

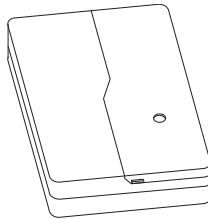


Adjustable Dual Technology Sound Sensor Installation Instructions

Product summary

The sensor (60-834-95, 60-765-43) is a dual technology glass-break detector that uses a single microphone for detecting both flex and audio frequencies. Since glass breaking must be both detected *and* verified, false alarms are virtually eliminated.

The sensor detects glass breakage of windows within 25 feet.



How It Works

The microphone is sensitive to different frequencies. It detects both the ultra-low frequencies produced by a blow to a glass window and the higher frequencies produced by breaking glass.

The audio technology remains inactive until the microphone detects a blow to the glass. Once this happens the microphone must also detect the frequency of breaking glass, within a defined time-window after the flex circuitry detects a blow to the glass. Only then does the sensor go into alarm.

The sensor is powered by two 3.6V Lithium AA batteries (included).

The sensor can be used with the glass types and thicknesses shown in Table 1 below.

Table 1: Glass types and thicknesses

Glass type	Thickness (inches)
Plate	3/32
Tempered	1/8
Laminated	1/8
Wired	1/4

For the sensor to work properly, the glass size must be at least 10-7/8" x 10-7/8".

Tools Needed

- Small Phillips Screwdriver
- Small Flathead Screwdriver
- Screws and Anchors (included)
- Small Needle-Nose Pliers
- M4 or M5 Screw
- Sound Sensor Tester (part number 13-332)

Programming

The following steps describe the general guidelines for programming (learning) the sensor into panel memory. Refer to the specific panel installation instructions or reference manual for complete programming details.

1. Set the panel to the program mode.
2. Proceed to the LEARN SENSORS menu.
3. Select the appropriate sensor group and sensor number assignments.
4. When prompted by the panel to trip the sensor, activate the sensor tamper by opening the sensor door.
5. Exit program mode.

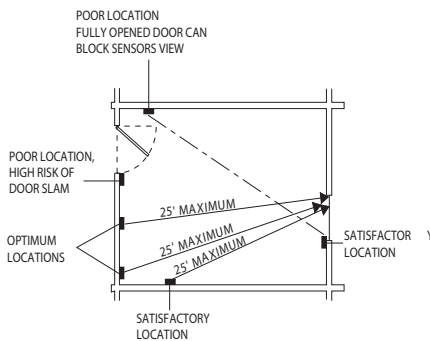
Installation

Guidelines

Determine the best mounting location for the sensor using the following guidelines:

- Mount the sensor on the ceiling or on a wall at least 7 feet from the floor with a direct and unobstructed line-of-sight of the protected glass.
- Mount the sensor within 25 feet of the glass to be protected (see Figure 1 below).

Figure 1: Sensor mounting locations



Note: Curtains, blinds, and other window coverings can absorb energy from breaking glass. For example, heavy curtains will effectively block the sound signal. In these cases, mount the sensor behind the window covering next to or above the window.

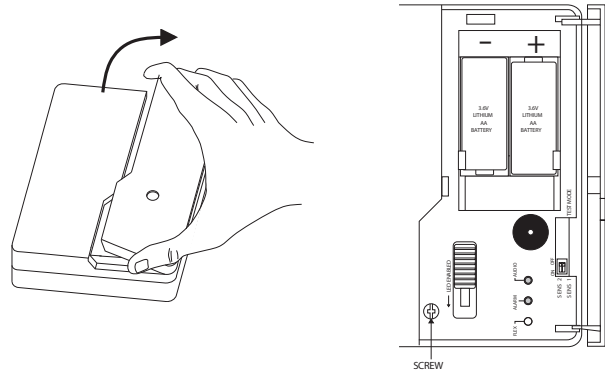
- Do not mount the sensor next to air ducts, forced air fans, or bells measuring 2 inches (or larger) in diameter
- Do not mount the sensor near doors and windows that can be slammed (see Figure 1 above).
- Do not mount the sensor where furniture may be placed between the glass and the sensor.
- Do not mount the sensor on posts, free-standing or otherwise.
- Do not mount the sensor where a door can be closed between the sensor and the glass or where an open door may obstruct sensor line-of-sight (see Figure 1 above).

Mounting the Sensor

Mount the sensor using the following procedure:

1. Open the sensor door and remove the cover screw using a Phillips screwdriver (see Figure 2 below).

Figure 2: Opening cover to locate and remove cover screw

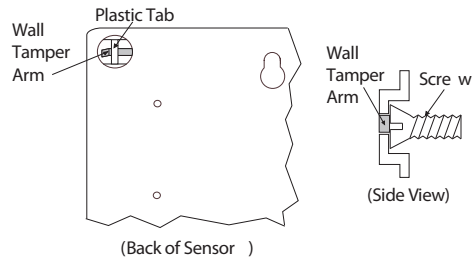


2. Remove the sensor cover by first pulling up at the top of the cover then lift up at the bottom. Set the sensor cover aside.

Note: Steps 3 and 4 provide instructions on how to enable the wall tamper switch. For commercial UL listed systems the wall tamper switch must be used. If not using the tamper switch feature, move on to step 5.

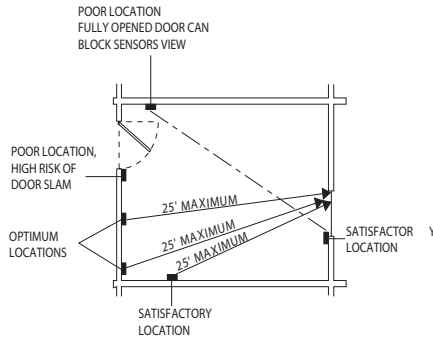
3. Enable the wall tamper switch by removing the plastic tab on the back of the sensor using the needle-nose pliers (see Figure 3 below).

Figure 3: Wall tamper switch



4. Screw the M4 or M5 screw into the wall or ceiling so that it will make contact with the wall tamper arm.
5. Place the sensor base at the desired location on the wall or ceiling (over tamper screw if installed) and mark the narrow portion of the mounting holes (see Figure 4 on page 3)

Figure 4: Mounting hole locations



6. Insert screws part way into anchors (if necessary) or wall.
7. Place the sensor base on the screws and slide the narrow portion of the mounting holes onto the screws.
8. Gently tighten the screws to secure the sensor in place.

Testing

Use the following procedures with the Sound Sensor Tester to test the audio and RF ranges simultaneously. The recommended tester is a FG-701 Glass Break Simulator, however instructions for the FG-700 Glass Break Simulator are also provided. For additional testing information, refer to the tester operating instructions. For UL listed systems, the installer should test the unit at least once a year.

Note: Do not test when the sensor is in normal mode.

Table 2 below describes LED indicator conditions.

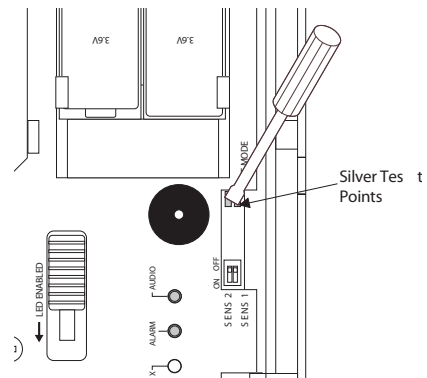
Table 2: LED indicator conditions

Condition	Green LED	Red LED
Normal	OFF	OFF
Normal, event detected	Flicker	OFF
Normal, event detected and alarm in memory	Flicker	Flash 5 seconds
Normal, break detected	OFF	ON 5seconds
Power up self-test	ON 1 second	ON 1 second
Trouble detected	Flash ON/OFF	Flash OFF/ON
Low battery	Flash ON/OFF	Flash ON/OFF
Test Mode	Flash once per second	OFF
Test Mode, event detected	Flicker	OFF
Test Mode, alarm	Flash once per second	ON 5 seconds

Sensor Testing with the FG-700 Glass Break Simulator

1. Set the panel to the dealer sensor test mode.
2. Open the sensor door (to view LEDs).
 - Note:** The only LEDs are for audio and alarm. The flex LED hole should be empty.
3. Place the sensor in test mode by shorting out the silver test points on the sensor board using a small flathead screwdriver (see Figure 5 below). When the sensor is in test mode the green LED blinks once per second

Figure 5: Shorting out the sensor board test points



Note: The sensor returns to normal mode after 5 minutes. To immediately return the sensor to normal mode short out the silver test points a second time.

1. Hold the tester at the farthest point of the glass to be protected (25 feet maximum).
2. Place the tester setting switches to “Flex” and “Temp.”
3. Within 30 seconds of arming the tester, generate a signal by striking the glass with your hand or a cushioned tool. The tester will automatically generate a burst of glass breaking sound, and the red LED on the sensor should light to indicate an alarm condition.
4. Listen for interior siren beeps to determine acceptable range (see panel installation instructions).

Note: If the sensor response is unacceptable, change the position or location of the sensor and re-test.

Sensor Testing with the FG-701 Glass Break Simulator

1. Set the panel to the dealer sensor test mode.
2. Open the sensor door (to view LEDs).
 - Note:** The only LEDs are for audio and alarm. The flex LED hole should be empty.

- Place the sensor in test mode by placing the tester setting switches to “Activate” and “Man,” then press the red button on the tester (within 15 feet of the sensor). The tester emits a low frequency buzzing sound. When the sensor is in test mode the green LED blinks once per second.

Note: The sensor returns to normal mode after 5 minutes. To immediately return the sensor to normal mode, place the tester setting switches to “Activate” and “Man,” then press the red button on the tester. The tester emits a low frequency buzzing sound and the green LED stops flashing.

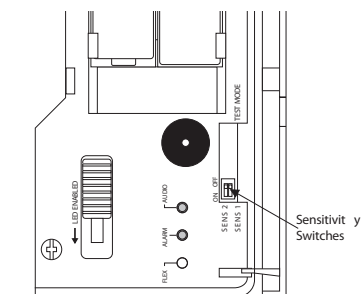
- Hold the tester at the farthest point of the glass to be protected (25 feet maximum).
- Place the tester setting switches to “Test” and “Flex.”
- Within 30 seconds of arming the tester, generate a signal by striking the glass with your hand or a cushioned tool. The tester will automatically generate a burst of glass breaking sound, and the red LED on the sensor should light to indicate an alarm condition.
- Listen for interior siren beeps to determine acceptable range (see panel installation instructions).

Note: If the sensor response is unacceptable, change the position or location of the sensor and re-test.

Adjusting the sensitivity

The sensitivity is set at the factory and should only be adjusted when necessary. Adjust the sensitivity using the following procedure.

Figure 6: LED sensitivity switches



Note: Sensitivity changes must be made with sensor batteries removed.

- Open the sensor door.
- Remove the batteries.
- Use a small screwdriver to move the sensitivity switches to the desired setting (see Figure 6 above). Sensitivity settings are shown in Table 3 below.

Table 3: Sensitivity settings

Sensitivity	SENS 1 switch	SENS 2 switch	Approximate coverage
Max	Off	Off	25 feet
Med	On	Off	15 feet
Low	Off	On	10 feet
Lowest	On	On	5 feet

- Reinstall the batteries.
- Place the sensor in test mode (see appropriate range testing section).
- Turn on any heating/air-conditioning system, and any other equipment in the sensor vicinity. Observe the green audio LED for one minute with equipment running. Excessive subsonic (inaudible) noise typically produced by air handling systems may cause the green audio LED to flash randomly.
- If the LED flashes randomly, decrease the sensitivity according to the sensitivity settings in Table 3 above.

Specifications

Compatibility	60-834-95—all 319.5 MHz. Learn Mode panels 60-765-43—all 433 MHz. Learn Mode panels
Power source	Two 3.6VDC Saft or Tadiran AA Lithium Batteries.
Operating temperature range	32°F - 110°F
Dimensions	4.75" x 4.13" x 1.25" (L x W x D)

Regulatory information

Manufacturer	UTC Fire & Security Americas Corporation, Inc. 1275 Red Fox Rd., Arden Hills, MN 55112-6943, USA
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Contact information

For contact information, see www.utcfireandsecurity.com or www.interlogix.com.

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