

**SP3237 Shock Sensor**  
 Installation Manual 11/30/06  
 STLIT02072B



This Product is Listed by  
 UNDERWRITERS LABORATORIES INC.

## Specifications

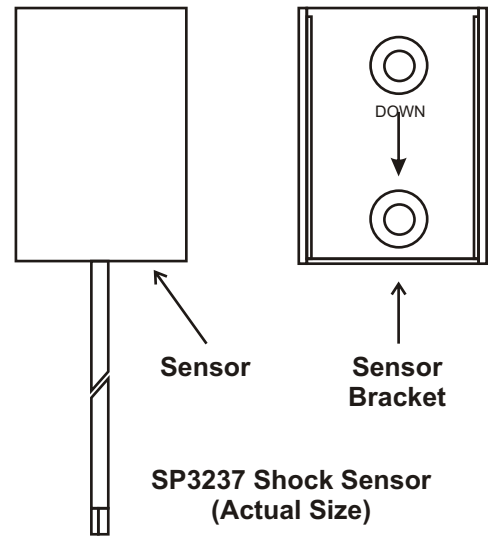
Size	Standard	1 inch	7/16 inch	wide	high	deep
		1 inch	7/16 inch	wide	high	deep
	Junction Box	1-3/8 inch	3 inch	1 inch	wide	high
					deep	

**Temperature Range**  
 -40° to 120° Fahrenheit

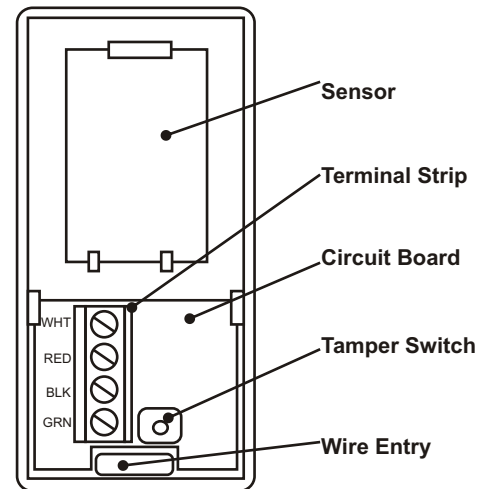
## Introduction

The Terminus SP3237 Shock Sensor is used to detect entry attempts on walls and windows by sensing the mechanical disturbance associated with the attempt. A shock is a sharp rap, tap, crack, break or similar occurrence. Shocks occur when a material is broken, hammered, cut, sawed or strained. Shock detection systems are ideal for perimeter protection because they are generally insensitive to ambient noise. The SP3237 is used with a processor. Adjustments on the processor allow the installer to eliminate alarms from such causes as thunder, passing trains, nearby traffic or other disturbances that would cause false alarms. The SP3237 is for indoor use only.

The shock sensor uses two contacts that must be activated simultaneously to produce an alarm signal. This redundant technology lessens the chance of false alarms. The gold plating on the contacts provides excellent conductivity and superior corrosion resistance. The sensors are hermetically sealed to keep out moisture, dirt and airborne contamination that can cause malfunction or failure.



The SP3237 is a small package that is available in damped and undamped versions. The damped version is slightly less sensitive and should be used on gates, metal structures and other applications that are prone to rattling or ringing. The sensors are available in 10 inch and 10 foot lead versions.

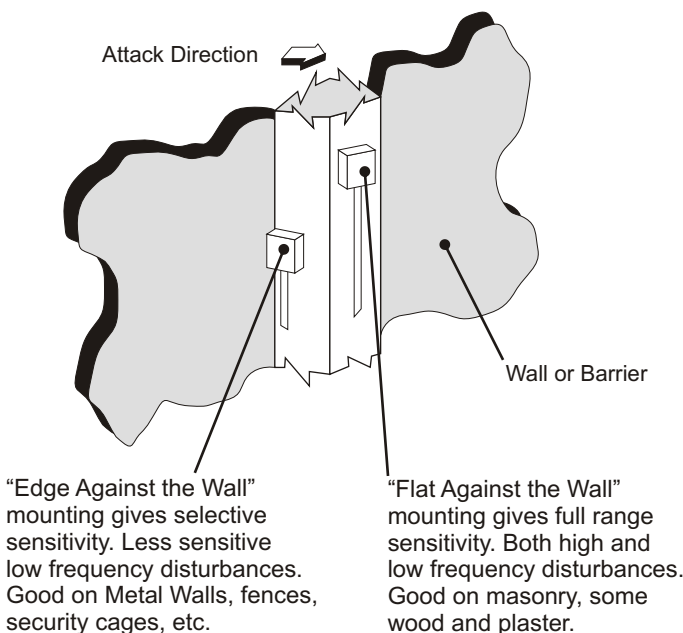


**SP3237JB Junction Box Sensor  
 Cover Removed**

The SP3237 Junction Box Sensor is available in damped and undamped versions, with or without a tamper switch. (Rated for 50 mA @ 50 VDC). The junction box sensors have four position terminal strips to allow easier installation. The SP3228 Multi-position Bracket is available for use with the junction box sensor and should be used on roofs, and other structures that are not vertical.

## Sensor Placement and Range

The design of the Terminus SP3237 Shock Sensor gives it two sensitivity modes, depending on how it is mounted. This feature is especially useful on walls and other structures that may provide a vertical barrier to intrusion. In the figure below, a shock sensor mounted flat against a vertical wall is more sensitive to low frequency movement than one with its edge against the wall. With either mounting scheme, the sensitivity to high frequency shocks is essentially the same. Flat against the wall mounting is useful when the leaning, sway or low frequency vibration of a structure is to be detected.



The drawings in Figure 3 on page 4 show some typical sensor placements for the Shock Sensor. Placement and range for the SP3237 is dependent on the size, shape, arrangement and type of glass or wall material. The listing below gives ranges for various types of materials.

### SP3237 Standard Shock Sensor

3 feet for double hung windows with 1/8 plate (float) tempered glass, or double pane glass.

5 feet for 1/4 inch continuous plate glass, 1/4 inch continuous tempered glass, plywood, brick, solid block and chain link fence.

6 feet on hollow block.

### SP3237D Damped Shock Sensor

1.5 feet for double hung windows with 1/8 plate (float) glass or double pane glass.

5 feet for plywood, brick, solid block and chain link fence.

6 feet on hollow block.

### SP3237JBT Junction Box Sensor with Tamper

3 feet for double hung windows with 1/8 plate (float) tempered glass, or double pane glass.

5 feet for 1/4 inch continuous plate glass, 1/4 inch continuous tempered glass, plywood, brick, solid block and chain link fence.

6 feet on hollow block.

### SP3237JBDT Junction Box Damped Sensor with Tamper

5 feet for plywood, brick, solid block and chain link fence.

6 feet on hollow block.

## Coverage Test

1. Apply the sensor to the area where it might be installed in the permanent installation and fasten it in a similar manner.
2. Wire the sensor to a processor and set the processor to count of one and most sensitive.
3. Rap or tap with a hard instrument (a screwdriver handle for example) in the most distant area to be covered.
4. Make sure that the processor responds with the sensitivity set to most sensitive.
5. Reduce the sensitivity and repeat the test until the processor stops responding. Note the sensitivity setting for future use.
6. After you are satisfied that the processor responds for All areas to be covered, install the sensor.

## Sensor Wiring

The Terminus SP3237 Shock Sensor has a jacketed four wire lead. The damped versions are polarized and the undamped versions are not. It is good practice to maintain polarity in both versions to make wiring easier and more understandable. The sensors must be wired to a Terminus processor as shown in Figure 1. The SP3237 can be used with the SP3219, SP3268, SP3274 and SP3273 processors. Each processor can handle up to 50 sensors per zone. An end-of-line (EOL) resistor of 4.7K ohms is installed at the last sensor in the loop. All splices should be soldered and taped. Normally-open and normally-closed alarm devices can be used in the alarm loop as shown.

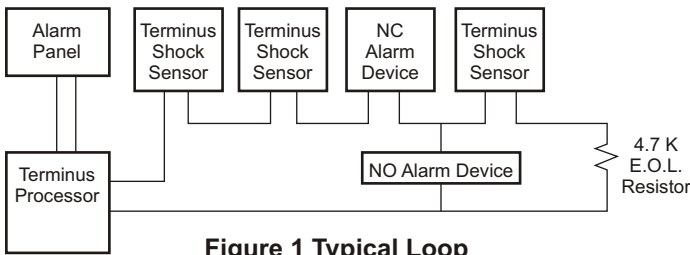
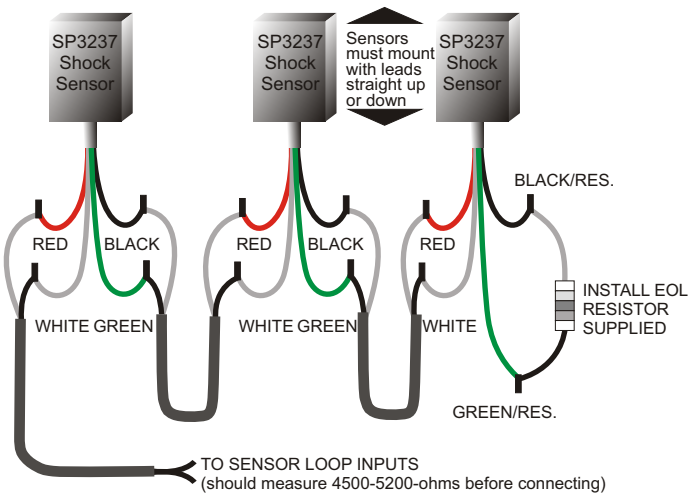


Figure 1 Typical Loop

For sensor loops less than 1500 feet in length, use 22 gauge or larger stranded twisted pair cable. For longer loops, use 18 gauge or larger stranded twisted pair. Shielded cable is not required except in rare cases.

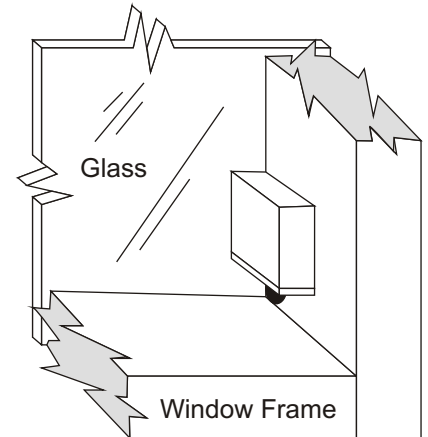


- All joints must be soldered
- End-of-Line Resistor (EOL) is supplied with the processor.

Figure 2 Sensor Wiring

## Mounting and Testing the Sensor

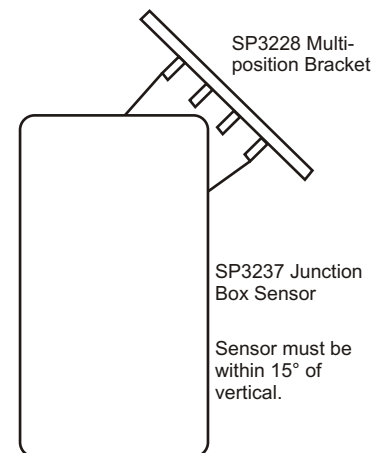
1. Attach bracket to the surface using two #4 machine, wood or sheet metal screws through the mounting holes.
2. For glass only, mount the bracket with adhesive applied to the smooth flat surface on the back side of the bracket. Dow Corning general purpose sealant is very good for adverse environments (i.e. sweaty windows). This -method of mounting cannot be used for UL Listed Systems.
3. Wire sensors as shown in figure 2. Solder and tape all Connections.



Where possible, sensor should be mounted touching glass.

## Junction Box Sensor Installation

1. Remove the circuit board and sensor from the base by carefully prying open the retaining clips.
2. Attach the base to the surface using two #4 machine, wood, or sheet metal screws through the mounting holes.
3. For glass only, mount the base with adhesive applied to the smooth flat surface on the back side of the base. Dow Corning general purpose sealant is very good for adverse environments (i.e. sweaty windows). This method of mounting cannot be used for UL Listed Systems.
4. Replace circuit board and sensor.
5. Bring wiring in Through oval hole at the bottom of the base.
6. Wire sensors similar to Figure 2 using the terminal strip provided Instead of solder and Tape.
7. Replace cover.



## False Alarm Test

1. Set sensitivity control as established in the Coverage Test section.
2. Shake structure with firm but gentle hand pressure. Any loose fitting part should rattle during this test, just as it would in response to wind, nearby traffic, thunder, etc.
3. If a rattle and false alarm occurs, the structure should be tightened or a better sensor location should be found.
4. If the remedy in step 3 is not effective, use a damped sensor.
5. If the entire loop is affected, the sensitivity on the control electronics can be made less sensitive.

The illustrations below are suggested starting locations for the coverage test and are intended only as a guide.

## UL Restrictions

The SP3237 is UL Listed for use with the SP3274 processor, SP3268 processor and SP3273 expander. The SP3237 is not currently Listed for use with the SP3219, SP2508 and SP3228.

Test the security system at least once a year.

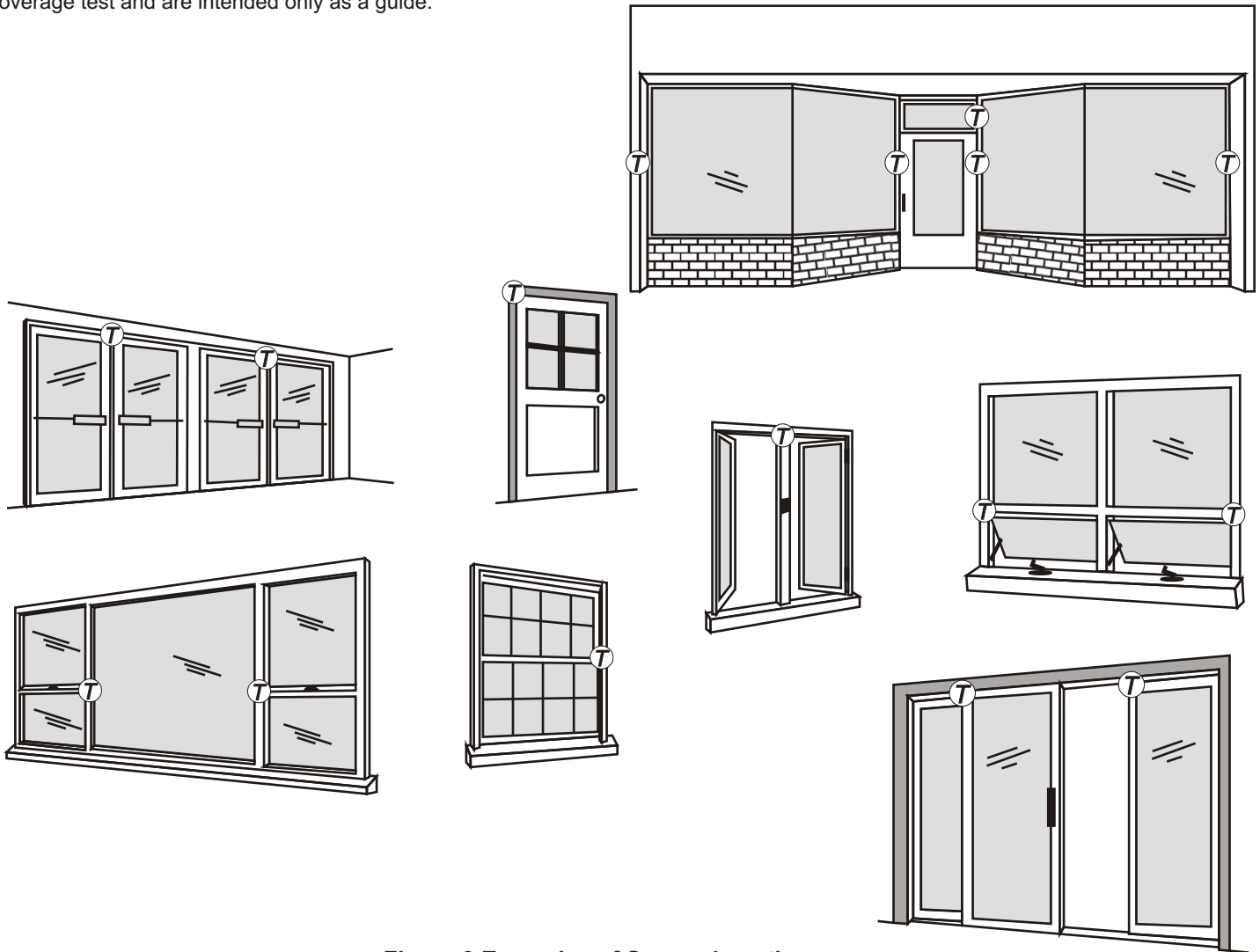


Figure 3 Examples of Sensor Locations  
 T = Sensor Location