

Features

E-Series heat sensors provide analog thermal information to the sensor base and feature:

- Epoxy encapsulated electronic thermal sensor design with gold plated contacts, high humidity thermistor, and stainless steel screws
- A fast response thermistor that is inherently rate compensated
- Operation for ceiling or wall mounting

E-Series sensor bases features:

- Digital transmission of analog sensor values via IDNet
- Base mounted address remains with its location
- Integral red LED for power-on (pulsing), or alarm or trouble (steady on)
- Locking anti-tamper design mounts on standard box
- Designed for EMI compatibility
- Magnetically operated functional test

Base options and accessories include:

- Control of supervised or unsupervised remote relay
- Remote LED alarm indicator output
- Relays and LED alarm indicators
- Communications isolator base or sounder base

Fire alarm control panel provides:

- Fixed temperature sensing, rate-of-rise temperature sensing, or both
- Utility temperature sensing
- Automatic, once per minute individual sensor calibration check that verifies sensor integrity
- Ability to display and print detailed sensor information in plain English language

For use with the following Autocall products:

- 4007ES, 4010ES, and 4100ES Series control panels

UL listed to Standard 521 for:

- 60 ft x 60 ft (18.3 m) spacing for 135° F (57.2° C) alarm
- 40 ft x 40 ft (12.2 m) spacing for 155° F (68° C) alarm
- Sounder operation is also listed to UL Standard 464 as an audible notification appliance

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.

Description

A4098-9773 heat sensors

A4098-9773 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's thermistor accurately and quickly measures the local temperature for analysis at the fire alarm control panel.

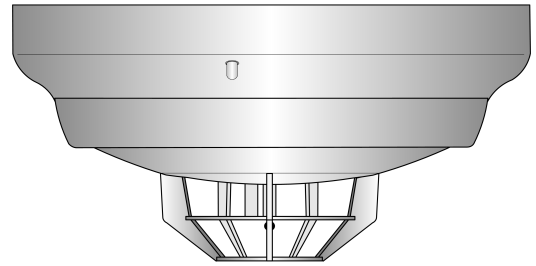


Fig 1: A4098-9733E Heat Sensor Mounted in Standard Size Base

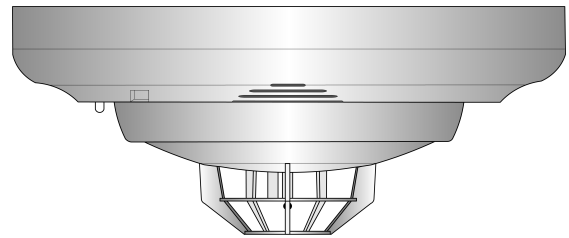


Fig 2: A4098-9733E Heat Sensor Mounted in Sounder Base

Temperature Selection.

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.

Utility Device Temperature Monitoring

can be programmed 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. (Refer to specific panels for availability.)

Digital Communication of Analog Sensing.

Sensor bases contain integral addressable electronics that monitor analog information from the detachable heat sensors. Each sensor's information is digitized and transmitted to the system fire alarm control panel approximately every four seconds using Autocall addressable communications. The panel processes the information to evaluate for pre-selected alarm levels or other off-normal conditions.

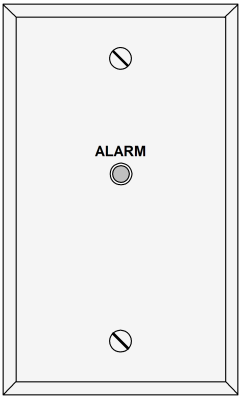
Sensor Alarm and Trouble LED Indication.

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

Application Reference

Heat sensor 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 and Signaling Code. For detailed application information, refer to A4098 Detectors, Sensors, and Bases Application Manual (574-709AC).

Remote LED Alarm Indicator



For bases located out of easy viewing, the A2098-9808 remote red LED alarm indicator duplicates the base LED status indication. It is mounted on a single-gang stainless steel plate for mounting on a standard electrical box. (See illustration.)

Sensor and Base Mechanical Reference

The A4098-9733E is sealed against rear air flow entry and the electronics are EMI/RFI shielded. Dimensions are shown in the illustrations below.

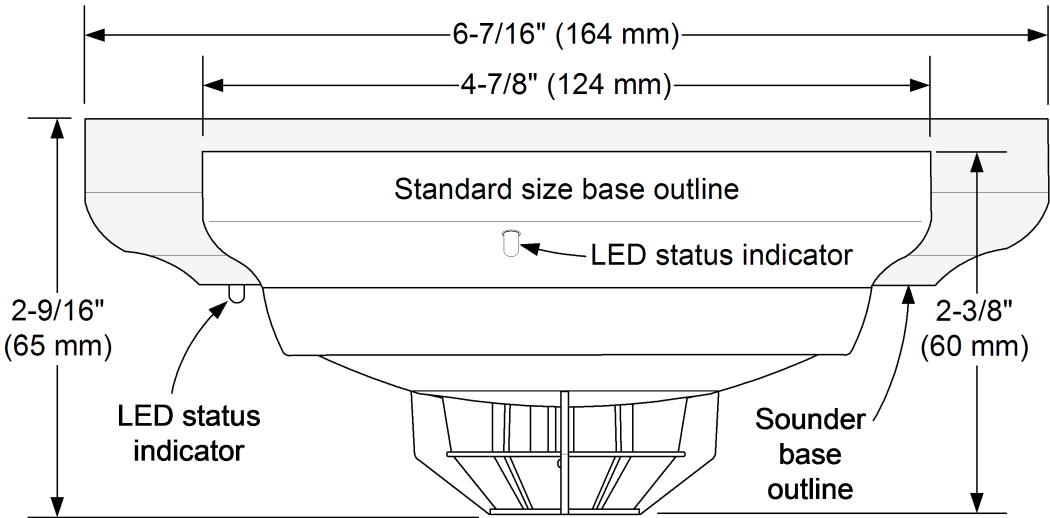


Fig 3: Dimensions

E-Series Heat Sensor Product Selection Chart

Table 1: Heat Sensors

SKU	Description
A4098-9733E	Heat Sensor

E-Series Analog Heat Sensor A4098-9733E and Bases for Extended Exposure to High Humidity

Table 2: Sensor Bases

SKU	Description	Compatibility	Mounting Requirements
A4098-9792E	Standard Sensor Base	No options available	4" octagonal or 4" square box, 1 1/2" minimum depth; or single gang box, 2" minimum depth
A4098-9793E	Isolator Base; for use with IDNet communications only; input is automatically separated from output when a communications short circuit occurs	No options available; for use only with Autocall models 4007ES, 4010ES, 4100ES fire alarm control panels	
A4098-9789E	Sensor Base with wire connections for Remote LED Alarm Indicator or Unsupervised Relay	A2098-9808 Remote LED Alarm Indicator or A4098-9822 Relay	4" octagonal or 4" square box Note: Box depth requirements depend on total wire count and wire size, refer to accessories list below for reference.
A4098-9791E	4-Wire Sensor Relay Base with connections for Supervised Remote Relay and connections for Remote Alarm Indicator or Unsupervised Relay; relay operation is programmable and can be manually operated from control panel	A2098-9737 Remote Relay (supervised)	
		A2098-9808 Remote Alarm Indicator or A4098-9822 Relay (unsupervised)	
A4098-9780E	2-Wire Sensor Relay Base with connections for Supervised Remote Relay and connections for Remote Alarm Indicator or Unsupervised Relay; relay operation is programmable and can be manually operated from control panel	A4098-9860 Supervised Remote Relay	
		A2098-9808 Remote Alarm Indicator or A4098-9822 Unsupervised Relay Note: Not compatible with 2120 CDT	
A4098-9794E	Sounder Base with built-in piezoelectric sounder; sounder power can be from 24 VDC or from a compatible NAC; sounder operation can be independently activated from the host control panel; sounder output can be synchronized via communications or by the NAC, if NAC powered	A2098-9808 Remote LED Alarm Indicator or A4098-9822 Relay	
		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	

Table 3: Accessories

SKU	Description	Compatibility	Mounting Requirements
A2098-9737	Supervised Relay, mounts remotely or in base electrical box; same size as A4098-9822	For use with A4098-9791E base	Remote Mounting requires 4" octagonal or 4" square box, 1 1/2" minimum depth
A4098-9860	Supervised Relay, mounts remote or in base electrical box	For use with A4098-9780E base	Base Mounting requires 4" octagonal box, 2 1/8" deep with 1 1/2" extension ring
A2098-9808	Remote Red LED Alarm Indicator on single gang stainless steel plate	For use with bases A4098-9789E and A4098-9791E	Single gang box, 1 1/2" minimum depth
A4098-9822	Relay, tracks base led status, activates when base LED is on steady indicating local alarm or trouble; unsupervised, mounts only in base electrical box		4" octagonal box, 2 1/8" deep with 1 1/2" extension ring
4098-9832	Adapter Plate; required for some mounting applications; 6 3/8" (162 mm) diameter, 1/4" (6.4 mm) deep	Compatible with each base; can also be used for cosmetic retrofitting to existing 6 3/8" diameter base product	Required for surface or semi-flush mounted 4" square box and for surface mounted 4" octagonal box
Refer to publication A4098 Detectors, Sensors, and Bases Application Manual (574-709AC) for additional information.			

Specifications

Table 4: Spacing Distance Between Sensors

Fixed Temperature Setting	UL 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

Table 5: General Operating Specifications

Specification	Rating
Communications and Sensor Supervisory Power	IDNet communications, auto-selected, 1 address per base
Communications Connections	Screw terminals for in/out wiring, 18 to 14 AWG (0.82 mm ² to 2.08 mm ²)
Remote LED Alarm Indicator and Relay Connections	Color coded wire leads, 18 AWG
Remote LED Alarm Indicator Current	1 mA typical, no impact to alarm current
UL Listed Temperature Range	32° to 100° F (0° to 38° C)
Operating Temperature Range	32° to 122° F (0° to 50° C)
Storage Temperature Range	0° F to 140° F (-18° C to 60° C)
Humidity Range	10 to 95% RH
Housing Color	Frost White

Table 6: A4098-9791E Base With Supervised Remote Relay A2098-9737

Specification	Rating
Externally Supplied Relay Coil Voltage	18-32 VDC (nominal 24 VDC)
Supervisory Current	270 μ A, from 24 VDC supply
Alarm Current with A2098-9737 Relay	28 mA, from 24 VDC supply
Relay Contacts	DPDT contacts for resistive/suppressed loads; power limited rating of 3 A @ 28 VDC; non-power limited rating of 3 A @ 120 VAC, requires external 24 VDC coil power

Table 7: A4098-9780E Base With Supervised Remote Relay A4098-9860

Specification	Rating
Power	Supplied from communications
Relay Contacts	SPDT contacts for resistive/suppressed loads; power limited rating of 2 A @ 30 VDC, resistive; non-power limited rating of 0.5 A @ 120 VAC, resistive

Table 8: A4098-9822 Unsupervised Relay, Requirements for Bases A4098-9789E, A4098-9791E, and A4098-9794E

Specification	Rating
Externally Supplied Relay Coil Voltage	18-32 VDC (nominal 24 VDC)
Supervisory Current	Supplied from communications
Alarm Current	13 mA from separate 24 VDC supply
Relay Contacts	DPDT contacts for resistive/suppressed loads; power limited rating of 2 A @ 28 VDC; non-power limited rating of 0.5 A @ 120 VAC

Table 9: A4098-9794E Sounder Base, Sounder Operation

Specification	Rating
Sounder Voltage	18 to 32 VDC from steady external source or from NAC
Alarm Current (sounder on)	20 mA @ 24 VDC, 24 mA maximum @ 32 VDC
Sounder Output	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
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 sounder is activated by control panel, sounder output tracks connected NAC to allow synchronized coding (Temporal or March Time, etc.)