PINGALAX

GATHER NEW ENERGY AND
CREATE THE FUTURE

Change the world with innovation and
build a sustainable future for mankind!

PINGALAX
Distributed **Energy** System

www.pingalax.com

Chongqing Pingchuang Digital Energy
Technology Co., Ltd.

1 Company Profile

Chongqing Pingchuang Digital Energy Technology Co., Ltd.

Pingalax (Full name: Pingchuang Digital Energy Technology Co., Ltd.)is a company focusing on AC and DC charging pile, portable outdoor power supply, home energy storage, industrial and commercial energy storage and other products. The company has nearly 300 employees,We have strong technical R&D capabilities, over 60% of the company' s employees are R&D personnels, more than 40% of whom are with master or doctor degree. Over the years, we have focused on the design and development of new energy products, and have applied for a total of 106 related patents, and established an international quality management system and obtained certification. As a technology-based company, it is committed to the deep integration of semiconductor technology, digital technology and new energy industry, and the construction of a new intelligent power system with wind, light, heat and hydrogen as the main body. Contact us, we can provide a complete charging solution according to your demands from R&D to after-sales.

We always implement the concept of "continuously creating maximum value for customers", and we warmly welcome customers whom at home and abroad to communicate cooperation and create a better future together!

300+	40%	OEM/ODM
Our Team	Master and doctor proportion	Customized Requirements

Gather New Energy And Create The Future

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PINGALAX

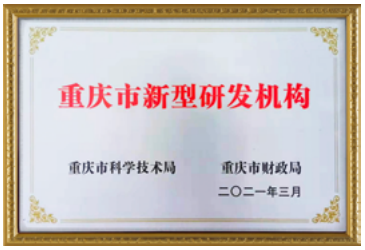
2 Honor and Qualification

We have been listed as a National High-tech Enterprise, a Specialized and Sophisticated SMEs, and a national level Postdoctoral Programme, etc.

We have also successfully conformed to the IATF16949 automotive industry quality management system, ISO9001 quality management system, ISO14001 environmental management system, ISO45001 occupational health and safety management system, ISO/IEC 27701 privacy information management system, ISO/IEC 27001 information security management system, etc.

1 Honor

Our Honor



Certifications

2 Qualification Certificate

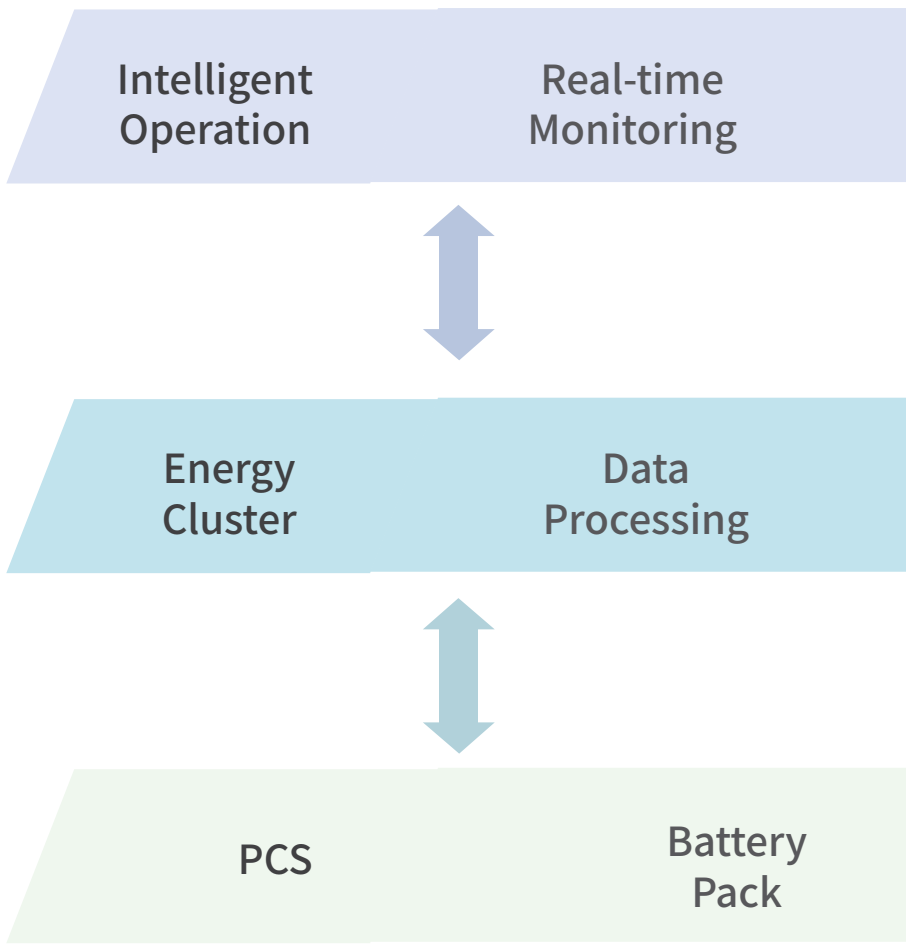
3 Solution of Distributed Energy Storage System

The distributed energy storage system of Pingalax is based on the three-layer architecture of “cloud, edge and end”, and consists of three parts: digital energy GalaxOS system service, interactive edge eHub and energy storage battery terminal ePak.

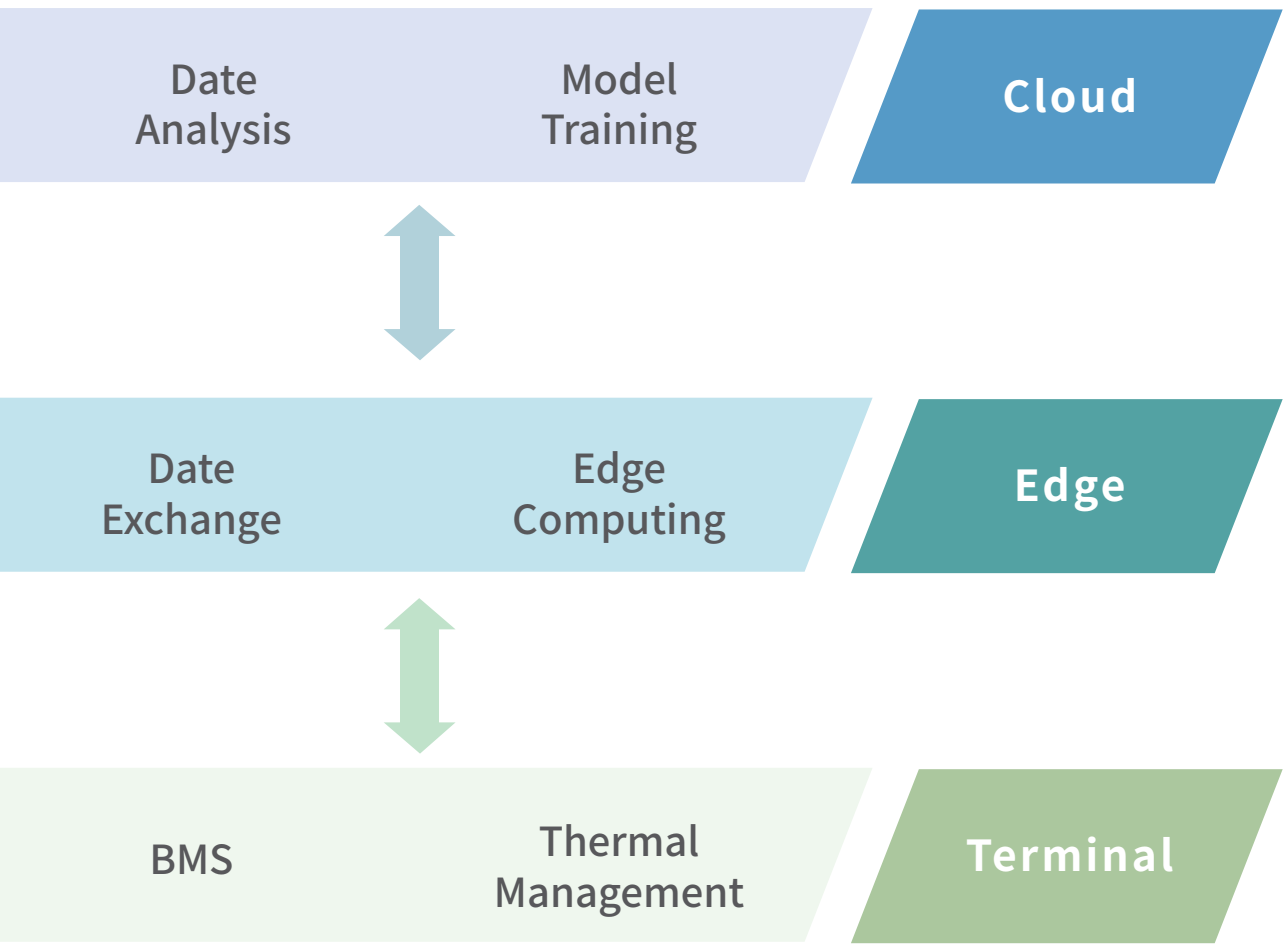
GalaxOS

eHub

ePak



Pingalax has the ability to design and develop key energy storage components such as BMS and PCS, develop ePak and eHub energy storage products, and design efficient and safe overall energy storage systems. Pingchuang' s distributed energy storage system can be connected to the grid in two hours as soon as it takes advantage of its flexible layout, and realizes intelligent management with cloud services, bringing convenient and extreme energy solutions to customers.



4 Product Introduction

PV Inverter

- 33kW
- 40kW
- 50kW
- 100kW

The inverter is three-phase transformerless string type grid-connected inverter, which is an important part of the photovoltaic power generation system. The inverter converts the DC power generated by the PV systems to AC power that meets the grid requirements and feeds it into the grid.

Product **Introduction**

- **Inversion Function:** The inverter converts direct current into alternating current that meets the grid requirements and feeds it into the grid.
- **Data Backup and Display Function:** The inverter stores system information such as operating information and fault records.
- **Wireless Communication Interface:** The inverter provides a wireless communication interface. Users can configure inverter parameters through the cloud system, and view key information such as inverter operating status and power generation.
- **Protection Function:** The inverter has protection functions such as islanding protection, DC reverse connection protection, AC short circuit protection, and current leakage protection, etc.

Product **Features**

- It is not affected by module differences between strings and occlusion, increasing electricity generated.
- It has a wide MPPT voltage range and more flexible module configuration; it can work for longer time in rainy and foggy areas.
- Compact and easy for installation.
- Low self-consumption and small failure impact.

Product Specifications 33kW

Model		PSI33K
Input (DC)	Maximum input voltage	1100V
	Minimum input voltage/Starting voltage	160V/200V
	Rated input voltage	160V-1000V
	MPPT voltage range	380
	Maximum nos. of input strings for each MPPT	2
	Maximum nos. of input current for each circuit	15A
	Maximum input current	90A (3×30A)
	MPPT Nos.	3
	Input terminal maximum permissible current	40A
	Maximum DC short circuit current	120A (3×40A)
Output (AC)	Rated output power	33000W
	Maximum output power	36300W
	Maximum output apparent power	36300VA
	Maximum output current	55.2A
	Rated grid voltage	3/N/PE, 230/400V, 220/380V
	Grid voltage range	312-480V
	Rated grid frequency/Grid frequency range	50HZ/45-55HZ
	Total harmonic distortion rate of current	＜3% (Power rated)
	DC component	＜0.5%*Rated current
	Power factor	＞0.99 (Power rated)
	Power factor adjustable range	0.8 lead - 0.8 lag
	Nos. of feeding phase/Nos. of output phase	3/3

Common efficiency		
Efficiency	Maximum efficiency	98.60%
	Common efficiency	98.08%
Common Parameters	Dimensions (width*height*length)	605*575*254mm
	Weight	35kg
	Isolation method	No transformer
	Ingress protection	IP66
	Night consumption	⩽1W
	Working temperature	-30°C to 60°C
	Working humidity	0-100%
	Cooling method	Intelligent forced-air cooling
	Maximum working altitude	4000m(＞2000m, derate needed)
	Display	LED, Bluetooth+App
	Communication	4G
	DC terminal type	MC4
	AC terminal type	OT/DT terminal (Max 35mm^2)
	Standards	NB/T 32004-2018, GB/T 37408-2019
	Power grid compatibilize	Anti-islanding, active and reactive power adjustment, power factor control, pre-start/shutdown

Product Specifications 40kW

Model		PSI40K
Input (DC)	Maximum input voltage	1100V
	Minimum input voltage/Starting voltage	160V/200V
	Rated input voltage	600V
	MPPT voltage range	160V-1000V
	Maximum nos. of input strings for each MPPT	2
	Maximum nos. of input current for each circuit	15A
	Maximum input current	120A (4×30A)
	MPPT Nos.	4
	Input terminal maximum permissible current	40A
	Maximum DC short circuit current	160A (4×40A)
Output (AC)	Rated output power	40000W
	Maximum output power	44000W
	Maximum output apparent power	44000VA
	Maximum output current	66.9A
	Rated grid voltage	3/N/PE, 230/400V, 220/380V
	Grid voltage range	312-480V
	Rated grid frequency/Grid frequency range	50HZ/45-55HZ
	Total harmonic distortion rate of current	＜3% (Power rated)
	DC component	＜0.5%*Rated current
	Power factor	＞0.99 (Power rated)
	Power factor adjustable range	0.8 lead - 0.8 lag
	Nos. of feeding phase/Nos. of output phase	3/3

Common efficiency		
Efficiency	Maximum efficiency	98.60%
	Common efficiency	98.08%
Common Parameters	Dimensions (width*height*length)	605*575*254mm
	Weight	40kg
	Isolation method	No transformer
	Ingress protection	IP66
	Night consumption	⩽1W
	Working temperature	-30°C to 60°C
	Working humidity	0-100%
	Cooling method	Intelligent forced-air cooling
	Maximum working altitude	4000m(＞2000m, derate needed)
	Display	LED, Bluetooth+App
	Communication	4G
	DC terminal type	MC4
	AC terminal type	OT/DT terminal (Max 35mm^2)
	Standards	NB/T 32004-2018, GB/T 37408-2019
	Power grid compatibilize	Anti-islanding, active and reactive power adjustment, power factor control, pre-start/shutdown

Product Specifications 50kW

Model		PSI50K
Input (DC)	Maximum input voltage	1100V
	Minimum input voltage/Starting voltage	160V/200V
	Rated input voltage	600V
	MPPT voltage range	160V-1000V
	Maximum nos. of input strings for each MPPT	2
	Maximum nos. of input current for each circuit	15A
	Maximum input current	120A (4×30A)
	MPPT Nos.	4
	Input terminal maximum permissible current	40A
	Maximum DC short circuit current	160A (4×40A)
Output (AC)	Rated output power	50000W
	Maximum output power	55000W
	Maximum output apparent power	55000VA
	Maximum output current	83.6A
	Rated grid voltage	3/N/PE, 230/400V, 220/380V
	Grid voltage range	312-480V
	Rated grid frequency/Grid frequency range	50HZ/45-55HZ
	Total harmonic distortion rate of current	＜3% (Power rated)
	DC component	＜0.5%*Rated current
	Power factor	＞0.99 (Power rated)
	Power factor adjustable range	0.8 lead - 0.8 lag
	Nos. of feeding phase/Nos. of output phase	3/3

Common efficiency		
Efficiency	Maximum efficiency	98.60%
	Common efficiency	98.08%
Common Parameters	Dimensions (width*height*length)	605*575*254mm
	Weight	45kg
	Isolation method	No transformer
	Ingress protection	IP66
	Night consumption	⩽1W
	Working temperature	-30°C to 60°C
	Working humidity	0-100%
	Cooling method	Intelligent forced-air cooling
	Maximum working altitude	4000m(＞2000m, derate needed)
	Display	LED, Bluetooth+App
	Communication	4G
	DC terminal type	MC4
	AC terminal type	OT/DT terminal (Max 35mm^2)
	Standards	NB/T 32004-2018, GB/T 37408-2019
	Power grid compatibilize	Anti-islanding, active and reactive power adjustment, power factor control, pre-start/shutdown

Product Specifications 100kW

Model		PSI100K
Input (DC)	Maximum input voltage	1100V
	Minimum input voltage/Starting voltage	200V / 250V
	Rated input voltage	585V
	MPPT voltage range	200~1000V
	Maximum nos. of input strings for each MPPT	2
	MPPT voltage range at full load	15A
	Maximum input current	234A (9X26A)
	MPPT Nos.	9
	Input terminal maximum permissible current	30A
	Maximum DC short circuit current	360A (9X40A)
Output (AC)	Rated output power	100kW
	Maximum output power	110kW
	Maximum output apparent power	110kVA
	Maximum output current	158.8A
	Rated grid voltage	3 / N / PE, 230/400V, 220/380V
	Grid voltage range	320~460V
	Rated grid frequency	50Hz / 60Hz
	Grid frequency range	45~55Hz / 55~ 65Hz
	Total harmonic distortion rate of current	＜3% (Power rated)
	DC component	<0.5 %In
	Power factor	＞0.99 (Power rated)
	Power factor adjustable range	0.8 lead - 0.8 lag
	Nos. of feeding phase/Nos. of output phase	3/3

Common efficiency		
Efficiency	Maximum efficiency	98.60%
	Common efficiency	98.30%
Common Parameters	Dimensions (width*height*length)	1051×660×362.5mm
	Weight	89kg
	Isolation method	No transformer
	Ingress protection	IP66
	Night consumption	<2W
	Working temperature	-30~+60 ℃((> 50 ℃, derate needed)
	Working humidity	0-100%
	Cooling method	Intelligent forced-air cooling
	Maximum working altitude	5000m (＞4000m, derate needed)
	Display	LED, Bluetooth+App
	Communication	RS485 / GPRS (optional) / 4G (optional) / Wi-Fi(optional)
	DC terminal type	MC4
	AC terminal type	OT/DT crimp terminal (Max240mm^2)
	Standards	IEC62109-1, IEC62109-2, IEC61727, IEC62116, GB / T19964, NB / T32004-2018 , CGC / GF 035-2013, CNCA / CTS0002-2014, Q / GDW 1617-2015, GB / T 32826-2016, GB / T 32892-2016
	Installation method	wall-mounted

100kW/200kWh

ePak Energy Terminal

Safe & Reliable

Efficient heat management design,
hierarchical linkage protection
PACK level immersive firefighting

Easy to Install

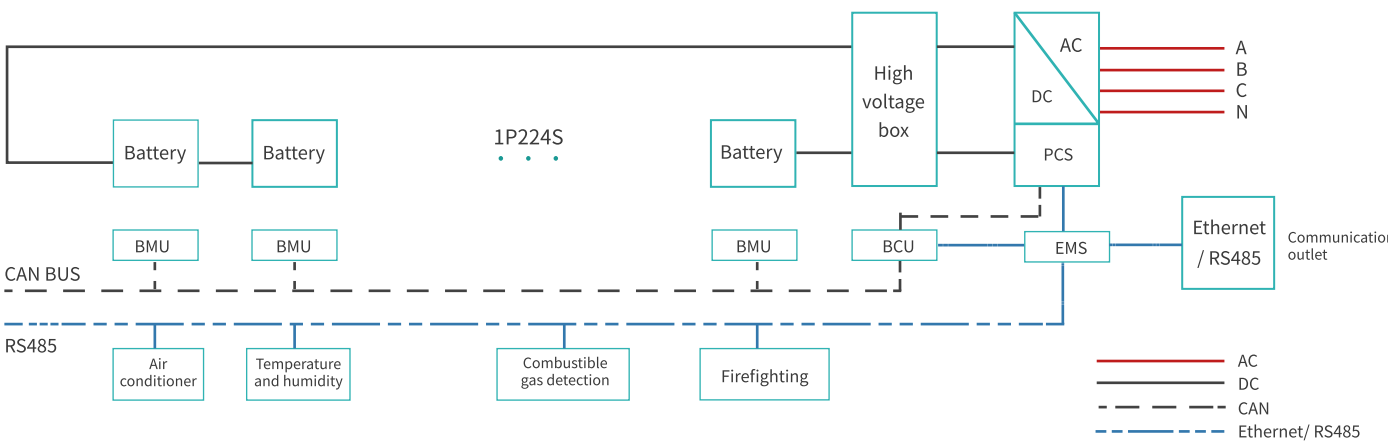
Modular design, easy to use
IP65 ingress protection, meet a variety of application environment

Flexible Configuration

Support up to 12 units in parallel
Cover a power range of 100kW-1200kW
Various configuration schemes

Economical & Efficient

Battery string design, zero capacity loss
Efficient three-level topology, intelligent temperature control and air duct design, system conversion efficiency > 90%



Product Specifications

Product Specifications	
DC-side parameter	
Battery type	LiFePO4
Battery module	14.336kWh1P16S 103kg
Nos. of battery module	14
Rated capacity	200.7kWh
Rated voltage	716.8V
Charge and discharge rate	⩽0.5C
Depth of discharge	100%
AC-side Parameter	
Rated output power	100kW
Rated voltage	400VAC
Rated output current	145A
Access method of AC	3 phase 4 wires
Isolation method	N/A
Grid voltage range	400V (-20%~+15%)
Grid frequency range	50Hz/60Hz±2.5Hz
Total harmonic distortion rate of current	⩽3%(Fully load)
Power factor	-0.99~+0.99
Basic Parameter	
Dimensions (width*height*length)	1200*1050*2350mm
Weight	2500kg
Ingress protection	IP65 for battery cell
Working humidity	0%~95% (No condensation)
Working temperature	-20°C~50°C (>45°C, derate needed)
Maximum working altitude	3000m (>2000m, derate needed)
Cooling method	Intelligent temperature control
Firefighting	Aerosol+PACK immersive firefighting (optional)
Communication	CAN2.0.B/RS485/Ethernet

100kW ~ 1.2MW

eHub Convergence Terminal

Highly Integrated

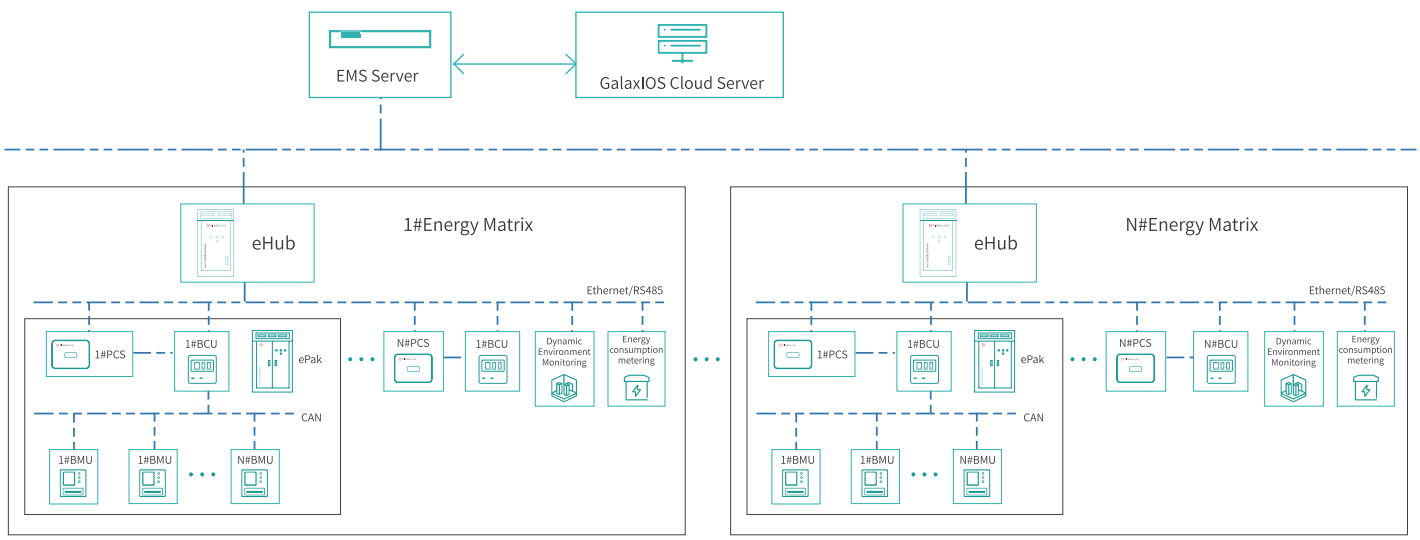
Intelligent power distribution system to combine energy flows
Support access of a maximum of 12 battery cabinets for fast coordinated control of MWh power stations

Easy to Install

Modular design, easy to use
IP55 protection level, to meet a variety of use environment

Flexible Configuration

EMS equipped, multiple operating modes optional, increasing project revenue
Remote operation and maintenance monitoring is realized with the cloud technology



Product Specifications

Product Specifications	
System voltage	400V
Minimum input voltage/Starting voltage	12
Output circuits	1
Maximum rated power	1200kW
Rated current	1825A
Metering accuracy	0.2S
Short circuit protection, over-load protection	Equipped
EMS energy controller	Equipped
Interaction	10” configured display
UPS	Configurable
Dimensions (width*height*length)	800*1050*2350mm
Ingress protection	IP55
Working humidity	0%~95% (non-condensing)
Working temperature	-20°C~50°C (＞45°C, derate needed)
Cooling method	3000m (＞2000m, derate needed)
Firefighting	Intelligent temperature control
Firefighting	Aerosol (configured)
Communication method	LAN/CAN/RS485/4G

Edge Energy Management System

The EMS in the eHub provides the entire energy storage system with data collection, data storage, and local collaborative control.

It also provides the data connection channel between the terminal and the Cloud, making it reliable and fast.

Safe & Reliable

Encrypted data transmission to ensure data security and integrity
Adopt MQTTS protocol and establish retransmission mechanism to ensure that the data is not lost.
Communication ports boasts isolation protection to reduce communication interference and ensure communication quality.

Flexible Deployment

Software architecture adopts modularized design, which can support a variety of device access
Supports Modbus, CAN, TCP and other communication protocols.
Multiple operating modes support capacity expansion and charging under peak -valley price.

Remote Operation and Maintenance

Support remote OTA upgrade
Support remote export of operation logs and alarm records to analyze the system operation status.
Support to remotely change the operation mode and set the operation parameters

Multidimensional Monitoring

Real-time display of detailed operating data and alarm records from BMS, PCS, Supervision System (SS) and other components.
Data persistence enables multi-dimensional analysis of the system, such as performance and power consumption.

GalaxOS

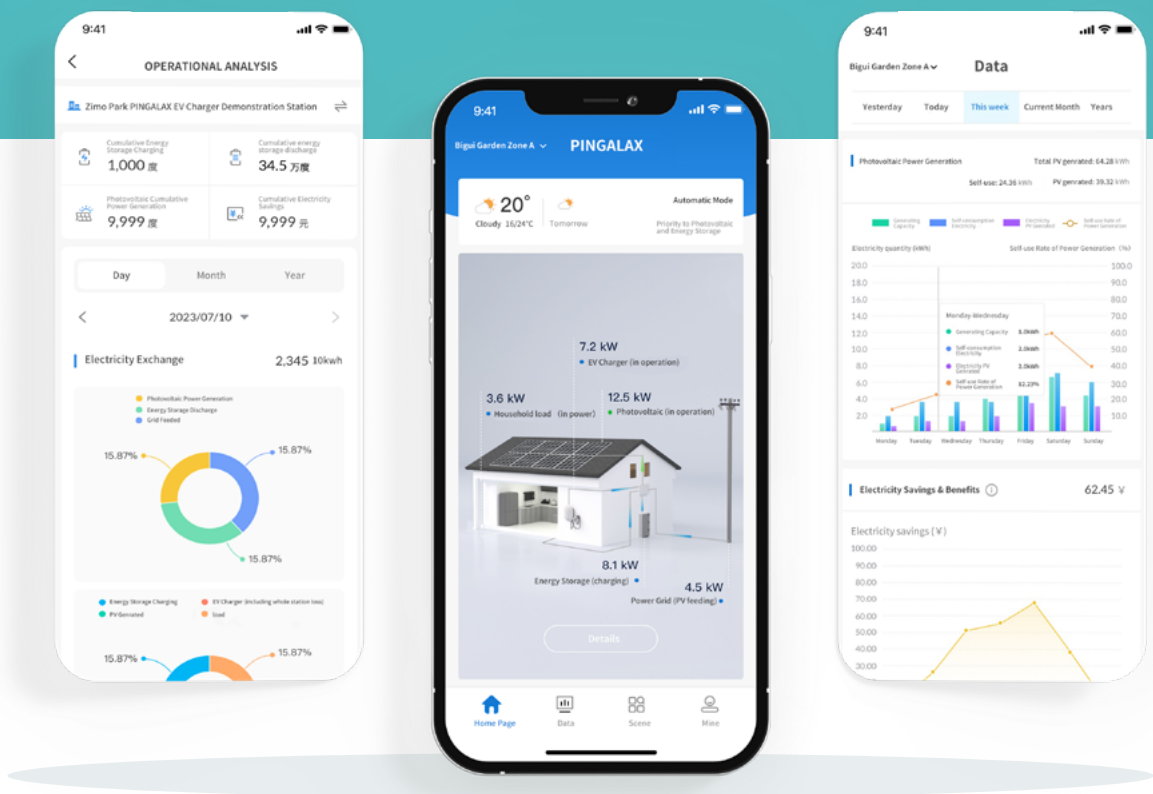
Integrated Management System for Photovoltaic, Energy Storage and Charging

GalaxOS is a self-developed energy management platform that integrates photovoltaic, energy storage and charging.

The platform is built around four core business units: Charging Transaction Center, Energy Management Center, Equipment Lifecycle Management System and Risk Control Center, and is flexible to deploy.

The platform uses a combination of the MQTT protocol and a time-series database, which not only guarantees the transmission and continuity of messages, but is also very efficient at writing and reading time-series data, thus ensuring the traceability of process data.

GalaxOS



Intelligent Operations and Maintenance

- Remote management of equipment and power plants
- Developing the operating strategy
- OTA upgrade
- Real-time monitoring

Real-time Monitoring

- Dimensional visualization display
- Operational data/process data/financial statements

Data Analysis

- Full equipment lifecycle management and anomaly data analysis
- Correlation analysis between power generation and energy storage data and energy consumption analysis
- Charging data analysis, thermal runaway warning, and abnormal battery cell identification

AI Empower

- Charging and discharging model, and training and analysis of the battery safety failure model
- Distribution of intelligent energy

Digital Energy Cloud Platform Technical Map

EYNAMICS®

Technology Development

- VUE
- Nodejs
- Swift
- Java
- Spring Cloud
- Python
- VUE
- ...

Presentation layer

WEB Operation Platform

Mobile App

Access layer

Aggregation Services

Business Middle office

Charging Exchange Center

Billing strategy, order management and operator management

Energy Management Center

Charging equipment/modules, inverters, distributed energy storage, and outdoor power supply

Support of Middle office

Basic Service Center

Access control, time zone and information channel

User Management Center

Registration&login, Individual Users, users organization

Resource layer

MySQL

Redis

MangoDB

Terminal Equipment

Egde equipment

Gateway

MQTT Gateway

Full Equipment Lifecycle Management

Charging equipment/modules, inverters, distributed energy storage, and outdoor power supply

Risk Control Center

Charging security, PV and energy storage security, real-time monitoring, and intelligent O&M

Product Management Center

Product Definitions, registration & activation and authentication

Business Operation Support System

Basic setup, administration and reports

InfluxDB

MQTT Cloud

Task scheduling

O&M TOOL

- Monitoring Management
- Audit Management
- Log Management
- Configuration Center
- Registration Center
- Upgrade Center
- ...

5 Application Scenario

PINGALAX

PINGALAX

Better Innovation
Better World

No. 1, Hongyu Avenue, Bishan District, Chongqing

Phone : 023-41666739
Postcode : 402760

www.pingalax.com

contact@PINGALAX.com

@PINGALAX Energy

@PINGALAX Energy