400 Series™
High-Temperature
Duct Smoke Detector

SYSTEM SENSOR®

Models Available

DH400ACDCIHT — 4-wire ionization high-temperature duct smoke detector

Product Overview

System Sensor DH400ACDCIHT is designed for interior or exterior duct applications where extreme temperatures can exceed standard detector capabilities. (For exterior applications use DH400 OE-1 outdoor enclosure.) The DH400ACDCIHT samples air currents passing through a duct to provide dependable performance for management of fans, blowers, and air conditioning systems. The twist-in, twist-out 1451DHHT High-Temperature ionization detector head allows easy removal for quick cleaning, maintenance, and replacement without removing the duct housing.

Temperature range 32° – 158°F (0° – 70°C)

Air velocity rating from 500 – 4,000 FPM

24 VAC/DC or 120/220 VAC operation

Easy and quick mounting to round or rectangular ducts from 1′ – 12′ (0.3 – 3.7 meters) wide
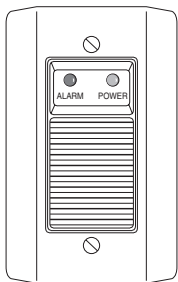
3-year warranty

Agency Listings

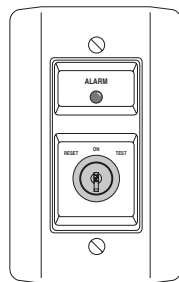|	
DH400ACDCIHT	UL S911
APA451	UL S4011
RTS451KEY	UL S2522
RTS451	UL S2522
RA400Z	UL S2522
PA400W	UL S3593

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.
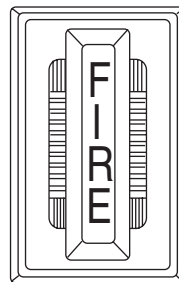
As with our duct detectors, all duct detector accessories are UL listed.
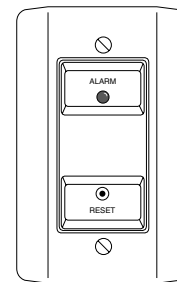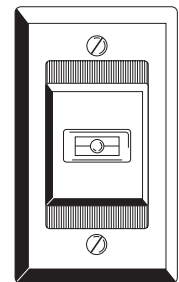
APA451
Piezo
Annunciator

RTS451KEY
Remote Test
Station with Key

PA400W with
PS24LOW Add-on Strobe

RTS451
Remote Test
Station

RA400Z
Remote
Annunciator

UL LISTED

Architect/Engineer Specifications

The air duct smoke detector shall be a System Sensor Model DH400ACDCIHT Series Duct Smoke Detector. The detector shall be UL listed per UL S911, standard for Smoke Detectors for Duct Applications, specifically for use in air handling systems. The detector shall operate at air velocities from 500 feet per minute to 4000 feet per minute. The detector shall have an operating temperature range of 32°F to 158°F. The detector housing shall be equipped with an integral mounting base capable of accommodating ionization detector heads. It shall be capable of local testing via magnetic switch or remote testing using the RTS451KEY or RTS451 Remote Test Station. The duct detector housing shall incorporate an airtight smoke chamber in compliance with UL S911. The housing shall be capable of mounting to rectangular or round ducts up to 12′ wide 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 be installed after the housing is mounted to the duct by passing through the duct housing. Terminal connections shall be of the strip and clamp method suitable for 14–18 AWG wiring.

Electrical Specifications

Power Supply Voltage	20 - 29 VDC	24 VAC 50 - 60 Hz	120 VAC 50 - 60 Hz	220/240 VAC 50 - 60 Hz

CURRENT REQUIREMENTS (USING NO ACCESSORIES)

Max. standby current	25 mA	35 mA RMS	20 mA RMS	20 mA RMS
Max. alarm current	95 mA	55 mA RMS	55 mA RMS	30 mA RMS

CONTACT RATINGS

Alarm initiation contacts (SPST)	2.0A @ 30 VAC/DC (0.6 power factor)
Alarm auxiliary contacts (DPDT)	10A @ 30 VDC
	10A @ 250 VAC
Trouble contacts (SPST)	0.3 @32 VDC (resistive)

Accessory Current Loads at 24 VDC

Device	Standby	Alarm
AP451	12mA max.	30mA max.
PA400W	0mA max.	15mA max.
RA400Z	0mA max.	7mA max.
RTS451	0mA max.*	8mA max.
RTS451KEY	12mA max.*	8mA max.

*NOTE: When initiating an alarm, the RTS451 and RTS451KEY require 103mA in alarm. Nominal standby current is 0mA. Alarm current is 8 mA maximum when test magnet is removed.

NOTE: Accessories are only rated to 120°F and must be installed indoors.

ANY COMBINATION OF ACCESSORIES MAY BE USED SUCH THAT THE GIVEN CURRENT LOADS TOTAL:

100mA OR LESS IN THE STANDBY STATE,
150mA OR LESS IN THE ALARM STATE.

Physical Specifications

Length:
14.5 inches (36.8 cm)

Width:
5 inches (12.7 cm)

Depth:
4 inches (10.2 cm)

Weight:
4.5 lbs. (2.0 kg)

Operating Temperature Range:
32° to 158°F (0° to 70°C)

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

Air Duct Velocity:
500 to 4000 ft./min.

Operating Humidity Range:
10% to 93% relative humidity

Voltage:
24 VAC/VDC or 120/220 VAC

Ordering Information

Model	Description
DH400ACDCIHT	4-wire ionization high-temperature duct smoke detector
1451DHHT	Replacement ionization high-temperature sensor head
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′
P48-21-00	End cap for metal sampling tubes
APA451	Annunciator with piezo alarm and power LEDs
DH400OE-1	Weatherproof Outdoor Enclosure
RTS451KEY	Remote test station with key
RTS451	Remote test station
PA400W	Piezo sounder (white)
PS24LOW	Add-on strobe (white)
RA400Z	Remote annunciator alarm LED
CRT400	Ion cover removal tool
F36-05-00	Replacement air filters (two per package)
MOD400R	Sensitivity test module
M02-04-00	Test magnet
RS14	Ion replacement screen
A2650-01	Replacement installation kit (mounting hardware)

System Sensor Sales and Service

A05-0953-002•10/03•#1169