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IoT-Enabled

Addressable

Multisensor detector with speaker

Model-**AA-MDS-IoT-105**

Revolutionary 3-in-1 Smart Safety Solution

The Airlight AA-MDS-IoT-105 is an IoT-enabled digitally controlled addressable multisensor detector with integrated speaker, combining automatic fire detection, voice evacuation, and public address capabilities in a single compact unit. This intelligent device continuously monitors smoke density and temperature, transmitting real-time data to the fire alarm control panel which is seamlessly uploaded to the cloud via internet connectivity. Designed in compliance with NBC 2016 and international fire safety standards, this aesthetically designed white polycarbonate unit delivers triple functionality while significantly reducing installation costs by eliminating the need for separate speakers, additional cabling, and control panels. Each unit is individually controllable using unique IDs, enabling targeted area voice paging while leaving other zones undisturbed. The control panel routes power, audio signals, and control data through a single 2-core cable, while IoT connectivity enables remote monitoring, diagnostics, and cloud-based analytics for enhanced fire safety management.

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Core Features

- 3-in-1 Design
- Real-Time Monitoring
- Heat Detection
- Contamination Alarm
- IoT Connectivity
- Built-in Speaker
- Soft Addressing
- Corrosion Protection
- Cloud Data Upload
- Smoke Detection
- Remote Configuration
- 2-Wire Technology

IoT & Smart Monitoring Capabilities

Real-Time Temperature Sensing & Cloud Upload

Continuously monitors smoke density and temperature, transmitting real-time data to the control panel which automatically uploads to the cloud via internet connection. Access sensor data, speaker status, and system health from any location worldwide.

Intelligent Event Alerts

Instant notifications for fire detection, abnormal environmental conditions, contamination levels, device connectivity issues, and speaker faults. Multi-channel alerts enable rapid emergency response and intervention.

Enhanced Situational Awareness

Real-time smoke density and temperature display on control panel touchscreen provides critical information for rescue operations. Cloud-based historical trending enables post-incident analysis and system optimization.

Remote Monitoring & Management

Fire safety personnel can monitor live temperature and smoke levels, control speaker functions, and access historical trends through web-based platforms and mobile devices from any location.

Proactive Maintenance Monitoring

IoT-based contamination detection and continuous diagnostics identify maintenance needs before performance degrades. Predictive alerts for optical chamber cleaning, speaker testing, and electrical supervision issues.

Integrated System Management

Compatible with Building Management Systems (BMS) for unified control. Integrates fire detection, voice evacuation, and public address monitoring in a single cloud-based dashboard for comprehensive facility management.

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Advanced Detection Features

Photoelectric Smoke Detection: Special LED illuminates smoke chamber for accurate particle detection. Continuous smoke density measurement with real-time reporting to control panel and cloud servers.

Thermal Sensing Technology: Monitors ambient temperature continuously across 20°C to 60°C range. Detects both rapid temperature rise and fixed threshold breaches for comprehensive heat detection.

Contamination Monitoring: Automatic detection when optical chamber contamination affects LED illumination levels. Proactive contamination alarms ensure timely maintenance before detection capability is compromised.

Digital Addressable Communication: Two-way communication enables remote sensitivity adjustment from control panel. AU101X protocol ensures reliable data transmission and individual device management.

Electrical Supervision: Two-way communication enables remote sensitivity adjustment from control panel. AU101X protocol ensures reliable data transmission and individual device management.

Visual Status Indication: Bi-colour LED provides clear operational feedback: Green LED blinks during normal scan, Red LED glows steady during alarm condition for easy status verification.

Operating Principle

- **Continuous Multi-Parameter Monitoring:** Smoke sensor and thermal sensor operate simultaneously 24/7, providing dual-mode fire detection capability.
- **Real-Time Data Transmission:** Smoke density and temperature readings transmitted to control panel with unique device ID for precise location identification.
- **Cloud-Based Data Management:** Control panel automatically uploads all sensor readings, alarm events, and speaker status to cloud servers for remote access
- **Intelligent Threshold Analysis:** Device analyzes smoke and temperature levels against pre-configured alarm thresholds and communicates status to fire warning system
- **Two-Wire Audio Routing:** Control panel routes power and audio signals through single 2-core cable, enabling voice evacuation and PA functionality
- **Photoelectric Calibration**: LED illumination monitoring detects aging effects and triggers calibration alerts per IS 2189 requirements
- **Addressable Control:** Digital communication enables remote sensitivity adjustment, testing, and individual speaker control without physical device access.

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Technical Specifications

Electrical Specifications

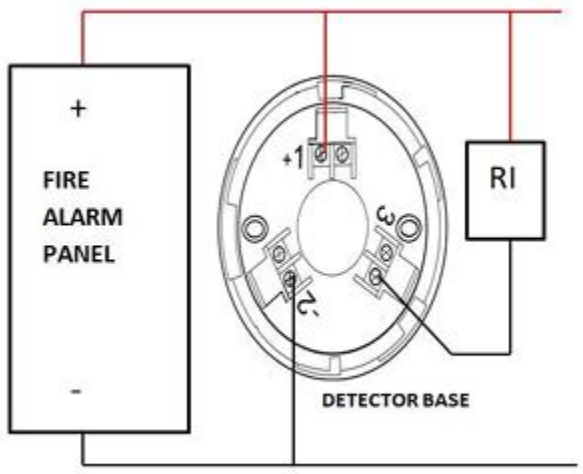
Parameter	Specification
Operating Voltage	17-24V
Quiescent current	200uA
Alarm current	20mA

Mechanical Specifications

Dimensions		Weight	
Without base	100x30mm	Without base	90g
With Base	100x42mm	With Base	140g

General Specifications

Parameter	Specification
Smoke sensitivity	0.5 - 3.5 %obs/foot
Thermal Sensitivity	20ºC to 60ºC
Operating temperature	-10ºC to 55ºC
Storage temperature	-10ºC to 60ºC
Humidity	0-95% RH (Non condensing)
Colour	White
Housing	Polycarbonate
Compatibility	AU101X Protocol
Contact Clamp	Stainless steel



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Compliance &Standards

UL 2681 - 6th Edition | UL 521 - 7th Edition | EN 54 - Part 5 | EN 54 - Part7

IS 11360 | IS 21756 | NBC 2016

The AA-MDS-IoT-105 is fully compliant with international and national fire safety standards including UL (Underwriters Laboratories), EN (European Norms), IS (Indian Standards), and NBC 2016 (National Building Code) certifications. Meets requirements for automatic fire detection systems, voice evacuation systems, and public address applications.

Ideal Applications

- **High-Rise Buildings:** Residential and commercial towers requiring integrated fire detection and voice evacuation
- **Hospitals:** Healthcare facilities needing zone-specific paging and emergency evacuation
- **Hotels:** Hospitality properties requiring PA, evacuation, and fire detection in one unit.
- **Shopping Malls:** Retail complexes needing targeted announcements and comprehensive fire protection
- **Educational Institutions:** Schools and universities requiring PA and fire safety integration
- **Corporate Offices:** Business buildings needing efficient communication and fire detection
- **Transportation Hubs:** Airports, metro stations requiring multi-zone voice control
- **Industrial Facilities:** Manufacturing plants needing integrated safety communication

Why Choose AA-MDS-IoT -105

- **Revolutionary 3-in-1 Design:** Combines fire detection, voice evacuation, and public address in single device, dramatically reducing installation costs and complexity
- **Cloud-Connected Intelligence:** IoT connectivity enables remote monitoring, cloud-based analytics, and off-site management of detection and audio functions
- **Significant Cost Savings:** Eliminates separate smoke detectors, heat detectors, and PA speakers along with associated cabling, panels, and installation labor

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- **NBC 2016 Compliant:** Meets National Building Code requirements for integrated fire detection and voice evacuation systems
- **Targeted Voice Control:** Individual unit addressing enables zone-specific paging and announcements without disturbing entire building
- **Simplified Installation:** Two-wire technology carries power, audio, and data on single cable, reducing wiring complexity by 60%+
- **Dual Detection Capability:** Combined smoke and heat sensing provides comprehensive fire protection with reduced false alarms
- **Proactive Maintenance:** IoT-based contamination monitoring and electrical supervision ensure optimal performance and timely maintenance
- **Aesthetic Integration:** Compact white design with detachable base provides professional appearance while replacing multiple devices
- **Enhanced Emergency Response:** Real-time data display and instant cloud alerts enable faster decision-making during emergencies
- **Remote Management:** Adjust sensitivity, test speakers, and monitor system health without physical site access
- **Global Certification:** UL, EN, IS, and NBC approvals provide confidence across international markets
- **Future-Ready Platform:** IoT connectivity ensures compatibility with emerging smart building technologies and centralized management systems

Contact Information

AIRLIGHT Naveen alarm systems

Web: www.airlight.in

Product Information

For detailed technical documentation, installation guides, and product support,

Please visit our website or contact your local Airlight representative