

SHATTERPRO™ II DESCRIPTION

The ShatterPro™ II is an advanced version of the ShatterPro™ acoustic glassbreak sensor. By processing over 30 frequency points across the glass break frequency spectrum, the ShatterPro™ II can eliminate most common false alarm sounds, while providing excellent glassbreak detection.

USE A SHATTERPRO™ II FOR:

- Perimeter loops for occupied or unoccupied buildings.
- Most rooms including those with blinds and unlined drapes.
- Recommended glass size of 1' x 2' (0.3 m x 0.6 m) or larger. Minimum glass size 1' x 1' (0.3 m x 0.3 m).
- Glass thicknesses as follows:
 - Plate Glass: 3/32" to 1/4" (2.4 mm to 6.4 mm)
 - Tempered Glass: 1/8" to 1/4" (3.2 mm to 6.4 mm)
 - Wired Glass: 1/4" (6.4 mm)
 - Laminated Glass: 1/8" to 1/4" (3.2 mm to 6.4 mm)

FOR BEST DETECTION, AVOID INSTALLING IN:

- Rooms with lined, insulating, or sound deadening drapes.
- Rooms with closed wooden window shutters inside.
- Ceilings higher than 15' (4.5 m), if ceiling mounted.

SHATTERPRO™ II RANGE OF COVERAGE

The coverage range is for worst-case breaks in worst-case applications.

- For ceiling mounted sensor: 25' (7.5 m) radius of coverage from sensor to the bottom of the glass; 20' (6 m) from sensor to wall.
- For wall mounted sensor: 25' (7.5 m) of coverage to farthest glass if mounted on opposite wall; 20' (6 m) coverage if mounted on adjoining wall.
- If not using hand-held tester to verify range, reduce range to 15' (4.5 m) for windows with blinds and unlined drapes.
- Reduce coverage 50% for armor-coated glass.
- 360° coverage pattern
- No sensitivity adjustment.

FOR BEST FALSE ALARM IMMUNITY

- Avoid 24-hour loop applications (perimeter loop OK).
- Don't use where white noise such as air compressor noise is present. (May cause false alarms by saturating the glass break frequency spectrum.)
- Avoid rooms smaller than 10' x 10' (3 m x 3 m) and rooms with multiple sounds such as small kitchens, glass booths, noisy areas, garages, small bathrooms, etc.
- Sensor should also not be used in rooms where noise causes the sensor's LED to frequently flash, if the same noises will be present when the sensor is armed.

SHATTERPRO™ II MOUNTING LOCATION

For best false alarm immunity the sensor should be located at least 4' (1.0 m) away from noise sources (televisions, speakers, sinks, doors, etc.). The sensor must always be in direct line of sight of all of the windows to be protected. It cannot consistently detect glass breaking around corners, in other rooms, etc. Mount the sensor at least 1' (0.3 m) away from the glass.

SENTROL

ShatterPro™ II

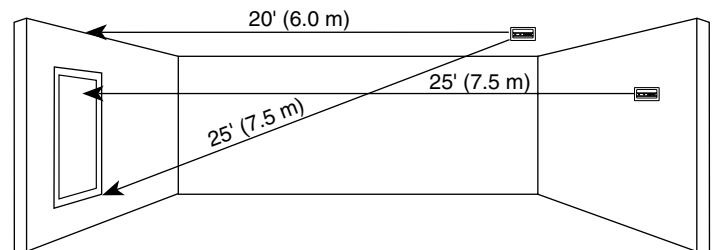
Advanced Acoustic Sensor With
Pattern Recognition Technology™

Protected under U.S. Patent 5,192,931
and other patents pending

Installation Instructions

Wall Mounting

Since the sound of breaking glass travels directionally out from the broken window, the best location for mounting the sensor is on the opposite wall, assuming that the wall is within the sensor's range and line of sight to the protected glass. The ceiling or adjoining (side) walls are also good sensor locations, assuming that they are mounted within range and line of sight to the protected glass.



As with all glassbreak sensors, detection is reduced with same wall mounting, since such detection is partially dependent on glass break sound reflection off the opposite wall. With same wall mounting, test range with Sentrol's 5709C tester held flat against the glass. Depending on room acoustics, there may be a reduction in range.

Ceiling Mounting

Mount the sensor on any type of ceiling in a location which is in direct line of sight of the windows to be protected. The sensor can be mounted as close as 1' (0.30 m) from the glass. Since the glass break sound travels directionally out from the broken window, however, a ceiling mounted sensor placed 8' (2.4 m) into the room may detect better than a sensor mounted close to the glass.

Prior to final installation of the ShatterPro™ II, the sensor should be pre-tested in the desired location to confirm coverage. To test range, a Sentrol 5709C hand-held tester is required. This is the only tester which accurately verifies range of the sensor.

SHATTERPRO™ II PRE-TESTING

Temporarily Mount the Sensor

1. Connect a 9-volt battery to the ShatterPro™ II for testing purposes.
2. Use the double-stick tape provided to mount the sensor in the desired location.
3. Use the Sentrol 5709C hand-held tester to set the sensor into test mode. Set the tester to tempered glass and hold the tester on top of the sensor. Activate the tester. The sensor will then trip into alarm and go into test mode for one minute. When in test mode the sensor's LED will blink continuously. Extend the test time by firing the tester at the sensor at least once a minute.

Test the Sensor

1. Holding the tester near the surface of the glass, **aim the tester at the ShatterPro™ II** and hold down the test button. If drapes or blinds are present, test with the hand-held tester behind the closed drapes or blinds (do not use sensor with heavy or lined drapes). If mounted on same wall, point the tester at opposite wall.
2. The 5709C tester has different settings for each type of glass. The tester should always be set for tempered or laminated glass (either is correct and both have the same range) unless the installer is certain that all the glass to be protected is plate glass, in which case the plate setting may be used.

If the LED on the sensor goes solid for four seconds when the tester is triggered, the glass is within detection range.

If the LED does not go solid, but simply continues blinking as before, reposition the sensor closer to the protected windows and retest. This may require adding additional sensors in order to achieve adequate coverage. It is very rare that the sensor will not activate within its stated range of coverage. Double-check adequate battery strength in the hand-held tester. A new tester battery will likely restore range.

Note: If setting the sensor for latching LED (cut the wire jumper), provide a power reset for cutting power and resetting the LED.

IMPORTANT! Room acoustics can artificially extend the range of a glassbreak sensor. The specified range of the ShatterPro™ II has been established for worst-case conditions. *While the sensor will likely function at additional range, it may miss a minimum output break, or room acoustics may be changed at some future time, bringing sensor range back into normal conditions. For example, adding window coverings some time after the installation may reduce sensor range.* **Do not exceed the rated range of the sensor, regardless of what the tester shows.**

HOW TEST MODE WORKS

The Pattern Recognition Technology™ of the ShatterPro™ II ignores false alarm sounds, including hand-held glassbreak testers. In order to test the ShatterPro™ II, a test mode is used. With the sensor in test mode, portions of the glass break pattern processing are disabled. The ShatterPro™ II is then listening only for those frequencies which determine sensor range, as reproduced by the 5709C tester.

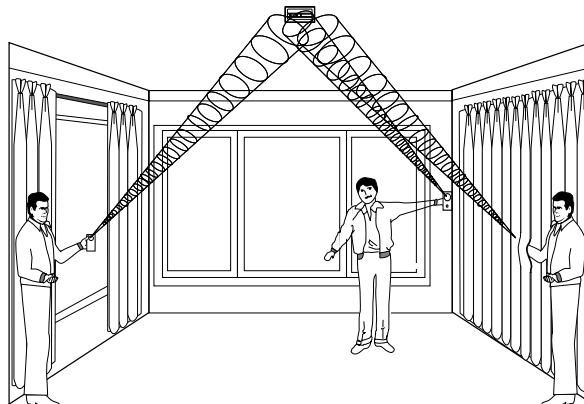
CHECKING THE SHATTERPRO™ II

The ShatterPro™ II can be checked by the installer or end-user while in normal mode, simply by clapping hands loudly under the sensor. The LED will blink twice, but the sensor will not trip. This verifies visually that the microphone and circuit board are functioning.

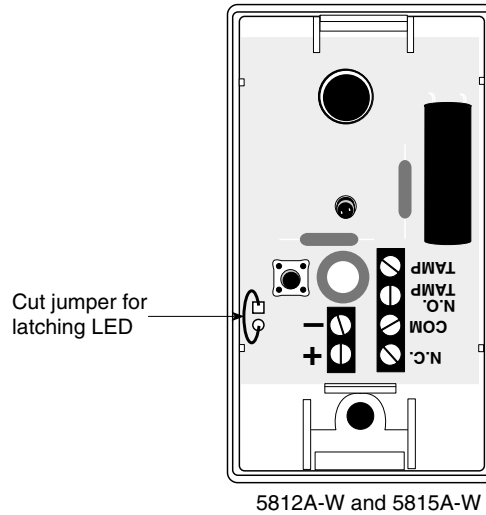
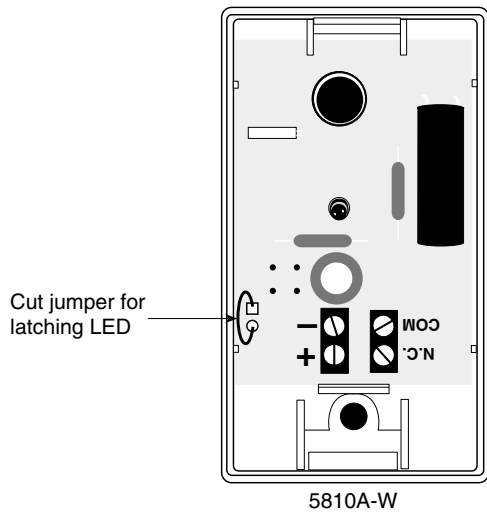
IN NORMAL MODE, THE SHATTERPRO™ II WILL NOT TRIP TO THE TESTER, UNLESS THE TESTER IS HELD ON TOP OF THE SENSOR.

NOTE: EACH TIME THE SENSOR ALARMS IT ALSO GOES INTO TEST MODE FOR ONE MINUTE.

WHEN THE SHATTERPRO™ II TRIPS TO AN ALARM CONDITION IT WILL LATCH SOLID FOR FOUR SECONDS, THEN START BLINKING FOR ONE MINUTE. AT THE END OF ONE MINUTE THE LED WILL EXTINGUISH IF IN "SET-UP LED" MODE, OR THE LED WILL LATCH IF SET FOR "LATCHING LED" (cut wire jumper for latching LED).



WIRING THE SHATTERPRO™ II



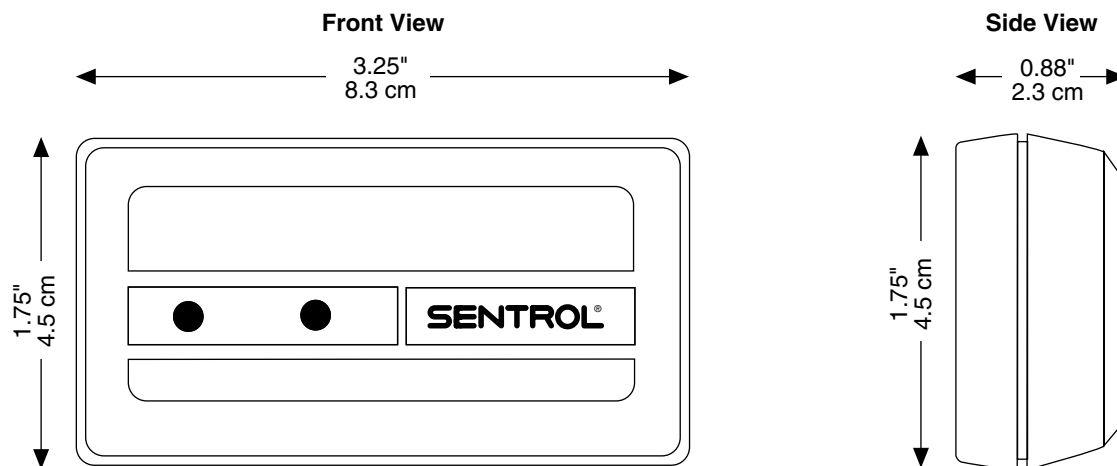
INSTALLATION TIPS

1. The ShatterPro™ II is designed to detect the shattering of framed glass mounted in an outside wall. “Testing” the sensor with unframed glass, broken bottles, etc. may not trip the sensor. The ShatterPro™ II typically does not trip to glass break tests in the middle of a room. No burglar breaks glass in the middle of a room, so such breaks are false alarms.
2. False alarms are most likely to occur when installed on a 24-hour loop, when installed in glass airlocks and glass vestibule areas, when mounted above sinks, when used in residential car garages, small utility rooms, stairwells, small bathrooms, and in other small acoustically live rooms, and rooms where multiple sounds can reflect and eventually duplicate the glass break frequency pattern. For glass break protection in such applications, use Sentrol shock sensors on the windows or window frames.
3. Do not install in humid rooms. No glassbreak sensor is hermetically sealed. Excess moisture on the circuit board can eventually cause a short and a false alarm.
4. Installing the ShatterPro™ II on 24-hour loops will increase false alarms. The ShatterPro™ II is recommended for perimeter loops and is designed to function without false alarms in occupied areas. On a 24-hour loop which is armed all day, all night, every day, the false alarm technology will be pushed to its limit since some sounds in some conditions can duplicate the points on the glass break pattern that the ShatterPro™ II detects. Install the ShatterPro™ II on a perimeter loop which is armed whenever the door and window contacts are armed. For occupied area installations, ShatterPro™ II’s false alarm immunity is best in rooms with only moderate noise. For 24-hour occupied area protection, use Sentrol shock sensors.
5. ShatterPro™ II detects the shattering of glass. Like all glassbreak sensors, it may not consistently detect cracks in glass, or bullets which break through the glass or break out the glass. Glassbreak sensors should always be backed up by interior protection.
6. The ShatterPro™ II should be connected to a UL Listed control panel or a power supply that provides at least four hours of standby power. Like all security sensors, the ShatterPro™ II should be tested for proper operation at least once a year.

SHATTERPRO™ II SPECIFICATIONS

Housing material	Flame retardant ABS plastic
Operational voltage	9-16 VDC
Current draw	10mA typical; 20mA max.
Relay output	Normally closed, open 4 seconds on alarm
On resistance	10 Ohm ±5
Off resistance	20 MOhms
Maximum loop rating (relay or tamper loop)	16 VDC, 50 mA
Lightning suppression	400 watts for 1 msec pulse
RF immunity	20 volts per meter, 1MHz to 1000MHz.
Microphone	Omni-directional electret
Temperature range	0 to 120° F (-18° to 50° C)
Color	White
Wiring terminals	22-18 AWG

DIMENSIONS



ORDERING INFORMATION

Description	Model Number	Color	Listing
ShatterPro™ II, latch or non-latch LED	5810A-W	White	
ShatterPro™ II, tamper, latch or non-latch LED	5812A-W	White	
ShatterPro™ II, tamper, Form C, latch or non-latch LED	5815A-W	White	ULC
Hand-held Tester, for testing effective range	5709C-W	White	

Protected under U.S. and foreign patents including: 3,863,250; 4,745,398; 4,837,558; 5,192,931 and other patents pending.

NOTE: The products, materials, and specifications listed are subject to change without notice as Sentrol strives for continuing product improvement.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Re-orient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.



SECURITY & LIFE SAFETY GROUP

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