



by Honeywell

# InnovairFlex™ Series D2 Duct Smoke Detector

## Description

The InnovairFlex™ Series, D2, 2-wire photoelectric duct smoke detector features a pivoting housing that fits various applications: both square and rectangular footprints mount to round or rectangular duct work. The InnovairFlex™ Series are the only duct smoke detectors flexible enough to fit configurations from square to rectangular and everything in between.

This new duct smoke detector senses airflow speeds ranging from 100 to 4,000 feet per minute with proven System Sensor precision. The enhancements built into this model improve false alarm immunity (with plug-in sensor head); broaden operating temperature (-4°F to 158°F) and humidity (0 to 95 percent non-condensing) ranges; while simplifying the installation and the maintenance. These advance features detect smoke in the harshest duct applications.

The new design provides more wiring space with an added 3/4 inch conduit knockout. Numbers and labels for terminal designations are consistent with previous Innovair models. The new sampling tube can be clicked into position with one smooth motion from either the front or the back of the detector.

The InnovairFlex Series, D2 duct smoke detector has signals to indicate trouble and maintenance conditions. Additionally, a cover tamper feature is incorporated to indicate a trouble condition for a removed or improperly installed sensor cover. An improved cover design, with an integrated low-flow feature, isolates the sensor head from the low-flow technology for simple maintenance.

The InnovairFlex Series is designed for greater flexibility and reliable smoke detection to simplify installation and maintenance. The new InnovairFlex product line is backward compatible to existing Innovair models, including remote test accessories

**WARNING:** Duct smoke detectors have specific limitations.

### DUCT SMOKE DETECTORS ARE:

NOT a substitute for an open area smoke detector,  
NOT a substitute for early warning detection, and NOT a replacement for a building's regular fire detection system. Refer to NFPA 72 and 90A for additional duct smoke detector application information.

E3 Series® is a registered trademark and InnovairFlex™ is a trademark of Honeywell International, Inc.

## 2-Wire Photoelectric Duct Smoke Detector



InnovairFlex-D2

## Features

- 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 in square or rectangular configuration with modular construction
- Plug-in sensor
- Superb false alarm immunity with the latest sensor technology
- Broader 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
- A cover tamper feature to indicate a trouble condition for removed or improperly installed sensor cover
- Increased wiring space with a newly added 3/4 inch conduit knockout
- Improved LED status
- 24 VDC

An ISO 9000-2000 Company

SIGNALING



LISTED



APPROVED



MSFM



S911 3029700 2202 3242-1653:206 S911

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# InnovairFlex Duct Smoke Detector Specifications

## Architectural/Engineering Specifications

The air duct smoke detector shall be a System Sensor InnovairFlex™ D2 Photoelectric Duct Smoke Detector. The detector housing shall be UL Listed per UL 268A specifically for use in air handling systems. The flexible housing of the duct smoke detector fits both square and rectangular footprints. The detector shall operate at air velocities of 100 ft/min to 4,000 ft/min (0.5 m/sec to 20.32 m/sec). The unit shall be capable of providing a trouble signal in the event that the sensor cover is removed or improperly installed. It shall be capable of local testing via magnetic switch or remote testing using the RTS151KEY remote test station. Terminal connections shall be of the strip and clamp method suitable for 12–18 AWG wiring.

## Physical Specifications

### Size:

**Rectangular Dimensions:** 14.38 in (37 cm) Length; 5 in (12.7 cm) Width; 2.5 in (6.6 cm) Depth

**Square Dimensions:** 7.75 in (19.7 cm) Length; 9 in (22.9 cm) Width; 2.5 in (6.35 cm) Depth

### Operating Temperature

**Range:** -4° to 158°F (-20° to 70°C)

**Storage Temperature Range:** -22° to 158°F (-30° to 70°C)

**Operating Humidity Range:** 0% to 95% relative humidity non-condensing

**Air Duct Velocity:** 100 to 4000 ft/min (0.5 to 20.32 m/sec)

## Electrical Ratings

**Power supply voltage:** 8.5-35 VDC

**Input capacitance:** 0.1 µF max.

**Reset voltage:** 2.5 VDC min.

**Reset time: (with RTS151)** 0.03 to 0.3 sec.

**Reset time: (by power down)** 0.3 sec. max.

**Power up time:** 35 sec. max.

**Alarm response time:** 15 sec.

**Sensitivity Test:** See detector label

### Current Requirements:

**Peak standby current:** 120 µA

**Max. standby current:** 60 µA (average)

**Max. alarm current:** 130 mA

## Accessory Current Loads at 24 VDC

Device	Standby	Trouble
RA100Z	0 mA	12 mA Max.
RTS151	0 mA	12 mA Max.
RTS151KEY	12 mA	12 mA Max.

## Installing the InnovairFlex Sampling Tube

The InnovairFlex 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. (Figure 3 illustrates the front locking tab).



Figure 1



Figure 2



Figure 3

## Wiring for 2-Wire Duct Smoke Detector

Figure 4 illustrates the system wiring diagram for the 2-wire duct smoke detectors (powered from the initiating device circuit).

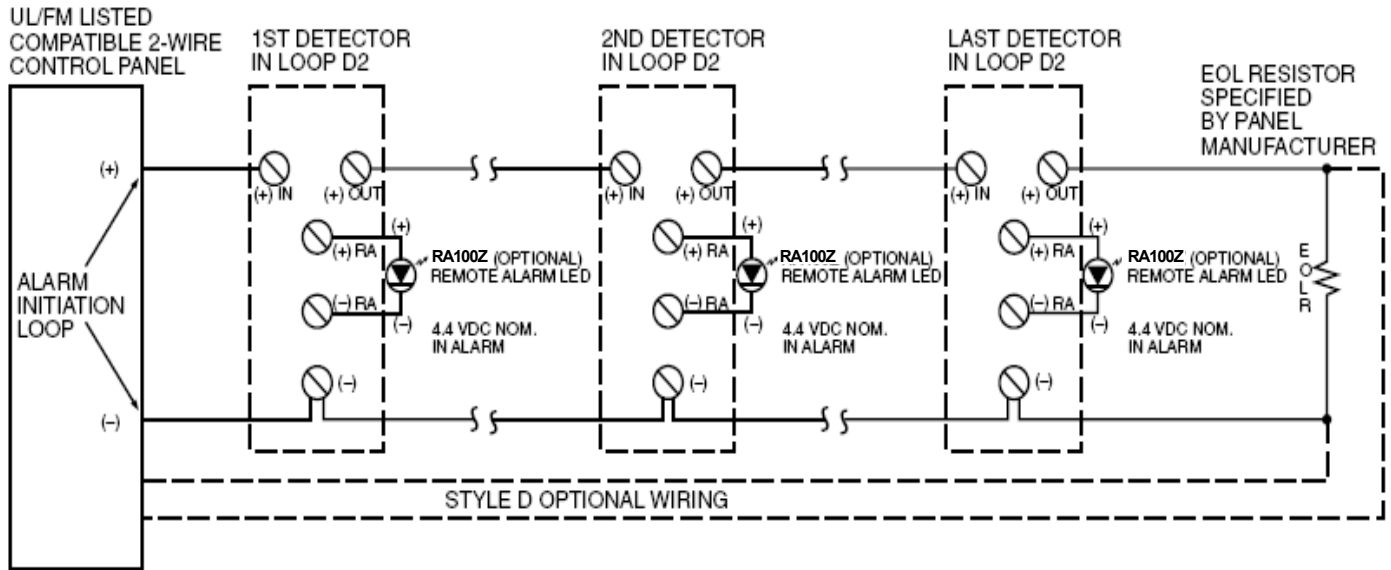


Figure 4 2-Wire Duct Smoke Detector (Powered from the Initiating Device Circuit) Wiring Diagram

Figure 5 illustrates the wiring diagram for 2-wire duct smoke detector to the RTS151/RTS151KEY Remote Test Station.

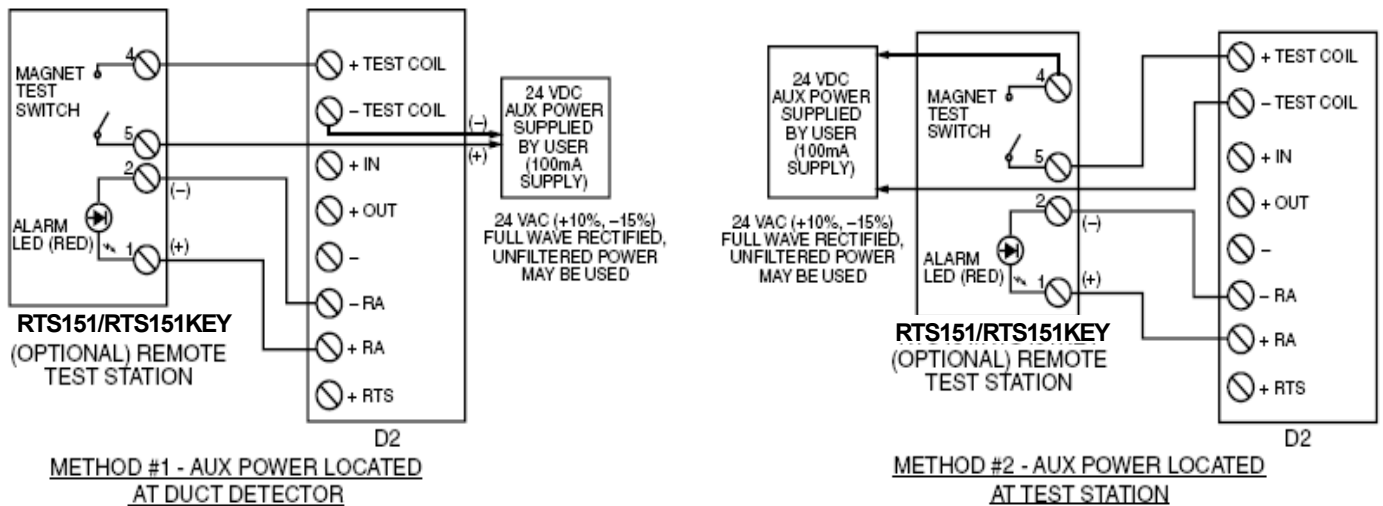


Figure 5 2-Wire Duct Smoke Detector to RTS151/RTS151KEY Wiring Diagram

### Important Notes:

- The use of either the RTS151 or RTS151KEY requires the installation of an accessory coil, DCOIL, sold separately. For additional information, refer to the InnovairFlex D2 Duct Smoke Detector Installation Instructions, P/N I56-3050-001R and the Duct Application Smoke Detectors Applications Guide.

## Ordering Information

Part Number	Description
D2	2-Wire photoelectric low-flow duct smoke detector

### Accessories

Part Number	Description	Part Number	Description
2151	2-wire conventional photoelectric sensor head	DH400OE-1	Weatherproof enclosure
DCOIL	2-wire remote test coil required with RTS151/RTS151KEY	ETX	Metal exhaust tube duct width 1ft. (0.3m)
DST1	Metal sampling tube duct width up to 1ft (0.3m)	M02-04-00	Test magnet
DST1.5	Metal sampling tube duct widths 1 ft. to 2 ft. (0.3 to 0.6 m)	P48-21-00	End cap for metal sampling tubes
DST3	Metal sampling tube duct widths 2 ft. to 4 ft. (0.6 to 1.2 m)	RA100Z/ RA100ZA	Remote annunciator alarm LED
DST5	Metal sampling tube duct widths 4 ft. to 8 ft. (1.2 to 2.4 m)	RTS151	Remote test station
DST10	Metal sampling tube duct widths 8 ft. to 12 ft. (2.4 to 3.7m)	RTS151KEY	Remote test station with key lock