



7251DH High Sensitivity Duct Smoke Detector



The System Sensor 7251DH detector is designed for interior duct applications where high velocity, high volume air changes are required for very early warning fire protection.

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
- Easy and quick mounting to round or rectangular ducts from 1 ft to 12 ft (0.3 m to 3.7 m) wide
- 3 year warranty

The 7251DH high sensitivity duct smoke detector provides dependable performance for management of fans, blowers, and air conditioning systems by using an intelligent laser smoke sensor residing in an efficient housing design that samples air currents passing through a duct. The twist-in, twist-out 7251 high sensitivity laser smoke detector head allows easy removal for quick cleaning, maintenance, and replacement without removing the duct housing. The laser detector achieves sensitivities as low as 0.02 percent-per-foot by using a laser diode instead of a standard LED light source in the sensing chamber. Many sensitive areas cannot tolerate even small amounts of smoke. This 7251DH detector is designed to protect valuable assets and operations where systems must remain online at all times.

Some ideal applications for the 7251DH high sensitivity duct smoke detector include:

- Telecommunications switching facilities
- Cellular telephone infrastructure
- Integrated circuit fabrication facilities
- Computer rooms
- Clean rooms

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 m² (4 ft²) of the return air opening."

The System Sensor 7251DH high sensitivity duct smoke detector is designed to satisfy NFPA 76 for Very Early Warning Fire Protection.

Agency Listings



Accessories

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



RTS451KEY
Remote Test Station
with Key (UL S2522)



PA400W
Piezo Sounder
(UL S3593)



RTS451
Remote Test Station
(UL S2522)



RA400Z
Remote Annunciator
(UL S2522)

7251DH Duct Smoke Detector Specifications

Architectural/Engineering Specifications

The high sensitivity air duct smoke detector shall be a System Sensor Model 7251DH 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 feet per minute to 4000 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. It shall be capable of local testing via magnetic switch or remote testing using the RTS451KEY or RTS451 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 ft wide without adapter brackets. An integral filter system shall be included to reduce dust and residue effects on detector and housing, thereby reducing maintenance and servicing. 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 14 to 18 AWG wiring.

Physical Specifications

| | |
|------------------------------------|--|
| Size | 14½ in L x 5 in W x 4 in D (36.8 cm L x 12.7 cm W x 10.2 cm D) |
| Shipping Weight | 2.8 lbs (1.1 kg) |
| Operating Temperature Range | 32°F to 100°F (0°C to 38°C) |
| Storage Temperature Range | -22°F to 100°F (-30°C to 38°C) |
| Operating Humidity Range | 10% to 93% relative humidity |
| Air Duct Velocity | 300 to 4000 ft/min (0.5 to 20.32 m/sec) |

Electrical Specifications

| | |
|--|---|
| Voltage | 24 VDC |
| Power supply voltage | 15 to 32 VDC |
| Current Requirements (Using No Accessories) | |
| Max. standby current | 230 µA @ 24 VDC (without communication); 330 µA @ 24 VDC (one communication every 5 sec with LED enabled) |
| Max. alarm current | 6.5 mA (LED on) |

Ordering Information

| Part No. | Description | | |
|--------------------|--|-----------|--|
| 7251DH | High sensitivity duct smoke detector | | |
| 7251DHA | High sensitivity duct smoke detector (Canadian model) | | |
| 7251 | Replacement intelligent laser sensor head | | |
| Accessories | | | |
| ST-1.5 | Metal sampling tube duct widths 1 ft to 2 ft (0.3 m to 0.6 m) | RTS451 | Remote test station |
| ST-3 | Metal sampling tube duct widths 2 ft to 4 ft (0.6 m to 1.2 m) | PA400W(A) | Piezo sounder (white) |
| ST-5 | Metal sampling tube duct widths 4 ft to 8 ft (1.2 m to 2.4 m) | RA400Z(A) | Remote annunciator alarm LED |
| ST-10 | Metal sampling tube duct widths 8 ft to 12 ft (2.4 m to 3.7 m) | F36-05-00 | Replacement air filters (two per package) |
| P48-21-00 | End cap for metal sampling tubes | M02-04-00 | Test magnet |
| RTS451KEY(A)* | Remote test station with key | A2650-01 | Replacement installation kit (mounting hardware) |

*(A) suffix denotes Canadian products



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