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

www.fonrich.com

2025H2

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FONRICH

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

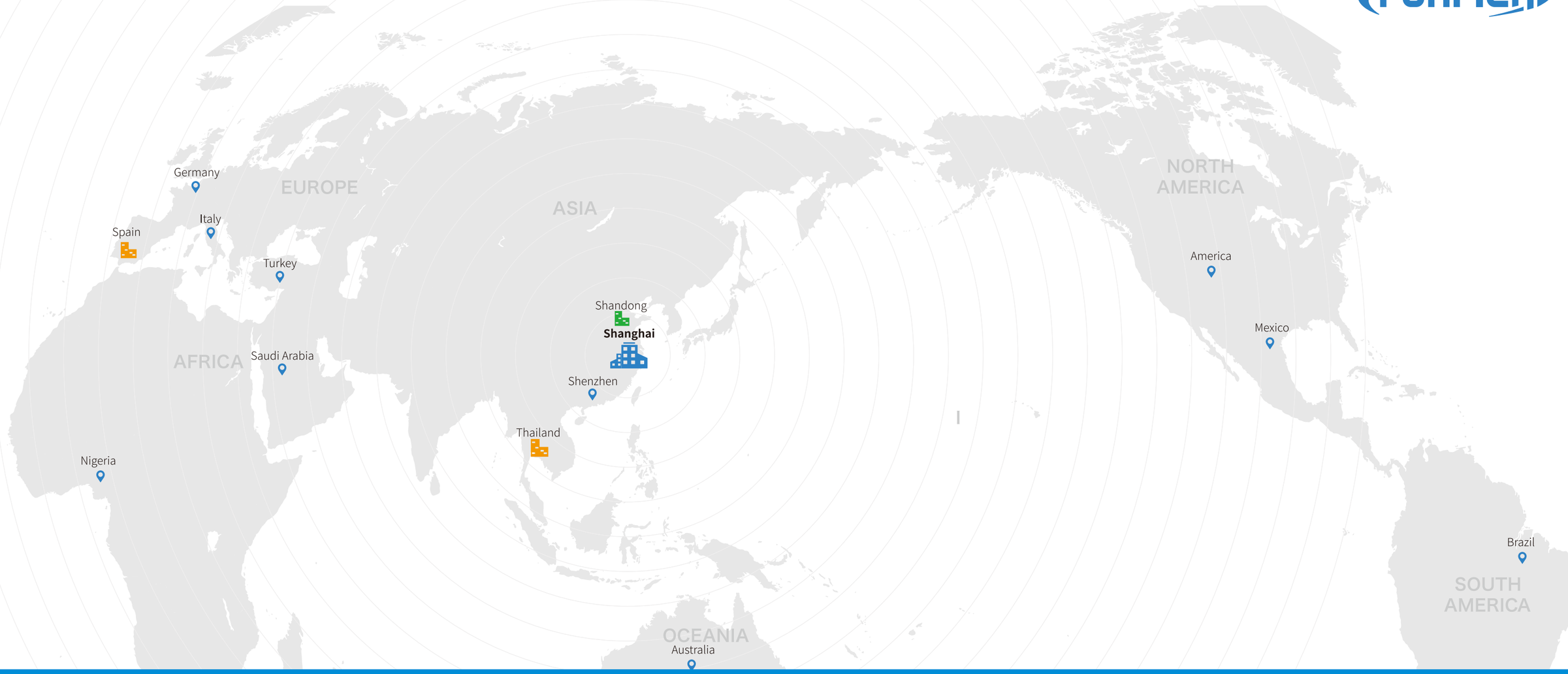
Fonrich (Thailand) and Fonrich(Shandong) established

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

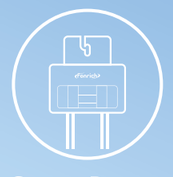
Smart Logger

PLC Transceiver

SafeSolar PV Monitoring Cloud Platform

MLPE Module-Level Power Electronics

Residential: Module-Level Power Optimization, Safety Protection



Smart Power Optimizer

Emergency Controller

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 Controller

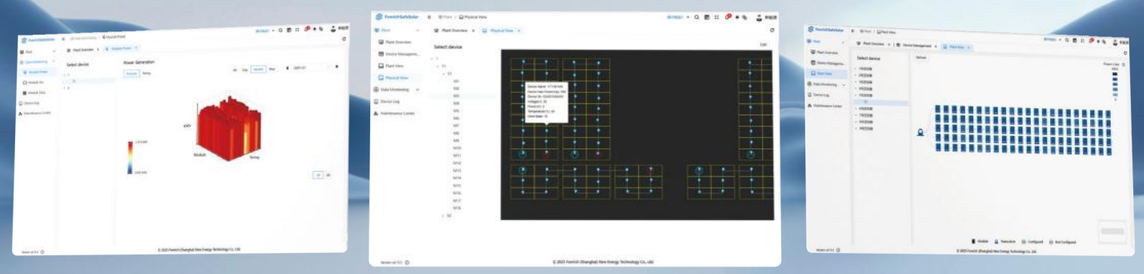
PLC Transceiver

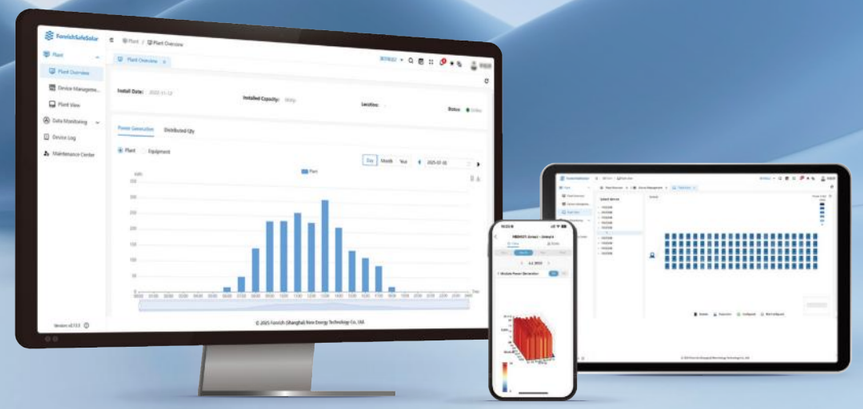
SafeSolar PV Monitoring Cloud Platform

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-Base Fault Localization





SafeSolar PV Monitoring Cloud Platform

AFCI Arc Protection

Residential: String-Level Arc Protection Solution

Arc Protection Box

SafeSolar APP

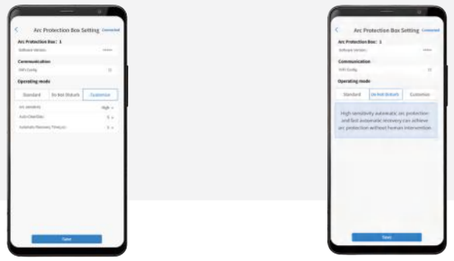
Solution Advantages

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

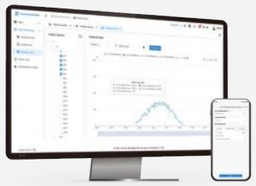
Effectively addresses arc issues in ground-mounted PV systems by enabling arc fault detection and shutdown at the string level. When an arc is detected in a string, the system performs a string-level shutdown.

- 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

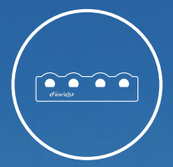
PLC Transceiver

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

NEW

300A

ESS Arc Fault Detector

DIN Rail Arc Fault Detector

CBM

Combiner Box Monitoring System Solution

Combiner Box
Monitoring Sensor

Combiner Box
MonitoringMain Controller

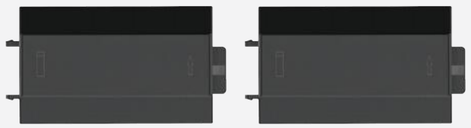
Solution Advantages

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, monitoringand 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

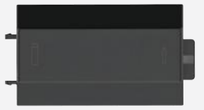
String-Level Insulation Fault Location

Monitoring Range 0.2-990kΩ

Product Overview

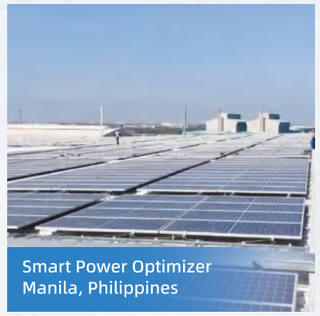
Insulation Monitoring Main Unit

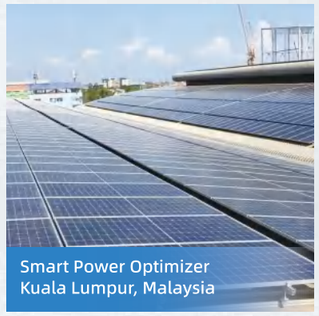
Combiner Box Monitoring Main Controller



Leakage Current Sensor

Overseas Cases


Smart Power Optimizer
Manila, Philippines

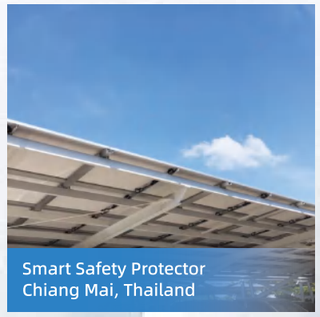

Smart Power Optimizer
Kuala Lumpur, Malaysia


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

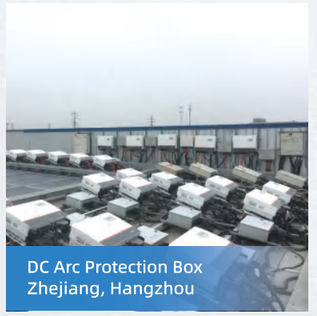

Smart Safety Protector
Bangkok, Thailand


Smart Safety Protector
Bangkok, Thailand

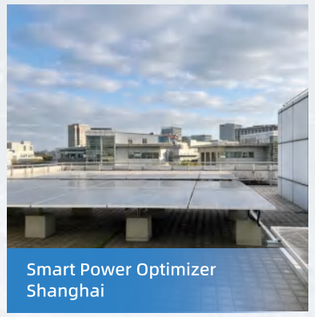
Domestic Cases


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