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energy and operation tech solutions

# Electrical Fire Protection & Fire Safety Solutions

- Electrical Fire Protection System (EFPS)
- Fire-Fighting Equipment Power Supply Monitoring System
- Electrical Fire Protection Devices
- Electrical Fire Current-Limiting Protection Device
- Arc Fault Detectors

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# Contents

## ↗ Intelligent Power Management · Proactive Early Warning · Protecting Life and Property

As building electrical systems become increasingly complex, the risk of fire caused by electrical faults continues to increase.
Electrical Fire Protection Systems (EFPS) and Fire-Fighting Equipment Power Supply Monitoring Systems form a critical component of modern building fire safety infrastructure.

By continuously monitoring key electrical parameters and the operational status of fire-fighting power supplies, these systems enable **early detection, early warning, and early intervention** of potential fire hazards, providing a robust safeguard for **life safety and asset protection**.

This product range is designed and manufactured in accordance with relevant standards and integrates advanced sensing technologies, digital communication methods, and intelligent analytical algorithms.
It is widely deployed across **commercial complexes, public buildings, industrial facilities, hospitals, schools, data centres, and renewable energy applications**, delivering **reliable, comprehensive, and sustainable electrical fire safety solutions**.

## ↗ Electrical Fire Protection System

**Preventing Electrical Fire Hazards at the Source**

The Electrical Fire Monitoring System is designed to continuously monitor **abnormal residual current, excessive conductor temperature rise, and current overload conditions,** which are common precursors to electrical fires.

Using high-precision sensors and a centralised monitoring platform, the system provides **24/7 online supervision** of distribution circuits.

When abnormal trends or preset alarm thresholds are exceeded**, audible and visual alarms** as well as **remote alarm notifications** are triggered immediately, enabling maintenance and facility management personnel to investigate and rectify potential hazards **before an incident occurs.**

- **Proactive early warning to prevent incidents before they occur**
- **High-accuracy monitoring to minimise false alarms and missed detections**
- **Traceable data to support maintenance and operational decision-making**
- **Effective reduction of fire incidents caused by electrical faults**

## ↗ Fire-Fighting Equipment Power Supply Monitoring System

**Ensuring Power Availability When It Matters Most**

The Fire-Fighting Equipment Power Supply Monitoring System is designed for critical fire protection equipment, including **fire pumps, sprinkler systems, smoke exhaust and pressurisation systems, emergency lighting, and fire lifts**.

The system provides **real-time monitoring** of the operating status of **main power supplies, standby power sources, and associated supply circuits**.

It is capable of promptly detecting faults such as **power loss, phase failure, overvoltage, undervoltage, and abnormal power changeover**, and issuing immediate alarms to ensure that fire-fighting equipment operates **reliably and continuously during fire emergency conditions**.

- **Real-time visibility of fire-fighting equipment power supply status**
- **Early identification of potential power supply faults**
- **Enhanced overall reliability of fire protection systems**
- **Supports fire authority inspection**

### Flexible System Topology

Supports system-level deployment, independent measurement points, and integration with building automation/fire control platforms

### High-Precision Measurement

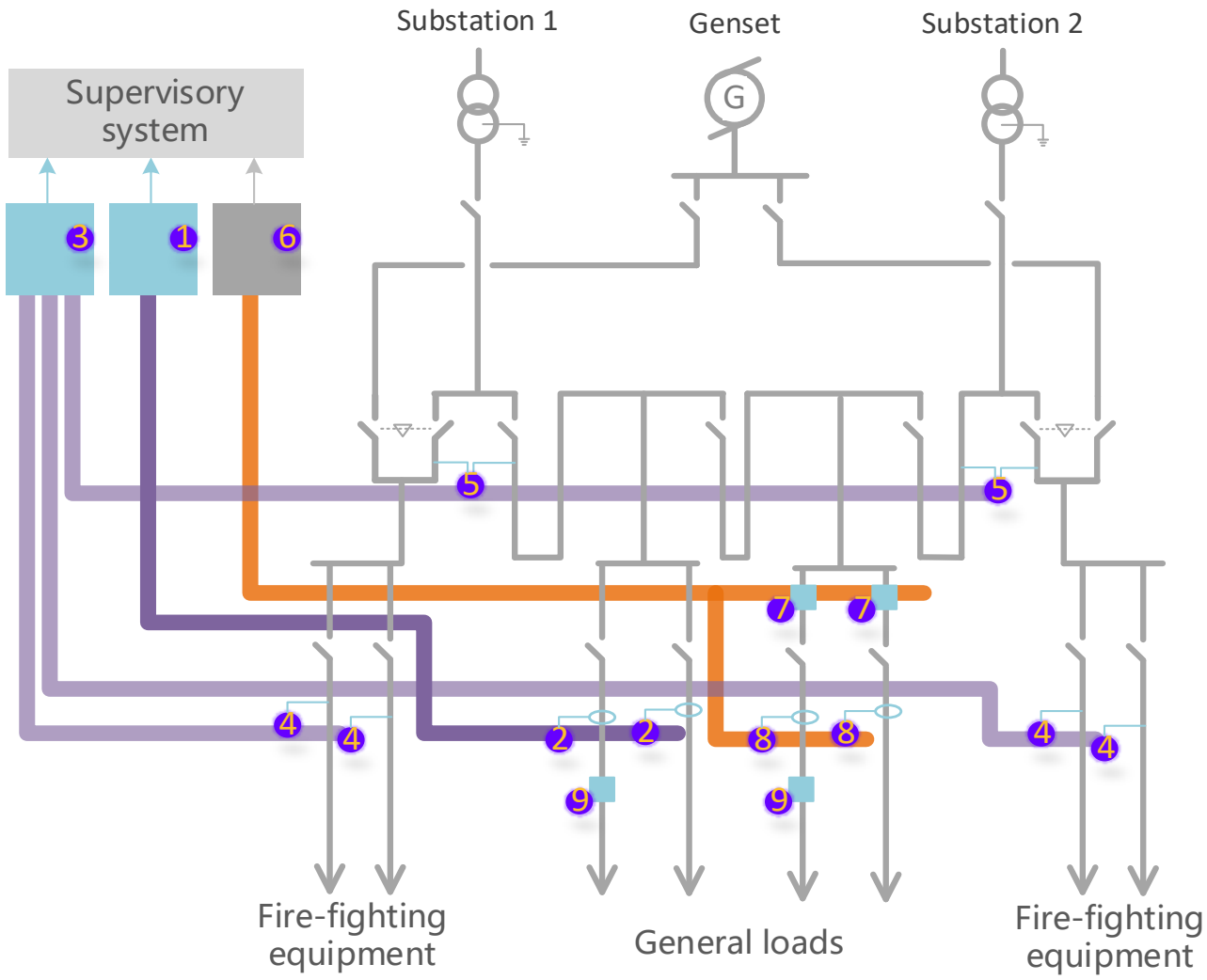
Over 20 years of experience in power measurement and protection products; high-precision data enables efficient and reliable alarms and protection

### High Reliability Operation

Industrial-grade design suitable for complex electromagnetic environments

# Product and Service Overview

## System Architecture

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## Product & Solution

| | Product & Solution |
|---|---|
| **Electrical Fire Protection System** | 1 iEF Electrical Fire Protection System Console Unit  <br>2 iEF Electrical Fire Monitoring Detectors   |
| **Fire-Fighting Equipment Power Supply Monitoring System** | 3 iFPM Fire-Fighting Equipment Power Supply Monitoring System Console Unit  <br>4 5 iFPM-V/VA Single-Channel / Dual-Channel Voltage/Current Sensors  |
| **Standalone Detection and Monitoring Products** | 6 Edge Gateway / Data Acquisition Devices<br>(Compatible with third-party management software or Fourier™ EMS; remote configuration of sensors/detectors can be achieved via Polaris™ installation)<br>7 Arc Fault Detector  <br>8 Electrical Fire Protection Devices  |
| **Electrical Fire Current-Limiting Protection Device** | 9 Electrical Fire Current-Limiting Protection Device  |

# iEF Electrical Fire Protection System

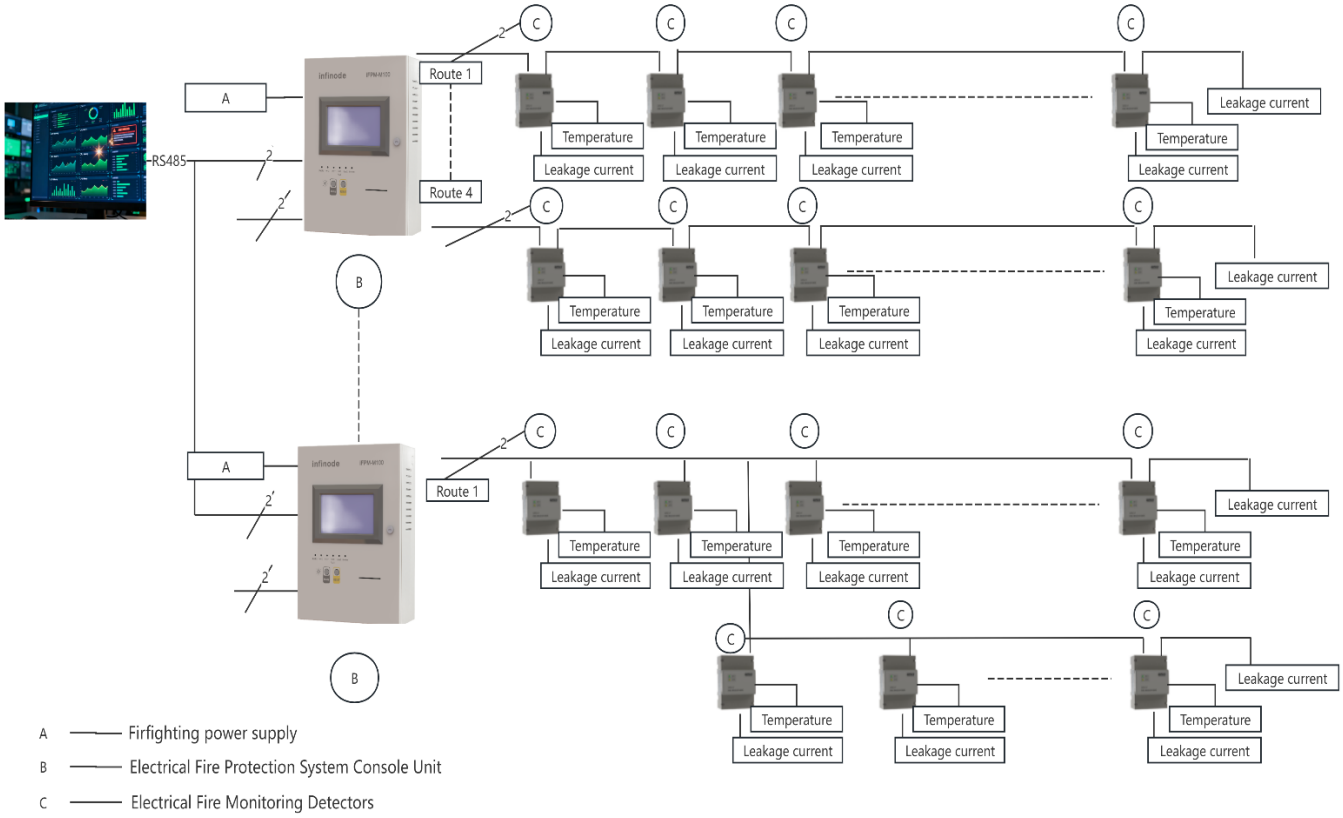
***monitoring multi-zone, multi-circuit wirings with a smart, simple and easy-to-install system***

## System Overview

The **iEF-M100 Multi-Loop Wall-Mounted Electrical Fire Protection System** works seamlessly with the **iEF-DS and iEF-DU Series Detectors** to provide round-the-clock monitoring of residual currents and temperature rises in power circuits and electrical equipment.

Using a bus-based connection, the system collects and displays real-time data from all detectors. When any reading exceeds preset alarm thresholds, an instant alert is sent, enabling rapid response to potential electrical fire hazards.

Designed for comprehensive coverage, the **iEF-M100** gives a clear overview of residual currents, alarms, and power supply status throughout a building's electrical network. By detecting issues such as wiring degradation or moisture-related anomalies early, it helps prevent electrical fires before they occur, ensuring both safety and peace of mind.




## Applications

This electrical fire protection system is suitable for high-risk, high-protection-level, densely populated areas. It is compatible with TN-C, TN-S, and TT wiring systems.

## Electrical Fire Protection System Console Unit iEF-M100

**The iEF-M100 Electrical Fire Monitoring Console Unit** is a wall-mounted, multi-loop electrical fire monitoring device designed for continuous supervision of electrical circuits.

Each Console Unit supports up to four configurable loops, with each loop accommodating up to 127 detectors (maximum 508 detectors per Console Unit). Multiple Console Units can be networked in a primary–secondary architecture to enable scalable system expansion.

The system is suitable for smart buildings, commercial complexes, industrial and mining facilities, telecommunications infrastructure, and other critical applications. It delivers reliable electrical fire risk monitoring by detecting faults within electrical circuits at an early stage.

### Features

- **System Architecture, Power & Reliability**
  - Wall-mounted Console Unit with integrated centralized power supply, providing power to field sensors and acquisition modules via a proprietary communication protocol.
  - Features high immunity to electromagnetic interference; supports non-polar wiring and star, tree, and bus network topologies.
- **Scalability, Networking & Expansion**
  - Each Console Unit supports up to four configurable loops, accommodating up to 127 detectors per loop (maximum 508 detectors per unit).
  - Console Units can be networked in a primary–secondary architecture to enable scalable system expansion.
- **Data Management, Security & Control**
  - Multi-user management with configurable administrator and operator permissions.
  - High-capacity data storage with fast retrieval of alarm and event records.
  - Provides audible and visual alarm indication, relay interlock control outputs, and optional printing functionality.
- **Installation, Operation & User Interface**
  - Wall-mounted installation with built-in self-check, reset, mute, fault alarm, monitoring alarm, and alarm record/query functions.
  - Equipped with a 7-inch colour touchscreen HMI providing an intuitive and user-friendly operation interface.

### Model Selector

| Key Performance & Features | | iEF-M100 |
|---|---|---|
| Technical Specifications | Main Operating Voltage | AC 187 ~ 242V， 50/60HZ |
| | Maximum Power Consumption | 80W |
| | Communication Method with Detectors | Proprietary protocol |
| | Communication Distance | 1200m |
| | Number of Loops | 4 |
| | Load Capacity per Loop | 127 Detectors per Loop |

| | | |
|---|---|---|
| | Load Capacity for Four Loops | Up to 508 Detectors in Total |
| | Number of Stored Fault Records | 500,000 Records |
| | Backup Power Supply | DC 12V， 12AH， 1battery |
| | Relay Output Capacity | 5A@250VAC, 5A@30VDC |
| | Enclosure Protection Rating | IP30 |
| | Operating Temperature | -10℃~50℃ |
| | Storage Temperature | -10℃~60℃ |
| | Relative Humidity (Temperature) | Relative Humidity: ≤90% at 20°C, Non-Condensing |
| | Enclosure Material | Metal |
| | Dimensions | L300mm*W155mm*H400mm |
| | Mounting | Wall-Mounted |
| Real-time collection of alarm information, measurement data, and fault status from each detector | | ■ |
| Automatic detection of device component faults or damage | | ■ |
| Historical data storage and retrieval; query of alarms and event information | | ■ |
| Multi-user management with configurable administrator and operator permissions | | ■ |
| Configurable residual current, temperature alarm, and delays for each detector | | ■ |
| Printing Function (Optional) | | ■ |
| Upstream Communication | RS485 | ■ |
| | Ethernet | Optional |
| Downstream Communication | Proprietary protocol | ■ |
| Human-Machine Interface: 7-inch Colour LCD | | ■ |
| Status Indicator Lights | | ■ |
| Operation Buttons | | ■ |
| Audible and Visual Alarm | | ■ |
| Interlock Control Output / Relay Output | | ■ |

## iEF-DS Series Electrical Fire Monitoring Detector

**The iEF-DS Series Electrical Fire Monitoring Detectors** are designed for use in intelligent building power distribution systems, providing real-time monitoring of residual current and cable temperature. Measurement data is transmitted to the monitoring host via proprietary protocol for analysis and processing.

The detectors support multi-channel leakage current or temperature monitoring, with manual configuration available for each residual current or temperature measurement channel to meet diverse on-site requirements. Featuring a compact design, the product is easy to install and well suited for a wide range of applications.


## Features

- **Designed for use with the iEF-M100 monitoring Console Unit**
- **Supports simultaneous measurement of up to 6 channels of residual current and temperature (iEF-DS6).** When residual current or temperature exceeds the preset threshold, the detector activates audible and visual alarms and transmits the alarm to the monitoring host**.**
- **Communication:** Fire-rated dual bus ensuring secure and reliable communication.
- **Display Function:** Displays various fault and alarm information.
- **Inherent Leakage Current Compensation:** Allows configuration of the inherent leakage current of the monitored circuit to prevent false alarms.

## Auxiliaries

- **iEF-YCT-100/315/630**

- **iEF-FCT-315/630/1000**

# Model Selector

| Key Performance & Features | | iEF-DS-6 | iEF-DS-8 |
|---|---|---|---|
| Technical Specifications | Rated Operating Voltage | DC 24V | |
| | Operating Voltage Range | DC 15V ~ 28V | |
| | Maximum Power Consumption | 50mW | |
| | Communication Method with Detectors | Proprietary protocol | Proprietary protocol |
| | Communication Distance | 1200m | 1200m |
| | Mounted | DIN-rail mounted | DIN-rail mounted |
| | Operating Temperature | -10℃~50℃ | -10℃~50℃ |
| | Storage Temperature | -10℃~60℃ | -10℃~60℃ |
| | Relative Humidity (Temperature) | Relative Humidity: ≤90% at 20°C, Non-Condensing | Relative Humidity: ≤90% at 20°C, Non-Condensing |
| | Enclosure Protection Rating | IP30 | IP30 |
| | Dimensions | L72mm*W95mm*H55mm | L72mm*W95mm*H55mm |
| Function | Number of Residual Current Channels | 1 | 8 |
| | Residual Current Measurement Accuracy Class | 5 | |
| | Residual Current Measurement Range | 100~3500mA | |
| | Residual Current Alarm Setting Range and Adjustment Resolution | 300~1000mA, 1mA | |
| | Inherent Leakage Current Compensation Setting Value | 0~2500mA, 1mA | |
| | Number of Temperature Channels | 5 | x |
| | Temperature Measurement Range | -20℃ ~ 120℃ | x |
| | Leakage Current / Temperature Pre-Alarm Settings | 55 ~ 100℃, 1℃ | x |

## iEF-DU Series Electrical Fire Monitoring Detector

**The iEF-DU Combined-Type Electrical Fire Monitoring Detector Series** features an innovative integrated design that combines the information processing module with the residual current transformer, requiring minimal installation space. Only a bus connection is needed, with no additional wiring, making installation and cabling extremely convenient.

The detector can collect **one residual current channel** and **five temperature channels,** providing effective monitoring of electrical fire risks.

## Features

- **Designed for use with the iEF-M100 monitoring console unit.**
- **Supports simultaneous measurement of up to 6 channels of residual current and temperature (iEF-DS6).** When residual current or temperature exceeds the preset threshold, the detector activates audible and visual alarms and transmits the alarm to the monitoring console unit.
- **Communication:** Proprietary protocol ensuring secure and reliable communication.
- **Display Function:** Displays various fault and alarm information.
- **Inherent Leakage Current Compensation:** Allows configuration of the inherent leakage current of the monitored circuit to prevent false alarms.

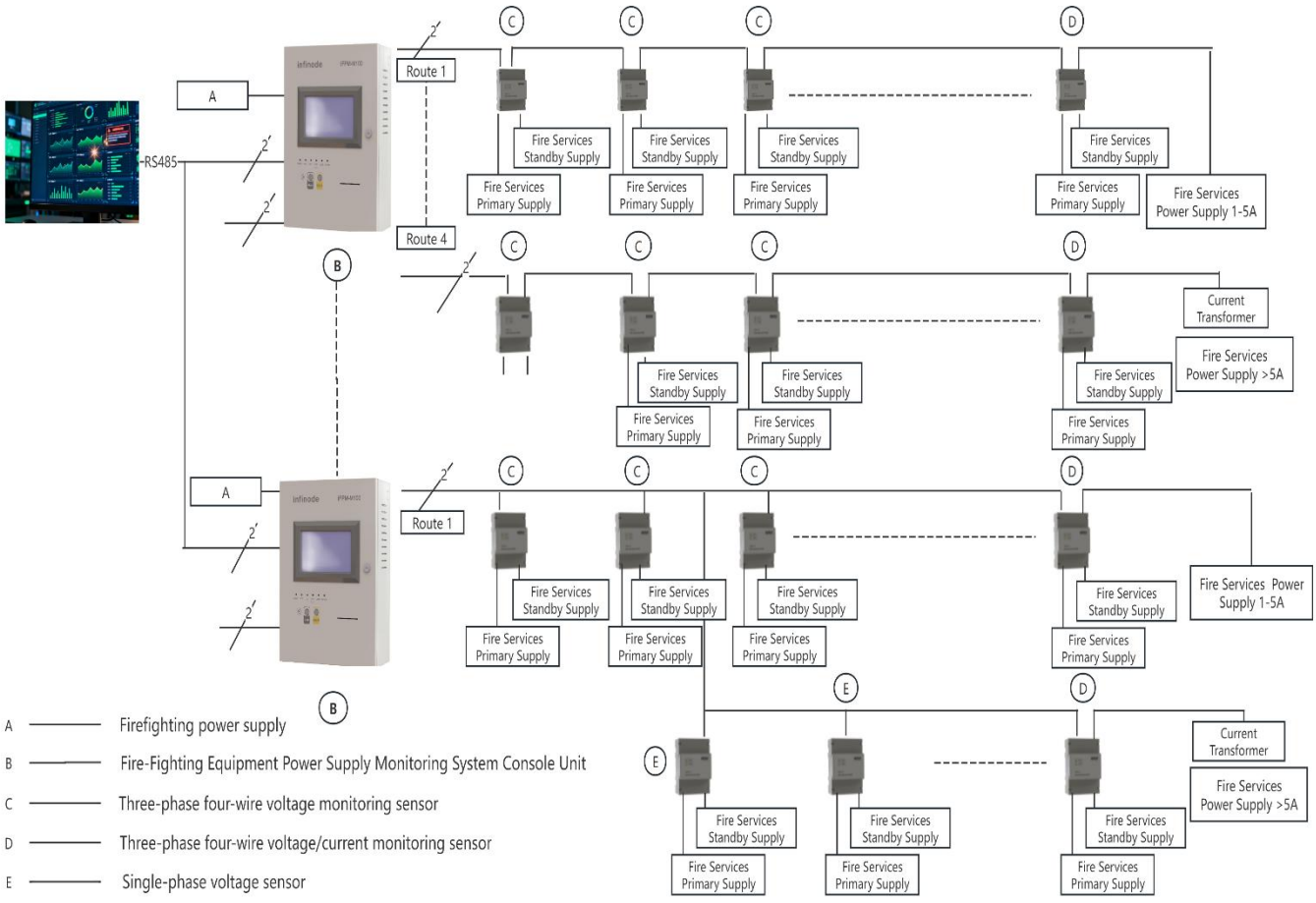
## Model Selector

| Key Performance & Features | | iEF-DU | | | | | |
|---|---|---|---|---|---|---|---|
| | | -100Y | -315Y | -315F | -630Y | -630F | -1000F |
| Technical Specifications | Rated Operating Voltage | DC 24V | | | | | |
| | Operating Voltage Range | DC 15V ~ 28V | | | | | |
| | Maximum Power Consumption | 50mW | | | | | |
| | Main Circuit Rated Current | 100A | 315A | 315A | 630A | 630A | 1000A |
| | Communication Interface | Proprietary protocol | | | | | |
| | Communication Distance | 1200m | | | | | |
| | Mounted | DIN-rail mounted | | | | | |
| | Installation Location | Cable | Cable | Cable | Busbar | Busbar | Busbar |
| | Cable Entry Diameter (mm), Closed Type | Φ45 | Φ80 | 15x38 | Φ105 | 25x50 | 32x60 |
| | Operating Temperature | -10℃~50℃ | | | | | |
| | Storage Temperature | -10℃~60℃ | | | | | |
| | Relative Humidity (Temperature) | Relative Humidity: ≤90% at 20°C, Non-Condensing | | | | | |
| | Enclosure Protection Rating | IP30 | | | | | |
| Function | Number of Residual Current Channels | 1 | | | | | |
| | Residual Current Measurement Accuracy Class | 5 | | | | | |
| | Residual Current Measurement Range | 100~3500mA | | | | | |
| | Residual Current Alarm Setting Range and Adjustment Resolution | 300~1000mA, 1mA | | | | | |
| | Inherent Leakage Current Compensation Setting Value | 0~2500mA, 1mA | | | | | |
| | Number of Temperature Channels | 5 | | | | | |
| | Temperature Measurement Range | -20℃ ~ 120℃ | | | | | |

# Fire-Fighting Equipment Power Supply Monitoring System

## System Overview

The system consists of the JSPM-M100 multi-circuit wall-mounted Fire Equipment Power Monitoring Console Unit and JSPM-V/VA series voltage and current sensors. It provides 24/7 continuous monitoring of power supplies for fire protection equipment. In the event of faults such as overvoltage, undervoltage, overcurrent, or phase loss, the system automatically generates fault signals, issues real-time alarms, and records events for monitoring and analysis. The system is designed with high reliability, real-time performance, digitalization, intelligence, networking, automation, and continuous monitoring capabilities. It enables real-time status monitoring and centralized display of power conditions, effectively preventing critical situations where fire protection equipment fails to operate due to power supply faults during a fire. This ensures the overall reliability of the fire protection and emergency response system.



## Application Scenarios

The installation of voltage and current sensors within the Fire Equipment Power Monitoring System shall ensure that the operational status of all power supplies serving the fire protection systems is continuously monitored and capable of real-time display at the Fire Equipment Power Monitoring Console Unit and/or within the Fire Control Room.

Sensors shall be installed, as applicable, at the following locations to ensure full coverage of essential services power supplies:

• At the outgoing terminals of main switchboards and fire services switchboards supplying essential fire protection equipment within the building.

• At the dual supply incoming terminals of fire electrical control equipment (including fire pump controllers, smoke exhaust fan controllers, etc.).

• At the outgoing terminals of fire services power supply units installed within individual fire compartments.

• At the outgoing terminals of distribution boards supplying fire protection equipment.

• At the incoming terminals of emergency power supplies (including generator or battery-backed systems) serving fire protection equipment.

• At the incoming terminals of emergency lighting distribution boards.

• For equipment supplied by multiple main power sources, each main incoming supply circuit shall be individually monitored at its point of supply.

The monitoring arrangement shall ensure compliance with applicable Australian Standards and support the reliability of essential fire safety measures.

## Electrical Fire Protection System Console Unit iFPM-M100


The iFPM-M100 Fire Equipment Power Status Monitoring Console Unit is a wall-mounted, multi-circuit monitoring device designed for fire services power supervision.

The Console Unit supports up to four (4) monitoring loops, which may be configured as required. Each loop can accommodate up to 127 sensors, allowing a maximum of 508 sensors when fully populated across four loops.

Multiple Console Units can be networked in a master–slave configuration, enabling centralized monitoring. In such arrangements, the master unit can display and supervise the power supply status of fire protection equipment monitored by sensors connected to subordinate (slave) units.

## Features

- **System Architecture, Power & Reliability**
  - Wall-mounted Console Unit with integrated centralized power supply, providing power to field sensors and acquisition modules via a proprietary communication protocol.
  - Features high immunity to electromagnetic interference; supports non-polar wiring and star, tree, and bus network topologies.
- **Scalability, Networking & Expansion**
  - Each Console Unit supports up to four configurable loops, accommodating up to 127 detectors per loop (maximum 508 detectors per unit).
  - Console Units can be networked in a primary–secondary architecture to enable scalable system expansion.
- **Data Management, Security & Control**
  - Multi-user management with configurable administrator and operator permissions.
  - High-capacity data storage with fast retrieval of alarm and event records.
  - Provides audible and visual alarm indication, relay interlock control outputs, and optional printing functionality.
- **Installation, Operation & User Interface**
  - Wall-mounted installation with built-in self-check, reset, mute, fault alarm, monitoring alarm, and alarm record/query functions.
  - Equipped with a 7-inch colour touchscreen HMI providing an intuitive and user-friendly operation interface.

## Model Selector

| Key Performance & Features | | iFPM-M100 |
|---|---|---|
| Technical Specifications | Main Operating Voltage | AC 187 ~ 242V，50/60HZ |
| | Maximum Power Consumption | 80W |
| | Communication Method with Detectors | proprietary protocol |
| | Communication Distance | 1200m |
| | Number of Loops | 4 |
| | Load Capacity per Loop | 127 Detectors per Loop |
| | Load Capacity for Four Loops | Up to 508 Detectors in Total |
| | Fault Record Storage | 500,000 Records, expandable |
| | Backup Power Supply | DC 12V，12AH，1battery |
| | Relay Output Capacity | 5A@250VAC, 5A@30VDC |
| | Enclosure Protection Rating | IP30 |
| | Operating Temperature | -10℃~50℃ |
| | Storage Temperature | -10℃~60℃ |
| | Relative Humidity (Temperature) | Relative Humidity: ≤90% at 20°C, Non-Condensing |
| | Enclosure Material | Metal |
| | Dimensions | L300mm*W155mm*H400mm |
| | Mounting | Wall-Mounted |
| Real-time collection of alarm information, measurement data, and fault status from each detector | | ■ |
| Automatic detection of device component faults or damage | | ■ |
| Historical data storage and retrieval; query of alarms and event information | | ■ |
| Multi-user management with configurable administrator and operator permissions | | ■ |
| Configurable residual current, temperature alarm, and delay alarm values for each detector | | ■ |
| Real-time printing of fault and alarm information | | ■ |

| | | |
|---|---|---|
| Upstream Communication | RS485 | ■ |
| | Ethernet | Optional |
| Downstream Communication | Proprietary protocol | ■ |
| Human-Machine Interface: 7-inch Colour LCD | | ■ |
| Status Indicator Lights | | ■ |
| Operation Buttons | | ■ |
| Audible and Visual Alarm | | ■ |
| Interlock Control Output / Relay Output | | ■ |

## iFPM-V/VA Series Voltage and Current Sensors


**The iFPM-V/VA Series Voltage and Current Sensors** are designed for monitoring the power supply status of fire protection equipment, providing real-time voltage and current monitoring. Measurement data is transmitted to the Fire Equipment Power Monitoring Console Unit via a proprietary communication protocol for processing and analysis.

The sensors support single-channel and multi-channel voltage and current monitoring, with configurable measurement parameters for each channel to meet diverse site requirements. They can detect fault conditions including overvoltage, undervoltage, power interruption, and overload, and trigger audible and visual alarms at the Console Unit.

Featuring a compact, wall- or panel-mounted design, the sensors are easy to install and suitable for integration into a wide range of fire protection systems and building power monitoring applications.

## Features

- **System Integration & Compatibility**
  - Designed for use with the JSPM-M100 Fire Equipment Power Monitoring Console Unit.
- **Measurement & Fault Detection**
  - Supports single-channel and multi-channel voltage and current monitoring to assess power supply status.
  - Capable of detecting fault conditions including overvoltage, undervoltage, power interruption, and overload.
  - Fault event information is transmitted to the Console Unit for real-time monitoring and alarm indication.
- **Communication**
  - Uses the fire services dual-bus system, providing reliable and secure communication. Display Function: Displays various fault and alarm information.
- **Display & Alarm**
  - Displays various fault conditions and alarm information on the Console Unit for immediate operator awareness.

## Model Selector

| Key Performance & Features | | JSPM-V1 | JSPM-V2 | JSPM-VA |
|---|---|---|---|---|
| Technical Specifications | Rated Operating Voltage | DC 24V | | |
| | Operating Voltage Range | DC 15V ~ 28V | | |
| | Maximum Power Consumption | 50mW | | |
| | Communication Method with Detectors | | | |
| | Communication Distance | 1200m | | |
| | Mounting | Wall-Mounted | | |
| | Operating Temperature | -10℃~50℃ | | |
| | Storage Temperature | -10℃~60℃ | | |
| | Relative Humidity (Temperature) | Relative Humidity: ⩽90% at 20°C, Non-Condensing | | |
| | Enclosure Protection Rating | IP30 | | |
| | Dimensions | L72mm*W95mm*H55mm | | |
| Function | Applicable System | 3PH4W | | |
| | Voltage Measurement Channels | 1 | 2 | 2 |
| | Voltage Measurement Range | 100-300VAC | 100-300VAC | 100-300VAC |
| | Current Measurement Channels | x | x | 3 |
| | Current Measurement Range (CT Secondary Side) | x | x | 0-5A |

## Auxiliaries

5A secondary current transformer

# Standalone Arc Fault Detector (AFD)

## iEF-AFD


Electric/fire Safety

Condition Monitoring

Arc Fault Monitoring

The **iEF-AFD Fault Arc Detector** can detect dangerous fault arcs caused by cable aging or loose connections, which may easily trigger fires. This product is suitable for situations that can cause electrical fires, including:

**Parallel Arcs:** Occur when insulation damage between two live conductors results in a resistive short circuit. Because the fault current is very small, circuit breakers may not detect it. Additionally, with no leakage current to ground, residual-current devices also cannot detect the fault.

**Series Arcs:** Occur when a single conductor or connection is damaged. Localized heating causes the insulation material to carbonize, allowing part of the current to flow through the carbonized insulation.

## Features

- **Fast Response:** Detects fault arcs immediately and transmits the alarm to the monitoring host
- **Stable & Reliable:** Built-in comprehensive electrical equipment database to prevent false alarms
- **Easy Installation**: DIN rail mounted design for simple and convenient installation.
- **Strong Anti-Interference Capability:** Advanced electromagnetic compatibility design ensures high resistance to electromagnetic interference

## Model Selector

| Key Performance & Features | | iEF-AFD |
|---|---|---|
| Technical Specifications | Rated Voltage | 230V |
| | Main Circuit Rated Current | 10/16/32/40/63A |
| | Maximum Power Consumption | 3W |
| | Mounting | DIN-rail mounted |
| | Operating Temperature | -10℃~50℃ |
| | Storage Temperature | -10℃~60℃ |
| | Relative Humidity (Temperature) | Relative Humidity: ≤90% at 20℃, Non-Condensing |
| | Enclosure Protection Rating | IP30 |
| Measurement | Parallel Arc Measurement | ■ |
| | Series Arc Measurement | ■ |
| Alarm | Indicator Light | ■ |
| | Relay Output | ■ |
| | Audible Alarm | ■ |
| DO Output | | ■ |
| Communication | RS485 | ■ |
| Self-test/Reset Function | | ■ |

# Electrical Fire Protection Devices

## iPM3603

Electric/fire Safety

Energy Management

Residual Current Monitoring

The **iPM3603 Electrical Fire Protection Devices** are combined-type detectors integrating multiple functions, including three-phase full electrical quantity measurement, residual current monitoring, three-phase over/under voltage detection, current overload detection, conductor temperature monitoring, and fire smoke detection. Equipped with a built-in communication module (wired/wireless), the detectors support local networking or cloud connectivity, enabling remote monitoring through the electrical fire IoT platform. All measured values, alarms, and fault status are displayed in real time. This product series features a user-friendly human-machine interface, intuitive and convenient operation, easy installation, stable communication, and simple wiring, making it ideal for comprehensive electrical fire monitoring applications.

### Features

- **Continuous Power/Energy and Residual Current Monitoring**
  - Power/Energy and Residual current data displayed on the on-device display.
  - Data readable via RS485 communication for supervisory system
  - Revenue grade energy measurement accuracy
  - Type-A residual current monitoring for both AC and pulsed DC residual current components.
- **Operation**
  - Configurable alarm and relay output thresholds.
  - Both visual and sound indication.
- **Protection Relay**
  - Relay outputs can be used with a circuit breaker, contactor, or indicator to provide protection and indication of residual current, over voltage, under voltage, over current, over temperature.
  - Configurable delay of relay outputs.
- **M2M Interface**
  - RS485 interface
- **AI-enhancement** *NEW*
  - Considering using our FOURIER EMS to enhance the system performance via AI based residual current data analysis.
  - Digital inputs/outputs
  - Programmable digital outputs

# Model Selector

| Key Performance & Features | | iPM3603 | iPM3603S | iPM3603LR | iPM3603C |
|---|---|---|---|---|---|
| Technical Specifications | Rated Voltage | 220VAC, 50Hz | | | |
| | Residual Current Alarm Setting Value | 100mA ~ 1000mA | | | |
| | Current Alarm Setting Value | 10A ~ 630A | | | |
| | Overvoltage Alarm Setting Value | 220 ~ 300VAC | | | |
| | Undervoltage Alarm Setting Value | 100 ~ 220VAC | | | |
| | Temperature Alarm Setting Value | 55℃ ~ 140℃ | | | |
| | Normal Standby Current | | ~85mA | | |
| | Mounting | DIN-rail mounted | Panel mounted | DIN-rail mounted | DIN-rail mounted |
| | Operating Temperature | -10℃~50℃ | | | |
| | Storage Temperature | -10℃~60℃ | | | |
| | Relative Humidity (Temperature) | Relative Humidity: ≤90% at 20°C, Non-Condensing | | | |
| | Enclosure Protection Rating | IP30 | | | |
| Measurement | Parallel Arc Measurement | ■ | | | |
| | Series Arc Measurement | ■ | | | |
| Pre-alarm | Configurable Threshold and Delay | ■ | | | |
| | Local Display | ■ | | | |
| Alarm | Configurable Threshold and Delay | ■ | | | |
| | Local Display | ■ | | | |
| | Relay Output | ■ | | | |
| DO Output | | ■ | | | |
| Communication | RS485 | ■ | ■ | ■ | ■ |
| | LTE | | | ■ | |
| | LoRaWAN | | | | ■ |
| Remote Configuration | | Polaris™ | | | |

# Electrical Fire Current-Limiting Protection Device

## iEF-CLP Series

The **iEF-CLP Series Electrical Fire Current-Limiting Protectors** can rapidly limit short-circuit currents at microsecond-level speeds, providing arc-extinguishing protection. The current is limited before the short-circuit reaches its full magnitude, preventing continuous arcing and sparks that could ignite combustible materials during electrical faults.

This product uses high-quality imported power MOS devices, featuring low on-resistance and a wide safe operating area. It offers high reliability, stability, redundancy, and safety.

## Features

- **Modular Current-Limiting Protector Solution:** Supports expansion and development to meet differentiated market needs.
- **Simple Wiring:** Modules require only L-line input, L-line output, and N-line for current-limiting protection.
- **Microsecond-Level Interruption:** Prevents the formation of arcs.
- **Modular Interfaces:** TTL communication interface, output interface, indicator light interface, and button interface facilitate convenient and rapid expansion.

## Model Selector

| Key Performance & Features | | iEF-CLP-xx-Q | iEF-CLP-xx-K |
|---|---|---|---|
| Technical Specifications | Rated Voltage | 220VAC, 50Hz | |
| | Rated Current | 20A、45、63A | 20A、45、63A |
| | Current Limiting Protection | 42A、95A、135A | 42A、95A、135A |
| | Current Limiting Protection Time | <150us | <150us |
| | Mounting | DIN-rail mounted | Embedded Module |
| | Operating Temperature | -10℃∽50℃ | -10℃∽50℃ |
| | Storage Temperature | -20℃∽50℃ | -20℃∽50℃ |
| | Relative Humidity (Temperature) | Relative Humidity: ≤90% at 20°C, Non-Condensing | Relative Humidity: ≤90% at 20°C, Non-Condensing |
| | Enclosure Protection Rating | IP30 | IP30 |
| Alarm | Local Display | ■ | X |
| | Audible and Visual Alarm | ■ | X |
| | Relay Output | ■ | ■ |
| DO Output | | ■ | ■ |
| Communication | | Optional RS485 / NB-IoT/ Proprietary protocol | TTL |

# ODM/soft-ODM services



## R & D capabilities for power/energy/logic controller/data centre applications

- **Embedded System Design**
- **ARM-based Embedded and Linux Application Development**
- **Monitoring/Measurement Technologies**
- **Analog/Digital Signal Processing**
- **I/O Control Technologies**
- **Power Supply Monitoring and Protection**
- **Industrial Field Bus**
- **Networking**
- **Wired/Wireless Communication**
- **IoT Whole-stack Techniques**
- **Industrial Design**
- **We can help customer conduct pilot evaluation/tests of product standard conformity, potentially help them reduce the time and cost of lab tests**
  - **Pattern Approval**
  - **Product Safety**
  - **EMC**
  - **EMR**
- **Well-quipped Safety， Environment, EMC, EMR testing capabilities**

## Device$^{PLUS+}$ ------- our IoT capabilities

| | | |
|---|---|---|
| **Embedded:**<br>**MCU/MPU + Sensor + I/O** | ■ **Embedded system Design, development, manufacturing and testing**<br>■ **Power supply design**<br>■ **Measurement, analogue/digital signal processing**<br>■ **I/O**<br>■ **Safety, EMC, EMR conformity design** | **We use:** |
| **Communication/Networking** | ■ Field bus experience and knowledge: Ethernet, Modbus, Profibus, CAN Bus, PROFINET, LoRa | |

| | | |
|---|---|---|
| | ■ Networking experience and knowledge: LPWAN, LTE, IEEE802.11<br>■ Application Level: HTTP, MQTT etc. | |
| **Edge Computing/Gateway** | ■ Data query and control logic implementation (Python, C++)<br>■ Local database<br>■ Local dashboard<br>■ Data analysis (powered by Azure IoT Edge and our machine learning partner companies) | **We use:** |
| **Cloud Application**<br>**Device Management** | ■ We can use the Azure platform to provide tailored device management functions.<br>■ Our hardware platform is well-tuned with the Azure platform<br>■ Other public cloud platform (such as AWS, Ali-cloud) can also be implemented<br>■ Support of customer's proprietary server | **We use:**<br>Azure IoT Central<br>Customer's proprietary Server |

## ↗ Manufacturing capabilities (via our BFHY Electric brand)

- Pilot and Batch Manufacturing
- Project/Product Management
- Quality control
- Dedicated Inline Testing Equipment

## ↗ Cost control for the best outcome of our clients

## Signature ODM/soft-ODM services

**ATS-ODM**

*ODM of automatic transfer switches and related products*

- **ATS**
- **STS (solid state switch)**
- **Rack-ATS**

**PDU-ODM**

*Comm and energy management part of power distribution unit*

- **Rack-PDU**
- **Inline-meter**

**iDLC3 soft-ODM**

*Firmware customisation based on iDLC3 series hardware*

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