

B.One Smart Sensor Engineering Specification

B.One Smart Sensor is a wireless reed sensor powered by AAA battery. It is used for detecting the Opening and closing of doors, windows. It can communicate with another associated Z-Wave device, such as Siren, Smart Switch, etc.

B.One Smart 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.

B.One Smart Sensor is also a security Z-Wave device and supports the Over The Air (OTA) feature for the product's firmware upgrade.

If you want your B.One Smart Sensor to be a security device that use secure/encrypted message to communicate in a Z-Wave network, then a security enabled Z-Wave controller is needed.

Features :

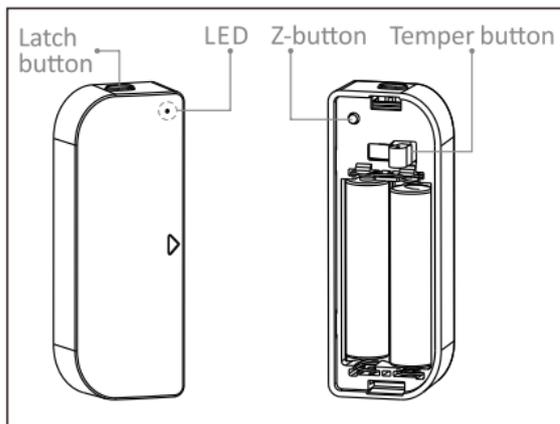
- 1) Door/Window Sensor contains a sensor body and a magnet.
- 2) Door/Window opening detected through the separation of the main body and the magnet.
- 3) Door/Window closing detected through the combination of the main body and the magnet.
- 4) The longest effective distance between the sensor body and the magnet is 10MM.
- 5) The Sensor also possess the function of temper button, once the Sensor drops, it will notify

the gateway.

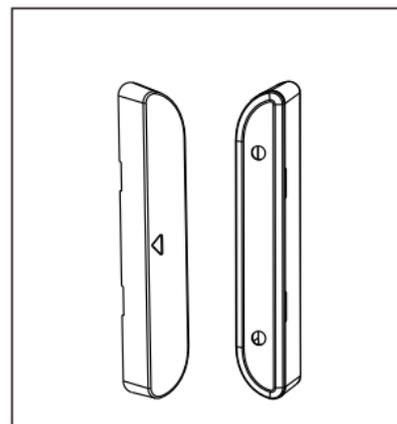
- 6) The battery life is up to 1 year.
- 7) Support low battery alarm function.
- 8) Support firmware OTA.

1. Familiarize yourself with your B.One Smart Sensor

1.1 B.One Smart Sensor Layout



Sensor body



Sensor body

2. Technical specifications

Power supply:	Two AAA 1.5V Batteries
Storage environment:	-10 °C -50 °C 0%-90%
Operational temperature:	0-40 °C
Radio protocol:	Z-Wave
Radio frequency:	908.42MHz (US) 868.42MHz (EU) 921.42MHz (AU)
Range:	More than 100m outdoors About 30m indoors (depending on building materials)
Dimensions:	Main body: 75*28*18mm

Magnet: 75*12*18mm

Working current: About 60mA

Standby current: About 30uA

3. Functions of each trigger

Function of Action Button:

B.One Smart Sensor is not in the Z-Wave network:

Trigger	Description
Short press 1 time (within 1 second)	1. Led will blink for 5 seconds, send non-security Node Info frame. 2. Add for inclusion (non-security): <ol style="list-style-type: none">1. Insert the AAA battery.2. Set the Z-Wave network main controller into learning mode.3. Triggering this action button.4. If the add for inclusion is successful, the LED will blink less than 5 seconds and then keep on 3 seconds. Otherwise, the LED will blink 5 seconds and then turn off, in which case you need to repeat the process from step 2.
Short press 3 time (within 1 second)	The same as "Short press 1 time"
Press and hold for 1-3 seconds	Led keeps on when holding the Z-Button, turn off when Z-Button is released.
Press and hold for 3-8 seconds	1. Led keep on 3 seconds and blink from the 3 rd to the 8 th then turn off; send security Node Info frame at the 3 rd second. 2. Add for inclusion (security): <ol style="list-style-type: none">1. Insert the AAA battery.2. Set the Z-Wave network main controller into learning mode.3. Triggering this action button.4. If the add for inclusion is successful, the LED will blink less than 5 seconds and then keep on 3 seconds. Otherwise, the LED will blink 5 seconds and then turn off, in which case you need to repeat the process from step 2.
Press and hold more than 8 seconds	Led will turn off

B.One Smart Sensor is in the Z-Wave network:

Trigger	Description
Short press one time (within 1 second)	Led will keep on for 3 seconds
Short press 3 time (within 1 second)	1. Led will blink for 5 seconds; sending Node Info frame. 2. Remove for exclusion;

	<ol style="list-style-type: none"> 1. Insert the AAA battery. 2. Set the Z-Wave network main controller into learning mode. 3. Triggering this action button. 4. If the remove for exclusion, the LED will turn off within 1 second. Otherwise, the LED will blink 5 seconds and then turn off, in which case you need to repeat the process from step 2.
Press and hold for 1-3 seconds	Led keeps on when holding the Z-Button, turn off when Z-Button is released.
Press and hold for 3-20 seconds	<ol style="list-style-type: none"> 1. LED will blink to the 20th second. 2. Door/Window Sensor will send "wake up notification command" to the nodes which is assigned by "Wake Up Command". 3. Door/Window Sensor will enable/disable "awake for 5 minutes function".
Press and hold more than 20 seconds	<p>Reset Door/Window Sensor;</p> <p>Triggering this action, led will keep on until the Z-Button is released; Door/Window Sensor will send "Device_Reset_Locally" to the main controller and exclude from the Z-Wave network when the Z-Button is released, this procedure will reset the Sensor to factory default.</p>

4. Security and non-security features of B.One Smart Sensor in Z-Wave network

Door/Window Sensor can be included into a Z-Wave network as a non-security or security device.

1. The way to add for inclusion is different.

1.1 Add for inclusion (non-security):

5. Insert the AAA battery.
6. Set the Z-Wave network main controller into learning mode.
7. Triple or single short press the Z-button.
8. If the add for inclusion is successful, the LED will blink less than 5 seconds and then keep on 3 seconds. Otherwise, the LED will blink 5 seconds and then turn off, in which case you need to repeat the process from step 2.

1.2 Add for inclusion (security):

1. Insert the AAA battery.
2. Set the Z-Wave network main controller into learning mode.
3. Pressing and holding the Z-button for 3 seconds.
4. If the add for inclusion is successful, the LED will blink less than 5 seconds and then keep on 3 seconds. Otherwise, the LED will blink 5 seconds and then turn off, in which case you need to repeat the process from step 2.

2. Node info frame is different.

2.1. Non-security device

The node info frame supports:

COMMAND_CLASS_ZWAVEPLUS_INFO V2
 COMMAND_CLASS_VERSION V2
 COMMAND_CLASS_MANUFACTURER_SPECIFIC V2
 COMMAND_CLASS_NOTIFICATION V5
 COMMAND_CLASS_ASSOCIATION_GRP_INFO V1
 COMMAND_CLASS_ASSOCIATION V2
 COMMAND_CLASS_BATTERY V1
 COMMAND_CLASS_WAKE_UP V2
 COMMAND_CLASS_POWERLEVEL V1
 COMMAND_CLASS_CONFIGURATION V1
 COMMAND_CLASS_FIRMWARE_UPDATE_MD V2
 COMMAND_CLASS_SECURITY V1
 COMMAND_CLASS_DEVICE_RESET_LOCALLY V1

2.2. Security device

The node info frame supports:

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_POWERLEVEL V1

Security Command Supported Report Frame:

COMMAND_CLASS_NOTIFICATION V5
 COMMAND_CLASS_ASSOCIATION_GRP_INFO V1
 COMMAND_CLASS_ASSOCIATION V2
 COMMAND_CLASS_BATTERY V1
 COMMAND_CLASS_WAKE_UP V2
 COMMAND_CLASS_CONFIGURATION V1
 COMMAND_CLASS_FIRMWARE_UPDATE_MD V2

5. Note for special command

5.1 Association Command

Door/Window Sensor supports two association groups.

Grouping Identifier	Max Nodes	Send Commands
Group 1	0x05	1. Notification Report. Sensor will send Notification Report when the sensor body and magnet removed or combined. 2. Battery Report. Sensor will send Battery Report when the battery level is low and the battery report's value is 0xFF.
Group 2	0x05	1.Basic Set

		Sensor will send Basic Set when the sensor body and magnet removed or combined.
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TIP:

1. The max number of associated nodes of all these 2 groups is 5.
2. Association allows for direct transmission of control command between devices and takes place without the participation of the main controller.

5.2 Basic Command

There is no relevant commands are available for mapping. Sensor will send “Basic Set” via the lifeline group.

5.3 Notification Command

1. Notification Supported Report;

There are two types notification are supported, Access Control (0x06) and Home Security (0x07).

2. Event Supported Report;

Access Control: Window/Door is open (0x16), Window/Door is closed (0x17).

Home Security: Tampering, Product covering removed (0x03), Previous Events cleared (0x00).

3. How to trigger the different notifications;

Access Control:

Window/Door is open (0x16): the separation of the main body and the magnet.

Window/Door is closed (0x17): the combination of the main body and the magnet.

Home Security:

Tampering, Product covering removed (0x03): the temper button is released.

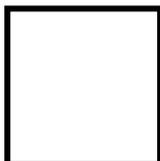
Previous Events cleared (0x00): the temper button is pressed.

5.4 RESETTING

Reset procedure clears the flood sensor's memory, including Z-Wave network controller information and advanced configuration.

To reset a Flood Sensor:

Press and hold the Z-button for more than 20 seconds and then release.



NOTE

Use this procedure only in the event that the network primary controller is missing or otherwise inoperable.

5.5 Configuration Command

Door/Window Sensor offers a wide variety of advanced configuration settings. Below parameters can be accessed from main controllers configuration interface.

NOTE: ALL NUMBERS BELOW ARE DECIMAL.

Parameter No.14 Enable/Disable BASIC SET command

Door/Window Sensor can send BASIC SET command to nodes associated with group 2.

0 – Disable.

1 – Enable.

Default setting: **0**

Parameter size: **1 [byte]**

Parameter No.15 Value of the BASIC SET

Door/Window Sensor can reverse its value of BASIC SET when the magnet is triggered.

0 –Send BASIC SET VALUE = 255 to nodes associated with group 2 when door/window is opened.

Send BASIC SET VALUE = 0 to nodes associated with group 2 when door/window is closed.

1 –Send BASIC SET VALUE = 0 to nodes associated with group 2 when door/window is opened.

Send BASIC SET VALUE = 255 to nodes associated with group 2 when door/window is closed.

Default setting: **0**

Parameter size: **1[byte]**

Parameter No.32 Level of low battery

This parameter defines a battery level as the “low battery”.

Available settings: **10-50 (10% - 50%)**

Default setting: **20 (20%)**

Parameter size: **1[byte]**