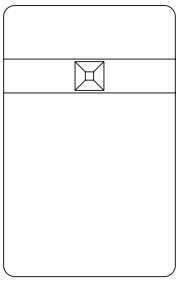
IntelliSense™

INSTALLATION INSTRUCTIONS

Model FG-1015 *Glass-Break Detector*

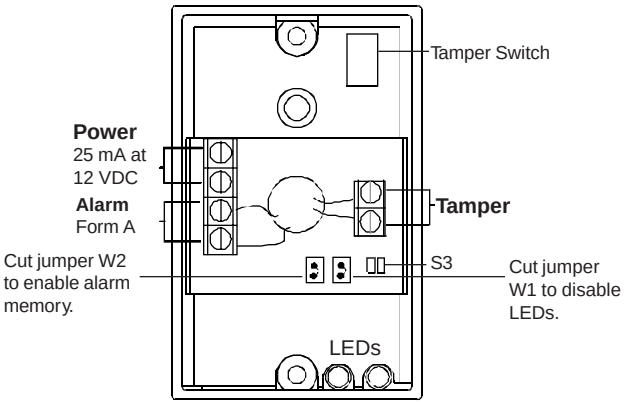


FEATURES

- Advanced microcontroller with Digital Signal Processing (DSP)
- Continuous self-test
- No adjustments
- No minimum range
- Remote Test Mode activation with FG-701 simulator
- 8 - 14 VDC operation
- PCB and housing designed to protect against ESD and mechanical damage
- Watchdog for micro-controller
- Green event LED lights when signals are received
- Energized Form A relay
- 15' (4.6 M) Detection range

WIRING

1. For surface-wired installation, use optional Wiring Spacer Plate (model number FG-SP1 or FG-SP3).
2. Route wire through Wire Entry Hole in the center of the printed circuit board (PCB), and strip wire ends 1/4" (6.5 mm).
3. Wire the unit as shown, (use 22 - 18 AWG). Reverse polarity connections will not damage the unit.
4. When wiring is complete, push excess wire back into the wall.



MOUNTING LOCATION

The FG-1015 can be mounted in corners, on walls, ceilings or posts. Refer to the guidelines below when selecting a mounting location:

- Mount the unit within15' (4.6 M) of the glass.
- There is no minimum range, but the unit must have a clear line-of-sight and a clear view of the protected glass, or on the ceiling directly in front of the glass.
- The preferred location is on the wall or ceiling directly opposite the glass.
- When wall mounting, mount the unit at a height of at least 6 feet (1.8 m) to avoid accidental screening if furniture in the room is moved.
- Curtains, blinds, and other window coverings will absorb energy from breaking glass. Heavy curtains, for example, will effectively block the sound signal. In these cases, mount the unit on the window frame behind the window covering, or above the window. **Make sure to test the unit thoroughly for proper detection.**
- Do not mount within 3 feet (0.9 m) of forced air ducts, sirens, or bells measuring two inches (5 cm) or more in diameter.
- **Be sure to test the unit for detection in the final mounting location.**

Tip: It is a good idea to mount the unit temporarily in the intended location and power it with a 9 V battery until testing has established proper detection. If the 9 V battery is weak, the unit will not operate.

MOUNTING PROCEDURE

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

1. To open the sensor, use a screwdriver to push down on the latch at the top of the unit.

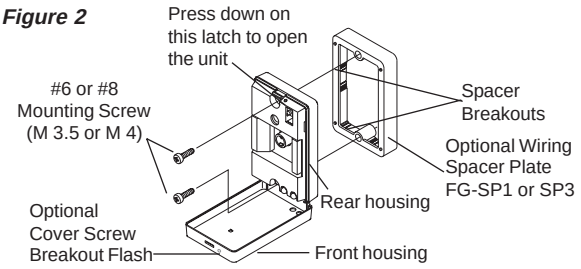
   NOTE: The FG-1015 is designed to be mounted without removing the PCB. DO NOT remove the PCB from the protective enclosure.

2. For mounting the FG-1015 sensor, #6 (M 3.5) or #8 (M 4) screws are recommended. (Screws are not provided.)

MOUNTING PROCEDURE (continued)

3. For better access, detach the front cover by opening fully, twisting slightly, and gently pulling the front cover off.
4. If surface wiring is required, use the optional Wiring Spacer Plate (model number FG-SP1 or FG-SP3).

Figure 2



NOTE: If required, the front cover can be secured with a screw after installation. Break out the cover screw breakout flash, and secure the front cover with a #4 (M 3) screw.

TAMPER SWITCH

The FG-1015 is equipped with a normally-closed (NC) cover tamper.

TESTING

The FG-1015 should be tested at least once each year. Test the unit with the FG-701 Glass-Break Simulator. The model FG-700 Glass-Break Simulator can be used if it is set for the TEMPered glass sound. Other glass-break simulators will not give accurate indication of range.

You must place the FG-1015 in Test Mode before you can test the unit.

To activate Test Mode:

1. Stand within 10 feet (3 m) of the unit.
2. Switch the FG-701 to ACTIVATE and MANual modes.
3. Point the front of the simulator at the unit and press the red start button.

You should hear a short buzz from the simulator, and the green LED on the FG-1015 should begin flashing about once per second to indicate it is in Test Mode.

NOTE: In Test Mode, the LEDs are enabled whether jumper W1 is cut or not.

If an FG-701 is not available, or if for any reason remote activation cannot be used, use a screwdriver to short the test pads at location **S3** on the PCB (see Figure 1). This will activate the Test Mode. Make sure to close the front cover of the FG-1015 before beginning the test.

To test the FG-1015:

1. Place the unit in the Test Mode as described above.
2. Set the FG-701 switches to the TEST and FLEX positions and close the cover.
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-1015.
5. Generate a flex signal by carefully striking the glass with a cushioned tool. The FG-701 will respond by producing a burst of glass-break audio.

If both the flex and audio are received properly, the red alarm LED on the FG-1015 will light.

IMPORTANT: If window coverings are present, close them fully and hold the FG-701 behind the window coverings for testing.

> **NOTE:** You can also use the simulator in the MANual mode to test audio alone. The blinking green LED on the unit will flicker when the simulator audio is received correctly. (See the FG-701 Operating Instructions for additional information.)

After testing, exit the Test Mode using the same procedure for activating the Test Mode. The FG-1015 will also automatically exit Test Mode after ten minutes.

LED Indicators:

The two LEDs on the front cover are used to indicate the sensor'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

APPLICATIONS INFORMATION

The FG-1015 is designed to detect framed glass broken by an impact sufficient to make a hole.

To minimize the chance of false alarms:

- Do not use outside.
- 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:

- Mount the unit on a wall or ceiling directly opposite the glass if possible. The least desirable mounting location is on the same wall as the glass.
- Minimize range to the glass. Do not install beyond the maximum specified range even if testing indicates greater range.
- Verify the installation back to the panel to be sure that the protection loop is intact.

SELF-TESTS

The FG-1015 automatically performs a series of self-tests during power-up, and continuously (when the sensor is not detecting a trouble or alarm condition).

If any self-test fails, the unit will signal trouble by flashing the LED's alternately about once per second. Protection will continue if possible. If the trouble condition clears, the LED's will return to the normal state. Always return the unit for repair if there is any indication of trouble, even if the trouble is temporary.

SPECIFICATIONS

Range:
15' (4.6 M) maximum
No minimum range

Alarm Relay:
Form A
125 mA maximum
25 VDC maximum

Alarm Duration:
5 seconds

Tamper Switch:
Cover tamper
25 mA maximum
24 VDC maximum

Power Requirements:
8 - 14 VDC; 25 mA typical at 12 VDC, 35 mA max
AC Ripple: 4 Volts peak-to-peak at Nominal 12 VDC

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

RF Immunity:
30 V/m, 10 MHz - 1000 MHz

ESD Immunity:
10 kV, Discharges of either polarity to exposed surfaces

Dimensions:
3.86" H x 2.44" W x 0.86" D
(98 mm x 62 mm x 21.8 mm)

Weight:
3.2 oz., (90 g)
Packaged Product: 4.1 oz, (116 g)

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.

Glass Type	Thickness Minimum	Thickness Maximum
Plate	3/32" (2.4 mm)	1/4" (6.4 mm)
Tempered	1/8" (3.2 mm)	1/4" (6.4 mm)
Laminated[1]	1/8" (3.2 mm)	9/16" (14.3 mm)
Wired	1/4" (6.4 mm)	1/4" (6.4 mm)
Coated[2]	1/8" (3.2 mm)	1/4" (6.4 mm)
Sealed Insulating[1]	1/8" (3.2 mm)	1/4" (6.4 mm)

[1] Laminated and sealed insulating glass types are protected only if both plates of glass are broken.

[2] For glass coated on the inner surface with 3M scotchshield type RE35NEARL or Hard Glass Security Film, reduce maximum range to 10 feet (3.1 m).

Accessories:
FG-701 Glass-Break Simulator
FG-SP1 Spacer Plate - depth 0.6" (1.52 cm)
FG-SP3 Spacer Plate - depth 0.3" (0.76 cm)

> **NOTE:** The FG-1015 Glass-Break Detector is designed for primary perimeter security. For a complete security system, additional interior protection devices are recommended.

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.

LIMITED WARRANTY

Seller warrants its products to be in accordance with its own plans and specifications and to be free from defects in materials and workmanship under normal use and service for **18 months** from the date stamp control on the product; or for products not having an IntelliSense date stamp, for **12 months** from the date of original purchase, unless the installation instructions or catalogue sets forth a shorter period, in which case the shorter period shall apply.

Seller's obligation shall be limited to repairing or replacing, at its option, free of charge for materials or labor, any part which is proved not in compliance with Seller's specifications or proves defective in materials or workmanship under normal use and service. This warranty is void if the product is altered or improperly repaired or serviced by anyone other than IntelliSense factory service. For warranty service, contact the nearest IntelliSense service center.

THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY, OR FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE, WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. In no case shall Seller be liable to anyone for any consequential or incidental damages for breach of this or any other warranty, express or implied, or upon any other basis of liability whatsoever, even if the loss or damage is caused by Seller's own negligence or fault.

Seller does not represent that its product may not be compromised or circumvented; that the product will prevent any personal injury or property loss by burglary, robbery, fire, or otherwise; or that the product will in all cases provide adequate warning or protection. Buyer understands that a properly installed and maintained alarm system may only reduce the risk of burglary, robbery, or fire without warning, but it is not insurance or guarantee that such will not occur or that there will be no personal injury or property loss as a result. CONSEQUENTLY, SELLER SHALL HAVE NO LIABILITY FOR ANY PERSONAL INJURY, PROPERTY DAMAGE, OR OTHER LOSS BASED ON A CLAIM THAT THE PRODUCT FAILED TO GIVE WARNING. However, if Seller be held liable, whether directly or indirectly, for any loss or damage arising under this Limited Warranty or otherwise, regardless of cause or origin, Seller's maximum liability shall not in any case exceed the purchase price of the product, which shall be fixed as liquidated damages and not as a penalty, and shall be the complete and exclusive remedy against Seller.

This warranty replaces all previous warranties and is the only warranty made by IntelliSense on this product. No increase or alteration, written or verbal, of the obligation of this warranty is authorized.

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