



March 24, 2005

DN-6821 • H-215

FSD-751P and FSD-751RP

Intelligent Photoelectric Duct Smoke Detectors with FlashScan®

Section: Intelligent Addressable Devices

GENERAL

An HVAC system supplies conditioned air to virtually every area of a building. Smoke introduced into this air duct system is thus distributed to the entire building. Smoke detectors for use in air duct systems sense the presence of smoke in the duct.

The FSD-751P air duct smoke detector is a photoelectric detector, combining this detection technology with an efficient housing design that samples air passing through the duct, allowing detection of a developing hazardous condition. When sufficient smoke is sensed, an alarm signal is initiated at the fire control panel monitoring the detector, and appropriate action can be taken to shut off fans and blowers and change over air handling systems, etc. This can isolate toxic smoke and fire gases or prevent their distribution throughout the areas served by the duct system.

Two LEDs on each detector can be programmed by the system control panel to provide a local alarm indication. A remote alarm output is provided for use with auxiliary devices. The FSD-751P has remote test capability with the RTS451/RTS451KEY Remote Test Station.

Traditional panels support addresses of 0 – 99. The FlashScan® protocol supports addresses of 0 – 159. Patented **FlashScan®** is a new communication protocol developed by NOTIFIER Engineering that greatly enhances the speed of communication between analog intelligent devices. Intelligent devices communicate in a grouped fashion. If one of the devices within the group has new information, the panel stops the group poll and concentrates on single points. The net effect is response speed **greater than five times** that of earlier designs.

APPLICATIONS

Duct smoke detectors have specific limitations.

Duct smoke detectors are:

- **NOT** a substitute for open area smoke detectors.
- **NOT** a substitute for early warning detection.
- **NOT** a replacement for a building's regular fire detection system.

Call NOTIFIER for a copy of System Sensor's application guide, *Proper Use of Smoke Detectors in Duct Applications*, (A05-1004-00).

INSTALLATION

Wiring: For signal wiring (the wiring between detectors or from detectors to auxiliary devices), it is recommended that single conductor wire be no smaller than 18 AWG (0.75 mm²). The duct smoke detector terminals accommodate wire sizes up to 12 AWG (3.25 mm²). Flexible conduit is recommended for the last foot (30.48 cm) of conduit; solid conduit connections may be used if desired.

Smoke detectors and alarm system control panels have specifications for Signaling Line Circuit (SLC) wiring. Consult the control panel specifications for wiring requirements before wiring the detector loop. The FSD-751P/FSD-751RP detector is designed for ease of wiring; the housing provides a terminal

FlashScan® is a registered trademark of NOTIFIER.



LISTED
S1115



CS308
(FSD-751PA,
FSD-751RPA)

MEA
143-00-E
(FSD-751P)
389-00-E
(FSD-751RP)



APPROVED



California
State Fire
Marshal
3240-0028:205

U.S. Coast Guard

161.002/42/1 (NFS-640)
161.002/27/3 (AFP1010/
AM2020, FSD-751P)
161.002/23/3 (AFP-200)

MARYLAND State Fire Marshal

Permit #2036 (FSD-751P)
Permit #2060 (FSD-751RP)

strip with clamping plates.

LED Features: If programmed with the system control panel, two LEDs on each duct smoke detector light to provide local visible indication. Remote LED annunciator capability is available as an option. Each duct smoke detector can only be wired to one remote accessory.

NOTIFIER panels offer different feature sets across different panel models. As a result, certain features of the FSD-751P/FSD-751RP may be available on some control panels, but not on others. Possible features, if supported by the control panel are:

- Panel controls the LED operation on sensor. Operational modes are: RED blink, RED continuous, GREEN blink, GREEN continuous, and OFF.

SPECIFICATIONS

FSD-751P

Operating voltage range: 15 to 32 VDC.

Standby current: 300 µA @ 24 VDC (one communication every 5 seconds with LED blink enabled).

Operating temperature range: 32° to 131°F (0° to 55°C).

Humidity range: 10% to 93% (non-condensing).

Duct air velocity: 500 to 4,000 feet/min. (152.4 to 1219.2 meters/min.).

Dimensions: 14.375" (365.125 mm) wide x 5.500" (13.970 mm) high x 2.750" (69.850 mm) deep.

Options: RTS-451, RTS-451KEY, RA400Z. Separate auxiliary power not required.

Listed to UL 268A.

FSD-751RP

Operating voltage range: 15 to 32 VDC (*comm. line voltage*) and 24 VAC/VDC or 120/240 VAC auxiliary power* (*separate source*). ***NOTE:** The FSD-751RP **requires** a separate auxiliary source.

Standby current: 300 µA @ 24 VDC (one communication every 5 seconds with LED blink enabled).

Auxiliary power current draw (@ 24 VDC): 26 mA (*standby*), 87 mA (*alarm*).

Options: RTS-451, RTS-451KEY, RA400Z, APA451.

NOTIFIER® is a Honeywell company.

This document is not intended to be used for installation purposes. We try to keep our product information up-to-date and accurate. We cannot cover all specific applications or anticipate all requirements. All specifications are subject to change without notice. For more information, contact NOTIFIER. Phone: (203) 484-7161 FAX: (203) 484-7118



12 Clintonville Road, Northford, Connecticut 06472



ENGINEERING & MANUFACTURING
QUALITY SYSTEMS

Operating temperature range: 32° to 131°F (0° to 55°C).
Humidity range: 10% to 93% (non-condensing).
Duct air velocity: 500 to 4,000 feet/min. (152.4 to 1219.2 meters/min.).
Dimensions: 14.375" (365.125 mm) wide x 5.500" (13.970 mm) high x 2.750" (69.850 mm) deep.
Relay contact ratings: 2 Form-C, DPDT, 10 A @ 250 VAC, 10 A @ 30 VDC (resistive). *Minimum switching current of 100 mA @ 5 VDC.*

Listed to UL 268A.

Programming specifications/requirements for intelligent system control panels:

The number of devices that can have their LEDs programmed to illuminate is limited by the features of the panel and the individual devices. The actual number of devices is determined by the control panel and its ability to supply LED current. Refer to the control panel installation manual for details.

INLET TUBE SELECTION

6821inlt.tbl

Outside Duct Width	Inlet Tube*
Up to 2 feet (0.6096 m)	ST-1.5
2 to 4 feet (0.6096 to 1.2192 m)	ST-3
4 to 8 feet (1.2192 to 2.4384 m)	ST-5
8 to 12 feet (2.4384 to 3.6576 m)	ST-10

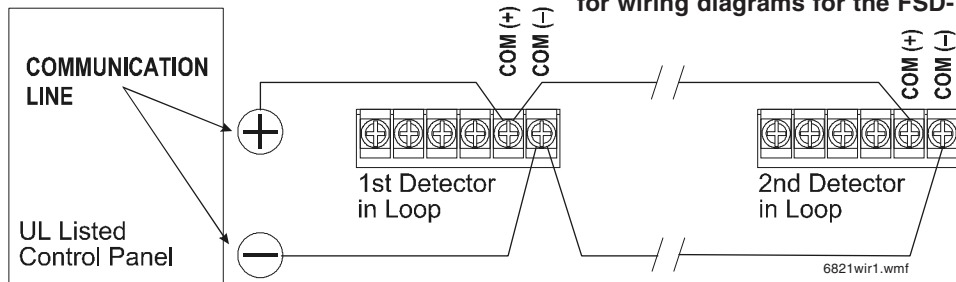
*NOTE: Inlet tube is required and must be purchased separately. Order one inlet tube for each duct smoke detector ordered.

PRODUCT LINE INFORMATION

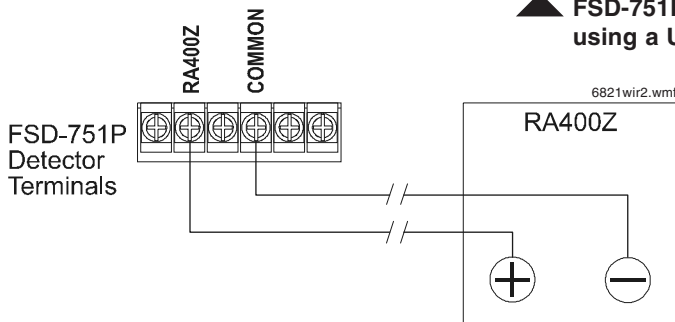
- FSD-751P** Duct detector housing with FlashScan® photo-electric smoke detector.
- FSD-751RP** Duct detector housing with FlashScan® photo-electric smoke detector, DPDT relay.
- ST-1.5** Metal sampling tube, duct widths 1' to 2' (*see table at left for metric lengths*).
- ST-3** Metal sampling tube, duct widths 2' to 4'.
- ST-5** Metal sampling tube, duct widths 4' to 8'.
- ST-10** Metal sampling tube, duct widths 8' to 12'.
- RA400Z** Remote annunciator alarm LED.
- RTS451** Remote test station. Mounts in single-gang box. Includes red alarm LED and magnet test switch.
- RTS451KEY** Key-activated remote test station.
- F36-09-00** Replacement filters.
- M02-04-00** Replacement test magnet.
- S08-39-01** Replacement photo insect screen.
- P48-55-00** Replacement end cap for plastic sampling tube.
- P48-21-00** Replacement end cap for metal sampling tube.
- A5053FS** Replacement photoelectric sensor board.
- A5067** Replacement power board (without relay).
- A5060** Replacement power board (with relay).

SAMPLE WIRING DIAGRAMS

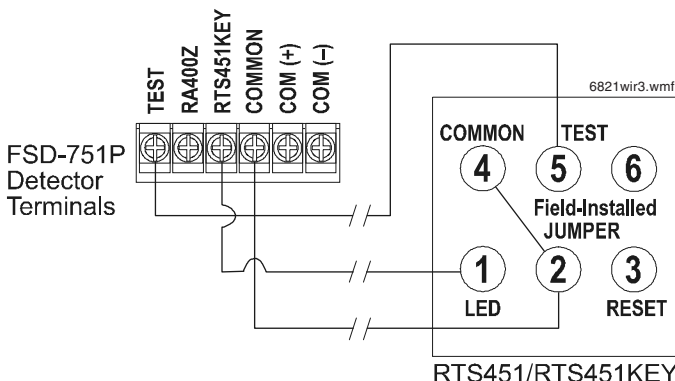
See product *Installation Instructions* for wiring diagrams for the FSD-751RP.



▲ FSD-751P Duct Smoke Detector using a UL Listed control panel



◀ FSD-751P Duct Smoke Detector with optional RA400Z



◀ FSD-751P Duct Smoke Detector with RTS451/RTS451KEY

NOTE: For RTS451, Terminal 3 is not used. RTS451 does not have a Terminal 6.

For RTS451KEY, Terminals 3 and 6 are not used.



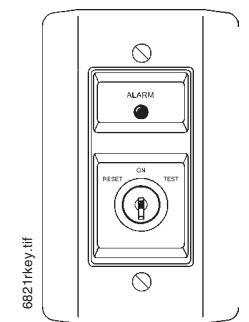
3242ra4z.jpg

The RA400Z



3242rts4.jpg

The RTS451



6821rkey.tif

The RTS451KEY