Instruction Manual
Water Sensor

Thank you for your support

- Please read the instruction manual carefully before operating
- Please keep the instruction manual for future reference

Shenzhen NEO Electronics Co., LTD

Product Introduction

Water sensor is an intelligent security equipment that can transmit the Z-wave network which has particular frequency. Different countries or areas, the radio frequency of Z-wave is different. In the Z-wave network communications, water sensor can work with any Z-wave main controller. In the Z-wave network communications, water sensor can send messages to the Z-wave main controller, and realize association with other devices through the Z-wave network. In the communication with the Z-wave main controller, the water sensor can send messages to the Z-wave main controller, but it can not receive messages from the Z-wave main controller. When the water sensor is triggered, the LED light keeps on and the buzzer will make sound. The water sensor sends messages to the Z-wave main controller at the same time, the Z-wave main controller will display the current status of water sensor. Water sensor is battery powered, is small and can be installed easily.

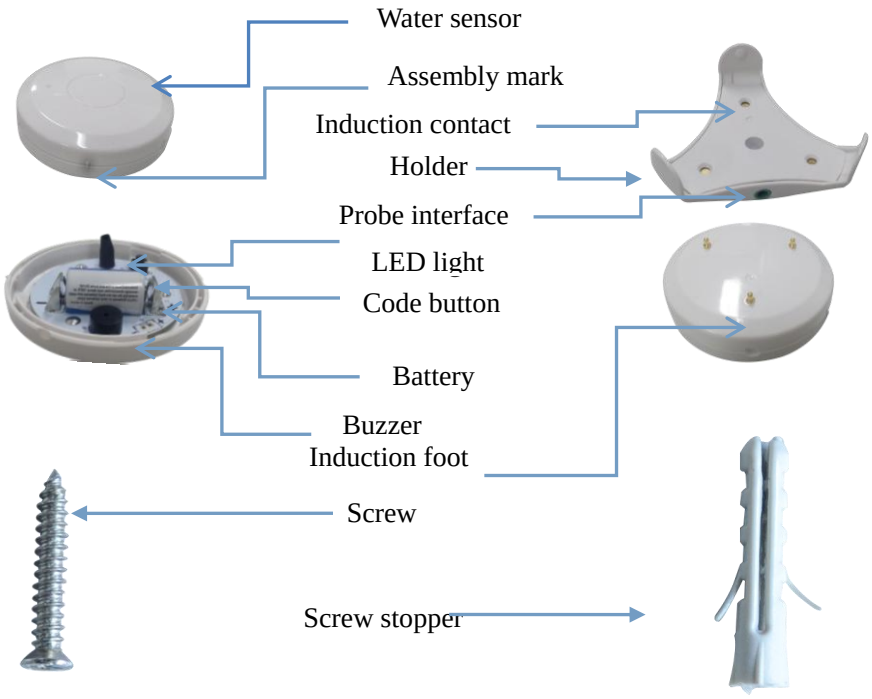
Technical Parameters

- Flood detection
- Battery specification: CR2 x 1
- Standby current: 2 uA Max current: 32 mA
- Battery life: 2 years
- Radio Protocol: Z-wave
- Radio Frequency: 868.4MHz EU；908.4MHz US
- Wireless distance: Up to 50m outdoor, Up to 30m indoor
- Operation temper: 0-40℃
- Storage temperature: 0-60℃
- Size (D x W x H): 68mm x 68mm x 34mm

Technical Information

- When alarm triggered, LED light flashes in the detection area.
- Easily install with screws or sticker .
- Detecting the location of the overflow timely and accurately , reduce the economic losses caused by the overflow of water.
- Compatible with any Z-wave main controller.
- High sensitivity and good stability.

Product Configuration



Product List

- Water sensor 1pc
- Holder 1pc
- Battery 1pc
- Screw 2pcs
- Screw stopper 2pcs
- Probe 1pc
- Instruction manual 1pc

Including Sensor (Water Sensor) to Z-wave Network

The water sensor can be included to the Z-wave network by pressing the code button.
1) Power to the code, the device is plugged into the power 20S can not have any operation!
2) Disassemble the water sensor and insert the battery into the water sensor. Make sure the device locates within the network of the Z-wave main controller.
3) Set the Z-wave main controller into the learning mode (see main controller's operating manual).
4) Quickly, triple click the code button, LED light flashes red for 5 times.
5) Water sensor will be detected and included in the Z-wave network.
6) Wait for the main controller to configure the water sensor.

Excluding Sensor (Water Sensor) from Z-wave Network

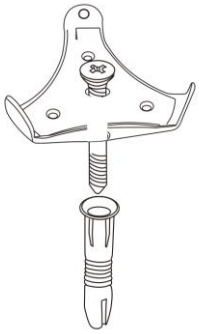
1) Make sure the sensor is connected to power source.
2) Set the Z-wave main controller into the learning mode (see main controller's operating manual).
3) Quickly, triple click the code button, LED light flashes red for 5 times.
4) Wait for the Z-wave main controller to delete the sensor.

Installation Steps

- Holder Installation
- Battery Installation
- Fix water sensor on the holder
- Probe installation

Holder Installation

Fix the holder with screws and screw stopper



Battery Installation

Open the water sensor Install the battery Close the water sensor

Fix Water Sensor on the Holder

NOTE：
1.When assembling the water sensor, please align the assembly mark.
2.When fixing water sensor on the holder, please align the induction foot and the induction contact.

Tips

- Make sure the water sensor is in the Z-wave main controller's network.
- Do not install in the place near water vapor or smoke.
- Do not install the water sensor main body and the probe in the place where water is soaked.
- The sensor probe should be placed on the surface of the water leakage.
- Association allows for direct communication between Z-wave network devices. Main controller does not take part in such communication. Using this mechanism, water sensor may communicate with other devices even when the main controller is damaged.

Restore the Sensor (Water Sensor) to Factory Default Settings

Reset procedure will delete all information on the Z-wave network and Z-wave controller, and restore the sensor to factory default settings.
1. Remove the device cover.
2. Make sure the water sensor is connected to power source.
3. Press the reset button for 10 seconds, LED light flashes red for 1 times.
4. Release the button.

NOTE
When the water sensor is being restored factory settings, please make sure power source is connected.

The Status of LED
1. When the water sensor is triggered,the LED light will keep on red until the probe is not socked in the water.
2. When the water sensor installs battery, LED light will flash red for 5 times.
3. Quickly, triple click the code button ,add the water sensor to the Z-wave network or delete water sensor from Z-wave network , LED light flashes red for 5 times.
4. Press the code button for 10 seconds, the water sensor will be restored to factory default settings, LED light flashes red for 1 times.

5. In normal condition, the LED light keeps off.
6. Wakeup motion detector, press the button once to wake up the device and send wakeup notification to controller, LED light flashes red for 1 times.

Battery Usage Tips
Battery life of the contact sensor is approximately 2 years at factory default settings. The current battery level is displayed in the gateway. Red battery icon means the battery needs replaced. In order to avoid tamper detection, while replacing the battery, please disconnect the association of the contact sensor with other devices.

Note
Water sensor is powered by battery. Using batteries other than specified may result in explosion. Dispose of properly, please observe environmental protection rules.

Advanced Configuration

1. Configuring the OFF Delay

This configuration parameter that can be used to adjust the amount of delay before the OFF command is transmitted.

Function: Basic Set.
Parameter Number: 2.
Parameter Size: 2 Byte
Available Settings： 1 ~ 65535 (in seconds, each 1s).
Default Setting: 30 (s)

2. Basic Setting Command

When the mouse zapper trigger alarm, it will send basic setting command with parameters. The receiver will execute this parameters. For example, when the lamp receive the basic setting command, the parameters of the command decides the brightness of this lamp.

Function: Basic Set
Parameter Number: 1
Parameter Size: 1 Byte
Available Settings： 0, 1 ~ 99 or 255
0 – OFF, Alarm canceling or turning a device off
1 ~ 99 or 255 – ON (Binary Switch Device)
Dim Level (Multilevel Switch Device)
Default Setting: 99

Add the Sensor to Z-Wave Network

1. Remove the sensor cover.
2. Make sure the sensor is powered.
3. Set Z- Wave controller or Z- Wave gateway into inclusion mode (Refer to the controller or gateway operating manual)
4. Press the button three times within 1.5 second, the device will enter inclusion mode. And the LED will flash on and off alternately five times.

Remove the Sensor from Z-Wave Network

1. Remove the device cover.

2. Make sure the sensor is powered.
3. Set Z- Wave controller or Z- Wave gateway into exclusion mode (Refer to the controller or gateway operating manual)
4. Press the button three times within 1.5 second, the device will enter exclusion mode.

Battery Check Command

The users can check the battery status of the water sensor by sending BATTERY_GET command. Once the water sensor receives the command, it will return BATTERY_REPORT command. If the water sensor will send BATTERY_LEVEL = 0xFF command to the Z-wave Controller, it shows that the water sensor is is battery off, otherwise BATTERY_LEVEL range should be 0% to 100%.

Wake up Command Class

The mouse zapper stays dormant most of time, in order to conserve battery.
The minimum wake up interval is 120s
The maximum wake up interval is 16,777,215s (about 194 days)
Allowable interval among each wake up interval is 1 second, such as 120, 121, 122…

Restore the Sensor to Factory Default Settings

Reset procedure will remove all information on the Z- Wave network and Z- Wave controller or Z- Wave Gateway, and restore the sensor to factory default settings.

1. Remove the device cover.
2. Make sure the sensor is powered.
3. Press and hold the button for 10 seconds, led will blink once.
4. Release the button.

Wakeup the Sensor Manual

User can press button once to wake- up this sensor to send wakeup notification to controller, the Led will be blink one time.

Associations (Association Command Class Version 2)

This Sensor supports 4 association groups. Each group supports max 5 associated nodes.

This has the effect that when the sensor is triggered, all devices associated with the sensor will receive the relevant reports. Through an association the sensor may control another Z- Wave network device, e.g. siren device, wall plug, lamp etc.

GROUP 1 is lifeline service that assigned to Sensor (Water leakage detector) status. It enables the sensor to send reports and readings to Z- Wave Controller or Z- Wave Gateway whenever the sensor is triggered. This Group Support:

NOTIFICATION_REPORT_V4,
BATTERY_REPORT,
SENSOR_BINARY_REPORT_
V2,
DEVICE_RESET_LOCALLY_NOTIFICATION

GROUP 2 allows for sending control commands to associated devices such as relay module, lighting, etc. This association group is configured through the advanced parameters no. 7. If the sensor clears the Notification Event that a Basic Set with 0x00 is sent to the nodes associated in Group 2 in order to turn off the device. This Group Support:

BASIC_SET.

GROUP 3 allows for Send Notification to associated devices in this group. This Group Support:

NOTIFICATION_REPORT_V4

GROUP 4 allows for Send Notification to associated devices in this group. This Group Support:

SENSOR_BINARY_REPORT_V2

Advanced Configuration

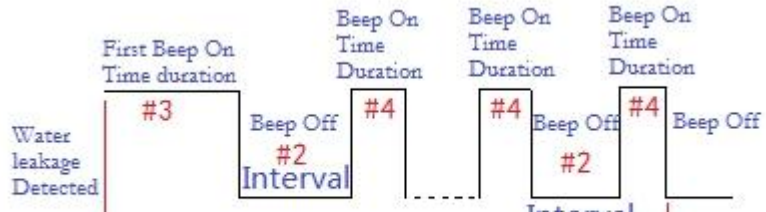


Fig.1 Alarm Time Setting Figure

1. Configuring Alarm Duration Time

This configuration parameter that can be used to adjust the time for beep and LED turned on when water leakage is detected. If this parameter is set to '0', the beep and LED will be turn on always until water leakage is not detected. Prefer to Figure 1.

Parameter Number	Size	Available Settings	Default
1	1	0 ~255 (minute)	120(minute)

2. Configure Alarm Interval

This Parameter defines beep on /off interval time when water leakage is detected. Prefer to Figure 1.

Parameter Number	Size	Available Settings	Default
2	1	1 ~255 (minute)	1(minute)

3. Configure First Alarm On Time Duration

This parameter defines beep on duration first time when water leakage is detected. Prefer to Figure 1.

Parameter Number	Size	Available Settings	Default
3	1	10 ~ 255 (second)	60(second)

4. Configure Alarm on Time Duration

This parameter defines beep on duration after fist beep on when water leakage is detected. Prefer to Figure 1.

Parameter Number	Size	Available Settings	Default
4	1	5 ~ 255 (second)	5(second)

5. Configure Alarm Enable/Disable

This parameter defines beep on is enabled or disabled when water leakage is detected. '0' indicate beep on is disable, but LED will be turned on when water leakage detected. '1' indicate beep on is enabled, the BEEP and LED will be turned on when water leakage detected.

Parameter Number	Size	Available Settings	Default

5	1	0 ,1	1

6. Configure Water Leakage Detected Enable/Disable

This parameter defines the function than water leakage detect is enabled or disabled. '0' indicate disable water leakage detect, '1' indicate enable water leakage detect.

Parameter Number	Size	Available Settings	Default
6	1	0, 1	1

7. Basic Set Level

Basic Set Command will be sent where contains a value when the door/window is opened or closed, the receiver will take it for consideration; for instance, if a lamp module is received the Basic Set Command of which value is decisive as to how bright of dim level of lamp module shall be.

Parameter Number	Size	Available Settings	Default
7	1	0 ~ 99, 255	255

Notification Command Class

Once the detector detected a water leakage, it will send NOTIFICATION_REPORT and SENSOR_BINARY_REPORT to the nodes of lifeline to inform there is a water leakage event. When water leakage is not detected, NOTIFICATION_REPORT and SENSOR_BINARY_REPORT will be sent again to the nodes in lifeline.

For compliant to Z- Wave 300 Series, There also realize the Binary Sensor Command Class.

Notification Report Command:
Event Present:
Command Class: COMMAND_CLASS_NOTIFICATION
Command: NOTIFICATION_REPORT
Notification Type: NOTIFICATION_TYPE_WATER_ALARM
Event:
NOTIFICATION_EVENT_WATER_ALARM_WATER_LEAK_DETECTED_UNKNOWN_LOCATION
Event Clear:
Command Class: COMMAND_CLASS_NOTIFICATION,
Command: NOTIFICATION_REPORT,
Notification Type: NOTIFICATION_TYPE_WATER_ALARM,

Event: NOTIFICATION_EVENT_WATER_ALARM_NO_EVENT

Binary Sensor Report Command:
Event Present:
Command Class: COMMAND_CLASS_SENSOR_BINARY
Command: SENSOR_BINARY_REPORT
Sensor Type: SENSOR_WATER
Value: 0xFF
Event Clear:
Command Class: COMMAND_CLASS_SENSOR_BINARY
Command: SENSOR_BINARY_REPORT
Sensor Type: SENSOR_WATER
Value: 0x00

Battery Check Command

The users can also enquire the battery status of the water detector by sending BATTERY_GET command. Once the water detector receivers the command, it will return BATTERY_REPORT command. The water detector will send BATTERY_LEVEL = 0xFF command to the Z- Wave Controller to inform that the water detector is in dead battery status, otherwise BATTERY_LEVEL value range is 0% to 100%.

Wakeup Command Class

The water detector stays in sleep status for the majority of time in order to conserve battery life. The minimum wakeup interval is 300s
The maximum wakeup interval is 16,777,200s (about 194 days)
Allowable interval among each wakeup interval is 60 second, such as 360, 420, 480… **Note:** The default value is 12 hours. This value is longer, the battery life is greater.

LED Color Indicator

LED Color	Led Display Status	Description
Red	Blink 5 Times(1s Interval)	Power on and Not Add in Z- Wave Network
	Blink 5 Times(500ms Interval)	Press Button tripled, Adding siren in a Z- Wave Network or Send Node Info.
	Blink 5 Times(300ms Interval)	Power on and Already Add in a Z- Wave Network
	Blink 1 Time	Press the Button Long Time, Reset the Plug to restore default settings;
	Blink with Beep On/Off	Detect water leakage

Command Classes

This Sensor supports Command Classes as Below:

* COMMAND_CLASS_ZWAVEPLUS_INFO (V2)
* COMMAND_CLASS_VERSION (V2)
* COMMAND_CLASS_MANUFACTURER_SPECIFIC (V2)
* COMMAND_CLASS_DEVICE_RESET_LOCALLY (V1)
* COMMAND_CLASS_POWERLEVEL (V1)
* COMMAND_CLASS_BATTERY (V1)
* COMMAND_CLASS_ASSOCIATION (V2)
* COMMAND_CLASS_ASSOCIATION_GRP_INFO (V1)
* COMMAND_CLASS_WAKE_UP (V2)
* COMMAND_CLASS_NOTIFICATION (V4)
* COMMAND_CLASS_SENSOR_BINARY (V2)
* COMMAND_CLASS_CONFIGURATION (V1)

SPECIFICATIONS

Baaery type:	CR142SO(3.0V)
Power Consumption:	0.13W
Max Current:	35mA(In Radio Transmitter Mode)
EU Standards Compliance:	
Radio Protocol:	Z-Wave
Radio Frequency:	EU-868.4MHz US-908.4MHZ
Valid Range:	Up to 80m outdoors Up to 40m indoors(Depending on terrain and building structure)
Operational Temperature:	0-40℃

Guarantee

1. The Guarantee is provided by Shenzhen NEO Electronics Co., Ltd (hereinafter “Manufacture”)
2. The Manufacturer is responsible for equipment malfunction resulting from physical defects (manufacturing or material) of the device for 12 months from the date of its purchasing.
3. During the Guarantee period, the Manufacturer shall remove any defects, free of charge, by repairing or replacing.
4. In special cases, when the device cannot be replaced with the device of the same type (e.g. the device is no longer available in the commercial offer), the Manufacturer may replace it with a different device having technical parameters similar to the faulty one. Such activity shall be considered as fulfilling the obligations of the Manufacturer. The Manufacturer shall not refund money paid for the device.
5. The guarantee shall not cover:
   - mechanical damages (cracks, fractures, cuts, abrasions, physical deformations caused by impact, falling or dropping the device or other object, improper use or not observing the operating manual);
   - damages resulting from external causes, e.g.: flood, storm, fire, lightning, natural disasters, earthquakes, war, civil disturbance, force majeure, unforeseen accidents, theft, water damage, liquid leakage ,battery spill, weather conditions, sunlight, sand, moisture, high or low temperature, air pollution
   - damages caused by malfunctioning software, attack of a computer virus, or by failure to update the software as recommended by the Manufacturer;

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