

#### Features

**Monitors air ducts for the presence of smoke†**

**For use with the Simplex model 4098-9714,  
TrueAlarm® photoelectric smoke sensor**  
(ordered separately)

**TrueAlarm analog sensing provides:**

- Digital transmission of analog sensor values via Simplex, MAPNET II® or IDNet™, two-wire communications††

**SSL Listed to AS1603.13-1998**

**UL listed to standard 268A**

**Model 4098-9752 provides 2-wire operation**  
(no relay output)

**Model 4098-9753 provides a local relay:**

- Relay operation is programmable from fire alarm control panel
- Form “C” contacts rated: 1 A @ 28 VDC, power limited; or 1/2 A @ 120 VAC, non-power limited
- Requires separate 24 VDC power, supplied by fire alarm system (4-wire operation)

**Visible red LED indicator on housing:**

- Pulsing indicates power-on, steady on indicates alarm or trouble as indicated at the fire alarm control panel

**Output for optional remote LED**

**Sampling tubes:** (ordered separately)

- Available in multiple lengths to match duct size
- Are installed with housing in place

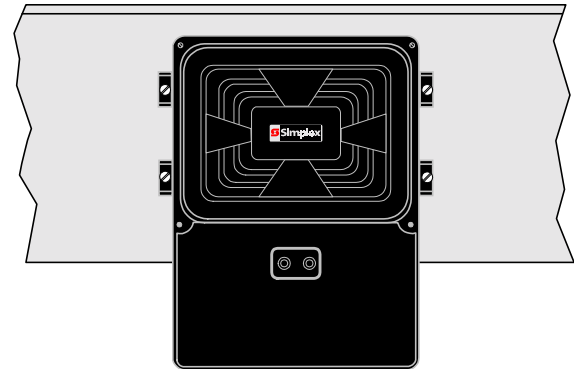
**Options:**

- Remote led alarm indicator (2098-9808)
- Remote test station (2098-9806)

\* ULC listed models are designated with a “C” suffix such as 4098-9752C.

\*\* Accepted for use – City of New York Department of Buildings – MEA35-93E.

† Please note that smoke detection in air ducts is intended to notify of the presence of smoke *in the duct*. It is not intended to, and will not, replace smoke detection requirements for open areas or other non-duct applications.



4098-9752/-9753 Duct Sensor Housing

#### Description

**Operation.** Simplex TrueAlarm air duct smoke sensor housings detect the presence of smoke in air conditioning or ventilating ducts. Sampling tubes are installed into the duct and air is directed to a smoke sensor mounted in the housing. These duct housings provide the high reliability performance of TrueAlarm analog sensing featuring: programmable sensitivity, consistent accuracy, environmental compensation, status testing, and monitoring of sensor dirt accumulation.

**TrueAlarm sensors** require only two wires for both communications and power. For applications requiring control relay operation, two additional wires are required to supply 24 VDC. The 4098-9753 relay can be programmed to track the local sensor’s operation or can be independently controlled by the fire alarm control panel to perform fire response actions such as fan shutdown and damper control.

**Optional AC power adapter**, 2098-9747, is available for applications where the detector relay functions are supplementary only. In the event of loss of power from the 24 VDC or 120 VAC source, the control panel will be informed via data communications.

**Ordering Information.** Duct housings include the necessary exhaust tube. The correct size sampling tube and the required sensor are ordered separately. (Refer to page 3 for selection information.)

†† TrueAlarm analog sensors and MAPNET and IDNet communications are protected by one or more of the following U.S. Patents: 5,155,468; 5,173,683; 5,543,777; 5,400,014; 5,552,765; 5,552,763; 4,796,025; DES. 377,460.

## Applications Reference

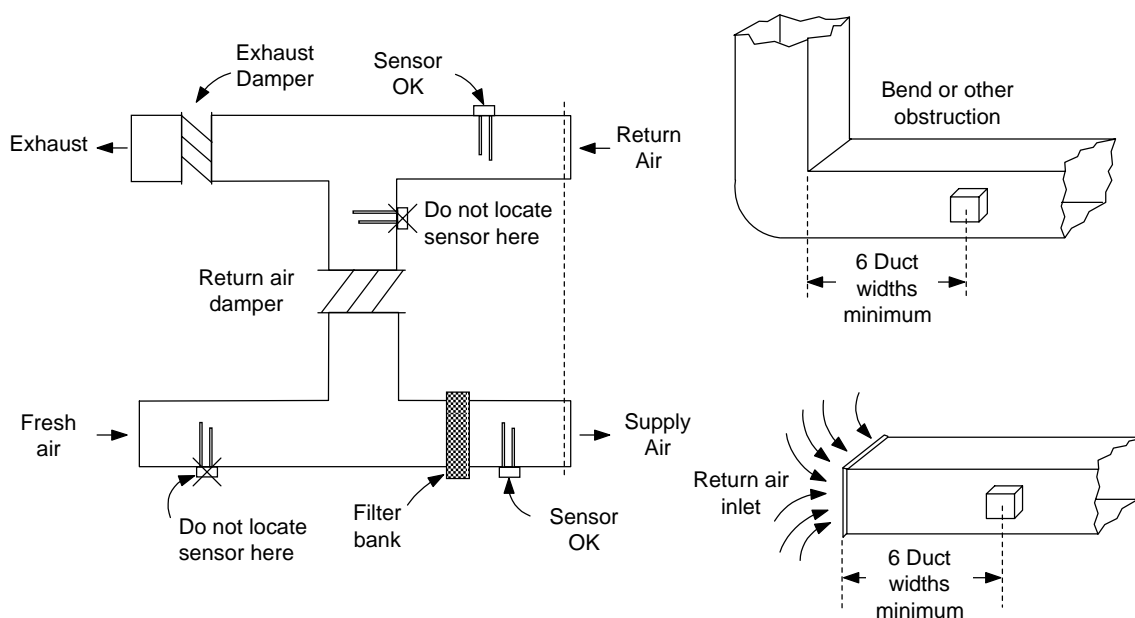
### Preferred Duct Sensor Locations:

1. A minimum of six duct widths downstream from bends or inlets to avoid air turbulence.
2. On the downstream side of filters to detect fires in the filters.
3. In return ducts, ahead of mixing areas.
4. Upstream of air humidifier and cooling coil.
5. With accessibility for test and service.
6. For additional information, refer to NFPA 90A, *Standard for the Installation of Air Conditioning and Ventilating Systems*.

### Locations To Avoid:

1. Where dampers closed for comfort control would interfere with airflow.
2. Next to outside air inlets (unless the intent is to monitor smoke entry from that area).
3. In return air damper branch ducts and mixing areas where airflow may be restricted.

## Duct Sensor Location Reference



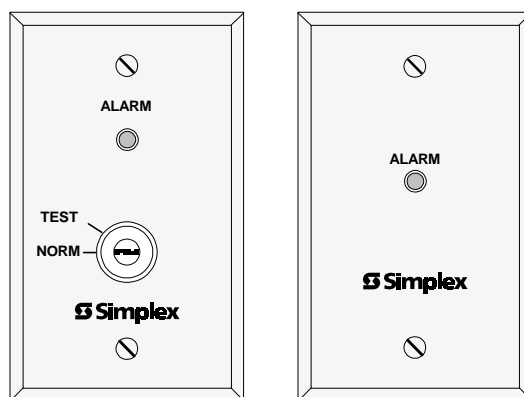
## Remote Indicator Options

**2098-9806, Remote Test Station**, provides a remote Red LED status indicator and a remote test key switch mounted on a single gang stainless steel plate. Turning the test switch to "TEST" will initiate an alarm and allow the resulting system responses to be verified.

**2098-9808, Remote Alarm Indicator**, provides a remote Red LED status indicator mounted on a single gang stainless steel plate.

## Indicator Mounting

Remote status indicators mount in standard single gang boxes, 2"W x 3"H with a minimum depth of 2" (51 mm W x 76 mm H x 51 mm D), supplied separately.



2098-9806

2098-9808

## TrueAlarm Duct Housing Selection Chart

**Sensor Housings** (sensor and sampling tube are ordered separately, exhaust tube is included)

Model	Description	Compatibility
4098-9752	<b>Standard Sensor Housing</b> (no relay), requires 4098-9714 sensor and correct length duct tube	Simplex fire alarm control panel models 4010, 4020, 4100, 4120, and 2120 CDT configured for MAPNET II TrueAlarm
4098-9753	<b>Sensor Housing with relay output</b> , requires 4098-9714 sensor and correct length duct tube	Simplex 4010, 4020, 4100, 4120 (not compatible with 2120 CDT)

**Compatible Sensor** (ordered separately)

Model	Description	Compatibility
4098-9714	Photoelectric Sensor	Required for either 4098-9752 or 4098-9753 (refer to Simplex data sheet S4098-0019 for details)

**Accessories** (order as required)

Model	Description	Compatibility
2098-9747*	AC Power Adapter	Duct Housing 4098-9753
2098-9806	Remote Test Station	Duct Housings 4098-9752 and 4098-9753
2098-9808	Remote Alarm Indicator	

\* When the 2098-9747 Power Adapter is used, only supplementary functions can be performed from the sensor housing.

## Sampling Tube Selection Chart

Overall Duct Width	Tube Required	Suggested Cut Length
12" (305 mm)	2098-9796	1/2 in. (12.7 mm) longer than duct width
13" to 23" (330 mm to 584 mm)	2098-9804	1/2 in. (12.7 mm) longer than duct width
24" to 46" (610 mm to 1168 mm)	2098-9797	2 in. (51 mm) longer than duct width
46" to 71" (1168 mm to 1803 mm)	2098-9798	2 in. (51 mm) longer than duct width
71" to 95" (1803 mm to 2413 mm)	2098-9799	2 in. (51 mm) longer than duct width

## Specifications

### Electrical, General

Data Communications	MAPNET II or IDNet, auto-select, 1 address per housing
Remote LED Current	0.6 mA, no impact to alarm current

### Electrical, 4098-9753 Only, with Auxiliary Relay

Coil Voltage	18 to 32 VDC, supplied separately
Standby Current	240 $\mu$ A @ 24 VDC
Alarm Current	32 mA @ 24 VDC
Power Limited Contact Rating	Single form "C", 1 A @ 28 VDC (for suppressed loads)
Non-Power Limited Contact Rating	Single form "C", 1/2 A @ 120 VAC, resistive (for suppressed loads)

### Environmental

Air Velocity Range	122 to 1220 m/min
Operating Temperature Range	0° C to 50° C
Humidity Range	10% to 95% RH from 0° C to 50°

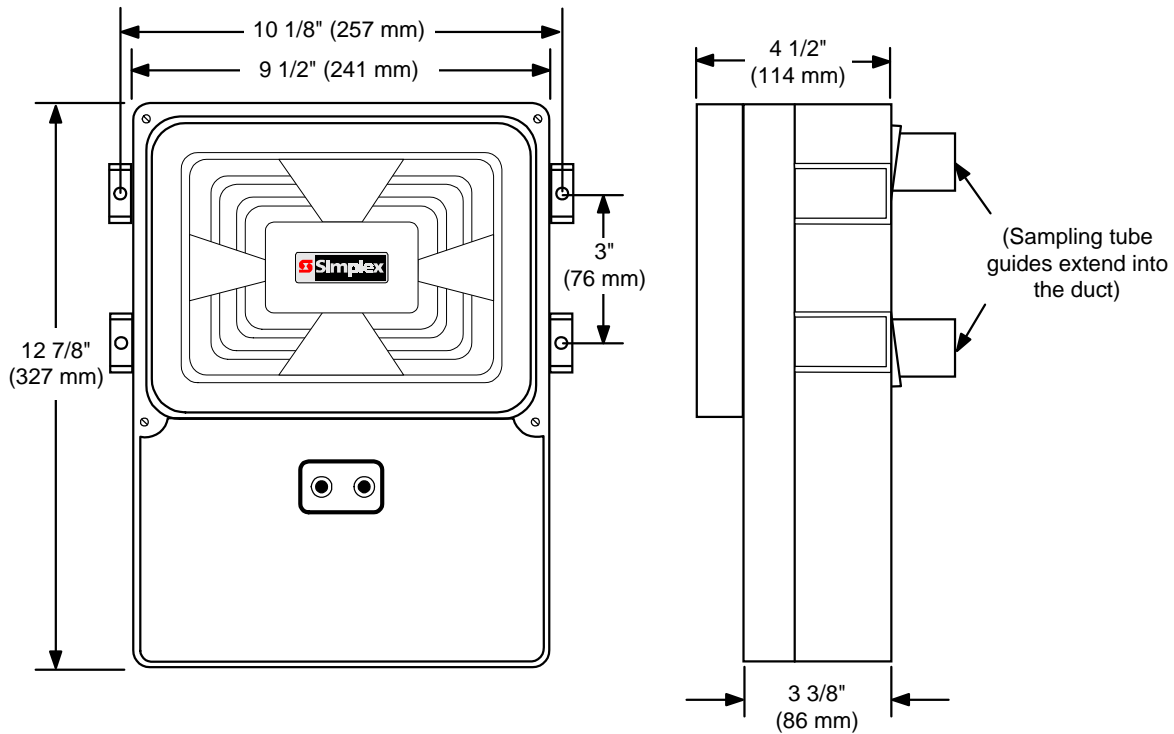
### SSL Approvals

Approved to AS1603.13-1998 – SSL Listing no: afp1263

### Mechanical

Wiring Connections	Terminal blocks, #18 to #14 AWG
Color	Black
Dimensions	Refer to drawing on page 4

## Mounting Information



## Duct Housing Installation Notes

1. For detailed installation information, refer to Simplex Installation Instruction 574-710.
2. Refer to NFPA Standard 72, the *National Fire Alarm Code*, NFPA 90A, *Installation of Air Conditioning and Ventilating Systems*, and Simplex data sheet S2098-0038, *Air Duct Smoke Detection, General Information*, for guidelines to consider during placement and installation of these duct sensor housings.
3. Sampling tubes and exhaust tubes are keyed for proper alignment with the duct housing. Templates are supplied with the unit and must be properly aligned with respect to air flow.

## Maintenance Notes

The *National Fire Alarm Code*, NFPA 72, Chapter 7, Table 7-2.2, Test Methods, states "Air duct sensors shall be tested or inspected to ensure that the device will sample the airstream. The test shall be made in accordance with the manufacturer's instructions."

The following is a partial maintenance list to follow for duct sensor locations:

1. Periodically check duct sensor locations to ensure proper air flow and to verify integrity to the standards of the installation instructions.
2. Sensor air entry areas should be vacuumed on a six month basis or as required. (Sensor dirt accumulation is monitored by the fire alarm control panel.)
3. Additional considerations are contained in Installation Instructions 574-710.

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All specifications and other information shown were current as of printing and are subject to change without notice.