SVGS-1ZBS Shock, Vibration & Glass break sensor

SVGS-1ZBS is a ZigBee Shock, Vibration/Glass Break Sensor. It is capable of sending wireless signals to the coordinator in the ZigBee network upon detection of window glass break or shock vibration detection.

The Sensor utilizes ZigBee technology for wireless signal transmission. ZigBee is a wireless communication protocol that is reliable and has low power consumption and high transmission efficiency. Based on the IEEE 802.15.4 standard, ZigBee allows a large amount of devices to be included in a network and coordinated for data exchange and signal transmission.

The Sensor serves as an end device in the ZigBee network. It can be included in the ZigBee network to transmit signal upon activation, but cannot permit any other ZigBee device to join the network through the Sensor.

Parts Identification

1. **Function Button**

   Using sharp tools such as paper clip to press and hold the Function Button for 10 seconds to send learning signal to the Control Panel / or Reset to factory settings.
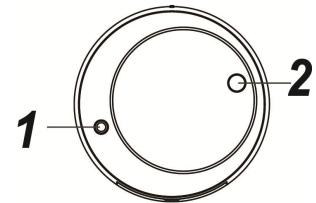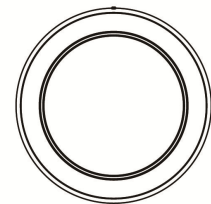
2. **LED Indicator**

   The LED indicator lights up in the following conditions:

   LED flash Once: The Sensor has been reset.

   LED flash Twice: The Sensor has successfully joined ZigBee network.

Features

● *Battery and Low Battery Detection*

- The Sensor use one **CR2032 3V** Lithium battery as its power source. Please note: **ALWAYS** replace battery with the correct size and voltage.
- The Sensor can detect if the battery is low. When the Battery is low, a low battery signal will be sent to the Control Panel along with regular transmission.
- When changing battery, use a sharp tool to open the battery slot to remove and insert battery.
- When inserting batteries, the **positive(+)** side of the battery must face upward. **NEVER** insert the battery with negative(-) side facing upward.
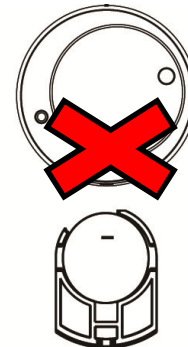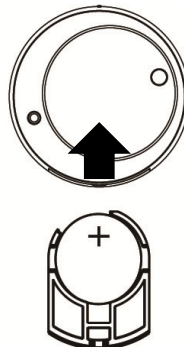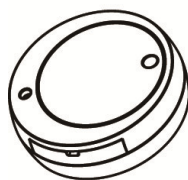
● *Supervision*

The Sensor will transmit a supervision signal to report its condition regularly according to the user's setting. The factory default interval is 30 minutes. The user can also press the Function Button once to transmit a supervision signal manually.

● *Sensitivity*

The Sensor can send alarm signal to the Control Panel according to different sensitivity levels set in the Control Panel. The Sensitivity levels include high, medium, and low (default is medium), the higher the sensitivity the easier to trigger the Sensor when window/glass break or shock vibration detected.

- Please use sharp tools such as a paper clip and to press the Sensor's function button once. The Sensor will wake up (for 1 minutes) and send test signal to the Control Panel before setting sensitivity.
- Start setting sensitivity level on the Control Panel (Please refer to your Control Panel for details).

ZigBee Network Setup

● *ZigBee Device Guideline*

ZigBee is a wireless communication protocol that is reliable and has low power consumption and high transmission efficiency. Based on IEEE802.15.4 standard, ZigBee allows a large amount of devices to be included in a network and coordinated for data exchange and signal transmission.

Due to the fundamental structure of ZigBee network, ZigBee device will actively seek and join network after powering on. Since performing a task in connecting network may consume some power, it is required to follow the instructions to avoid draining battery of a ZigBee device.

- Ensure your ZigBee network router or coordinator is powered on before inserting battery into the ZigBee device.
- Ensure the ZigBee network router or coordinator is powered on and within range while a ZigBee device is in use.
- Do not remove a ZigBee device from the ZigBee network router or coordinator without removing the battery from a ZigBee device.

● *Joining the ZigBee Network*

As a ZigBee device, the Sensor needs to join a ZigBee network to transmit signal when it is triggered. Please follow the steps bellow to join the Sensor into the ZigBee network.

1. Remove the insulator from the Sensor to power on.
2. After powering up, use sharp tools such as a paper clip to press and hold the Function button for 10 seconds until LED flash once, then release it to join the network. Please make sure the permit-join feature on the router or coordinator of your ZigBee network is enabled.
3. If the Sensor successfully joins a ZigBee network, the LED Indicator will flash twice to confirm (refer to you Control Panel to complete learning).
4. After joining the ZigBee network, the Sensor will be registered in the network automatically. Please check the ZigBee coordinator, system control panel or CIE (Control and Indicating Equipment) to confirm if joining and registration is successful.
5. After joining the ZigBee network, if the Sensor loses connection to current ZigBee network, the LED will flash every 20 minutes to indicate. Please check your ZigBee network condition and Sensor signal range to correct the situation.

● *Removing Device from ZigBee Network (Factory Reset)*

To remove the Sensor from current ZigBee network, the Sensor must be put to Factory Reset to complete device removal. Factory Reset function will clear the Sensor of its stored setting and information and prompt the Sensor to search for new ZigBee network.
Before removing device, make sure the Sensor is within current ZigBee network signal range

1. Press and hold the function button for 10 seconds, then release the button to reset Sensor.
2. Upon reset, the Sensor will clear current ZigBee network setting and transmit signal to ZigBee coordinator to remove itself from current ZigBee network. It will then actively search for available ZigBee network again and join the network automatically.

Installation

The Sensor should be installed on a glass to detect shock/vibration or glass breakage. Use the double side adhesive tape provided to secure the Sensor on the window.

Appendix (For developers only)

● *Vibration Movement Sensor Cluster ID*

Device ID: IAS Zone 0x402 Endpoint: 0x01	
Server Side	**Client Side**
Mandatory	
Basic (0x0000)	Basic (0x0000)
Identify(0x0003)	
IAS Zone(0x0500)	
Optional	
None	*None*

● *Attribute of Basic Cluster Information*

Identifier	Name	Type	Range	Access	Default	Mandatory / Optional
0x0000	*ZCLVersion*	Unsigned 8-bit integer	0x00 –0xff	Read only	0x01	M

0x0001	ApplicationVersion	Unsigned 8-bit integer	0x00 –0xff	Read only	0x00	O
0x0003	*HWVersion*	Unsigned 8-bit integer	0x00 –0xff	Read only	0	O
0x0004	*ManufacturerName*	Character String	0 – 32 bytes	Read only	Climax Technology	O
0x0005	*ModelIdentifier*	Character String	0 – 32 bytes	Read only	(Model Version)	O
0x0006	*DateCode*	Character String	0 – 16 bytes	Read only		O
0x0007	*PowerSource*	8-bit	0x00 –0xff	Read only		M
0x0010	*LocationDescription*	Character String	0 – 32 bytes	Read / Write		O
0x0011	*PhysicalEnvironment*	8-bit	0x00 –0xff	Read / Write	0x00	O
0x0012	*DeviceEnabled*	Boolean	0x00 –0x01	Read / Write	0x01	M

- ***Attribute of Identify Cluster Information***

Identifier	Name	Type	Range	Access	Default	Mandatory / Optional
0x0000	*IdentifyTime*	Unsigned 16-bit integer	0x00 –0xffff	Read / Write	0x0000	M

- ***Attribute of IAS Zone Cluster Information***

Identifier	Name	Type	Range	Access	Default	Mandatory / Optional
0x0001	*ZoneState*	8-bit Enumeration	All	Read only	0x00	M
0x0002	*ZoneType*	8-bit Enumeration	All	Read only		M
0x0003	*ZoneStatus*	16-bit bitmap	All	Read only	0x00	M
0x0010	*IAS_CIE_ADDRESS*	IEEE ADDRESS	Valid 64bit IEEE address	Read / Write		M
0x0011	*ZONE_ID*	Unsigned 8-bit integer	All	Read only	0xFF	M
0x1000	*VibrationSensitivity*	Unsigned 8-bit integer	0x01 – 0x03	Read / Write	0x02	O

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:
. Reorient or relocate the receiving antenna.
. Increase the separation between the equipment and receiver.
. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
. Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. (Example - use only shielded interface cables when connecting to computer or peripheral devices).

FCC Radiation Exposure Statement

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The antennas used for this transmitter must be installed to provide a separation distance of at least 0.5 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.