

TC840A OMNI Multi-element Sensor

SPECIFICATION DATA



FEATURES

- Sleek, low profile design
- Microprocessor based technology
- Advanced fire detection and discrimination algorithms
- Mechanically integrated photoelectric and ionization shared volume smoke chamber
- Digital pulse-width encoded communications with noise immunity
- Compatible with FS90 Plus, FS45/M1000 and XLS200/1000 Life Safety Systems
- Rotary decade switches for easy address entry
- Optional tamper resistant mounting
- Dual LEDs provide 360° viewing
- Local test feature
- Conforms to EN54 Part 7

DESCRIPTION

The TC840A OMNI Sensor is a microprocessor based smoke detector which uses a combination of ionization, photoelectric and temperature sensing technologies within a single housing. The OMNI Sensor utilizes advanced algorithms with time based analysis to provide early warning and an accurate analysis of alarm situations. These state-of-the-art algorithms also provide a high immunity to nuisance alarms. Five sensitivity settings are available to cover a broad range of applications.

The OMNI Sensor continuously monitors its sensitivity to smoke and compensates for certain contamination factors. The TC840A, like the other TC800 Series sensors and modules, incorporates two rotary direct-dial decade address switches. The exact address of each sensor can facilitate swift response to a specific fire situation, or allow for selective maintenance when required. Two bi-coloured LEDs provide 360° visibility and will flash green in stand-by and glow steady red for alarm.

The OMNI Multi-element sensor and other TC800 Series single element sensors and input/output modules are compatible with Honeywell's DeltaNet FS90, FS45/M1000 and XLS200/1000 Life Safety Systems.

The built-in intelligence in the OMNI Sensor enables the sensor to process the data from the individual sensing elements before transmission of the information to fire alarm panel, therefore greatly improving the response time.

The OMNI Sensor heads are sealed to prevent entry of dust and dirt. In addition the sensors have an insect-resistant screen (0.6 mm [0.025 in] openings) to reduce nuisance alarms.

Several different mounting bases are available for the TC840A to accommodate various configurations. If using the mounting base with integral horn, a local audible alarm occurs automatically whenever the sensor is in alarm.

The OMNI Sensor is ideal for:

- Where there is a probability of both flaming and smoldering fires
- Environments prone to nuisance alarms
- Environments with high humidity and rapid changes in temperature
- Where there is a high risk to life and/or property

SPECIFICATIONS

Sensor Models:
TC840A1001

Operating Voltage:
15 to 32V dc

Power Consumption:
6.5 mA max. alarm current with LEDs latched on
0.35 mA maximum stand-by current

Temperature Setting:
Fixed Temperature Element: 58°C (135°F)

Sensitivity:
0.5 to 4% per foot obscuration
Five selectable sensitivity levels

Indicators and Switches

Two LEDs on opposite sides of sensor head for 360° viewing angle. LEDs blink green for normal operation and are steady red for alarm condition. As an option normal blinking can be suppressed for use in a sleeping area.

Two decade switches for setting sensor address (01-99)

Lamp Life:
LED rated at 40 years

Testing:
Built-in magnetic reed switch for testing with magnet

Mounting:
Surface Mounted on ceiling or wall

Sensor Placement:
Sensors must be installed in accordance with local codes

System Constraints:
A maximum of 3x TC840A sensors can be installed between isolators. Use additional isolator bases when necessary.

Do not install in locations where the ambient temperature range extends beyond 0°C to 50°C.

Dimensions:
Diameter : 102 mm (4.02 inches)
Height: 43 mm (1.70 inches)
(when mounted in the 14506414-007 or 14507371-001 bases)

Weight:
104g

Base Terminals:
Screw terminals accept up to 12 AWG (3.3 mm²) wire.

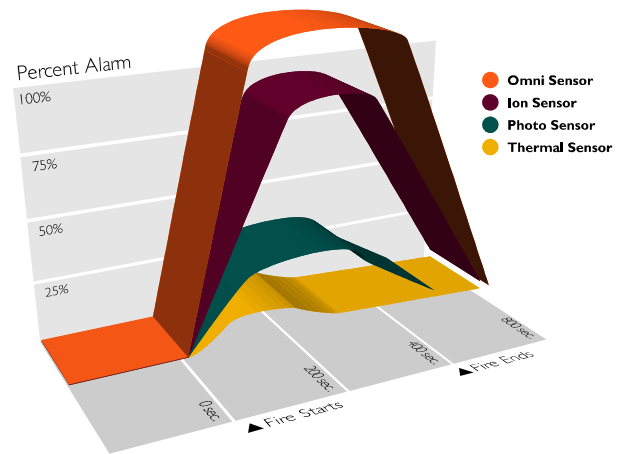
Environmental Operating Limits:

Temperature: -10°C to 60°C (14 to 140 °F)
Humidity: 10 to 93% rh, non-condensing

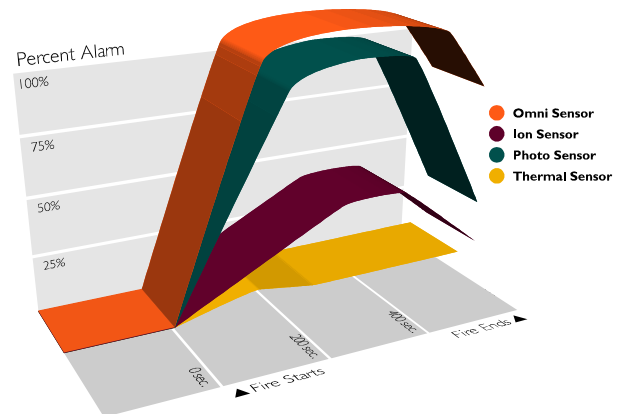
Approvals:
UL, ULC
LPCB (EN54 Part 7)

Fire Test Comparisons:

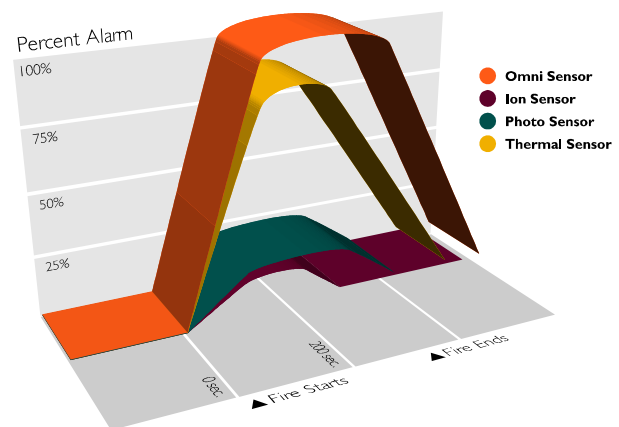
Response to Flaming Fire (e.g. Paper Fire):



Response to Smoldering Fire:



Response to Liquid Fire (e.g. Alcohol Fire):



Mounting Bases and Accessories:

14506414-007:

Small (Metric) Base. Mounts on 50, 60, or 70 mm electrical box (for international use)

14506414-005:

Small Relay Base. The same as -007 with integral relay to signal external devices

14506414-006:

Small Isolator Base. The same as -007 with a built-in fault isolator

SSDB501DG:

Extra Deep Base. The same as -007 with extra depth to allow side entry of the cable for surface mounted cables.

SSDB501BH:

Flanged Horn Base. Mounts on 4 in. square x 1-1/2 in. deep electrical box (with integral horn for local audible annunciation; requires external power supply)

14507371-001:

Flanged Base. Mounts on 4 in. square x 1.5 in. deep electrical box or mounts on 3 in. or 4 in. octagonal x 1.5 in. deep electrical box. (flanged)

14507371-003:

Flanged Relay Base. The same as -001 with integral relay to signal external devices

14507371-005:

Flanged Isolator Base. The same as -001 with a built-in fault isolator

SSDRMK400:

Recess Mounting Kit.

SSDSMK400:

Surface Mounting Kit

SSDRA400Z:

Remote LED Indicator

SSDMOD400R:

Detector Sensitivity Tool for use with most analogue or digital multimeters. Satisfies the requirements of NFPA 72E

SSDXR-2:

Detector Removal Tool

SSDXP-4:

3x1.5m (3x4.8 ft) Extension Poles for SSDXR-2

M02-04:

Test Magnet

External Power Supply:

(only needed for SSDB501BH Horn Base):

Operating Voltage:	17-32V dc (24V dc nominal) Supervised external power supply
Stand-by Current:	1.0 mA max
Alarm Current:	15 mA max
Max. Ripple Voltage:	10% of supply voltage

Sound Output:

Reversing polarity of power supply for SSDB501BH (horn base) causes each horn on the power circuit to sound when sensor LED latches on for 10 seconds

Greater than 90 dBA measured in anechoic room at 3m
24V 85 dBA minimum measured in UL reverberant room



Figure 1: OMNI Sensor mounted in small metric base and in the flanged base

Dimensions In Inches (Millimeters):

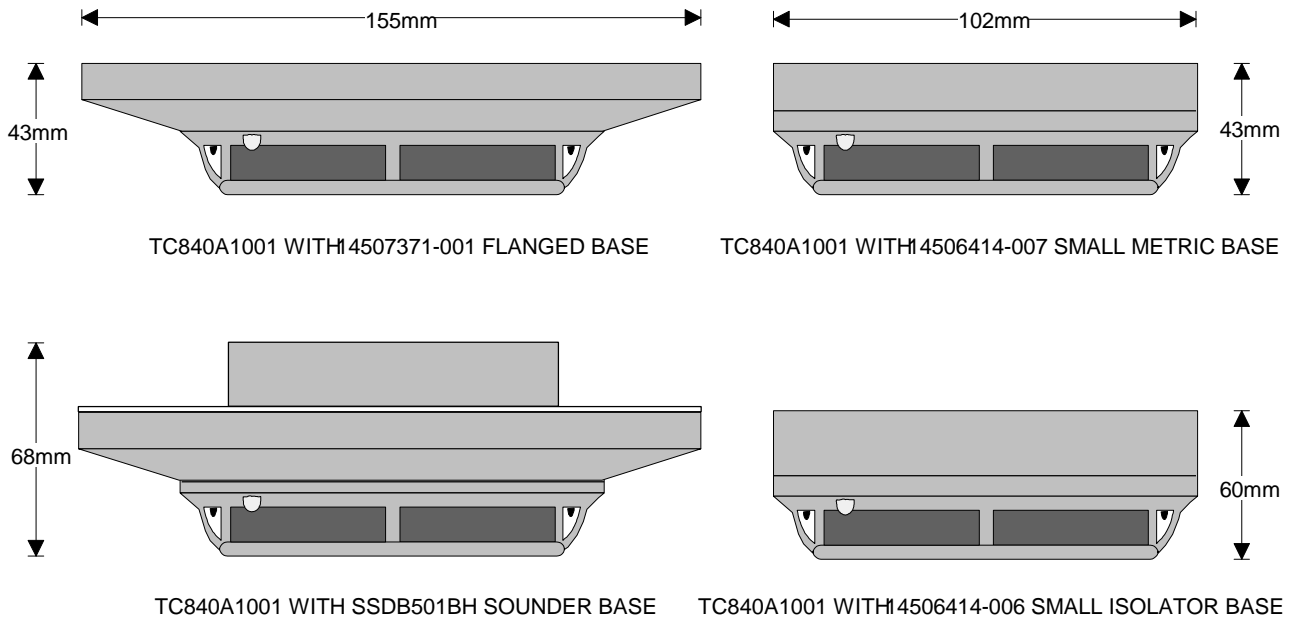
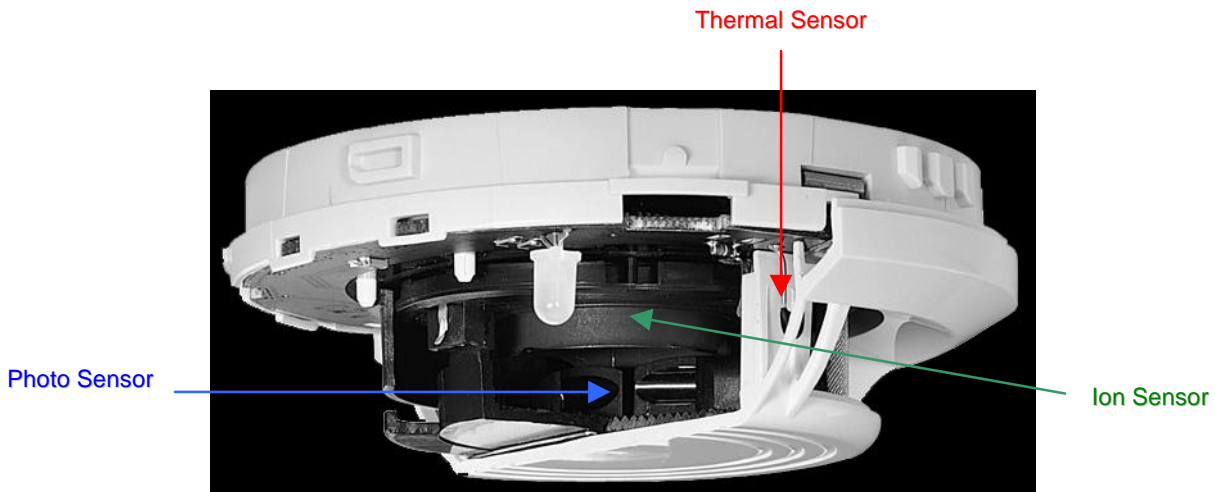


Figure 2: Unique design features a mechanically integrated photoelectric and ionization shared volume smoke chamber combined with a thermal sensor



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