# DATASHEET

# IoT-Enabled

## Addressable
## heat detector

Model-**AA-IoT-HD-101**

### Intelligent Temperature Monitoring with IoT Integration

The AirlightAA-IoT-HD-101 IoT-enabled addressable heat detector continuously monitors temperature variations and transmits real-time thermal data to the fire alarm control panel, which is then seamlessly uploaded to the cloud via internet connectivity. Designed for precise heat detection in environments where smoke detectors may not be suitable, this intelligent sensor combines advanced thermal sensing with cloud-based monitoring capabilities. It issues instant alerts for rapid temperature rise, fixed temperature thresholds, abnormal environmental conditions, and device connectivity issues. Leveraging IoT technology, it empowers fire safety personnel to monitor temperature trends, respond quickly to fire hazards from any location, and enables proactive maintenance through continuous system diagnostics and real-time data analysis.

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## Core Features

- IoT Connectivity
- Temperature Display
- Remote Test Facility
- Low Power Consumption
- Cloud Data Upload
- Soft Addressing
- Bi-Colour LED Status
- Corrosion Protection
- Real-Time Monitoring
- Remote Configuration
- Event Alerts
- Easy Installation

## IoT & Smart Monitoring Capabilities

### Real-Time Temperature Sensing & Cloud Upload

Continuously monitors ambient temperature with high precision. Real- time thermal data is transmitted to the control panel and automatically uploaded to the cloud via internet connection for remote access and analysis.

### Remote Access& Monitoring

Supports off-site monitoring and response by fire safety personnel from any location worldwide. Access live temperature readings, historical trends, system status, and alerts through web- based platforms and mobile devices.

### IntelligentEvent Alerts

Detects and notifies for rapid temperature rise, fixed temperature threshold breaches, abnormal environmental conditions, device connectivity status, and sensor faults. Instant notifications enable rapid emergency response and intervention.

### Proactive Maintenance Monitoring

Continuous system diagnostics identify potential issues before they become critical. Predictive maintenance alerts reduce downtime, ensure optimal performance, and extend detector lifespan through timely servicing.

### Enhanced Situational Awareness

Touchscreen display shows real-time temperature data, providing critical Information for rescue support staff and emergency responders. Historical temperature trends enable faster and more informed decision-making during emergencies.

### System Integration

Compatible with Building Management Systems (BMS) and smart building platforms for unified monitoring and control. Integrates seamlessly with HVAC, ventilation, and other building systems for comprehensive environmental management.

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## Advanced Detection Features

### Dual Detection Modes:

Operates in both rate-of-rise and fixed temperature detection modes. Responds to rapid temperature increases or when temperature exceeds preset thresholds, ensuring comprehensive fire detection in various scenarios.

### Digital Communication

Addressable functionality enables two- way communication between control panel and detector. Advanced digital protocols ensure reliable data transmission and support remote diagnostics and configuration.

### Adjustable Sensitivity Levels

Sensitivity levels and control functions can be adjusted remotely through the control panel without physical access to the detector, enabling optimization for different environments and reducing false alarms.

### Configurable Temperature Thresholds

Users can define pre-alarm and main alarm temperature settings based on specific environmental conditions and site requirements, ensuring optimal detection sensitivity for any application.

### Unique Device Identification

Real-time temperature data transmitted with unique device IDs enable precise location identification on the control panel, allowing rapid emergency response to the exact detector location.

### Visual Status Indication

Bi-colour LED provides instant visual feedback: Green LED blinks during normal scan operation, Red LED glows steady during alarm condition, ensuring clear status indication at all times.

## Operating Principle

- **Continuous Temperature Monitoring:** Thermal sensor operates 24/7 with minimal power consumption, providing constant environmental temperature surveillance
- **Rate-of-Rise Detection:** Activates when temperature increases rapidly over a short period, indicating potential fire development
- **Fixed Temperature Detection:** Triggers alarm when ambient temperature exceeds pre-configured threshold levels (20°C to 60°C range)
- **Intelligent Data Transmission:** Real-time temperature data transmitted to control panel with unique device ID for precise location identification
- **Cloud-Based Data Management:** Control panel automatically uploads temperature readings and sensor status to cloud servers via internet connection for remote access, analysis, and historical trending
- **Digital Addressable Communication:** Two-way communication enables remote Configuration, testing, sensitivity adjustment, and advanced diagnostics without physical access
- **LED Status Indication:** Visual feedback ensures easy inspection and verification of detector operational status from ground level

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## Technical Specifications

### Electrical Specifications

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

### Mechanical Specifications

| Dimensions | | Weight | |
|---|---|---|---|
| Without base | 100x30mm | Without base | 66g |
| With Base | 100x42mm | With Base | 106g |

### General Specifications

| Parameter | Specification |
|---|---|
| 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 |

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## Compliance &Standards

| UL 521 - 7th Edition | EN54 - Part 5 | IS 2175 |
|---|---|---|

The AA-IoT-HD-101 Heat Detector is fully compliant with international and national fire safety standards including UL (Underwriters Laboratories), EN (European Norms), and IS (Indian Standards)certifications, ensuring reliable performance and regulatory compliance across global markets.

## Ideal Applications

- **Kitchens & Cooking Areas:** Where smoke detectors may cause false alarms from cooking fumes
- **Garages & Parking Facilities:** Areas with vehicle exhaust and dust requiring heat detection
- **Industrial Manufacturing:** Facilities with dust, steam, or fumes that affect smoke detection
- **Boiler Rooms:** High-temperature environments requiring thermal monitoring
- **Warehouses:** Storage facilities with dusty conditions or temperature-sensitive goods
- **Mechanical Rooms:** Equipment areas requiring heat detection without false alarms
- **Laundry Facilities:** Areas with steam and moisture that affect smoke detectors
- **Electrical Rooms:** Critical infrastructure requiring precise temperature monitoring

## Why Choose AA-IoT-HD-101

- **Cloud-Connected Intelligence:** Real-time temperature data upload enables remote monitoring and faster response from any location worldwide
- **Ideal for Challenging Environments:** Perfect for areas where smoke detectors may trigger false alarms due to dust, steam, or cooking fumes
- **Dual Detection Capability:** Both rate-of-rise and fixed temperature detection ensure comprehensive fire protection
- **Proactive Maintenance:** IoT-based diagnostics and predictive alerts reduced own time and extend detector lifespan
- **Enhanced Response Capability:** Real-time temperature display and instant alerts enable faster, more informed emergency decision-making

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- **Remote Management:** Adjust sensitivity, test devices, and monitor temperature trends without physical site access
- **Clear Visual Indication:** Bi-colour LED system provides instant status feedback for easy inspection and verification
- **Global Certification:** UL, EN, andIS approvals provide confidence and regulatory compliance
- **Ultra-Low Power Consumption:** Efficient operation extends system battery backup and reduces energy costs
- **Future-Ready Platform:** IoT connectivity ensures compatibility with emerging smart building technologies and centralized monitoring systems
- **Durable Construction:** Corrosion-resistant materials with stainless steel contact sensure long service life in harsh environments

## 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