S. Simplex

True*Alarm*® Analog Sensing

UL, ULC Listed*, FM Approved

4098-9713 Quick*Connect* TrueAlarm Analog
Photoelectric Sensor with Internal Sounder

Features

TrueAlarm® analog sensors provide digital transmission of analog sensor values via MAPNET II® or IDNet™, two-wire communications**

QuickConnect design integrates sensor, base and piezoelectric sounder into one assembly

- Pluggable terminal block allows quick disconnect and reconnect

Built-in piezoelectric sounder with operation programmable at the fire alarm control panel:

- Automatically annunciates the local sensor's alarm *or* other system alarms as required
- Can be programmed for synchronized coded/temporal coded operation[†]
- Can also be manually activated

Fire alarm control panel provides:

- Individual sensitivity selection for each sensor
- Sensitivity monitoring satisfies NFPA 72 sensitivity testing requirements
- Peak value logging allowing accurate analysis for sensitivity selection
- Automatic, once per minute individual sensor calibration check verifies sensor integrity
- Automatic environmental compensation
- Display of sensitivity in percent per foot
- Multi-stage alarm operation
- Ability to display and print detailed sensor information in plain language
- Selectable sensitivity from 1.5%/ft to 3.7%/ft

For use with Simplex 4010, 4020, 4100, and 4120 series fire alarm control panels and Universal Transponders

Includes a magnetic test feature

Functional and architecturally styled chamber enclosure:

- Louvered design enhances smoke capture by directing flow to chamber
- Entrance areas are minimally visible when ceiling mounted
- Chamber is easily accessible for cleaning
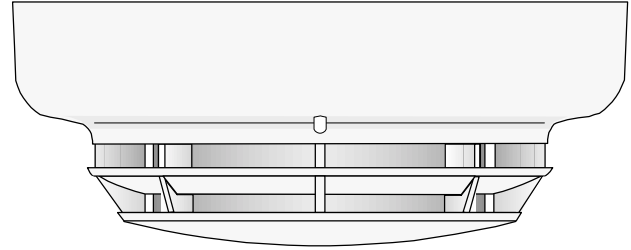
4098-9713 QuickConnect TrueAlarm
Sensor with Internal Sounder

Description

Digital Communication of Analog Sensing. The 4098-9713 TrueAlarm ana log sensor provides an analog measurement that is digitally communicated to the host control panel. At the control panel, the data is analyzed and an average value is determined and stored. An alarm or other abnormal condition is determined by comparing the sensor's present value with its average value.

Intelligent Data Evaluation. With TrueAlarm analog sensing, the constant monitoring of each sensor's average value provides a continuously shifting reference point. This process of software filtering compensates for environmental factors (dust, dirt, etc.) and component aging, providing an accurate reference for evaluating new activity. With this filtering, there is a significant reduction in the probability of false or nuisance alarms caused by shifts in sensitivity, either up or down.

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

Sensor alarm set points can be programmed for timed automatic sensitivity selection (i.e. more sensitive at night and less sensitive during daytime). Control panel programming can also provide multi -stage operation per sensor. For example, a 1.5% level may cause a warning to prompt investigation while a 2.5% level may initiate an alarm.

*   ULC listed models is 4098-9713C.

** 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.

† Total quantity of 4098-9713 sensors with sounders and other device types available on the same IDNet channel may vary with panel application. Refer to specific panel programming requirements.

Description *Continued*

Sensor Alarm and Trouble LED Indication. The control panel determines when individual sensors need cleaning. Dirty sensors, or other sensor trouble, will automatically be annunciated at the control panel and the sensor's LED will light steadily. In an alarm condition, the sensor's LED will light steadily. Normal conditions are indicated by a pulsing of the sensor LED. (Specific LED operation is controlled by the fire alarm control panel. During system alarm conditions, a sensor LED that was on to indicate a trouble condition may return to pulsing to conserve communications power, as long as it is not in alarm.)

Photoelectric Sensing Operation

The 4098-9713 TrueAlarm photoelectric sensor uses a stable, pulsed LED light source and a silicon photodiode receiver to provide consistent and accurate smoke sensing with low power requirements. Sensitivity is monitored and selected at the fire alarm control panel from the range of 1.5%/ft to 3.7%/ft obscuration.

The sensor head design provides 360º smoke entry for optimum response to smoke from any direction. A built-in screen keeps insects from entering the smoke chamber. Due to its photoelectric operation, air velocity is not normally a factor, except for how it may impact area smoke flow.

Piezoelectric Sounder

An efficient piezoelectric sounder (tone-alert) is located internally such that its sound output travels through the chamber and out the air intake louvers. This results in a compact package that provides a loud local notification when activated by the fire alarm control panel.

Sounder operation is programmable from the fire alarm control panel and can be activated when the sensor is in alarm, or can be activated when another alarm has occurred within the system. Operation can be programmed to provide synchronized coded or temporal coded sounder output. This activation can be automatic, or can be manually performed at the control panel.

Options

Wired connections are available for connecting a remote LED alarm indicator or a relay that can be used to annunciate the alarm or trouble status of the sensor LED.

Remote Red LED Alarm Indicator, 2098-9808. For applications where the sensor LED is not readily visible, the 2098-9808 remote alarm indicator will provide the required annunciation by duplicating the operation of the sensor LED.
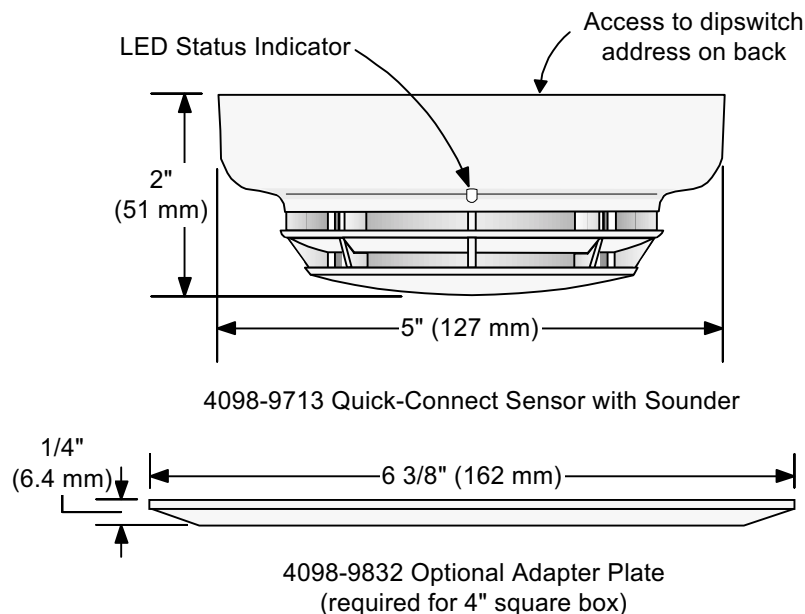
Auxiliary Alarm Relay, 4098-9822. For applications that require a contact closure to monitor the status of the sensor LED, the 4098-9822 relay will activate when the LED is on continuously. Mounting is required to be in the sensor electrical box. Relay output is dual form "C" contacts with color coded wire leads, rated 2 A @ 28 VDC for transient suppressed loads (requires external 24 VDC).

Application Reference

Detector 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*. On smooth ceilings, 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*, Simplex part number 574-709.

Dimension Reference

LED Status Indicator

Access to dipswitch address on back

2" (51 mm)

5" (127 mm)

4098-9713 Quick-Connect Sensor with Sounder

1/4" (6.4 mm)

6 3/8" (162 mm)

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

Accessories Selection Chart

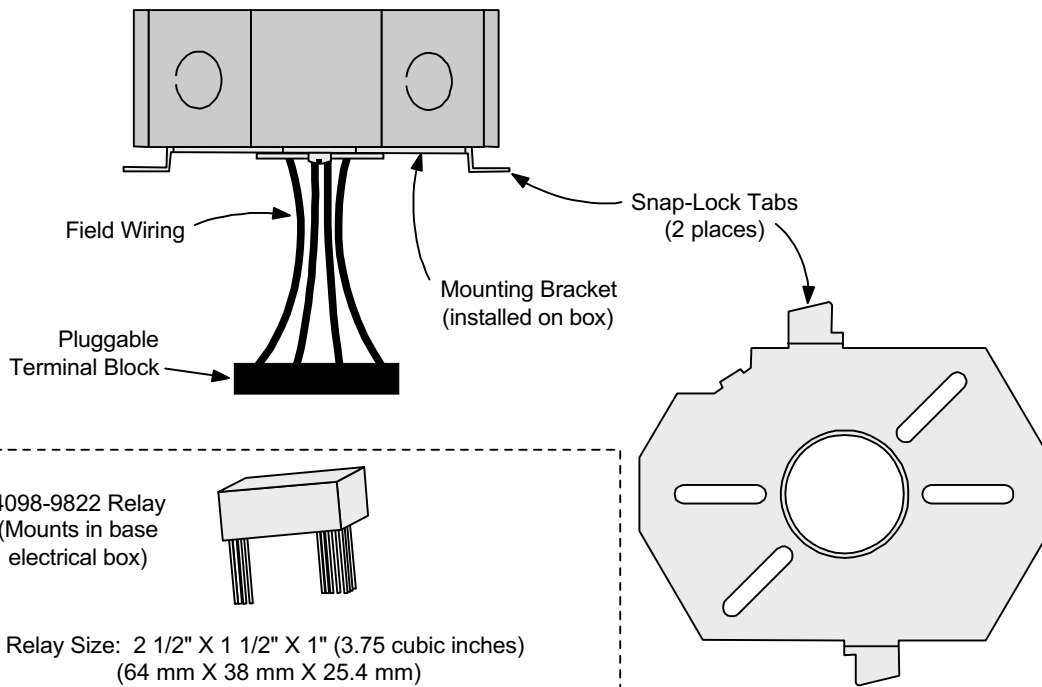| Model	Description	Mounting Requirements
2098-9808	Remote red LED Alarm Indicator on single gang stainless steel plate	Single gang box, 1 1/2" minimum depth
4098-9822	Relay, tracks base LED status (**unsupervised, mounts only in sensor electrical box**)	4" octagonal box, 2 1/8" deep with 1 1/2" extension ring
4098-9832	Adapter plate	• Required for mounting to 4" square box, fits 4" octagonal box, • May be used when retrofitting existing bases

Specifications

General Operating Specifications

Communications and Sensor Supervisory Power	MAPNET II or IDNet, auto-select, 24-40 VDC w/data, 400 μA typical, 1 address per base
Communications Connections	Screw terminals for in/out wiring, #18 to #14 AWG
Sensitivity	Panel selectable from 1.5 to 3.7%/ft obscuration
Remote LED Alarm Indicator/LED Annunciation Relay Drive Current	1 mA typical, supplied from communications
Remote LED Alarm Indicator and Relay Connections	Color coded wire leads, #18 AWG
UL Listed Temperature Range	32° F to 100° F (0° C to 38° C)
Operating Temperature Range	32° F to 122° F (0° C to 50° C)
Humidity Range	10 to 95% RH
Air Velocity Range	0-2000 ft/min (0-610 m/min)
Altitude	up to 8000 ft (2438 m) maximum
Housing Color	Frost White
Dimensions	Refer to mounting illustration

Sounder Operation*

Externally Supplied Sounder Voltage	18-32 VDC (nominal 24 VDC)
UL Rated Sounder Output	85 dbA minimum @ 10 ft (3m) per UL Standard 464, *Audible Signaling Appliances* and UL Standard 268, *Smoke Detectors for Fire Protective Signaling Systems*
Sounder Standby Current	340 μA maximum @ 24 VDC, from separate 24 VDC supply
Sounder Alarm Current	30 mA @ 24 VDC, from separate 24 VDC supply

4098-9822, Unsupervised LED Annunciation Relay Requirements

Externally Supplied Relay Voltage	18-32 VDC (nominal 24 VDC)
Supervisory Current	Supplied from communications
Alarm Current	13 mA from separate 24 VDC supply
Relay Rating	dual form "C" contacts, rated 2 A @ 28 VDC for transient suppressed loads

* Synchronized coded/temporal coded sounder operation is programmable from the control panel. Refer to specific panel programming for requirements.
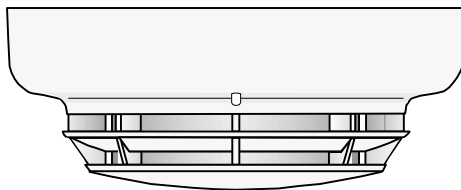
Electrical Box Requirements <u>without 4098-9822 Relay</u>:
4" octagonal or 4" square, 1 1/2" deep; single gang, 2"
deep (supplied by others)

Field Wiring

Snap-Lock Tabs
(2 places)

Mounting Bracket
(installed on box)

Pluggable
Terminal Block

4098-9822 Relay
(Mounts in base
electrical box)

Relay Size: 2 1/2" X 1 1/2" X 1" (3.75 cubic inches)
(64 mm X 38 mm X 25.4 mm)

Note: Mounting relay in electrical box requires a 4" octagonal box,
2 1/8" deep with 1 1/2" extension ring minimum, or equal. Review
total wire count, wire size, and accessories being wired to determine
required box volume.

Mounting Bracket for
4098-9713 (included)

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

4098-9713 Quick-Connect
Sensor with Sounder

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visit us on the world wide web at *www.simplexnet.com*
All specifications and other information shown were current as of printing and are subject to change without notice.

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