

Features

TrueAlarm addressable sensor base with 520 Hz sounder

- TrueAlarm sensor bases with 520 Hz tone require a TrueAlarm photoelectric, photo/heat or heat sensor (ordered separately)
- TrueAlarm sensor bases with 520 Hz tone are multi-point devices, use a single IDNet address, and receive communications and sensor power from the IDNet channel (the sounder base requires separate 24 VDC system power or NAC connection)
- IDNet circuit allows the sounder to be supervised and coded by compatible NACs, allowing synchronized temporal, march time, or other channel coding.
- Sensor and sounder operation is listed to UL Standard 268, UL Standard 464, and ULC Standard S529
- Sounder operation is also listed to UL Standard 464 as an audible notification appliance

Sensor base with photoelectric or photo/heat sensor operation

- Independent sensor operation or selectable multi-sensor modes for false alarm reduction or faster detection
- Photoelectric, photo/heat, or heat sensors can be analyzed to reject non-fire conditions that can trigger false alarms (steam, dust, etc)

520 Hz Sounder base operation

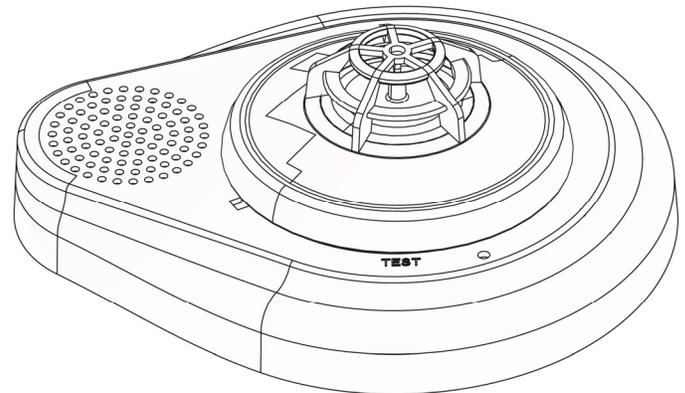
- Low Frequency sound output (520Hz at 85 dBA)
- The base can supervise the sounder drive circuit when an AUX 24V power line is used for sounder power. Alternatively, base supervision can be disabled if a supervised NAC is needed to power the sounder for coded outputs.
- Sounder can be manually activated from the panel

Panel operation summary

- Analog sensor information is digitally transmitted to the host control panel via IDNet communications for processing to evaluate and track status

General features

- Ceiling mount operation
- Optional accessories include remote alarm LED and mounting adapter plate
- Designed for EMI compatibility
- Magnetic test feature



TrueAlarm Sensor Base with 520 hz sounder
4098-9772 with Heat Sensor installed

520 Hz Sounder Base Features

Base mounted address selection allows the address to remain with its programmed location when the sensor is removed for service or type change.

Automatic sensor type identification provides default sensitivity when substituting sensor types. Different sensor types can be easily interchanged to meet specific location requirements. This feature also allows intentional sensor substitution during building construction. Instead of covering the smoke sensors when conditions are temporarily dusty, heat sensors may be installed without reprogramming the control panel.

Integral red LED indicates power-on by pulsing, or alarm or trouble when steady on. The exact status is annunciated at the fire alarm control panel.

Application Reference

Determine sensor locations after careful consideration of the physical layout and contents of the area to be protected.

For fire alarm applications:

- 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:

- Refer to *4098 Detectors, Sensors, and Bases Application Manual*, Part Number 574-709.

* Listings and approvals under Simplex Time Recorder Co. are the property of Tyco Fire Protection Products.

Control Panel Operations

Smoke sensor features include: sensitivity monitoring satisfying NFPA 72 sensitivity testing requirements, automatic individual sensor calibration checking to verify sensor integrity, automatic environmental compensation, available multi-stage alarm operation, display of sensitivity directly in percent per foot, monitoring of peak activity per sensor, alarm set point, and time of day or multi-stage alarm selection.

Sensor Alarm and Trouble LED Indications

The sensor base LED pulses to indicate communications with the panel. If a sensor is in alarm, or has a trouble condition, the status is annunciated at the control panel and that base LED will turn on steady. During a system alarm, the panel will control LEDs such that a trouble indication will return to pulsing to help identify the sensors in alarm.

Multi-Point Allocation 4007ES, 4010ES, and 4100ES control panels require only one (1) point at the host panel per sensor base. Depending on sensor base and sensor choice, up to seven (7) points can be made public to a connected Simplex Fire Alarm Network. Each sensor base uses a single address with “sub-points” layered underneath (such as 1-1-0, 1-1-1, 1-1-2,1-1-6).

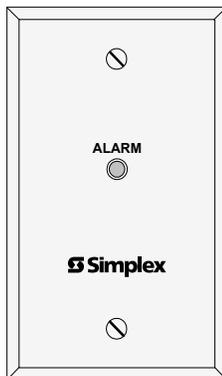
For 4100U control panels, the requirement is three (3) points at the host panel per sensor base with the 4098-9754 multi-sensor, and two (2) points for the other sensors. Additional multi-point allocation detail is described in reference data sheet S4090-0011.

Control Panel Operations (Continued)

Sensor Base with 520 Hz Power Requirements Power for the sensor base is provided by IDNet communications. No additional wiring is required for upgrading of existing installed TrueAlarm sensor bases. Sensor sounder bases do require system supplied separate VDC (or NAC) wiring, the same as the standard sounder base.

Accessories

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



2098-9808 Remote LED Alarm Indicator

TrueAlarm Analog Sensor Features

Sealed against rear air flow entry Electronics are EMI/RFI shielded Heat sensing:

- Selectable rate compensated, fixed temperature sensing with or without rate-of-rise operation
- Rated spacing distance between sensors:

Fixed Temp. Setting	UL& 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

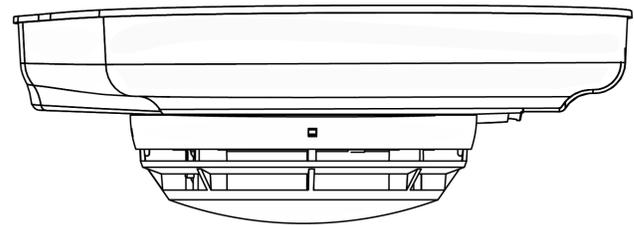
Smoke Sensors:

- 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 fire alarm control panel. (For detailed application information about sensitivity selection, refer to Installation Instructions 574-709.)

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.



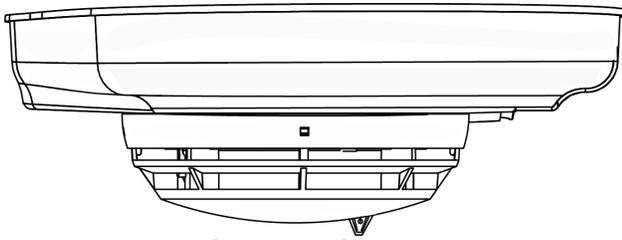
4098-9714 Photoelectric Sensor on sensor base

4098-9754 Multi-Sensor

TrueAlarm multi-sensors combine the performance of TrueAlarm photoelectric smoke sensing with TrueAlarm thermal sensing to provide both features in a single assembly. Each sensing element provides data for evaluation at the fire alarm control panel where the following four independent detection modes are evaluated:

- Fixed temperature heat detection
- Rate-of-rise heat detection
- TrueAlarm photoelectric smoke detection
- And TrueSense correlation detection

4098-9754 Multi-Sensor (Continued)



Multi-Sensor on Sensor Base

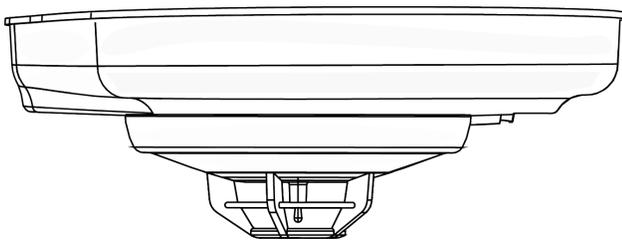
TrueSense analysis correlates thermal activity and smoke activity at a single multi-sensor location using an extensively tested covariance relationship. As a result, TrueSense detection improves response to conditions indicative of faster acting, hot flaming fires when compared to the response of either photoelectric smoke activity or thermal activity alone.

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. Due to its small thermal mass, the sensor accurately and quickly measures the local temperature for analysis at the fire alarm control panel.

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 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 will be initiated when the temperature reaches its rated 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 155° F (0° C to 68° C). This feature can provide freeze warnings or alert to HVAC system problems.



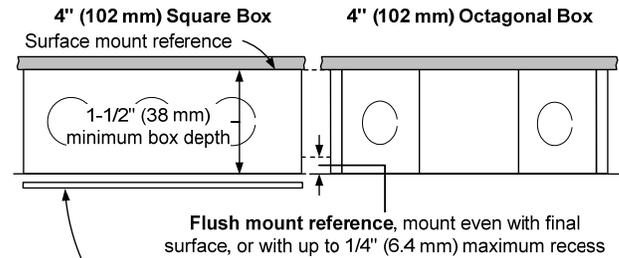
4098-9733 Heat Sensor on Sensor Base

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

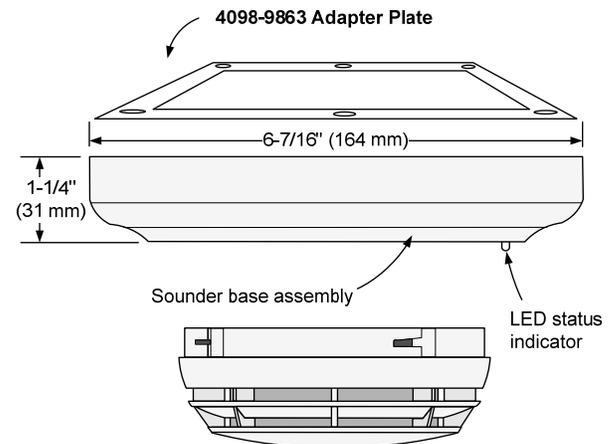
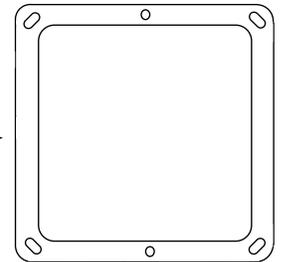
Install Reference

Electrical Box Requirements:

4" octagonal or 4" square, 1-1/2" deep; single gang, 2-1/8" deep



Note: 4098-9863 adapter plate is required when using 4" square box



(Photoelectric sensor shown for reference)

NOTES:

1. Sounder Base 4098-9772 requires flush mounting.
2. Review actual wire size, wire count and box type before determining box size.
3. Mounting to flush mounted box also fits single gang handy box, 2-1/8" (51 mm) deep if wiring allows.
4. Refer to Installation Instructions 574-707 for additional information.
5. The 4098-9772 Sounder base can be mounted at 90 degrees rotation using a single gang box, consult your local SimplexGrinnell contact for further information.

Sensors and Accessories Product Selection

TrueAlarm Sensor Base

Model	Description
4098-9772	Sensor base with 520 Hz Sounder

TrueAlarm Sensors (select one per Sensor Base with 520 Hz Sounder)

Model	Description	
4098-9714	Photoelectric Smoke Sensor	Refer to selection table below for available operation modes
4098-9754	Multi-Sensor Photoelectric and Heat Sensing	
4098-9733	Heat Sensor	

Accessories (ordered separately as required)

Model	Description	Mounting Requirements
4098-9863	Adapter Plate required for surface flush 4" square electrical boxes.	Refer to page 6, mounting reference
2098-9808	Remote red LED Alarm Indicator on single gang stainless steel plate.	Single gang box, 1-1/2" minimum depth

Note: Refer to Installation Instructions 574-707 and Application Manual 574-709 for additional information.

Sensor Base Operation Options with Sensor Choice

Sensor Choice	Mode	Operational Mode Choices* (✓ = operation selected)						
		False Alarm Reduction	Faster Detection	TrueSense Photo/Heat	Photo Fire	Heat Fire**	Utility Temp.	Ion Fire
Photoelectric Smoke Sensor 4098-9714	1	✓	—	—	—	—	—	—
	2	—	✓	—	option	—	—	—
Photo/Heat Multi-Sensor 4098-9754	3	✓	—	—	—	option	option	—
	4	—	✓	—	option	option	option	—
	5	—	—	✓	option	option	option	—
Heat Sensor 4098-9733	6	—	—	—	—	✓	option	—
	7	—	—	—	—	option	✓	—

* **NOTE:** Duct detection modes are not applicable and are not available. Refer to the Multi-Point Allocation discussion on page 3 for panel point requirement information.

** Heat Fire Mode is 135° F or 155° F, fixed or rate-of-rise.

Specifications

General Operating Specifications

Communications and Sensor Supervisory Power	IDNet communications, 1 address per base	
Communications and Sounder Power Connections	Screw terminals for in/out wiring, 18 to 14 AWG (0.82 mm ² to 2.08 mm ²)	
Remote LED Alarm Indicator	Current	1 mA typical supplied from communications, no impact to alarm current
	LED Connections	Color coded wire leads, 18 AWG (0.82 mm ²)
UL Listed Temperature Range	32° F to 100° F (0° C to 38° C)	
Operating Temperature Range	with 4098-9733, 4098-9714 or 4098-9754 32° F to 122° F (0° C to 50° C)	
Humidity Range	10 to 95% RH	
Smoke Sensor Ambient Ratings	4098-9714, Photoelectric Sensor Air velocity is 0-4000 ft/min (0-1220 m/min)	
Housing Color	Frost White	
Installation Instructions	574-707	

Sounder Operation

Sounder Voltage	24 VDC nominal, 16 to 32 VDC from NAC		
Alarm Current (Sounder On)	520Hz signal	129 mA @ 16 V, 115 mA @ 18 V	
	Broadband signal	139 mA @ 16 V, 125 mA @ 18 V	
Sounder Output		Minimum sound output @ 10 ft (3 m) per UL Standard 464, <i>Audible Signaling Appliance</i>	Minimum sound output @ 10 ft (3 m) per UL Standard 268, <i>Smoke Detectors for Fire Protective Signaling Systems</i> and CSA 6.19-01
	520 Hz signal	80 dBA	86 dBA
	Broadband signal	81 dBA	87 dBA
Base Supervision of Sounder Power Input (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, will sound when NAC is in alarm, allowing synchronized pattern (Temporal or March Time, etc.) controlled by the NAC control		

Additional Information Reference

Product	Data Sheet	Product	Data Sheet
Temporal Code 4 Module	S4905-0006	4100ES Control Panels with EPS Power Supplies	S4100-0100
Standard Bases	S4098-0019	4100ES Standard Control Panels	S4100-0031
Isolator Bases	S4098-0025	4100ES Audio Control Reference	S4100-0034
Standard Sounder Base	S4098-0028	4010ES Control Panels	S4010-0004
TrueSense Multi-Sensor	S4098-0024	4007ES Hybrid Control Panels	S4007-0001
TrueAlarm 4098-9773 CO Sensor Base with 520 Hz Sounder	S4098-0053		