

# Acuity<sup>®</sup> AC-100 Glass Break Detector

## INSTALLATION INSTRUCTIONS

The Acuity AC-100 is an advanced acoustic glass break sensor, designed to detect the sounds produced by the shattering of framed glass. The AC-100 is the result of an extensive research program, designed to study the properties of glass as well as the properties of sounds produced by the shattering of framed glass. The result is a detector which provides exceptional sensitivity and high false alarm immunity. High quality manufacturing methods have been combined with a meticulous final test, to produce a detector which is superior to any other product of its kind.

Dynamic Signal Processing\* provides accurate detection of Plate, Laminated, Wired and Tempered glass types, while rejecting common false alarm sounds. \*Patented

### Product Information

- AC-100: Detector with form A alarm contact
- AC-101: Detector with form A alarm contact and tamper switch
- AC-102: Detector with form C alarm contact and tamper switch

### Specifications

- Voltage: 9-16 Vdc
- Current: 25mA typical/35mA max. @ 12Vdc
- Alarm Relay: Contact Ratings 1A @ 24Vdc
- Tamper Switch: Contact Ratings 0.1A @ 24Vdc
- Microphone type: Omnidirectional Electret
- Dimensions (l x w x h): 89 x 64 x 20 mm (3.5 x 2.5 x 0.8 inch)
- Alarm duration: 3 seconds
- Additional operating modes: Installer test mode: Jumper J1 Alarm memory mode: Jumper J2

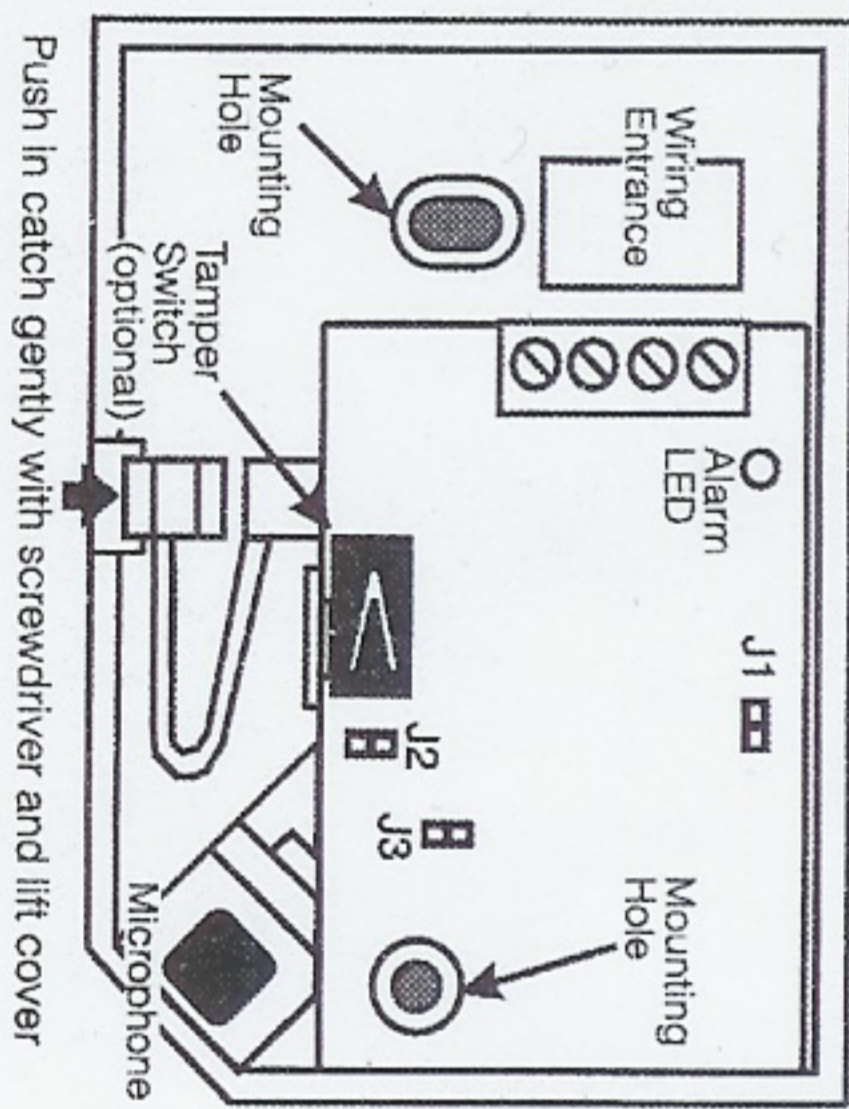
### Level of Detection (Jumper J3)

The AC-100 glass break detector comes with a "detection level" jumper setting (Jumper J3), which allows the selection of one of two levels of detection, depending on the size and acoustics of the room in which the detector will be installed. This improves the overall false alarm immunity of the detector.

The detector is factory preset for Level 1 detection (Jumper J3=OFF). This is the highest sensitivity setting of the detector, and is designed for applications requiring high sensitivity and range, such as larger rooms, or rooms which contain a significant amount of sound-absorbing surfaces (such as carpets, furniture, drapes, etc.). Level 1 will be suitable for most applications.

For rooms which are smaller, and contain a significant amount of hard, sound-reflective surfaces

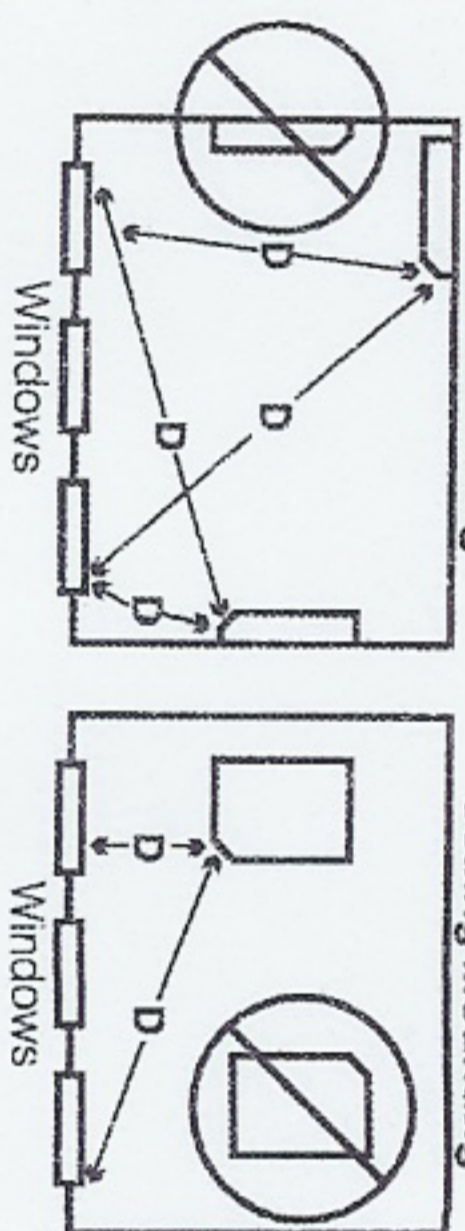
(such as kitchens, bathrooms, entrances etc.), Level 2 detection (Jumper J3=ON) provides a lower sensitivity setting which is more appropriate for these environments.



### Locating The Detector

**NOTE: Test the detector thoroughly for proper placement using the AFT-100 Glass Break Simulator. Other simulators may trip the unit, but will not provide accurate indications.**

- For optimum protection, the detector should have a direct line of sight to the protected glass.
- Window coverings will absorb sound energy from the shattering glass. In these cases, mount the detector as close as possible to the protected glass, either on an adjacent wall, the ceiling, or behind the window covering if possible.
- The detector should be mounted at least 1.8m (6 feet) off the ground.
- Do not mount the detector on the same wall as the protected glass. Refer to the diagram below for correct and incorrect mounting locations.
- Avoid installation near "noisy" sources, such as speakers or other objects which produce sounds continuously.
- Do not install the detector beyond the maximum recommended range, even if the AFT-100 simulator shows additional range - future changes in room acoustics could reduce that additional range.
- Application on 24 hour loops should be avoided unless the location is unoccupied.
- Test false alarm immunity by creating any sounds in the room which will likely occur when the alarm system is armed.



### Testing

When choosing a location for each AC-100 glass break detector, the following test should be performed to ensure that it is mounted in the best possible location.

Test mode set-up:

1. Select a location and remove the front cover of the detector. Use double-sided tape to temporarily mount the detector in the selected location. Use a 9V battery to power the detector.
2. Set the test mode Jumper J1 to the ON position. The alarm relay will latch into the alarm state, and will remain so until the jumper is restored to the OFF position after testing.

**NOTE: The detector will not respond to the glass break simulator unless the test mode Jumper J1 is in the ON position.**

3. If Alarm Memory operation is desired (latching LED), set Jumper J2 to the ON position.

**NOTE: The alarm memory indication is cleared by disconnecting the supply voltage for one second. This can be done from the alarm system keypad using the sensor reset option available on most control panels.**

4. Replace the front cover.

### The AFT-100 Glass Break Simulator

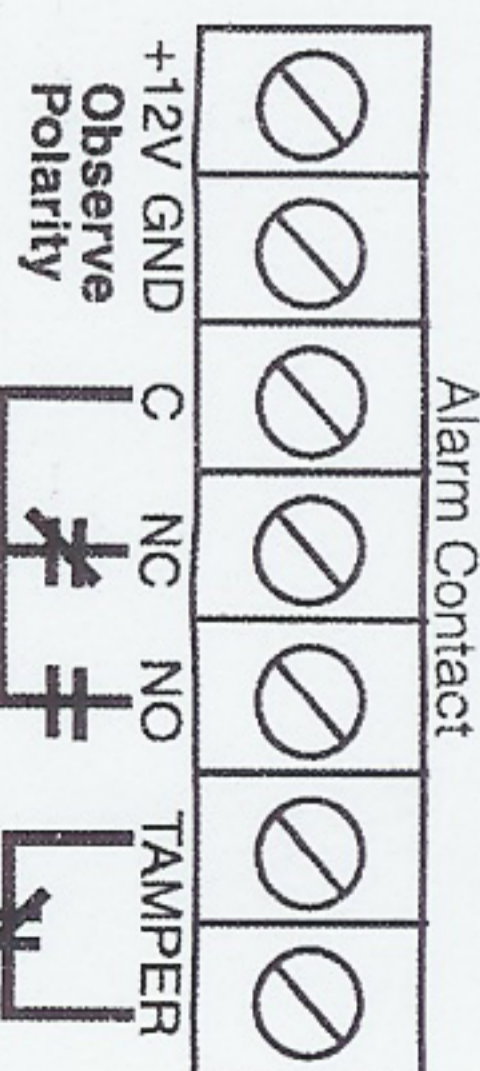
The AFT-100 glass break simulator generates plate or tempered glass samples. Use the plate glass setting if you are unsure of the glass type. Observe the following when testing the detector:

- The correct mounting location is indicated by three successive detections. If the detector does not respond each time, relocate the detector and repeat the test.
  - If the windows in question are covered by drapes or blinds, place the tester behind the closed window coverings. If the drapes prevent reliable detection, we suggest that the detector be mounted behind the drapes either on an adjacent wall or on the ceiling.
  - If there are multiple windows, or one large window, activate the tester at the furthest point on the glass.
- When the detector responds consistently, it can be permanently mounted using the supplied screws.

### Mounting the AC-100

Once the location has been determined, open the detector by pressing the release tab on the bot-

tom with a small flat-blade screwdriver. Remove the cover and set in a safe location. Draw the wires through the rectangular opening in the backplate and connect to the terminal block. Observe polarity for power wiring. Mount the detector using the two mounting screws. Once the detector is permanently mounted, replace the cover and repeat the installation tests using the AFT-100 tester to confirm proper operation.



Contacts shown energized in the non-alarm state

### UL Notes:

1. This product should be tested yearly by the installer.
2. This product must be connected to a UL Listed burglar alarm power supply capable of providing at least 4 hours of stand-by power.

### Limited Warranty

Digital Security Controls warrants that for a period of twelve months from the date of purchase, the product shall be free of defects in materials and workmanship under normal use and that in fulfillment of any breach of such warranty, Digital Security Controls shall, at its option, repair or replace the defective equipment upon return of the equipment to its repair depot. This warranty applies only to defects in parts and workmanship and not to damage incurred in shipping or handling, or damage due to causes beyond the control of Digital Security Controls such as lightning, excessive voltage, mechanical shock, water damage, or damage arising out of abuse, alteration or improper application of the equipment.

The foregoing warranty shall apply only to the original buyer, and is and shall be in lieu of any and all other warranties, whether expressed or implied and of all other obligations or liabilities on the part of Digital Security Controls. This warranty contains the entire warranty. Digital Security Controls neither assumes, nor authorizes any other person purporting to act on its behalf to modify or to change this warranty, nor to assume for it any other warranty or liability concerning this product.

In no event shall Digital Security Controls be liable for any direct or indirect or consequential damages, loss of anticipated profits, loss of time or any other losses incurred by the buyer in connection with the purchase, installation or operation or failure of this product.

Warning: Digital Security Controls recommends that the entire system be completely tested on a regular basis. However, despite frequent testing, and due to, but not limited to, criminal tampering or electrical disruption, it is possible for this product to fail to perform as expected.

This manual shall be used in conjunction with the Installation Manual of the alarm control panel.

Glass Type	Thickness	Maximum Detection Range	
		Level 1	Level 2
Plate/Tempered	1/8" - 1/4"	25 ft	15 ft
	3-6 mm	7.6 m	4.6 m
Wired/Laminated	1/4"	18" x 18" and up	15 ft
		12" x 12" to 18" x 18"	10 ft
		30 x 30 cm to 46 x 46 cm	3 m
Wired/Laminated	6 mm	18" x 18" and up	20 ft
		12" x 12" to 18" x 18"	10 ft
		30 x 30 cm to 46 x 46 cm	3 m

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