Shock Sensor 868 GEN2
Installation Instructions

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Introduction

This is the GE *Shock Sensor 868 GEN2 Installation Instructions* for models TX-5011-03-1 and TX-5011-03-3. The shock sensor has the following functions:

- To detect the vibrations made by an intruder trying to break a window or door.
- To detect a window or door opening.
- To detect tamper situations, such as an intruder removing the sensor cover or sensor from the wall.

Vibrations cause a momentary open circuit in the shock element of the sensor. The circuit closes again when the vibration stops. The sensor micro controller *sees* the open/close action as a pulse, causing the sensor to transmit an alarm signal. The sensor has two detection modes:

Gross Attack. Detects a violent blow sufficient in length to trip the sensor.

Pulse Count. Detects a sufficient number of less violent blows (rapping or tapping).

The sensor includes an internal magnetic reed switch to detect door/window openings.

The sensor is powered by a single 3-volt lithium battery.

Tools and supplies

You will need the following tools and supplies:

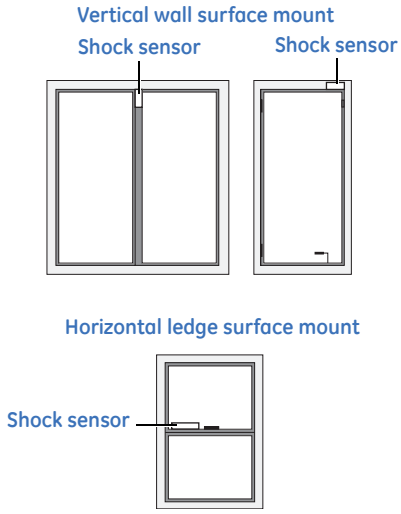
- Control panel documentation.
- Phillips screwdriver.
- Slotted screwdriver (to open the cover).
- Magnet hardware kit that includes a magnet, one #6 x 1in. (2.5 cm) screw, one #6 lock washer, a magnet cover, and a magnet chassis for mounting the magnet.
- Product hardware kit that includes three #6 x 1 in. (2.5 cm) screws, three plastic wall anchors, and one small 0.25 in. (0.6 cm) screw.

Installation guidelines

Use the following installation guidelines:

- Program (learn) the sensor before adjusting the shock sensitivity.
- Before permanently mounting the sensor, test it at the intended location to make sure the panel receives sensor signals.
- Always mount the shock sensor on the frame, not on the glass.
- Mount the sensor where the structure can transmit vibrations to the sensor.
- You can mount the sensor on a vertical wall surface or on a horizontal ledge surface (*Figure 1*).
- To prevent false alarms, make sure the window fits snugly in the frame and doesn't move or rattle.
- Hold the sensor base against the frame to make sure the sensor base fits on the surface area of the frame and doesn't extend over the surface edges.

Figure 1. Mounting locations



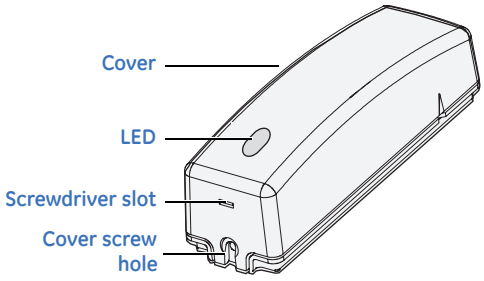
Base installation

To install the sensor base, do the following:

1. Insert a slotted screwdriver into the slot at the top end of the unit and remove the cover by lifting it up (*Figure 2*).

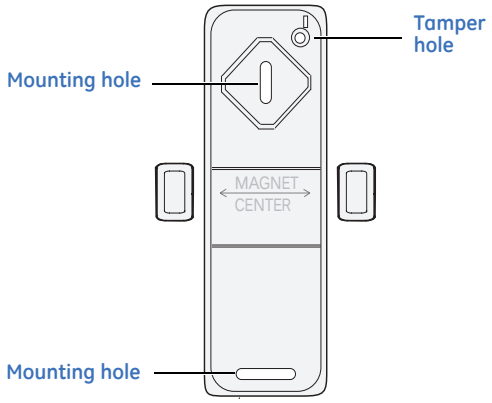
CAUTION: You must be free of all static electricity when handling electronic components. Touch a grounded, bare metal surface before touching a circuit board or wear a grounded wrist strap.

Figure 2. Removing the cover



2. Align the base with the two mounting holes and use the two long panhead screws to secure the base to the mounting surface. (*Figure 3*).

Figure 3. Base mounting holes



3. Mount the magnet centering the long face of the magnet with the arrow in the middle of the base (*Figure 3*). Place the lock washer between the plastic base and the mounting surface to reduce rotation of the magnet housing.
4. Mount a long screw in the tamper hole to enable the pry-off and opening tamper.

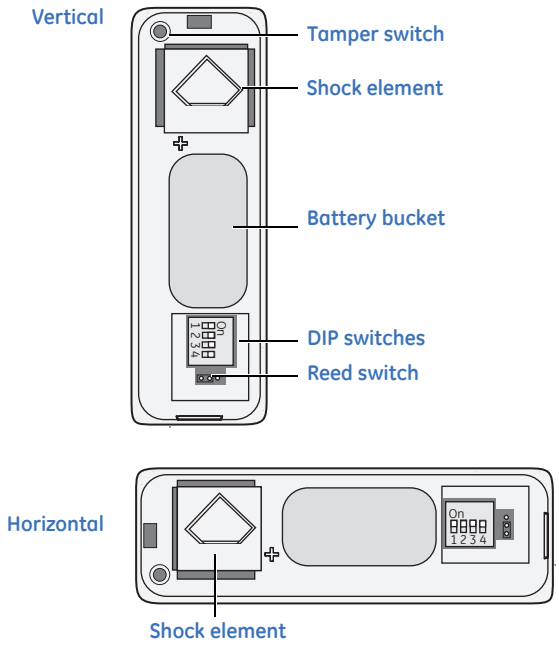
Cover installation

To customize the cover settings and install the cover, do the following:

1. Position the shock element with the flat side of the diamond downward, and press it firmly into the socket.

   Vertical surface. The shock sensor element must always be positioned with the flat side of the diamond pointed down (*Figure 4*).

Figure 4. Open cover



   Horizontal surface. Any position is allowed, but certain sensor element positions are better than others. The element is much better at detecting horizontal vibrations perpendicular to the flat side of the diamond than it is parallel vibrations.
2. Insert the battery into the battery bucket observing the polarity on the plastic inner cover.
3. Select the internal reed switch setting using the jumper.
   - To activate the reed switch on the left side of the sensor as it will be installed, put the jumper over the two right pins (as viewed from the open cover in *Figure 5*).
   - To activate the reed switch on the right side of the sensor as it will be installed, put the jumper over the two left pins (as viewed from the open cover in *Figure 6*).
   - To disable the reed switches, put the jumper on the middle pin only or set the jumper aside.

Figure 5. Jumper selection for left-positioned reed switch

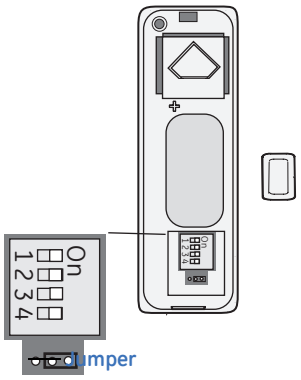
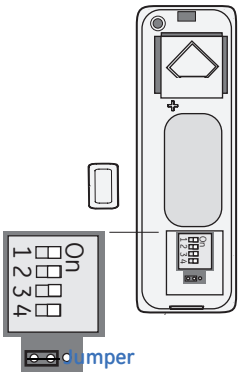


Figure 6. Jumper selection for right positioned reed switch



4. Use the DIP switches (*Figure 4*) to set the sensitivity of the detection modes. The shock sensor has the following detection modes:

   Gross attack. The gross attack mode detects a violent blow sufficient in length to trip the sensor. Set the DIP switches as described in *Table 1*.

Table 1. Gross attack mode settings

DIP switch 3	DIP switch 4	Sensitivity
Off	Off	1 (most sensitive)
On	Off	2
Off	On	3
On	On	4 (least sensitive)

Pulse count. The pulse count mode detects a sufficient number of less violent blows (rapping or tapping) that trip the sensor. If the pulse count is reached within the most recent 30 seconds, the sensor goes into alarm. Set the DIP switches as described in *Table 2*.

Table 2. Pulse count mode settings

DIP switch 1	DIP switch 2	Pulse count
Off	Off	4
On	Off	6
Off	On	8
On	On	Disabled

5. Test the correct installation of the shock sensor with LED feedback.
   a. Put the cover on top of the base.
   b. Upon closure, the LED provides feedback on the status of the reed switches:
      - Reed switch closed: LED is off.
      - Reed switch opened: LED is on.
   c. Test the sensitivity settings applying shocks.
      - To test the pulse count setting, generate small shocks on the mounting surface. Each time a shock is detected, a pulse is registered in memory and the LED lights for 250 mseconds. If the pulse count is reached within the most recent 30 seconds, the sensor goes into alarm and the LED blinks 250 mseconds on/off during 4 seconds. If the sensor goes into gross attack shock alarm, any stored pulses are cleared.
      - To test the gross attack setting, apply high level shocks to the mounting surface. A shock severe enough to put the sensor into gross attack alarm causes the LED to blink 250 mseconds on/off during 4 seconds.
6. In order to install your wireless system according to EN50131-1, secure the sensor cover using the short screw (provided) in the cover screw hole (see *Figure 2* on page 1).

Programming

To program the sensor, refer to your panel documentation and do the following:

1. Make sure the sensor battery is installed.
2. Put the panel into Program mode.
3. Proceed to the **Learn Sensors** menu.
4. Select the appropriate sensor group and sensor number assignments.
5. When prompted by the panel to trip the sensor, open and close the cover of the sensor.
6. Exit Program mode.

RF testing

This section describes the basic steps for testing the sensor. Refer to your panel or receiver documentation for complete testing details.

To RF test the sensor, do the following:

1. Set the panel to **Sensor Test**.
2. Trip the sensor.
3. Listen for an appropriate response from the system sirens.
4. Exit **Sensor Test**.
5. Mount the sensor.

Battery replacement

When the system indicates the sensor battery is low, replace it immediately. Use the recommended replacement batteries (see *Specifications*) or contact technical support for more information. Dispose of used batteries according to battery directive instructions and /or local government authorities.

CAUTION: Observe polarity when installing a new battery. Installing the battery backward may cause damage to the sensor.

To replace the battery, do the following:

1. Remove the sensor cover (*Figure 2* on page 1).
2. Remove the battery and dispose as required by local laws. Insert the replacement battery, observing correct polarity.
3. Do a sensor test to resynchronize the sensor with the panel.

Specifications

Model numbers	TX-5011-03-1, TX-5011-03-3
Frequency	868 Mhz
Compatibility	All GE Security 868 GEN2 control panels/ receivers
Battery type	3.0 VDC lithium
Recommended battery	Duracell DL123A, Panasonic CR123A, Sanyo CR123A, Varta CR123A
Typical standby current	10 uA
Estimated battery life	5 years
Supervisory interval	Less than 20 minutes
Typical RF power output	1 mW
Operating temperature	32 to 120°F (0 to 49°C)
Storage temperature	-30 to 140°F (-33 to 60°)
Relative humidity	0 to 90% noncondensing
Dimensions (L x W x D)	4.5 x 1.25 x 1.25 in. (11.4 x 3.2 x 3.2 cm)
Weight	74 gms
EN 50131-1:2006	Manufacturer: GE Security Description: Shock Sensor Designed and Manufactured to EN 50131-1:2006 Security Grade 2 Environmental Class II

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Technical support
Toll-free: 888.GESECURity (888.437.3287 in the US, including Alaska and Hawaii; Puerto Rico; Canada).
Outside the toll-free area: Contact your local dealer.

www.gesecurity.com