Aeotec Recessed Door Sensor Gen5

(Z-Wave Recessed Door Sensor Gen5)

Change history

Revision	Date	Change Description
1	05/27/2013	Initial draft.
3	6/17/2014	Update Z-wave Library to 6.51.01

Aeotec Recessed Door Sensor Gen5
Engineering Specifications and Advanced Functions for Developers
(V1.13)

Aeotec Recessed Door Sensor Gen5 is a door detector that can detect the state of the door's open/close. It is a notification sensor device based on Z-wave routing slave library V6.51.01

The Recessed Door Sensor 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.

1. Library and Command Classes:

1.1 SDK:6.51.01

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:

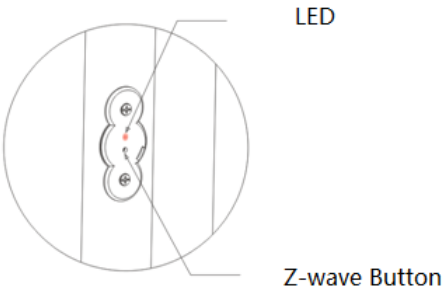
	Added into Non- security network	**Added into Security network**
Node Info Frame	COMMAND_CLASS_ZWAVEPLUS_INFO V2 COMMAND_CLASS_SENSOR_BINARY V1 COMMAND_CLASS_BASIC COMMAND_CLASS_BATTERY V1 COMMAND_CLASS_WAKE_UP V2 COMMAND_CLASS_CONFIGURATION V1 COMMAND_CLASS_ASSOCIATION_GRP_INFO V1 COMMAND_CLASS_ASSOCIATION V2 COMMAND_CLASS_NOTIFICATION V3 COMMAND_CLASS_FIRMWARE_UPDATE_MD V2 COMMAND_CLASS_POWERLEVEL V1 COMMAND_CLASS_SECURITY V1 COMMAND_CLASS_VERSION V2 COMMAND_CLASS_MANUFACTURER_SPECIFIC V2 COMMAND_CLASS_MARK V1 COMMAND_CLASS_DEVICE_RESET_LOCALLY V1 COMMAND_CLASS_HAIL V1	COMMAND_CLASS_ZWAVEPLUS_INFO V2 COMMAND_CLASS_VERSION V2 COMMAND_CLASS_MANUFACTURER_SPECIFIC V2 COMMAND_CLASS_SECURITY V1 COMMAND_CLASS_MARK V1 COMMAND_CLASS_DEVICE_RESET_LOCALLY V1 COMMAND_CLASS_HAIL V1
Security Command Supported Report Frame		COMMAND_CLASS_SENSOR_BINARY V1 COMMAND_CLASS_BASIC COMMAND_CLASS_BATTERY V1 COMMAND_CLASS_WAKE_UP V2 COMMAND_CLASS_CONFIGURATION V1 COMMAND_CLASS_ASSOCIATION_GRP_INFO V1 COMMAND_CLASS_ASSOCIATION V2 COMMAND_CLASS_NOTIFICATION V3 COMMAND_CLASS_FIRMWARE_UPDATE_MD V2 COMMAND_CLASS_POWERLEVEL V1

2. Technical Specifications

Operating distance: Up to 300 feet/100 meters outdoors.

3. Familiarize yourself with your Recessed Door Sensor

3.1Interface



4. All functions of each trigger are like the following

4.1 Event and Response

Event	Response
Short press the Z-Wave Button	**Add Recessed Door Sensor Gen5 into z-wave network:** 1. Power on the Recessed Door Sensor Gen5. 2. Let the primary controller into inclusion mode (If you don't know how to do this, refer to its manual). 3. Press the Z-Wave button. 4. If the inclusion is success, Recessed Door Sensor Gen5's LED will be kept turning on for 10 minutes. If the LED still blinks slowly, in which you need to repeat the process from step 2. **Remove Recessed Door Sensor Gen5 from z-wave network:** 1. Power on the Recessed Door Sensor Gen5. 2. Let the primary controller into exclusion mode (If you don't know how to do this, refer to its manual). 3. Press the Z-Wave button. 4. If the exclusion is success, Recessed Door Sensor Gen5's LED will blink slowly. If LED still be solid status for 3 seconds after you short press the Z-Wave button, in which you need to repeat the process from step 2.
Press and hold the Z-wave Button for 6 seconds	1, It will be wake up and send Wake Up Notification with broadcast. 2, It will sleep after you released the z-wave button for 10 seconds, or sleep right away when received the Wake Up No More Information and then the led will turn off.
Press and hold the Z-wave Button for 20 seconds	Recessed Door Sensor will be reset and send Device Reset Locally CC to controller. Note: This procedure should only be used when the primary cont roller is inoperable or missing.

Magnet switch open/close	Send Sensor Binary Report (configurable) or Basic Set Command (configurable)

We can configure Recessed Door Sensor send or don't send the configurable commands. The Basic Set CC/Sensor Binary Report CC will be sent to associated nodes. If Recessed Door Sensor does not have any associated node, the commands will not be sent.

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 Wake up time

Recessed Door Sensor will keep wake up for 10 seconds after it send wake up notification command. If it's included into Z-wave network, the Recessed Door Sensor will wake for 10 minutes.
Only 2 ways can abort this status:
1. Z-wave Button held 6 seconds, then released, after 8 seconds, sleep right now;
2. Recessed Door Sensor received "Wake up no more information CC", sleep immediately;

5.2 Association Command Class

Recessed Door Sensor supports 2 Association groups.
If Recessed Door Sensor is included into a SIS or SUC z-wave network, it will be associated to SIS/ SUC controller automatically.
The Node IDs in Group 1 will receive Basic Set/ Sensor Binary Report (configurable) which is sent via multicast(if there are more than 2 Node IDs) or single-cast (if there is only one Node ID) when the Recessed Door Sensor's magnet switch to open or close.
If enable the low battery check (configurable) and when the battery voltage is less than the warning voltage, the associated Node IDs in Group 2 will receive the Battery Low Warning Report which is sent as multicast (if there are more than 2 Node IDs) or single-cast (if there is only one Node ID) when it is waked up.
If you change the battery and the new battery voltage is a reliable voltage (higher than 80%). the associated Node IDs in Group 2 will also receive the current Battery Report CC once when the Recessed Door Sensor is wake up.

5.3 Z-Wave Plus Info Report Command Class

Parameter	Value
Z-Wave Plus Version	1
Role Type	6 (ZWAVEPLUS_INFO_REPORT_ROLE_TYPE_SLAVE_SLEEPING_REPORTING)
Node Type	0 (ZWAVEPLUS_INFO_REPORT_NODE_TYPE_ZWAVEPLUS_NODE)
Installer Icon Type	0x0C00 (ICON_TYPE_GENERIC_SENSOR_NOTIFICATION)
User Icon Type	0x0C00 (ICON_TYPE_GENERIC_SENSOR_NOTIFICATION)

5.4 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	0x59

5.5 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	Description	Default Value	Size
1	Which value of the Sensor Binary Report will be sent when the magnet switch to open/close. 1, Value=0, Open=Sensor Binary Report 0xFF, Close=Sensor Binary Report 0x00. 2, Value=1, Open= Sensor Binary Report 0x00, Close= Sensor Binary Report 0xFF.	0	1
3	Which value of the Basic Set will be sent when the magnet switch to open/close. 1, Value=0, Open= Basic Set 0xFF, Close=Basic Set 0x00. 2, Value=1, Basic Set 0x00, Close= Basic Set 0xFF.	0	1
101	Enable/disable the function of low battery checking, when the current voltage is less than the warning voltage, it will send the Battery Low Warning Report. (00==Disable, 1==Enable).	0	1
111	The Interval time of low battery checking (0~0xFFFFFFFF seconds). The minimum unit of interval time is 4 minutes. If the value is set to 1 minute, the interval time will be 4 minutes. The same is if the value is set to 7 minutes, the interval time will be 8 minutes. Note: 1, This parameter only will be activated after the function	0x00 01 52 70	4

	of low battery checking (parameter 101) is enabled. 2, Recessed Door Sensor also will check the current battery voltage when it was wake up as other ways (e. g. the Z-Wave button trigger, magnet switch trigger, and the Wake Up Interval Set timeout trigger) after the function of low battery checking (parameter 101) is enabled.		
121	To set which command will be sent to the associated nodes when the magnet switch is triggered. See the below table.	0x00000100	4
252	Lock/ unlock all configuration parameters. (0==Unlock, 1== Lock).	0	1
254	Device Tag.	0	2
255	1, Value=0x55555555、Default=1、Size=4 2, Value=0、Default=1、Size=1 Reset all configuration parameters (except the parameter 254) to default settings. 3, Other values will be reserved.	--	4

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							Basic Set
Configuration Value 4(LSB)	Reserved	Reserved	Reserved	Sensor Binary	Reserved	Reserved	Reserved	Reserved

Example:
Configure the recessed door sensor to send Sensor Binary report to controller when the magnet switch's state is changed:
1), Set the association to node 1(controller).
ZW_SendData(0x85, 0x01, 0x01, 0x01); // Association Set
2), Set the parameter 121 to 0x00000010.
ZW_SendData(0x79, 0x04,0x00,0x00,0x00,0x10); //Configuration Set