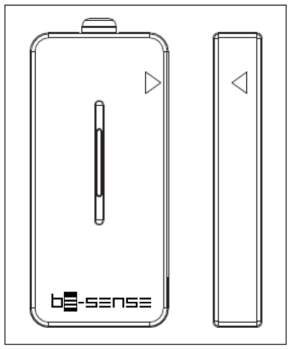
Z-Wave Plus Door/Window Sensor

Specification



I. Introduction

IM20 Z-Wave is a wireless door sensor regarded as an important part of wireless alarm panel. It can immediately detect open or close of door/window, has anti-tamper and battery level real time detection functions. With exquisite design, it will perfectly match up with your home decoration and integrate into installation environment. As it is a separation triggered door sensor, when the magnet part and main body are separate, it will send alarm signal to Control Panel and then Control Panel's buzzer rings and will call or send message to Alarm Central Station or user phones.

- Adopt imported high sensitivity magnetic sensor, with stable and reliable performance

- Special magnet position design, assure its high induction property toward metal door/window

- Ultra-low power consumption and extra-long standby time, battery life is up to 3 years

- Low battery alert

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Model No. : IM20 Z-Wave

Communication Protocol : Z-Wave Plus.

Working Voltage : 3VDC (2PCS AAA alkaline batteries)

Working Current : Static current≤9uA; transmit current≤35mA

Indoor Transmit Distance : ≥30m

Induction Distance : ≥10mm

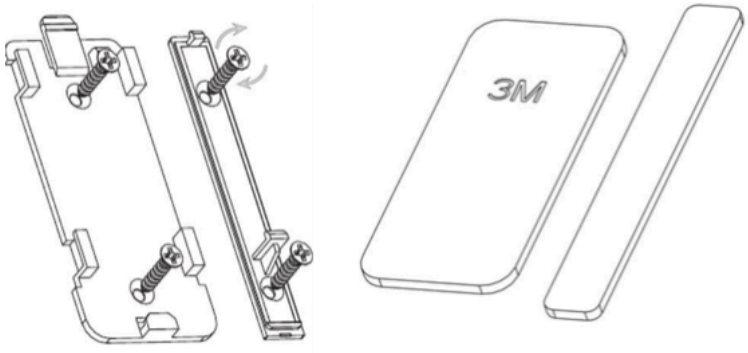
Alarm Indicator : LED status indicator

Output Signal Type : Alarm report, tamper report, battery level status.

Working Humidity & Temperature : -10°C~50°C; ≤95%RH no condensation

Dimension : 80*50*20mm (L*W*H)

Screw plate and 3M double-sided tape are included.



Screw Plate 3M Double-Sided Tape

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II. Network Inclusion/ Exclusion

The sensor must be added to the Z-Wave network prior to use. To include the sensor in a network both the sensor and the Network controller or HUB must be in inclusion mode at the same time.

Add : start by placing the controller in inclusion mode. Activate the inclusion mode at the sensor pressing the tamper switch 3 times, then the door sensor will stay in enrollment state.

Wait about 15-30 seconds while the sensor and controller finished the inclusion process.

Remove: enter the Exclusion Mode on the controller, and press the tamper switch 3 times, then the door sensor will be removed after 15-30 seconds.

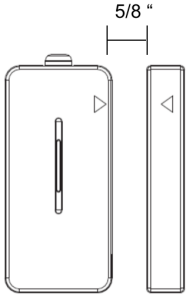
III. Restore Factory Settings

Please use this procedure only when the network primary controller is missing or otherwise inoperable.

Press the tamper switch for 6 times to restore factory settings.

a) Manual Wake-up
Quickly press tamper switch once, the door sensor will automatically send wake-up information, and there will be 10s after wake-up to receive gateway setting information.

b) Automatic Wake-up
Default time of automatic wake-up is 24 hours, and there will be 10s after wake-up to receive gateway setting information, the max automatic report time = 24 hours, minimum=30min



The edge of the magnet must align with the line on the sensor, AND the magnet must locate next to the arrow on the sensor. Maximum gap between the magnet and the sensor is 5/8”. If the magnet is not located following these rules, the sensor may not get activated.

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Here are some instructions that should help you get our Motion Sensor device handler to work in SmartThings.

Why update the handler?

- **Customized to avoid false alarms**
- **Generate Tamper alerts**
- **Battery indicator**
- **Colors and Background improved**

How to ADD a device Handler for the BeSense Motion Sensor?

1. Log in here with the same username and password you use for your SmartThings app: **https://graph.api.smartthings.com/login/auth**

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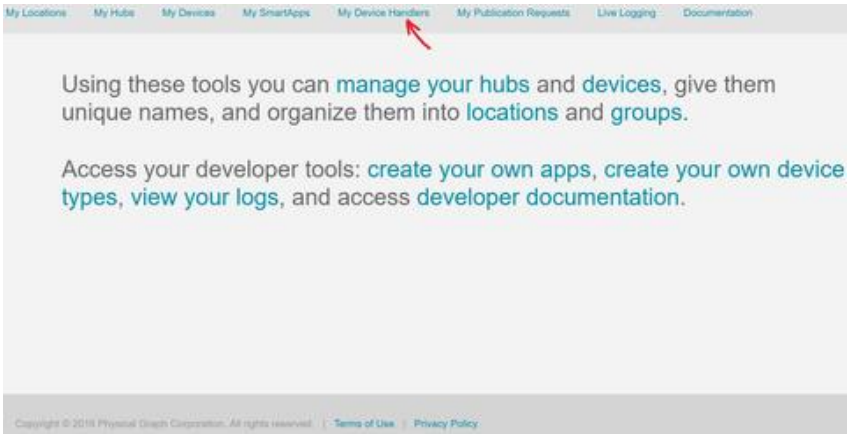
2. Click on My Device Handlers in the top menu



3. In the top right corner, click on **Create new device handler** and choose **From code** from the top tab menu. You'll be presented with a blank area where you can copy the code from this link and paste it in (it's always best to use the raw version of the code)

https://besense-iot/smartthings/besense_handler.txt

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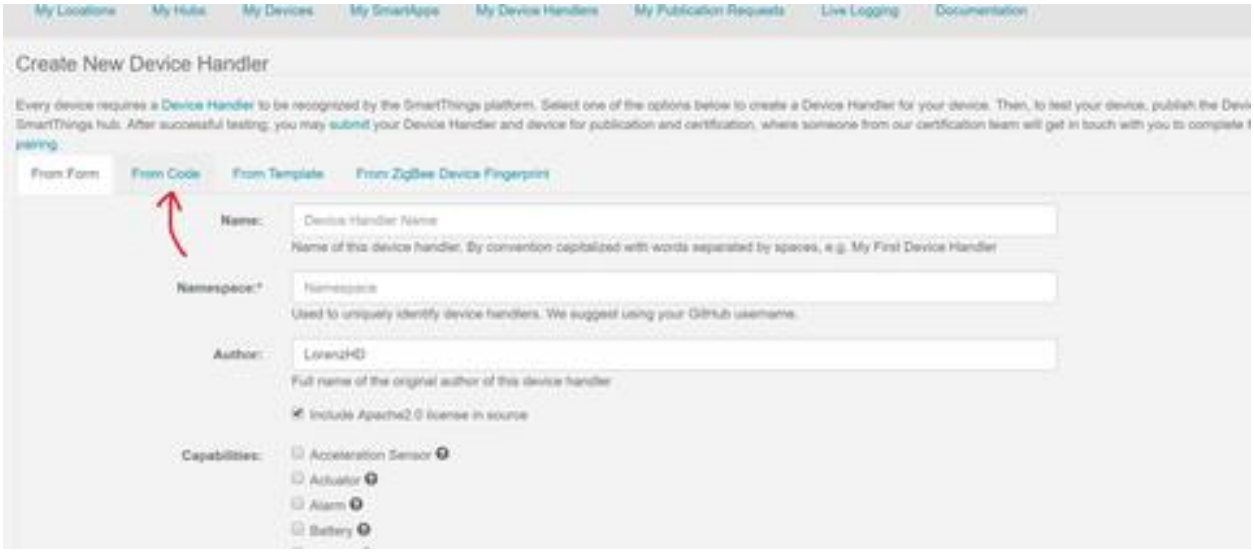
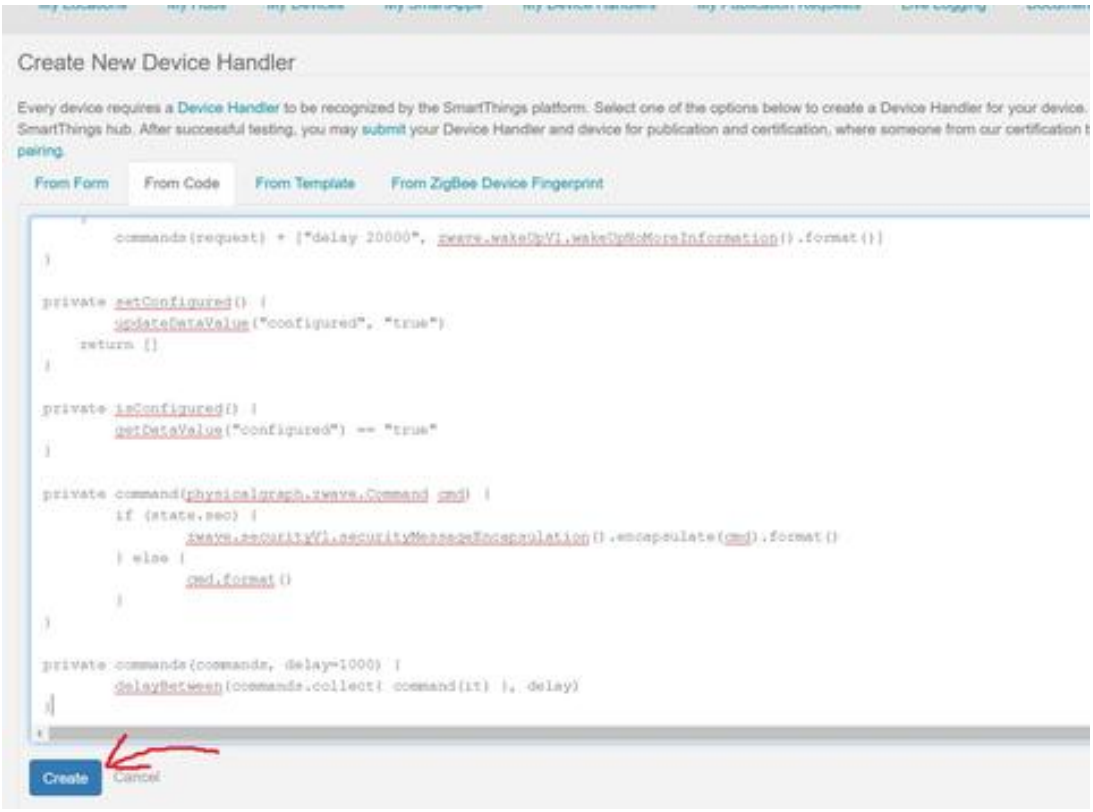


4. Next, scroll to the bottom and click **Create**. Now click Save, then click **Publish > for me.**



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You should now see this device type in your list of Device Handlers

How To assign a custom DEVICE HANDLER to my Z-Wave device

Simply exclude the device if you had included it prior to installing the new device handler. Then add the device to your SmartThings hub by clicking on Add thing > + Connect New Device in your app. Press and release the tamper switch three times on the sensor quickly.

Remember to keep the device within 3 feet away from your hub during inclusion — the device should be automatically discovered as the BeSense Motion sensor. Then, leave the sensor by the hub for a few hours so it can fully configure.

And that should be it! I hope this was helpful in simplifying the process behind custom device handlers. Feel free to contact us if you have any question.

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BeSense Z-Wave

Command Class Specification

Lifeline Group

When the door sensor is opened or recovered, it will send “Binary Sensor Report” and “Notification Report” commands to the device under Lifeline group.
When door sensor is opened:
Sensor Binary Report, Value = 0xFF, Type = 0x0A

Notification Report, Notification Type = 0x06, Event = 0x17

When door sensor is recovered:

Sensor Binary Report, Value = 0x00,Type = 0x0A

Notification Report, Notification Type = 0x06, Event = 0x16

When tamper switch is triggered or recovered, the door sensor will send “Sensor Binary Report” and “Notification Report” command to the device under Lifeline group.
Tamper Triggered:
Sensor Binary Report, Value = 0xFF,Type = 0x08

Notification Report, Notification Type = 0x07, Event = 0x03

Tamper recover (press tamper switch for 0.5s):
Sensor Binary Report, Value = 0x00, Type = 0x08

Notification Report, Notification Type = 0x07, Event = 0x00

Battery report

When the door sensor is wake-up it will check the battery status. If the battery status is low it will send the Battery Report to the gateway under Lifeline group every hour.

Battery Report, Battery Level = 0xFF

Association Group2

If there is any device under Association Group2, the door sensor will send “BASIC SET” command to control those devices when the door sensor is triggered. For example: when the door sensor is triggered, it sends adjustable parameter “BASIC SET” command to a lamp under

Group2, you can adjust the lamp's luminance through the parameters of this command; if the set light-up time out (see the Configuration Description), the sensor will send "BASIC SET"command to turn-off the lamp.

When sensor is triggered:

[Command Class Basic， Basic Set,Value = 0xFF(default 0xFF, configurable, see the Configuration Description)]

When light-up time out:

[Command Class Basic， Basic Set,Value = 0x00]

Configuration Description

a) "Basic Set" configuration

If there is any device under Association Group2, the door sensor will send "Basic Set = value" command to control that device when the door sensor is opened. "Value" configuration rule is as below:

Function	Parameter	Byte	Range	Default
Basic Set Level	1	1	1-100 or 0xFF	0xFF

b) Turn Off Light Time Configuration

If there is any device under Association Group2, the door sensor will send "Basic Set = value" command to Group2, and send "Basic Set = 0x00" command to turn-off light after "t" seconds, Set value = "t", means to send Basic Set command after "t" seconds.

Function	Parameter	Byte	Range	Default
Turn Off Light Time	2	1	1-120	20

c) Door Sensor Status Report

The Door Sensor will automatically send the tamper status.

Set value = t, If "t" >0 means "t" hours if "t"= 0 NO status report active.

Function	Parameter	Byte	Range	Default
Auto report Door/Window status time	3	1	0-24hour	12hours

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Z-Wave Supportive Commands

Generic Deice Type =

GENERIC_TYPE_SENSOR_BINARY

Specific Device Type =

SPECIFIC_TYPE_ROUTING_SENSOR_BINARY

Support Command Class =

COMMAND_CLASS_ZWAVEPLUS_INFO_V2

COMMAND_CLASS_ASSOCIATION_V2

COMMAND_CLASS_WAKE_UP_V2

COMMAND_CLASS_BATTERY

COMMAND_CLASS_ZWAVEPLUS_INFO_V2

COMMAND_CLASS_ASSOCIATION_GRP_INFO

COMMAND_CLASS_NOTIFICATION_V4

COMMAND_CLASS_SENSOR_BINARY_V2

COMMAND_CLASS_MANUFACTURER_SPECIFIC_V2

COMMAND_CLASS_VERSION_V2

COMMAND_CLASS_POWERLEVEL

COMMAND_CLASS_DEVICE_RESET_LOCALLY

Commands to Control Other Devices: COMMAND_CLASS_BASIC