Aeotec Door Window Sensor Gen5

(Z-Wave Door Window Sensor)

Change History

Revision	Date	Change Description
1	08/08/2015	Initial draft.
2	08/01/2016	Update
3	14/01/2016	Update
4		

<p style="text-align:center">Aeotec Door Window Sensor Gen5</p>
<p style="text-align:center">Engineering Specifications and Advanced Functions for Developers</p>

Aeotec Door Window Sensor Gen5 is a sensor binary device based on Z-Wave enhanced 232 slave library of V6.51.06.

Aeotec by Aeotec Door/Window Sensor Gen5 provides your Z-Wave network with the intelligence required for a modern home automation and security system. And it does it all in a smaller, more elegant design crafted to suit any home's decor.
The Door Window Sensor is also a security Z-Wave device and supports the Over The Air (OTA) feature for the product's firmware upgrade.

Door Window Sensor Gen5 can be included and operated in any Z-Wave network with other Z-Wave certified devices from other manufacturers 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.
It supports Security Command Class and has the AES 128 bit security encryption built right in, so a security enabled controller is needed for fully to utilize its function.

1. Library and Command Classes

1.1 SDK: 6.51.06

1.2 Library

- Basic Device Class: BASIC_TYPE_ROUTING_SLAVE
- Generic Device class: GENERIC_TYPE_SENSOR_NOTIFICATION
- Specific Device Class: SPECIFIC_TYPE_NOTIFICATION_SENSOR

1.3 Commands Class

|	Included Non-Secure	Included Secure
Node Info Frame	COMMAND_CLASS_ZWAVEPLUS_INFO V2 COMMAND_CLASS_VERSION V2 COMMAND_CLASS_MANUFACTURER_SPECIFIC V2 COMMAND_CLASS_NOTIFICATION V4 COMMAND_CLASS_ASSOCIATION_GRP_INFO V1 COMMAND_CLASS_ASSOCIATION V2 COMMAND_CLASS_BATTERY V1 COMMAND_CLASS_POWERLEVEL V1 COMMAND_CLASS_WAKE_UP V2 COMMAND_CLASS_BASIC COMMAND_CLASS_SENSOR_BINARY V1 COMMAND_CLASS_CONFIGURATION V1	COMMAND_CLASS_ZWAVEPLUS_INFO V2 COMMAND_CLASS_VERSION V2 COMMAND_CLASS_MANUFACTURER_SPECIFIC V2 COMMAND_CLASS_SECURITY V1 COMMAND_CLASS_DEVICE_RESET_LOCALLY V1 COMMAND_CLASS_MARK V1

	COMMAND_CLASS_SECURITY V1 COMMAND_CLASS_FIRMWARE_UPDATE_MD V2 COMMAND_CLASS_DEVICE_RESET_LOCALLY V1 COMMAND_CLASS_MARK V1	
Security Command Supported Report Frame	-	COMMAND_CLASS_ASSOCIATION_GRP_INFO V1 COMMAND_CLASS_ASSOCIATION V2 COMMAND_CLASS_POWERLEVEL V1 COMMAND_CLASS_NOTIFICATION V4 COMMAND_CLASS_WAKE_UP V2 COMMAND_CLASS_BASIC COMMAND_CLASS_SENSOR_BINARY V1 COMMAND_CLASS_BATTERY V1 COMMAND_CLASS_CONFIGURATION V1 COMMAND_CLASS_FIRMWARE_UPDATE_MD V2

2. Technical Specifications

Operating distance: Up to 300 feet (100 meters) outdoors.

3. Familiarize Yourself with Your Door Window Sensor Gen5

3.1 Interface
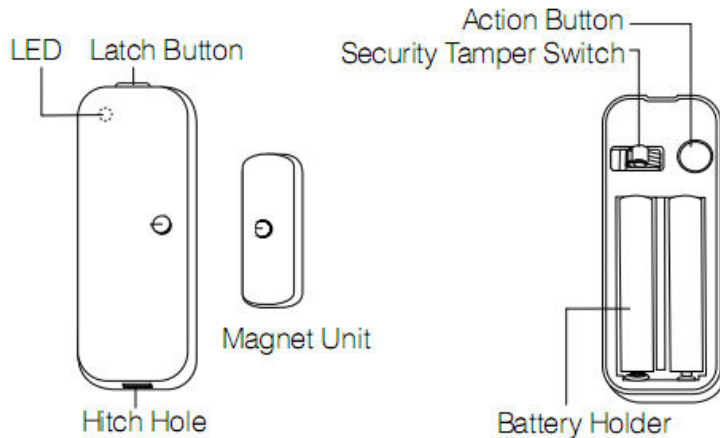
4. All Functions of Each Trigger

4.1 Functions of Z-Wave Button

Button Action	Description
Click the Action Button one time	1. **Send node info frame without security CC in node info list.** 2. **Add Door Window Sensor into Z-Wave Network:** 1. Power on Door Window Sensor.

	2. Let the primary controller into inclusion mode (If you don't know how to do this, please refer to its manual). 3. Press the Action Button. 4. If the adding is failed, please repeat the process from step 2. **3. Remove Door Window Sensor from Z-Wave Network:** 1. Power on Door Window Sensor. 2. Let the primary controller into exclusion mode (If you don't know how to do this, refer to its manual). 3. Press the Action Button. 4. If the removing is failed, please repeat the process from step 2. *Note*: If Door Window Sensor is removed from Z-wave network, it will be reset to factory default.
Click the Action Button 2 times with 1 seconds	**1. Send node info frame with security CC in node info list.** **2. Add Door Window Sensor into Z-Wave Network:** 1. Power on Door Window Sensor. 2. Let the primary controller into inclusion mode (If you don't know how to do this, please refer to its manual). 3. Press the Action Button 2 times. 4. If the adding is failed, please repeat the process from step 2. **3. Remove Door Window Sensor from Z-Wave Network:** 1. Power on Door Window Sensor. 2. Let the primary controller into exclusion mode (If you don't know how to do this, refer to its manual). 3. Press the Action Button 2 times. 4. If the removing is failed, please repeat the process from step 2. **Note**: If Door Window Sensor is removed from Z-wave network, it will be reset to factory default.
Press and hold the Action Button for 3 seconds and then released	Toggle on/off 10 minutes wake-up state
Press and hold the Action Button for 20 seconds and then released	**Reset Door Window Sensor to Factory Default:** 1. Make sure the Door Window Sensor is connected to the power supply. 2. If holding time more than one second, the Network LED will fast blink. If holding time more than 20seconds, Network LED will be on for 2 seconds, which indicates the reset operation is successful, otherwise please repeat from

	step1 to step2.
	Note:
	1. This procedure should only be used when the primary controller is inoperable.
	2. Reset Door Window Sensor to factory default settings will:
	a), remove Door Window Sensor from Z-Wave network;
	b), delete the Association setting;
	c), restore the configuration settings to the default.

4.2 Tamper Switch triggering

Triggering	Description
Press down/ release the tamper switch	Send Notification Report.

4.3 Sensor triggering

Triggering	Description
Magnet triggers On/Off	Send Sensor Binary Report (configurable), Basic Set Command (configurable) or Notification Report.

The priority of destination node that Wake Up Notification will be sent to:

Destination nodes	Priority
The Node configured by Wake up Interval set command	Supreme
SIS or SUC Node	High
First Associated Node	Middle
Broadcast	Low

5. Special Rule of Each Command

5.1 Z-Wave Plus Info Report Command Class

Parameter	Value
Z-Wave Plus Version	2 (ZWAVEPLUS_INFO_VERSION_V2)
Role Type	6 (ZWAVEPLUS_INFO_REPORT_ROLE_TYPE_SLAVE_SLEEPING_REPORTING)
Node Type	0 (ZWAVEPLUS_INFO_REPORT_NODE_TYPE_ZWAVEPLUS_NODE)
Installer Icon Type	0x0C06

	(ICON_TYPE_SPECIFIC_SENSOR_NOTIFICATION_ACCESS_CONTROL)
User Icon Type	0x0C06
	(ICON_TYPE_SPECIFIC_SENSOR_NOTIFICATION_ACCESS_CONTROL)

5.2 Manufacturer Specific Report

Parameter	Value
Manufacturer ID 1	0x00
Manufacturer ID 2	0x86
Product Type ID 1	EU=0x00, US=0x01, AU=0x02
Product Type ID 2	0x02
Product ID 1	0x00
Product ID 2	0x78

5.3 Association Command Class

The Door Window Sensor supports 1 association group and can add Max 5 nodes in group 1.

Association Group	Nodes	Send Mode	Send commands
Group 1	0	N/A	N/A
	[1,5]	Single Cast	Send Sensor Binary Report (configurable in parameter 121) or Basic Set Command (configurable in parameter 121) or Notification Report Command when the Sensor is triggered.

5.4 Association Group Info Command Class
5.4.1 Association Group Info Report Command Class

Profile: General: NA (Profile MSB=0, Profile LSB=0)

5.4.2 Association Group Name Report Command Class

Group 1：Lifeline

5.5 Notification Command Class

Default Notification type and Event:

Notification Type: Access Control (0x06) and Home Security (0x07).

Notification Events for Access Control: Window/Door is open (0x16). Window/Door is closed (0x17).

Notification Events for Home Security: Product covering removed (Notification Report Type =0x03, Event inactive =0x00). Product covering is installed (Notification Report Type =0x07, Event inactive =0x00).

5.6 Configuration Set Command Class

7	6	5	4	3	2	1	0
Command Class = COMMAND_CLASS_CONFIGURATION							
Command = CONFIGURATION_SET							
Parameter Number							
Default	Reserved					Size	
Configuration Value 1(MSB)							
Configuration Value 2							
....							
Configuration Value n(LSB)							

Parameter Number Definitions (8 bit):

Parameter Number Hex / Decimal	Description	Default Value	Size
0x01 (1)	To set which value of the Sensor Binary Report will be sent when the door is Opened/Closed. 1, Value=0, Close=Sensor Binary Report 0xFF, Open=Sensor Binary Report 0x00. 2, Value=1, Close= Sensor Binary Report 0x00, Open= Sensor Binary Report 0xFF.	1	1
0x02 (2)	Enable/disable wake-up 10 minutes when re-power on the Sensor. (0=disable, 1=enable)	1	1
0x03 (3)	To set which value of the Basic Set will be sent when the door is Opened/Closed. 1, Value=0, Close= Basic Set 0xFF, Open=Basic Set 0x00. 2, Value=1, Close=Basic Set 0x00, Open= Basic Set 0xFF.	1	1
0x27 (39)	Set the low battery value. (10% to 50%)	10	1

0x6F (111)	Set the interval time of battery report. Value=0, disable the battery report for an interval time. Value=1 to 0xFFFFFFFF, the interval time of battery report. *Note*: 1, if the value is less than 10, the time unit is second. If the value is more than 10, the time unit is 4 minutes, which means if the value is more than 10 and less than 240, the interval time is 4 minutes. If the value is more than 240 and less than 480, the interval is 8 minutes. 2, if the current battery report falls below the low battery value (configurable parameter 39), it will send battery report=0xFF.	0	4
0x79 (121)	To configure which sensor report will be sent when the Sensor is triggered On/Off.	0x00000001	4
0xFF (255)	1, Value=0x55555555、Default=1、Size=4 Reset to factory default setting and removed from the z-wave network	N/A	4
	2, Value=0、Default=1、Size=1 Reset to all settings to default value.	N/A	1

Parameter number equals 121:

	7	6	5	4	3	2	1	0
Configuration Value 1(MSB)	Reserved							
Configuration Value 2	Reserved							
Configuration Value 3	Reserved							
Configuration Value 4(LSB)	Reserved	Reserved	Reserved	Sensor Binary	Reserved	Reserved	Reserved	Basic Set