ACREL CO.,LTD.

Acrel

【Stock Code:300286.SZ】

Solutions for Enterprise

Micro-grid System



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2024.9

ACREL CO.,LTD.



Acrel Co., Ltd. [Stock Code : 300286. SZ] is a high-tech enterprise concentrating on research, production, sales and services. It mainly provides systemic solutions of energy efficiency management and electrical safety for users. ‘Acrel’ is equipped with the complete production lines from cloud platform software to sensors. Until now, it has more than 8000 sets systemic solutions used in China to help users to realize energy visual management ,supply energy data services and improve electrical efficiency and safety. ‘Acrel’ has maintained steady growth since its listing in 2012. The company will adhere to the concept of ‘innovation,high-efficiency,unity and honesty’ and it provides more high-quality solutions,products and service for power system users and micro-grid.

2012
Stock Listed 300286.SZ

2
R&D Center

2
Production Base

30+
National Customer Service Center

30
Invention Patent

181
Design Patent

191
Utility Model Patent

352
Computer Software Copyright Registration Measures

December 31,2023

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Acrel EMS 3.0

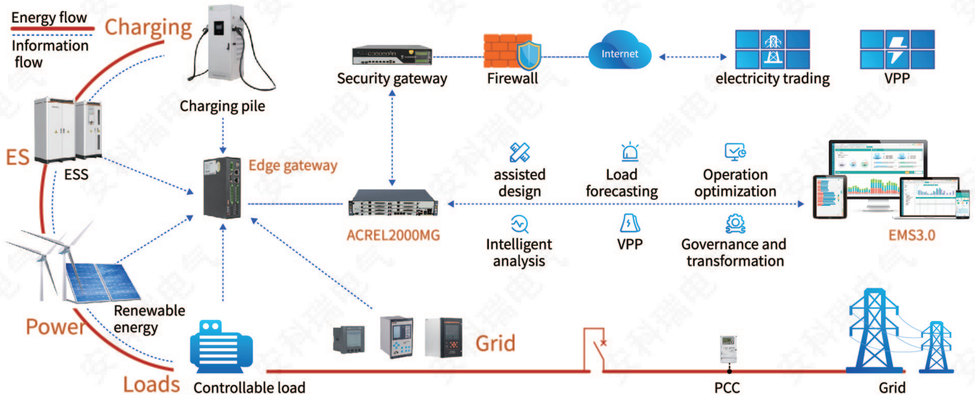
Overview

Acrel EMS 3.0 can dispatch and manage power, grid, loads, energy storage and charging. To lower the cost, improve the renewable energy usage efficiency, benefit from peak valley arbitrage, demand management and VPP transaction



Architecture

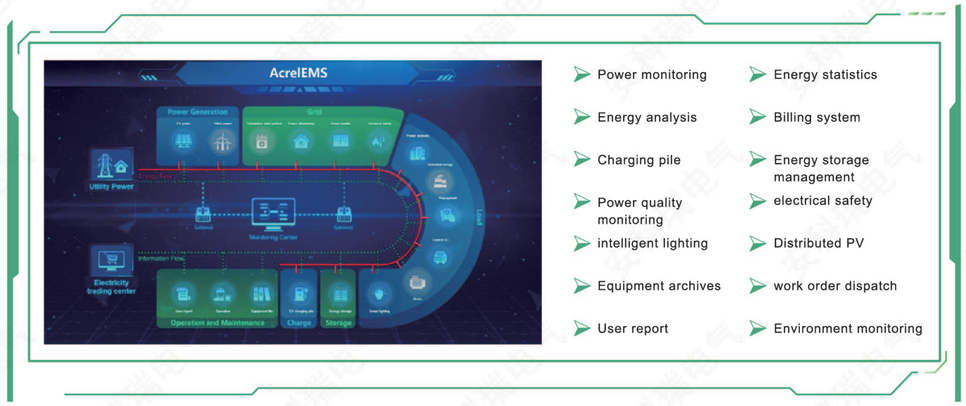
clean power generation » Reliable power distribution » Efficient power usage » Optimal control



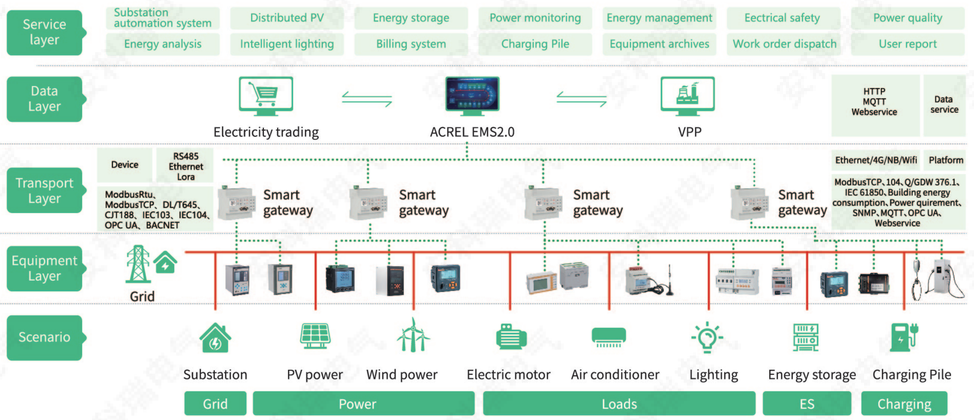
Acrel EMS 2.0

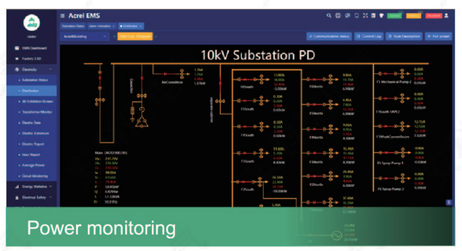
Overview

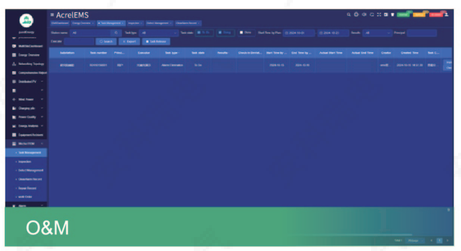
Acrel EMS 2.0 can monitor and analyse the power, grid, loads, energy storage and charging. Realize the data interaction among each systems. Improve energy efficiency, lower cost, achieve carbon peaking and carbon neutrality.



Architecture





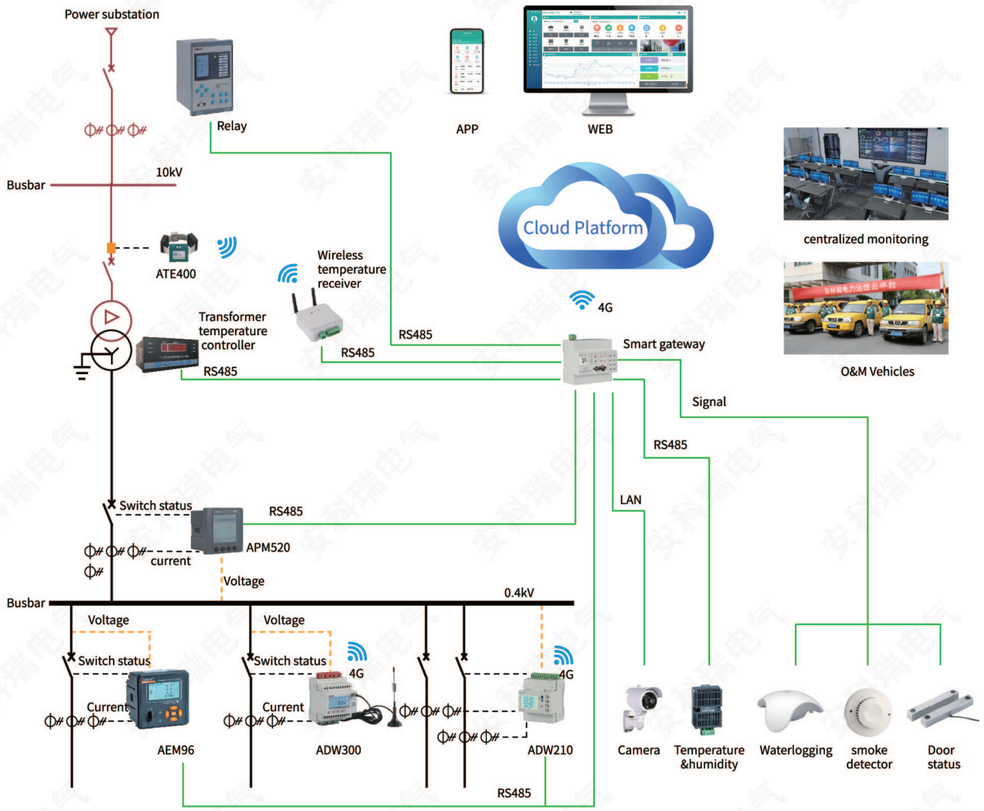


Substation O&M System

Overview

The substation O&M system helps users manage different power substation&distribution facilities efficiently. By establishing a monitoring and warning system for substation through mobile networks, complete O&M processes, and improves O&M efficiency, to ensures the stable and reliable operation.

Architecture

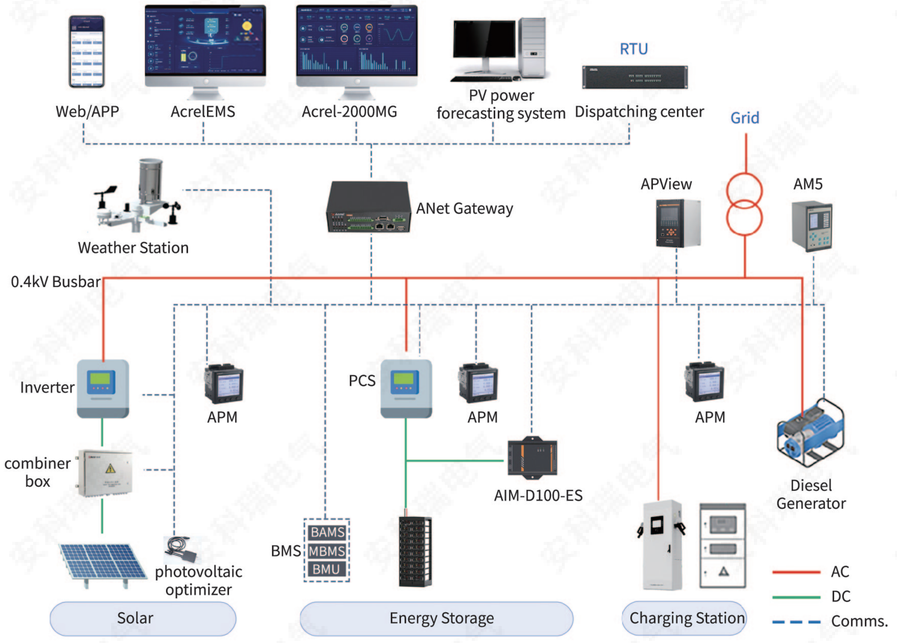


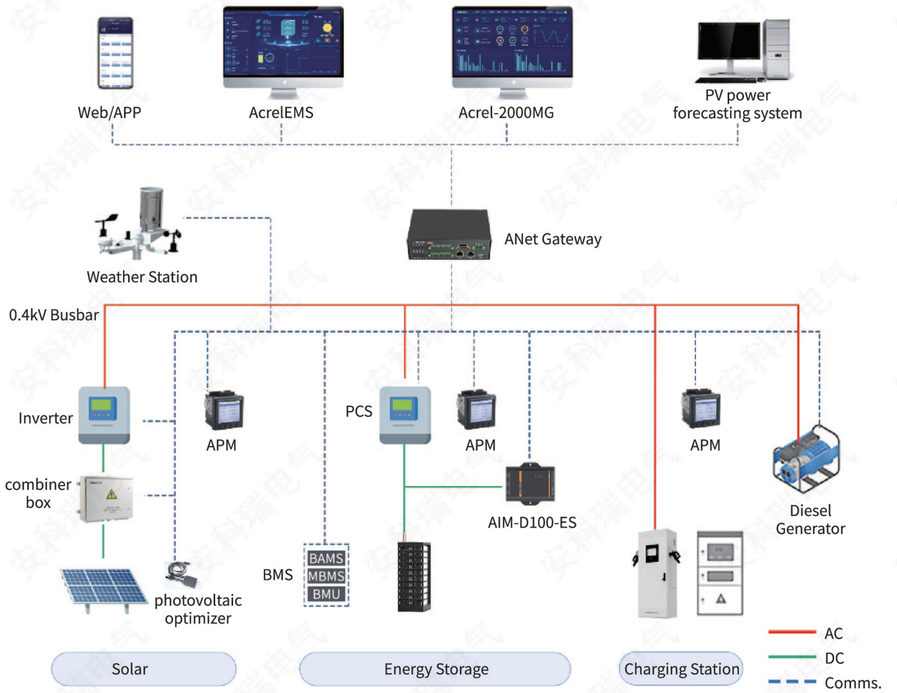
Functions

- Power Monitoring
- Power and Environment Monitoring
- Real-time Alarm
- Power Quality
- Electrical Safety
- Equipment archives
- Energy Efficiency Analysis
- O&M Inspection

Acrel-2000MG Microgrid （EMS）

Architecture





Acrel-2000MG Microgrid （EMS）

Functions

ANet intelligent gateway

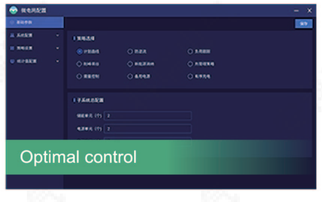


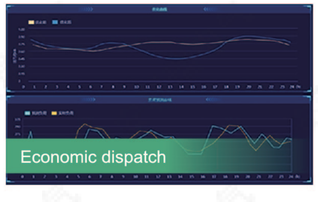
ANet-2E4S1/2E8S1 adopts an embedded hardware computer platform with multiple downlink communication interfaces and multiple uplink network interfaces. It is used to collect and aggregate the communication data of all inteligent monitoring/protection devices in a target area and upload them to the main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

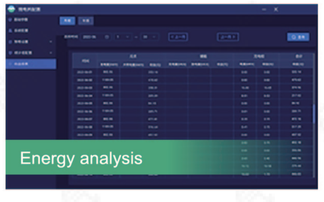


Fuctions

- 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/WIF/LORA.







Applications











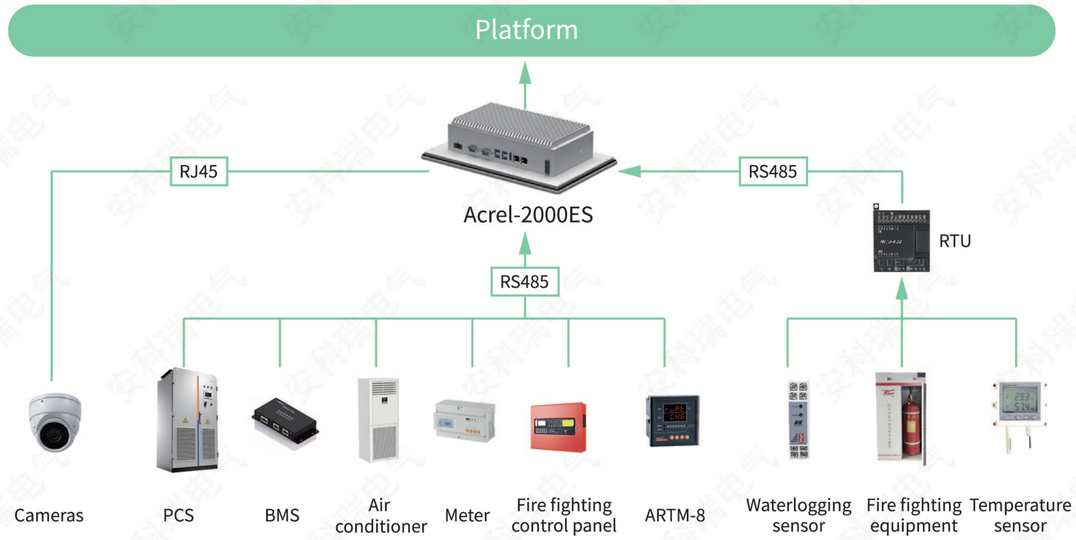






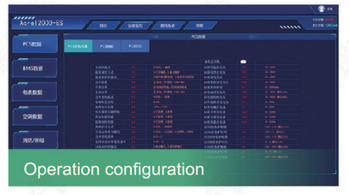
Acrel-2000ES Energy Storage（EMS）

Architecture

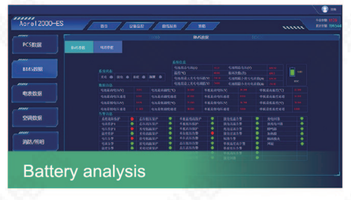


Functions





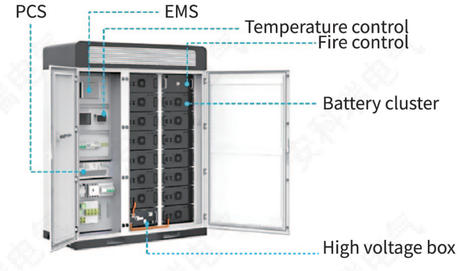




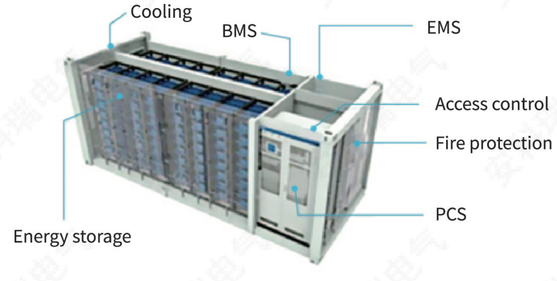




Applications



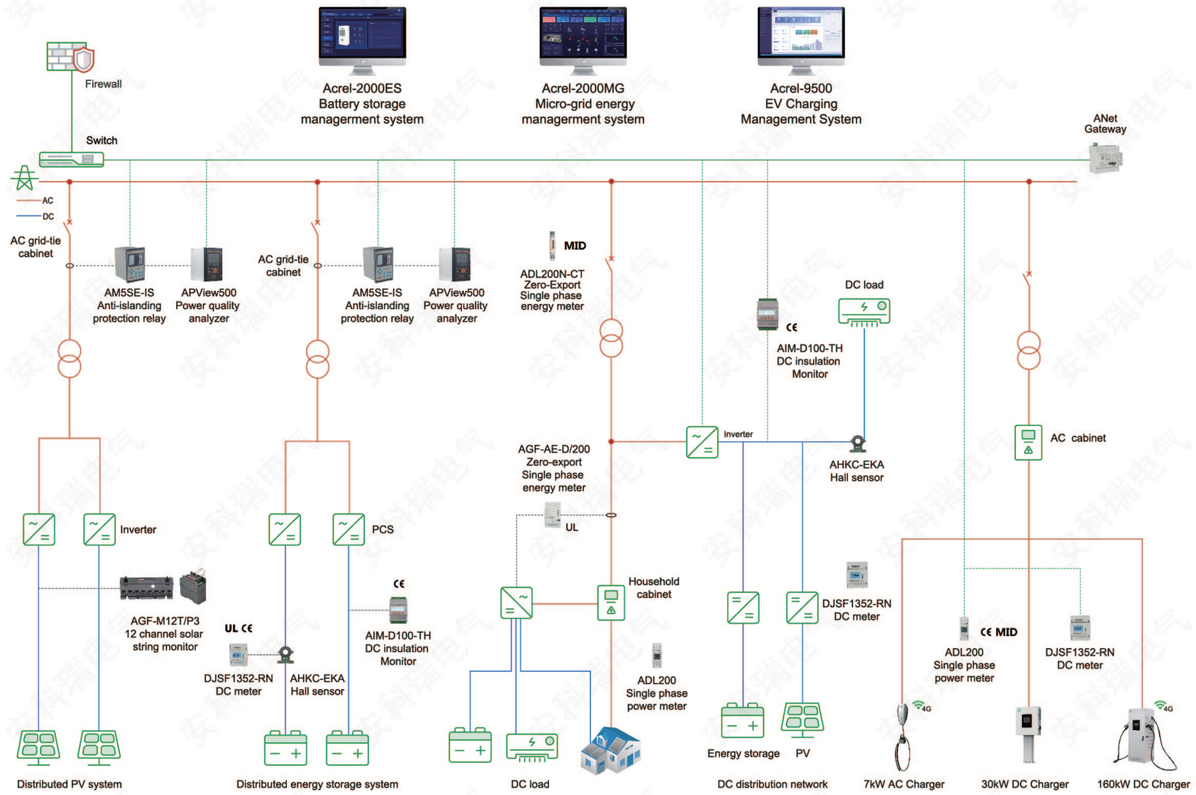
Energy Storage Cabinet



Energy Storage Container

Renewable Energy Monitoring and Protection

Architecture





Distributed photovoltaic power station



Distributed energy storage station



Household Solar PV and Energy Storage system



Regional DC distribution system



Charging and battery swap station

Products

AM5SE-IS Anti-islanding Protection Relay



- 20DI &13DO
- Over and under voltage monitoring
- Interrupted neutral monitoring
- Over and under frequency monitoring
- Vector shift detection
- RS485 and Ethernet Port

IEC CE Modbus

DJSF1352-RN DC energy meter



- Dual-channel metering
- Hall Sensor or Shunt Connection
- Voltage, current and power extreme recording
- SOE

UL Modbus

Renewable Energy Monitoring and Protection

AGF-M8T Solar String Monitor



- DC 0-1500V
- 0-20A
- Strings MAX 24

Modbus

AIM-D100-T Series DC Insulation Monitor



- Insulation & Voltage monitoring
- Overvoltage and undervoltage alarms
- SOE

CE Modbus

ADL200N/400N-CT AC Energy Meter



- Voltage, current and power
- 100ms refresh
- External split core current transformer

MID UL Modbus

AGF-AE-D AC Energy Meter



- Insulation & Voltage monitoring
- Overvoltage and undervoltage alarms
- SOE

UL Modbus

ADL400 Energy Meter



CE MID Modbus

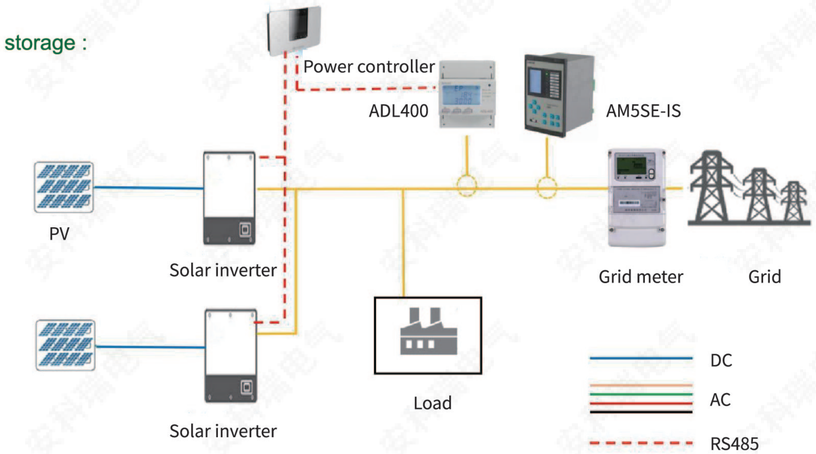
ADL3000-E-A/B Energy Meter



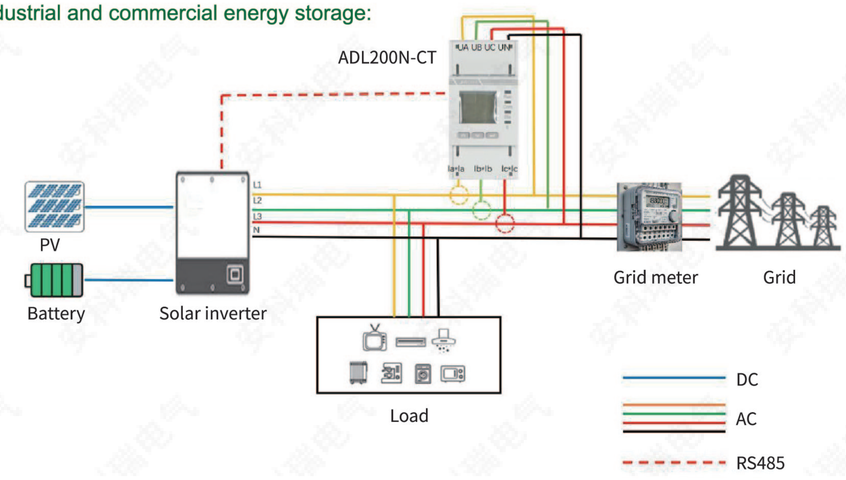
CE UL Modbus

Applications

◆ Home storage :

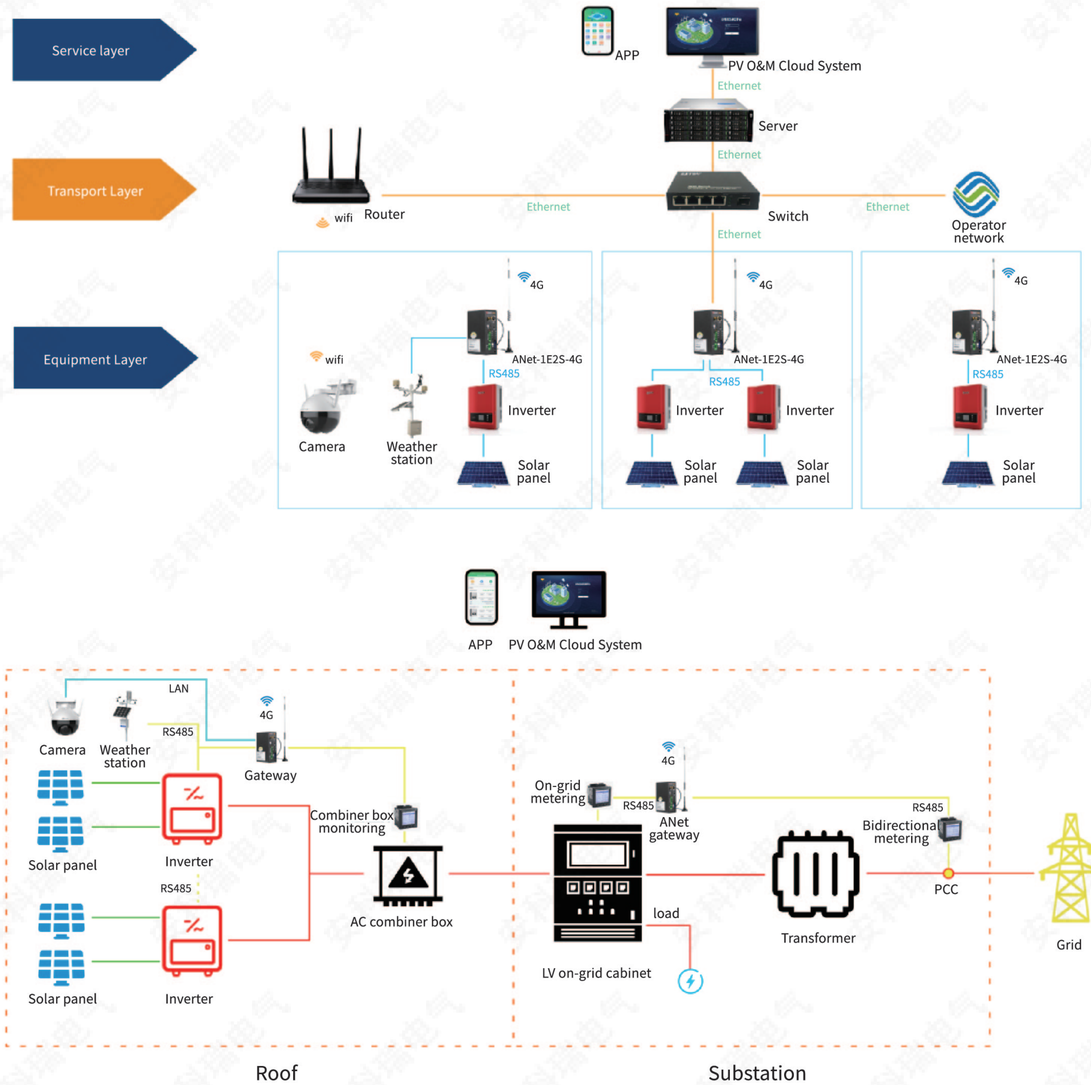


◆ Industrial and commercial energy storage:



PV O&M Cloud System

Architecture



Functions

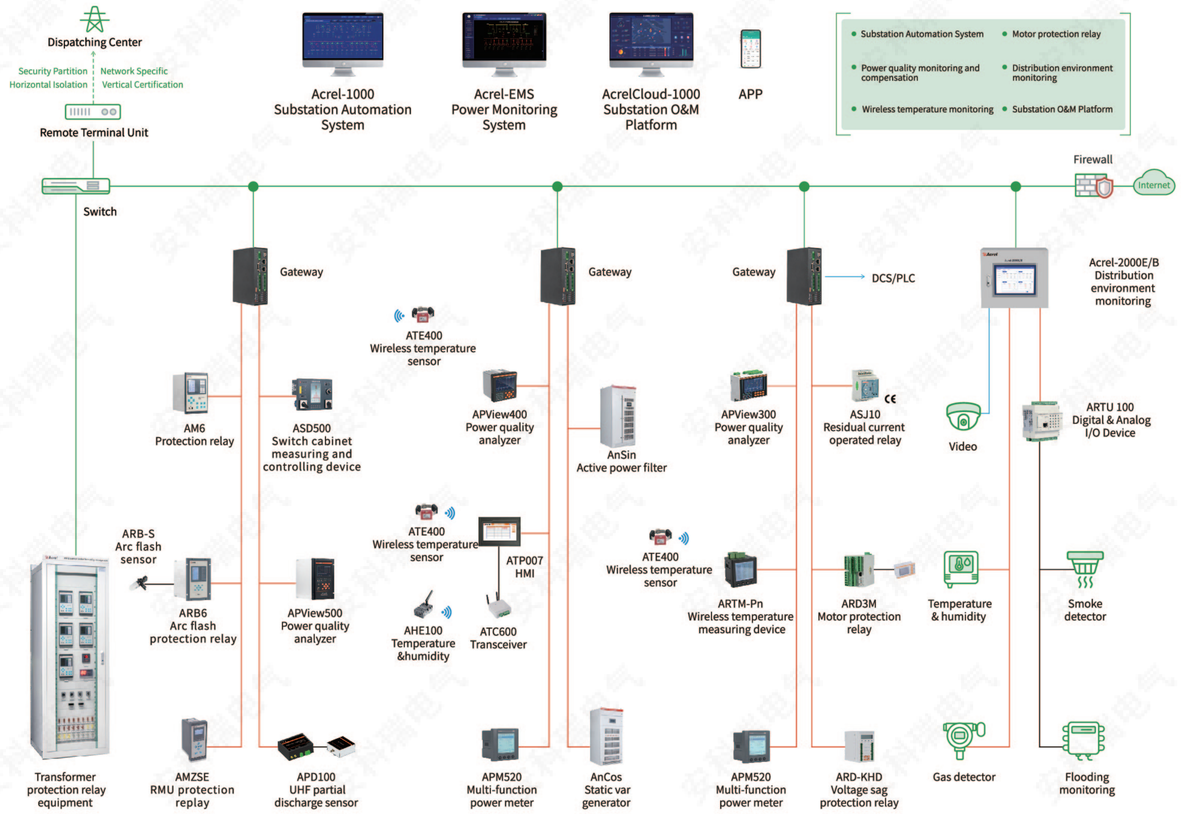
01	Status monitoring
02	Fault alarm
03	Power generation statistics
04	Economic benefits statistics
05	Power generation efficiency analysis

Power Monitoring System

Overview

The power monitoring system provides protection, control, analysis and warning for substations of 110kV and below , helping users to reduce fault rates, quickly locate and cut off faults, and shorten power outage time.

Architecture



Products



AM5SE Series Protection Relay

- ANSI 87M：differential protection，motor
- ANSI 87T：differential protection，transformer
- ANSI 50/51：overcurrent protection
- ANSI 32R：reverse power

CE IEC Modbus



APM520 Power Meter

- Electrical parameters
- Energy metering
- Harmonic
- Temperature and leakage current

CE IEC Modbus 4G LAN



ARB Series Arc Protection

- Cut off arc faults in 0.4kV~35kV voltage power distribution systems
- Single arc criterion, arc and current criterion, and arc and zero sequence voltage criterion.
- Real-time self inspection
- Arc fault location function
- SOE and fault waveform

CE IEC Modbus



APView500 Power Quality Analyzer

- Vector diagram of the voltage and current
- SEMI F47，ITIC
- 2.5~8.9kHz harmonics
- Real-time waveform
- Voltage dip location
- DC volume
- Web Server

CE IEC IEC 61850 Modbus

Wireless Temperature Monitoring System

Overview

The wireless temperature monitoring system is mainly used for real-time online monitoring of the temperature of electrical connection points such as cable joints, circuit breaker contacts, busbars, etc. in high and low voltage switch cabinets to prevent excessive contact resistance and heating caused by oxidation, looseness, dust and other factors during operation, thereby improving equipment safety, accurately reflecting equipment operating status, and reducing equipment accident rates.

Architecture



Products

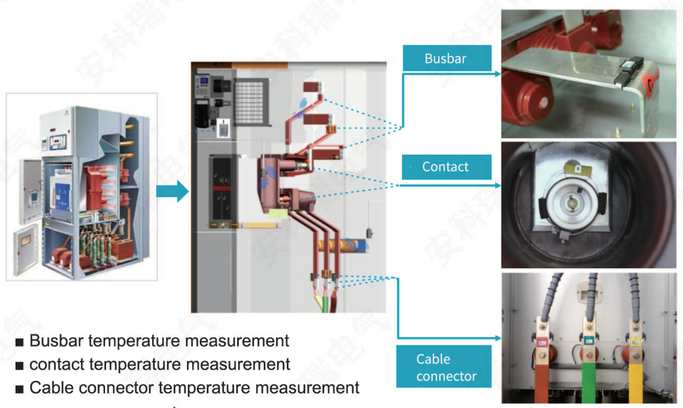
ATE Series temperature sensors



ATC600/ARTM-PN/ATP wireless temperature collect and display



Applications

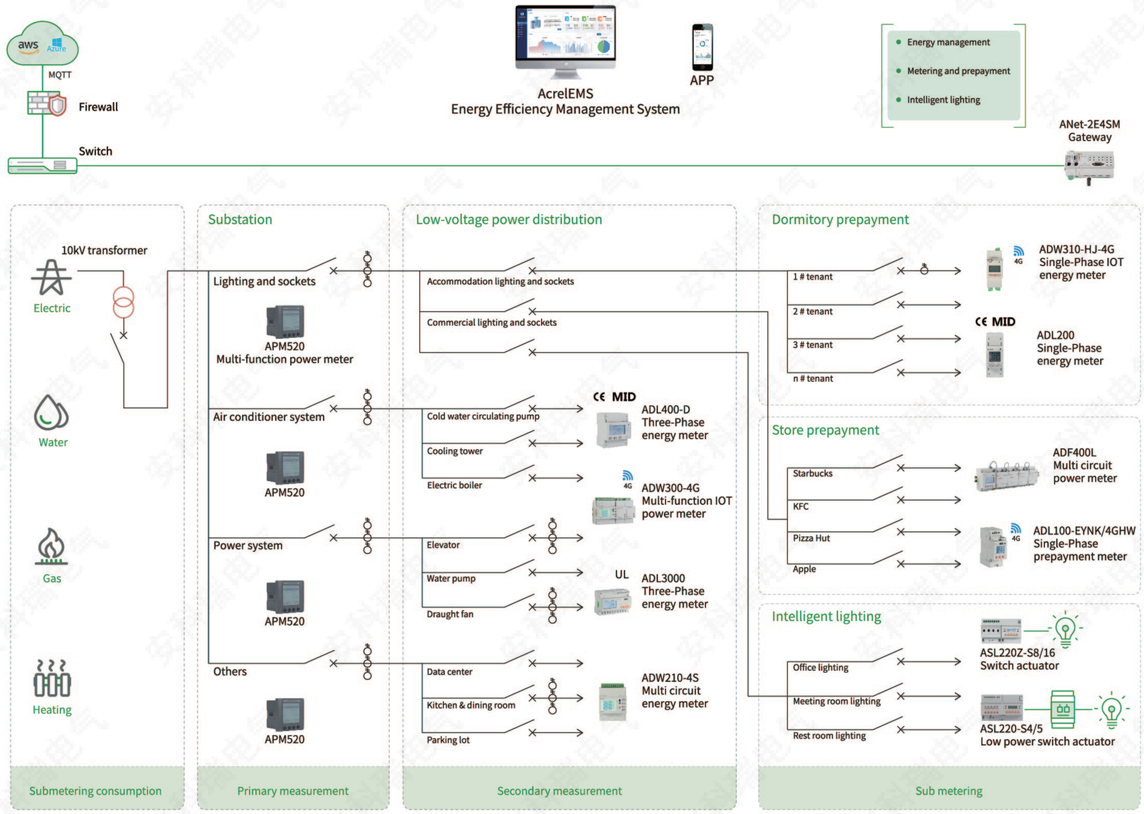


- Busbar temperature measurement
- contact temperature measurement
- Cable connector temperature measurement

Energy Efficiency Management System

overview

Energy efficiency management system can realize real-time monitoring, energy consumption analysis, energy billing management and intelligent control in the process of power supply and distribution in factories and buildings.



Products



ADL200 ADL400

- Electrical parameters
- Bidirectional measurement
- Built-in relay



ADL100-EY ADL300-EY

- Metering
- Historical data
- Harmonic

Applications

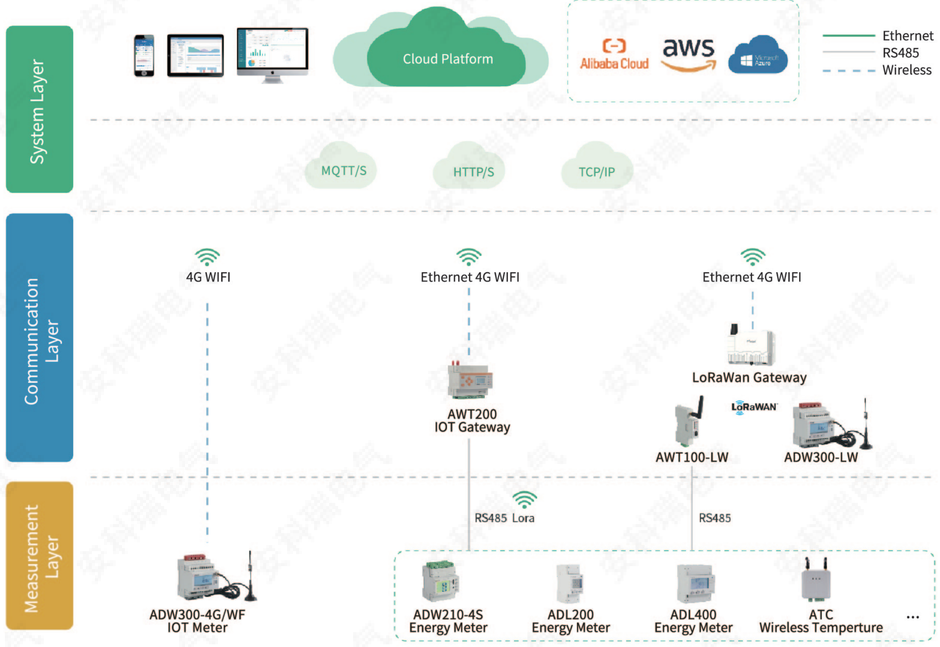


IOT EMS Solution

Overview

Acrel IoT platform enables widespread connectivity with various devices and sensors, offering functions such as remote data collection, status monitoring, and controlling. It supports flexible networking solutions, including both centralized and distributed architecture, integrating data streams for clients and creating value .

Architecture



Products



AWT100 DTU

- Auto-detect Reading
- 1P Module
- OTA



ADW300 IOT Meter

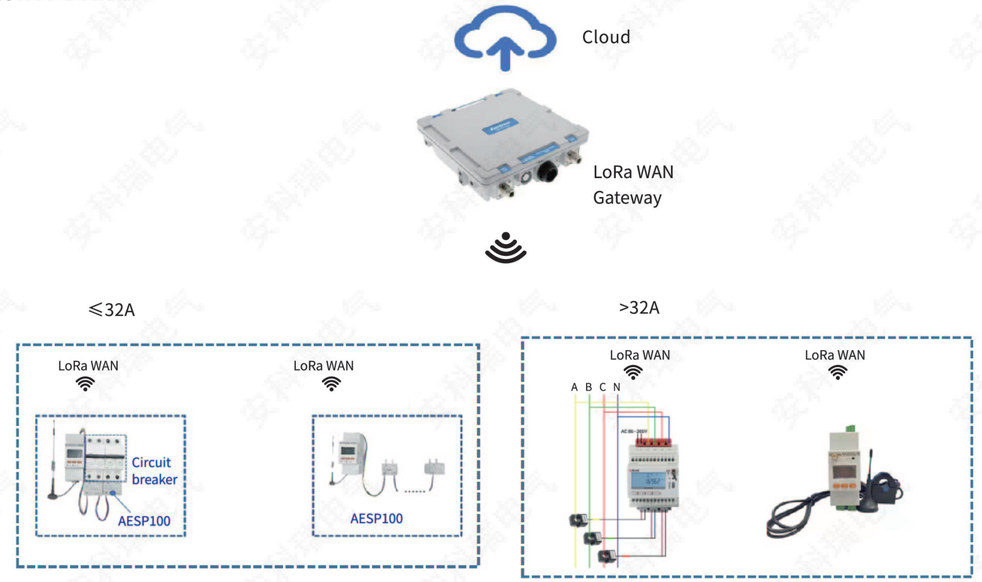
- Remote Direct Transmission
- Electric Power Metering
- OTA

Applications



End-of-Line Energy Measurement Renovation

Architecture

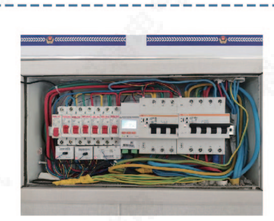


Products



AESP110-MS DTU

- Max 32 modules
- LCD





AESP110 Monitoring Module

- U/I/P/kWH/℃/leakage
- Alarm
- 2P/3P



Applications

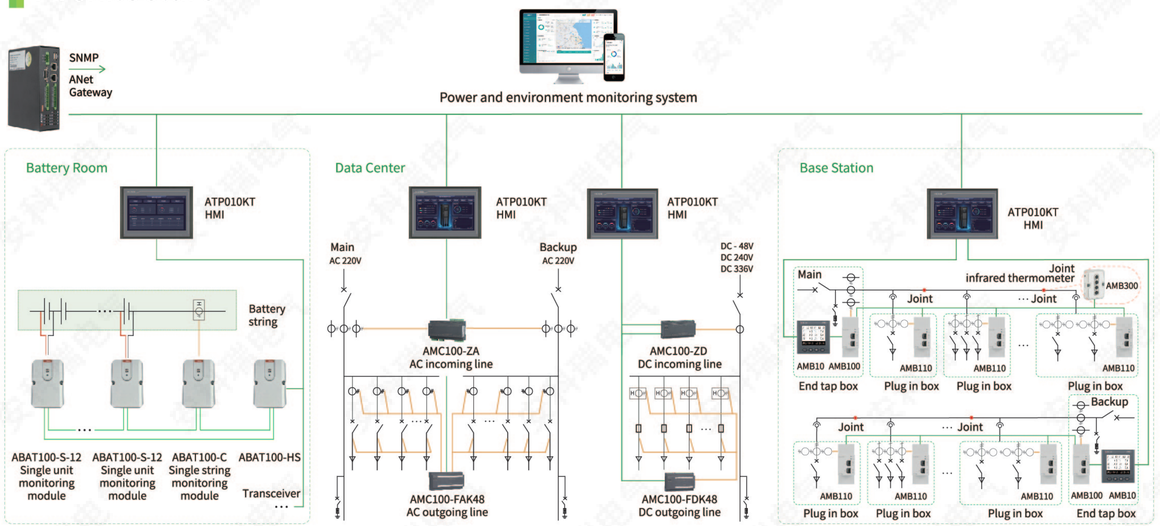


Data Center Energy Efficiency Management

Overview

Acrel's data center energy efficiency management Solution provides comprehensive monitoring and controlling for data centers, including power monitoring, power quality monitoring and management, energy consumption analysis, battery monitoring and management, etc., to promote the development of data centers.

Architecture





Lead-acibattery monitoring



IDC power distribution monitoring



Busway power distribution monitoring

Products



ABAT100 Series Battery Monitoring

- Lead-Acid Battery: 2V, 6V or 12V
- Voltage, temperature, internal resistance
- Maximum 120 Units
- Ring Network



AMC100 Precision Power Distribution Monitoring

- 2 incoming & 192 outgoing circuits
- All electric parameters, 63rd Harmonics
- RS485 (MODBUS-RTU)
- 8DI/4DO
- Temperature&Humidity Measurement

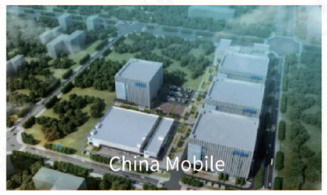


AMB Series Busway Power Monitoring

- AC&DC Busway
- All electrical parameters
- Pin temperature measurement
- RJ45 connected
- End tap box and Plug-in Box Metering

Projects





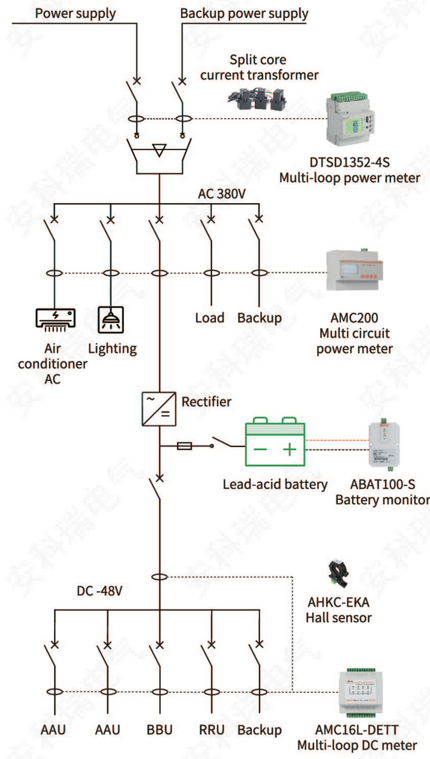


Telecom Base Station Energy Management

Overview

Monitor the electrical parameters of AC and DC distribution system of Telcom base station in real time, provide online monitoring and energy consumption analysis of operation status, improve the efficiency of base station operation and maintenance control, and reduce the operation cost.

Architecture



Products



DTSD1352-4S AC Multi Channels Energy Meter

- Three phase×4 or Single phase×12
- RJ12 Socket CT Connection
- 2DI/2DO



AMC16(L)-DETT DC Multi Channels Energy Meter

- DC Channel×6
- Hall Sensor Input 0-5V
- Power supply for Hall Sensor ±12V

Customers

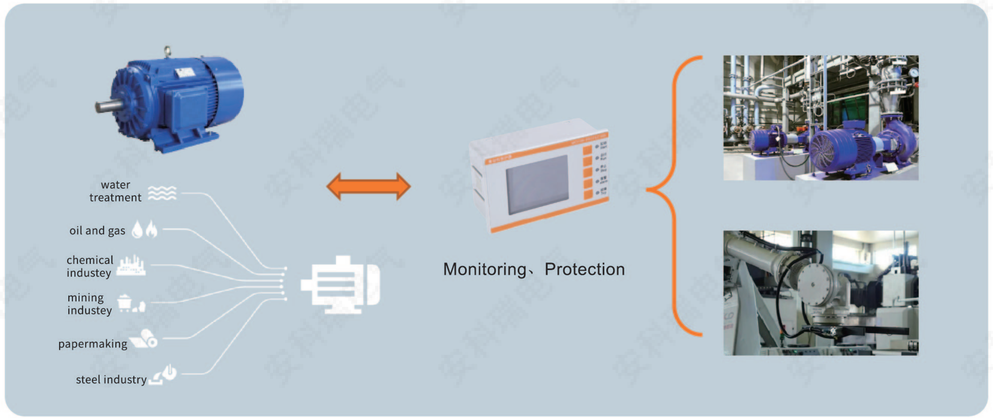
edgepoint · vodafone · 中国电信 CHINA TELECOM · 中国移动 China Mobile · China unicom 中国联通 · AMERICAN TOWER · CHINA TOWER 中国铁塔 · ooredoo · TASC TOWERS · helios towers · orange

Motor Protection and Monitoring

Overview

Motor protection and monitoring for LV motors in the industrial field, can help users to monitor all kinds of electric parameter data, power quality and operation state in real time, and provide all kinds of protection for motor equipment.

Architecture



Products



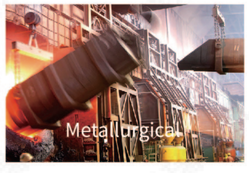
ARD3M Smart Motor Protection Relay

- All electric parameter，63rd Harmonics
- Anti - electric shock function
- Protection：overload、phase loss、block、phase sequence
- SOE，fault record
- Modbus-RTU/TCP, ProfiBus, Profinet

Applications







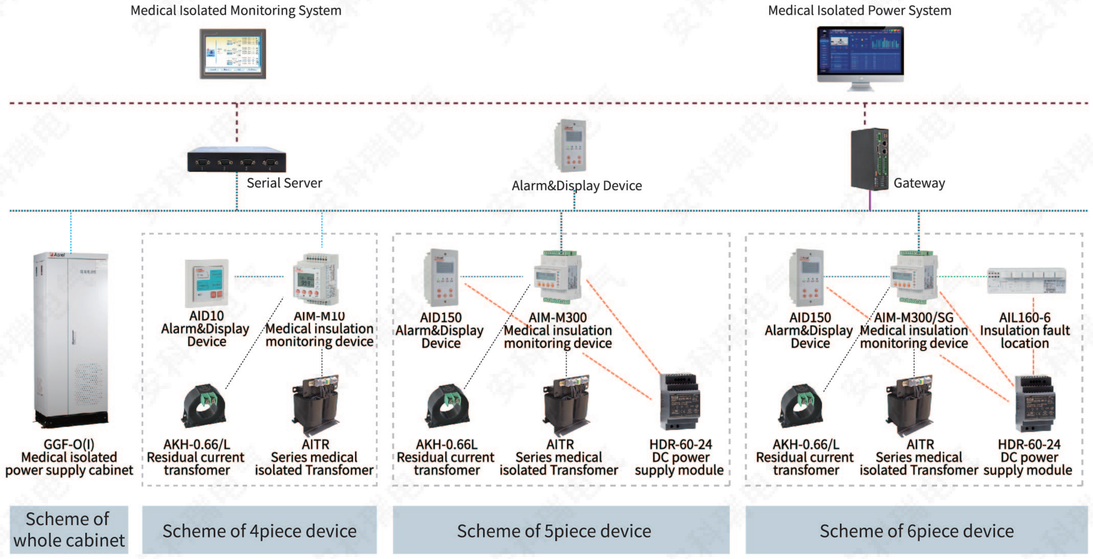


Medical IT Isolated Power System

Overview

The medical isolation power monitoring system is used to monitor medical class 2 places (operating room, ICU, CCU) to provide safe, reliable and continuous power distribution for these important places. At the same time, assist the O&M personnel to find and eliminate insulation faults in time to further improve the reliability of the system.

Architecture



Products



AIM-M Insulation Monitoring

- Resistance range：15-999KΩ
- Response time <3s
- MODBUS-RTU



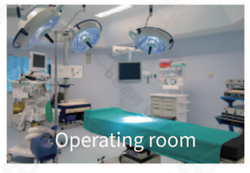
AIL Insulation Fault Location

- Location of insulation faults
- Location time <5s
- Up to 6 channels



GGF Medical IPS Cabinet

Applications





Projects

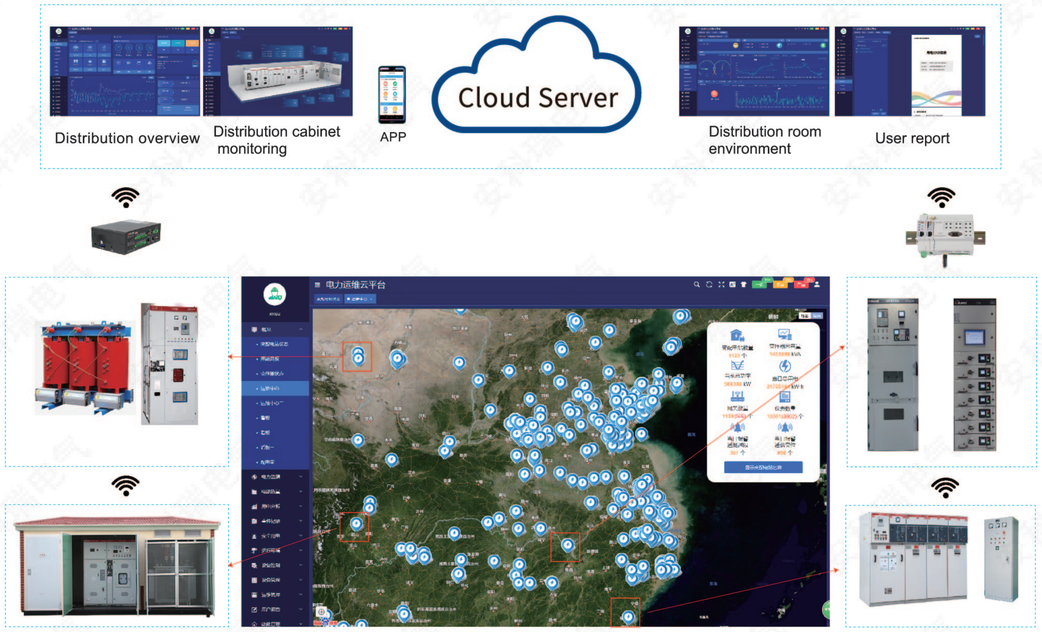
01	Cardiova scular Hospital in Bucuresti CCI LIFSCU Romania
02	Hospital Eduardo Demenezes Brazil
03	Hospital da Crianca Santo Antonio Brazil
04	Central Jakarta Hospital

Smart Distribution Cabinet

Overview

Acrel provides an efficient distribution cabinet O&M management platform. Traditional MV and LV distribution cabinets can be upgraded easily by installing smart meter and temperature sensors .

Architecture



Products

ADW300 IOT Meter

- Electrical parameters
- Energy metering
- Harmonic
- Temperature and leakage current

ADW210 Multi-Loop meter

- Measurement of 4 circuits 3-phase
- Electrical parameters
- energy metering
- Temperature and leakage current

Electrical Equipment O&M System

Overview

Electrical equipment O&M system provides data services such as operating status and time, start and stop times, energy efficiency, maintenance reminders for electrical equipment manufacturers (such as electric motors, industrial air conditioners, air compressors, heat pumps, etc.).

Architecture



Products

ADW300 IOT Meter

- Electrical parameters
- Energy metering
- Harmonic
- Temperature and leakage current

ADW210 Multi-Loop Meter

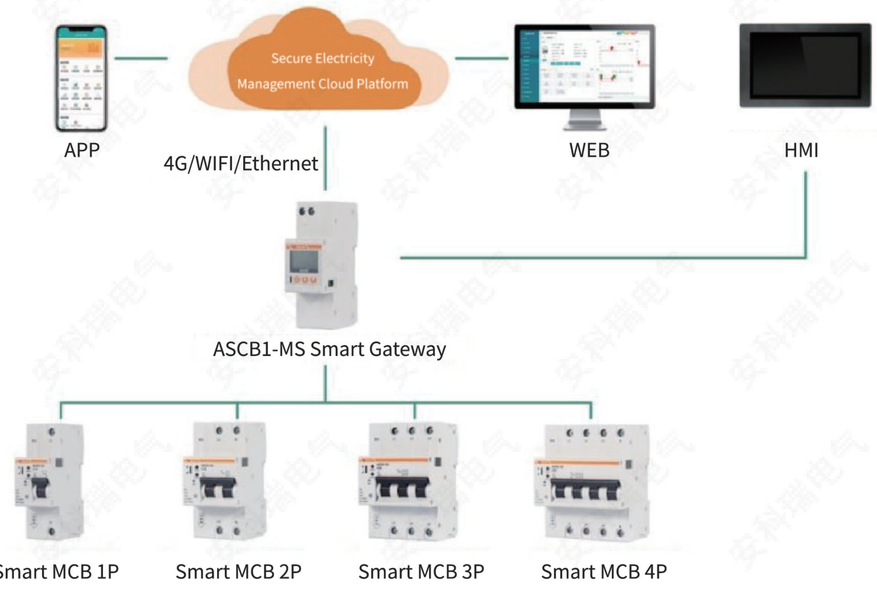
- Measurement of 4 circuits 3-phase
- Electrical parameters
- Energy metering
- Temperature and leakage current

Smart MCB

Overview

Acrel smart MCB monitors electrical parameters such as voltage, current, power, temperature, leakage, energy consumption, etc. in real-time. It has functions such as remote control, alarm, short circuit protection, energy statistics, fault location, etc. It can achieve timing automatic switching on and off.

Architecture



Smart MCB 1P　Smart MCB 2P　Smart MCB 3P　Smart MCB 4P

Products



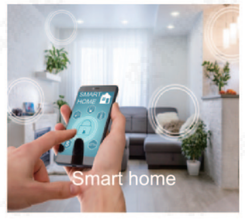
ASCB1 Series Smart MCB

- voltage, current, power, energy, temperature, leakage and etc;
- Protection: overvoltage, undervoltage, overload, short circuit, overcurrent, over temperature, leakage, etc
- Local&remote control, timing control
- Modbus-RTU/MQTT
- 4G/WIFI/Ethernet
- Optional tripping curve type C/D

Applications





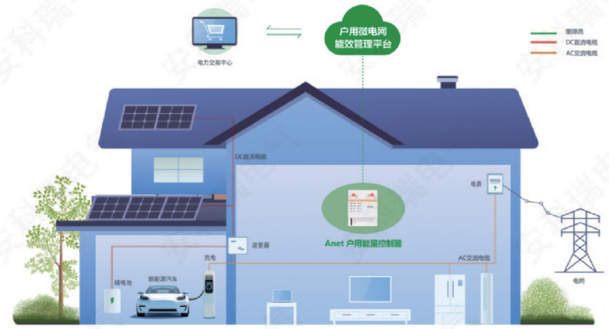


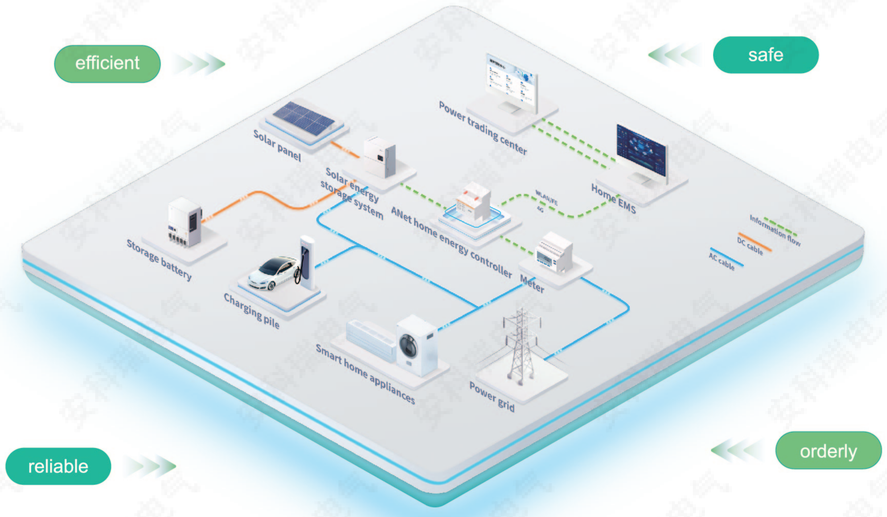


Home EMS - Solar & Energy Storage

Overview

Acrel Home EMS solar & energy storage system can realize real-time monitoring, energy metering, energy consumption analysis, alarms, orderly management and strategic control of PV energy storage and loads in the home, realizing home efficient, reliable, safety and orderly use of electricity.





Functions

01 Increase photovoltaic consumption

02 Avoid additional electricity bills

03 Home energy storage

04 Benefit from peak valley arbitrage



Products



ANet Energy Controller

- Offline logic control
- Data encryption and transmission security
- Data record

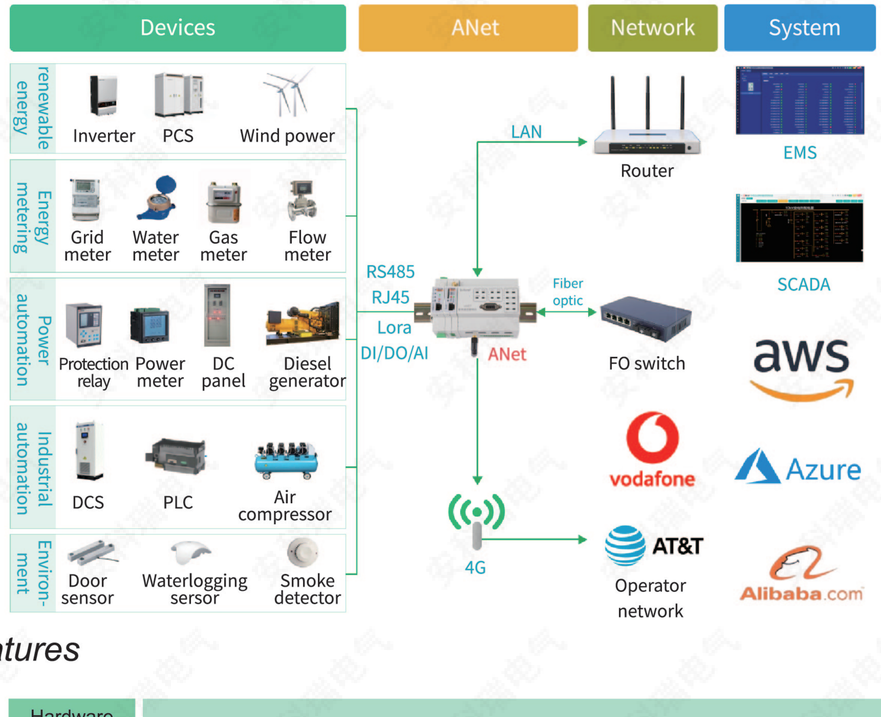


AEV300-AC007D-EU
AC 7KW Charging Pile

- Connect to cloud platform
- Protection function
- Bluetooth and IC card

ANET Intelligent Gateway

Architecture



Features

Hardware performance	ARM processor, 256M RAM， up to 32G extended storage: up to 16 serial ports, EMC class 4
Interface	RS485, M-Bus, Lora, DI/DO/AI, FO port, LAN, 4G
Protocols	Device：Modbus RTU/TCP, IEC60870-5-104, IEC60870-5-103, OPC UA, M-Bus, Siemens S7; Master：Modbus TCP, IEC 104, SNMP, OPC UA, BACNET, MySQL database; Platform：MQTT, Alibaba Cloud IOT
Safety	Encryption, breakpoint resume,Power Failure & Outage Alarm, hardware watchdog, serial port/network port isolation
Convenience	Remote debugging, OTA , remote configuration, module expansion
Edge computing	Data storage, multi-platform connection, virtual data summation, four arithmetic operations, graphical logic programming, linkage control/timing control

Projects

01 Beijing Winter Olympics

02 Tesla Factory

03 NIO

04 Lawson

05 Lottemart

06 LG

QUALIFICATIONS



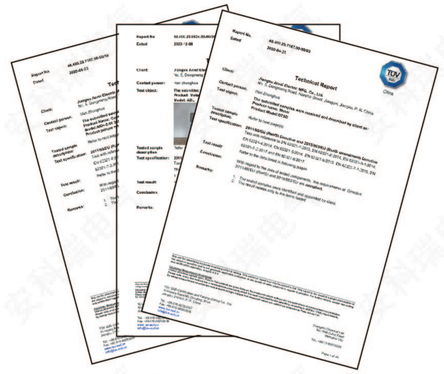
ISO14001 Environmental Management System Certificate
ISO27001 Information Security Management System Certificate
ISO9001 Quality Management System Certificate



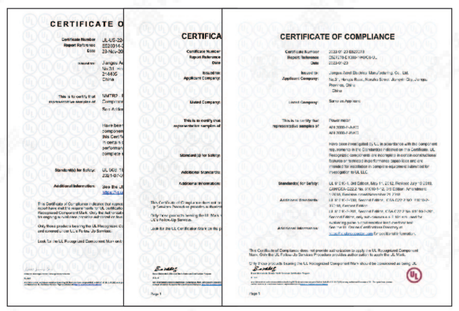
MID Certificate



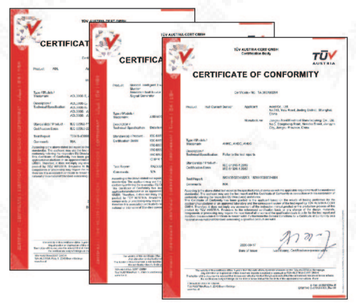
CE Certificate



RoHS Certificate



UL Certificate



IEC Certificate