



Official Website



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FONRICH (SHANGHAI) NEW ENERGY TECHNOLOGY CO., LTD.

CONTENTS



FONRICH

About Fonrich

Company Profile
Company History
Global Business

Solutions

C&I Rooftops: Module-Level Rapid Shutdown,
Power Optimization
Residential: Module-Level Power Optimization,
Safety Protection
SafeSolar PV Monitoring Cloud Platform
Residential: String-Level Arc Protection Solution
Utility-Scale: String-Level Arc Protection Solution
Arc Fault Detection Solution
Energy Storage System EMS
C&I Microgrid Energy Management System
PowerRich Energy Management Platform
Combiner Box Monitoring System Solution
Insulation Monitoring Solution

Project Cases



COMPANY PROFILE

Founded in 2011, Fonrich (Shanghai) New Energy Technology Co., Ltd. is dedicated to providing intelligent new energy solutions to global customers. By optimizing solar plant operation efficiency and ensuring safety, the company promotes the efficient and secure management of renewable energy systems. As a global leader in DC arc fault detection technology, Fonrich continuously innovates in the fields of PV system optimization, energy storage integration, and smart energy management. Fonrich has filed over 200 patent applications, with nearly 100 granted invention patents, covering the full technology stack of new energy. Its core technologies span multiple fields and include module-level shutdown and monitoring management, arc fault detection and protection devices, power optimizers and DC microgrid safety solutions.



14Years of experience
The first company in China
passed UL1699B certification



100GW+
Global solar plant
service capacity



200+
Patent applications, including
100 invention patents



100+
Countries & regions with
global business presence



COMPANY HISTORY

2011

Fonrich New Energy founded

2012

First combiner box monitoring system launched

2016

Arc fault detector launched and certified with UL1699B

2018

1st-generation PV module optimizer released

2020

R&D of PV module-level smart safety protector initiated

2021

Arc fault detector ranked No.1 in shipments in China

2022

2nd-generation PV module optimizer released

1st-generation PV module-level smart safety protector released

Arc fault detector successfully applied in overseas PV projects

SafeSolar Cloud Platform officially launched

2023

Fonrich (International) established

Fonrich products sold in dozens of countries worldwide

2nd-generation PV module-level smart safety protector released

2024

Fonrich product shipments exceeded one million units

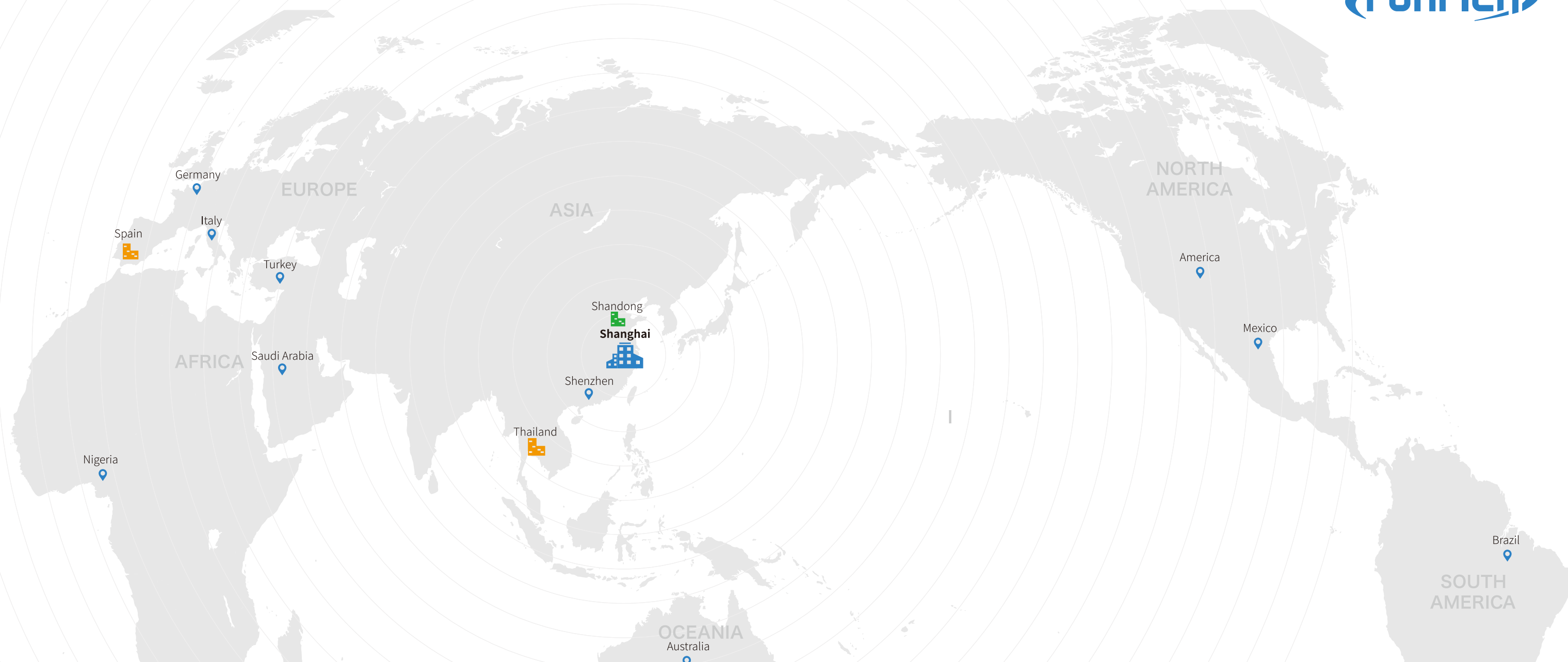
Fonrich (Thailand) and Fonrich(Shandong) established

2025

PowerRich Energy Management System (EMS) officially launched

Fonrich (Europe) established

AFCI White Paper released



GLOBAL BUSINESS

Localized Support

Fonrich is headquartered in Shanghai, with subsidiaries in Thailand and Spain. The company has established a dual manufacturing center system in "Shanghai + Shandong", covering the full business chain including hardware and software R&D, production and manufacturing, global supply chain management, full-cycle quality control, pre-sales and after-sales services, and marketing. Fonrich provides comprehensive market sales and technical support to global customers. With subsidiaries and distribution partners in multiple countries, Fonrich offers localized support wherever you are.



Shanghai
Headquarters



Thailand | Spain
Subsidiaries



Shanghai
Production Center



Shandong
Manufacturing Base

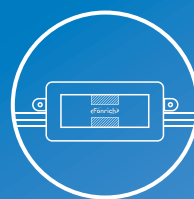


Business Cooperation
Direct Sales or Authorized Agents

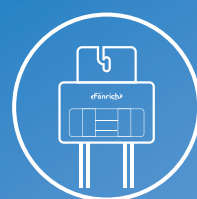
MLPE

Module-Level Power Electronics

C&I Rooftops: Module-Level Rapid Shutdown, Power Optimization



Smart Safety Protector



Smart Power Optimizer



Smart Logger



PLC Transceiver



Solution Advantages

The module-level safety solution enables rapid shutdown, arc protection, and remote monitoring at the module level, helping to prevent economic losses and personal injury caused by fire damage.

The module-level power optimization solution effectively addresses issues such as orientation and shading, reducing power generation loss, improving energy output, and increasing plant revenue.



Automatic Protection /
Manual Rapid Shutdown



Improved Power
Generation Efficiency



Module-Level Arc
Protection



1600m PLC
Communication

Product Overview



Smart Power Optimizer



Smart Safety Protector



Smart Logger



PLC Transceiver

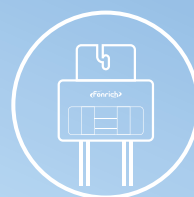


SafeSolar PV Monitoring Cloud Platform

MLPE

Module-Level Power Electronics

Residential: Module-Level Power Optimization, Safety Protection



Smart Power Optimizer



Emergency Switch Box



PLC Transceiver



Solution Advantages

The module-level power optimizer integrates both power optimization and rapid shutdown protection functions. It effectively avoids installation area reduction caused by orientation differences and maximizes the mitigation of power generation loss due to shading and obstruction. It also supports long-string design optimization, further reducing installation costs. The product supports data monitoring via the SafeSolar Cloud Platform.



Improved Power Generation Efficiency



Automatic Protection / Manual Rapid Shutdown



Supports Remote Data Monitoring



1600m PLC Communication

Product Overview



Smart Power Optimizer



Emergency Switch Box



PLC Transceiver

SafeSolar PV Monitoring Cloud Platform

Fonrich SafeSolar PV Monitoring Cloud Platform is an intelligent management system deeply integrated with expertise in PV safety protection. The platform is designed to meet comprehensive monitoring requirements of PV systems, enabling core functions such as real-time monitoring of power generation, power output, voltage, current, temperature, arc fault detection and module status through the Fonrich safety protector. Users can quickly locate faulty PV modules and view real-time power generation data and operating status via mobile phones, tablets, or computers. Additionally, the platform allows technical teams to provide remote O&M support, forming a closed-loop management system from data monitoring to fault alerts. This significantly enhances the safety and operational efficiency of PV systems and builds an intelligent protective barrier for the stable operation of solar plants.

Solution Advantages



Granular Monitoring



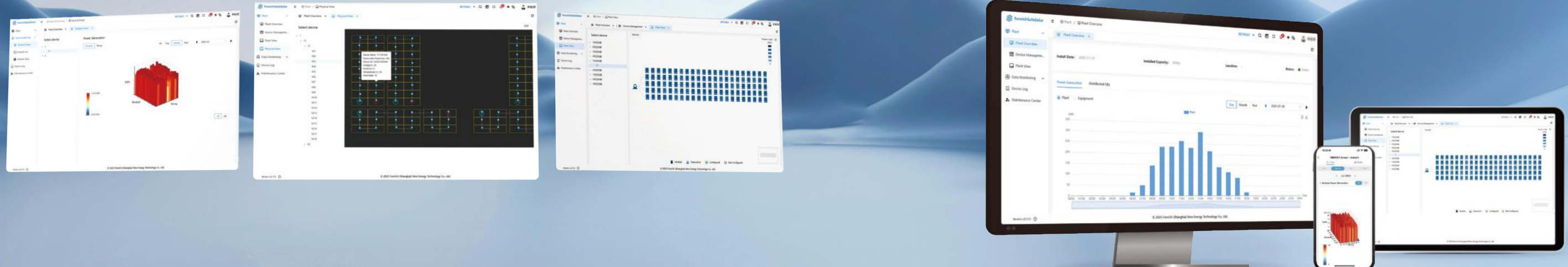
Anomaly Diagnosis
& Analysis



Remote Fault Alerts



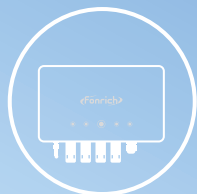
Physical Layout-Based
Fault Localization



SafeSolar PV Monitoring Cloud Platform

AFCI Arc Protection

Residential: String-Level Arc Protection Solution



Arc Protection Box



SafeSolar APP



Solution Advantages

Designed for rooftop PV systems, this solution quickly meets arc fault detection and protection requirements. It supports up to 4-channel arc fault detection and offers both WiFi and Bluetooth communication options.



Rapid Arc Protection



Convenient Wall-Mounted Installation



Remote Fault Monitoring

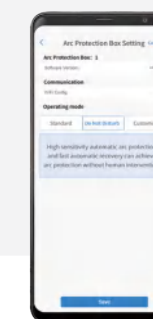
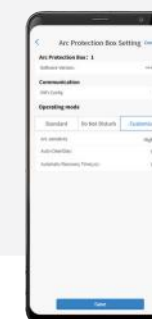


Compatible with System Voltage up to 1100V

Product Overview



4-Channel Arc Protection Box



SafeSolar APP

AFCI

Arc Protection

Utility-Scale: String-Level Arc Protection Solution



Arc Interrupter
(PLC Version)



Arc Interrupter
(LoRa Version)

Solution Advantages

Effectively addresses arc issues in ground-mounted PV systems by enabling arc fault detection and shutdown at the string level. When an arc is detected in a string, the system performs a string-level shutdown.



String-Level
Arc Protection



String-Level Current
Monitoring



Remote Data
Monitoring



Flexible Configuration
No Limitation on
Number of Strings

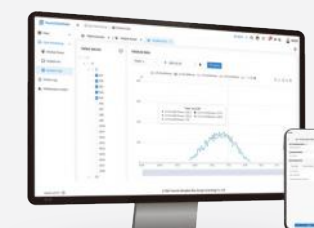
Product Overview



Arc Interrupter
(PLC Version)



Arc Interrupter
(LoRa Version)



SafeSolar Cloud Platform



PLC Transceiver



AFCI Monitoring Box

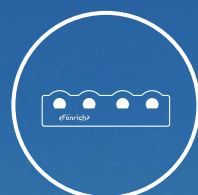
AFD

Arc Fault Detection

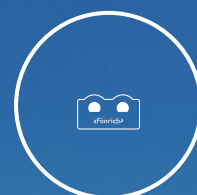
Arc Fault Detection Solution



Arc Fault Detector
(DIN Rail Type)



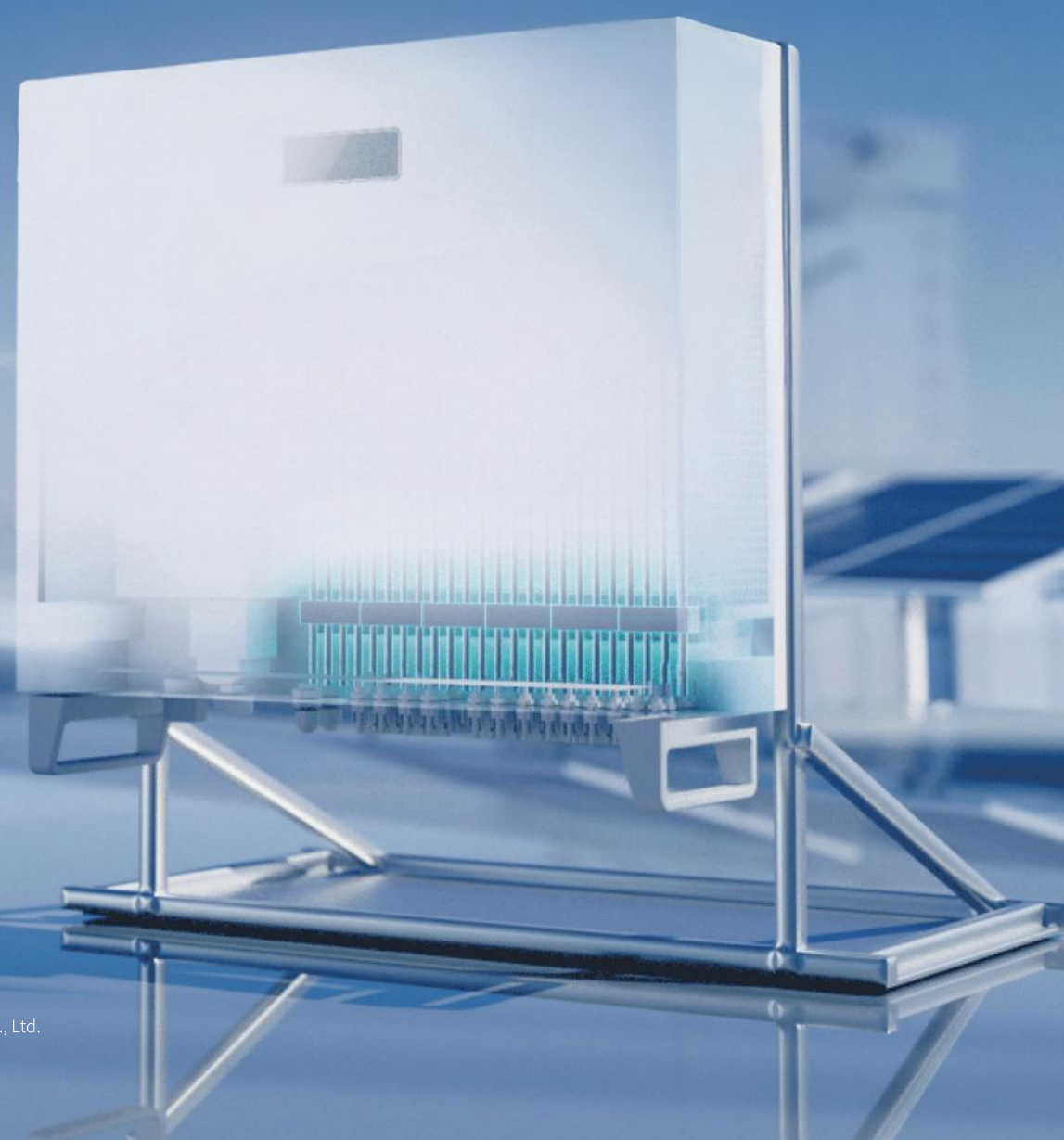
Arc Fault Detector
(Onboard Type)



Arc Fault Detector
(Onboard Type)



ESS Arc Fault Detector
(High Current Type)



Solution Advantages

The high-performance arc fault detector module enables arc fault detection functionality. By monitoring arc faults in real time, it quickly identifies abnormalities and triggers protective mechanisms, thereby enhancing system safety and reliability.



10 Years of Arc Fault
Detection Experience



Quick Integration
Easy to Embed



Adopted by Over 60
Inverter Manufacturers



Supports OTA and
Remote Learning

Product Overview



2-Channel Onboard Arc Fault Detector



4-Channel Onboard Arc Fault Detector



ESS Arc Fault Detector

NEW
300A



DIN Rail Arc Fault Detector

Energy Storage System EMS



Solution Advantages

Independently developed hardware and software enable rapid customization. Supports multiple deployment options, including local deployment, SaaS version, and private deployment.



Intelligent Scheduling Algorithm



Energy Data Visualization



Smart Operation & Maintenance

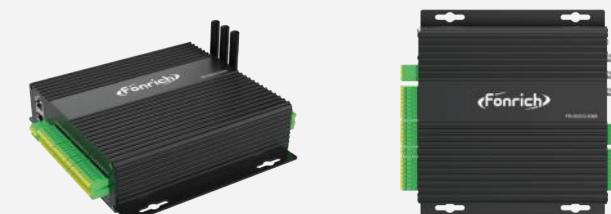


One-Click Strategy Switching

Product Overview

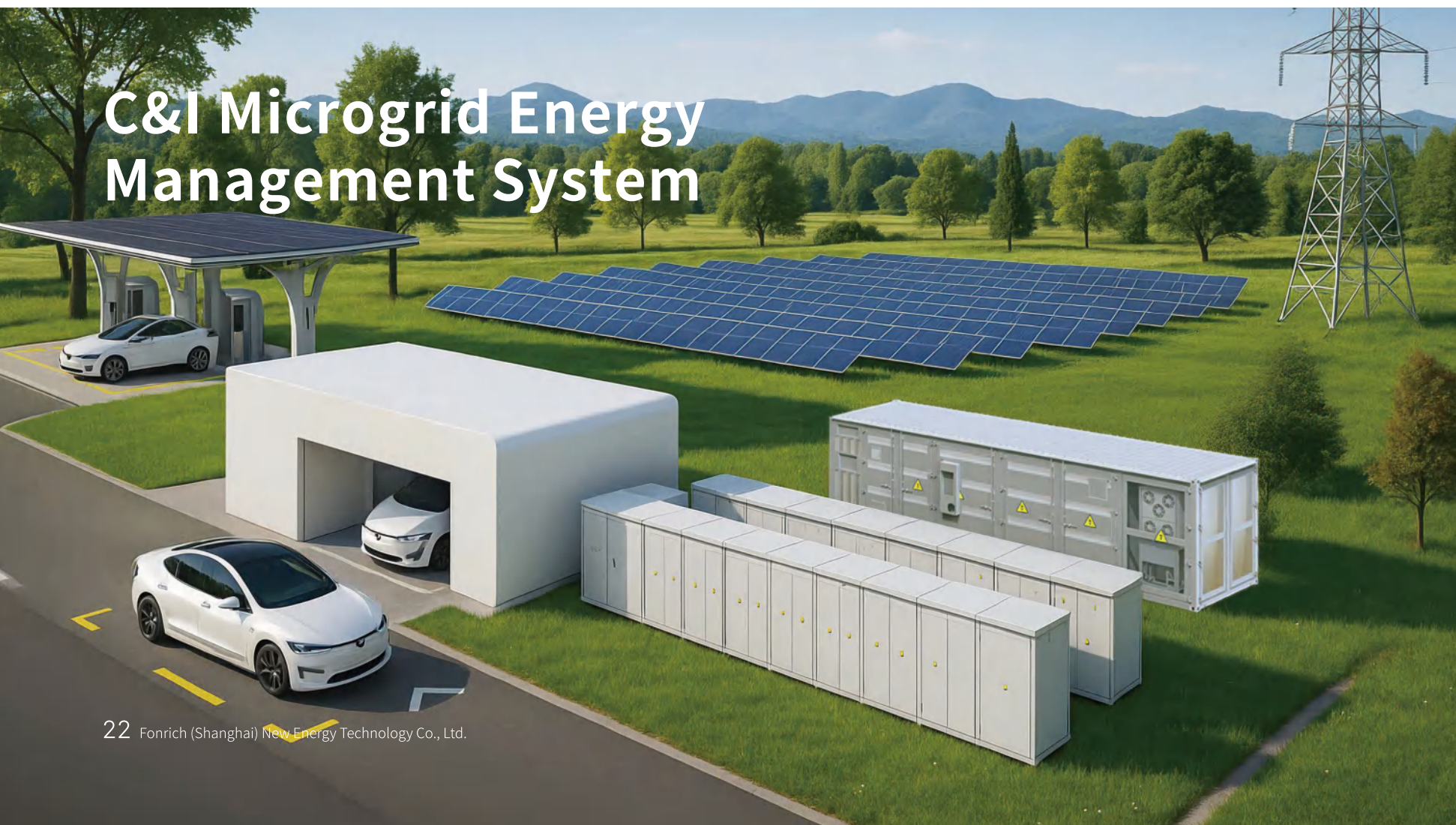


PowerRich Energy Management Platform



Microgrid Controller

C&I Microgrid Energy Management System



PowerRich Energy Management Platform

Fonrich PowerRich Energy Management Platform enables precise data acquisition and coordinated optimization control of various devices within energy microgrids and energy storage stations. By establishing an intelligent monitoring and regulation system, it forms a strong technical foundation for the safe and stable operation of the system and injects intelligent momentum for efficient and economical performance. This solution not only ensures the reliable real-time operation of energy systems but also uncovers energy efficiency potential through refined scheduling strategies. It supports the maximization of lifecycle economic benefits and provides robust backing for the low-carbon and intelligent development of new power systems.



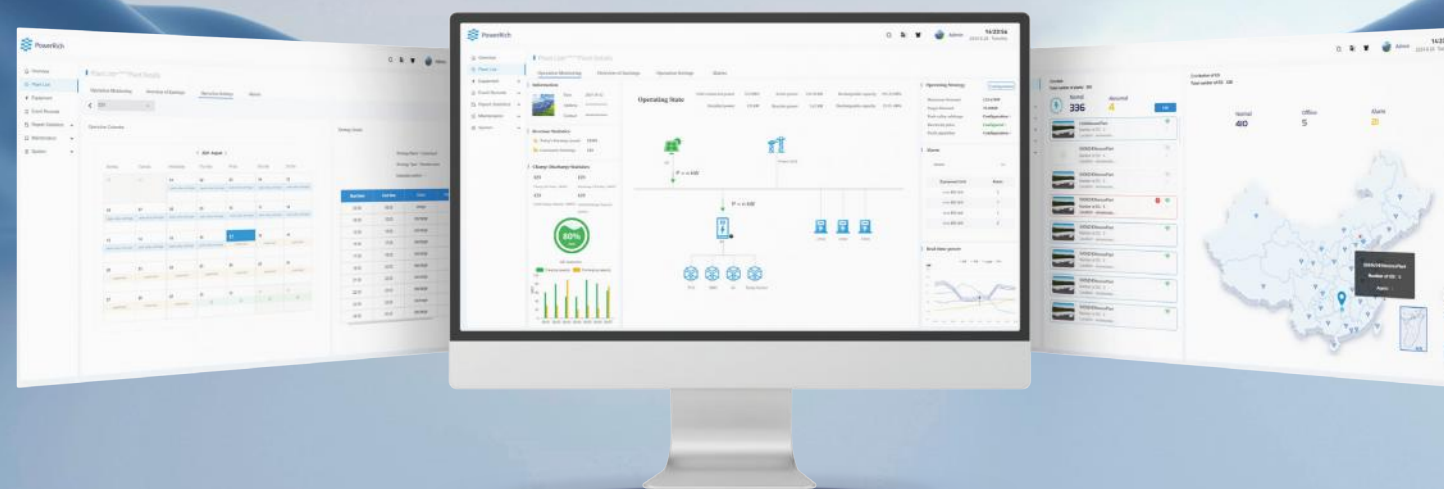
Energy Balancing & Optimization Control



Energy Data Visualization



Smart O&M Management



PowerRich Energy Management Platform

CBM

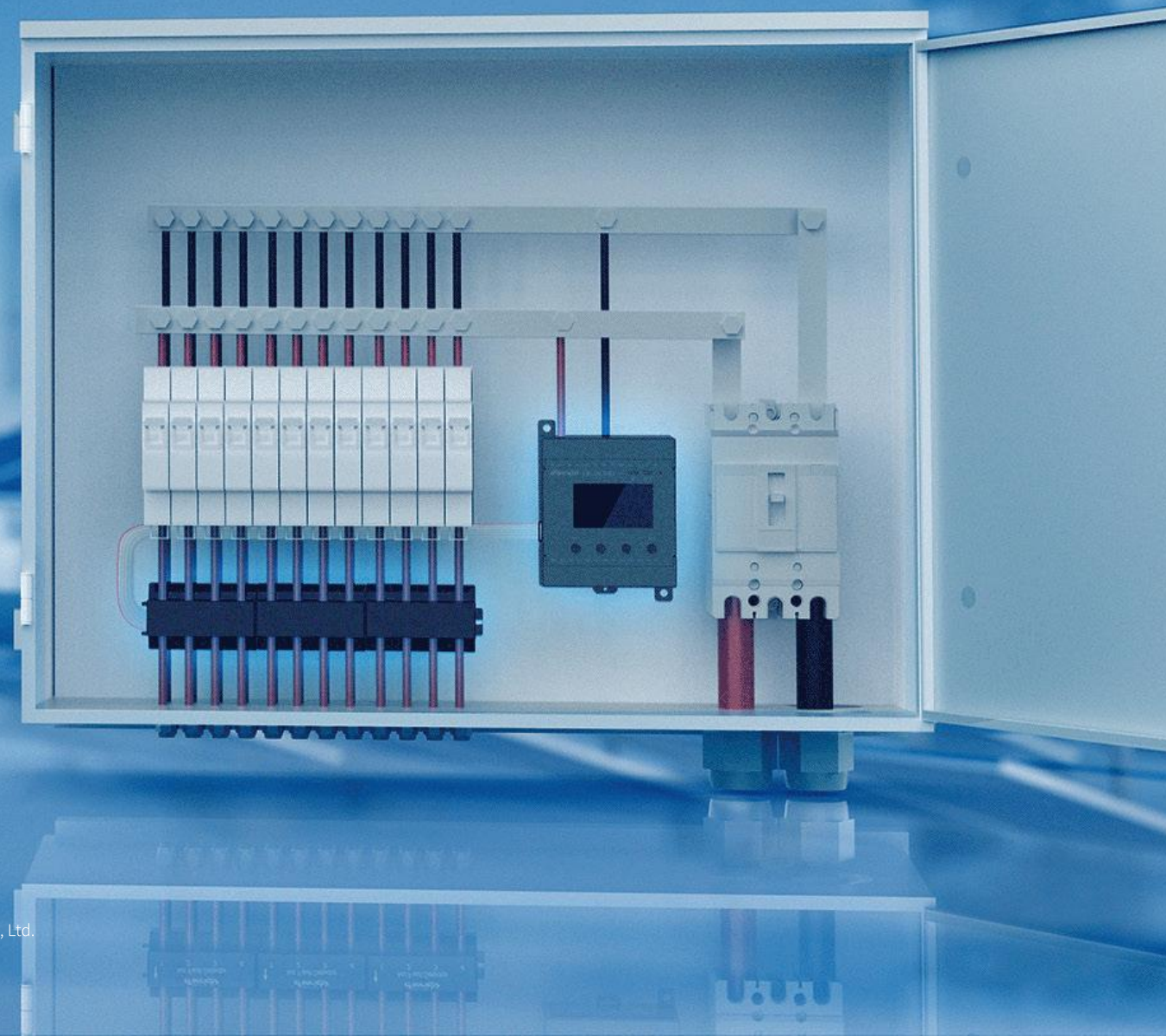
Combiner Box Monitoring System Solution



Combiner Box Monitoring Sensor



Combiner Box Monitoring Main Controller



Solution Advantages

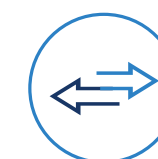
The combiner box monitoring system provides monitoring and management for each device in a solar power generation system. It can monitor the status of surge protectors and circuit breakers without an external power supply. The system supports RS485 communication, DC arc fault detection, and shunt trip functionality.



14 Years of AFCI Expertise



String-Level Arc Detection



Supports HPLC Communication



Supports IV Curve Scanning

Product Overview



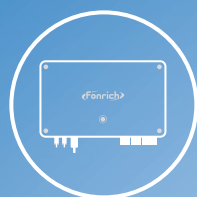
Combiner Box Monitoring Main Controller



Combiner Box Monitoring Sensor

IMD

Insulation Monitoring Solution



Insulation Monitoring
Main Unit



Combiner Box Monitoring
Main Controller



Leakage
Current Sensor

Solution Advantages

A comprehensive solution for insulation fault detection, monitoring and location in PV systems. It fully supports insulation fault detection and arc fault detection, with multiple communication options including RJ45 Ethernet, RS485 Modbus, and Bluetooth.



String Insulation
Resistance



String Leakage
Capacitance



String-Level Insulation
Fault Location



Monitoring Range
0.2-990kΩ

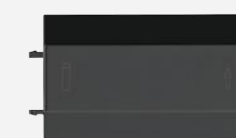
Product Overview



Insulation Monitoring Main Unit

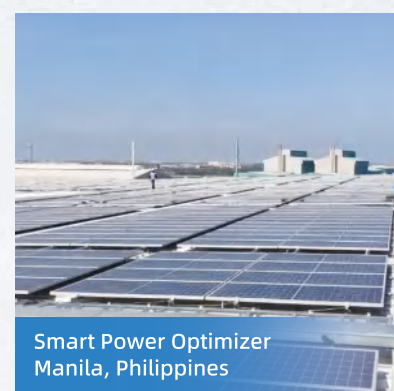


Combiner Box Monitoring Main Controller

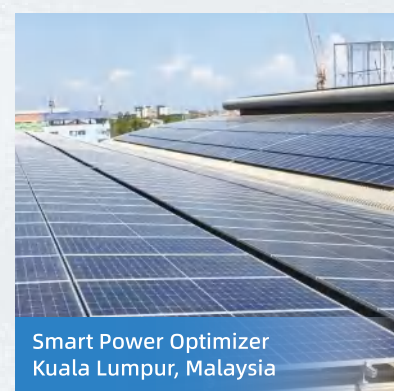


Leakage Current Sensor

Overseas Cases



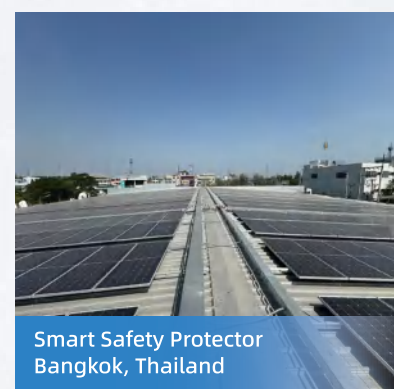
Smart Power Optimizer
Manila, Philippines



Smart Power Optimizer
Kuala Lumpur, Malaysia



Smart Safety Protector
Osaka, Japan



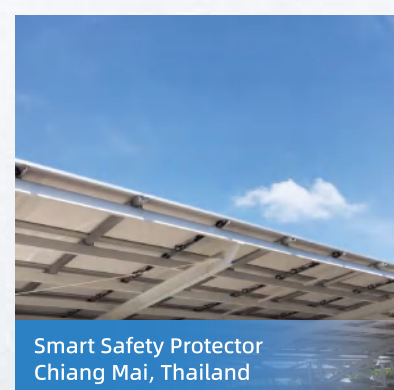
Smart Safety Protector
Bangkok, Thailand



Arc Protection Retrofit Project
Netherlands



Arc Fault Detection Retrofit Project
Japan



Smart Safety Protector
Chiang Mai, Thailand



Smart Safety Protector
Bangkok, Thailand



Smart Safety Protector
Bangkok, Thailand

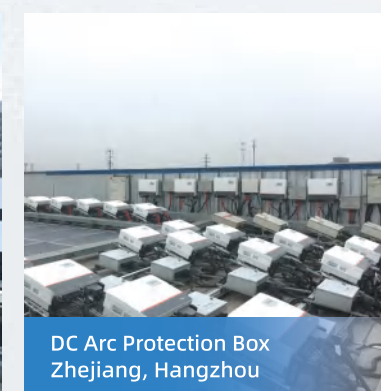
Domestic Cases



Smart Safety Protector
Zhejiang, Hangzhou



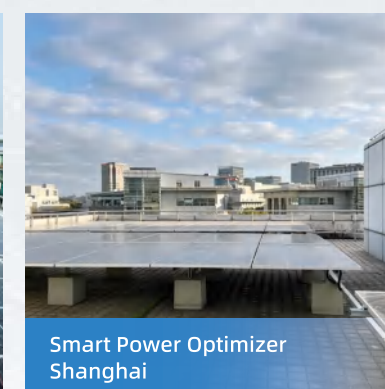
DC Arc Protection Box
Zhejiang, Huzhou



DC Arc Protection Box
Zhejiang, Hangzhou



Smart Safety Protector
Guizhou



Smart Power Optimizer
Shanghai



Smart Safety Protector
Ningxia



Smart Safety Protector
Jiangsu, Xuzhou



Smart Power Optimizer
Zhejiang, Hangzhou