Aeon Labs Recessed Door Sensor

(Z-Wave Recessed Door Sensor)

Change history

Revision	Date	Change Description
1	05/27/2013	Initial draft.
2	07/15/2013	Update Z-wave Library

Aeon Labs Recessed Door Sensor
Engineering Specifications and Advanced Functions for Developers
(V1.05)

The Aeon Labs Recessed Door Sensor is a binary sensor device based on Z-wave routing slave library V4.55.00

1. Library and Command Classes:

1.1 SDK:4.55.00

1.2 Library:

- Basic Device Class: BASIC_TYPE_ROUTING_SLAVE
- Generic Device class: GENERIC_TYPE_SENSOR_BINARY
- Specific Device Class: SPECIFIC_TYPE_ROUTING_SENSOR_BINARY

1.3 Commands:

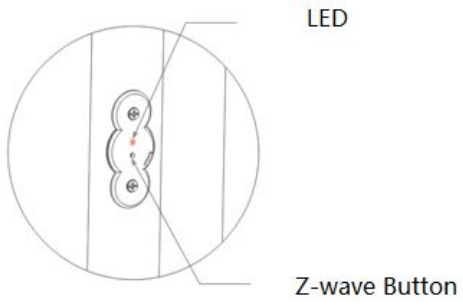
- COMMAND_CLASS_SENSOR_BINARY_V1,
- COMMAND_CLASS_BATTERY_V1,
- COMMAND_CLASS_WAKE_UP_V2,
- COMMAND_CLASS_CONFIGURATION_V1,
- COMMAND_CLASS_ASSOCIATION_V1,
- COMMAND_CLASS_VERSION_V1,
- COMMAND_CLASS_MANUFACTURER_SPECIFIC_V2

2. Technical Specifications

Operating distance: Up to 100 ft/ 30 meters indoors and 300 ft/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
Z-wave Button clicked	Node info frame/Enter learn mode. If the Recessed Door Sensor in the learn mode, the led will blink quickly; If the Recessed Door Sensor learning successes, the Recessed Door Sensor will wake up 10 minutes, Led light will illuminate ,else if the learning failed, LED will blink quickly and into the sleep mode after 8 seconds.
Z-wave Button held 6 seconds	Recessed Door Sensor will send Wake Up Notification as broadcast or singlecast , 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. If it be sleep, the led will turn off.
Z-wave Button held 20 seconds	Held 20 seconds, then Recessed Door Sensor will be reset.
Magnet switch open/close	Sensor Binary Report（configurable） Basic Set Command（configurable）

We can configure Recessed Door Sensor send or don't send the configurable commands.
The destination nodes of Basic set command, Sensor Binary Report are all associated nodes. If Recessed Door Sensor don't have associated nodes, these command will not be sent.

The destination node of Wake Up Notification are listed in the following table：

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

4.2 LED Show

Status	LED
Wake up	Out of network: Blink In network: ON
Sleeping	OFF

4.2 Wake up time

Recessed Door Sensor will keep wake up for 8 seconds after it send wake up notification command.
If received a command, it will keep wake up for 8 seconds to wait next command.
If it's included into Z-wave network, then Recessed Door Sensor will wake 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 right now;

5. Special rule of each command

5.1 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 or SUC 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 singlecast (if there is only one Node ID) when the state of Recessed Door Sensor's magnet switch open or close.
If enable the low battery check (configurable), when the battery voltage below the warning voltage,
The 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 singlecast (if there is only one Node ID).
If enable the low battery check (configurable), when the Recessed Door Sensor had sent Battery Low Warning Report, if you change the battery, and the new battery voltage is a reliable voltage(higher than 80%).When the Recessed Door Sensor is wake up, the Node IDs in Group 2 will receive the Battery Report which is sent as multicast(if there are more than 2 Node IDs)or singlecast(if there is only one Node ID).

5.2 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	Toggle sensor binary report value when Magnet switch open/close (Value=00, Open: 00, Close: 0xFF; Value=01, Open: 0xFF, Close: 00).	0	1
3	Toggle basic set value when Magnet switch open/close (Value=00, Open: 00, Close: 0xFF; Value=01, Open: 0xFF, Close: 00).	0	1
101	Enable the low battery voltage check function, when the voltage below the warning voltage, send the Battery Low Warning Report.(00==Disable,1==Enable).	0	1
111	The battery low check Interval time, 0~0xFFFFFFFF seconds. The minimum battery low check Interval time is 4 minutes (240 seconds) rounded up. Thus if the interval time is set to 1 minute, then battery voltage will be checked every 4 minutes.	0x00 01 52 70	4

	Likewise if the interval time is set to 7 minutes, Battery voltage will be checked at 8 minute intervals. This parameter is activated only when the low battery check function is enable. The Recessed Door Sensor will check the battery voltage when it was wake up as other ways. For example: the z-wave button trigger, magnet switch trigger, and the Wake Up Interval Set timeout trigger.		
121	Flag values for which reports to send when the magnet switch is triggered	0x00000100	4
252	Lock or Unlock other configuration set function (0:unlock, 1: Lock).	0	1
254	Device Tag.	0	2
255	Reset to the default Configuration	--	--

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

- Reserved
  Reserved bits or bytes must be set to zero.
- Basic Set (1 bit)
  The Basic set flag signals that Recessed Door Sensor send (1) or don't send (0) Basic Set Command when Magnet switch open/close.
- Sensor Binary (1 bit)
  The Sensor Binary flag signals that Recessed Door Sensor send (1) or don't send (0) Sensor Binary Report when Magnet switch open/close.