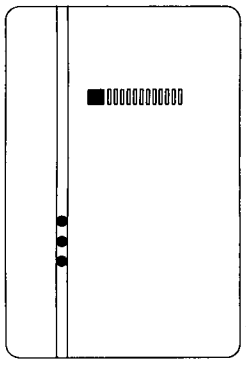
IntelliSense™

INSTALLATION INSTRUCTIONS



FlexGuard™

Dual Technology Glass-Break Detector

Model FG-830
30' range

The FG-830 from IntelliSense is a flush-mount **dual technology** glass-break detector that uses flex detection and audio discrimination to detect breaking glass.

The flex and audio technologies are sensitive to different frequencies. The flex technology is sensitive to ultra low frequencies, the type generated by a blow to a glass window. The audio technology detects the frequency of breaking glass.

The audio technology remains off until the flex technology detects a blow to the glass. For an alarm condition to occur, the audio must detect the frequency of breaking glass within a defined time-window *after* the flex detects a blow to the glass. Because both technologies must detect and verify glass breakage, **false alarms are virtually eliminated**.

FEATURES

- Dual flex/audio technology
- 10 - 14 VDC operation
- Low 25 mA at 12 VDC current draw
- No adjustment on audio
- Adjustment on flex detection to fit characteristics of each location
- Alarm memory
- Indicator LEDs
- Energized form A alarm relay
- Voltage supervision circuit
- Flush mounts on a standard switch box
- Noise burst rejection circuit
- RFI immunity

MOUNTING LOCATION

The FG-830 can be mounted either on walls or on ceilings. Refer to the guidelines below when selecting a mounting location.

- The unit must have a direct line of sight to, and a clear view of, the protected glass.
- Locate the FG-830 **within 30'** (9 m) of the glass to be protected, and as close as possible to the glass.
- 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 behind the window covering, or above the window. **Make sure to test the unit thoroughly for proper detection**.
- Do not mount the unit in front of air ducts or forced air fans, or close to bells measuring 2" (or larger) in diameter.

Tip: If mounting the FG-830 near heavy machinery or central air conditioning, test the glass-break function ***before*** mounting. Use a 9 V battery for power, and tape the sensor to the desired mounting location. Refer to the *Flex Adjustment*, *Testing the Audio*, and *Final Testing* sections to determine which location will be most suitable.

The FG-830 can be mounted in a standard switch box. If the mounting surface is soft, such as sheetrock or acoustic tile, the unit must be mounted in a switch box.

The FG-830 can be mounted without a switch box on hard surfaces, such as wood, plastic, or metal paneling.

To mount the FG-830 without a switch box, use the FG-830 package insert as a template for easy placement. Trace the template on the mounting surface, then cut and drill the holes. Follow the instructions in the *Mounting Procedure* section to mount the sensor.

WIRING

The terminal strip is located on the back of the FG-830. It can accept wire gauges from 14 to 22 AWG. Observing the proper polarity, wire the unit as shown in Figure 1. Reverse-polarity connections will not damage the unit.

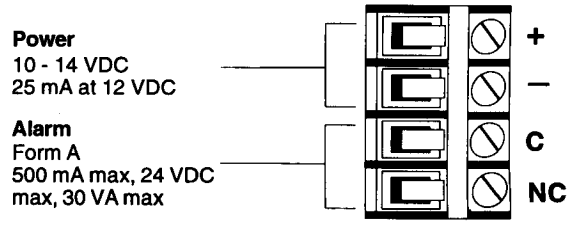


Figure 1 FG-830 Terminal Strip

MOUNTING PROCEDURE

To remove the front housing from the unit, depress the latch through the slot in the bottom of the FG-830, while separating the housing parts.

Do not remove the PCB from the rear housing. Turn the rear housing over and wire the FG-830 as shown in the *Wiring* section above.

Use the two mounting screws provided to secure the rear housing to the switch box or mounting surface. Place the inside front housing slots over the top latches of the rear housing and snap the housings together. Refer to Figure 2.

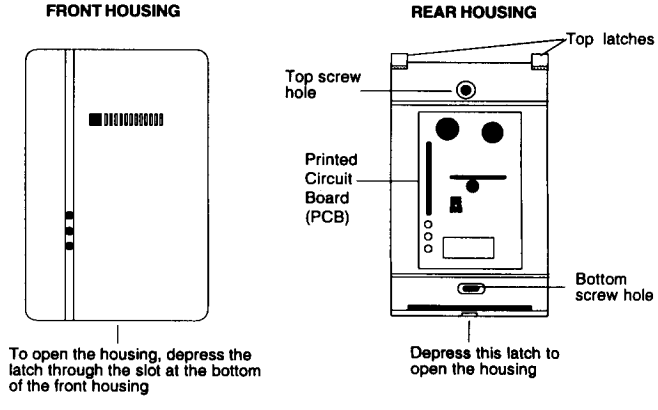


Figure 2 Mounting the FG-830

FLEX ADJUSTMENT

Set the flex thumbwheel (R5) at MAXIMUM by turning it all the way clockwise. Refer to Figure 3.

To ensure maximum protection against false alarms, test flex sensitivity by activating any equipment in the area that may produce low frequency noise. Run heating, air conditioning, fans, compressors, generators, laundry equipment, etc. If the flex (yellow) LED lights, reduce sensitivity by turning R5 slowly counterclockwise until the flex no longer triggers. Watch the flex for a few minutes to ensure it is not triggering.

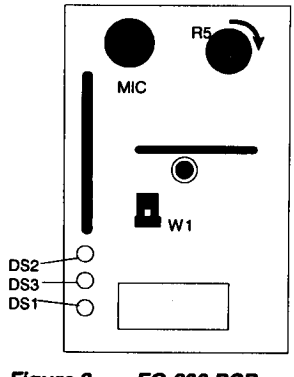


Figure 3 FG-830 PCB

TESTING THE AUDIO

On the FG-830, the audio LED is always enabled. It is not necessary to move a jumper as required with some models.

To test the audio technology, use the IntelliSense FG-700 Glass-Break Simulator. Although simulators by other manufacturers will trigger the audio channel, they may not give an accurate indication of effective range.

Hold the simulator at the farthest point of the glass to be protected (30' maximum), and point it directly at the FG-830. Activate the simulator while watching the green LED (DS1) on the unit. If the LED flashes when the simulator sounds, the audio technology will detect breaking glass at that distance.

FINAL TESTING

To check overall alarm performance, generate a flex signal by striking the glass and *immediately* activate the simulator. (The FG-700 automatically simulates the sound of breaking glass when it senses a flex signal.) The red LED (DS3) should turn on to indicate an alarm. Refer to the FG-700 instructions for additional information.

To ensure proper operation, test the FG-830 using the FG-700 simulator at least once each year.

ALARM MEMORY

The FG-830 is equipped with a latching circuit for the alarm LED. When the latching circuit is activated, an alarm condition will make the red alarm LED on the unit latch on. This feature is particularly helpful in determining which unit alarmed in a multiple detector installation.

To activate the latching circuit, install a jumper at position W1 on the printed circuit board. Refer to Figure 3. To reset the latched alarm LED, remove then restore power to the detector.

- **Note:** The latching circuit has absolutely no effect on the alarm relay. The alarm relay will continue to function as normal.

SPECIFICATIONS

Range:
30' (9 m)

Alarm relay:
Form A
500 mA max
24 VDC max

Power requirements:
10 - 14 VDC
25 mA, 12 VDC

Alarm hold time:
6 seconds (typical)
5 seconds (minimum)

Dimensions:
4.5" H x 2.9" W x 1.1" D
(11.4 cm x 7.4 cm x 2.8 cm)

Weight:
3 oz (85 g)

Operating temperature:
32° to 120° F (0° to 49° C)

Glass types:
1/8", 3/16", and 1/4" plate;
1/4" laminated, wired, and tempered;
minimum size 10-7/8" x 10-7/8", single pane

Patents:
US Patents 4,853,677; 5,107,249 and 5,109,216 other US and international patents applied for

Approvals:
UL listed

NOTE: This unit is to be connected to a UL-listed power supply, or a control panel capable of providing a minimum of four hours of standby power.

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 FlexGuard service center listed below.

THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY, OR FITNESS FOR A PARTICULAR PURPOSE ~~OR OTHERWISE, WHICH I 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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Other US and International Patents Applied For