

FG-2035

GENERAL DESCRIPTION

The FG-2035 is an advanced microprocessor based Acoustic Glass Break Detector, for flush or surface wall/ceiling mounting, using advanced glass-breaking pattern analysis of both low frequency "flex" and high frequency "shatter" channels. It will detect the breaking of most common types of framed glass panes while ignoring false alarms.

MAIN FEATURES

- FG-2035 for flush (single gang box) or wall/ceiling mounting for up to 30'(9m) ranges.
- Suitable for most common types of glass, tempered, laminated and wired glass.
- Minimum size for all types of glass: 30cm x 30cm (12" x 12")
- Thickness Plate } 3.2mm-6.4mm (1/8"-1/4")
- Tempered.
- Laminated, Wired 64mm (1/4")
- No adjustments necessary-each unit is factory calibrated at factory.
- Will not alarm if glass pane broken from inside or glass dropped on floor.
- Active and passive microphone supervision-verifies unit is in working condition..
- Full remote test using Glass Break Simulator-no need to open unit.
- optional ceiling/wall mount bracket available for optimal mounting and performance.

INSTALLATION PROCEDURE

STEP 1 RANGE OF COVERAGE

FG-2035 range of coverage depends on the type of glass (see table 1) and the angle between FG-2035 and glass (see Table 2 Fig 1).

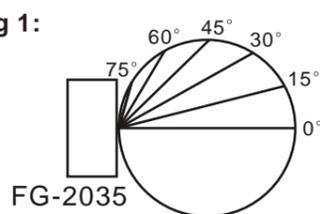
Table 1: FG-2035 range according to glass type

Type of Glass	Plate			Tempered. Laminated. Wired		
	Size	Thickness	Max. Range	Size	Thickness	Max. Range
FG-2035	Minimum 50x50cm (20"x20")	3.2-6.4mm (1/8"-1/4")	9m (30ft)	Minimum 30x30cm (12"x12")	6.4m (1/4")	6m (20ft)
	Minimum 30x30cm (12"x12")		9m (30ft)			

Table 2: FG-2035 range of coverage according to angle

Angle(degrees)	Percent of max range
0	100
15	96
30	87
45	70
60	50
75	26
90	0

Fig 1:

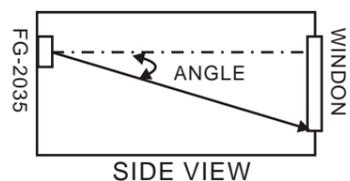


Percentage of Maximum Range as function of angle between FG-2035 and glass.

Verify that the distance between the FG-2035 and the furthest point on the protected glass does not exceed the maximum specified range taking into account the reduced range due to angle (see Fig 2)

Fig 2:

Angle between FG-2035 and glass



Important: Other factors effecting range:

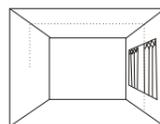
- There should be no obstructions between the FG-2035 and the protected glass.
- Curtains and blinds may reduce the effective range.
- Sound absorbing materials in the protected area may reduce the range.

STEP 2 RANGE OF LOCATION

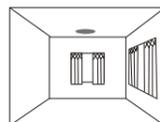
FG-2035 can be mounted in a single gang box using flush mount adapter or on wall or ceiling. For optimal results the FG-2035 should be mounted as nearly opposite the glass area to be protected, as shown in Fig 3.

Fig 3

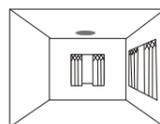
FG-2035 Mounting Options Opposite wall-Mount (For optimal results FG-2035 is centered opposite glass)



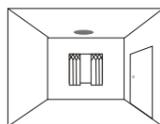
Ceiling Mount (for optimal results FG-2035 is centered and directed towards protected glass using Bracket)



Corner Mount (choose corner opposite glass to be protected).



Side Wall-Mount (not recommended as is not opposite glass-see range versus angle diagram. Test carefully at both ends of glass using Tester)



Note:

- When Ceiling Mounted use The bracket for best performance.
- Do not mount FG-2035 on same wall as protected glass.
- Avoid installing the FG-2035 near sources of loud noises or vibrations (air conditioners, fans, compressors, streros, etc.)



STEP 3 MOUNTING

FLUSH MOUNTING

- 1) Screw mounting bracket into single gang box
- 2) Insert cable through knockout in FG-2035 base & insert wires into terminal block, snap PCB into base.
- 3) Snap on front cover & secure with screw provided.
- 4) Snap complete FG-2035 unit into mounting bracket.

NOTE: To remove trimplate, squeeze the top and bottom simultaneously and pull away.

WALL/CEILING MOUNTING

- Open the cover using a flat screwdriver.
- Remove the PCB in order to facilitate ease of wiring (see FIG 4).
- Open the required mounting and cable holes (see Fig 5).
- Insert the cable through the cable hole and mount the rear cover in its final location.
- Seal the remaining holes with sealant.
- Snap back the PCB (if removed).

Fig 4:



Fig 5:

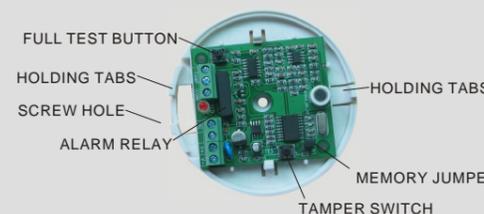


STEP 4 TERMINAL WIRING

Wire the cable to the Terminal Block as follows (see fig6):

- 12VDC: Power supply inputs
- ALARM: Normally-Closed relay outputs
- TAMPER: Normally-Closed Tamper switch outputs
- EOL: End-of-Line resistor connection

Fig 6: FG-2035 PCB-General View



STEP 5 TESTING

Testing should be performed using the FG-2035 tester which has been specially designed and calibrated to give accurate range test results.

- Set lower selector switch on tester to CODE setting, Press operating button on tester to put unit into test mode.
- FG-2035 LED will blink every 2 seconds for 2 minutes.
- HIGH FREQUENCY (AUDIO) TEST:** Position the Glass Break Simulator at the farthest point on the protected glass and face it into the room. Set lower selector to GLASS setting and upper to type of glass to be simulated. Generate glass-break sound by pressing operating button. Verify that FG-2035 LED turns on for 3 seconds and ALARM relay is activated.
- LOW FREQUENCY TEST:** Tap the window gently, (Caution breaking glass may cause injury). Verify that the FG-2035 produces several rapid flashes of its LED in conjunction with each tap. The ALARM relay is not activated in this case.

Note: All tests should be conducted under worst-case conditions. All sounds should be generated behind curtains or blinds, if present.

ENVIRONMENTAL TEST

Operate all devices in the protected region that may interfere with the detector, including air conditioners, fans, radios, etc. Observe the FG-2035 and note any disturbances. If disturbances occur, re-position the unit and re-test. Turn all noise generating equipment off and wait until unit returns to NORMAL mode.

Note: The FG-2035 will return to NORMAL mode after two minutes, setting the "CODE" switch and pressing the "Manual" button at any time will initiate another two minutes of Full Remote Test Mode.

If tester is not available test mode can be initiated by inserting screwdriver in slot on front cover (to the right of the LED) and pressing the test button. The FG-2035 LED will blink every 2 seconds. FG-2035 will automatically return to normal mode after 5 minutes. Functional test can now be performed using another tester. Pressing the button again during the test mode will immediately return unit to normal mode.

STEP 6 MEMORY INDICATION

To use the MEMORY option-remove the Jumper. The LED is latched on the first alarm. The LED is reset by temporarily removing the power from the detector (using a Switched 12V line from the control panel).

STEP 7 NORMAL OPERATION

There are three types of indication in normal mode:

- Active Supervision:** Any loud sounds such as clapping, whistling or key-jingling should produce a flash of the FG-2035's LED. This verifies that the FG-2035 is active. The alarm relay is not opened.
- Passive Supervision:** The FG-2035 continuously monitors its audio channel. If no sounds are registered for more than 24 hours the LED will flash rapidly. This indication will persist until a sound is registered. The alarm relay is not opened.
- Alarm:** On detection of framed glass being broken from outside the LED will light continuously for 3 seconds and the alarm relay will open.

LED INDICATIONS

	Sound	LED Indication	Alarm Relay
Normal Mode	Low frequency "Flex"wave	No indication	--
	High Frequency "Shatter"sound	LED flashes in conjunction with sound	--
	No sound	LED off. (After 24 hours without any environmental sounds the LED flashes rapidly to indicate possible dead microphone, and turns off after a sound is registered)	--
	Frame Glass Breaking	LED turns on for 3 seconds. (latched mode LED stays on until power is disconnected)	Activated
Test Mode	No sound	LED blinks once every 2 seconds to indicate testmode	--
	Low Frequency "Flex"wave	LED flashes rapidly	--
	High Frequency "Shatter"sound	LED turns on for 3 seconds	Activated

SPECIFICATIONS

ELECTRICAL
 CURRENT CONSUMPTION
 20mA at 12V (24mA max)
 VOLTAGE REQUIREMENTS 9.3-16 VDC
 ALARM CONTACTS NC, 24 VDC, 50mA
 TAMPER CONTACTS NC, 24 VDC, 0.5A

ACOUSTIC SENSOR

Omni Directional Microphone

PHYSICAL

SIZE: 90×90×22mm(3.5×3.5×0.9in.)
 WIEIGHT: 63.70g(2.25 oz.)
 GLASS
 TYPES: Plate, laminated, wired&tempered.
 SIZE: 30×30cm(12"×12")minimum

ENVIRONMENTAL

OPERATING TEMPERATURE 0°Cto55°C(32°F to131°F)
 STORAGE TEMPERATURE -20°Cto66°C(14°F to-140°F)