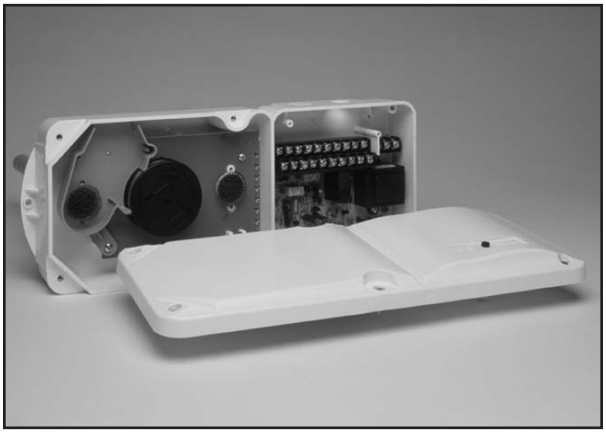
WATERTIGHT 4-WIRE LOW-FLOW DUCT SMOKE DETECTOR

Data Sheet

DESCRIPTION

The System Sensor (Fike P/N 63-1051) Watertight Innovair™ is a NEMA 4 duct smoke detector rated for installation and use in non-hazardous indoor and outdoor applications. The 63-1051 is UL listed as an environmentally watertight enclosure providing a degree of protection against falling dirt, rain, windblown dust, splashing and hose directed water. Additionally, this 4-wire photoelectronic Innovair features advanced Low-Flow technology, capable of sensing smoke in air velocities from 100 to 4,000 feet per minute (0.5 to 20.3 m/sec).



The 63-1051 Watertight Innovair can be directly mounted onto rooftop HVAC equipment or used in other environmentally harsh applications which fall within its specified temperature limits. Since the Watertight Innovair is NEMA 4 rated, no additional enclosure is needed. The Watertight Innovair provides the same form, fit and wiring terminations as the standard Innovair, but meets the NEMA 4 requirements providing an unsurpassed level of environmental protection.

APPROVALS

- UL Listed

In addition to being the only watertight duct smoke detector on the market, this revolutionary Innovair solves many difficult low airflow duct applications where reliable smoke detection is critical. Innovair with Low-Flow technology can detect smoke in air speed velocities of as low as 100 feet per minute, while continuing the same reliable performance up to 4,000 feet per minute.

The Innovair family is designed for simplified installation and easy maintenance. The modular construction allows for easy cleaning and simple field replacement of the UL recognized power and sensor boards.

System Sensor has again set the standard for HVAC smoke detection technology. The Watertight Innovair 63-1051 provides unsurpassed protection in environmentally harsh and low air-flow environments.

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 information about the proper application of duct smoke detectors.

Note: To maintain the watertight properties of this duct smoke detector, watertight conduit and fittings must be used. Mount the product with the conduit holes facing downwards, if possible.

FEATURES

- NEMA Type 4 UL listed for non-hazardous indoor and outdoor applications
- Air velocity rating from 100 to 4000 feet per minute (0.5 to 20.32 m/sec.)
- Patented interconnectability for multi-fan shutdown (up to 10 air handlers)
- Patented telescopic sampling tube
- Patented cover tamper trouble signal
- 24 VAC/DC or 120/241 VAC operation
- High-Low voltage barrier
- Equipped with two DPDT Form C relay contacts

Form No. P.1.80.01

704 S. 10th Street · P.O. Box 610 · Blue Springs, Missouri 64013-0610 U.S.A. · (816) 229-3405 · (816) 229-4615 · www.fike.com

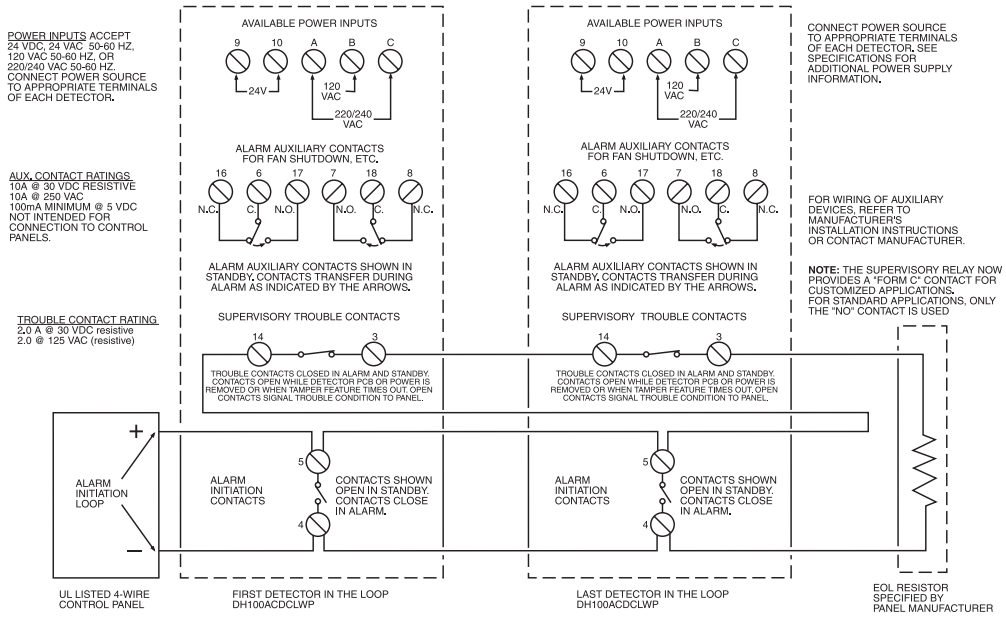
- Built-in reset button
- Outside mounting tabs
- Easy and quick mounting to round or rectangular ducts from 1'-12' (0.3-3.7 meters) wide
- Easy to clean
- UL recognized field-replaceable power and sensor boards
- Remote test station option
- Remote sounder option
- UL 268A listed
- 3-year warranty

ARCHITECTURAL/ENGINEERING SPECIFICATIONS

The air duct smoke detector shall be a System Sensor (Fike P/N 63-1051) series watertight duct smoke detector. The detector shall meet the NEMA 4 standard for enclosures for electrical equipment. It shall be UL listed for non-hazardous locations for installation and use in both indoor and outdoor applications. The detector shall be constructed so as to provide a degree of protection against falling dirt, rain, windblown dust, splashing water, hose-directed water and incidental contact. 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 100 feet per minute to 4000 feet per minute (0.5 to 20.3 m/sec.). 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 02-3869 Multi-Signaling Accessory or 02-4998 Remote Test Station. The unit shall be reset by local reset button or remote test station. The duct smoke 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 ducts. The unit shall provide a spatial separation of no less than 1/4" (6.4mm) 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 the strip and clamp method suitable for 12-18 AWG wiring.

WIRING GUIDE

System wiring diagram for 4-wire duct smoke detectors



SPECIFICATIONS

Size:	14-3/8" (37 cm.) Length, 5-1/2" (14 cm.) Width, 2-3/4" (4 cm.) Depth
Shipping Weight:	3-3/4 lbs. (1.7 kg.)
NEMA Enclosure Rating:	Type 4 - Watertight indoor/Outdoor
Operating Temperature Range:	32° to 131°F (0° ti 55°C)
Storage Temperature Range:	-22° to 158°F (-30° to 70°C)
Operating Humidity Range:	10% to 93% relative humidity non-condensing
Duct Air Velocity Range:	100 to 4000 ft./min. (0.5 to 20.3 m/sec.)

ELECTRICAL RATINGS - DH100ACDCLWP (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 µF max.	270 µF 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
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	25 mA RMS*	25 mA RMS*
Contact Ratings				
Alarm Initiation Contacts (SPST)	2.0 @ 30 VAC/DC (0.6 power factor)			
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); 2.0A @ 125 VAC (resistive)			

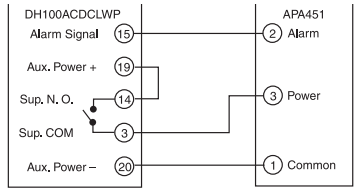
Accessory Current Loads at 24 VDC				
Fike P/N	Device	Standby	Trouble	Alarm
02-11490	APA451	12.5mA Max	n/a	30mA Max.
20-130-134	PA400	0mA	n/a	15mA Max.
02-3868	RA400Z	omA	n/a	10mA Max.
02-3869 02-4998	RTS451 RTS451KEY	12mA*	n/a	7.5mA Max.
02-11489	SSK451	5mA Max.	0mA max.	30mA Max.

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: 50 mA or less in the standby state; 110 mA or less in the alarm state.

Important Interconnect Notes:

- When using the interconnect feature, all interconnected units must be powered with the same, independent supply.
- Polarity must be maintained throughout the interconnect wiring. Connect terminal 12 on unit 1 to terminal 12 on unit 2 and so on. Similarly, connect terminal 1 on unit 1 to terminal 1 on unit 2 and so on.

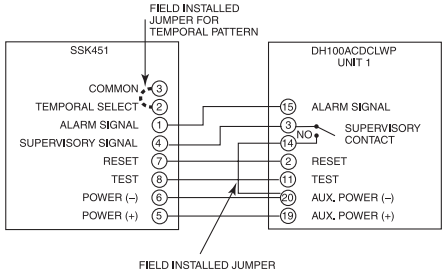
Wiring diagram for 63-033 to 02-11490



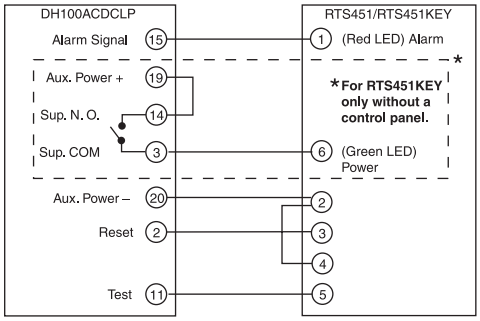
NOTE: Wiring diagram shown is for DH100ACDCLWP 4-wire duct smoke detector system equipped without a control panel.

NOTE: A trouble condition is indicated when the green LED is not illuminated.

Wiring diagram for 63-033 to 02-11489 and interconnect feature



Wiring diagram for 02-3869/02-4998 and interconnect feature

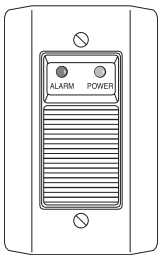


ORDERING INFORMATION

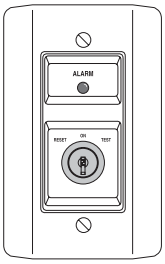
Flke P/N	Mfg. P/N	Description
63-1051	DH100ACDCLWP	4-wire photoelectric duct detector with low-flow technology
63-1026	A5069	Replacement photoelectric detector board
02-4673	A5064	Replacement 4-wire power board
02-3721	ST-1.5	Metal sampling tube duct widths 1'-2' (0.3-0.6 m)
02-3722	ST-3	Metal sampling tube duct widths 2'-4' (0.6-1.2 m)
02-3723	ST-5	Metal sampling tube duct widths 4'-8' (1.2-2.4 m)
02-3724	ST-10	Metal sampling tube duct widths 8'-12' (2.4-3.7 m)
02-4674	T80-71-00	Replacement telescoping sampling tube
02-4675	P48-55-00	Replacement end cap for T80-71-00
02-11489	SSK451	Multi-Signaling accessory
02-4998	RTS451KEY	Remote rest station with key lock
02-3869	RTS451	Remote test station
02-11490	APA451	Remote annunciator with piezo alarm
02-3727	MOD400R	Sensitivity test module
02-3868	RA400Z	Remote annunciator alarm LED
02-4676	F36-09-00	Replacement air filters (two per package)
02-4980	M02-04-00	Test magnet
02-4677	P48-21-00	End cap for metal sampling tubes
02-9976	S09-39-01	Photo replacement screen
20-130-134	PA400W	Mini-Alert sounder
20-1091	PS24LOW	Mini-Alert add-on strobe
02-11491	PS12/24SLENSW	Wall-mount "SMOKE" lens

ACCESSORIES

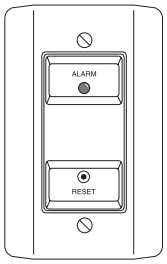
System Sensor provides system flexibility with a variety of accessories, including two remote rest stations, and several different means of visible and audible system annunciation. As with our duct detectors, all duct smoke detector accessories are UL listed.



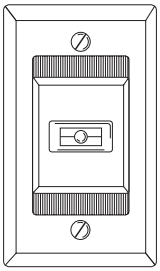
P/N 02-11490
Piezo Annunciator
(UL S4011)



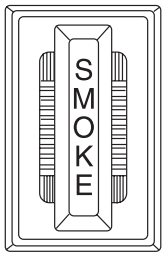
P/N 02-4998
Remote Test Station
with Key (UL S2522)



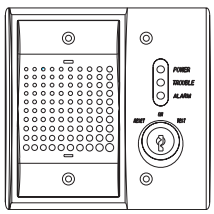
P/N 02-3869
Remote Test Station
(UL S2522)



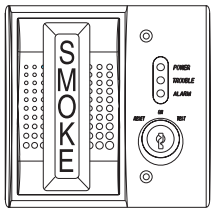
P/N 02-3868
Remote Annunciator
(UL S2522)



P/N 20-130-134
Mini-Alert Sounder
(UL S3593)



P/N 02-11489
Multi-Signaling Accessory
(UL 268A)



P/N 02-11489
Multi-Signaling Accessory
(UL 268) shown with
P/N 20-1091 add-on strobe
(P/N 02-11491 smoke lens
option available)

Form No. P.1.80.01 September, 2005 Specifications are subject to change without notice.