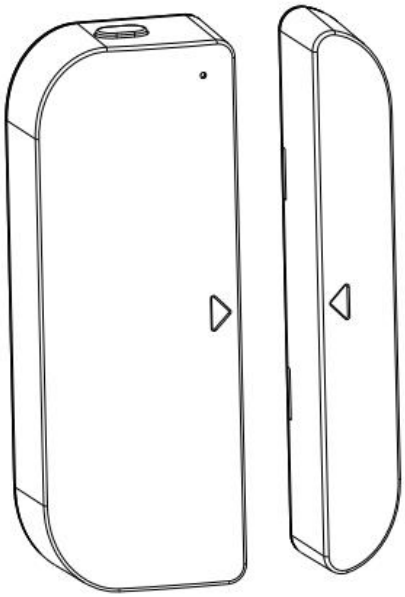


Door/Window Sensor Engineering Specification

Door/Window 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.
Door/Window 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.
Door/Window 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 Door/Window 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:

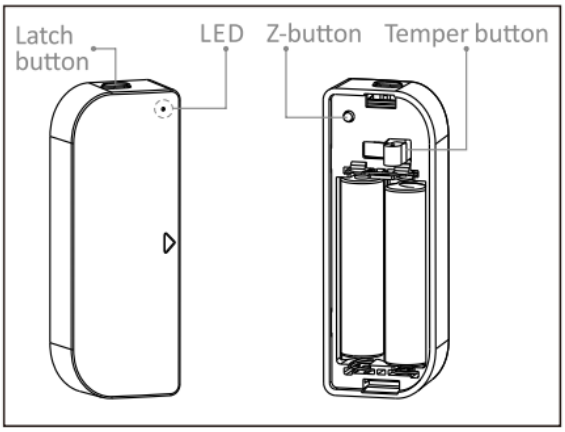
1) Door/Window Sensor contains a sensor body and a magnet.
2) Door/Window opening detected through the separation of the main body and the magnet.
3) Door/Window closing detected through the combination of the main body and the magnet.
4) The longest effective distance between the sensor body and the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

the gateway.

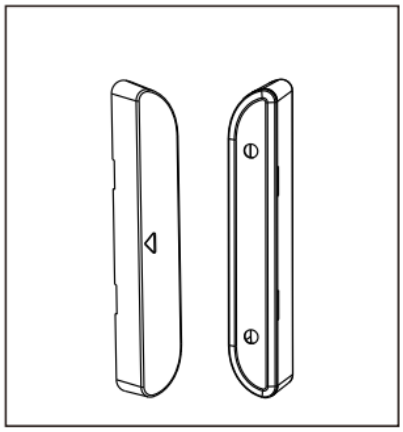
6) The battery life is up to 1 year.
7) Support low battery alarm function.
8) Support firmware OTA.

1. Familiarize yourself with your Door/Window Sensor

1.1 Door Window Sensor Layout



Sensor body



Sensor body

2. Technical specifications

Power supply:	Two AAA 1.5V Batteries
Storage environment:	-10℃-50℃ 0%-90%
Operational temperature:	0-40℃
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:

Door/Window Sensor is not in the Z-Wave network:

Trigger	Description
Short press 1 time (within 1 second)	1. Led will blink for 1 seconds. 2. **Add for inclusion(security):** 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 3 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 3-20 seconds	Led will blink fast and then turn off
Press and hold more than 20 seconds	Led keep on 1 seconds and then turn off

Door/Window Sensor is in the Z-Wave network:

Trigger	Description
Short press one time (within 1 second)	Led will keep on for 1 seconds
Short press 3 time (within 1 second)	1. Led will blink for 3 seconds; 2. **Remove for exclusion;** 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	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	**Reset Door/Window Sensor;** 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.

Smart Start function

If the device is outside the network, it starts **Smart Start** when it wakes up from hibernation. You can find the QR code of SmartStart on the side of the product. If your Z-WAVE controller supports the SmartStart function, you can use your mobile phone to scan SmartStart QR code. And if the device does not receive a controller response within 5 seconds, it will enter into **Sleep Mood** (only the controller that supports the smart start function saves the device's DSK could responds to this device).

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.

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5. Security features of Door/Window Sensor in Z-Wave network

Door/Window Sensor can be included into a Z-Wave network as a security device. **(S0 or S2)**

1. Add for inclusion (security):

1.1 Insert the AAA battery.
1.2 Set the Z-Wave network main controller into learning mode.
1.3 Pressing and holding the Z-button for 3 seconds.
1.4 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. Remove for exclusion

2.1 Insert the AAA battery.

2.2 Set the Z-Wave network main controller into learning mode.

2.3 Triggering this action button.

If the remove for exclusion, the LED will turn off within 1 second. Otherwise, the LED will blink 5 seconds and then turn off

3. Security device

2.1 The node info frame supports:

COMMAND_CLASS_ZWAVEPLUS _INFO V2
COMMAND_CLASS_SECURITY V1
COMMAND_CLASS_ SECURITY_2 V1
COMMAND_CLASS_ TRANSPORT_SERVICE V2

2.2 Security Command Supported Report Frame:

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 V4
COMMAND_CLASS_TRANSPORT_SERVICE V2
COMMAND_CLASS_SUPERVISION V1

6. Battery Command

1. When sending Battery get command to the product, the product will report the current battery power when it wakes up.

2. The battery report value 0xff will be reported to the associated node of group 1 when the product is at a low voltage (the threshold value can be configured in Configuration, the default value is less than 20% of the power).

7. Wake up command

7.1. When the product has been online, long press the Z-Wave button for more than 3 seconds to report the product has been awakened.

7.2 Wake up Interval Capabilities Report CC
Minimum Wake up Interval Seconds = 0 seconds
Maximum Wake up Interval Seconds = 2678400 seconds, that is 31 days

Default Wake up Interval Seconds = 0 seconds

Wake up Interval Step Seconds = 60 seconds

8. Note for special command

8.1 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.

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.

8.2 Basic Command

There is no relevant commands are available for mapping.

8.3 Notification Command

Supported Notification Type	Supported Event
Access Control（0x06）	Window/Door is open (0x16)
	Window/Door is closed (0x17)
Home Security（0x07）	Tampering, Product covering removed（0x03）

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.

8.5 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.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]**