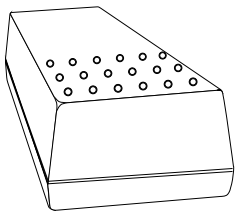
ITI Part No. 60-886-95
60-886-11-95

Learn Mode Shock Sensor



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Installation Instructions

Product Summary

The Learn Mode Shock Sensor has the following three main functions:

- ❑ To detect the vibrations made by an intruder trying to break a window or door.
- ❑ To detect a window or door opening.
- ❑ To detect tamper situations, such as an intruder removing the sensor cover.

Vibrations cause a momentary open circuit in the shock element of the sensor. The circuit closes again when the vibration stops. The sensor microcontroller "sees" the open/close action as a pulse, causing the sensor to transmit an alarm signal. The sensor has two different detection modes:

- ❑ Gross Attack - detect a violent blow sufficient in length to trip sensor.
- ❑ Pulse Count - detect a sufficient number of less violent blows (rapping or tapping).

The sensor includes an internal magnetic reed switch that must be disabled if it is not used.

A cover tamper provides additional security if an intruder tries to disable or damage the sensor.

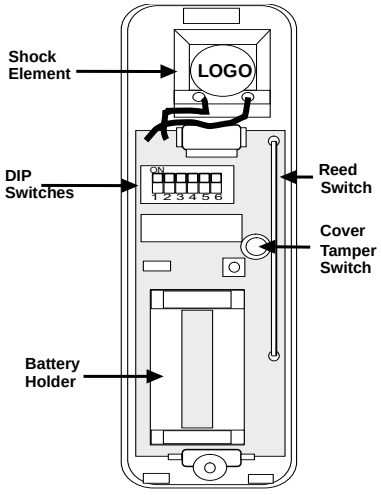

Figure 1. Shock Sensor Main Components

Installation Guidelines

- ❑ Learn the sensor before adjusting the shock sensitivity. The sensor is shipped with the reed switch enabled and open, and this is how it must be learned.
- ❑ Before permanently mounting the sensor, test it at the intended location to make sure that the panel can receive sensor signal transmissions. The sensor is an RF device and there may be blind or non-operational locations within the installation. Normally, these can be overcome by moving the sensor or receiver.
- ❑ Always mount the shock sensor so that the detector is on the frame and not on glass, solid, or hollow-core doors. See Figure 2 for mounting locations.

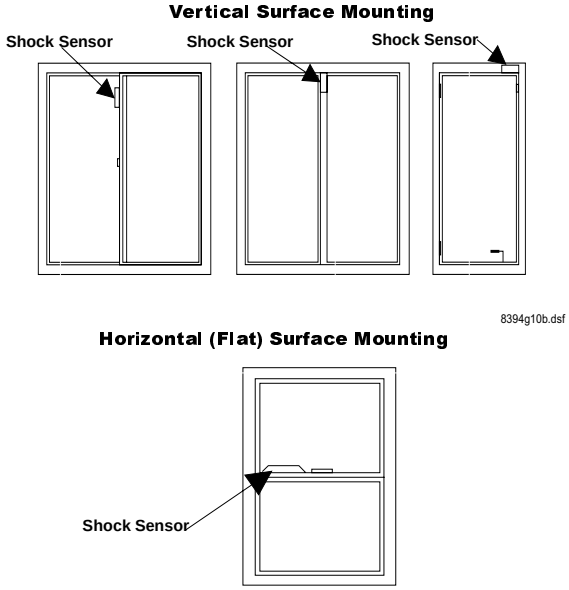

Figure 2. Mounting Options for Door/Window Styles

- ❑ Mount the sensor in a location where the structure can transmit vibrations to the sensor.
- ❑ The sensor can be mounted on a vertical surface or on a horizontal (flat) surface.
- ❑ Make sure the window fits snugly in the frame and doesn't move or rattle.
- ❑ Hold the sensor against the frame to make sure the sensor base fits on the surface area of the frame and doesn't extend over the surface edges.

Shock Sensor Orientation

There are two types of shock sensor mounting orientations; on a vertical surface or on a horizontal surface (sill or ledge).

On a **vertical surface,** there are two orientations (see Figure 3).

> **Note**
> On a vertical surface, the shock sensor element must always be oriented with its screw terminals down, or the writing on the shock element horizontal.

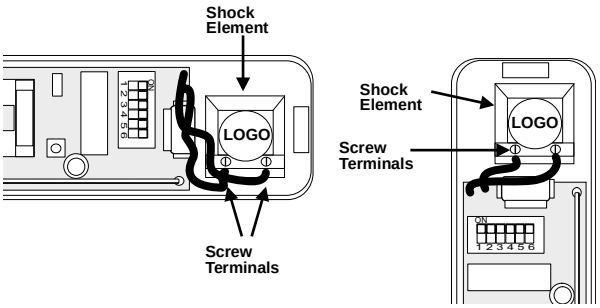

Figure 3. Positioning shock element according to mounting orientation on a vertical surface

On a **horizontal surface (sill or ledge)**, any orientation is allowed, but certain sensor element orientations are better than others. The element is much better at detecting horizontal vibrations perpendicular to its writing than parallel (see Figure 4).

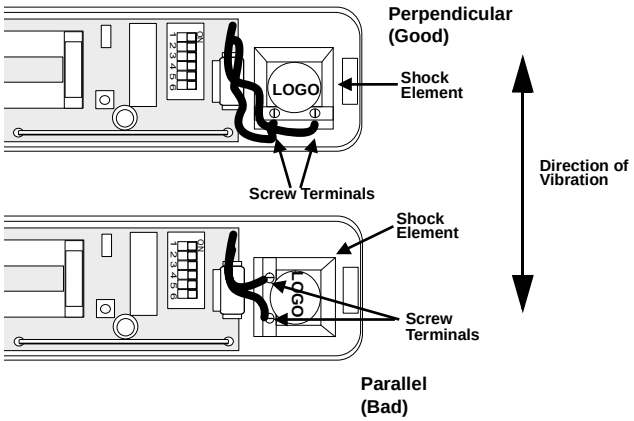

Figure 4. Positioning shock elements for horizontal surface mounting

Tools and Supplies

- ❑ Control panel installation instructions
- ❑ Phillips screwdriver
- ❑ Slotted screwdriver (to pry off the cover)
- ❑ Two #6 x 3/4” flathead screws for mounting the sensor (included)
- ❑ Two #6 x 5/8” screws for mounting the magnet (included)

Installation

Caution!
You must be free of all static electricity when handling electronic components. Touch a grounded, bare metal surface before touching a circuit board or wear a grounded wrist strap.

1. Insert a slotted screwdriver into the slot at the top end of the unit and remove the cover (see Figure 5).

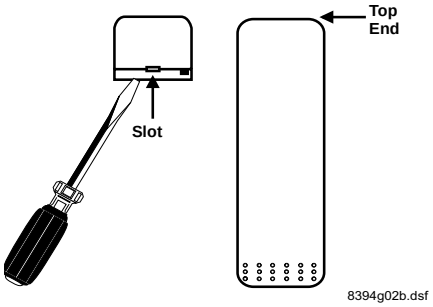

Figure 5. Remove the sensor cover

2. Using the flathead mounting screws, secure the base to the mounting surface either vertically or horizontally as required (see Figure 6).

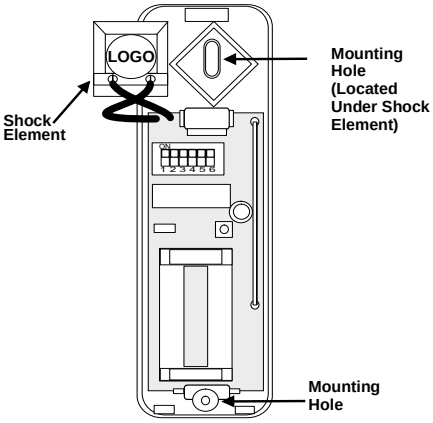

Figure 6. Sensor base mounting holes

3. Position the shock element and press it firmly into its socket (see Figure 7).
4. If using the reed switch, use the two remaining screws to mount the magnet so that its arrow is aligned with the arrow on the sensor case (see Figure 7).

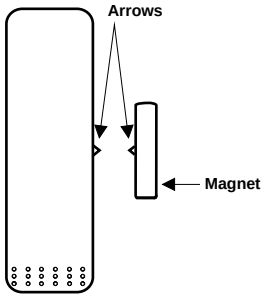

Figure 7. Magnet alignment

Important! You must disable the reed switch if you are not using it. If the reed switch is enabled but no magnet is installed, the sensor will be in a continuous alarm state.

Adjusting the Shock Sensor

DIP Switches

The following describes the DIP switch functions:

- ❑ **DIP Switches 1 and 2**—adjust the Pulse Count.
- ❑ **DIP Switches 3 and 4**—adjust the sensitivity setting of Gross Attack detection.
- ❑ **DIP Switch 5**—enable/disable reed switch.
- ❑ **DIP Switch 6**—not used.

> **Note**
> In order for the LED to indicate shock detection while adjusting the sensitivity, be sure the reed switch is disabled (DIP switch 5 OFF) or that the magnet is lined up with the reed switch if DIP switch 5 is ON.

Gross Attack Adjustment

1. To adjust the sensor for Gross Attack, set DIP switches 1 and 2 to the ON position. This disables the Pulse Count so that the unit can only be activated by a Gross Attack.
2. Apply high level shocks to the mounting structure, using the LED as a guide to when the alarm trips (LED on for 4 seconds).

   The LED will blink for 1 second every time the sensor detects a pulse. A shock that is severe enough to cause an alarm will cause the LED to light for approximately 4 seconds.
3. Use switches 3 and 4 to adjust the Gross Attack sensitivity of the sensor (see Table 1).
4. Repeat step 2 each time you make a sensitivity change.

Table 1: Gross Attack Sensitivity Settings

DIP Switch 3	DIP Switch 4	Sensitivity
OFF	OFF	1 (maximum sensitivity)
ON	OFF	2
OFF	ON	3
ON	ON	4 (minimum sensitivity)

Pulse Count Adjustment

1. Set the sensor to the desired Pulse Count (see Table 2).

   > **Note**
   > Pulse Count signals are counted at 1-second intervals and stored in a 30-second digital memory. These small signals can detect an intruder gently prying open a window or door frame.

Table 2: Pulse Count Adjustment

DIP Switch 1	DIP Switch 2	Pulse Count
OFF	OFF	4
ON	OFF	6
OFF	ON	8
ON	ON	Disabled

2. To test the pulse count setting, generate small shocks on the mounting structure. Each time a shock is detected, a pulse is registered in memory and the LED will blink for one second. If the programmed pulse count is reached within the most recent 30 seconds, the alarm will trip and the LED will light for approximately 4 seconds. If the alarm trips for any reason, the stored pulses are cancelled.
3. Use switches 1 and 2 to adjust the Pulse Count.
4. Repeat step 2 each time you make a sensitivity change.

Reed Switch Setting

After adjusting the sensor sensitivity, set DIP switch 5 to the appropriate setting, ON for enabled or OFF for disabled.

System Programming

This section describes the basic steps for adding the sensor to panel memory. Refer to the specific panel installation instructions for complete programming details.

The reed switch must be enabled and open when learning the sensor.

1. With the cover on the sensor, set the panel to 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, remove the sensor cover to activate the tamper switch.
5. Exit program mode.

RF Testing

This section describes the basic steps for testing the sensor. Refer to the specific panel or receiver installation instructions for complete testing details.

1. Set the panel to Sensor Test.
2. Trip the sensor.
3. Listen for appropriate response from system sirens.
4. Exit Sensor Test.

Battery Replacement

When the system indicates that the sensor has a low battery, remove the old battery and install a new battery (Duracell DL123A or a Sanyo CR123A) into the battery holder, observing proper polarity.

> **Caution!**
> Replace only with a Duracell DL123A battery or a Sanyo CR123A battery. Observe polarity when installing a new battery. Installing the battery backwards may cause damage to the sensor.
>
> Dispose of used batteries according to the manufacturer's instructions and/or local government authorities.

Specifications

Compatibility ..... All ITI 319.5 MHz Learn Mode Panels/Receivers

Case dimensions ..... 1.4 inches (3.5 cm) W x 6.0 inches (15.2 cm) L x 1.25 inches (3.2 cm) H

Operating temperature .. 32° to 122° F (0° to 50° C)

Storage temperature ..... -29° to 140° F (-34° to 60° C)

Humidity ..... 90% relative humidity non-condensing

Battery ..... Duracell DL123A or Sanyo CR123A 3V Lithium (ITI part number 34-030)

Transmitter frequency... 319.5 MHz

Transmitter Range ..... 500 feet open air

FCC Notices

This device complies with FCC Rules Part 15. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference that may be received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by Interlogix, Inc. can void the user's authority to operate the equipment.

FCC ID: B4Z-802A-SHOCK

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