Door/Window Sensor

User's Manual

Introduction

The Door/Window Sensor is a wireless,battery powered,Z-Wave compatible reed sensor.Each time the sensor's body and a magnet separate,a radio signal is sent.In addition,the Door/Window Sensor supports one potential-free input and self-power adapter of DC 9V~30V.The Door/Winidow Sensor is designed for use with home automation systems,alarm and surveillance systems and everywhere else where information related to opening/closing of doors,garage gates,etc. is needed.

Package Contents

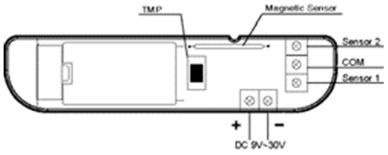
- Door/Window sensor x1
- Contact Magent x1
- Screws x4
- Conical Anchors x2
- Body Adhesive x1
- Magnet Adhesive x1
- Battery x1

Sensor Installation

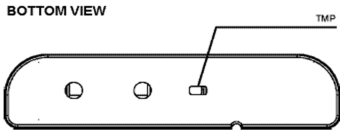
1.Connect Door/Window Sensor according to the appropriate diagram (if necessary)
2.Place battery inside the Sensor's casing
3.Include into the Z-Wave Home Gateway
4.Install Door/Window Sensor observing diagram
EXPLANATION OF CONDUCTOR MARKINGS
TMP: Tamper button. Detects removal, tampering etc. Used also as a service button, to include/exclude the device to/from the Z-Wave Home Gateway
N.C.: Sensor 2 (N.O. or N.C.)
N.O.: Sensor 1 (N.O. or N.C.)
+: DC Input Voltage "+"
- : DC Input Voltage "-"

Product Overview

TOP VIEW

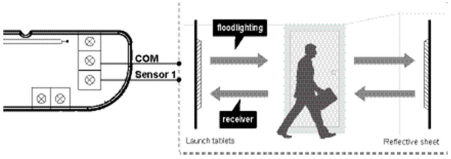


BOTTOM VIEW

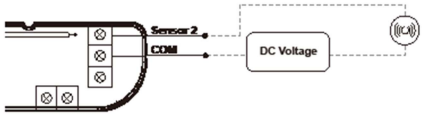


Application Diagram

Infrared Breaker Diagram
The illustrations below show the applications of the infrared breaker. When Sensor 1 is set to N.O.

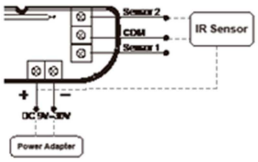


N.C. Diagram
The illustrations below show the applications of N.C. (Normal Close). The function can be used as alarm type siren device.When Sensor 1 is set to N.C.



Sensor 1	Sensoe 2
N.O.	N.O.
N.C.	N.C.
N.O.	N.C.
N.C.	N.O.
N.O.	X
N.C.	X
X	N.C.
X	N.O.

IR Sensor Diagram
The illustrations below show the applications of IR Sensor.

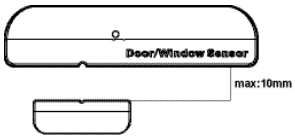


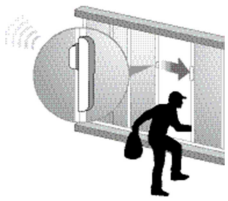
GLOSSARY OF TERMS

- INCLUSION - the device sends out a Node Info frame, which makes it possible to add it to the Z-Wave Home Gateway
- EXCLUSION - remove the device from the Z-Wave Home Gateway
- ASSOCIATION - controlling other devices included in the Z-Wave Home Gateway

Sensor Start-up
Installation of the Door/Window Sensor
Step 1
Install the device observing the figure below for correct positioning of
the sensor and the magnet. Close the sensor's casing.
Include/Exclude the Door/Window Sensor to/from the Z-Wave Home Gateway.
Step 2
The Door/Window Sensor is added to the network by quickly pressing the TMP button three times (the button is located on the underside of the device, inside its casing).
Step 3
When successfully include the device to the network, the Z-Wave Home Gateway will send out the signal.

Correct positioning of the Sensor and the magnet





Install battery for the first time: Split the top and bottom lids with both thumbs.
Replace battery: Remove the top lid to the right with the right thumb and index finger.

NOTE: For Sensor 1, connect with IR Sensor electronic products, the contact should be under 0.7V, so as not to repeat the trigger.

LED Indicator

1.Install the battery for the first time, or LED does not glow when the
upper lid is open.
2.After paired up, the respective LED status will be as below:

Status	LED Signal	Note
No node ID (Before inclusion)	Blue LED 1 sec. flash 3 times, 1	
Inclusion	Blue LED solid light / Blue LED	
Exclusion	Blue LED 1 sec. flashes 3 times, 1	
After inclusion	Fast flashing in inclusion; solid light when	If no action is detected, the device will enter Sleep mode after 5 sec.
Detect Switch press to ON status and Reed switch is ON	Blue LED off	Same as above

Status	LED Signal	Note
Detect Switch press to ON status and Reed switch is	Blue LED on	Sames as above
Detect Switch press to OFF status and Reed switch is ON	Blue LED on	Sames as above
Detect Switch press to OFF status and Reed switch is	Blue LED on	Sames as above
Low power(under 20%)	Blue LED flashes once every second	1. Send Battery report every 3 sec. 2. Add Config to set the Battery report time interval 3. Options: 3 min. /5 min. /10 min. (Default: 3 min.) 4. Battery report will be created on wake-up
NC	Enable Blue LED on, Disable LED off	Make sure the top and botttom lids are closed, and the bottom switch is pressed
NO	Enable Blue LED on, Disable LED off	Same as above

NOTE:
1. The initial default values of Sensor 1/Sensor 2 are Both "0x00", and can be set to NO or NC via software.
2. If NO&NC are both triggered(less than 50ms),the Software may not be able to determine the action.
3. The device is equipped with the automatic inclusion and automatic exclusion function. If you want to manually include or exclude the device, press Tamper three times repeatedly to perform the actions.
4. LED Status

	Battery Mode	External Power Mode(9~30v)
Sensor1	LED Off	LED Off
Sensor2	LED Off	LED Off
Reed Switch/Tamper	LED solid on when either one triggered	LED solid on when either one triggered
Reed Switch/Tamper	LED off when neither one triggered	LED off when neither one triggered

5. When the external power supply, the device will change the Role type to AOS mode (Always on Slave); so use this device, please note that the use of the environment for the battery or external power supply, when "include", so use the same environment include, please.

Door/Window Sensor Operation

The Door/Window Sensor may be operated using:

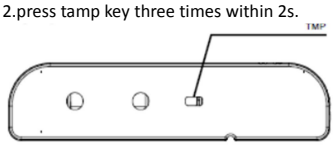
- Any System compatible controller(e.g. Z-Wave Home Gateway)
- Cellular phone(e.g. Pad or phones from other manufacturers,with the proper control application)
- PC,with the use of an internet browser,
- Tablets(e.g. Pad)
- Using the TMP button,located inside the housing.

Command Class

Door Sensor Command Class Supported
COMMAND_CLASS_ZWAVEPLUS_INFO_V2,
COMMAND_CLASS_ASSOCIATION_V2,
COMMAND_CLASS_ASSOCIATION_GRP_INFO,
COMMAND_CLASS_BASIC,
COMMAND_CLASS_BATTERY,
COMMAND_CLASS_DEVICE_RESET_LOCALLY,
COMMAND_CLASS_CONFIGURATION,
COMMAND_CLASS_POWERLEVEL,
COMMAND_CLASS_WAKE_UP_V2,
COMMAND_CLASS_NOTIFICATION_V4
COMMAND_CLASS_MANUFACTURER_SPECIFIC_V2,
COMMAND_CLASS_VERSION_V2,
COMMAND_CLASS_FIRMWARE_UPDATE_MD_V2

Door Sensor Device Information
Basic Type : BASIC_TYPE_ROUTING_SLAVE
Generic Type : GENERIC_TYPE_SENSOR_NOTIFICATION
Specific Type : SPECIFIC_TYPE_NOTIFICATION_SENSOR

Door Sensor Inclusion (Adding to Z-Wave network)
1.enable add/remove mode on main controller
2.press tamp key three times within 2s.



Door Sensor Exclusion (Removing to Z-Wave network)
1.enable add/remove mode on main controller,
2.press tamp key three times within 2s.

Associations
An association group sends an unsolicited command to the configured destinations when triggered by an event.

Associated Groups:
Group1:"Lifeline" :
Group1 is used to send Sensor trigger status(BATTERY, NOTIFICATION, DEVICE_RESET_LOCALLY NOTIFICATION) to the controller.

Group2:"Sensor Reed rep":
When the Sensor Reed rep is triggered, a NOTIFICATION REPORT is sent to the Device in Group2.

Group3:"Sensor Tamper rep":
When the Sensor Tamper rep is triggered, a NOTIFICATION REPORT is sent to the Device in Group3.

Group4:"Sensor S1 rep":
When the Sensor S1 rep is triggered, a NOTIFICATION REPORT is sent to the Device in Group4.

Group5:"Sensor S2 rep":
When the Sensor S2 rep is triggered, a NOTIFICATION REPORT is sent to the Device in Group5.

Note: Up to 5 Device per Group

Basic
The user can also enquire the Sensor Tamper status of the unit using BASIC_GET command via Z-WAVE Controller, it will return BASIC _REPORT Command.

Configuration parameters
This class is used for setting certain vendor specific configuration variables.

See the following table for configuration variables:

ID	Name
1 (0x01)	The interval time of sending Battery Report when the battery runs out of electricity
2 (0x02)	Set the configuration of 2 external sensors

ID	SIZE	Range	Default Value	Description
1 (0x01)	1byte	1~30	3	
2 (0x02)	1byte	0~3	0	0 (00b): S1 NO, S2 NO 1 (01b):S1 NO,S2 NC 2 (10b):S1 NC,S2 NO 3 (11b):S1 NC,S2 NC

Battery report
The user can also enquire the battery status of the unit using BATTERY_GET command via Z-WAVE Controller, it will return BATTERY_REPORT Command.
Battery report parameters:
0x64= ST_BATT_FULL
0x46=ST_BATT_HIGH
0x00=ST_BATT_LOW
0xFF= ST_BATT_DEAD
When the sensor is triggered or device wake up, the BATTERY_REPORT command will be sent to the controller.

Device Reset Locally
The Device Reset Locally Notification Command is used to advertise that the device will be reset to default.
In Wake up time, Press tamp key 2 times, then the third long press 5s, then device will clear the data back to the factory default.
Please use this procedure only when the network primary controller is missing or otherwise inoperable.

Wake up
The Z-Wave Window/Door Sensor stays in sleep status for the majority of time in order to conserve battery power. However, it can be woken up at specified intervals by setting WAKE_UP_INTERVAL_SET command.
After the Z-Wave Window/Door Sensor wakes up by wake up timer or trigger from any sensor, it will send Wakeup Notification Command to the node ID that requires to be reported and stay awake for 10 seconds, if no WAKE_UP_NO_MORE_INFORMATION command is received.

The Minimum wake up time is 60 seconds, the maximum wake up time is 192 days.This class is used for setting & getting wake up interval value.

Name	Size	Range	Default Value	Description
WAKE_UP _INTERVAL _SET	3bytes	60 – 16588800 (1 min – 192 days)	86400 (1 day)	Second

Powerlevel
The Powerlevel defines RF transmit power controlling Commands useful when installing or testing a network. The Commands makes it possible for supporting controllers to set/get the RF transmit power level of a node and test specific links between nodes with a specific RF transmit power level.

Firmware Update Meta Data
Support OTA (On-The-Air) firmware update function.

Certificate Regulations

EN 61000-6-3:2007 +A1:2011
EN 61000-3-2:3006 +A1:2009 +A2:2009
EN 61000-3-3:2013
EN 61000-6-1:2007
EN 301 489-1 v1.9.2
EN 301 489-3 v1.6.1
EN60950-1:2006 +A11: 2009+A1: 2010+A12: 2011
sEN 300 220-2 V2.4.1

Specification

ITEM	DESCRIPTION
Normal Power	1/2AA battery 3.6V*1(1200mAh)
External DC supply voltage	DC 9~30V
Frequency	868.42MHz / 908.42MHz / 922.5MHz
Detect type	Magnetism reed switch / NO / NC
Reed switch range (Horizontal)	10mm
Reed switch range (Vertical)	10mm
LED Indicator	Blue
Protocol	Z-Wave
Data Rate	9.6kbps / 40kbps / 100kbps
Operation Range	100 feet(About 30M)
Application	Indoor use
Operation Temp.	0℃~40℃
Dimensions	Detector: 78x18x19mm Magnet: 30x10x12mm

NOTE:
This product can be operated in any Z-Wave network with other Z-Wave certified devices from other manufacturers. All non-battery operated nodes within the network will act as repeaters regardless of vendor to increase reliability of the network.

Region Applied	Frequency	Data Rate
EU	868.42 MHz	9.6 kbps
EU	868.4 MHz	40 kbps
EU	869.85 MHz	100 kbps
US	908.42 MHz	9.6 kbps
US	908.4 MHz	40 kbps
US	916 MHz	100 kbps
JP	922.5 MHz	100 kbps
JP	923.9 MHz	100 kbps
JP	926.3 MHz	100 kbps

*Specification is subject to change without prior notice.

Regulatory Compliance

CE Caution
Electromagnetic compatibility and Radio spectrum Matters (ERM);Short Range Devices (SRD); Radio equipment to be used in the 25 MHz to 1,000 MHz frequency range with power levels ranging up to 500 mW; Part 2: Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive.

WEEE Information
For EU (European Union) member users: According to the WEEE (Waste electrical and electronic equipment) Directive, do not dispose of this product as household waste or commercial waste. Waste electrical and electronic equipment should be appropriately collected and recycled as required by practices established for your country.
For information on recycling of this product, please contact your local authorities, your household waste disposal service or the shop where you purchased the product.

Z-Wave Plus
This product 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.