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IoT-Enabled

Addressable
Monitor Module

Model-**AA-IoT-SIM-101**

Intelligent Supervisory Monitoring with IoT Intelligence

The Airlight AU-IoT-SIM-101 is an IoT-enabled addressable single input monitor module designed to meet comprehensive supervisory requirements of fire protection systems with cloud-connected monitoring capabilities. This intelligent device utilizes advanced monitoring circuits to continuously examine contact status of connected water flow switches, pressure switches, valve tamper switches, building automation inputs, and other supervisory devices. Real-time contact status changes, supervisory events, and device health data are automatically transmitted to the fire alarm control panel which is seamlessly uploaded to the cloud via internet connectivity. Powered directly by signaling line circuit, it eliminates need for separate power wiring while providing continuous electrical supervision of monitored circuits. The addressable capability with soft addressing enables flexible device ID configuration remotely from control panel without physical programming tools. IoT connectivity enables remote monitoring of all supervisory inputs, status change verification, response time tracking, and comprehensive system integration diagnostics, empowering facility managers to ensure fire protection system readiness, verify sprinkler system supervision, and maintain regulatory compliance from any location worldwide.

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Core Features

- IoT Connectivity
- Electrical Supervision
- Visual LED Status
- Event Tracking
- Cloud Operation Logging
- Loop-Powered
- Remote Configuration
- Addressable Control
- Soft Addressing
- Contact Monitoring
- Supervisory Compliance
- UL & EN Certified

IoT & Smart Monitoring Capabilities

Real-Time Call Monitoring & Cloud Upload

Continuously monitors connected contact status and supervisory input conditions. All status changes, supervisory events, timestamps, and electrical parameters automatically transmitted to control panel and uploaded to cloud for remote monitoring and compliance documentation.

Intelligent Supervisory Alerts

Instant cloud-based notifications for supervisory status changes including valve tampering, water flow activation, pressure loss, system component faults, electrical supervision failures, and maintenance requirements. Multi-channel alerts ensure rapid awareness and response capability.

Remote Testing & Verification

Conduct remote functional tests of monitoring circuits and connected supervisory devices without physical site access. Verify contact supervision, electrical circuits, and system integration from centralized monitoring center for proactive maintenance.

Remote Access & Management

Facility managers, fire protection system supervisors, and maintenance teams can monitor supervisory input status, verify system integrity, track valve positions, and access historical event records through web-based platforms and mobile devices from any location worldwide.

Supervisory Event Analytics

Cloud-based analytics track supervisory event patterns, valve operation frequency, system status history, and response times. Historical data enables predictive maintenance planning, identifies recurring issues, and supports regulatory compliance verification.

Proactive Device Health Monitoring

IoT-based continuous monitoring of input circuits, contact status, electrical supervision, and addressable communication. Predictive maintenance alerts identify potential supervision failures before they affect fire protection system reliability or regulatory compliance.

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Supervisory Monitoring Applications

Water Flow Switch Monitoring

Monitors water flow switches in sprinkler systems to detect water discharge indicating sprinkler activation. Instant notification enables rapid response to sprinkler system operation, potential fire events, or system malfunctions requiring investigation.

Valve Tamper Switch Monitoring

Monitors tamper switches on control valves, gate valves, and butterfly valves. Detects unauthorized valve closure preventing water supply interruption to sprinkler systems, ensuring continuous fire protection system readiness per NFPA requirements.

Building Automation Integration

Interfaces with building management systems, HVAC status contacts, elevator status, emergency power availability, and other building systems requiring fire alarm system supervision and coordination during emergencies.

Pressure Switch Supervision

Supervises pressure switches monitoring fire pump discharge pressure, sprinkler system pressure, standpipe pressure, and pre-action system air pressure. Detects pressure loss or abnormal conditions requiring immediate attention and maintenance.

Fire Pump Supervision

Monitors fire pump running status, controller operation, power supply status, and pump room environmental conditions. Ensures fire pump readiness and detects pump operation during fire events or routine testing procedures.

Environmental Monitoring

Monitors environmental conditions including temperature extremes in sprinkler rooms, water tank levels, room flooding detection, equipment room access, and other supervisory conditions affecting fire protection system integrity.

Advanced Technical Features

Soft Addressing Configuration

Digital soft addressing enables easy device ID configuration remotely through control panel without physical DIP switches or programming tools. Flexible addressing simplifies installation, system modifications, and device replacement procedures without on-site visits.

Loop-Powered Operation

Draws operating power directly from signaling line circuit, eliminating need for separate power wiring or local power supplies. Simplified installation reduces material costs and wiring complexity while maintaining reliable supervision through loop communication.

Visual LED Supervision

Blinking green LED during normal scan provides visual confirmation of operational status and addressable communication. Steady red LED during supervisory alarm indicates contact status change for easy on-site verification and troubleshooting.

Comprehensive Electrical Supervision

Continuous monitoring of input circuits and connected contact wiring ensures supervision integrity. Automatic detection of open circuits, short circuits, ground faults, and wiring issues with instant reporting to panel and cloud for proactive maintenance.

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Contact Status Monitoring

Advanced monitoring circuitry examines normally open or normally closed contact status with precise detection. Distinguishes between normal, alarm, trouble, and supervision fault conditions for accurate system response and event classification.

Remote ID Configuration

Device ID can be changed remotely from control panel without physical access to module. Enables flexible system reconfiguration, device replacement, zone reassignment, and addressing changes without on-site programming or service visits.

Operating Principle

Loop-Powered Supervision: Module draws operating power from addressable signaling line circuit, eliminating separate power requirements while enabling continuous communication with control panel for 24/7 supervision

Addressable Communication: Digital two-way communication with control panel enables individual device identification, status reporting, remote configuration capability, and continuous electrical supervision of monitored circuits

Contact Status Monitoring: Monitoring circuitry continuously examines connected contact status (normally open or normally closed configuration) detecting state changes indicating supervisory conditions

Supervisory Event Detection: When monitored contact changes state (valve closed, water flow detected, pressure loss, etc.), module immediately transmits supervisory alarm signal with unique device address to control panel

Precise Location Identification: Control panel receives device address and displays exact supervisory device location, zone information, and device type for rapid investigation and response by maintenance staff.

Cloud Data Transmission: All supervisory events, contact status changes, timestamps, restoration events, and electrical supervision status automatically uploaded to cloud servers for remote monitoring and compliance documentation

Electrical Circuit Supervision: Continuous monitoring of input wiring detects open circuits, short circuits, ground faults, and wiring issues with automatic trouble reporting for proactive maintenance

Visual Status Indication: LED provides local visual feedback—green blink during normal supervision, steady red during supervisory alarm condition for easy on-site verification and system status assessment

Automatic Restoration: When supervisory condition is resolved and contact returns to normal state, module automatically reports restoration to control panel and cloud with timestamp for complete event documentation.

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Technical Specifications

Electrical Specifications

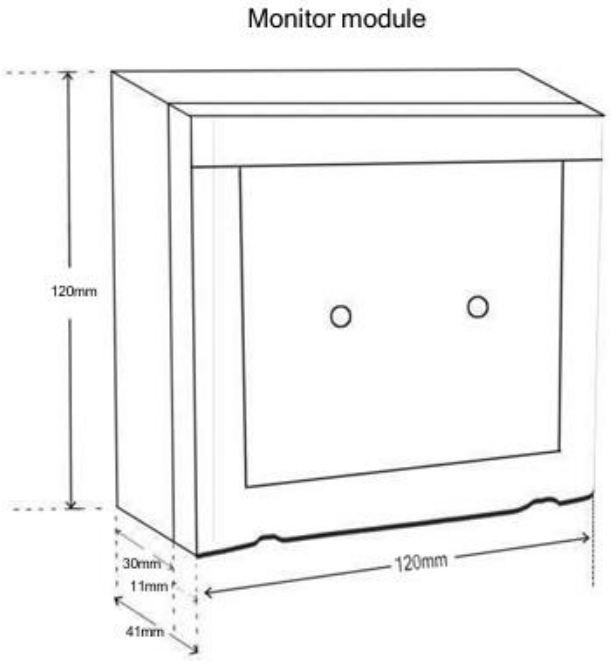
Parameter	Specification
Operating Voltage	18-24V
Quiescent current	200uA
Alarm current	20mA

Mechanical Specifications

Dimensions	Weight	
120x120x45mm	Without Base	178g
	With base	242g

General Specifications

Parameter	Specification
Operating temperature	-10ºC to 55ºC
Storage temperature	-10ºC to 60ºC
Humidity	0-95% RH (Non condensing)
Colour	Red
Housing	ABS



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Compliance &Standards

UL 864	EN 54 – Part 18	Input/Output Device	NFPA Compliant

The AU-IoT-SIM-101 Monitor Module is fully compliant with UL 864 (Standard for Control Units and Accessories for Fire Alarm Systems) and EN 54 Part 18 (Input/Output Devices) standards, ensuring reliable performance and regulatory compliance for supervisory monitoring of fire protection systems, sprinkler systems, and building automation integration across international markets.

Ideal Applications

- **Sprinkler System Supervision:** Water flow switches, valve tamper switches, pressure switches, and system component monitoring
- **Fire Pump Monitoring:** Pump running status, controller operation, power supply supervision, and room environmental conditions
- **Standpipe System Supervision:** Pressure monitoring, valve position, water supply status, and system readiness verification
- **Pre-Action System Monitoring:** Air pressure supervision, cross-zone detection confirmation, and release system status
- **Fire Suppression Systems:** Gas cylinder pressure, release system status, abort switch position, and system component supervision
- **Water Supply Supervision:** Tank level monitoring, water supply valve position, and municipal water pressure monitoring
- **Building Automation Interface:** HVAC status, equipment operation, power supply monitoring, and system integration.
- **Environmental Monitoring:** Room temperature extremes, flooding detection, humidity levels, and equipment room conditions.
- **Access & Security Integration:** Emergency exit status, security system interface, door position monitoring.
- **Equipment Supervision:** Generator status, emergency power availability, critical equipment operation monitoring.

Why Choose AD-IoT-2S103

Cloud-Connected Intelligence: IoT connectivity enables remote monitoring of all supervisory inputs, status verification, and comprehensive fire protection system analytics from any location

24/7 Supervisory Surveillance: Continuous monitoring of critical fire protection system components ensures regulatory compliance and system readiness at all times

Instant Supervisory Alerts: Cloud-based notifications for valve tampering, water flow, pressure loss, and system faults enable rapid investigation and response.

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Loop-Powered Simplicity: Draws power from signaling circuit eliminating separate power wiring, reducing installation costs and complexity by 50%+

Soft Addressing Flexibility: Remote device ID configuration without physical access enables easy system modifications, zone changes, and device replacements

Comprehensive Electrical Supervision: Continuous circuit monitoring detects wiring faults, open circuits, and short circuits before they affect system supervision capability

NFPA Compliance Support: Meets supervisory requirements for sprinkler systems, fire pumps, and water supplies per NFPA 13, 20, 25, and 72

Complete Event Documentation: Cloud-based logging of all supervisory events, restorations, and maintenance actions provides audit trail for inspections and compliance

Remote Testing Capability: Verify supervision circuits and device connectivity remotely without on-site visits, reducing maintenance costs and downtime

International Compliance: UL 864 and EN 54-18 certifications ensure global standards compliance across diverse markets and regulatory requirements

Flexible Contact Support: Compatible with both normally open and normally closed contacts for universal application with various supervisory devices

Predictive Maintenance: Historical event analytics identify recurring issues, seasonal patterns, and potential equipment failures before they compromise system integrity

Visual Status Verification: LED indicators provide instant visual confirmation of supervision status and alarm conditions for easy on-site troubleshooting

Ultra-Low Power Consumption: 200µA quiescent current ensures minimal loop loading while maintaining continuous supervision of critical fire protection systems

Future-Ready Platform: IoT connectivity ensures compatibility with emerging facility management technologies and centralized monitoring platforms.

Contact Information

AIRLIGHT Naveen alarm systems

Web: www.airlight.in

Product Information

For detailed technical documentation, installation guides,IoT integration support and product support, Please visit our website or contact your local Airlight representative.