

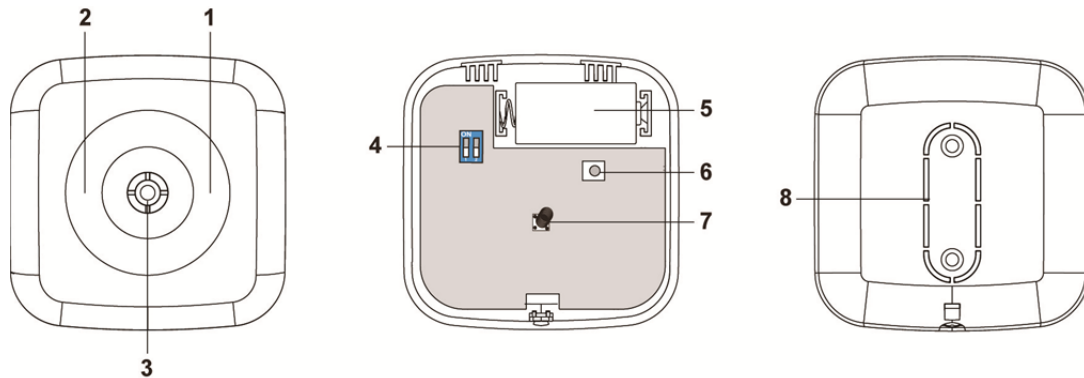
Acoustic Glass Break Detector (ACGS-23ZW)

The Glass Break Detector detects the high frequency sound emitted by glass breakage and transmits signal to notify the alarm system control panel when it is triggered.

The Glass Break Detector is a Z-Wave enabled device and is fully compatible with any Z-Wave enabled network and allows access to the “S2 Unauthenticated” class.

Z-Wave is a wireless communication protocol that uses a low-power RF radio. By taking advantage of the Z-Wave mesh network, commands can be transmitted to their destination via intermediary “listening” Z-Wave products.

Parts Identification



1. Green LED Indicator (Inside)

Flashes for 1 second: When Detector is powered on.

Slow Flashes: When the Detector is under Test Mode after Function Button pressed.

Quick Flash: When Detector is activated under Test mode.

Flashes once every 4 seconds: Battery is exhausted.

2. Red Indicator (Inside)

Flashes for 1 second: When Detector is powered on.

3. Microphone

4. Dip Switch

5. Battery Compartment

6. Function Button

-Press the button 3 times within 1 second to send a learn code.

-Press the button to send wakeup notification report.

-Press and hold the button for 10 seconds to perform factory reset.

7. Tamper Switch

-The tamper switch is compressed against the back cover and protects the Detector from cover opening or removal from mounted location

8. Breakaway Area

The Breakaway Area has 2 knockouts where plastic is thinner for screw mounting. When the Detector is forcibly removed from mounting location, the Break Away area will detach and allow tamper switch to be activated.

Features

● Battery

The Glass Break Detector uses a 3V CR123A Lithium battery.

The Glass Break Detector will report its battery percentage to the Control Panel respectively at 100% (0x64), 75% (0x4B), 50% (0x32) and 25% (0x19). If the battery voltage is low (25%), a Low Battery signal will be sent to the Control Panel to notify the user. When battery level is dead (cut off), the sensor will send 0xFF to the Gateway/Control Panel.

The Glass Break Detector can detect low battery voltage. When low battery voltage is detected, a low battery signal will be sent to the Control Panel along with regular signal transmissions for the Control Panel to display the status accordingly.

When changing battery, press the learn/test button a couple times to discharge after removing battery before inserting a new one.

● **Sensitivity Adjustment**

The Glass Break Detector sensitivity can be adjusted using the two dip switches. Adjust the sensitivity to change detector range.

Sensitivity	Dip Switch 1	Dip Switch 2	Detection Range
Maximum	OFF	OFF	8m
Medium	OFF	ON	5m
Low	ON	OFF	3m
Minimum	ON	ON	1.5m

● **Adding Device (Inclusion)**

This product can be included and operated in any Z-Wave network with other Z-Wave certified devices from other manufactures and/or other applications. All non-battery operated nodes within the network will act as repeaters regardless of vendor to increase reliability of the network.

- Insert the 3V CR123A Lithium battery into the battery compartment connecting the correct polarity as shown on the battery compartment lid.
- Put the Z-Wave gateway or control panel into **Inclusion** or **Learning** mode (please refer to the Z-Wave gateway or control panel manual).
- Within 1 second, press the Function Button 3 times.
- Refer to the operation manual of the Z-Wave gateway or control panel to complete the learn-in process.
- If the sensor has already been **included** (learnt) into another Z-Wave Gateway/Control Panel, or if the sensor is unable to be learnt into the current Z-Wave Gateway/Control Panel, please exclude it first (see **Exclusion**) before attempting to **include** it into the current Z-Wave Gateway/Control Panel.

● **Removing Device (Exclusion)**

The Glass Break Detector must be removed from existing Z-Wave network before being included into another. There are two methods available to exclude a device.

Exclusion Mode

- Put the Z-Wave gateway or control panel into **Exclusion mode** (please refer to the Z-Wave gateway or control panel manual).
- Within 1 second, press the Function Button 3 times and the Glass Break Detector will be removed from the Z-Wave network.

Factory Reset

(Only use factory reset when network Control Panel/Gateway is missing or inoperable).

- Remove the batteries of the Glass Break Detector first.
- Press and hold the Function Button. While holding the Function Button, power on the Glass Break Detector by re-inserting the batteries, wait for 10 seconds to factory reset.

<NOTE>

- ☞ Factory resetting the Glass Break Detector will restore it to factory default settings (excluded from the Z-Wave network). The Z-Wave gateway or control panel will still keep its Z-Wave settings. Please refer to the gateway or control panel manual on how to remove the Glass Break Detector's Z-Wave settings.

● **Range Test**

To test whether the device is able to communicate with the Z-Wave gateway or control panel:

- Put the gateway / panel into range test mode (Walk Test).
- Press the Function Button on the device
- The gateway / panel should display if the device is within the operation range (please refer to the operation manual of the gateway / panel).

● **Z-Wave Sleep Mode**

- The Glass Break Detector will enter Z-Wave Sleep mode (to conserve power) after waking up for a short period of time (~10 seconds). While in Z-Wave sleep mode, Z-Wave gateways or control panels are unable to send commands to the Glass Break Detector.
- To program the Glass Break Detector, please send command(s) to the Glass Break Detector within the wake-up period.

- **Supervision Function**

This function uses the Z-Wave Wake Up Command Class. The Wake Up Command Class allows the battery-powered Glass Break Detector to notify the Control Panel/Gateway that it is awake and ready to receive any queued commands. The wake up time is programmed automatically according to Control Panel's setting when The Glass Break Detector is included. The recommended setting of the wake up time is 60 minutes above.

Installation

The Glass Break Detector should be mounted on ceiling or wall. There should be no obstacle between the Detector and the window protected. The Detector back cover has mounting knockouts which can be broken for screw mounting. Alternatively, you may also mount the detector with double side adhesive tape provided.

Mounting Location:

- Mount away from sound source, such as speaker, air condition or motor.
- Mount with as much distance from window or door as possible to avoid external sound interference.

Screw Mounting

- 1 Break through the knockouts on back cover and use them as template to mark position on wall/ceiling.
- 2 Drill holes at marked location and screw the back cover onto the wall/ceiling, insert wall plug if needed.
- 3 Replace the Detector main body onto the back cover. Make sure the cover is properly closed and the device is fixed to the wall tightly.

Adhesive Tape Mounting

When using provided double side adhesive tape, make sure to install the detector on flat surface. Do not install on uneven surface or location with cracking paints.

- 1 Clean both the detector back cover and mounting location with suitable degreaser.
- 2 Apply the double side adhesive tape to back cover of detector, then apply to mounting location.

<NOTE>

- ☞ When mounting with double side adhesive tape, the tamper protection for mounting location removal will be disabled. Protection from cover opening is still available.

- **Glass Thickness**

Plated Glass: 2.4 to 6.4 mm (3/32 to 1/4")

Tempered Glass: 2.4 to 6.4 mm (3/32 to 1/4")

Wired Glass: 3.2 to 6.4 mm (1/8 to 1/4")

Laminated Glass 3.2 to 6.4 mm (1/8" to 1/4")

- **Testing the Detector**

The Detector should be tested to ensure it is able to detect glass breakage successfully. A FlexGuard FG-701 Glassbreak Simulator is required to test the detection function.

- 1 Press Function Button once to put Detector into Test mode for 5 minutes.
- 2 Set the FlexGuard FG-701 to "FLEX" and "TEST" mode.
- 3 Put FG-701 at desired testing location on the glass and point the speaker at the Detector. Close the window covering if it is present.
- 4 Strike the glass with a cushioned tool to create a glass striking sound. When FG-701 detects the glass striking sound, it will react by emitting glass break sound.
- 5 The Detector will only be activated if it detects both glass striking and glass break sounds. When activated, Green LED will flash to indicate glass break has been detected.

Z-Wave Information

Generic Type: Sensor Notification

Specific Type: Notification Sensor

Product Type ID: 0x0003

Product ID: 0x0000E

Device Type: Sensor- Notification

Role Type: Reporting Sleeping Slave (RSS)

Command Class Support/Control

Mandatory CC Support:

- Z-Wave Plus Info CC, V2
- Association CC, V2 (security 2)
- Multi Channel Association CC, V3 (security 2)
- Association Group Information CC (security 2)
- Transport Service CC, V2
- Version CC, V3 (security 2)
- Manufacturer Specific CC, V2 (security 2)
- Device Reset Locally CC (security 2)
- Powerlevel CC (security 2)
- Battery CC (security 2)
- Security 2 CC
- Notification CC, V8 (security 2)
- Wake UP CC, V2 (security 2)
- Supervision CC
- Firmware Update MD CC, V4 (security 2)

Z-Wave's Groups (Association Command Class Version 2)

Group 1 for "LifeLine" (max node = 1):

Notification CC,V3 (COMMAND_CLASS_NOTIFICATION)

Battery CC (COMMAND_CLASS_BATTERY)

Device Reset Locally CC

Notification Report

1. If Glass Break Detector is triggered, it will send a Notification Report (Type: 0x07, Event 0x06).
2. If tamper is open, it will send Notification Report (Type: 0x07, Event: 0x03)
3. If tamper is closed, it will send Notification Report (Type: 0x07, Event: 0x00, Parmeter:0x03).

Battery Report

1. If battery level changes, it will send Battery Report (0x64, 0x4B, 0x32, 0x19, or 0xFF) respectively.

0x64 --- 100% Battery Full
0x4B --- 75% Battery
0x32 --- 50% Battery
0x19 --- 25% Battery
0xFF --- Battery Dead (Cut Off)

Device Reset

1. To perform factory reset, press and hold the Function Button for 10 seconds, the device will send a **DEVICE_RESET_LOCALLY_NOTIFICATION** report.

Group 2 for "Basic Set" (max node = 1):

BASIC CC (COMMAND_CLASS_BASIC)

1. When the detector is triggered, it will send BASIC SET (0xFF). The device does NOT support Restore Event report.