

#### Features

- Modular TrueAlarm sensor base with built-in electronic alarm sounder
- Piezoelectric sounder provides high output (88 dBA) with low current requirements (20 mA)
- For use with interchangeable TrueAlarm photoelectric or heat sensors (ordered separately)
- Ceiling or wall mounting

#### Sounder operation

- Powered from 24 VDC or from a compatible Notification Appliance Circuit (NAC).
- Synchronized through communications or by the NAC, if NAC powered, see note.
- Sounder can be manually activated from the fire alarm control unit (FACU).
- Sensor and sounder operation is listed to UL Standard 268.
- Sounder operation is also listed to UL Standard 464 as an audible notification appliance.

#### TrueAlarm analog sensing

- Analog sensor information is digitally communicated to the FACU through IDNet or MAPNET II two-wire communications.
- Sensor information is processed by the FACU to determine sensor status.

#### Compatibility

For use with the following Simplex products:

- 4007ES, 4010, 4010ES, 4100ES, and 4100U series FACUs, and 4008 series FACUs with reduced feature set. Refer to data sheet *S4008-0001* for details
- 4020, 4100, and 4120 series FACUs, and Universal Transponders equipped for MAPNET II operation

#### General features

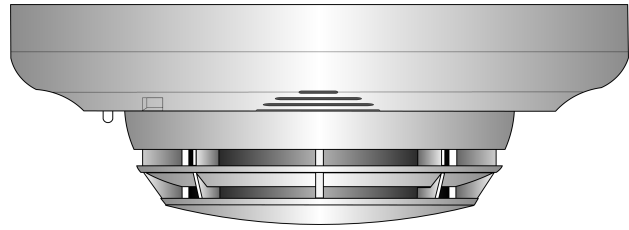
- Louvered smoke sensor design enhances smoke capture by directing flow to the chamber. Entrance areas are minimally visible when ceiling mounted.
- Designed for EMI compatibility.
- Magnetic test feature is provided.
- Optional accessories include remote LED alarm indicator and output relays.

#### Additional base reference:

- For standard bases, refer to data sheet *S4098-0019*.
- For isolator bases, refer to data sheet *S4098-0025*.
- For isolator2 bases, refer to data sheet *S4098-0026*.
- For photo/heat sensors, refer to data sheet *S4098-0024*, single address, and *S4098-0033*, dual address.

**Note:** The number of sounder bases available on the same communications channel may vary with FACU application and availability of NAC power. Refer to specific FACU requirements.

Figure 1: TrueAlarm Photoelectric Sensor mounted in Sounder Base 4098-9794



#### TrueAlarm analog sensing description

Sounder bases combine an audible notification appliance and a TrueAlarm analog sensor to provide the following features:

##### Digital communication of analog sensing

Analog information from each sensor is digitally communicated to the FACU. The FACU stores and tracks sensor input as an average value. It then determines an alarm or abnormal condition by comparing the sensor's present value against its average value.

##### Intelligent data evaluation

The software filtering process monitors each photoelectric sensor's average value and compensates for environmental factors, such as dust and dirt, and component aging. The result is a reduction in false or nuisance alarms caused by shifts in sensitivity. Status indications of dirty and excessively dirty prompt maintenance to be performed for each device.

##### FACU selection

Peak activity for each sensor is stored to assist in evaluating specific locations. You can select the alarm set point for each TrueAlarm sensor at the FACU, as more or less sensitive as the individual application requires.

##### Timed and multi-stage selection

You can program alarm set points for timed automatic sensitivity selection, such as more sensitive at night, less sensitive during day. You can also program the FACU for multi-stage operation for each 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 FACU. If the FACU 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 FACU and that sensor base's LED turns on steadily. During a system alarm, the FACU controls the LEDs so that an LED indicating a trouble returns to pulsing to help identify the alarmed sensors.

#### Additional Sounder Base features

##### Base mounted address selection

Programmed locations are stored in the base, so you can service sensors without reprogramming. Access is from the front under the removable sensor.

##### Automatic sensor type identification

Automatic sensor type identification provides a default sensitivity when substituting sensor types. You can change different sensor types to meet specific location requirements, and substitute sensors during building construction. When conditions are temporarily dusty, you can install heat sensors without reprogramming the FACU.

\* This product has been approved by the California State Fire Marshal (CSFM) pursuant to Section 13144.1 of the California Health and Safety Code. See CSFM Listings 7300-0026:217 and 7271-0026:231 for allowable values and/or conditions concerning material presented in this document. Accepted for use – City of New York Department of Buildings – MEA35-93E. Additional listings may be applicable, contact your local Simplex product supplier for the latest status. Listings and approvals under Simplex Time Recorder Co. are the property of Tyco Fire Protection Products.

### Integral red LED

The LED pulses on power-on, and lights steady on when there is an alarm or trouble. The FACU annunciates the exact status of the specific sensing element.

### FACU features

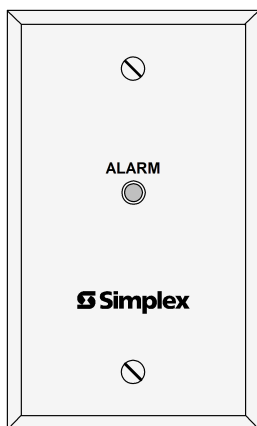
- Peak value logging of each sensor for accurate sensitivity selection
- Sensitivity monitoring satisfying NFPA 72 sensitivity testing requirements; automatic individual sensor calibration check verifies sensor integrity
- Automatic environmental compensation, multi-stage alarm operation, and display of sensitivity directly in percent per foot
- Ability to display and print detailed sensor information in English language

### Accessories

**4098-9822, LED Annunciation Relay:** This activates when the base LED is on steady and indicates a local alarm or trouble. Contacts are DPDT, rated 2 A at 30 VDC, 1/2 A at 120 VAC for transient suppressed loads. Requires external 24 VDC coil power.

**2098-9808, Remote Red LED Alarm Indicator:** Mount on a single gang box to provide status indications where the sensor location may not be readily visible.

Figure 2: 2098-9808 Remote LED Alarm Indicator



### TrueAlarm Analog Sensor features

TrueAlarm Analog Sensors are sealed against rear air flow entry, and the electronics are EMI/RFI shielded

### Heat Sensors

You can select rate-compensated, fixed temperature sensing with or without rate-of-rise operation

Table 1: Rated spacing distance between sensors

Fixed temperature setting	UL and ULC spacing	FM Spacing, either fixed temperature setting
135° F (57.2° C)	60 ft x 60 ft (18.3 m)	20 ft x 20 ft (6.1 m) for fixed temperature only, RTI = Quick
155° F (68° C)	40 ft x 40 ft (12.2 m)	50 ft x 50 ft (15.2 m) for fixed temperature with either rate-of-rise selection, RTI = Ultra Fast

### Smoke Sensors

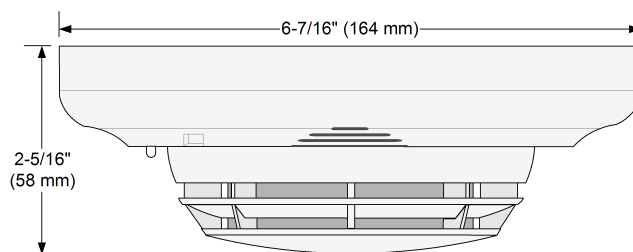
- Photoelectric technology sensing
- 360° smoke entry for optimum response
- Built-in insect screens

### 4098-9714 Photoelectric Sensor

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 FACU. See note in [Application reference](#).

The sensor head design provides 360° smoke entry for optimum smoke response. Due to its photoelectric operation, air velocity is not normally a factor, except for impact on area smoke flow.

Figure 3: 4098-9714 Photoelectric Sensor with Sounder Base



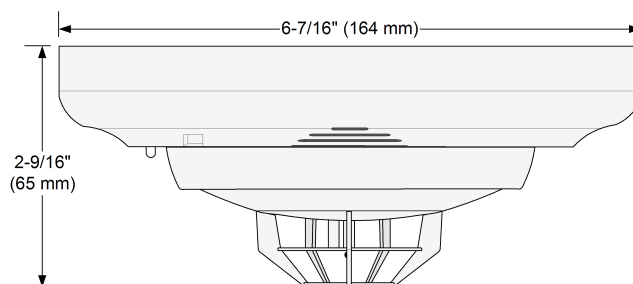
### 4098-9733 Heat Sensor

TrueAlarm heat sensors are self-restoring and provide rate-compensated, fixed temperature sensing, selectable with or without rate-of-rise temperature sensing. The sensor measures the local temperature for analysis at the FACU.

You can select rate-of-rise temperature detection at the FACU 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 programmable 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 is initiated when the temperature reaches its rated fixed temperature setting.

You can program TrueAlarm heat sensors as a utility device to monitor for temperature extremes in the range from 32° F to 155° F (0° C to 68° C). This feature can indicate freeze warnings or HVAC system problems. Refer to specific FACUs for availability.

Figure 4: 4098-9733 Heat Sensor with 4098-9794 Sounder Base



**WARNING:** In most fires, hazardous levels of smoke and toxic gas can build up before a heat detection device initiates an alarm. In cases where Life Safety is a factor, the use of smoke detection is highly recommended.

### Application reference

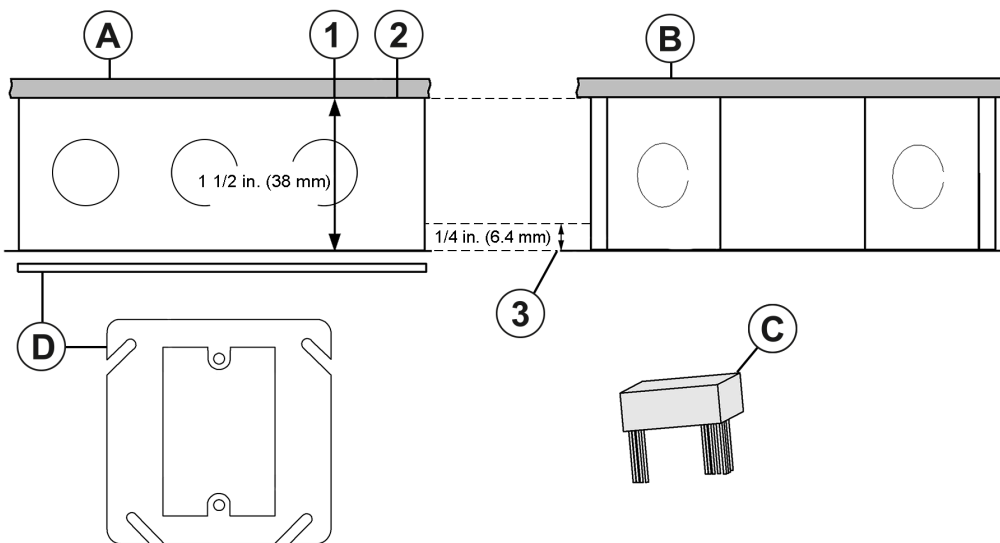
Determine the location for sensors after careful consideration of the physical layout and contents of the area. Refer to NFPA 72, *the National Fire Alarm and Signaling Code*. On smooth ceilings, you may use a smoke sensor spacing of 30 ft (9.1 m) as a guide, see note.

**Note:** For detailed application information, refer to *4098 Detectors, Sensors, and Bases Application Manual (574-709)*.

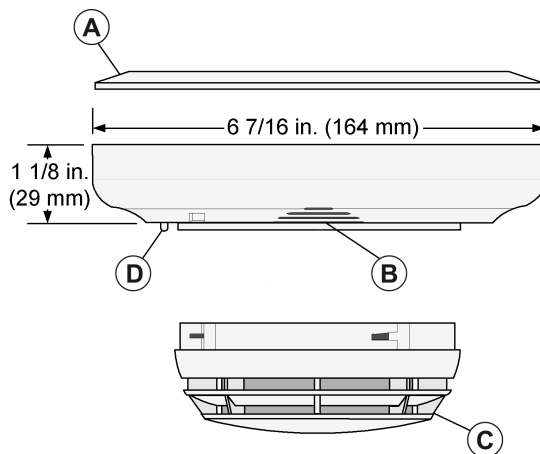
### Mounting reference

**Table 2: Electrical box requirements, boxes are by others**

Installation type	Electrical box dimensions
Without relay	4 in. octagonal or 4 in. square, 1 1/2 in. deep. Single gang, 2 in. deep
With relay	4 in. octagonal or 4 in. square, 1 1/2 in. deep, with 1 1/2 in. extension ring



Callout	Description	Callout	Description
A	4 in. (102 mm) square box	B	4 in. (102 mm) octagonal box
C	Optional 4098-9822 relay. Mounts in base electrical box and requires additional volume, see notes. Relay size: 2 1/2 in. x 1 1/2 in. x 1 in. (64 mm x 38 mm x 25.4 mm), 3.75 cubic inches.	D	Single gang adapter plate, RACO No. 787 or equal. Required when using 4 in. square box, by others.
1	1 1/2 in. (38 mm) minimum box depth	2	Surface mount reference
3	Flush mount reference. Mount evenly with final surface, or with up to 1/4 in. (6.4 mm) maximum recess.	—	—



Callout	Description	Callout	Description
A	4098-9832 adapter plate, 6 3/8 in. diameter x 1/4 in. thick. Required for mounting to surface mounted boxes, mounts inverted.	B	Sound output louvers extend from front to side.
C	Photoelectric sensor shown for reference.	D	LED status indicator

**Notes:**

- Review actual wire size, wire count, box type, and whether 4098-9822 relay is used before you determine the box size.
- Mounting to a flush-mounted box also fits single gang handy box, 2 1/8 in. (51 mm) deep, if wiring allows. Not applicable if you use 4098-9822.
- For surface-mounted boxes, use 4 in. square box with a single gang adapter plate, RACO No. 787 or equal, by others, or 4 in. octagonal box. Both require a 4098-9832 adapter plate.
- When you use a 4098-9822, mount the relay in an electrical box and use a 1 1/2 in. extension ring, by others, on a 4 in. square or octagonal box of 1 1/2 in. or 2 1/8 in. depth as required.
- Refer to *4098 Smoke/Heat Sensor Bases Installation Instructions (574-707)* for additional information.

**TrueAlarm Analog Sensing product selection chart**
**Table 3: TrueAlarm Sounder Base, see note**

Model	Description	Compatibility	Mounting Requirements
4098-9794	Sounder Base with connections for Remote LED Alarm Indicator or Unsupervised Relay	Sensors: 4098-9714 and 4098-9733 Options: 2098-9808 remote LED alarm indicator or 4098-9822 relay	See <a href="#">Mounting reference</a> .

**Table 4: TrueAlarm Sensors, ordered separately**

Model	Description	Mounting requirements
4098-9714	Photoelectric Smoke Sensor	See <a href="#">Mounting reference</a> .
4098-9733	Heat Sensor	

**Table 5: Sounder Base accessories, ordered separately if required**

Model	Description	Mounting requirements
4098-9832	Adapter Plate, required for surface mounted 4 in. electrical boxes.	See <a href="#">Mounting reference</a> .
2098-9808	Choose one if required	Remote red LED Alarm Indicator on single gang stainless steel plate
4098-9822		Relay, tracks base LED status, unsupervised, only mount in base electrical box.
		Single gang box, 1 1/2 in. minimum depth
		Mounts in base electrical box, requires 1 1/2 in. extension on a 4 in. square or octagonal box.

**Note:** Refer to data sheet *S4098-0019* for other compatible bases. Refer to *4098 Smoke/Heat Sensor Bases Installation Instructions (574-707)* and *4098 Detectors, Sensors, and Bases Application Manual (574-709)* for additional information.

**Specifications**
**Table 6: General operating specifications**

Specification	Rating
Communications and sensor supervisory power	IDNet or MAPNET II communications, auto-selected, 1 address per base
Communications and sounder power connections	Screw terminals for in/out wiring, 18 to 14 AWG (0.82 mm <sup>2</sup> to 2.08 mm <sup>2</sup> )
Remote LED Alarm Indicator	Current
	LED connections
UL listed temperature range	32° F to 100° F (0° C to 38° C)
Operating temperature range	With 4098-9733
	With 4098-9714
Storage temperature range	32° F to 122° F (0° C to 50° C)
Humidity range	15° F to 122° F (-9° C to 50° C)
Smoke Sensor ambient ratings	0° F to 140° F (-18° C to 60° C)
Housing color	10 to 95% RH
	Air velocity is 0-4000 ft/min (0-1220 m/min)
	Frost white

**Table 7: Sounder operation**

Specification	Rating
Sounder voltage	18 to 32 VDC from steady external source or from NAC
Alarm current, sounder on	20 mA at 24 VDC, 24 mA maximum at 32 VDC
Sounder output	88 dBA minimum at 10 ft (3 m) in accordance with UL Standard 464, <i>Audible Signaling Appliances and UL Standard 268, Smoke Detectors for Fire Protective Signaling Systems</i>

**Table 7: Sounder operation**

Specification		Rating
Sounder power supervision, selectable	Supervised	Select for continuous 24 VDC power, loss of power is communicated to panel
	Unsupervised	Select when connected to NAC for sounder power, NAC provides supervision
NAC powered operation		When in alarm, sounds when NAC is in alarm, allowing synchronized pattern, for example Temporal or March Time, controlled by the NAC

**Table 8: 4098-9822 Unsupervised relay option**

Specification	Rating
Externally supplied relay voltage	18-32 VDC, steady source recommended (wires to remote LED leads)
Alarm current	13 mA from separate 24 VDC supply
Contact ratings, DPDT contacts for resistive or suppressed loads	Power limited rating: 2 A at 30 VDC
	Non-power limited rating: 1/2 A at 120 VAC
Relay operation	Tracks base LED status, relay is on with trouble or alarm at the base

