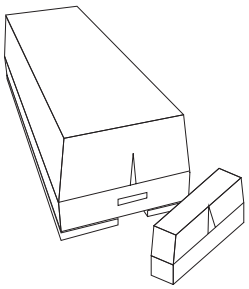
Learn Mode™ Shock Sensor

ITI Part No. 60-461



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Installation Instructions

Product Summary

The Learn Mode™ Shock Sensor is a wireless transmitter that includes a built-in shock processor and two reed switches.

The processor can be used with two Litton Shock Detector models available from ITI:

- ❑ SP3237 Surface Mount Shock Detector (ITI Part No. 13-005/13-011)
- ❑ SP3227 Flush Mount Shock Detector (ITI Part No. 13-214)

The SP3227 detector can also be installed inside the shock sensor housing for an easy, clutter-free installation.

How it Works

During normal operation, the shock sensor transmits a supervisory signal every 64 minutes. If the panel does not receive a supervisory signal within a set time frame, the panel responds by sounding trouble beeps and reports a supervisory condition on the premises and to a central monitoring station (if the system is monitored).

For shock detection, the elements inside the shock detector are activated by blunt force vibrations which travel through the door or window frame to the detector. The processor setting and sensitivity adjustments instruct the transmitter to transmit a trip (alarm) signal. If the system is armed, the panel responds by sounding sirens and reporting an alarm to a central monitoring station (if the station is monitored).

If the shock sensor is mounted on a window that opens, one of the two internal reed switches can be used to detect the window opening in addition to utilizing the shock detection. You can also add a hardwire contact to the shock detector wiring circuit instead of using the internal reed switches.

A built-in tamper switch is activated when the sensor cover is removed. If the system is armed when the sensor cover is removed, the panel responds by sounding sirens and reporting a tamper alarm to the central monitoring station (if the system is monitored). If the system is disarmed but the 24-hour tamper feature is enabled (panel programmable), the same alarm event just described occurs.

The shock sensor is powered by a 3.5 V lithium battery that can last 5-8 years depending on how often the sensor is activated.

Tools Needed

- ❑ Small Phillips Screwdriver
- ❑ Small Flathead Screwdriver
- ❑ Three #6 Screws (provided)
- ❑ A pair of needlenose pliers

Installation Guidelines

Use the following guidelines to determine the best mounting location for the sensor:

- ❑ Always mount Shock Sensors so that the detector is on the frame and not on glass, solid, or hollow-core doors. See Figure 1 for mounting possibilities.

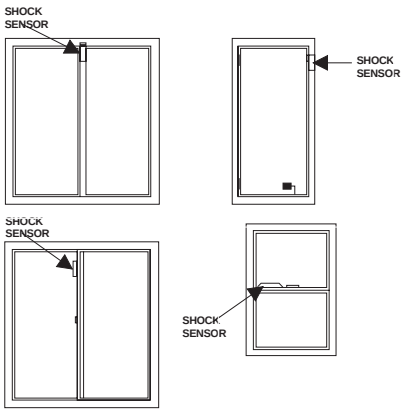

Figure 1. Mounting Options for Door/Window Styles

- ❑ 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.
- ❑ Position the sensor on the frame to determine whether the internal reed switches (located inside the shock sensor) or an external reed switch should be used if you will also be protecting the door or window opening.

Note
To use internal reed switches, there must be enough space to mount both the magnet and sensor and not interfere with normal window/door operation. Remember, when using the internal reed switches, mount the sensor on the stationary frame whenever possible and mount the magnet on the movable part of the door or window frame.

Mounting and Wiring Shock Detectors to the Shock Sensor

This section describes how to mount and wire surface mount and flush mount Litton Shock Detectors to the sensor.

Wiring Surface Mount Detectors (ITI Part No. 13-005/13-011)

The best location for the surface mount detector is on the window frame at right angles to the glass being detected. It should be as close

as possible to the glass, and the wire leads should either go straight up or straight down. For best results, solder and crimp all splices.

1. Mount the detector bracket with a screw or a thin application of RTV adhesive. Remember that the detector leads must be straight up or straight down in order to work. Keep the sensor within two (2) inches of the glass being detected.
2. Install the detector in the bracket.

Wiring Using an Internal Reed Switch

To use the internal reed switches, connect the white and red detector wires to terminals 2 and 3 of the sensor as shown in Figure 2. Be sure to crimp and solder the black and green leads of the last shock detector shown. They act as a tamper loop.

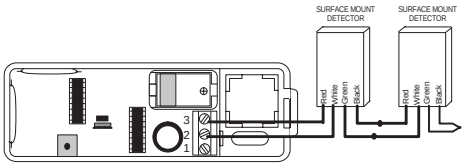

Figure 2. Wiring Using Active Internal Reed Switch

If you do not want to use the internal reed switches, connect the white and red detector wires to terminals 1 and 3 of the sensor as shown in Figure 3.

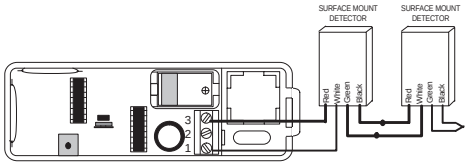

Figure 3. Wiring Using Inactive Internal Reed Switch

Wiring Using an External Reed Switch

Connect the external reed switch in series with the detector and terminals 1 and 3 of the sensor as shown in Figure 4.

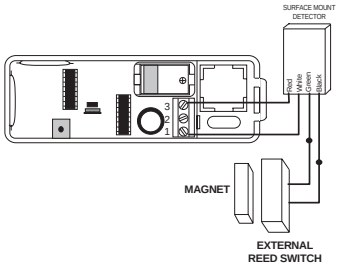

Figure 4. Wiring Using External Reed Switch

If you want to use both an external and internal reed switch, connect the external reed switch in series with the detector and connect the detector to terminals 2 and 3 of the sensor as shown in Figure 5.

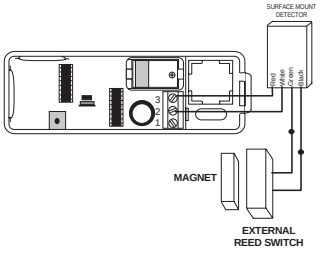

Figure 5. Wiring Using External and Internal Reed Switch

Mounting and Wiring Flush Mount Detectors (ITI Part No. 13-214)

This detector can be used inside the shock sensor or can be wired directly to the shock sensor for remote sensor mounting. The same mounting considerations for the surface mount detector apply to this detector. It must be within two (2) inches of the glass it is detecting.

Push wires and the detector through the 3/4" hole until the detector rests flush with the bottom of the plastic base.

Wiring Using an Internal Reed Switch

To use the internal reed switches, connect the detector wires to terminals 2 and 3 of the sensor as shown in Figure 6.

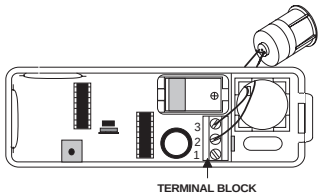

Figure 6. Wiring Using Active Internal Reed Switch

If you do not want to use the internal reed switches, connect the detector wires to terminals 1 and 3 of the sensor as shown in Figure 7. This disables the internal reed switches.

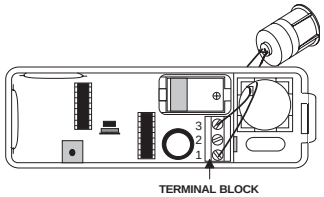

Figure 7. Wiring Using Inactive Internal Reed Switch
Wiring Using an External Reed Switch

Wiring Using an External Reed Switch

Connect the external reed switch in series with the detector and terminals 1and 3 of the sensor as shown in Figure 8.

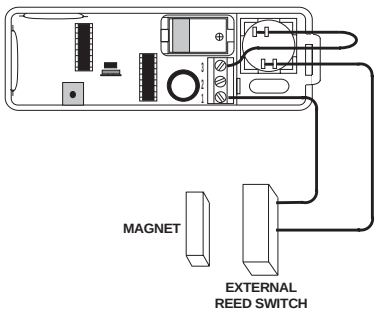

Figure 8. Wiring Using an External Reed Switch

If you want to use both an external and internal reed switch, connect the external reed switch in series with the detector and connect the entire circuit to terminals 2 and 3 of the sensor as shown in Figure 9.

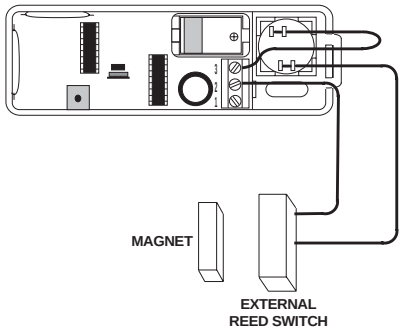

Figure 9. Wiring Using External and Internal Reed Switches

Setting the Shock Sensor Processor Jumper

❑ Position the jumper on the two pins nearest to the custom ITI chip as shown in Figure 10.

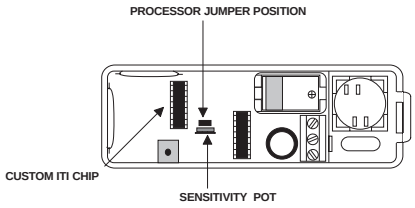

Figure 10. Processor Jumper Position

Mounting the Sensor Using the Litton Flush Mount Detector

CAUTION
It is important to be free of all static electricity when handling transmitters. Touch a grounded metal surface before handling the transmitter circuit board.

1. Remove the sensor cover to disengage the top of the cover from the slot in the sensor base as shown in Figure 11.

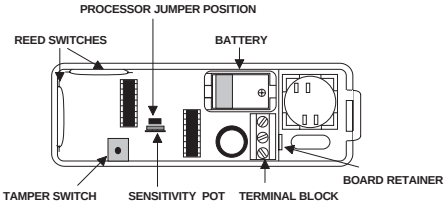

Figure 11. Shock Sensor with Cover Removed

2. Remove the circuit board from the base as shown in Figure 12.

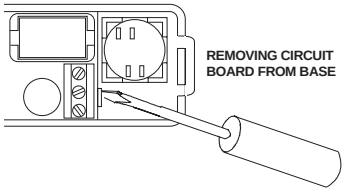

Figure 12. Circuit Board Removal

Note
To prevent damaging the base or terminal block, use care if using a screwdriver when removing the circuit board from the base.

3. Position the detector so that the arrows, based on the mounting position of the sensor, point up and down as shown in Figure 13.

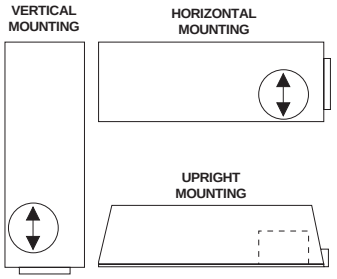

Figure 13. Detector Arrow Positions

4. Secure the base to the frame with three screws in the locations shown in Figure 14. Don't overtighten the mounting screws; this can cause the base to bow, which may partially lift the detector off the mounting surface.

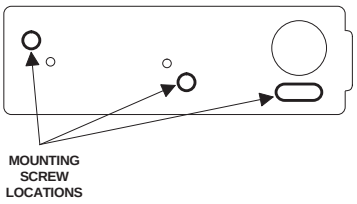

Figure 14. Mounting Screw Locations

Note
Installing a screw in the slot next to the detector helps ensure solid contact between the detector and the mounting surface.

5. Push the detector against the mounting surface to ensure solid contact.
6. Before placing the cover on the sensor, use a needlenose pliers to snap off the circular pattern of fins inside the cover as shown in Figure 15.

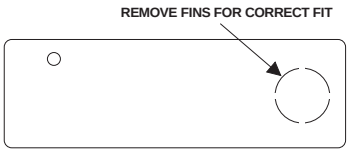

Figure 15. Fin Removal

Programming

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

1. Remove the shock detector wires from the sensor terminals.
2. Place the cover on the sensor.
3. Set the panel to program mode.
4. Proceed to the LEARN SENSORS menu.
5. Select the appropriate sensor group and sensor number assignments.

6. When prompted by the panel to trip the sensor, activate the sensor tamper by removing the sensor cover.
7. Exit program mode.
8. Connect the detector to the sensor terminal block (see “Mounting and Wiring Shock Detectors to the Shock Sensor”).
9. Put the cover back on the sensor.

Sensitivity Adjustments and Testing

To perform a sensitivity test:

1. Use the panel touchpad to enter the sensor test mode (refer to the system owner’s manual).
2. Remove the sensor cover and locate the sensitivity adjustment pot.
3. Set the sensitivity adjustment pot so that the arrow is at the 12 o’clock position as shown in Figure 16..

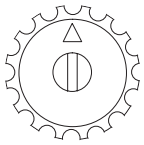

Figure 16. Sensitivity Adjustment Pot Shown at 12 O’Clock

4. Use a plastic or wooden handle of a screwdriver to tap the glass firmly twice within the area shown in Figure 17.

Note
The test area shown in Figure 17 represents the most vulnerable part of the glass based on the window latch location. This is the most likely area for an intruder to break the glass and access the latch. Tapping the glass beyond the test area in Figure 17 requires increasing the sensitivity setting just to detect the least likely breaking point. This should not be attempted since it may also produce unwanted alarms caused by a lesser impact on the glass in the test (vulnerable) area.

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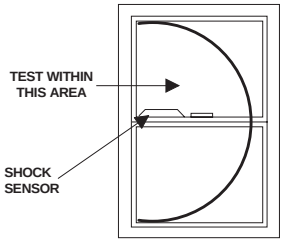

Figure 17. Sensitivity Testing Area

5. If the sensor doesn’t trip, remove the cover and increase the sensitivity by turning the pot so that the arrow is at the 1 o’clock position. If the sensor trips at the 12 o’clock position, decrease the sensitivity by turning the pot so that the arrow is at the 11 o’clock position.
6. Replace the cover on the sensor and wait at least 30 seconds before restoring the sensor. This allows time for the sensor to send a restore signal to the panel. We recommend placing an RF Sniffer (Part No. 60-401) next to the sensor so it can hear the restore signals.
7. Repeat steps 4 and 5 until the sensor doesn’t trip. Then increase the sensitivity by turning the sensitivity pot about 1/8” to the right.
8. If an external reed switch is installed, test it by opening the door or window where it is mounted.

Final Testing

To perform a dealer sensor test:

1. Set the panel to the Dealer Sensor Test when testing and adjusting sensitivity of shock sensors. Refer to the panel installation manuals for more details on Dealer/Sensor Signal Strength Testing.
2. Refer to the panel installation instructions.
3. Trip the sensor.
4. Listen for appropriate response from system sirens (refer to the panel installation instructions)

Specifications

Compatibility:	All ITI Learn Mode Panels and Receivers
Power Source:	One 3.5 VDC Lithium Battery
Temperature Range:	10 to 120 °F
Dimensions:	Sensor– 4.90” x 1.60” x 0.90”
	Magnet– 1.50” x 0.50” x 0.50”
	All Dimensions (L x W x D)

Notices

This device complies with FCC Rules Parts 15 and 68. Operation is subject to the following two conditions:

This device may not cause harmful interference.

This device must accept any interference that may be received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by Interactive Technologies, Inc. can void the user’s authority to operate the equipment.

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