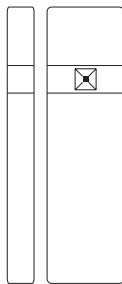




## INSTALLATION INSTRUCTIONS



# Model: FG-1008 Glassbreak Detector & Magnetic Contact

### MOUNTING LOCATION

The FG-1008 can be mounted on doors and window frames (indoors only). It can also be mounted in corners, on walls or on ceilings. Refer to the guidelines below when selecting a mounting location.

- Mount the FG-1008 within 8' (2.4 m) of the glass to be protected. Do not install beyond this range even if testing indicates greater range.
- The detector must have a direct line-of-sight to and a clear view of the glass.
- When wall mounting, mount the detector at a height of at least 6' (1.8 m).
- Mounting on free-standing posts and pillars is not recommended.
- The FG-1008 will detect through venetian blinds and light drapes. For heavy window coverings, mount the unit on the window frame behind the covering. Test the location thoroughly whenever there are window coverings present.
- Do not mount the detector within 3 feet (0.9 m) of forced air ducts, sirens, or bells measuring two inches (5 cm) or more in diameter.
- If the magnetic contact is enabled, the glassbreak detector housing must be mounted less than 1" (2.5 cm) from the magnet housing. The glassbreak detector and magnet housings **must be aligned and mounted parallel to each other**. See Figure 1.
- Magnetically susceptible material will affect the range of the contact gap. If using the magnetic contact, be sure to test the gap thoroughly when mounted on iron or steel surfaces.
- **Be sure to test the detector for detection in the final mounting location.**

### Mounting Guidelines

The FG-1008 is designed to detect framed glass broken by an impact sufficient to make a hole.

### To minimize the chance of false alarms:

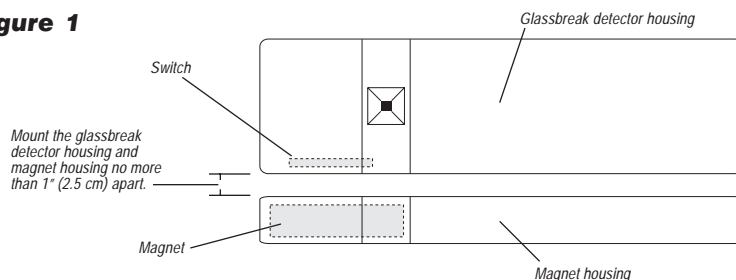
- Avoid installing in rooms with high-level noise sources, such as air compressors, bells, power tools, etc., if those sources can be active when the detector can signal an alarm.
- Test false alarm immunity by activating any known noise sources in the room.

### To maximize detection:

- Minimize range to the glass. Do not install beyond the maximum specified range, even if testing indicates greater range.
- Verify all installations back to the panel to be sure that the protection loop is intact.

**TIP:** It is a good idea to mount the detector temporarily in the intended location and power it with a 9 V battery until testing has established effective range coverage. If the 9 V battery is low, it cannot supply sufficient power and the detector will not operate.

Figure 1



## STEP 1

Figure 2a

Removing the front cover of glassbreak detector housing

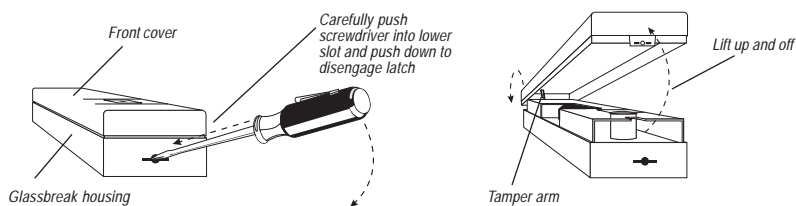
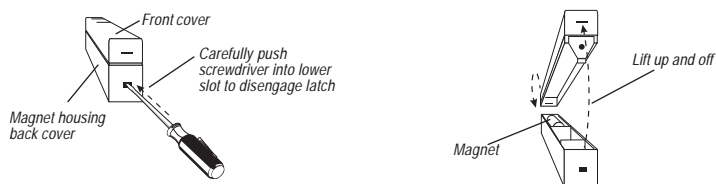


Figure 2b

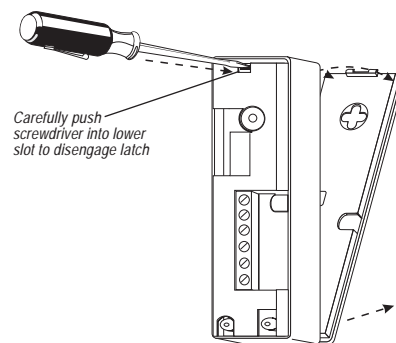
Removing the front cover of magnet housing



## STEP 2

Figure 3

Separating the printed circuit board (PCB) housing from mounting plate



## MOUNTING PROCEDURE

**IMPORTANT:** Test the detector in the desired mounting location before drilling mounting holes.

1. To open the glassbreak housing, insert a screwdriver into the slot at the end of the housing and gently depress the front cover latch. Lift and remove the front cover. Refer to Figure 2a.
2. To remove the front cover of the magnet housing, insert a screwdriver into the slot at the end of the back cover and gently depress the front cover latch. Lift and remove the front cover. Refer to Figure 2b.
3. Separate the mounting plate from the glassbreak housing. Insert a screwdriver into the slot at the top of the PCB as shown. Slightly twist and gently push downward on the latch. See Figure 3.
4. Align the "SWITCH" with the "MAGNET" to determine the correct orientation for mounting. See Figure 4b.
5. Route the wires through the wiring channel as shown in Figure 4a. (The channel loop forces condensation off the wiring and prevents it from reaching the PCB.) Remove breakout tab and use an industry standard 4" (10 cm) tie wrap if a strain relief is required.
6. Secure the mounting plate and magnet housing with #6 (M 3.5) screws (not provided).
7. Remove the appropriate breakout tab in the PCB housing. See Figure 5.
8. Route the wire through the wire entry hole in the PCB housing and reconnect the housing to the mounting plate.
9. Cut and strip wire ends 1/4" (6.5 mm). Wire the detector as shown (use 22 - 18 AWG). Reverse polarity connections will not damage the detector. See Figure 5.
10. Replace front cover.

## FG-1008 CONFIGURATION

Configure jumpers W1-W3 to best suit the application. See Figure 6.

**W1:** The FG-1008 comes with the LEDs enabled. To disable the LED operation, remove the jumper from position W1 on the PCB.

**W2:** The detector comes with alarm LED LATCH disabled. To enable alarm LED LATCH, place a jumper across W2.

**W3:** The FG-1008 comes with the magnetic contact enabled. To disable the magnetic contact, place a jumper across W3.

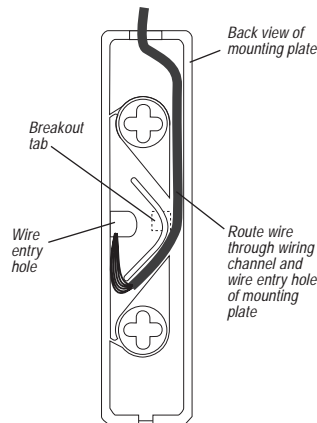
## TESTING

The FG-1008 should be tested at least once each year. Test the detector with the FG-701 Glassbreak Simulator. The model FG-700 Glassbreak Simulator can be used if it is set for the TEMPERed glass sound. Other glassbreak simulators will not give an accurate indication of range.

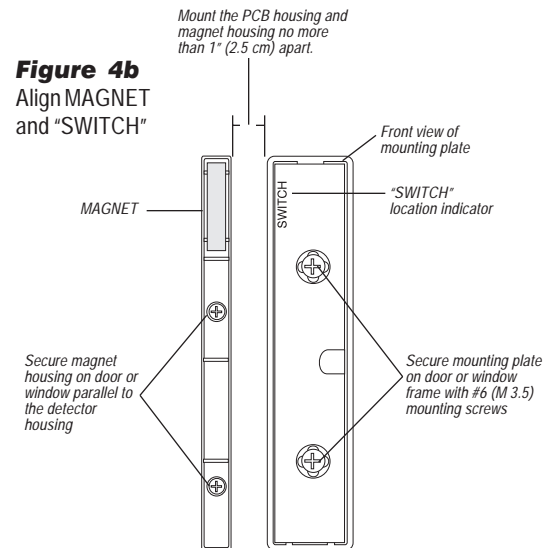
You must place the FG-1008 into Test Mode before you can test the detector.

## STEP 3

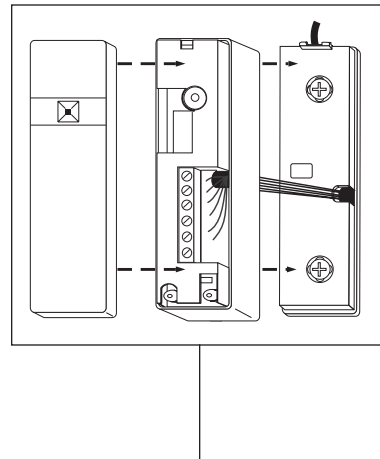
**Figure 4a**  
Routing the wires through the mounting plate



**Figure 4b**  
Align MAGNET and "SWITCH"

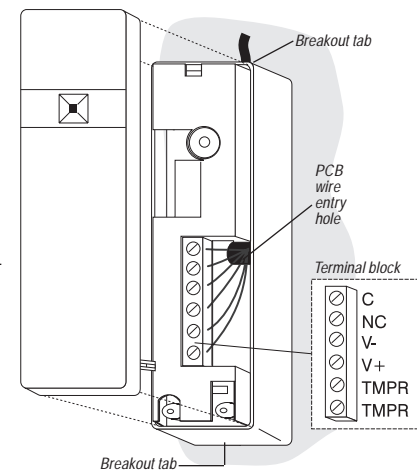


**Figure 5**  
Route wires through the PCB housing and connect to terminal block. Connect PCB housing to mounting plate.



**NOTE:** For proper wiring methods, refer to the National Electrical Code, NFPA 70.

After mounting plate is secured to wall, route wire through wire entry hole of PCB housing and PCB board. Strip wire ends and connect to terminal block.



## STEP 4

**Figure 6**  
Jumper settings

□ = Factory defaults

JUMPER	ON	OFF
<b>W1 (LED)</b>	LEDs are enabled	LEDs are disabled except during powerup test
<b>W2 (LATCH)</b>	Red alarm LED latches ON when detector alarms <sup>1,2</sup>	Red alarm LED lights for 5 seconds when detector alarms
<b>W3 (CONTACT DISABLE)</b>	Magnetic contact is disabled	Magnetic contact is enabled

<sup>1</sup>Latched alarm LED does not affect timing of alarm relay.

<sup>2</sup>Reset the alarm LED by removing and restoring power, or by momentarily removing and replacing the LATCH jumper.

TESTING continued...

### To activate Test Mode:

1. Position the simulator within 5 feet (1.5 m) of the detector.
2. Switch the FG-701 to ACTIVATE and MANUAL modes.
3. Point the front of the simulator at the detector and press the red start button. See Figure 7.

You should hear a short buzz from the simulator, and the green LED on the FG-1008 should begin flashing about once per second to indicate it is in Test Mode.

If an FG-701 is not available, or if for any reason remote activation cannot be used, use a small screwdriver to short the test pads at location W4 on the PCB (see Figure 8). This will activate Test Mode. Make sure to replace the front cover of the FG-1008 before beginning test.

**NOTE:** In Test Mode the LED disable jumper is overridden.

**IMPORTANT:** Some environmental factors may reduce the detector activation range. If you do not see the green LED flashing after pressing the red start button, move closer to the detector and try again.

### To test the FG-1008:

1. Place the detector in Test Mode as described above.
2. Set the FG-701 switches to the TEST and FLEX positions.
3. Press the red start button. The simulator will "click" on and start an eight second armed period.
4. Position the FG-701 near the farthest point of the protected glass and point it directly at the FG-1008. If window coverings are present, close them fully and hold the FG-701 behind the window coverings for testing. See Figures 10a&b.
5. Generate a flex signal by carefully striking the glass with a cushioned tool. The FG-701 will respond by producing a burst of glassbreak audio. See Figure 9.

If both the flex and audio are received properly, the red alarm LED on the FG-1008 will light.

You can also use the simulator in the MANUAL mode to test audio alone. The blinking green LED on the detector will flicker when the simulator audio is received correctly. (See the FG-701 Operating Instructions for additional information.) This is not a complete test. You must repeat steps 1-5 above until the red alarm LED lights.

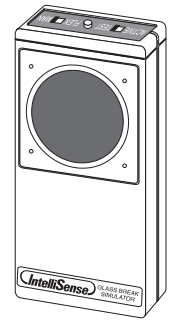
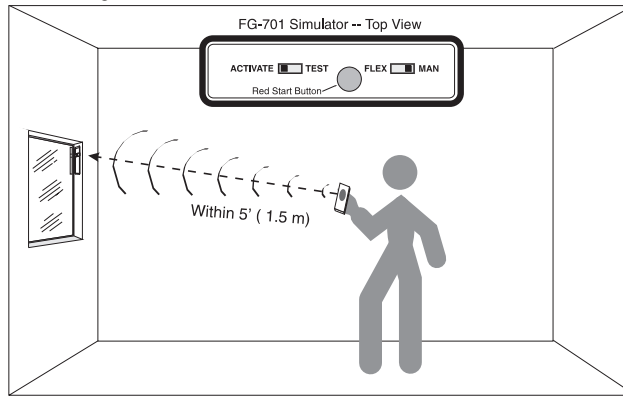
After testing, exit the Test Mode using the same procedure for activating the Test Mode. The FG-1008 will also automatically exit Test Mode after ten minutes.

### Test Magnetic Contact if Applicable

With the magnetic contact enabled, the detector will signal an alarm to the control panel when the normally closed magnetic contact opens. The LED on the detector will not indicate the alarm condition. An open contact must be verified at the panel. To reset the alarm relay, the magnetic contact must be closed (the door or window on which it is mounted must be closed).

## STEP 5

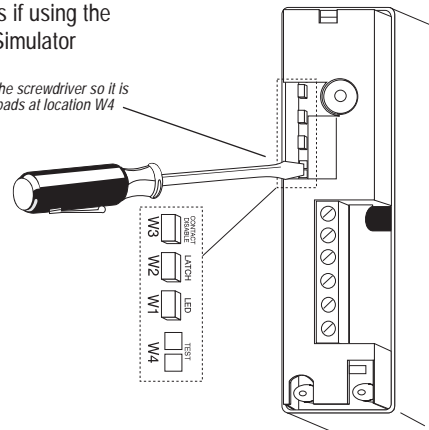
**Figure 7**  
Entering Test Mode



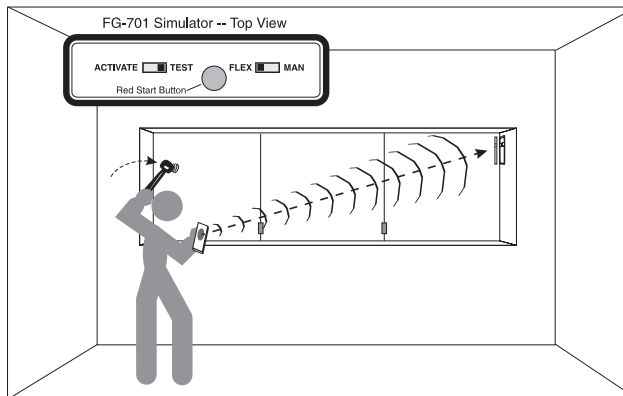
**FG-701**  
Glassbreak  
Simulator

**Figure 8**  
Shorting the test pads if using the  
FG-700 Glassbreak Simulator

Place the head of the screwdriver so it is touching both test pads at location W4

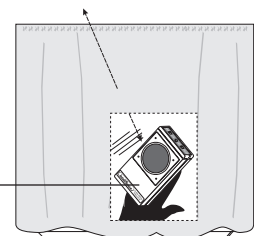
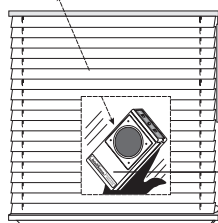


**Figure 9**  
Testing



**Figures 10a&b**

Hold FG-701 behind window coverings when testing



FG-701 Glassbreak Simulator

## LED Indicators

The two LEDs shining through the front cover are used to indicate the detector's operational status. The following table summarizes the LED operation when the LEDs are enabled.

Condition	Green LED	Red LED
Normal, no event	OFF	OFF
Normal, event detected	Flicker	OFF
Normal, break detected	OFF	ON
Power-up self-test	ON, one second	ON, one second
Trouble detected	Flash ON/OFF	Flash OFF/ON
Test mode, no alarm	Flash once per second	OFF
Test mode, event detected	Flicker	OFF
Test mode, alarm	Flash once per second	ON

## Self-Tests

The FG-1008 automatically performs a series of self-tests during power-up, and continuously. If any self-test fails, the detector will signal trouble by flashing the LEDs alternately once per second. Protection will continue if possible. If the trouble condition clears, the LEDs will return to the normal state. Always return the detector for repair if there is any indication of trouble, even if the trouble is temporary.

POWER-UP SELF-TESTS	CONTINUOUS SELF-TESTS
<ul style="list-style-type: none"> <li>• <b>RAM Test:</b> Write &amp; read all RAM locations with one's &amp; zero's</li> <li>• <b>Arithmetic Test:</b> Verify correct results for CPU arithmetic</li> <li>• <b>Logic Test:</b> Verify correct results for data comparisons</li> <li>• <b>Clock Rate Test:</b> Check clock frequency by measuring external time constants</li> <li>• <b>Active Analog Circuit Test:</b> Inject signals into analog channels to check gains, filters, A/D, and interrupts</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Watchdog:</b> Supervises microcontroller</li> <li>• <b>ROM Checksum:</b> Firmware ROM checksum verified</li> <li>• <b>RAM Test:</b> Write &amp; read RAM locations with one's &amp; zero's</li> <li>• <b>Logic Test:</b> Verify correct results for data comparisons</li> <li>• <b>Passive Analog Circuit Test:</b> Verify analog inputs are within normal bounds</li> </ul>

## SPECIFICATIONS

### Range:

8' (2.4 m) maximum  
No minimum range

### Alarm relay:

Form A, 250 mA maximum  
25 VDC maximum

### Alarm duration:

5 seconds (unaffected by alarm LED latching)

### Tamper switch:

Cover tamper 25 mA maximum  
24 VDC maximum

### Power requirements:

8 - 14 VDC; 17 mA typical at 12 VDC, 30 mA max.;  
AC Ripple: 4 Volts peak to peak at nominal 12 VDC

### Operating temperature:

32° to 120° F (0° to 49° C)  
Storage: -4° to 122° F (-20° to 50° C)

### RFI immunity:

30 V/m, 10 MHz - 1000 MHz

### ESD immunity:

10 kV, Discharges of either polarity to exposed surfaces

### Magnetic contact:

Make gap 0.9" minimum  
Break gap 2.2" maximum

### Dimensions:

Glassbreak housing:  
4-9/16" x 15/16" x 1-1/4"  
(11.6 cm x 2.3 cm x 3.2 cm)

### Magnet housing:

4-9/16" x 15/16" x 1/2"  
(11.6 cm x 2.3 cm x 1.3 cm)

### Weight:

2.9 oz., (81 g)  
packaged product: 3.8 oz., (108 g)

### Accessories:

FG-701 Glassbreak Simulator

### Approvals/listings:

FCC verified  
UL listed

### Protected glass:

Minimum size for all types is 11" (28 cm) square; Glass must be framed in the wall of the room or mounted in a barrier of 36" (0.9 m) minimum width.

Type	THICKNESS	
	Minimum	Maximum
Plate	3/32" (2.4 mm)	1/4" (6.4 mm)
Tempered	1/8" (3.2 mm)	1/4" (6.4 mm)
Laminated <sup>1</sup>	1/8" (3.2 mm)	9/16" (14.3 mm)
Wired	1/4" (6.4 mm)	1/4" (6.4 mm)
Coated <sup>2</sup>	1/8" (3.2 mm)	1/4" (6.4 mm)
Sealed Insulating <sup>1</sup>	1/8" (3.2 mm)	1/4" (6.4 mm)

<sup>1</sup>Laminated and sealed insulating glass types are protected only if both plates of the glass are broken.

<sup>2</sup>For glass coated on the inner surface with 3M Scotchtint™ type RE35NEARL or Hardglass® Security Film.

**IMPORTANT:** The FG-1008 must be connected to a UL listed power supply or UL listed control unit capable of providing a **minimum of four hours** of standby power.

**FCC Notice:** 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: 1) Reorient or relocate the receiving antenna, 2) Increase the separation between the equipment and receiver, 3) Connect the equipment into an outlet on a circuit different from that to which the receiver is connected. The installer can also consult an experienced radio/television technician for additional suggestions, if necessary.

In addition, a booklet on interference, prepared by the Federal Communications Commission, is also available for reference. Order "Interference Handbook" from the U.S. Government Printing Office, Washington D.C. 20402, stock no. 0004-000-00450-7.



Copyright 1997 C&K Systems, Inc.  
All Rights Reserved  
<http://www.cksys.com>  
5-051-436-00 Rev C

C&K is a registered trademark of C&K Components, Inc.  
IntelliSense is a registered trademark of C&K Systems, Inc.  
3M is a registered trademark and Scotchtint is a trademark of 3M Corporation.  
Hardglass is a registered trademark of CHB Industries.

NOTE: The content of this manual has been revised. For your convenience, dashed lines have been added to the margins of this document to note the locations of the changes.