Acrel

[Stock code: 300286.SZ]

Acrel-2000MG

Acrel-2000MG Microgrid EMS

Acrel Electric Co., Ltd.

Innovation Efficiency Unity Integrity

Acrel

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Acrel Micro-grid Energy Management System

Acrel-2000MG

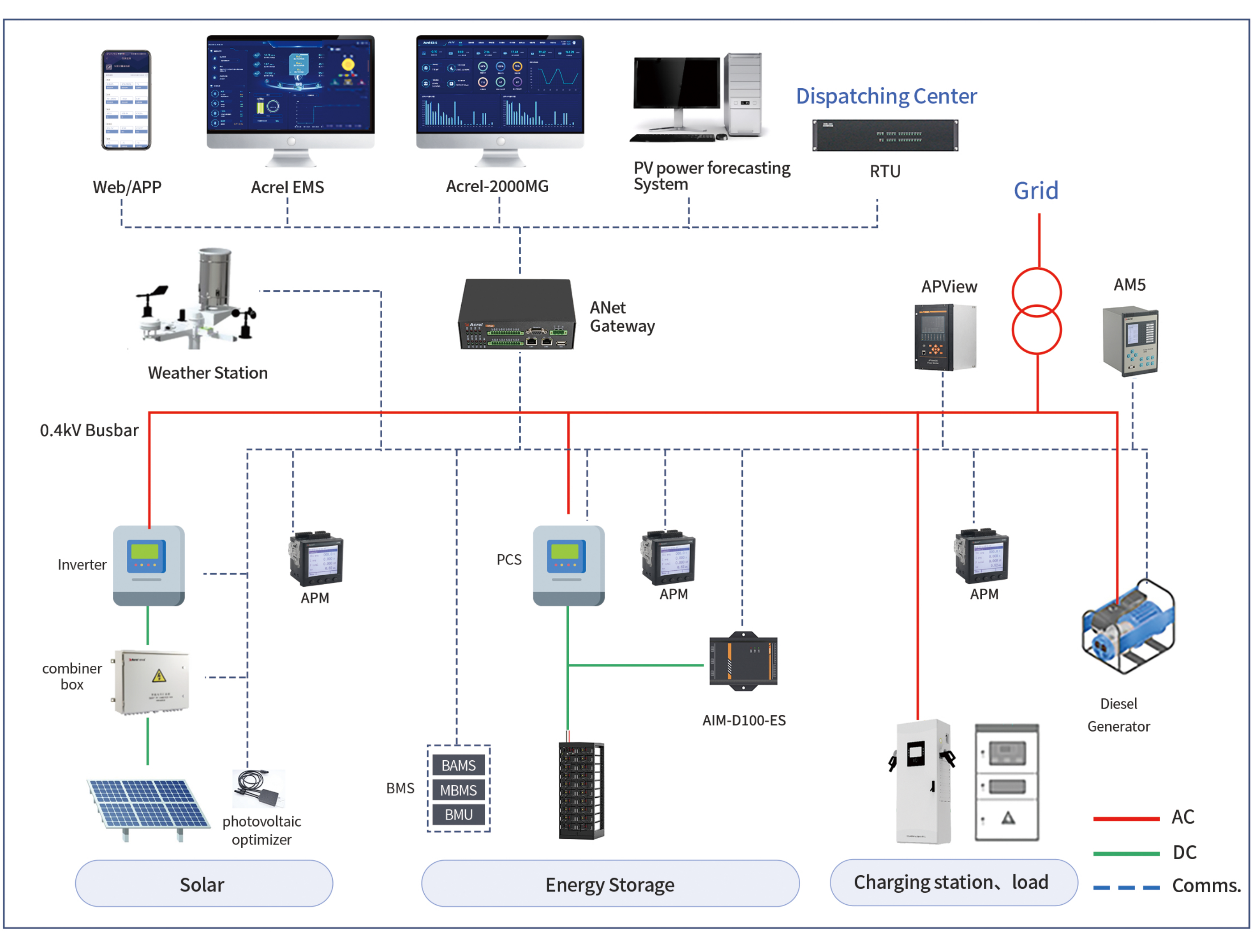
Acrel Electric Co., Ltd. was founded in 2003 and went public on the Growth Enterprise Market in 2012. It is a high-tech enterprise and software company that provides solutions for enterprise microgrid energy efficiency management and energy use safety. Acrel currently has more than 500 R&D engineering and technical personnel, focusing on user-side energy efficiency systems and the energy internet. The company offers one-stop services from cloud platform software to terminal components, forming a "cloud-edge-terminal" energy internet ecosystem. At present, over 14,000 system solutions are in operation across the country.

22	nos	Invention Patent
251	nos	Software Copyright
150	nos	Design Patent
132	nos	Utility Model Patent

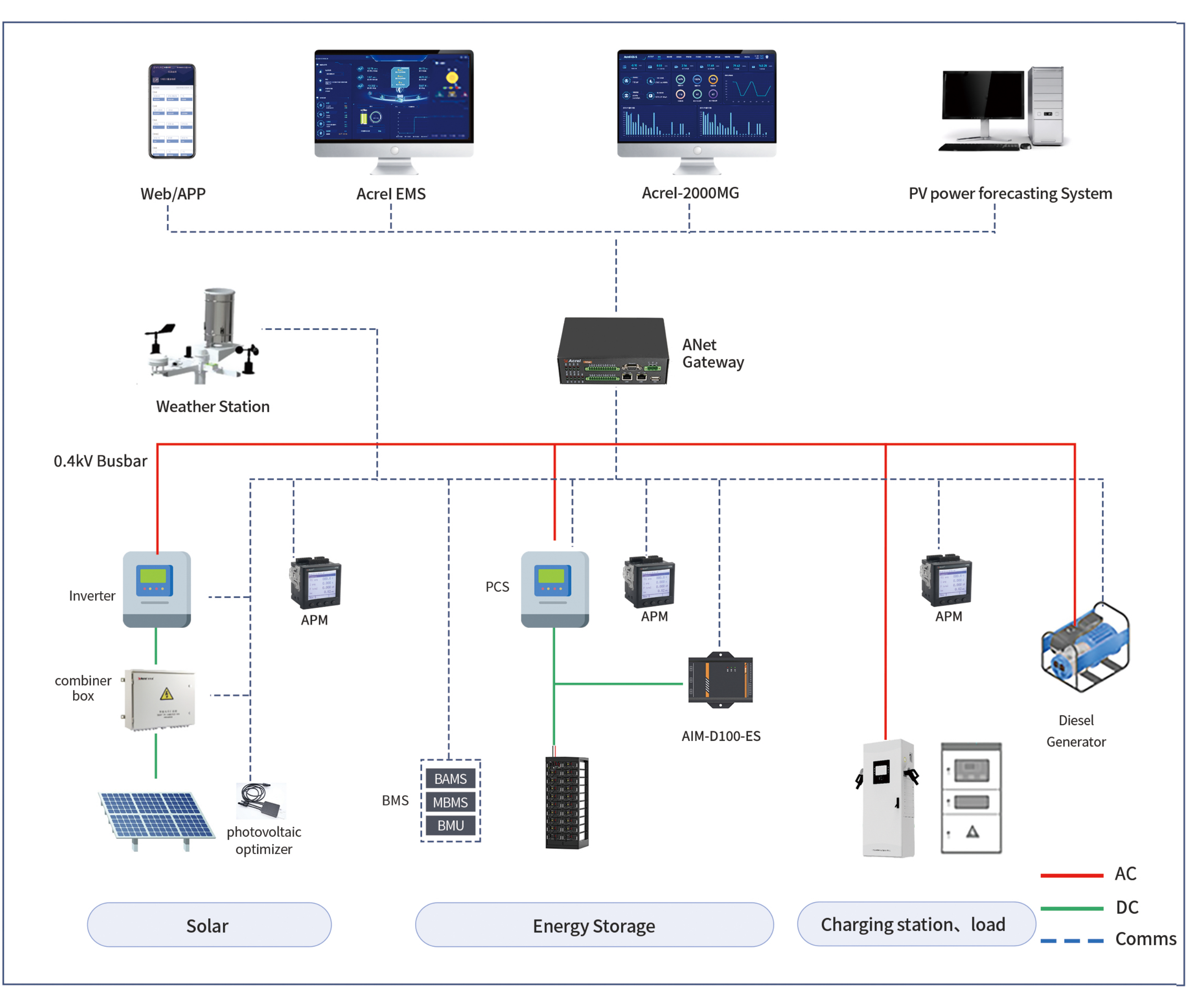
System Introduction

Acrel microgrid energy management system, Acrel-2000MG, accommodates the integration of photovoltaic systems, energy storage systems,charging piles, diesel generators, user loads, and other equipment, performing around-the-clock data collection and analysis. It monitors the operational status and health of photovoltaic, energy storage, diesel generator, load and other systems, serving as a comprehensive management system that integrates monitoring and energy management. This system aims for economic optimization based on safety and stability, promoting the utilization of renewable energy, peak shaving, load leveling, improving grid operational stability and equipment operational efficiency, and reducing power supply costs. It provides a new solution for the safe, reliable, and economical operation of enterprise microgrids.

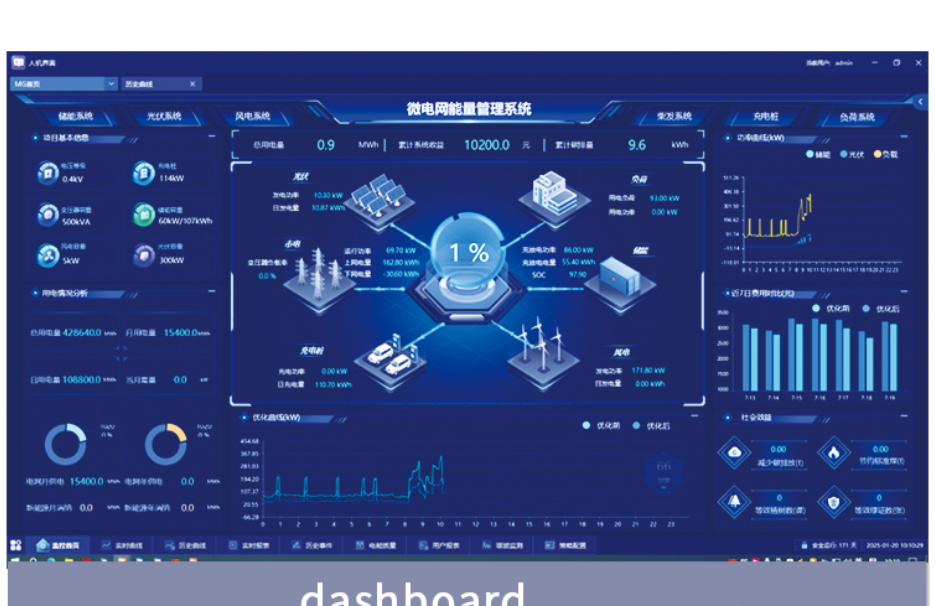
Architecture



Architecture

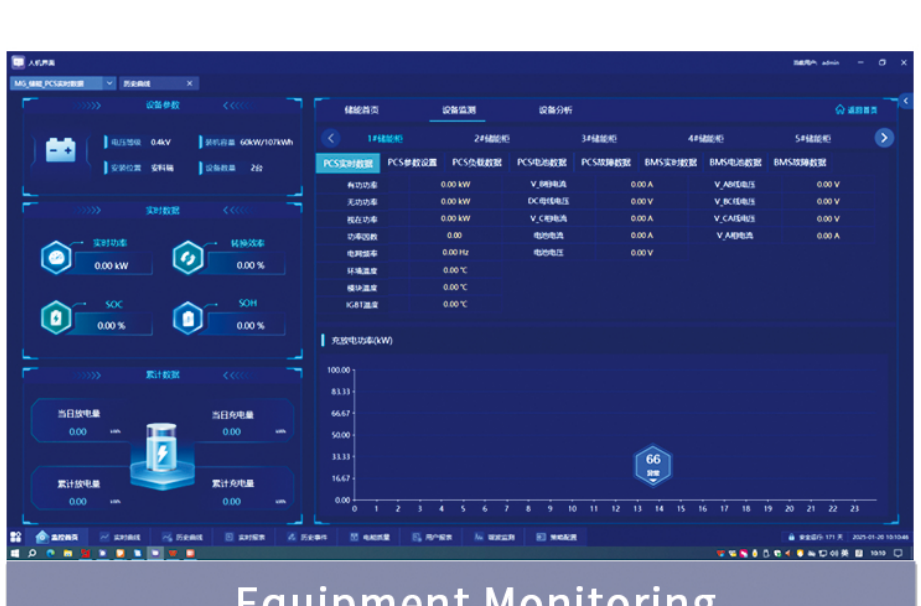


Functions



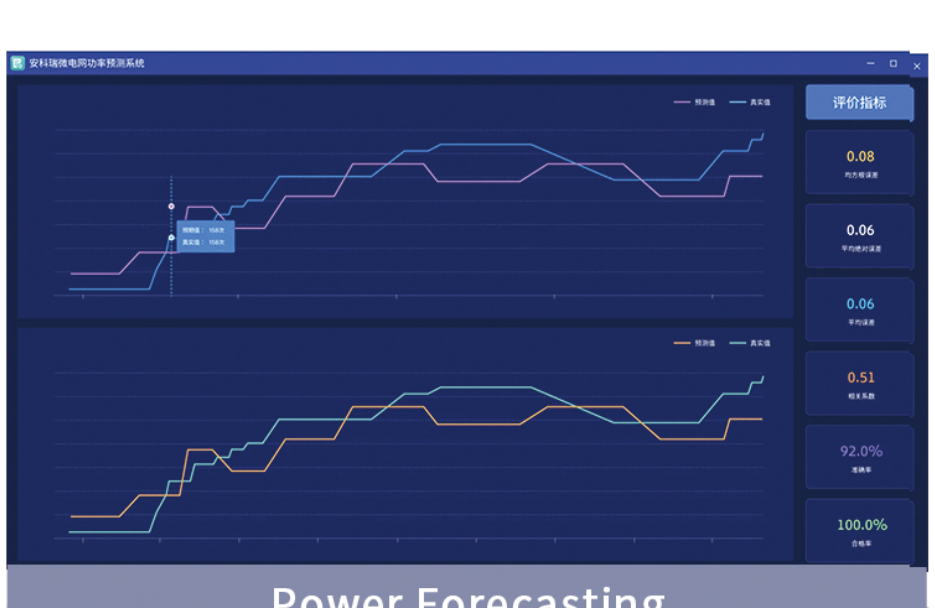
dashboard

Achieve the collection, monitoring, and visual display of data for microgrid photovoltaics, wind power, energy storage, loads, charging stations, and environmental data, along with functions such as abnormal alarm and revenue statistics.



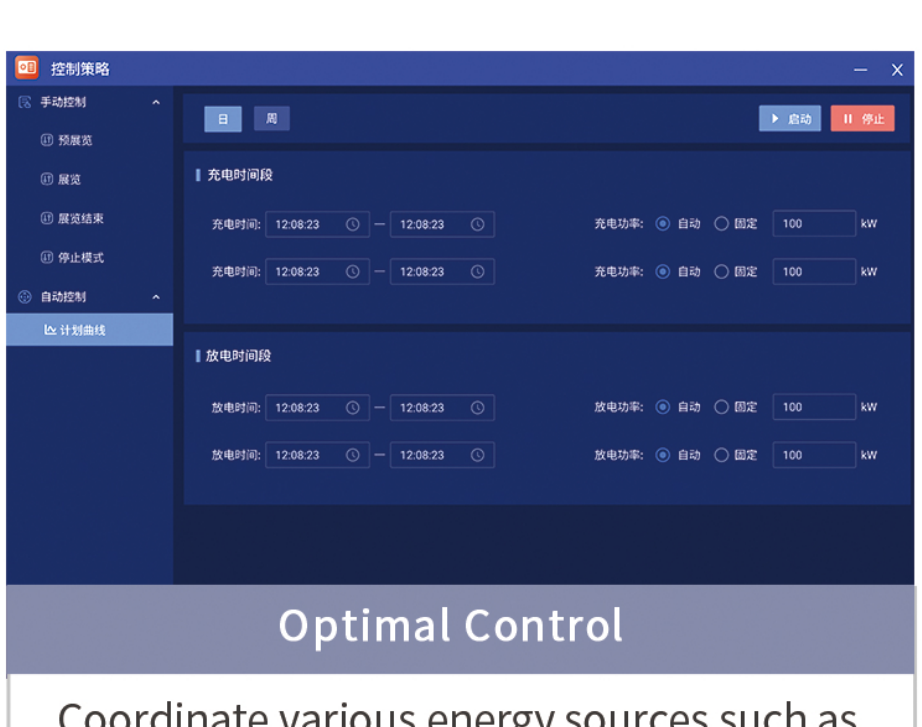
Equipment Monitoring

Monitor the generation, consumption, and charge/discharge status of equipment such as photovoltaic modules, inverters, PCS BMS, and charging stations, and support event queries, statistical reports, and other functions.



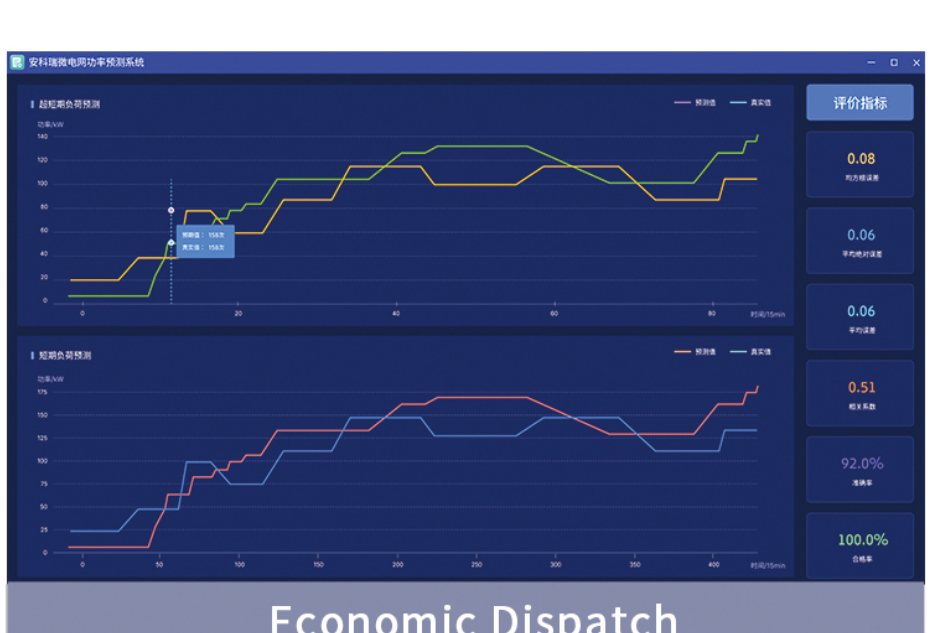
Power Forecasting

Achieve short-term and ultra-short-term power forecasting for photovoltaics, and conduct error analysis. At the same time, predict load power curves for all loads within the microgrid based on historical load data through big data analysis algorithms.



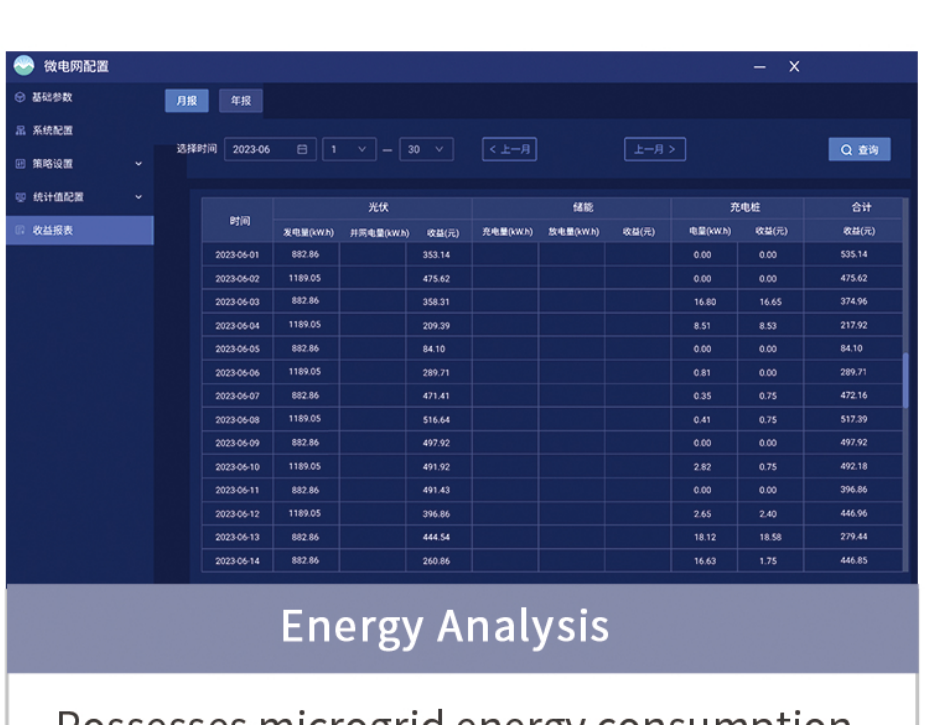
Optimal Control

Coordinate various energy sources such as photovoltaics, wind power, energy storage, and loads to dynamically plan intelligent strategies, achieving coordinated control of energy storage and photovoltaics, including planned curves, peak shaving and valley filling, anti-backflow, new energy consumption, demand control, etc.



Economic Dispatch

Based on the results of photovoltaic and load power forecasts, combined with time-of-use electricity prices, grid interactive power, energy storage status and constraints, an economic dispatch model is established with the goal of minimizing electricity costs. Deep learning algorithms are used to analyze the microgrid operation power plan. The system decomposes the power plan to effectively utilize photovoltaics and energy storage.



Energy Analysis

Possesses microgrid energy consumption and benefit analysis, microgrid economic operation analysis, multi-dimensional power analysis, and provides a basis for intelligent operation and maintenance.

Product Introduction

APView500 Power Quality Monitor

It adopts a high-performance multi-core platform and embedded operating system, complies with the measurement methods of various power quality indicators specified in IEC61000-4-30, and complies with the IEC61000-4-15 standard. It integrates harmonic analysis, waveform sampling, voltage sag/swell/interruption, flicker monitoring, voltage imbalance monitoring, event recording, measurement control and other functions.

Modbus

IEC 61850

Functions:

- Voltage and current vector diagram.
- SEMI F47, ITIC tolerance curve harmonic bar chart.
- 2.5~8.9kHz high frequency harmonics.
- Real-time waveform curve.
- COMTRADE and PQDIF format files.
- Temporary sag source location.
- DC component.
- Support Web Server.
- Power quality parameter statistics.

AM5SE-IS Anti-Islanding Protection Relay

The AM5SE-IS anti-islanding protection device is primarily used in 35kV, 10kV, and low voltage 380V photovoltaic power generation, gas power generation, and other new energy grid-connected power supply systems. When an islanding phenomenon occurs, it can quickly disconnect the grid connection point, ensuring the rapid separation of the local station from the grid side, thus ensuring the safety of the entire power station and related maintenance personnel.

IEC 60870-5-103

KETOP 开普

Modbus

CE

The AM5SE-IS anti-islanding protection relay features the following protection functions:

- Reverse Power Protection.
- Frequency Protection (Underfrequency Load Shedding/Overfrequency Protection).
- Frequency Sudden Change Trippin.
- Voltage-based Automatic Reclosing.
- Three-Stage Overcurrent Protection (can be locked by low voltage, can be directional).
- Inverse Time Overcurrent Protection (can be locked by low voltage).

These features ensure comprehensive protection and safety for grid-connected new energy power generation systems.

ANET intelligent gateway

ANet-2E4S1/2E8S1 adopts an embedded hardware computer platform with multiple downlink communication interfaces and multiple uplink network interfaces. It is used to collect and aggregate the communication data of all intelligent monitoring/protection devices in a target area and upload them to the main station system in real time to complete energy data collection functions such as remote signaling and telemetry.

IEC 60870-5-104

IEC 60870-5-103

CE

HTTP

M-Bus

ASHRAE BACnet

Modbus

OPC UA

SNMP

MQTT

Functions:

- Compatible with various electric /water /gas /flow meters and other equipments.
- Data calculation, alarm.
- Remote debugging, OTA, remote real-time monitoring.
- breakpoint resume, AES encryption, MD5 authentication.
- LAN/4G/WiFi/LoRa.

APM520 Network Power Meter

APM520 has the functions of full power measurement, power statistics, power quality analysis (including harmonics, interharmonics, and flicker), fault recording functions (including voltage shir and sag interruptions, inrush currents, etc.), event recording functions and network communication, etc., which are mainly used for comprehensive monitoring of power supply quality of power grids.

Modbus

MQTT

CE

Functions:

- All-electric parameter, electrical energy measurement.
- Freezing statistics of extreme values of electrical parameters.
- Complete power quality monitoring and analysis.
- Support 4G, WIFI, CE wireless communication methods.
- Fault recording, event recording, alarm recording.
- DI, DO, analog, temperature measurement, leakage current monitoring and other optional functions.

ADL3000-E Multi-functional Smart

ADL3000-E is a smart meter designed for power supply systems, industrial and mining enterprises, and utility companies to calculate electricity usage and manage electricity demand. It integrates the measurement of all electrical parameters and the comprehensive electricity metering management. ADL3000-E can be applied to various control systems, SCADA systems and energy management systems.

Modbus

UL

IEC 62053-22

IEC 62052-11

Functions:

- All-electric parameter, electrical energy measurement.
- 2~31 times voltage and current harmonic measurement.
- Support multi-rate energy metering.
- Historical frozen data on the last 48 months and 90 days.
- Optional two-way 485 communication.
- Support optional 3-channel temperature measurement function.

Specifications

Name		Parameters
hardware requirements	CPU	Above 3.0GHz
	Memory	Above 8GB
	Hard Disk	Above 500GB
	Graphics Card	Supports HDMI interface, resolution supports 1920x1080
System Support		Modbus RTU, Modbus TCP, CDT, IEC60870-5-101, IEC60870-5-103, IEC60870-5-104, MQTT and other communication protocols
Operating Environment		Windows 10、Ubuntu、Kylin、NeOS

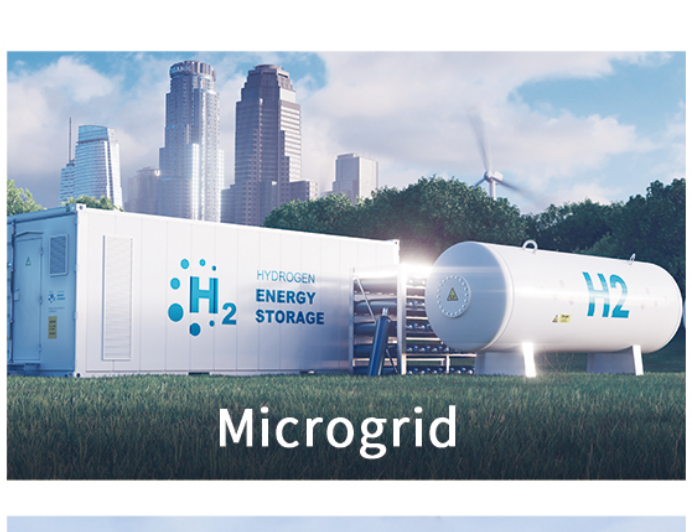
Product Value

- Interconnection
- Intelligent Operations
- Energy Saving and Carbon Reduction
- Orderly and Efficient
- Integrated Management
- Safe and Reliable
- Asset Appreciation
- Green and Low Carbon

Applications

charging station

industrial park


Microgrid

Highway service area

Distributed new energy

IDC

Hospital

campus

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Postal Code: 201801
Company website: https://www.acrel-electric.com/

Official Accounts
Acrel Co.,Ltd.

Wechat E-Shop
Acrel Co.,Ltd.

Product Selection Guide
Acrel Co.,Ltd.