Innovair™

2-Wire Low-Profile Duct Smoke Detector

SYSTEM SENSOR®

Model

DH100P   2-Wire Photoelectronic Detector

DH100P 2-Wire Photoelectronic Detector
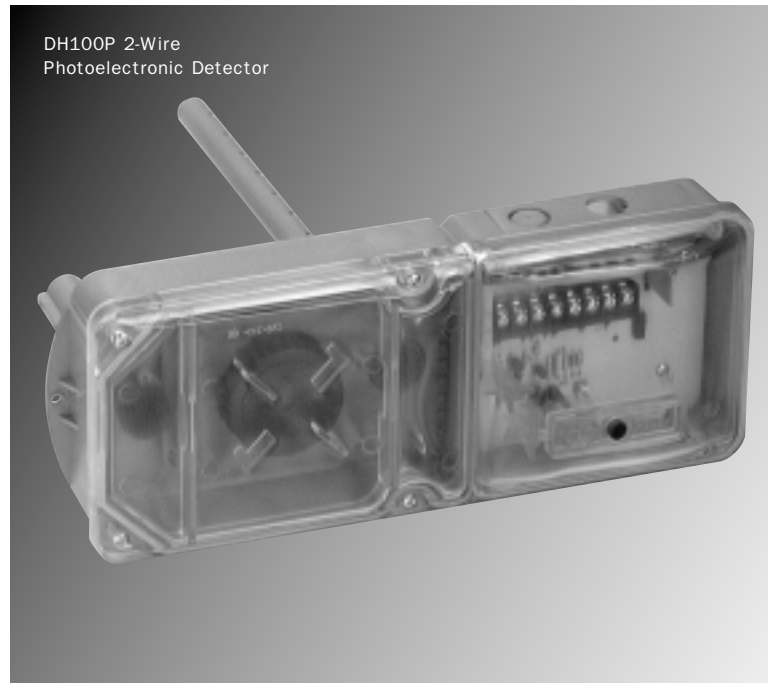
Product Overview

Outside mounting tabs

Patented plastic sampling tube

UL recognized field-replaceable power and sensor boards

Built-in reset button

Easy to clean

12/24 VDC operation

Photoelectronic models available

Remote test station option

Air velocity rating from 500 to 4000 FPM

Remote annunciator option

Easy and quick mounting to round or rectangular ducts from 1′–12′ wide

Textured cover for convenient visual inspection

UL 268A listed

3-year warranty

The System Sensor DH100 2-wire duct smoke detector is available as a photoelectronic model. This new design allows for simplified cleaning and maintenance. The DH100 samples air currents passing through a duct and gives dependable performance for management of fans, blowers, and air conditioning systems, preventing the spread of toxic smoke and fire gases through the protected area.

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.

UL LISTED

FM APPROVED

Architectural/Engineering Specifications

The air duct smoke detector shall be a System Sensor Model DH100 Series Duct Smoke Detector. The detector housing shall be UL listed per UL 268A specifically for use in air handling systems. The detector shall operate at air velocities of 500 feet per minute to 4000 feet per minute. It shall be capable of local testing via magnetic switch or remote testing using the RTS451KEY Remote Test Station. The unit shall be reset by local reset button or RTS451KEY. The duct detector housing shall incorporate an airtight smoke chamber in compliance with UL 268A, Standard for Smoke Detectors for Duct Applications. The housing shall be capable of mounting to either rectangular or round ducts 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 either be plastic or be easily installed after the housing is mounted to the duct by passing through the duct housing. The enclosure shall meet all applicable NEC and NFPA standards regarding electrical junction boxes. Terminal connections shall be of the strip and clamp method suitable for 12-18 AWG wiring.

Standard Specifications

Size
$14\frac{3}{8}''$ (37 cm.)L
$5\frac{1}{2}''$(14 cm.)W
$2\frac{3}{4}''$(7 cm.)D

Shipping Weight
$3\frac{1}{4}$ lbs.

Operating Temperature Range
32° to 131° F (0° to 55° C)

Operating Humidity Range
10% to 93% relative humidity

Air Duct Velocity
500 to 4000 ft./min.

Electrical Ratings

System Voltage
12/24 VDC

Ripple Voltage
4 Volts peak to peak

Start-up Capacitance
0.02µF maximum

Standby Ratings
8.5 VDC minimum
35 VDC maximum
120µA maximum

Alarm Ratings
4.2 VDC minimum at 10mA
6.6 VDC maximum at 100mA

Alarm current must be limited to 100mA or less by the control panel. If used, the RA400Z remote lamp operates within the specified alarm currents

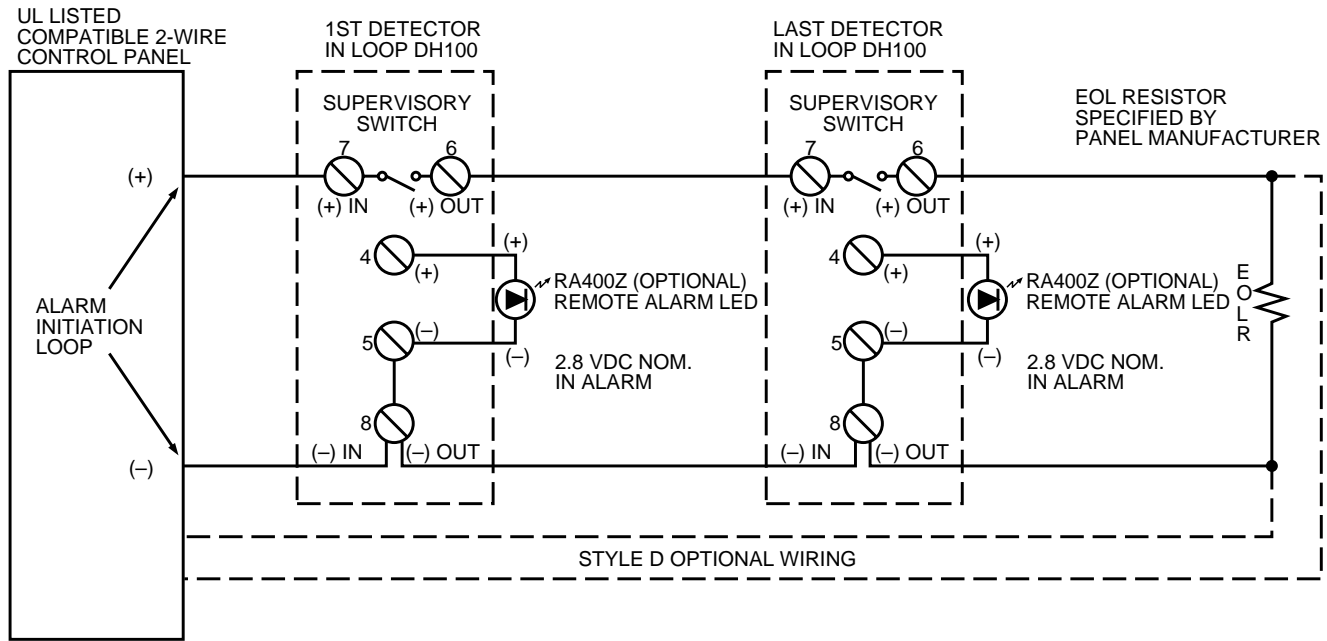Reset Voltage:
2.50 VDC minimum
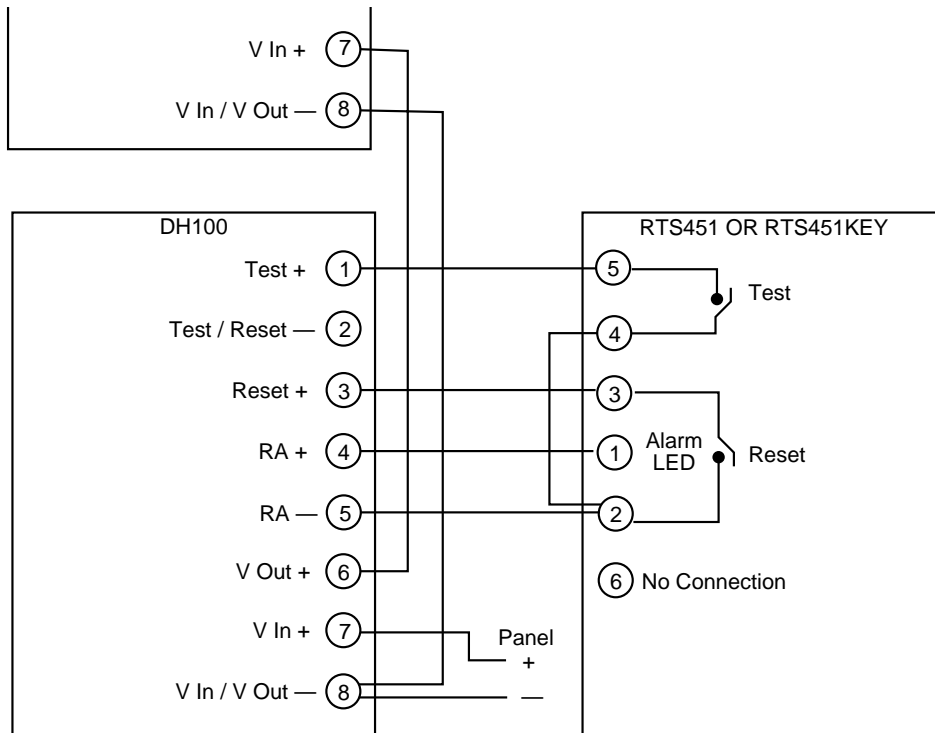
Reset Time:
0.3 Sec. maximum

Start-up Time
34.0 Sec. maximum

DH100 Wiring Guide

System wiring diagram for 2-wire duct smoke detectors (detectors powered from initiating device circuit)

UL LISTED
COMPATIBLE 2-WIRE
CONTROL PANEL

1ST DETECTOR
IN LOOP DH100

LAST DETECTOR
IN LOOP DH100

EOL RESISTOR
SPECIFIED BY
PANEL MANUFACTURER

SUPERVISORY
SWITCH

SUPERVISORY
SWITCH

7 (+) IN   6 (+) OUT

7 (+) IN   6 (+) OUT

(+)

ALARM
INITIATION
LOOP

4 (+)

RA400Z (OPTIONAL)
REMOTE ALARM LED

4 (+)

RA400Z (OPTIONAL)
REMOTE ALARM LED

E
O
L
R

5 (−)

2.8 VDC NOM.
IN ALARM

5 (−)

2.8 VDC NOM.
IN ALARM

(−)

8 (−) IN   (−) OUT

8 (−) IN   (−) OUT

STYLE D OPTIONAL WIRING

Wiring diagram for RTS451KEY Remote Test Station to 2-wire duct smoke detectors

V In + ⑦

V In / V Out — ⑧

DH100

RTS451 OR RTS451KEY

Test + ①   ⑤ Test

Test / Reset — ②   ④

Reset + ③   ③

RA + ④   ① Alarm LED Reset

RA — ⑤   ②

V Out + ⑥   ⑥ No Connection

V In + ⑦   Panel +

V In / V Out — ⑧   —

Coil Note

Please note that the magnetic coil supplied with the RTS451/RTS451KEY **is not required** when these accessories are used with the DH100 detectors. The functionality of the magnetic coil has been designed into the circuitry of the Innovair™ duct smoke detectors.

Ordering Information

| Part Number	Description
DH100P	2-wire photoelectronic duct smoke detector
A5069	Replacement photoelectronic detector head
A5061	Replacement 2-wire power board
Accessories	
ST-1.5	Metal sampling tube duct widths 1'–2'
ST-3	Metal sampling tube duct widths 2'–4'
ST-5	Metal sampling tube duct widths 4'–8'
ST-10	Metal sampling tube duct widths 8'–12'
T80-71-00	Replacement telescoping sampling tube
P48-55-00	Replacement end cap for T80-71-00
RTS451KEY	Remote test station with key lock (see below)
RTS451	Remote test station
RA400Z	Remote annunciator alarm LED (see below)
APA451	Remote annunciator with piezo alarm

| Part Number	Description
MOD400R	Sensitivity test module
F36-09-00	Replacement air filters (two per package)
M02-04-00	Test magnet
P48-21-00	End cap for metal sampling tubes
S08-39-01	Photo replacement screen
PA400	Mini-Alert sounder
PS24LO	Mini-Alert add-on strobe
PS12/24SLENSC	Ceiling-mount "SMOKE" lens
PS12/24SLENSW	Wall-mount "SMOKE" lens

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.
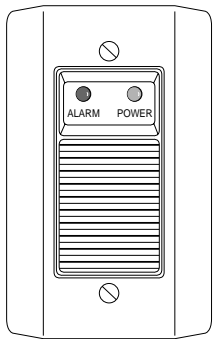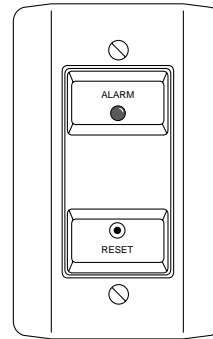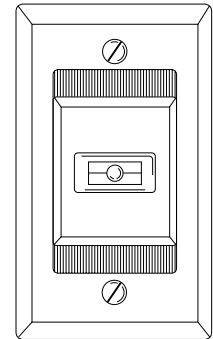
APA451
Piezo Annunciator
(UL S4011)
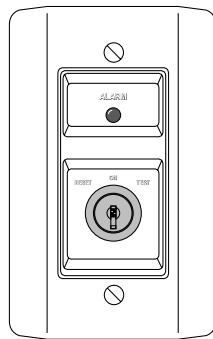
RTS451KEY
Remote Test Station with Key (UL S2522)
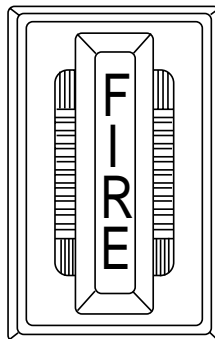
PA400
with PS24LOW Add-on Strobe (PS12/24SLENSW smoke lens option available) (UL S3593)

RTS451
Remote Test Station (UL S2522)

RA400Z
Remote Annunciator (UL S2522)

System Sensor Sales and Service