Z-Wave Door Window Sensor

TUV · Z-WAVE PLUS · CE · FC · RoHS COMPLIANT

Important: *Read All Instructions Prior to Installation*

Function introduction

LED indicator

Action Button

Back cover
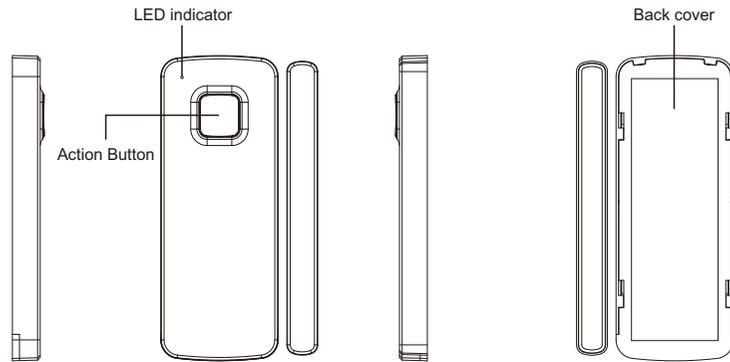
Product Data

Radio Frequency	868.42 MHZ (EU)/869.0 MHZ (RU)/908.42 MHZ (US)
Power Supply	3VDC (2 CR2450 Batteries)
Operating temperature	0 to 40°C
Relative humidity	8% to 80%
Dimensions	Sensor: 98×38×6(mm), magnet: 98×10×6(mm)

Safety & Warnings

• This device contains button lithium batteries that shall be stored and disposed properly.
• DO NOT expose the device to moisture.

Quick Start

How to install:
• Step 1: take off the back cover and remove battery protective film and close the cover.
• Step 2: activate inclusion mode on your Z-Wave controller.
• Step 3: activate inclusion mode of the sensor by triple press the action button and LED indicator will flash fast for 6 seconds then stay solid on for 3 seconds to indicate successful inclusion.

Product Description

The Z-Wave Door Window sensor is a wireless, battery powered contact sensor, compatible with the Z-Wave Plus standard. Changing the device's status will automatically send signal to the Z-Wave controller and associated devices. Sensor can be used to trigger scenes and wherever there is a need for information about opening or closing of doors, windows, garage doors, etc. Opening is detected by separating the sensor's body and the magnet.

The encryption modes that the sensor supports are S0, S2 Unauthenticated. When the door window sensor is being included into a Z-Wave network, you can use your primary controller/gateway to enable one encryption mode or disable encryption. (The primary controller/gateway shall support encryption mode configuration).

Physical Installation

1. Peel off the protective layer from the sticker on the sensor.
2. Stick the sensor onto the door/window frame.
3. Peel off the protective layer from the sticker on the magnet.
4. Stick the magnet onto the moving part of the door/window, no further than 5mm from the sensor.

Positioning of the Sensor and the magnet:
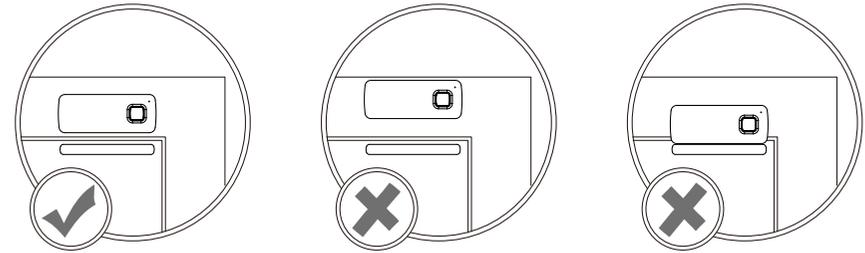
Correct positioning of the magnet in relation to the Sensor:
(vertical line marks should align)

max. 5mm
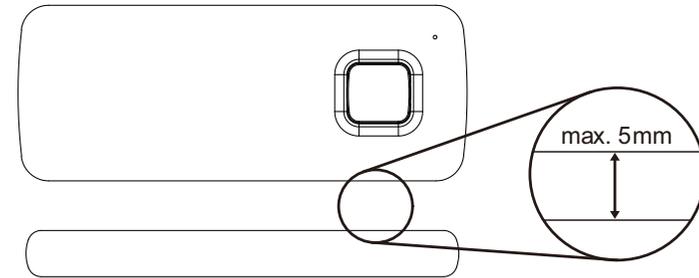
Inclusion (adding to a Z-Wave network)

1. Set primary controller/gateway into inclusion mode (Please refer to your primary controllers manual on how to turn your controller into inclusion).
2. Make sure the sensor does not belong to any Z-Wave network. Press the action button, if the LED indicator flashes 3 times slowly, it means it does not belong to any network, if the sensor has already been included into a network, it shall be removed from the network first. There are two methods to set the sensor into inclusion mode:
1) Remove the batteries and install them again to repower on the sensor, it will be set into inclusion mode automatically, and waiting to be included.
2) Triple press the action button on the sensor, it will set the plug into inclusion mode.
The LED indicator will flash fast then stay solid on for 3 seconds to indicate successful inclusion. If there is no Z-Wave network available, the LED indicator will flash fast for 6 seconds and sensor will quit inclusion mode automatically.

Exclusion (removing from a Z-Wave network)

There are two exclusion methods:
Method 1: Exclusion from the primary controller/gateway as follows:
1. Set the primary controller/gateway into exclusion mode (Please refer to your primary controllers manual on how to set your controller into exclusion).
2. Triple press the action button, the sensor will be set to exclusion mode, the LED indicator will flash fast and then stay solid on for 3 seconds to indicate successful exclusion. If exclusion fails, the LED indicator will flash fast for 6 seconds and the sensor will quit exclusion mode automatically.
Method 2: Factory reset the sensor will force it to be excluded from a network. (please refer to the part "Factory Reset" of this manual)
Note: Factory reset is not recommended for exclusion, please use this procedure only if the primary controller/gateway is missing or otherwise inoperable.

Factory Reset

Press and hold down action button for over 10 seconds, during this process, LED indicator will accelerate flashing, then LED indicator will stay solid on for 3s to indicate successful factory reset, release action button, the sensor will restart automatically.

Association

Z-Wave devices control other Z-Wave devices. The relationship between one device controlling another device is called association. In order to control a different device, the controlling device needs to maintain a list of devices that will receive controlling commands. These lists are called association groups and they are always related to certain events (e.g. button pressed). In case the event happens all devices stored in the respective association group will receive a common wireless command.

Association Groups:

Association Groups	Group Name	Max Nodes	Description
Group 1	Lifeline	5	1. When factory reset the sensor, send "Device Reset Locally Notification CC" to associated devices of this group to report factory reset information. 2. When the sensor state changes, send "NOTIFICATION CC" to associated devices of this group. 3. When the battery power is low, send " BATTERY CC" to associated devices of this group.
Group 2	On/Off Control	5	When the sensor is turned on/off, send "BASIC_SET". It can be configured by configuration parameter 02 to send BASIC=0XFF(ON), BASIC=0X00(OFF) or disable this function.

Set and unset associations:
(Note: All association information will be cleared automatically once the sensor is excluded from a network.)
Set association by operating primary controller/gateway to send packets to the sensor:
The primary controller/gateway sends packets to the sensor using "Command Class ASSOCIATION"

Node Information Frame
The Node Information Frame is the business card of a Z-Wave device. It contains information about the device type and the technical capabilities. The inclusion and exclusion of the device is confirmed by sending out a Node Information Frame. Beside this it may be needed for certain network operations to send out a Node Information Frame.
How to send out Node Information Frame:
When the sensor is set to inclusion/exclusion mode again, it will send out Node Information Frame, there are 2 kinds of operation as follows:
1. Triple press the action button, the sensor will be set to inclusion/exclusion mode, then send out Node Information Frame.
2. When the sensor is under inclusion mode, there are two kinds of operation:
1) Triple press action button, the sensor will be set to inclusion mode again, and send out Node Information Frame.
2) If the sensor does not belong to any Z-Wave network, remove the batteries and reinstall them to repower on the sensor, it will be set to inclusion mode automatically, and send out Node Information Frame.

Technical Data

Wireless Range	Up to 100 m outside, on average up to 40 m inside buildings
SDK	6.71.03
Explorer Frame Support	Yes
Device Type	Sensor - Notification
Generic Device Class	GENERIC_TYPE_SENSOR_NOTIFICATION
Specific Device Class	SPECIFIC_TYPE_NOTIFICATION_SENSOR
Role Type	Reporting Sleeping Slave (RSS)
Routing	No
FLiRS	No

Notification report event

notification Type	Triggering Event
Access Control（0x06）	Access Control Door/window opened（0x16）
Access Control（0x06）	Access Control Door/window closed（0x17）

SUPPORTED COMMAND CLASS

Node Info		Support S2
COMMAND_CLASS_ZWAVEPLUS_INFO	V2	
COMMAND_CLASS_SECURITY	V1	
COMMAND_CLASS_SECURITY_2	V1	
COMMAND_CLASS_TRANSPORT_SERVICE	V2	
COMMAND_CLASS_SUPERVISION	V1	
COMMAND_CLASS_MANUFACTURER_SPECIFIC	V2	YES
COMMAND_CLASS_VERSION	V2	YES
COMMAND_CLASS_BATTERY	V1	YES
COMMAND_CLASS_WAKE_UP	V2	YES
COMMAND_CLASS_CONFIGURATION	V1	YES
COMMAND_CLASS_ASSOCIATION_GRP_INFO	V1	YES
COMMAND_CLASS_ASSOCIATION	V2	YES
COMMAND_CLASS_FIRMWARE_UPDATE_MD	V4	YES
COMMAND_CLASS_POWERLEVEL	V1	YES
COMMAND_CLASS_DEVICE_RESET_LOCALLY	V1	YES
COMMAND_CLASS_NOTIFICATION	V3	YES
COMMAND_CLASS_MULTI_CHANNEL_ASSOCIATION	V3	YES

Controlled Command Classes (1):		Support S2/S0
COMMAND_CLASS_BASIC	V1	YES

Wake Up Notification
Once the sensor is included to a Z-Wave network, press and hold down the action button for 3-5 seconds to send WAKE_UP_NOTIFICATION, LED indicator will flash fast and then stay solid on, which will wake up the device, wake up interval can be configured by CONFIGURATION_SET (10S-1800S). Press the button again to force the device to sleepy mode again, LED indicator will turn off.
If the device is not added to a Z-Wave network, the LED indicator will turn off and go to sleepy mode.

Wake up interval
Available settings: 0 or 60s-2678400s (max. time 31 days).
Default setting: 28800 (8h)
Interval Step: 60s,
This device is battery powered device, under normal conditions it is under sleepy mode, users have to set the wake up interval.

If the value is set as 0, the device will never wake up and send notification to Z-Wave gateway. If the value is set as a valid non-zero data, the sleepy mode of the device will last for the time set above, and the device will wake up and send notification to Z-Wave gateway. If Z-Wave gateway replies with "wake up no more", the device will enter to sleepy mode and waiting for the next interval to wake up. If there is no reply from the gateway, the device will enter to sleepy mode after 10 seconds and waiting for the next interval to wake up. The longer the interval is, the more power can be saved.

Configuration Command Class

Parameter HEX (DEC)	Size	Description	Default Value
0x02(2)②	1	0x00, disable to open and close the door, send basic set 0x01, enable to open the door, send basic set, enable to close the door, do not send basic set 0x02, enable to open the door, do not send basic set, enable to close the door, send basic set 0x03, enable to open the door, send basic set, enable to close the door, send basic set	1
0x03(3)	1	0x01, when the door is opened, send BASIC_SET=0xFF, when the door is closed, send BASIC_SET=0x00; 0x00, when the door is opened, send BASIC_SET=0x00, when the door is closed, send BASIC_SET=0xff	1
0x04(4)	2	10-1800(30min), unit is second, Wake up interval (time for the device to enter to sleepy mode again after press and hold down the button to wake up it)	10
0x05(5)①	4	0x01, automatic waking up, send battery power state 0x00, automatic waking up, do not send battery power state	0

Remarks:

① if automatic waking up time is configured as 0, battery power state will only be sent under lower battery power state.

② if notification type(set 0x00) is disabled, even if this parameter is valid, no basic set will be sent.