

# HVAC Duct Smoke

## Detection and Monitoring

PRODUCTS



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# Reshaping Duct Smoke Detection

The System Sensor line of duct smoke detectors offers testing and inspection features to meet any code. With an intuitive design and simplified feature set, the DUCTSD is ideal for many standard applications. For complex applications the 2:1 sensor-to-power capability of the D4120 allows a single power board to monitor sensors installed in both the supply and return. The easily accessible Smoke Test Port (on DUCTSD model only) and Test/Reset button (included on DUCTSD and D4120) simplifies testing for conventional 4-wire models. Plus, the flexible housing overcomes mounting constraints by adjusting to fit a broad range of applications.

System Sensor provides increased flexibility with a variety of accessories, including two remote test stations and several different means of visible and audible system annunciation. All duct smoke detectors and accessories are UL listed.

## Unmatched Flexibility

- Air velocity rating from 100 ft/min to 4,000 ft/min (0.5 m/s to 20.32 m/sec)
- Versatile mounting options in square or rectangular configuration with modular construction
- Broader ranges for operating temperature (-4°F to 158°F) and humidity (0% to 95% non-condensing)

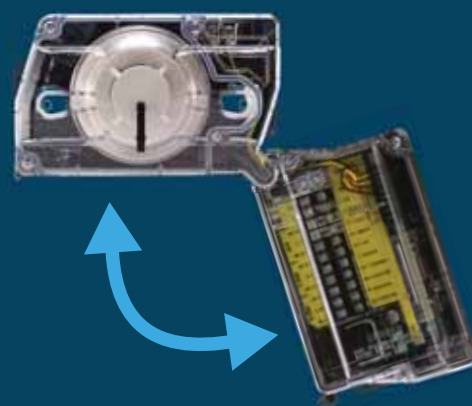
## Superior Features

- Integrated low-flow technology
- Integrated Smoke Test Port (DUCTSD only)
- One easy-access “Test/Reset” button (for conventional 4-wire models)
- Patented interconnectability for multi-fan shutdown
- Built-in short circuit protection from wiring errors
- Field-selectable settings for configuring the detectors
- Sampling tubes install from both front and back of the detector with patented snap in place feature.
- Easy and quick mounting to round or rectangular ducts of 1 ft. or 12 ft. (0.3 m to 3.7 m) wide



**D4120**  
Duct Smoke Detector in Rectangular Orientation

## Versatile Mounting Options Square or Rectangular Footprint





DUCTSD

## Conventional Duct Smoke Detectors

System Sensor duct smoke detectors combine an impressive collection of innovations to greatly simplify HVAC system monitoring. One unit can accommodate multiple installation footprints to overcome mounting constraints. Tool-free, plug-in sampling tubes speed and simplify installation. Broad temperature and humidity ranges accommodate exposure to environmental extremes. Easily visible status indications, a readily accessible smoke test feature, and remote test station accessories simplify testing and maintenance. With unmatched flexibility, these detectors can adjust to fit any application.



D4120

### Conventional Duct Smoke Detection Devices

D4120	4-wire photoelectric low-flow duct smoke detector, 24 VAC/DC, 120 VAC
D4240	4-wire photoelectric low-flow duct smoke detector, 24 VAC/DC, 240 VAC
DUCTSD	Standard 4-wire photoelectric duct smoke detector, 24 VAC/DC, 120 VAC
DUCTSD240	Standard 4-wire photoelectric duct smoke detector, 24 VAC/DC, 240 VAC
D4S	4-wire photoelectric sensor component only
D4P120	4-wire photoelectric power board component only, 24 VAC/DC, 120 VAC
D4120W	Watertight 4-wire photoelectric duct smoke detector
D2	2-wire photoelectric low-flow duct smoke detector



### 2D51 4-wire Photoelectric Sensor Head

Photoelectronic Low-Profile Plug-In Detector for Special Applications. For replacement purposes with 4-wire System Sensor duct smoke detectors.

Note: The 2D51 needs to be used with the D4P120 and B210LP for pendant mount applications.

- 4-Wire Photoelectric, integrated low-flow technology
- Air velocity rating from 100 ft/min to 4,000 ft/min (0.5 m/s to 20.32 m/sec)
- Versatile mounting options: square or rectangular configuration
- Plug-in sensor and latest sensor technology help prevent false alarms
- Integrated Smoke Test Port (DUCTSD only)
- Broad ranges for operating temperature (-4°F to 158°F) and humidity (0% to 95% non-condensing)
- Patented sampling tube installs from front or back of the detector with no tools required
- Increased wiring space with an additional 3/4-inch conduit knockout
- One easy-access Test/Reset button and improved LED status
- Patented interconnect feature for multi-fan shutdown
- High-contrast terminal designations
- Built-in short circuit protection from operator wiring errors
- Field-selectable settings for configuring the detector
- Two DPDT Form-C relay contacts
- 24 VAC/DC or 120 VAC
- Backward compatibility with existing System Sensor products, including remote accessories

# Intelligent

## Duct Smoke Detectors

System Sensor duct smoke detectors combine an impressive collection of innovations designed to save you time and money and provide the flexibility you need in the field. An adjustable housing overcomes mounting constraints. Plug-in, tool-free sampling tubes speed installation. The DNR model accommodates a wide variety of intelligent smoke detectors (detector head sold separately). With these features and many more, System Sensor is reshaping duct smoke detection.



### Intelligent Duct Smoke Detection Devices

DNR	Intelligent non-relay photoelectric duct smoke detector. <i>*Detector head sold separately</i>
DNRECL	Eclipse series intelligent duct smoke detector housing
DNRHS	High sensitivity duct smoke detector which provides very early warning fire protection in interior duct applications
DNRW	Watertight intelligent non-relay photoelectric low-flow duct smoke detector <i>*Detector head sold separately</i>

- Photoelectric, integrated low-flow technology (detector head sold separately)
- Air velocity rating from 100 ft/min to 4,000 ft/min (DNR)
- Air velocity rating from 300 ft/min to 4000ft/min (1.52m/s to 20.32m/sec) (DNRECL & DNRHS)
- Adjusts to square and rectangular mounting configurations
- Broad ranges for operating temperature (-4°F to 158°F) and humidity (0% to 95% non-condensing)
- Patented tool-free, plug-in sampling tubes
- New cover tamper signal
- Increased wiring space with a new 3/4-inch conduit knockout
- Housing has space for mounting a relay module
- Easily accessible code wheels on sensor head (sold separately)
- Clear cover for convenient visual inspection
- UL 268A listed
- Remote testing capability
- Requires com line power only
- NEMA Type 4 UL listed for non-hazardous indoor and outdoor applications (DNRW only)
- UV-resistant, UL-listed housing and cover material (DNRW only)
- 24 VDC operation (DNRHS)
- Temperature range 32°F to 100°F (0°C to 38°C) (DNRHS)



**2251BR**  
Photoelectric Smoke Detector



For use with DNR(W) duct smoke detectors, the intelligent plug-in smoke detector with integral communication provides point location for alarm communication and selective maintenance.



# Watertight

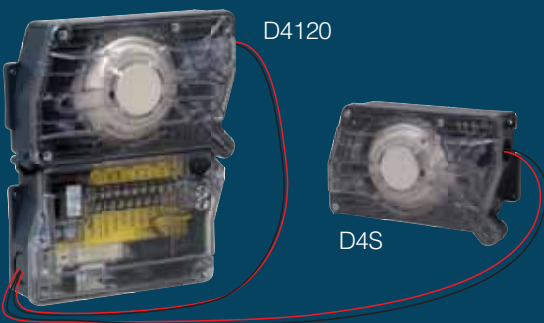
## Duct Smoke Detectors

Is your HVAC installation on the rooftop? NEMA 4-rated System Sensor watertight duct smoke detectors operate in the most challenging conditions without costly and bulky enclosures. Watertight System Sensor duct smoke detectors (D4120W conventional, DNRW intelligent) include a UV-resistant housing that provides protection against dirt, rain, and other water sources, so you can mount these detectors on HVAC equipment in harsh environments while saving on materials and labor.

### Watertight Duct Smoke Detectors

D4120W	Watertight 4-wire photoelectric duct smoke detector
DNRW	Watertight intelligent non-relay photoelectric low-flow duct smoke detector <i>*Detector head sold separately</i>

### 2:1 Sensor-to-Power Board Configuration

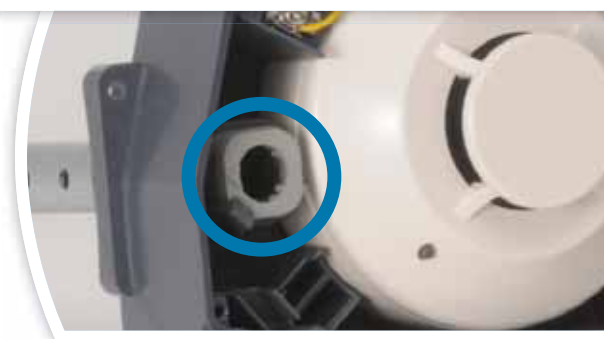
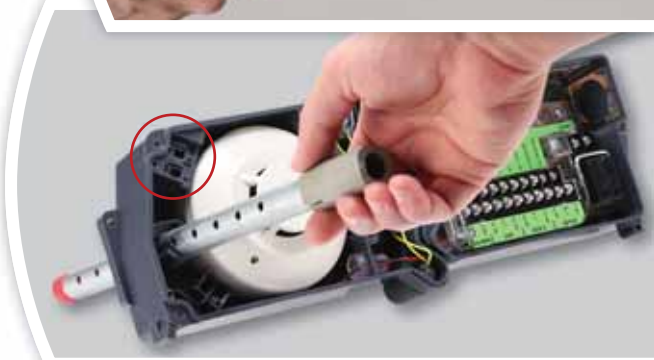


The D4120 4-wire duct smoke detector has the ability to power two sensors from one power board. With its 2:1 sensor-to-power board capability, the power board of the D4120 may be used to monitor a second D4S sensor simultaneously. This is perfect for applications where monitoring both supply and return are required.

- NEMA Type 4 UL listed for non-hazardous indoor and outdoor applications
- UV Resistant, UL listed housing and cover material
- 4-Wire Photoelectric, integrated low-flow technology
- Air velocity rating from 100 ft/min to 4,000 ft/min (0.5 m/s to 20.32 m/sec)
- Versatile mounting options: square or rectangular configuration
- Plug-in sensor offers the latest sensor technology helps to prevent false alarms
- Broad ranges for operating temperature (-4°F to 158°F) and humidity (0% to 95% non-condensing)
- Patented sampling tube installs from front or back of the detector with no tools required
- Increased wiring space with additional 3/4-inch conduit knockout
- One easy-access Test/Reset button and improved LED status
- Patented interconnect feature for multi-fan shutdown
- New high contrast terminal designations
- Built-in short circuit protection from operator wiring errors
- Field-selectable settings for configuring the detector
- Two DPDT Form-C relay contacts
- 24 VAC/DC or 120VAC
- Backward compatibility with existing Innovair products, including remote accessories

## Sampling Tube

The sampling tube may be installed from the front or back of the detector. The tube locks securely into place and can be removed by releasing the front or rear locking tab (rear locking tab shown below).



# Accessories

## Conventional and Intelligent

Duct smoke detector accessories add functionality to the duct smoke detection system by allowing quick, convenient inspections at eye level and effective audible and visible notification options. All System Sensor duct smoke detectors and accessories are UL listed.

### Accessories

APA151*	Remote annunciator with piezo alarm
DH400OE-1*	Weatherproof duct smoke detector enclosure
DST1*	Metal sampling tube duct width up to 1ft (0.3m)
DST1.5*	Metal sampling tube duct widths 1 ft to 2 ft (0.3 to 0.6 m)
DST3*	Metal sampling tube duct widths 2 ft to 4 ft (0.6 to 1.2 m)
DST5*	Metal sampling tube duct widths 4 ft to 8 ft (1.2 to 2.4 m)
DST10*	Metal sampling tube duct widths 8 ft to 12 ft (2.4 to 3.7 m)
ETX*	Metal exhaust tube duct width 1ft (0.3m)
P48-21-00*	End cap for metal sampling tubes
RA100Z*	Remote annunciator alarm LED
RTS151*	Remote test station
RTS151KEY*	Remote test station with key lock
RTS2	Multi-signaling accessory, without strobe
RTS2 - AOS	Multi-signaling accessory with add-on strobe
SENS-RDR	Utilizes infrared technology to read the sensitivity of i <sup>3</sup> series detectors

RTS151



\*For use with Conventional and Intelligent Duct Smoke Detectors



RTS2-AOS

# Special Applications

## Pendant Mount

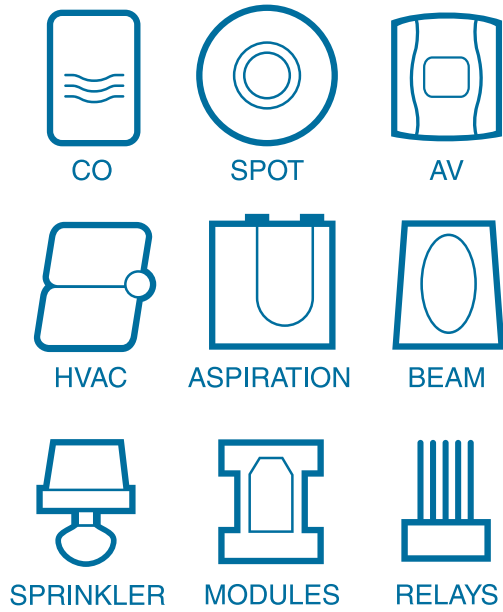
The System Sensor 2151 low-profile photoelectric smoke detector with a B114LP or B114LPBT base is listed to Underwriters Laboratories 268A specifically for use in no-flow/low-flow air-handling systems.

### Special Applications

2151	Low-profile photoelectric plug-in detector
2D151	Low-profile photoelectric plug-in detector
B114LP	120 VAC detector base
B114LPBT	24VAC/DC detector base
B210LP	Intelligent base - 15-32 VDC
D4P120	4-wire photoelectric power board component only, 24 VAC/DC, 120 VAC



Note: 2151 with B114LP or B114LPBT is not remote test capable, for remote testing use 2D51, B210LP with D4P120.



Founded in 1984, System Sensor is a global manufacturer of fire and life safety devices, specializing in smoke detection, carbon monoxide detection, and notification technology. System Sensor develops products for real-world applications worldwide. With sales, service, and manufacturing facilities throughout the Americas, Europe, and Asia, System Sensor places a premium on research and development to provide the most reliable, innovative, and comprehensive line of products in the industry.

