

# TrueAlarm® Smoke Detectors

SSL Listed, UL, ULC\* Listed, FM Approved  
NYC, MEA Approved\*\*

TrueAlarm Photoelectric Smoke Detectors  
for Two-Wire and Four-Wire Bases

## Features

Photoelectric smoke detector with on-board TrueAlarm sensitivity drift compensation†

SSL Listed to AS1603.2 - 1997

UL listed to standard 268

### Multi-function indicator LED:

- Indicates normal and alarm conditions
- Provides detailed diagnostic information for service evaluation
- Identifies dirty detectors, assisting with maintenance priorities

### Functional chamber enclosure:

- Louvered design enhances smoke capture by directing flow to chamber
- Entrance areas are minimally visible when ceiling mounted

### Magnetically operated functional test:

- Initiates alarm and verifies performance
- Identifies general sensitivity status using detector LED

### Model sensitivity settings:

- 4098-9601, Standard Sensitivity, nominal 2.8%/ft obscuration

### Available base options:

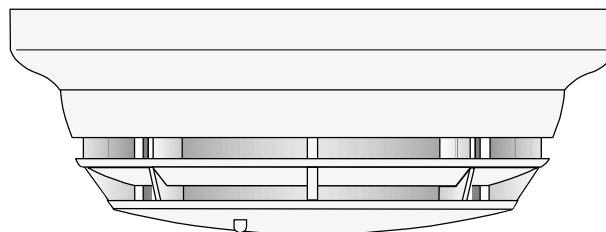
- Bases for 2-wire or 4-wire operation
- Auxiliary alarm relay output

### Optional remote alarm indicating LED

\* ULC listed models are designated with a "C" suffix such as 4098-9601C.

\*\* Detector 4098-9601 and compatible bases are "Accepted for use – City of New York Department of Buildings – MEA35-93E".

† Simplex TrueAlarm smoke detector operation is 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; DES. 377,460.



4098-9601 TrueAlarm Photoelectric  
Detector Mounted in Base

## Description

Simplex TrueAlarm photoelectric detectors provide many of the proven TrueAlarm analog sensing features for applications where detectors are connected to conventional 2-wire or 4-wire initiating device circuits (IDCs). Each TrueAlarm detector has an on-board microprocessor that evaluates its photoelectric light scattering chamber activity and makes an intelligent decision based on light obscuration history as to whether an alarm condition is present.

TrueAlarm detectors are packaged in a patented housing that minimizes the visibility of the air intake louvers from the normal viewing locations while maintaining a high performance smoke capture ability†. Bases are available for remote alarm LED indicator connections and auxiliary relay outputs.

## Specifications

Voltage	15 to 32 VDC, from Fire Alarm Control Panel IDC
Standby Current	100 $\mu$ A @ 24 VDC
Alarm Current, 2-Wire Operation	Up to 86 mA maximum, exact current is determined by alarm current limiting of connected IDC
Alarm Current, 4-Wire Operation	24 mA typical @ 24 VDC
Auxiliary Relay Ratings	Refer to page 2 under Product Selection
Air Velocity Range	0-2000 ft/min (0-610 m/min)
Altitude	up to 8,000 ft (2438 m)
SSL Approval Listing	Afp-1224
Operating Temp. Range	-9° C to +50° C
Humidity Range	10% to 95% RH from 0° C to +50° C
Color	Frost White
Dimensions	4 7/8" Dia. x 1 7/8" H, mounted in base (124 mm x 48 mm), refer to p.3 for detail

## TrueAlarm Smoke Detector Features

**Intelligent Data Evaluation.** Conventional smoke detectors will typically drift toward being too sensitive due to the accumulation of dust and dirt. With TrueAlarm analog detection, data from the photoelectric chamber is monitored and analyzed at the detector to provide a continuously shifting reference point.

**Drift Compensation.** The data evaluation and its shifting reference point provide a software filtering process that compensates for environmental factors (dust, dirt, etc.) and component aging, establishing an accurate reference for evaluating new activity. With this filtering, the resulting drift compensation provides a significant reduction in the probability of false or nuisance alarms caused by shifts in sensitivity – either up or down.

**Diagnostic LED Output.** Detailed service information is provided by pulses that are continuously (and invisibly) encoded into the detector LED status indicator. A hand-held Smoke Detector Sensitivity Reader service tool reads this information without requiring direct contact and without initiating an alarm. Diagnostic information includes detailed detector identification and the detector's

present compensation level to assist maintenance by providing an indication of its dirt accumulation status.

**Magnetic Test Information.** Status information is also available by performing the magnetic test and observing the detector LED pulses. The LED will normally go directly into alarm with the magnetic test. If there is an off-normal condition, the LED pulses first to indicate the condition and then goes into alarm. (See page 3.)

## Application Reference

**Detector Locations.** Locations should be determined only after careful consideration of the physical layout and contents of the area to be protected. Refer to NFPA 72, the *National Fire Alarm Code*.

For further detailed installation information, refer to Simplex publication 574-709, *4098 Detectors, Sensors, and Bases Application Manual*.

**Sensitivity Selection.** The 4098-9601 standard sensitivity detector is recommended for most applications. When a special application for a reduced sensitivity detector is required, the 4098-9605 should be considered. Consult Simplex for assistance in determining the proper selection.

## Product Selection

### Smoke Detectors

Model	Description	Nominal Sensitivity	Compatibility
4098-9601	TrueAlarm Photoelectric Detector	2.8%/ft (standard)	Compatible with detector bases: 4098-9788, 4098-9682, and 4098-9683
4098-9605		3.5%/ft	

### Detector Bases

Model	Description	Details
4098-9788	<b>2-Wire Base</b> with connections for Remote Alarm LED Indicator	<ul style="list-style-type: none"> <li>• IDC and LED connections are screw terminals for in/out wiring, #18 to #14 AWG</li> </ul>
4098-9682	<b>4-Wire Base</b> with Auxiliary Alarm Relay Contacts and connections for Remote LED Alarm Indicator	<p><b>Relay Ratings, Single Form "C", For Suppressed Loads:</b></p> <ul style="list-style-type: none"> <li>• Power limited, 3 A @ 28 VDC</li> <li>• Non-power limited, 3 A @ 120 VAC</li> </ul> <p><b>Wiring Connections (In/Out where required):</b></p> <ul style="list-style-type: none"> <li>• Relay contacts and IDC wiring, color coded #18 AWG leads</li> <li>• LED wiring, screw terminals for #18 to #14 AWG</li> </ul>
4098-9683	<b>2-Wire Base with Auxiliary Alarm Relay &amp; connections for Remote LED Indicator</b>  <b>NOTE:</b> Must be connected as the only device on the IDC to ensure relay operation.	<p><b>Relay Ratings, Dual Form "C", For Suppressed Loads:</b></p> <ul style="list-style-type: none"> <li>• Power limited, 1 A @ 28 VDC</li> <li>• Non-power limited, 1/2 A @ 120 VAC</li> </ul> <p><b>Wiring Connections (In/Out where required):</b></p> <ul style="list-style-type: none"> <li>• Relay contacts and IDC (-), color coded #18 AWG leads</li> <li>• IDC (+) and LED wiring, screw terminals for #18 to #14 AWG</li> </ul>

### Detector Accessories

Model	Description	Details
4098-9832	Adapter Plate	<ul style="list-style-type: none"> <li>• Required for mounting to 4" square box, fits 4" octagonal box</li> <li>• May be used when retrofitting existing bases</li> <li>• Compatible with 4098-9788, -9682, &amp; -9683 detector bases</li> </ul>
4098-9830	Remote LED Indicator	<ul style="list-style-type: none"> <li>• Mounted on single gang stainless steel plate</li> </ul>
2098-9739	Encapsulated 24 VDC End-of-Line Relay	<ul style="list-style-type: none"> <li>• Required for 4-wire circuits using 4098-9682 base, one per circuit, select mounting type as required</li> </ul>
2098-9735	Plate Mounted 24 VDC End-of-Line Relay	

## Visible LED Status Indications

LED Indication	Status
Flashes every 4 seconds *	Circuit is <b>Normal</b> , power is applied
Steady <b>On</b>	Detector is in <b>Alarm</b>

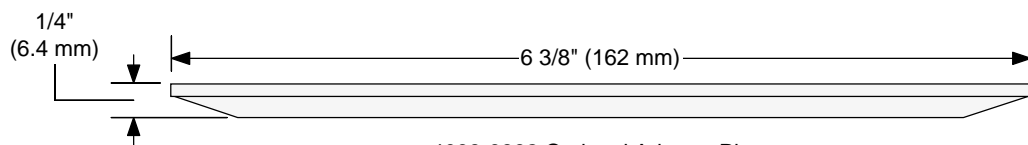
### LED Response to Magnetic Test \*\*

LED Indication	Followed By	Status	Action
LED turns <b>ON</b>	<b>Alarm is initiated</b>	<b>Normal</b> , sensitivity is within compensation range	None
<b>Flashes quickly</b> , 6 times in 3 seconds, <b>then turns ON</b>		<b>More sensitive</b> , out of normal compensation range,	Cleaning or other <b>service is required</b>
<b>Flashes slowly</b> , 4 times in 8 seconds, <b>then turns ON</b>		<b>Less sensitive</b> , out of normal compensation range	
	<b>Does not initiate Alarm</b>	<b>Detector is malfunctioning</b>	<b>Service is required</b>

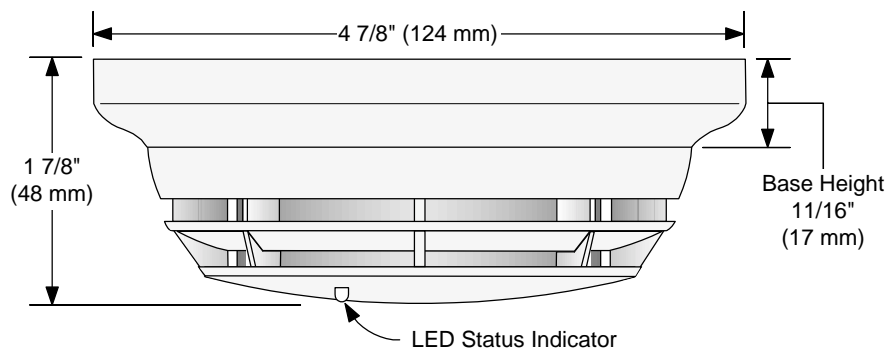
\* Includes encoded diagnostic information within the LED flash. Refer to page 2 for description.

\*\* Testing requires placing a magnet at the designated location on the detector cover for 4 seconds. Refer to application manual 574-709 for further test and maintenance information.

## Dimensions and Reference Information



4098-9832 Optional Adapter Plate  
(required for 4" square box)



4098-9601 & -9605 Dimensions Mounted on Base

4098-9830 Remote LED Indicator (not to scale)

## Mounting Information

(Electrical boxes are supplied by others.)

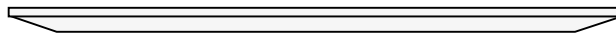
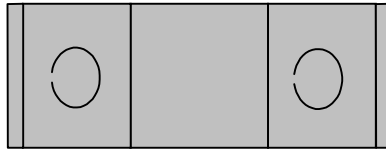
### Electrical Box Requirements:

#### Without Relay (base 4098-9788):

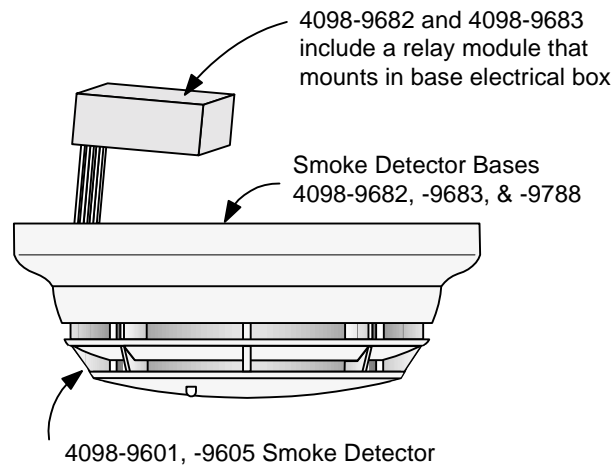
4" octagonal or 4" square, 1 1/2" deep; single gang, 2" deep

#### With Relay (bases 4098-9682 and 4098-9683):

4" octagonal, 2 1/8" deep with 1 1/2" extension ring



4098-9832 Optional Adapter Plate  
(required for 4" square box)



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