AC-100 – Acuity Glassbreak Detector

The Acuity AC-100 is an advanced acoustic glass break sensor, designed to detect the sounds produced by the shattering of framed glass. The unit uses DSP (patented Dynamic Signal Processing) to provide accurate detection of plate, laminated, wired (safety) and tempered glass types, while rejecting common false alarm sounds.

The detector requires three elements to go into alarm – it must hear a large number of different frequencies, the amplitude must be at least 90dB at 10' and the sound must 'drop off' within approximately 3 seconds.

Product Information:

AC-100   Form 'A' alarm contact
AC-101   Form 'A' alarm contact with tamper switch
AC-102   Form 'C' alarm contact with tamper switch

Specifications:

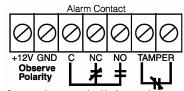|	
Operating voltage:	9.5 – 14.5VDC
Standby current:	16mA
Alarm current:	20mA
Operating temperature:	0°C - 50°C (32°F - 122°F)

Maximum Detection Range:

Glass Type	Thickness	Size (l x w)	Level 1	Level 2
Plate/ Tempered	1/8-1/4" 3-6mm	18"x18" min	25 ft	15ft
		46x46 cm min	7.6m	4.6m
		12"x12" to 18"x18"	15ft	10ft
		30x30cm to 46x46cm	4.6m	3m
Wired/ Laminate	¼" 6mm	18"x18" min	20ft	Do Not Use
		46x46 cm min	6m	Do Not Use
		12"x12" to 18"x18"	10ft	Do Not Use
		30x30cm to 46x46cm	3m	Do Not Use

Testing:

It is not possible to recreate the sound of breaking glass using a tester. The AC-100 has a 'test' mode. When in test, the unit will basically amplify the incoming sounds to compensate for the reduced output of the AFT-100 tester.

1. Select a location for the AC-100, remove the cover and move jumper J1 into the ON position. When in 'test' mode the alarm relay will latch into the alarm state, and will remain so until the jumper is removed. This is to prevent someone from leaving the unit in test mode.
2. Trigger the AFT-100 Glassbreak Simulator at the glass. The LED will turn on when the sound of breaking glass is detected. Make sure to close all window coverings to simulate the environment when no one is home.
3. The correct mounting location is indicated by three successive detections.

Wiring:

Alarm Contact

+12V GND C NC NO TAMPER
Observe Polarity
Contacts shown energized in the non-alarm state

+12V   Connect to AUX of control panel or power supply

GND   Connect to GND or COM of control panel or power supply

C, NC   Connect across Zone and COM terminals

Locating the Detector:

1. Detector should have line of sight to the protected glass, at least 1.8m (6ft) off the ground.
2. Mount the detector as close as possible to the protected glass, either on the adjacent wall, the ceiling or behind window coverings, NOT on the same wall as the glass.
3. Avoid installation near "noisy" sources, like speakers or other objects that produce noise continuously.

Jumpers:

J1	ON	Test mode
	OFF	Normal mode
J2	ON	Alarm Memory - LED will latch ON for alarm
	OFF	Alarm Memory - LED will not be latch ON for alarm
J3	ON	Level 2 detection (low sensitivity)
	OFF	Level 1 detection (high sensitivity)

If the unit is configured to latch the LED on alarm (J2 ON) the unit must be powered down to turn off the LED after an alarm is detected. The unit should be connected to a switchable power source so it can be reset from the keypad.

Troubleshooting:

1. If a tester other than the AFT-100 is used, it may not reliably indicate the actual coverage pattern of the detector.
2. The glass must be at least the minimum size indicated.
3. The glass must be framed – framed glass adds strength and requires more force to break, causing higher amplitude (90dB at 10') sound.
4. The glass must break. The unit will not detect something like a bullet hole.