Tilt Sensor Installation Instructions

Product Overview
- Z-Wave Plus™ enabled device which transmits when a garage door is opened or closed
- Uses a tilt sensor to detect the angle of a door and transmits open/closed status
- Reports tamper condition if cover is removed

Product Specifications
- For indoor use only
- Operating frequency: 908.42 MHz
- Operating range: Up to 100 feet (30.5 meters) line-of-sight
- Operating temperature: 0˚C to 49˚C, 32˚F to 120˚F (ambient temperature)
- Battery type: 3V Lithium CR123A
- Battery life: 5 to 1 years depending upon operating conditions

Network Inclusion

The sensor must be added to a Z-Wave network prior to use. To include the sensor in a network both the sensor and the network controller must be in inclusion mode at the same time. *Refer to the instructions provided by the manufacturer of your specific controller for details on initiating the controller's inclusion mode.*

STEP ONE **Start by placing the controller into inclusion mode.**

STEP TWO **Activate inclusion mode for the sensor by inserting the battery. When the inclusion process is complete the red LED will turn on for approximately 10 seconds and then it will go out. If the LED continues to flash, repeat the inclusion process.**

STEP THREE **Test the garage door sensor before mounting it. Hold the sensor in your hand. Flip the sensor upside-down and watch the LED while doing so. The LED will flash each time the position of the sensor is changed. If your Z-Wave network has a software interface you may verify that the messages from the sensor are being received each time the sensor is flipped.**

Notes: If you need to repeat the inclusion process, repeat STEP ONE above, then for STEP TWO you will need to simply remove the cover of the sensor, remove the battery for 5 seconds, reinsert the battery, and replace the sensor cover. This will re-enter the sensor in inclusion mode.

Network Inclusion: Key Points to Remember

- *Controller inclusion mode must be activated BEFORE starting sensor inclusion mode.*
- *The sensor can only be included in one network at a time. The sensor must be excluded from one network before inclusion in another.*
- *The sensor automatically enters inclusion mode at power-up.*
- ***Exclusion** mode on the senor is initiated following the same exact procedure as inclusion.*

Installation

No tools required. Drill, screwdriver, pencil optional.

The package contains the following:

1- Sensor
1- Sensor mounting bracket
2- mounting bracket screws
1- sensor to bracket screw
1- battery
1- piece of adhesive tape

STEP ONE   **Identify Location for Tilt Sensor:**
Choose a mounting method that is appropriate for your garage door. It is very important that the Tilt sensor be located on the top section of a multi-panel garage door. This will be the first section to tilt when the door is opened and the last to move to the vertical position when closing.

STEP TWO   **Mount the Tilt sensor to a clean dry surface WITH THE ARROW ON THE SIDE OF THE SENSOR POINTING UP**
Before you mount the sensor, make certain that the arrow on the side of the Tilt sensor is pointing UP when assembled in the mounting bracket.

The sensor can be mounted using adhesive tape and/or screws. Caution: Use of the screws is only recommended for garage doors that are thicker than the screws are long. Use the adhesive tape for any garage door that is thinner than the length of the provided screws (including many modern metal garage doors).
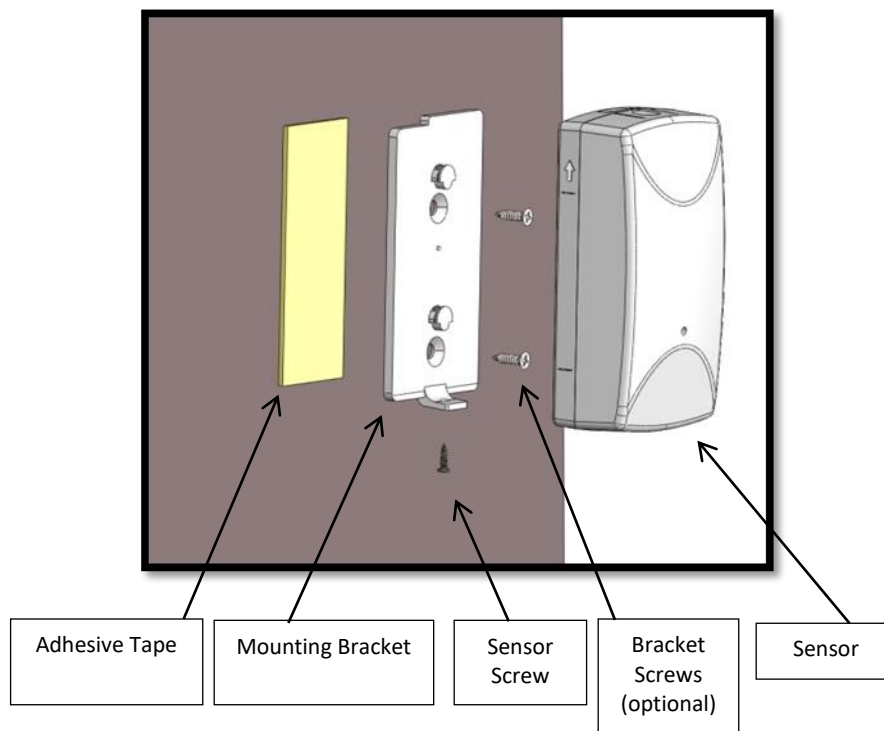
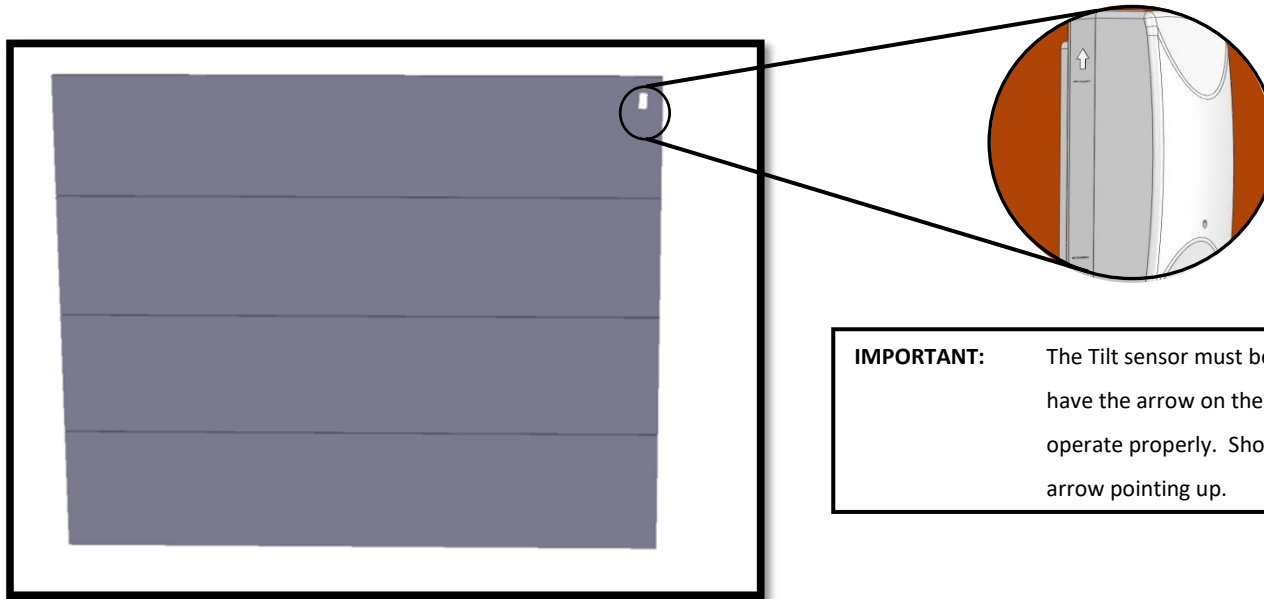**Adhesive Tape:**

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Make sure that the desired mounting location on the door is clean and dry. The adhesive tape can withstand the temperature and humidity conditions of a typical garage. However, it is recommended that the sensor be mounted when air or surface temperatures are not extreme.   Installing the adhesive tape when the conditions are right promotes a good long-lasting adhesive bond between the bracket and the surface of the door. Peel back the outer layer of one side of the adhesive tape, stick the tape to the garage door and press firmly. Peel back the outer layer on the other side of the tape and press the mounting bracket firmly onto the adhesive tape.

Screws:

Place the mounting bracket in the desired position on the garage door. Use the mounting bracket as a template to mark the location of the screw holes with a pencil. Drill a small hole through each of the marked locations.   Use a screwdriver to fasten the mounting bracket to the door.

Adhesive Tape | Mounting Bracket | Sensor Screw | Bracket Screws (optional) | Sensor

Z-Wave Device Class and Command Class Information

This Z-Wave sensor is a Z-Wave generic Device Class of GENERIC_TYPE_SENSOR_NOTIFICATION, and a specific device class of SPECIFIC_TYPE_NOTIFICATION_SENSOR, and the supported command classes are COMMAND_CLASS_ZWAVEPLUS_INFO, COMMAND_CLASS_VERSION, COMMAND_CLASS_MANUFACTURER_SPECIFIC, COMMAND_CLASS_POWERLEVEL, COMMAND_CLASS_BATTERY, COMMAND_CLASS_NOTIFICATION_V4, COMMAND_CLASS_ASSOCIATION, COMMAND_CLASS_ASSOCIATION_GRP_INFO, COMMAND_CLASS_WAKE_UP, COMMAND_CLASS_SENSOR_BINARY, COMMAND_CLASS_CONFIGURATION, COMMAND_CLASS_BASIC.

Manufacturer Specific

Manufacturer ID: 0x014A

Product Type: 4

Product ID: 3

Factory Default

To restore this sensor to factory default settings, follow the instructions in this manual to exclude this sensor from the Z-Wave network. Upon completion of removal from the network the sensor will restore itself to factory default settings automatically. Use this procedure only in the event that the network primary controller is missing or otherwise inoperable.

Keeping Awake for Testing and Configuration

To save power, this sensor sleeps most of the time and is therefore not awake to receive messages from a gateway for testing. Removing the top case from the sensor will put in device into a tampered mode in which the sensor will stay awake and able to receive messages. Most of the time an end user would not do this, but if the sensor needs to be configured after inclusion, an end user can follow the instructions below for sending Wake-Up notifications.

Association

This sensor has two Association groups of 5 nodes each. Group one is a lifeline group who will receive unsolicited messages relating to door/window open/close notifications (because there is no association group for tilt switches), case tampering notifications, low-battery notifications, and sensor binary reports. Group 2 is intended for devices that are to be controlled i.e. turned on or off (on only by default) with a Basic Set. On inclusion the controller should put its node ID in group 1 but not group 2.

Network Wide Inclusion

This sensor also supports Network Wide Inclusion such that the Sensor can be included into the Z-Wave network over the mesh network and not directly near the main controller. This mode is automatically activated after regular inclusion was not successful

SENSOR CONDITION	COMMAND CLASS and VALUE	ASSOCIATION GROUP	CONFIGURABLE?
Door Open	Notification Report of Access Control (0x06), Door is open (0x16)	1	Yes via Notification Set of notificationType (0x06) and status of 0x00: This type of notification turned off 0xFF: This type of notification turned on
	Sensor Binary Report of 0xFF Sensor Type: 0xFF	1	Yes via Configuration Command Class Parameter Number: 2 Size: 1 A Configuration Value: 0xFF (On) / 0x00 (Off)
	Basic set of 0xFF (On)	2	No
	Notification Report of Access Control (0x06), Door is closed (0x17)	1	Yes via Notification Set of notificationType (0x06) and status of 0x00: This type of notification turned off 0xFF: This type of notification turned on
	Sensor Binary Report of 0x00		Yes via Configuration Command Class Parameter

Door Close	Sensor Type: 0xFF	1	Number: 2 Size: 1 A Configuration Value: 0xFF (On) / 0x00 (Off)
	Basic Set of 0x00 (Off) By factory default this feature is disabled and must be enabled via Configuration Command Class.	2	Yes via Configuration Command Class Parameter Number: 1 Size: 1 A Configuration Value: 0xFF (On) / 0x00 (Off) Parameter Number: 2
Sensor Case Removed	Notification Report of Home Security (0x07), Tampering product cover removed (0x03)	1	Yes via Notification Set of notificationType (0x07) and status of 0x00: This type of notification turned off 0xFF: This type of notification turned on
Sensor Case Fastened	Wake-Up Notification	1	Yes via Wake-Up Notification Command Class
Battery Level Dipped Below 2.6v	Notification Report of Power Management (0x08), Replace battery now (0x0B)	1	Yes via Notification Set of notificationType (0x08) and status of 0x00: This type of notification turned off 0xFF: This type of notification turned on

Wake-Up Notification

The sensor will wake up every so often and when the case is closed, it will send a Wake-Up Notification to allow the life line master node controller that the sensor is now available for any queued messages that the controller may have for the sensor. The time between Wake-Up Notifications can be configured with the Wake-Up Notification command class to be between 1 hour and 1 week with interval steps of 200 seconds.

Configuration

The sensor has two configuration parameters. Parameter 1 configures the sensor to send or not send Basic Set commands of 0x00 to nodes in Association group 2 turning the devices off when the sensor is in a restored state i.e. the door is closed. By default the sensor does NOT send Basic Set commands of 0x00. Parameter 2 configures the sensor to either to send or not to send Sensor Binary Report commands to Association Group 1 when the sensor is faulted and restored. If the controller is fully compatible with the Notification Command Class thereby making the Sensor Binary Reports redundant, the controller can disable the Sensor Binary Report Commands completely. The following table shows the values to enable and disable the two configuration parameters.

Configuration Set Values	Effect
Parameter Number: 1 Size: 1 Configuration Value: 0x00	(Default) Sensor does NOT send Basic Sets to Node IDs in Association Group 2 when the sensor is restored (i.e. Door Closed).
Parameter Number: 1	Sensor sends Basic Sets of 0x00 to nodes in Association Group2 when

Size: 1 Configuration Value: 0xFF	sensor is restored.
Parameter Number: 2 Size: 1 Configuration Value: 0x00	(Default) Sensor sends Sensor Binary Reports when sensor is faulted and restored for backwards compatibility in addition to Notification Reports.
Parameter Number: 2 Size: 1 Configuration Value: 0xFF	Sensor will send only Notification Reports and NOT Sensor Binary Reports when the sensor is faulted and restored.

FCC Compliance Statement

This equipment has been tested and found to comply with the limits for Class B digital devices, 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 instruction manual, 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 or more of the following measures:

- Re-orient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment to an outlet on a different circuit from the receiver
- Consult the dealer or an experienced radio/TV contractor for help.
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Warning: Changes or modifications not expressly approved by Ecolink Intelligent Technology Inc. could void the user's authority to operate the equipment.

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

C'et appareil est conforme la norme d'Industrie Canada exempts de licence RSS. Son fonctionnement est soumis aux deux conditions suivantes: (1) c'et appareil ne peut pas provoquer d'interférences, et (2) c'et appareil doit accepter toute interférence, y compris les interférences qui peuvent causer un mauvais fonctionnement de la dispositif.

FCC ID:XQC-TLTZ25   IC: 9863B-TLTZ25

What is Z-Wave?

The Z-Wave protocol is an interoperable, wireless, RF-based communications technology designed specifically for control, monitoring and status reading applications in residential and light commercial environments. Mature, proven and broadly deployed (with over 35 million products sold worldwide), Z-Wave is by far the world market leader in wireless control, bringing affordable, reliable and easy-to-use 'smart' products to many millions of people in every aspect of daily life. Certified Z-Wave devices regardless of manufacturer can work together to form a Z-Wave mesh network. Always on Z-Wave devices can act as repeaters in the mesh increasing range and redundancy.

For a more complete look at Z-Wave technology for non-technologists, and to learn more about Z-Wave's role as a key enabling technology for the Internet of Things and connected objects, please visit www.z-wave.com.

LIMITED WARRANTY

This limited warranty is provided by Ecolink Intelligent Technology ("Ecolink") to you as the original purchaser of the product. Ecolink warrants this product to be free from defects in material and workmanship for a period of **one (1) year** from the date of original purchase. The determination of whether the product is defective shall be made by Ecolink in its sole discretion with consideration given to the overall performance of the product. If Ecolink determines that any product is defective, Ecolink's sole obligation and your sole and exclusive remedy shall be that Ecolink will replace the product.

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RETURN POLICY

Please visit us at www.discoverecolink.com/returns to view our return policy.

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This product covered by one or more claims of patents found at: http://sipcollc.com/patent-list/