

Innovair™

4-Wire Low-Profile Duct Smoke Detector



A Division of Pittway
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<http://www.systemsensor.com>



Models Available

- DH100ACDCI 4-wire Ionization Detector**
- DH100ACDCP 4-wire Photoelectric Detector**

Features

- Outside mounting tabs
- Telescoping sampling tube*
- Built-in reset button
- Interconnectability* for multi-fan shutdown (up to ten air handlers)
- Cover tamper trouble signal*
- Easy to clean
- 24 VAC/DC or 120/240 VAC operation
- High-Low voltage barrier
- Ion or photo models available
- Remote test station option
- Remote sounder option
- Air velocity rating from 500 to 4000 FPM
- Equipped with two DPDT Form C relay contacts
- 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

System Sensor DH100ACDC 4-wire duct duct smoke detector is available as either an ionization or photoelectric model. This new design allows for simplified cleaning and maintenance, or a change in application without removing the duct housing. The DH100ACDC 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 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 detector application information.

Specifications

Length: 14³/₈ inches (14 cm.)
Depth: 2³/₄ inches (7 cm.)
Shipping Weight: 3.75 lbs. (1.7 kg.)
Operating Temperature Range: 23° to 131° F (-5° to 55° C)

Operating Humidity Range: 10% to 93% relative humidity noncondensing
Air Duct Velocity: 500 to 4000 ft./min.

* Patent pending

Architectural/Engineering Specifications

The air duct smoke detector shall be a System Sensor Model DH100ACDC 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. The unit shall be capable of controlling up to ten (10) air handling systems when interconnected with other detectors. The detector shall be capable of providing a trouble signal in the event that the front cover is removed. 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 remote test station. 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 telescoping or be easily installed by passing through the duct housing after the housing is mounted to the duct. The unit shall provide a spacial separation of no less than 1/4" and/or a physical barrier between the high and low voltage terminals. 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.

Electrical Ratings – DH100ACDC (Includes Detector)

Power supply voltage:	20-29 VDC	24 VAC 50-60-Hz	120 VAC 50-60 Hz	220/240 VAC 50-60 Hz
Input capacitance:	270 μ F max.	270 μ F max.	N/A	N/A
Reset voltage:	3.0 VDC min.	2.0 VAC min.	10 VAC min.	20 VAC min.
Reset time (with RTS451):	.03 to 0.3 sec.	.03 to 0.3 sec.	.03 to 0.3 sec.	.03 to 0.3 sec.
Reset time (by power down):	0.6 sec. max.	0.6 sec. max.	0.6 sec. max.	0.6 sec. max.
Power up time:	34 sec. max.	34 sec. max.	34 sec. max.	34 sec. max.
Alarm response time:	2 to 17 sec.	2 to 17 sec.	2 to 17 sec.	2 to 17 sec.
Sensitivity Test:	See detector label	See detector label	See detector label	See detector label

Power Supply Voltage	20 - 29 VDC	24 VAC 50 - 60 Hz	120 VAC 50 - 60 Hz	220/240 VAC 50 - 60 Hz
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CURRENT REQUIREMENTS (USING NO ACCESSORIES)

Max. standby current	15 mA	35 mA RMS	25 mA RMS*	15 mA RMS*
Max. alarm current	70 mA	125 mA RMS	35 mA RMS*	25 mA RMS*

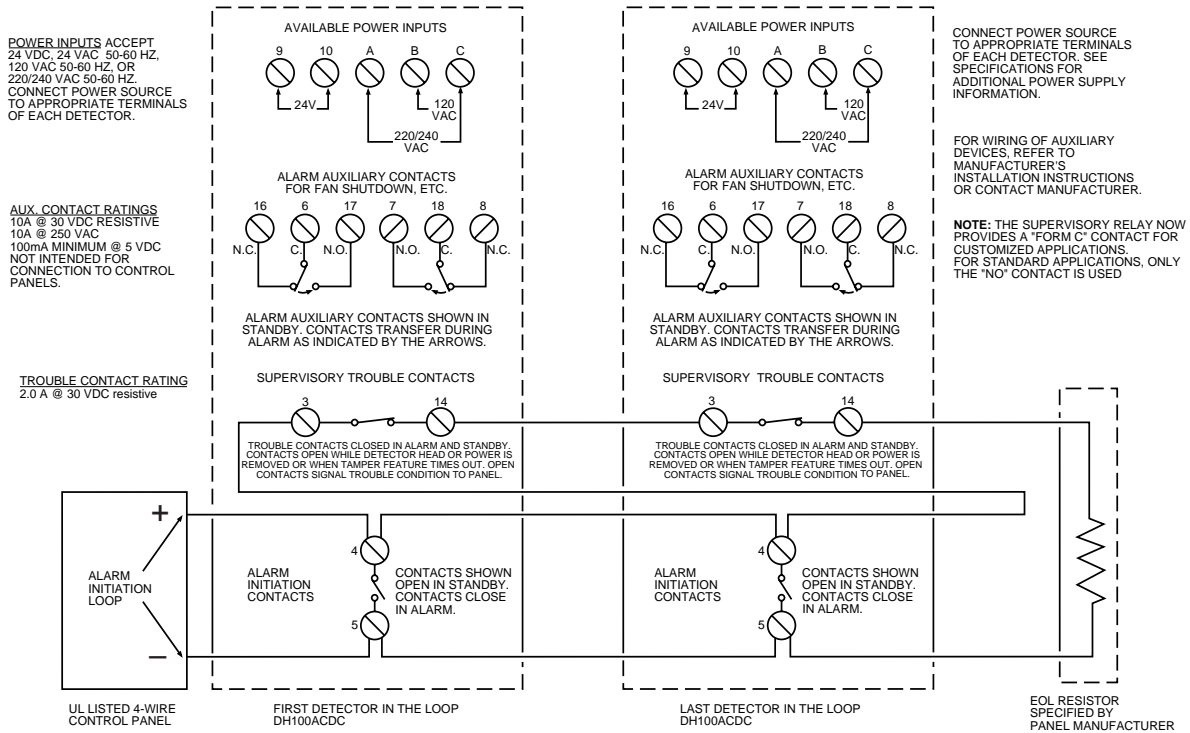
CONTACT RATINGS

Alarm initiation contacts (SPST)	2.0A @ 30 VDC (resistive)
Alarm auxiliary contacts (DPDT)	10A @ 30 VDC 10A @ 250 VAC
Note: Alarm auxiliary contacts must switch 100 mA minimum at 5VDC. Alarm auxiliary contacts shall not be connected to initiating circuits of control panels. Use the alarm initiation contact for this purpose.	
Trouble contacts (SPDT)	2.0A @ 30 VDC (resistive)

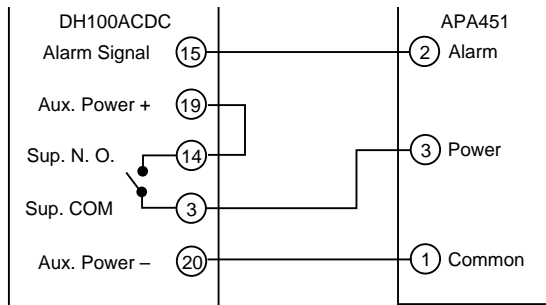
ACCESSORY CURRENT LOADS AT 24 VDC		
DEVICE	STANDBY	ALARM
APA451	12.5mA Max.	30mA Max.
PA400	0mA	15mA Max.
RA400Z	0mA	10mA Max.
RTS451/ RTS451KEY	12mA	7.5mA Max.

* NOTE: When a unit is powered at the 120VAC or 220/240VAC input, any combination of accessories may be used such that the given accessory loads are: 60 mA or less in the standby state, 110 mA or less in the alarm state.

DH100ACDC Wiring Guide

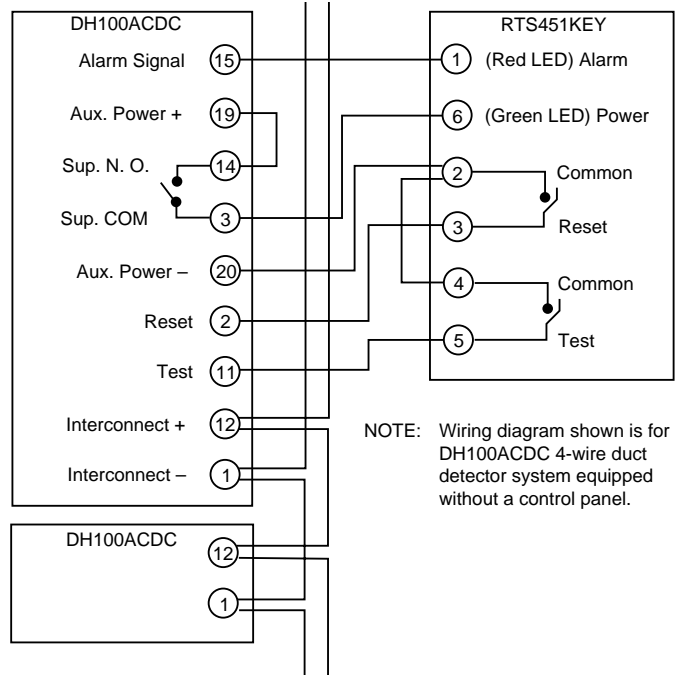


System wiring diagram for 4-wire duct smoke detectors (detectors powered from initiating circuit)



NOTE: Wiring diagram shown is for DH100ACDC 4-wire duct detector system equipped without a control panel.

Wiring diagram for DH100ACDC to APA451



NOTE: Wiring diagram shown is for DH100ACDC 4-wire duct detector system equipped without a control panel.

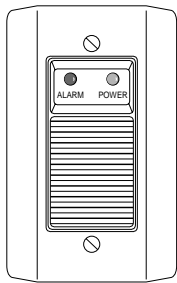
Wiring diagram for DH100ACDC to RTS451KEY and interconnect feature

Ordering Information

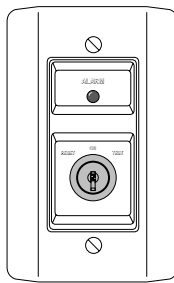
Part No.	Description	Part No.	Description
DH100ACDCI	4-wire ionization duct detector	RTS451KEY	Remote test station with key lock (see below)
DH100ACDCP	4-wire photoelectronic duct detector	RTS451	Remote test station
A5052-00	Replacement ionization sensor board	APA451	Remote annunciator with piezo alarm
A5069-00	Replacement photoelectronic sensor head	MOD400R	Sensitivity test module
A5064-00	4-wire power board	RA400Z	Remote annunciator alarm LED (see below)
Accessories		F36-09-00	Replacement air filters (two per package)
ST-1.5	Metal sampling tube duct widths 1'-2'	M02-04-00	Test magnet
ST-3	Metal sampling tube duct widths 2'-4'	P48-21-00	End cap for metal sampling tubes
ST-5	Metal sampling tube duct widths 4'-8'	S08-39-01	Photo replacement screen
ST-10	Metal sampling tube duct widths 8'-12'	PA400B	Mini-Alert sounder
T80-71-00	Replacement telescoping sampling tube	PS24LOB	Mini-Alert add-on strobe
P48-55-00	Replacement end cap for T80-71-00	PS12/24LENSC	Ceiling-mount "SMOKE" lens
		PS12/24LENSW	Wall-mount "SMOKE" lens

Accessories

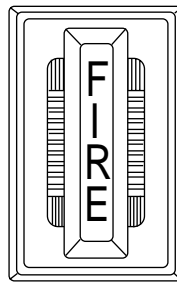
System Sensor provides system flexibility with a variety of accessories, including two remote test stations, and several different means of visible and audible system annunciation. As with our duct detectors, all duct detector accessories are UL listed.



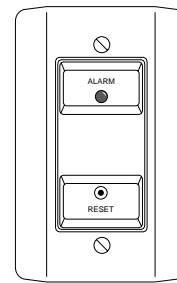
APA451
Piezo
Annunciator
(UL S4011)



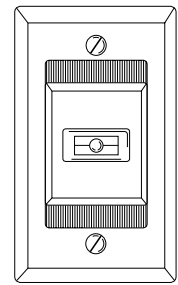
RTS451KEY
Remote Test
Station with Key
(UL S2522)



PA400 with
PS24LOW Add-on Strobe
(PS12/24LENSW
smoke lens option available)
(UL S3593)



RTS451
Remote Test
Station
(UL S2522)



RA400Z
Remote
Annunciator
(UL S2522)

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