

**Glass Breaking Sensor**



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**User Manual**

## Introduction

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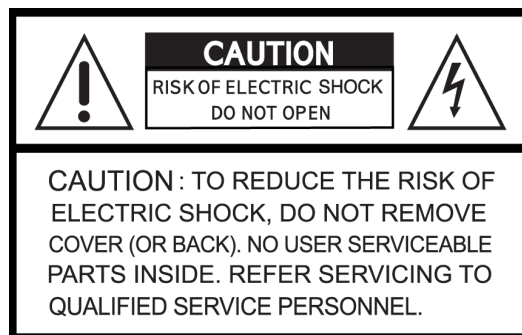
Thank you for purchasing the KATHREIN Digital Systems GmbH glass breaking sensor. Please take the time to read the following safety and installation information carefully and attentively before using the glass breaking sensor. It is imperative to comply with these instructions in order to ensure the safe operation of the device. If you have any further questions, please contact your local retailer or KATHREIN Digital Systems GmbH directly. Your glass breaking sensor FGM 100 was developed and built with state-of-the-art technology and complies with European and German standards.

Please keep this manual safe to be able to answer possible questions in the future. The manual is an integral part of the product even in case it is resold to a third party.

## Disclaimer

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All technical details and descriptions in this manual were compiled with the greatest care. However, KATHREIN Digital Systems GmbH cannot entirely exclude mistakes in this manual. Therefore, we do not assume any legal responsibility or liability resulting from wrong information in this manual. Descriptions, technical illustrations and technical data are subject to change without notice according to technical progress. In addition, KATHREIN Digital Systems GmbH reserves the right to change the product and the manual without prior notice. We do not assume any guarantee with regard to the content of this document. We appreciate any comments on mistakes or inaccuracies which may help us to improve this product and this manual.



This symbol is intended to attract the user's attention to the potential risk of dangerous unprotected voltage inside the housing. This may lead to electric shock.



This symbol is intended to attract the user's attention to user and maintenance instructions in the manual and documents enclosed with the product.

## WARNING:

TO MINIMISE THE RISK OF ELECTRIC SHOCK, YOU MUST NOT EXPOSE THIS PRODUCT TO WET AND MOIST CONDITIONS AT ANY TIME.



All KATHREIN Digital Systems GmbH products are lead-free and meet the requirements stated under the European Directive on the Restriction of Hazardous Substances (RoHS). This guarantees that the entire production process and the product itself are free of lead and of all listed hazardous substances.



This product was tested and complies with the regularities for a class of digital devices stated under FCC part 15. These limits were specified to provide reasonable protection against harmful exposure when operating the device in a commercial environment. This product generates, uses and may emit radio energy. It may in addition interfere with other radio communication systems if not installed or used according to this manual. Using the device in residential areas may cause disturbances to be possibly remedied at the user's expense.



Hereby KATHREIN Digital Systems GmbH declares that the glass breaking sensor FGM 100 (order number 2220000017, EAN 4021121548567) is in conformity with the relevant provisions of Directive 1999/5/EG.

## Conformity:

The declaration of conformity is available at <http://www.kathrein-ds.com> in the download section of the respective product. Alternatively, you can request the declaration of conformity directly from us:

KATHREIN Digital Systems GmbH

Anton-Kathrein-Str. 1-3

83022 Rosenheim, Germany

## Important Safety Information

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### **WARNING**

**The warranty claim will expire in case of damages resulting from the non-observance of this manual.**

**We do not assume any liability for consequential damages.**

**We do not assume any liability for damages to persons and/or material whatsoever which result from improper handling or noncompliance with the safety instructions. The warranty claim will expire in such cases!**

The glass breaking sensor FGM 100 is equipped with a high-quality housing. However, please observe the following safety instructions:

- Operate the glass breaking sensor only with the provided batteries.
- Handle the glass breaking sensor with care, heavy vibration or bumps may damage the device.
- Do not expose the glass breaking sensor to direct sunlight or strong heat, e.g. heaters.
- Do not install the glass breaking sensor close to strong electric power lines or magnetic fields, as this may impair the transmission quality significantly.
- Do not install the glass breaking sensor directly on iron or aluminium surfaces, as this may impair the wireless transmission significantly. Use a non-conducting material to insulate the device from the installation surface.
- Do not install the glass breaking sensor in moist, very cold or very hot environments.
- Persons (including children) with limited physical, sensory or mental abilities and/or lacking experience and/or knowledge must not use this product.
- Keep children away from the product and other connected electrical appliances at all times. The glass breaking sensor includes small parts they can swallow. Lay cables expertly so that they are neither bent nor otherwise damaged. Install the glass breaking sensor out of children's reach. Do not leave packaging materials unattended, as they may be dangerous for playing children.
- Use a damp cloth to clean the glass breaking sensor's surface, then dry it. Cleaning agents will damage the surface.

## Malfunctions and Defects

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If you notice any kind of defect, remove the batteries from the glass breaking sensor FGM 100 and contact your retailer or KATHREIN Digital Systems GmbH directly. Any further usage of the system may lead to fire or electric shock!

## Intended Use

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The KATHREIN Digital Systems GmbH glass breaking sensor is designed for building security. Use the glass breaking sensor FGM 100 indoors only (there is no protection class for the glass breaking sensor). Any other use than that described in this manual is not permitted and will void any warranty or guarantee as well as liability claims. The same applies if the device is modified or retrofitted.

## Disposal

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### **Do not dispose of the device with domestic waste!**

This product complies with the EU Directive on waste electrical and electronic equipment (WEEE) and therefore must not be disposed of with domestic waste. Dispose of the device via your local collection point for waste electronic equipment!

## **This product contains software programs subject to the GPL free software license.**

This product contains software that was developed by third parties and/or software subject to the GNU General Public License (GPL) and/or the GNU Lesser General Public License (LGPL). We will send you the source code of these programs on request. The GPL and/or LGPL code used and offered in this product is EXCLUSIVE OF ANY GUARANTEE WHATSOEVER and is subject to the copyright of one or several authors. For further details, please refer to the GPL and/or LGPL code of this product and to the terms of use of GPL and LGPL.

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For an unofficial German translation, please go to  
<http://www.gnu.de/documents/gpl.de.html>.

## Glass Breaking Sensor FGM 100

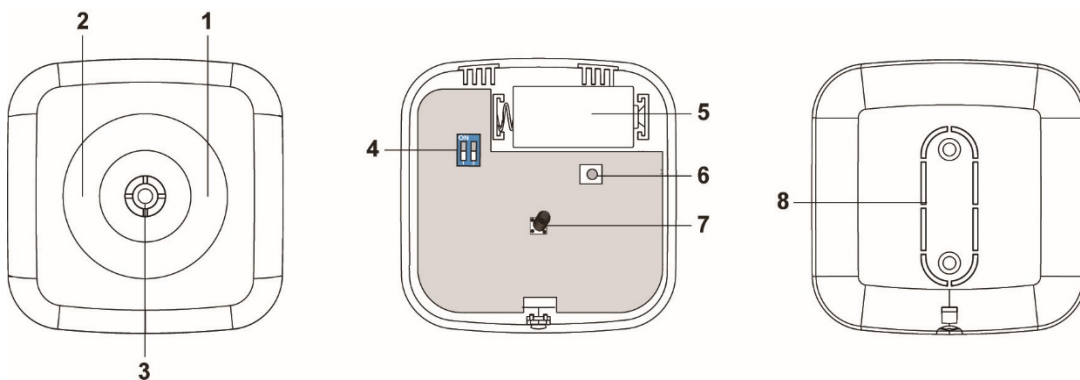
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### Product description:

The glass breaking sensor detects the sound of breaking window glass and notifies the alarm panel. In order to avoid false alarms, two inputs are required to trigger an alarm: First, the sensor registers the breaking of glass and, then, the pieces of glass falling to the ground.

### Sensor data:

Dimension (without mount):	10.8 x 8 x 4.3 cm (4.23 x 3.14 x 1.69 in)
Weight:	140 g (0.3 lbs)
Place of installation:	Only indoors (opposite of the secured window)
Operating temperatures:	-10 °C to +55 °C (14 °F to 131 °F)
Humidity:	Maximum 85% (non-condensing)
Radio frequency:	868.63 MHz



1. LED green (internally)
2. LED red (internally)
3. Microphone
4. Dip switch
5. Battery compartment
6. Learn button
7. Tamper contact
8. Mounting holes

### LED green:

- In case of a detection of broken glass in the test mode, the LED will be activated

### LED red:

- The red LED lights up if
  - the tamper contact is opened or closed
  - the Learn button is pressed
  - a broken glass is detected in the test mode

### Battery:

The glass breaking sensor requires a 3 V CR123A lithium battery. The average battery life is approx. three years. The alarm panel will inform you when the battery is running low.

## Connecting the glass breaking sensor and putting it into operation

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1. Open the housing by loosening the screw at the bottom.
2. Insert the supplied battery.
3. Open the configuration menu of the alarm panel and then the menu "Sensors" → "Add" and press "Start".
4. Press the Learn button of the glass breaking sensor once.
5. The sensor is listed in the lower menu after a short time and you hear a brief signal tone from the alarm panel.
6. Press "Add" to complete the connection process.
7. Close the housing and fasten the screw.

### Range test:

To test the signal strength at the desired installation location, perform a range test.

1. Open the alarm panel menu "Sensors" → "Range" and press "Start".
2. Press the Learn button of the glass breaking sensor.
3. The sensor and the signal strength should be indicated. The higher the indicated number the better the reception (1 – 9).
4. Click "Stop" to end the test.

### *Please note:*

If there is no signal at the installation location or the signal strength is below 4 or frequently falls below this level (signal fluctuations of 2 to 3 are normal), we recommend using a repeater to improve the signal.

### Dip switch:

The sensitivity of the glass breaking sensor can be adjusted by the two Dip switches:

Sensitivity	Dip switch 1	Dip switch 2	Reach
Maximum	OFF	OFF	8 m
Medium	OFF	ON	5 m
Low	ON	OFF	3 m
Minimum	ON	ON	1.5 m

### Test mode:

Press the Learn button to activate the test mode of the FGM 100 for five minutes. If glass breakage is detected during this time, the red and the green LED will light up. This allows you to test the function of the glass breaking sensor without triggering an alarm at the control panel.

**Notes:**

- The glass breaking sensor can be installed both on a wall or on the ceiling using the supplied screws.
- The sensor will only trigger an alarm if it first registers a blow to the glass pane and then the breakage of glass.
- The glass breaking detector detects sounds in a 360° radius.
- Make sure that no obstacles are between the window and the glass breaking sensor.
- Install the glass breaking sensor in an open space (**not** in corners), so that that sound waves can reach the sensor from as many sides as possible.
- Do not install the glass breaking sensor directly next to electronic devices e.g. speakers, air conditioners or devices causing noise.