

## Features

**TrueAlarm photoelectric sensing and TrueAlarm thermal sensing combined in one housing:**

- TrueAlarm photoelectric technology accurately monitors for smoke activity
- TrueAlarm thermal sensing accurately monitors for fixed temperature and rate-of-rise temperature, selected or combined as required per sensor
- Basic operation is UL listed to Standard 268
- Sounder operation is also listed to UL Standard 464 as an audible notification appliance

**Multi-Sensor Standard Base A4098-9796 provides:**

- Two sequentially addressed points, automatically assigned with one address selection
- Connections for remote LED or LED tracking relay for remote alarm status indication

**Multi-Sensor Sounder Base A4098-9795 provides the features of A4098-9796 and also provides:**

- Built-in piezoelectric sounder with high output (88 dBA) and low current requirements (20 mA)
- Sounder power can be from 24 VDC or from a compatible Notification Appliance Circuit (NAC)
- Sounder output can be synchronized via communications or by the NAC, if NAC powered\*\*
- Sounder operation can be independently activated from the host control panel

**TrueAlarm analog sensing operation:**

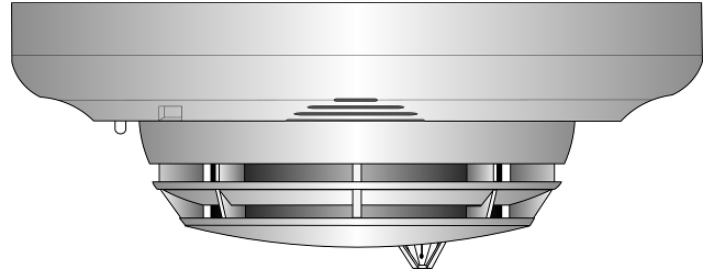
- Analog sensor information is digitally communicated to the control panel via IDNet two-wire communications
- Individual sensor information is processed by the host control panel to determine sensor status

**For use with the following Autocall products:**

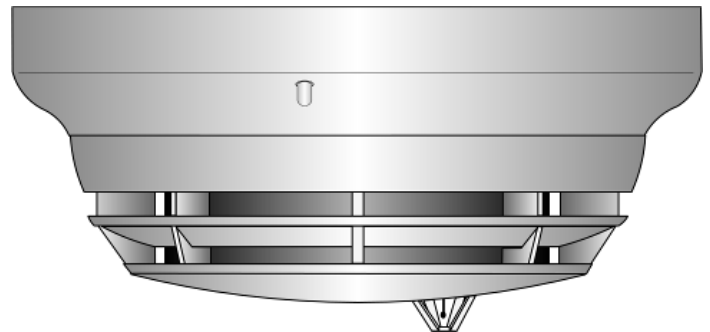
- Model Series 4007ES, 4100ES, and 4100ES fire alarm control panels
- For use with 4007ES, 4100ES, or 4010ES control panels, multi-sensor A4098-9754 is also available using single address bases; refer to data sheet AC4098-0024 for more information, including TrueSense early fire detection operation combining photo and heat inputs

**Functional and architecturally styled enclosures are for ceiling or wall mounting:**

- Smoke sensor louver design directs air flow to chamber, enhancing smoke capture
- Sound louvers on sounder base exit both front and side for high output sound
- Built-in magnetic test feature alarms both addresses
- Designed for EMI compatibility
- Optional accessories include remote alarm LED indicator or alarm LED tracking relay



**Fig 1: TrueAlarm Multi-Sensor A4098-9754  
Mounted in Multi-Sensor Sounder Base A4098-9795**



**Fig 2: TrueAlarm Multi-Sensor A4098-9754  
Mounted in Multi-Sensor Base A4098-9796**

## TrueAlarm Multi-Sensor Description

TrueAlarm multi-sensor A4098-9754 combines the established performances of a TrueAlarm photoelectric smoke sensor with a fast-acting and accurate TrueAlarm thermal sensor to provide both features in a single sensor/base assembly.

**Digital Communication of Analog Sensing.** Analog information from each sensor is digitally communicated to the control panel where it is analyzed. Photoelectric sensor input is stored and tracked as an average value with an alarm or abnormal condition being determined by comparing the sensor's present value against its average value. Thermal data is processed to look for absolute or rate-of-rise temperature as desired.

**Intelligent Data Evaluation.** Monitoring each photoelectric sensor's average value provides a software filtering process that compensates for environmental factors (dust, dirt, etc.) and component aging, providing an accurate reference for evaluating new activity. The result is a significant reduction in the probability of false or nuisance alarms caused by shifts in sensitivity, either up or down.

**Control Panel Selection.** Peak activity per sensor is stored to assist in evaluating specific locations. The alarm set point for each TrueAlarm sensor is determined at the control panel, selectable as more or less sensitive as the individual application requires.

**Timed/Multi-Stage Selection.** Alarm set points can be programmed for timed automatic sensitivity selection (such as more sensitive at night, less sensitive during day). Control panel programming can also provide multi-stage operation per sensor. For example, a 0.2% level may cause a warning to prompt investigation while a 2.5% level may initiate an alarm.

**Sensor Alarm and Trouble LED Indication.** Each sensor base's LED pulses to indicate communications with the panel. If the control panel determines that a sensor is in alarm, or that it is dirty or has some other type of trouble, the details are annunciated at the control panel and that

\* Additional listings may be applicable; contact your local product supplier for the latest status.

## Dual Address Bases for Multi-Sensor A4098-9754, Standard and Sounder

sensor base's LED will be turned on steadily. During a system alarm, the control panel will control the LEDs such that an LED indicating a trouble will return to pulsing to help identify the alarmed sensors.

\*\* Total quantity of sounder bases available for coding on the same communications channel may vary with panel application and availability of NAC power. Refer to specific control panel requirements.

### TrueAlarm Analog Sensor Features

**Sealed against rear air flow entry**

**Electronics are EMI/RFI shielded**

**Smoke sensing:**

- Photoelectric sensing technology
- 360° smoke entry for optimum response
- Chamber screen provides protection from dirt, dust, and insects

**Heat sensing:**

- Fast response thermistor design
- Rate compensated, self-resetting operation
- Control panel can select per sensor for fixed temperature sensing, rate-of-rise temperature sensing, or the combination of both

### Photoelectric Sensing

TrueAlarm photoelectric sensors use a stable, pulsed infrared LED light source and a silicon photodiode receiver to provide consistent and accurate low power smoke sensing. Seven levels of sensitivity are available for each individual sensor, ranging from 0.2% to 3.7% per foot of smoke obscuration. Sensitivities of 0.2%, 0.5%, and 1% are for special applications in clean areas. Standard sensitivities are 1.5%, 2.0%, 2.5%, 3.0%, and 3.7%. Application type and sensitivity are selected and then monitored at the fire alarm control panel.\*

The sensor head design provides 360° smoke entry for optimum smoke response. Because of the photoelectric sensing technology, the A4098-9754 sensor is UL listed for air velocity of up to 4000 ft/min. However, care must be taken in determining sensor locations to avoid areas where local airflow may also impact any smoke flow. (Refer to the application reference section on this page.)

### Heat Sensing

TrueAlarm heat sensors monitor a fast reacting thermistor providing operation that is self-restoring and rate compensated. Due to its small thermal mass, the sensor accurately and quickly measures the local temperature for analysis at the fire alarm control panel. The control panel allows alarm selection to be per sensor as fixed temperature, or rate-of-rise temperature, or the combination of both.

Rate-of-rise temperature detection is selectable at the control panel for either 15° F (8.3° C) or 20° F (11.1° C) per minute. Fixed temperature sensing is independent of rate-of-rise sensing and selectable to operate at 135° F (57.2° C) or 155° F (68° C). In a slow developing fire, the temperature may not increase rapidly enough to operate the rate-of-rise feature. However, an alarm will be initiated when the temperature reaches its selected fixed temperature setting.

TrueAlarm heat sensors can be programmed as a utility device to monitor for temperature extremes in the range from 32° F to 122° F (0° C to 50° C). This feature can provide freeze warnings or alert to HVAC system problems. (Refer to specific panels for availability.)

### Application Reference

Sensor locations should be determined after careful consideration of the physical layout and contents of the area to be protected. Refer to NFPA 72, *the National Fire Alarm and Signaling Code*. On smooth ceilings, smoke sensor spacing of 30 ft (9.1 m) may be used as a guide.\*

\* For detailed application information including sensitivity selection, refer to Installation Instructions 574-709AC.

### Installed Dimension Reference

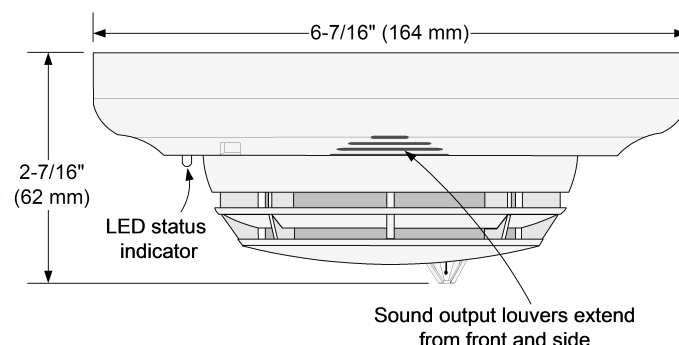


Fig 3: Multi-Sensor with A4098-9795 Multi-Sensor Sounder Base

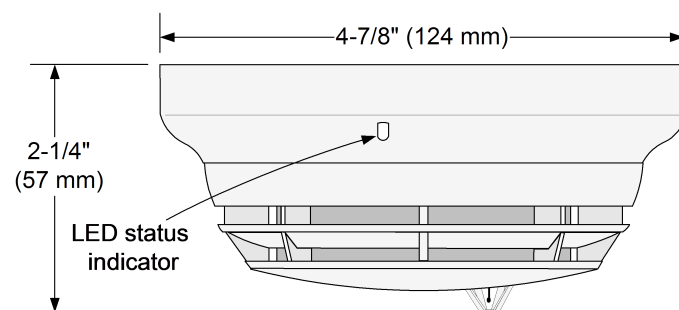


Fig 4: Multi-Sensor with A4098-9796 Multi-Sensor Base

### Multi-Sensor Base Features

**Base mounted address selection** allows the addresses of the multi-sensor base to remain with its programmed location when the sensor is removed for service.

**Integral red LED** indicates power-on by pulsing, or alarm or trouble when steady on, reflecting status of either sensor. The exact status of the specific sensing element is annunciated at the fire alarm control panel.

### Fire Alarm Control Panel Features

Individual smoke sensitivity and temperature operation is selectable for each sensor

- Sensitivity monitoring that satisfies NFPA 72 sensitivity testing requirements
- Peak value logging allows accurate analysis for sensitivity selection
- Automatic, once per minute individual sensor calibration check verifies sensor integrity
- Multi-stage alarm operation
- Selectable alarm verification
- Ability to correlate sensitivity selection with temperature
- Automatic environmental compensation
- Smoke sensitivity displayed in percent per foot
- Ability to display and print detailed sensor information in plain English language

## Product Selection Chart

Table 1: TrueAlarm Multi-Sensor (ordered separately, refer to page 3 for mounting requirements)

SKU	Color	Description
A4098-9754	White	Multi-sensor, photoelectric sensor with integral thermal sensor, for use with bases A4098-9795 and A4098-9796
A4098-9754 IND		
A4098-9779	Black	

Table 2: TrueAlarm Multi-Sensor Bases (ordered separately, refer to page 3 for mounting requirements)

SKU	Description	
A4098-9795	Sounder Base	Dual address base for multi-sensor A4098-9754; with connections for remote LED alarm indicator or unsupervised relay
A4098-9796	Standard Base	

Table 3: Accessories (ordered separately as required, refer to page 3 for additional mounting requirements)

SKU	Description	
4098-9832	Adapter Plate, 6-3/8" (162 mm) diameter, 1/4" (6.4 mm) deep, matches bases, required for some mounting combinations	
A2098-9808	Choose	Red LED Alarm Indicator on single gang stainless steel plate, mounts on single gang box, 1-1/2" minimum depth
A4098-9822	one if required	Relay with operation that tracks base led status, mounts in base electrical box, 4" square or octagonal box with 1-1/2" (38 mm) extension ring, select box depth per actual wiring requirements
<b>Note:</b> * Model numbers ending in IND are assembled in India.		

## Specifications

Table 4: General Operating Specifications

<b>Communications and Sensor Supervisory Power</b>		IDNet communications, auto-selected, 2 addresses per base
<b>Communications and Sounder Power Connections</b>		Screw terminals for in/out wiring, 18 to 14 AWG
<b>Remote LED Alarm Indicator</b>	<b>Current</b>	1 mA typical supplied from communications, no impact to alarm current
	<b>LED Connections</b>	Color coded wire leads, 18 AWG
<b>UL Listed Temperature Range</b>		32° F to 100° F (0° C to 38° C)
<b>Operating Temperature Range</b>		15° F to 122° F (-9° C to 50° C)
<b>Storage Temperature Range</b>		0° F to 140° F (-18° C to 60° C)
<b>Humidity Range</b>		10 to 95% RH
<b>Smoke Sensor Sensitivity Range</b>		0.2 % to 3.7% per foot of smoke obscuration, selectable at host control panel
<b>Smoke Sensor Air Velocity Range</b>		0-4000 ft/min (0-1220 m/min)
<b>Thermal Sensor Operation (selected at host control panel)</b>		Fixed alarm temperature setting of 135° F (57.2° C), and/or rate-of-rise temperature alarm at 15° F (8.3° C) or 20° F (11.1° C), also selectable as utility monitoring operation from 32° F to 122° F (0° C to 50° C), availability is panel dependent
<b>Sensor, Bases, and Adapter Plate Color</b>		Frost White or Black

Table 5: Sounder Operation with A4098-9795 Multi-Sensor Sounder Base

<b>Sounder Voltage</b>		18 to 32 VDC from steady external source or from NAC
<b>Alarm Current (sounder on)</b>		20 mA @ 24 VDC, 24 mA maximum @ 32 VDC
<b>Sounder Output</b>		88 dBA minimum @ 10 ft (3 m) per UL Standard 464, Audible Signaling Appliances and UL Standard 268, Smoke Detectors for Fire Protective Signaling Systems
<b>Sounder Power Supervision (selectable)</b>	<b>Supervised</b>	Select for continuous 24 VDC power, loss of power is communicated to panel
	<b>Unsupervised</b>	Select when connected to NAC for sounder power, NAC provides supervision
<b>NAC Powered Operation</b>		When sounder is activated by control panel, sounder output tracks connected NAC to allow synchronized coding (Temporal or March Time, etc.)

**Table 6: A4098-9822 Unsupervised Relay Option**

<b>Externally Supplied Relay Voltage</b>	18-32 VDC, steady source recommended (connects to remote LED leads)
<b>Alarm Current</b>	13 mA from separate 24 VDC supply
<b>Contact Ratings, DPDT contacts for resistive/suppressed loads</b>	Power limited rating: 2 A @ 30 VDC
	Non-power limited rating: 1/2 A @ 120 VAC
<b>Relay Operation</b>	Tracks base LED status, relay is on with trouble or alarm at the base