

## PATROL – 501

### DIGITAL ACOUSTIC GLASS BREAK DETECTOR

#### INSTALLATION INSTRUCTIONS

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**GSN** Electronic Company Ltd.

#### INTRODUCTION.

The PATROL-501 recognizes particular sound patterns emitted by glass breakage.

The PATROL-501 provides complete protection of all known framed glass types.

The PATROL-501 uses unique algorithm, based on two-channel recognition analysis of the characteristic frequencies and signal sequence of framed pane glass breakage.

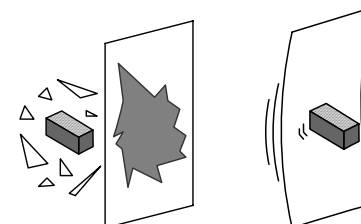
The LED will light continuously for 3 seconds and the alarm relay will be open on alarm.

#### DESCRIPTION.

Low-frequency sound occurs upon the impact on the glass.

High-frequency sound occurs upon the glass breakage.

#### HIGH-FREQUENCY SOUND LOW-FREQUENCY SOUND



For creating an alarm, both a low-frequency sound of the glass impact and a high-frequency glass breakage sound must be registered within a predetermined time frame.

Since both detector channels must register the actual glass breakage, false alarms are practically excluded.

The program of microcontroller, based on the mathematical algorithm, analyzes signals and detects only the actual breakage of all standard framed glass types.

#### PATROL-501 RELIABILITY.

Due to the unique program and perfectly adjusted filters the PATROL-501 provides excellent protection from false alarms in extremely harsh environments.

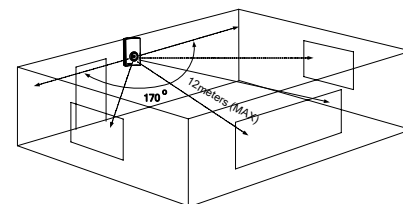
Highly selective sensitivity of the high frequency channel enables the PATROL-501 to detect real glass breakage with high accuracy among a variety of background noises.

The above features enable the PATROL-501 to be used in extremely harsh environments, such as airports, industrial plants as well as in the vicinity of noisy restaurants, bars, etc.

High RFI and EMI immunity allows the detector to be mounted next to radio and electromagnetic emission sources.

#### PATROL-501 COVERAGE RANGE.

Maximum detection range: 12 meters X 170°.



#### PROTECTED GLASS TYPES.

| Glass Type                     | Min. Thickness | Max. Thickness |
|--------------------------------|----------------|----------------|
| Plate                          | 2 mm           | 10 mm          |
| Tempered                       | 3 mm           | 8.4 mm         |
| Patterned                      | 3 mm           | 10 mm          |
| Laminated <sup>1</sup>         | 3.2 mm         | 14.3 mm        |
| Wired                          | 5 mm           | 6.4 mm         |
| Coated <sup>2</sup> (Triplex)  | 2,5 mm         | 8.4 mm         |
| Sealed Insulating <sup>1</sup> | 3.2 mm         | 6.4 mm         |

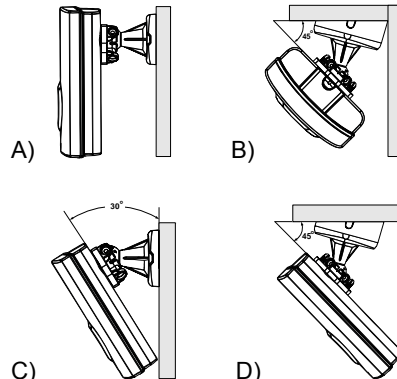
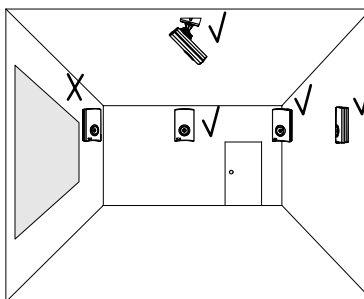
<sup>1</sup> Laminated and sealed insulating glass types are protected only if both glass plates are broken.

<sup>2</sup> For glass coated with plastic film on the inner surface, effective range is reduced to 6m.

#### SELECTING MOUNTING LOCATION. MOUNTING ON SWIVEL BRACKET.

V – Correct installation.

X – Incorrect installation.

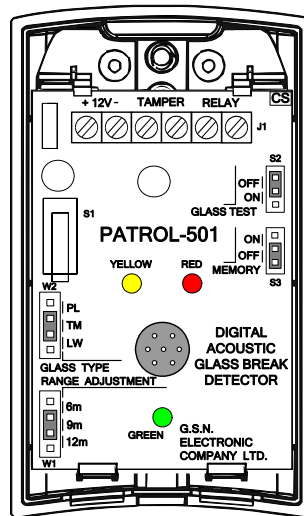
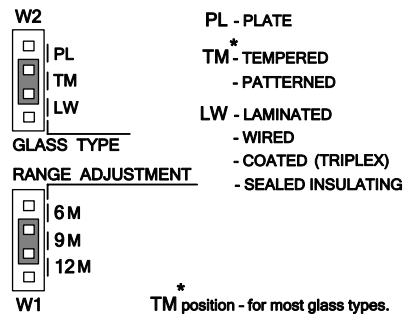


- A) Vertical mounting.
- B) Corner mounting.
- C) Surface mounting - 30°.
- D) Ceiling mounting - 45°.

## SELECTING GLASS TYPE AND COVERAGE RANGE.

Set the jumper W1 according to the distance to the protected glass.

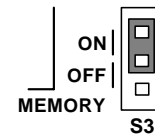
Set the jumper W2 according to the protected glass type (see the figure).



## LAST EVENT MEMORY.

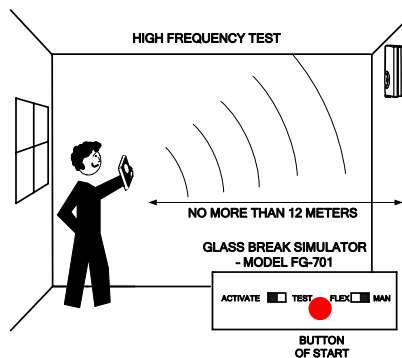
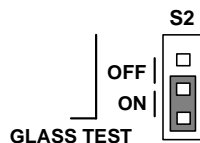
Set the jumper S3 to "ON" position for LED to provide indication of event memory function for last 30 minutes.

LED starts blinking on alarm. After the period of 30 minutes the memory is automatically erased.



## GLASS BREAK SIMULATION TEST.

1. Set jumper S2 to "ON" position. The yellow LED will be ON – the detector is in the "TEST" mode.
2. Replace the cover.
3. Use "FG-701" or "RG-65" Glass Break simulator or any other models to simulate the high frequency signal of the glass breakage. The red LED will flash on each simulator activation.

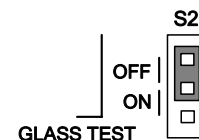


### ATTENTION!

During the "Glass Break Test" the alarm relay is opened. After the "Glass Break Test" set jumper S2 to "OFF" position (operating mode).

## SHOCK & GLASS BREAK SIMULATION TEST.

The test is conducted in operating mode ("OFF" position).



Replace the cover. Tap gently the protected glass and activate the simulator at the same time. The red LED will be ON for 3 sec.

## TECHNICAL SPECIFICATIONS.

Power input:.....9 - 16VDC

Current consumption

In stand-by mode:.....17.8mA

In alarm mode:.....18.7mA

Alarm period:.....3sec.

Warm up period: .....2sec.

Detection range:.....12m x 170°

Relay output:.....

.....N.C; 60V; 120mA; 16Ω

Tamper:.....N.C.10Ω

Microphone type:.....

omnidirectional electret microphone

Operating temperature range:.....- 30°C + 50°C

Storage temperature range:.....- 40°C + 80°C

RFI immunity:.....30 V/m at a frequency range 10MHz-1000MHz

EMI immunity:.....50 000V

Dimensions:.....87x52x24mm

Weight:.....58gr.

## WARRANTY.

G.S.N. Electronic Company Ltd. warrants the product to be free from defects in materials and workmanship under condition of observance of service regulations and to be repaired or replaced under absence of mechanical damages for a limited period of five years from the date of sale.