



# DNRHS High Sensitivity Duct Smoke Detector

*The System Sensor DNRHS detector provides very early warning fire protection in interior duct applications with high-velocity, high-volume air changes.*



Innovairflex™

## Features

- Temperature range 32°F to 100°F (0°C to 38°C)
- Air velocity rating from 300 to 4,000 FPM
- 24 VDC operation
- Versatile mounting options: square or rectangular configuration
- Patented sampling tube installs from the front or back of the detector with no tools required
- New cover tamper signal
- Increased wiring space with a newly added 3/4-inch conduit knockout
- Clear cover for convenient visual inspection
- Remote testing capability (DCOIL included)
- Easily mounts to round or rectangular ducts from 1 to 12 feet (0.3 to 3.7 m) wide
- 3 year warranty

**The DNRHS** high sensitivity duct smoke detector provides very early warning of fires\* to protect high-value assets and mission critical operations from fire and the spread of damaging smoke through air management systems. The detector's intelligent laser sensor can detect miniscule amounts of smoke (0.02 percent-per-foot) flowing through ductwork at air velocities from 300 to 4,000 feet per minute — ideal for environments with high-velocity, high-volume air changes.

Some ideal applications for the DNRHS include telecommunications switching facilities, cellular telephone infrastructure, integrated circuit fabrication facilities, computer rooms, and clean rooms.

Like all InnovairFlex™ duct smoke detectors, the DNRHS includes several features designed to lower installation time and costs. Its pivoting housing converts to both square and rectangular configurations to fit a variety of installation footprints. Its tool-free sampling tubes plug into the detector from the front or back without the need for set screws, which can be easy to lose. In addition, the twist-in, twist-out 7251 high sensitivity laser smoke detector head enables easy removal for quick cleaning, maintenance, and replacement.

*\*The DNRHS high sensitivity duct smoke detector is designed to satisfy NFPA 76 for Very Early Warning Fire Protection. NFPA 76, Section 8.5.3.1.2.3 Very Early Warning Fire Protection, calls for sensors to be mounted at the return air location for a space in the following instances:*

(A) "Where stand-alone packed HVAC units are installed, sensors or ports shall be installed where return air is brought back to the unit."

(B) "Sensors or ports shall be installed such that each covers no greater than 0.4 m<sup>2</sup> (4 ft<sup>2</sup>) of the return air opening."

## Agency Listings



## Accessories

System Sensor provides system flexibility for duct smoke detector applications with a variety of accessories, including two remote test stations and several different means of visible and audible system annunciation. As with our duct smoke detectors, all duct smoke detector accessories are UL listed.



**RTS151KEY**  
(UL S2522)



**RTS151**  
(UL S2522)



**RA100Z**  
(UL S2522)

## DNRHS Duct Smoke Detector Specifications

### Architectural/Engineering Specifications

The high sensitivity air duct smoke detector shall be a System Sensor Model DNRHS high sensitivity duct smoke detector. The detector shall be UL listed per UL S911, Standard for Smoke Detectors for Duct Applications, specifically for use in air handling systems. The detector shall operate at air velocities from 300 to 4,000 feet per minute. The detector shall have an operating temperature range of 32°F to 100°F. The detector housing shall be equipped with an integral mounting base capable of accommodating laser smoke detector heads. The flexible housing of the duct smoke detector shall fit both square and rectangular footprints. The detector shall be capable of local testing via magnetic switch or remote testing using the RTS151KEY or RTS151 Remote Test Station. The duct detector housing shall incorporate an airtight smoke chamber in compliance with UL S911. The housing shall be capable of mounting to rectangular or round ducts up to 12 feet wide without adapter brackets. Sampling tubes shall be installed after the housing is mounted to the duct by passing through the duct housing. Terminal connections shall be of the strip and clamp method suitable for 12 to 18 AWG wiring.

### Physical Specifications

<b>Size: (Rectangular)</b>	14.38 in (37 cm) Length; 5 in (12.7 cm) Width; 2.5 in (6.35 cm) Depth
<b>(Square)</b>	7.75 in (19.7cm) Length; 9 in (22.9 cm) Width ; 2.5 in (6.35 cm) Depth
<b>Shipping Weight</b>	2.0 lbs (1.2 kg)
<b>Operating Temperature Range</b>	32°F to 100°F (0°C to 38°C)
<b>Storage Temperature Range</b>	-22°F to 100°F (-30°C to 38°C)
<b>Operating Humidity Range</b>	10% to 93% relative humidity
<b>Air Duct Velocity</b>	300 to 4,000 ft/min (0.5 to 20.32 m/sec)

### Electrical Specifications

<b>Voltage</b>	24 VDC
<b>Power supply voltage</b>	15 to 32 VDC
<b>Current Requirements (Using No Accessories)</b>	
<b>Max. standby current</b>	230 $\mu$ A @ 24 VDC (without communication); 330 $\mu$ A @ 24 VDC (one communication every 5 sec with LED enabled)
<b>Max. alarm current</b>	6.5 mA (LED on)

## Ordering Information

Part No.	Description		
DNRHS	High sensitivity duct smoke detector		
DNRHSA	High sensitivity duct smoke detector (Canadian model)		
7251	Replacement intelligent laser sensor head		
<b>Accessories</b>			
DST-1	Metal sampling tube duct widths up to 1 ft (0.3 m)	ETX	Metal exhaust tube duct width 1 ft (0.3 m)
DST-1.5	Metal sampling tube duct widths 1 to 2 ft (0.3 to 0.6 m)	M02-04-00	Test magnet
DST-3	Metal sampling tube duct widths 2 to 4 ft (0.6 to 1.2 m)	RTS151	Remote test station
DST-5	Metal sampling tube duct widths 4 to 8 ft (1.2 to 2.4 m)	RTS151KEY(A)*	Remote test station with key
DST-10	Metal sampling tube duct widths 8 to 12 ft (2.4 to 3.7 m)	RA100Z(A)*	Remote annunciator alarm LED
P48-21-00	End cap for metal sampling tubes	DCOIL	Remote test coil (included)

\*(A) suffix denotes Canadian products



3825 Ohio Avenue • St. Charles, IL 60174  
Phone: 800-SENSOR2 • Fax: 630-377-6495  
www.systemsensor.com

©2012 System Sensor.  
Product specifications subject to change without notice. Visit systemsensor.com for current product information, including the latest version of this data sheet.  
HVDS00104 • 1/12