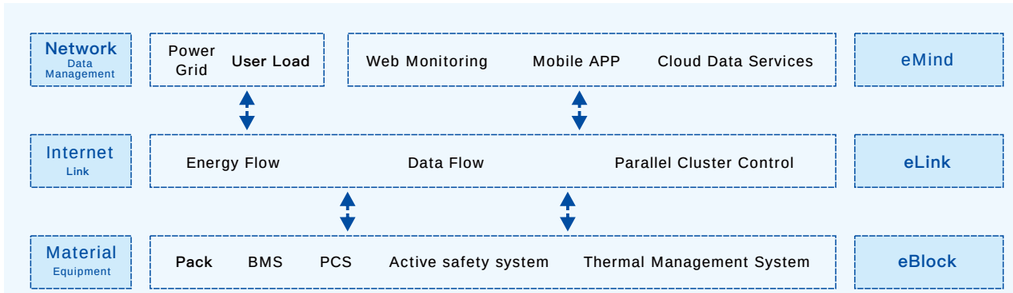
15GWh
15GWH AUTOMATED PRODUCTION BASE UNDER CONSTRUCTION

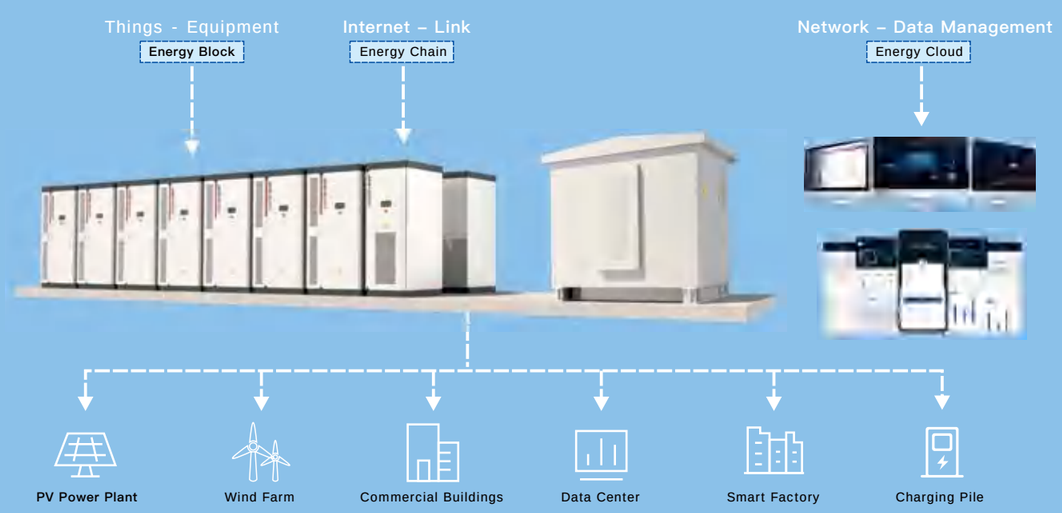
JD Energy is building a 5 GWh automated production base after the completion of the first GWh Standardized Energy Storage Product Manufacturing Base . At present, JD Energy has sufficient capability in the integrating energy storage product eBlock R&D and manufacturing, system integration, intelligent operation and maintenance of industrial and commercial energy storage stations, PV energy storage charging pile and new energy storage power stations. JD Energy can provide integrated solutions for energy storage power plants and one-stop energy management services.

Solutions

Solution for Energy Storage System of Distributed Energy Block

Based on eBlock the Distributed Energy Storage Solution is designed in segment as per equipment, link and data management; the core products include energy block–eBlock, energy chain–eLink and energy cloud–eMind. This solution realizes the efficient and safe design from 100kWh–level small–sized energy storage units to GWh large–scale energy storage power station which help to overcome common issues of traditional centralized energy storage solution, such as low system safety, high loss rate in parallel capacity, short system life cycles and define new standards of energy storage system integration.





Design Concept

Adhering to the design concept of "All in One", JD Energy integrates long-life Cells, Battery Management System (BMS), high-performance Power Conversion System (PCS), Active Safety System (ASS) and Thermal Management System (TMS) into single standardized outdoor cabinet to form an integrated plug & play smart energy block eBlock. eBlocks enable migration of energy storage systems from engineerization to productization.

LONG-SERVICE-LIFE CELL

Use high-quality LFP cells, with life **time of over 8000** cycles

EFFICIENT AND BALANCED BMS

Single set series **design + efficient** balancing technology, parallel system capacity **loss=0**

HIGH-PERFOR MANCE PCS

Integrated battery management and smart power distribution system, multi-level topology, minimum switch vector control algorithm, **maximum efficiency 99.3%**

ACTIVE SAFETY SYSTEM

Security isolation on cell/pack basis and active safety warning unit + immersion fire protection on pack-level to ensure controllable fire protection

THERMAL MANAGEMENT SYSTEM

Air/liquid cooling ensures that each cell and pack operates at a suitable temperature to ensure performance and life cycles of batteries

Core Values

EXTREME SAFETY

Standardized energy cabinet achieve safety isolation of battery system on segment basis, single cell-based thermal management technology, 9-level **active safety monitoring, pack level active safety warning and immersion fire protection** technologies to ensure safety and controllability of the energy storage system

ECONOMICAL AND EFFICIENT

Single string series design with zero parallel **capacity loss, efficient multi-level topology** and minimum-loss variable frequency modulation technology, optimal thermal management design and intelligent environmental temperature **control technologies, optimal fitting technologies of PCS and battery pack voltage ensure ⩾ 90% system conversion efficiency**

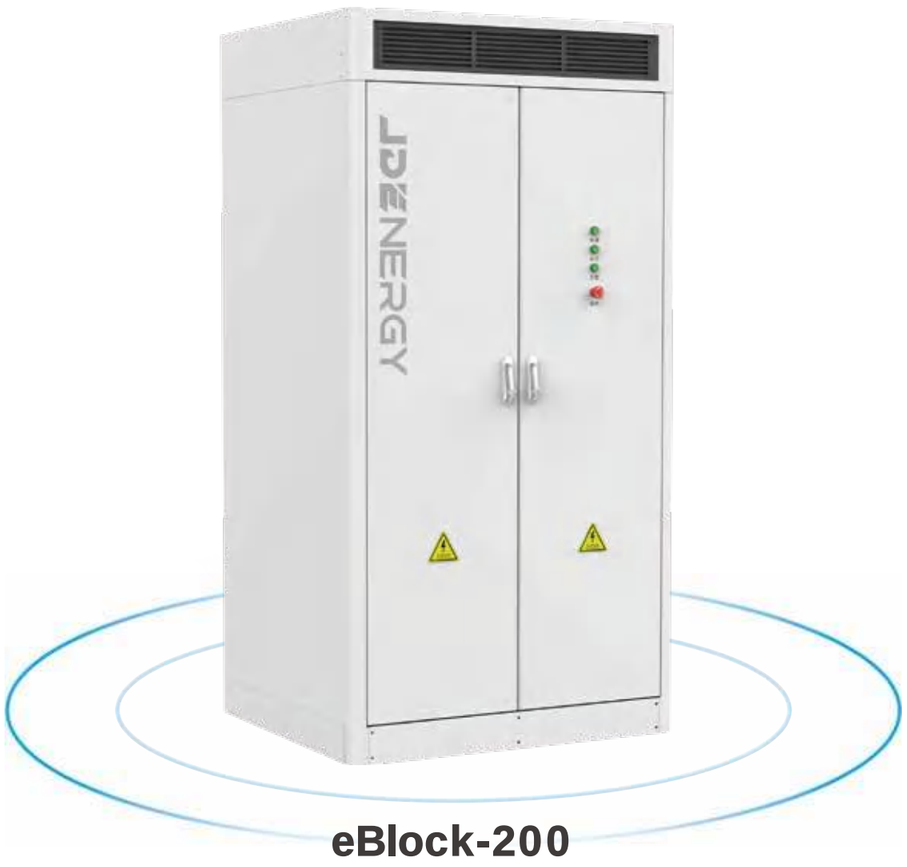
GRID FRIENDLY

Support grid stability control strategies such as primary and secondary frequency regulation, **high and low voltage crossing, grid load, AGC/AVC, inertial control, etc. Grid power dispatching response time is less than 50ms. Internal embedding control strategies such as peak load shifting, demand control for C&I application. Every single eBlock enables stand-alone operation**

INTELLIGENT OPERATION AND MAINTENANCE

Infinite parallel connection enables elastic expansion and fully modular maintenance **of energy storage power stations. Operating data can be connected to JD Energy cloud eMind through WIFI, 5G, LAN, etc realizing** unmanned operation and maintenance

Energy Block eBlock 200/AC 380V

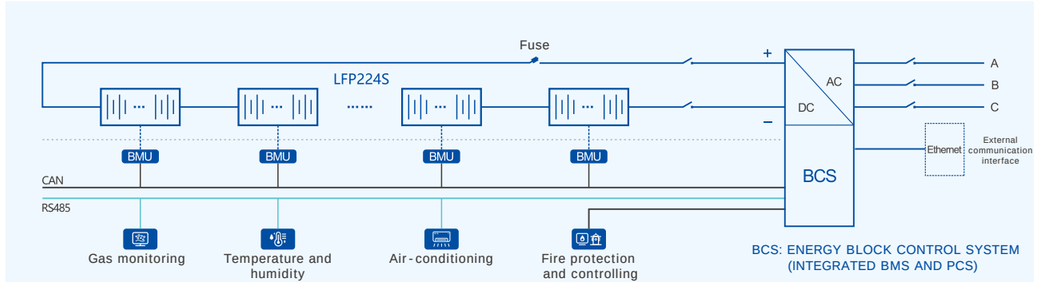


eBlock-200

Performance Parameters

DC Battery Parameters			
Cell Type	LFP 280Ah	Battery Voltage	627~806V
Battery PACK Configuration	14kWh	Number of Temperature Sensors	140
Battery System Configuration	200kWh	DC Protection	Circuit Breaker
AC Side Parameters			
Rated AC Power	100kW	Voltage of AC Side	380V±15%
Maximum AC Power	120kW	Power Factor	–1~1
AC Current Distortion Rate	<3%	Rated Power Grid Frequency	50Hz
DC Component	<0.5%Ipn		
System Parameters			
Maximum System Efficiency	≥90%	Cooling Mode	Air Cooling By Air Conditioner
Charge/Discharge Rate	≤0.5P	Operating Temperature	–35~55℃
Depth of Discharge	100%DOD	Relative Humidity	0–95%RH, No Condensation
System Voltage System	IT 380V	Noise	<70dB
Number of Cycles	≥8000	Altitude	≤2000m
Charge and Discharge Switching Time	<100ms	System Dimension (W*H*D)	1200*2350*1050mm
Communication Interface	LAN	Fire Protection System	Aerosol + PACK Level Immersion + Active Warning
Protection Grade	IP55	Weight	2600kg

Control Topology

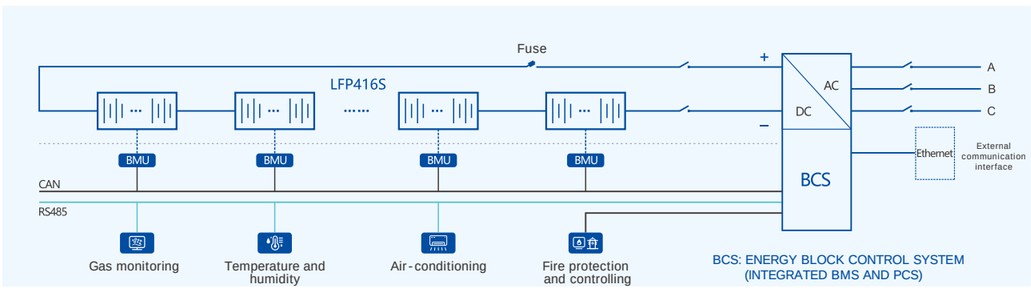


Energy Block eBlock 372/AC 690V

Technical Parameters

DC Side Parameters			
Cell Type	LFP 280Ah	Battery Voltage	1165~1498V
Battery PACK Configuration	46kWh	Number of Temperature Sensors	224
Battery System Configuration	372kWh	DC Protection	Circuit Breaker + Fuse
AC Side Parameters			
Rated AC Power	186kW	Voltage of AC Side	690V+15%
Maximum AC Power	223kW	Power Factor	–1~1
AC Current Distortion Rate	<3%	Rated Power Grid Frequency	50Hz
DC Component	<0.5%Ipn		IT
System Parameters			
Maximum System Efficiency	≥90%	Cooling Mode	Liquid Cooling
Charge/Discharge Rate	≤0.5P	Operating Temperature	–35~55°C
Depth of Discharge	100%DOD	Relative Humidity	0–95% RH, No Condensation
System Voltage System	IT 690V	Noise	<75dB
Number of Cycles	≥8000	Altitude	≤2000m
Charge and Discharge Switching Time	<100ms	System Dimension (W*H*D)	1400*2350*1300mm
Communication Interface	LAN	Fire Protection System	
Protection Grade	IP55	Weight	3800kg

Control Topology



Power Conversion System BCS

PCS-1000

PCS-2000

Product Introduction

Energy storage power conversion system–PCS consists of DC/AC bi–direction converter, integrated control unit. PCS controller receives background control commands through communication system and controls inverter to allow battery charge or discharge according to the commands of scheduling or EMS, to execute the adjustment of active and reactive power for the power grid.

Product Advantages

EFFICIENT OPERATION

Three-level topology and variable frequency control technology enables conversion efficiency≥99%

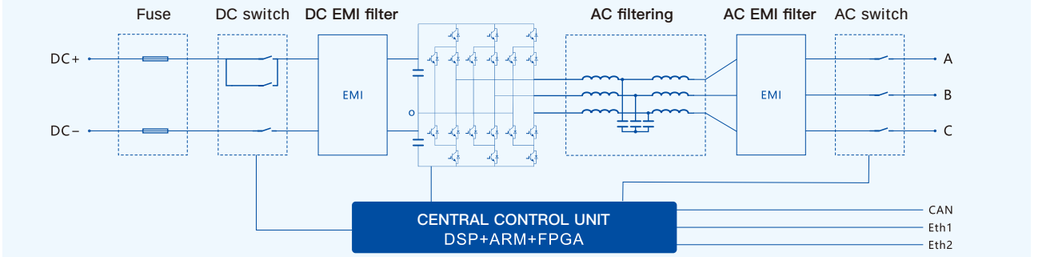
COMBINED CONTROLLING AND PROTECTION

Enabling battery protection easier and safer, power scheduling more efficient by Integration of BMS and smart power distribution, and AC/DC comprehensive I protection enable the battery safer and power scheduling more efficient

HIGH RELIABILITY

Power devices and control parts are underIP65 protection and system failure rate is less than 1‰

System Topology



Performance Parameters

Model	PCS-1000	PCS-2000
DC Side Parameters		
Current and Voltage	650~950V	1026~1500V
Maximum DC Current	115A	181A
Maximum DC Power	75kW	223kW
AC Side Parameters		
Rated AC Power	62.5kW	186kW
Maximum AC Power	75kW	223kW
AC Current Distortion Rate	<3%	<3%
DC Component	<0.5%Ipn	<0.5%Ipn
Rated Power Grid Voltage	380V	690V
Power Factor	–1~1	–1~1
Rated Power Grid Frequency	50Hz	50Hz
System Parameters		
Maximum System Efficiency	Charge ≥99% / Discharge ≥98.2%	Charge ≥99% / Discharge ≥98.2%
System Voltage System	TN380V	IT690V
Charge and Discharge Switching Time	<100ms	<100ms
Communication Interface	RS485/LAN/CAN	RS485/LAN/CAN
Protection Grade	IP65	IP65
Cooling Mode	Air Cooling	Air Cooling
Operating Temperature	–40~55°C	–40~55°C
Relative Humidity	0~95%RH	0~95%RH
Noise	<65dB	<75dB
System Dimension (W*H*D)	440*176*600mm	630*250*1050mm
Weight	50kg	50kg
Certification	TÜV、CQC、HVRT/LVRT	TÜV、CQC、HVRT/LVRT

Energy Chain Link

eLink

Product Introduction

Bi-directional link unit for energy flow and information flow in energy storage system.

Energy Flow: eLink connects eblock downwards and user distribution system upwards to complete convergence, control, protection and measurement of output AC power and realize bi-directional connection and management **of energy flow.**

Information Flow: eLink Serves as a bridge between eBlocks and eMind, to enable high-speed communication connections between local and cloud data, providing reliable data collection, storage, and control management **for eMind.**

Product Advantages

HIGHLY INTEGRATED

Integration design of smart power distribution and high-speed communication control enables high integration **of system energy flow and data flow**

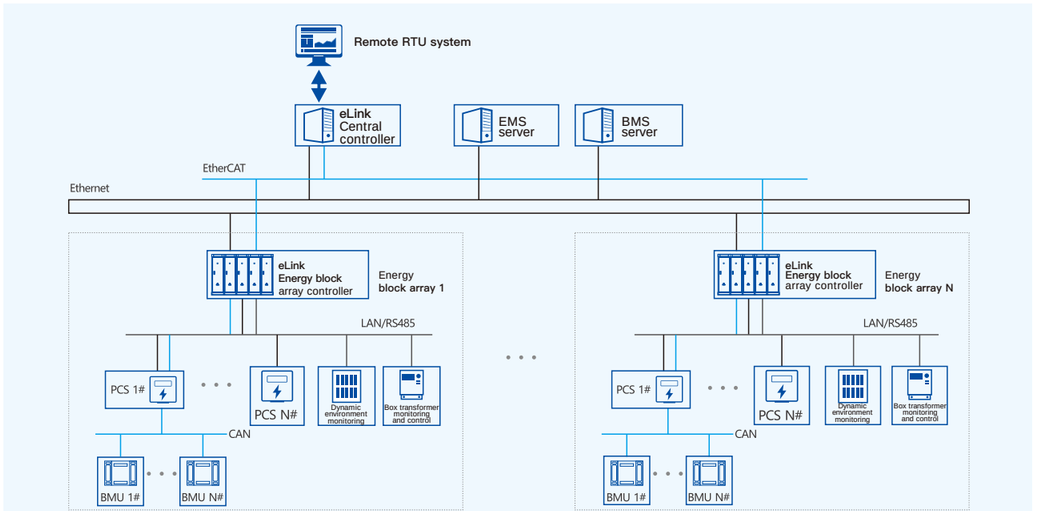
QUICK SCHEDULING

DSP+ARM + FPGA control platform with **1GHz bus speed and power output response<20ms to** power grid scheduling

FLEXIBLE EXPANSION

eLink control system can be freely expanded in capacity through two stages to allow rapid collaborative control of more than a thousand **eBlocks in GWh power stations**

Topology



Performance Parameters

Model	eLink-12H	eLink-16P	eLink-16C
Function Description	Energy Flow and Information Flow Integration Cabinet	Energy Block and Power Grid Busbar Connection Cabinet	High Speed Communication and Cluster Control Cabinet
System Voltage	380V	690V	/
Number of Blocks Connected (eBlock)	12	16	16
Outputs	1	1	1
Maximum Rated Power	1200kW	3000kW	/
Rated Current	1825A	2500A	/
Measuring Accuracy	0.5 (Bi-Direction Meter)	0.5 (Bi-Direction Meter)	/
Short Circuit Protection	Yes	Yes	Yes
Resonance Suppression	Yes	Yes	/
UPS	Optional	/	Optional
Communication Interface	LAN/CAN/RS485/FC	/	LAN/CAN/RS485/FC
Operating Temperature	- 35~55℃	- 35~55℃	- 35~55℃
Relative Humidity	0~95%RH	0~95%RH	0~95%RH
System Protection Grade	IP55	IP55	IP55
Altitude	< 2000m	< 2000m	< 2000m
Noise	< 65dB	< 65dB	< 65dB
System Dimension (W*H*D)	750*2200*1050mm	1000*2350*1300mm	1000*2350*1300mm

Energy Cloud eMind

eMind-Web

eMind-App

Product Introduction

Energy cloud eMind is a collection of application services such as aggregated data display, strategy control, operation analysis and big data mining for energy storage system. On the basis of microservice architecture, it can be flexibly deployed on public clouds or private clouds. Through the data storage based on temporal database, eMind is capable of displaying and storing voltage and temperature of each cell in energy storage system at second level (time), supporting tracing of operating data and failure break-point recording of energy storage power station at any time slots. Through big data statistical analysis, mining and analysis of thermal management operation data and battery health of energy storage equipment, it provides support for decision-making and risk forecast for energy storage power stations and enables energy storage power stations on unmanned duty.

Product Advantages

FULL SIDE MONITORING

Voltage, temperature and internal resistance of every cell are checked, and operating data and safety status of energy storage power station are displayed and stored in an all-round manner

PROCESS BACKTRACKING

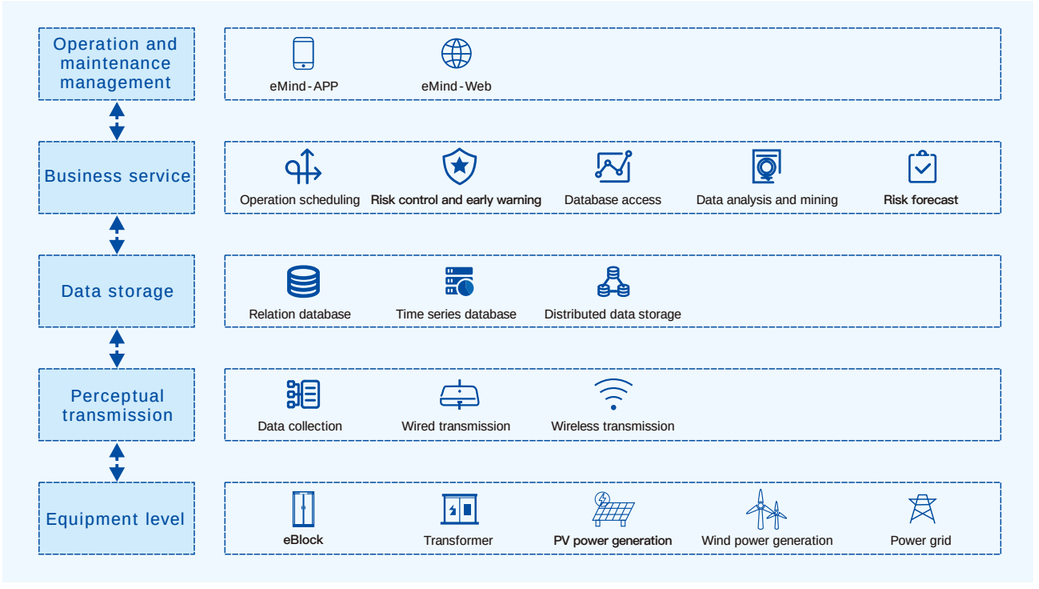
It is capable to automatically record break point data in the failure and inquire and trace energy operation process of storage power stations

INTELLIGENT OPERATION AND MAINTENANCE

Enabling battery calibration and maintenance, output economy reports and maintenance recommendations for power station operation

DATA MINING

Be capable of analyzing the data of thermal management and operation and battery system degradation and degradation of energy storage system



Application Scenarios

Energy storage at source network side

JD eBlock energy storage system can be used with wind and solar power plant to suppress fluctuations of new energy generation power, reduce the probability of wind and solar power curtailment , respond to AGC scheduling and provide auxiliary energy services such as power grid peak shaving and frequency regulation.

Extreme safety | Economical and efficient | Smart and friendly

Haikou Yaogu Station 10 MWh Project in Hainan


10 MWh Energy Storage Project at Changshou, Chongqing


288 MWh centralized energy storage project at Guigang, Guangxi


200 MWh energy storage power station project of Tongli Substation of Dachu Tech.

Ningxia 200 MWh Energy Storage Project


230 MWh centralized energy storage at Chongzuo, Guangxi

Energy Storage Application in Industry and Commerce

JD eBlock can be flexibly deployed in industrial and commercial parks for industrial and commercial users with significant peak-valley power price gap. Enable to reduce electricity bills, improve electricity quality by peak-load shifting, reducing demand and power consumption, and provide emergency standby power for important loads.

Extreme Safety

Flexible Deployment

Easy Operation &Maintenance

1.5 MWh user side energy storage project at Dongguan, Guangdong Province

10 MWh user side energy storage project at Huizhou, Guangdong Province

Donghua 4 MWh energy storage project Qingxi Town, Dongguan

6 MWh Lianxin (Kaiping) High-performance Fiber Project

0.7 MWh user side energy storage project at Yiwu, Zhejiang Province

0.5 MWh user side energy storage project at Panyu District, Guangzhou

Integrated Application of PV+ Storage and Charging

JD eBlocks coupled with PV system, charging pile system and other systems, will greatly improve the generation and utilization rate of PV system, and reduce the impact of high load consumers like charging pile to transformers to realize peak-load shifting, capacity expansion and satisfy the comprehensive demand of users maximally by bi-direction energy regulation of energy storage equipment.

Solution Edges

Flexible Adaptation

Energy storage capacity can be flexibly configured depending on charging pile power and PV generation power.

Easy Deployment

It allows flexible deployment and easy installation as per site conditions and is highly adaptable .

Smart Scheduling

The whole system applies self-consistent control, decentralized deployment and centralized scheduling to avoid reverse current and transformer overload.

Energy Storage Integration Project, Yizhuang Development Zone, Beijing

Optical-storage Combination Project at Bao'an District, Shenzhen

Qingyuan Xinmachang Beautiful Countryside Project in Guangdong

Baiyun District Bus Station Energy Storage Project in Guangzhou

Project Reference


40 MWh Energy Storage Project of Guotai Green Energy


10 MWh Support Project at Jinghe, Xinjiang


3 MWh Power Grid Side Energy Storage Project at Yongzhou, Hunan


1.4 MWh Project of Suzhou New Hope Shuangxi Dairy


Dongguan Taixin Wanpeng Baidai connection into grid


Mengrong Energy Storage Project at Yiwu, Jinhua


Shichang Energy Storage Project at Zhuhai


Huachang Textile Energy Storage Project at Haining

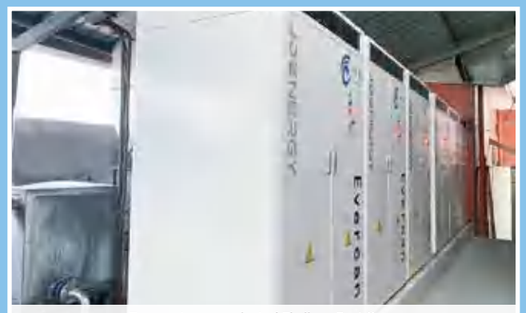

Sanshui District Energy Storage Project at Foshan


Pingyao Sigong Hospital Energy Storage Project

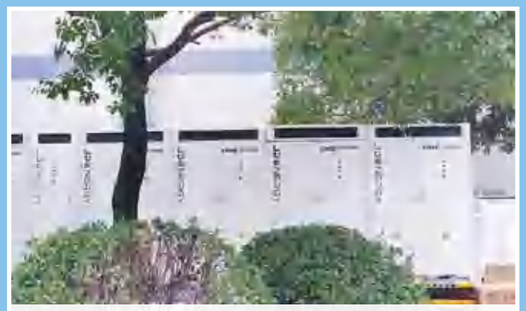

Energy Storage Project of RICOH


Energy storage project of Dongguan Hot Stamping Tech


Energy Storage Project Of Foshan Taiguan Metals


Energy storage project of Zhejiang Best Gear


Smart Energy Storage Project Of Sanxing Fabric At Jiaxing


Qianjiang Electric Energy Storage Project in Hangzhou


Energy Storage Project of Zhongshan Power Supply Bureau


Techang Phase II Project at Yuhan, Taizhou


Defulong Energy Storage Project at Yongzhou


Techang Phase I Project at Yuhan, Taizhou


LX energy storage project at Wenzhou, Zhejiang

Our Services

SAFE AND RELIABLE PRODUCTS ARE THE BEST SERVICE

Service Concept

CUSTOMER FIRST, PROFESSIONAL AND EFFICIENT, EXCEEDING EXPECTATIONS

Contact

400-097-6918

SERVICE CENTER: XI'AN | BEIJING | HANGZHOU | SUZHOU | CHANGSHA | GUANGZHOU

Objectives of Service