ND-100 and ND-100R

Low-Flow Photoelectric Duct Smoke Detectors for FireWarden Series Panels

NOTIFIER® by Honeywell

Addressable

General

NOTIFIER **ND-100** and **ND-100R** Intelligent Photoelectric Smoke Duct Detectors provide ***low-flow*** technology that enables duct smoke detection throughout a broad range of air-flow environments in HVAC applications. The low-flow technology can detect smoke at air speed velocities of 100 feet per minute (0.5 m/sec) or greater, while continuing the same reliable performance to 4,000 feet per minute (20.32 m/sec). The intelligent low-flow duct detectors sample air currents passing through a duct and gives dependable performance for shutdown of fans, blowers, and air conditioning systems, preventing the spread of toxic smoke an fire gases through the protected area.

ND-100 and ND-100R are used exclusively with the NOTIFIER **FireWarden Series** addressable control panels. ND-100 and ND-100R provide a remote alarm output for use with auxiliary devices, such as the RA400Z(A) remote LED annunciator, as well as remote test capability with the RTS451(A) or RTS451KEY(A) Remote Test Stations. The ND-100R features a Form-C relay.


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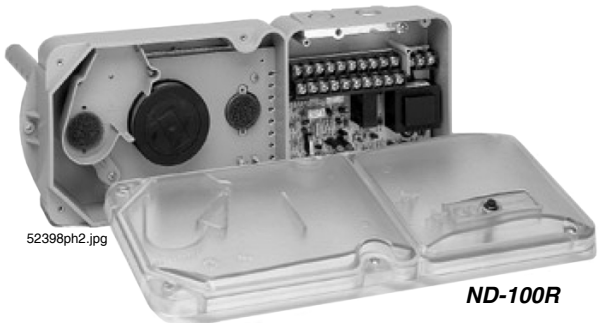
ND-100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ND-100R

Applications

Duct smoke detectors have specific limitations, they 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.

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

Features

- Air velocity rating from 100 to 4,000 feet per minute (0.5 to 20.32 m/sec).
- Patented telescopic sampling tube.
- Easily accessible code wheels for addressing detector.
- Outside mounting tabs.
- Mounts to round or rectangular ducts from 1' to 12' (0.3 to 3.7 meters) wide.
- Transparent cover for convenient visual inspection.
- Powered outputs for remote LED, and remote test and sounder.
- Two Form-C auxiliary contacts (ND-100R).
- Patented cover-tamper trouble signal (ND-100R).
- ND-100R requires both com line power and one of the following: 24 VAC/VDC or 120/220 VAC for operation.


3242ra4z.jpg

RA400Z


3242rts4.jpg

RTS451


3242key.jpg

RTS451KEY

Installation

Refer to installation manuals for control panel and duct detector for detailed information or to install equipment. Installation manuals for detectors: I56-2853-000R for ND-100, I56-2854-000R for ND-100R.

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 (0.821 mm²). The duct smoke detector terminals accommodate wire sizes up to 12 AWG (3.31 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 detectors are designed for ease of wiring; their housing provides a terminal 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.

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.

Product Line Information

NOTE:

ND-100: Addressable low-flow duct detector housing with photoelectric smoke detector.

ND-100R: Addressable low-flow duct detector housing with photoelectric smoke detector with DPDT relay.

A5053FL: Replacement photoelectric sensor board.

A5067: Replacement power board (without relay).

A5060: Replacement power board (with relay).

ST-1.5: Metal sampling tube, duct widths 1' to 2' *(see Inlet Tube Selection table on page 2 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.

F36-09-11: Replacement filters.

M02-04-00: Test magnet.

M02-09-00: Test magnet with telescoping handle.

S08-39-01: Replacement photo insect screen.

P48-61-00: Replacement end cap for plastic sampling tube.

P48-21-00: Replacement end cap for metal sampling tube.

T80-71-00: Replacement plastic sampling tube.

Specifications

FOR ND-100

Operating voltage range: 15 to 30 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).

Operating humidity range: 10% to 93% relative humidity (non-condensing).

Storage temperature range: –22°F to +158°F (–30°C to +70°C).

Duct air velocity: 100 to 4,000 feet/min (0.5 to 20.32 m/s).

Shipping weight: 3.35 lbs. (1.5 kg).

Dimensions: 14.75" (37 cm) length x 5.50" (14 cm) width x 2.75" (7 cm) deep.

ND-100 accessory current loads @ 24 VDC: ***PA400:*** refer to PA400 data sheet DN-2405. ***RA400Z:*** 0 mA standby, 10 mA maximum in alarm. ***RTS451 and RTS451KEY:*** 0 mA standby, 7.5 mA maximum in alarm.

FOR ND-100R

Operating voltage range: 20 to 30 VDC, 24 VAC/VDC, 120/240 VAC auxiliary power (requires a separate auxiliary source).

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).

Operating humidity range: 10% to 93% relative humidity (non-condensing).

Storage temperature range: –22°F to +158°F (–30°C to +70°C).

Duct air velocity: 100 to 4,000 feet/min (0.5 to 20.32 m/s).

Shipping weight: 3.90 lbs. (1.8 kg).

Dimensions: 14.75" (37 cm) length x 5.50" (14 cm) width x 2.75" (7 cm) deep.

ND-100R CONTACT RATINGS

Alarm auxiliary contacts (DPDT): 10 A @ 30 VDC; 10 A @ 277 VAC (0.75 power factor); 240 VA @ 249 VAC (0.4 power factor); 1/8 HP @ 120 VAC; 1/4 HP @ 240 VAC.

Minimum switching current for auxiliary contact must be 100 mA DC minimum @ 5 VDC.

Supervisory contact (SPST): 2.0 A @ 30 VDC (resistive).

ND-100R accessory current loads @ 24 VDC: ***PA400:*** refer to PA400 data sheetDN-2405. ***RA400Z:*** 0 mA standby, 12 mA maximum in alarm. ***RTS451 and RTS451KEY:*** 0 mA standby, 10 mA maximum in alarm.

ND-100R CURRENT REQUIREMENTS (USING NO ACCESSORIES)

20 – 30 VDC power supply voltage: 26 mA maximum standby current; 87 mA maximum alarm current; 3 to 10 second alarm response time; 2 second power-up time.

24 VAC, 50/60 Hz power supply voltage: 65 mA RMS maximum standby current; 182 mA RMS maximum alarm current; 3 to 10 second alarm response time; 2 second power-up time.

120 VAC, 50/60 Hz power supply voltage: 44 mA RMS maximum standby current; 52 mA RMS maximum alarm current; 3 to 10 second alarm response time; 2 second power-up time.

220/240 VAC, 50/60 Hz power supply voltage: 25 mA RMS maximum standby current; 30 mA RMS maximum alarm current; 3 to 10 second alarm response time; 2 second power-up time.

Agency Listings and Approvals

The listings and approvals below apply to ND-100 and ND-100R Intelligent Low-Flow Photoelectric Smoke Duct Detectors. In some cases, certain modules may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- **UL** Listed: files S635 *(ND-100)*, S1115 *(ND-100R)*.
- **CSFM** approved: files 3240-0028:232 *(ND-100R)* and 3240-0028:236 *(ND-100)*.
- **FM** approved.
- **MEA** approved: 320-02-E Vol. 2.
- **Maryland State Fire Marshal** approved: Permits #2173 *(ND-100R)*, #2174 *(ND-100)*.

Inlet Tube Selection

Outside Duct Width	Inlet Tube*
Up to 2 feet (0.6096 m)	ST-1.5(A)
2 to 4 feet (0.6096 to 1.21292 m)	ST-3(A)
4 to 8 feet (1.21292 to 2.4384 m)	ST-5(A)
8 to 12 feet (2.4384 to 3.6576 m)	ST-10(A)

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

ISO 9001 CERTIFIED ENGINEERING & MANUFACTURING QUALITY SYSTEMS

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.

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