LEEDARSON

We build your success in IoT.

LEEDARSON Water Leak Sensor

Content:

Water Leak Sensor

User Manual

1. Product Introduction

Water Sensor is a wireless water leak sensor powered by CR123A battery, you can receive immediate alerts if there is unwanted water in your home (such as in a basement, near a water heater, under an old pipe, or in a bathroom), helping you prevent leaks from turning into flood. This sensor integrates Z-Wave communication module to connect with Z-Wave gateway, and this device can be adapted to EU(868.42Mhz) or US(908.42MHz). Water leak sensor is an important part of home automation, and it can be set different modes according to different scenes.

2. Product Profile

① LED ②Probe ③Sensor

LEEDARSON

3. Specification

Power Supply	Battery
Power Source	3V, CR123A *1
Battery Life	3 years
Communication Protocol	Z-Wave
Radio Frequency	908.42MHz (US) 868.42MHz (EU)
Wireless Range	More than 100m outdoors About 30m indoors (depending on building materials)
Operational Temperature	-10℃ ~+ 45℃
Operating Humidity	Up to 85% non-condensing
Dimensions (mm)	54(L)*54(W)*25.5(H)
Mounting	Screws or 3M Tape
Standards Compliance	FCC/ IC/CE/ Z-Wave
OTA	Yes

4. Features/Capabilities

- The LEEDARSON Water Sensor is a Z-Wave compatible sensor.
- The LEEDARSON Water Sensor “alarm” can be sent to controller.
- The LEEDARSON Water Sensor is designed to be mounted on the wall with sensor probes extended by connected wire.
- The LEEDARSON Water Leak Sensor has a built-in LED indicator and an acoustic alarm, notifying the user of:
  - Water leak
  - Operating mode
- The LEEDARSON Water Sensor is powered by CR123A battery with 3 years battery life. Suggest to use CR123A battery with 1600 mAH capacity.
- The LEEDARSON Water Sensor Support low battery alarm function.
- The LEEDARSON Water Sensor Support firmware OTA.

5. Installation Notice

If a pool of water form, moisture must contact both leads to trigger an alert.

1. Install the detector where the water is likely to leak, such as place the Water Leak Sensor in areas like bathrooms, basements, under clogged drains, under older pipes, or in other areas of your home that are prone to leak so that you can receive an instant alert.
2. Do not locate the detector in cabinet and other places where the alarm sound cannot came out easily.
3. Do not install it at the area with rain, oil smoke and steam of cooking range.
4. Do not install the detector with submersed water.

6. Installation

1. Attach the mounting bracket on the wall firmly with screw or 3M tape.
2. Mount the rest of the detector into the bracket.
3. Put the probe in the floor where the water is likely to leak.
4. Connect the alarm to the power.

7. Product usage

Function of Button Action:

Water Leak Sensor is not in the Z-Wave network:

Trigger	Description
Power On	LED will keep on 1 second.
Short press 1 time (within 1 second)	1. LED will blink fast for 25 seconds, send Node Info frame. 2. **Add for inclusion:** 1. Insert the CR123A battery. 2. Set the Z-Wave network main controller into inclusion mode. 3. Triggering this button action. 4. If the add for inclusion is successful, the LED will blink fast and then keep on 3 seconds. Otherwise, the LED will blink 25 seconds and then turn off, in which case you need to repeat the process from step 2.

Water Leak Sensor is in the Z-Wave network:

Trigger	Description
Power On	Send battery report to associated node, and the buzzer will keep on for 3 seconds.
Short press one time (within 1 second)	1. Led will keep on for 25 seconds (sensor will not send wake up cc during these 25 seconds if you short press 3 times z-button), send Node Info frame. 2. **Remove for exclusion:** 1. Insert the battery. 2. Set the Z-Wave network main controller into exclusion mode.

	3. Triggering this button action. If the remove for exclusion is successful, the LED will blink fast and turn off. Otherwise, the LED will keep solid for 25 seconds and then turn off, in which case you need to repeat the process from step 2.
Short press 3 time (within 1 second)	1. LED will blink one time; sending wake up notification cc.
Press and hold for 5 seconds	Reset Water Leak Sensor to factory Default: LED will blink for 5 seconds and then keep solid for 3 seconds, after that Water Leak Sensor will send “Device_Reset_Locally” to the main controller and exclude from the Z-Wave network. Use this procedure only in the event that the network primary controller is missing or otherwise inoperable.

Caution:

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

IC Statement

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :
(1) l'appareil ne doit pas produire de brouillage, et
(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

IC 20cm RF

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the radiator and your body.

Cet équipement est conforme aux limites d’exposition aux rayonnements de la IC établies pour un environnement non contrôé. Cet équipement doit être installé et fonctionner à au moins 20 cm de distance d’un radiateur ou de votre corps.

Low voltage alarm to remind changing battery.

This product has low voltage detection reminder, when the battery voltage is in low status, the detector will give out low battery signal to controller.

8. Note

1. Replace the battery timely on low battery warning to ensure the detector works properly.
2. Clean the surface with soft towel regularly.
3. In case the product is failure, do not try to fix it by yourself. Please contact the local distributor.
4. 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.
5. If you want your product 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.

9. Command List

9.1 SECURITY AND NON-SECURITY FEATURES OF WATER LEAK SENSOR IN Z-WAVE NETWORK

1. The function of the Water Leak Sensor as a security and non-security device is identical.
2. When a node includes into a S2 Z-Wave network, the node only supports S2 unauthenticated class and so do the supported CCs.
3. Commands List

	Included Non-Secure Network	Included Secure Network
Non-secure supported Command Classes	COMMAND_CLASS_ZWAVEPLUS_INFO_V2 COMMAND_CLASS_SECURITY0_V1 COMMAND_CLASS_SECURITY2_1 COMMAND_CLASS_TRANSPORT_SERVICE_V2 COMMAND_CLASS_ASSOCIATION_V2 COMMAND_CLASS_ASSOCIATION_GRP_INFO_V1 COMMAND_CLASS_VERSION_V2 COMMAND_CLASS_MANUFACTURER_SPECIFIC_V2 COMMAND_CLASS_DEVICE_RESET_LOCALLY_V1 COMMAND_CLASS_POWERLEVEL_V1 COMMAND_CLASS_CONFIGURATION_V1 COMMAND_CLASS_BATTERY_V1 COMMAND_CLASS_NOTIFICATION_V4	COMMAND_CLASS_ZWAVEPLUS_INFO_V2 COMMAND_CLASS_TRANSPORT_SERVICE_V2 COMMAND_CLASS_SECURITY0_V1 COMMAND_CLASS_SECURITY2_V1

	COMMAND_CLASS_WAKE_UP_V2 COMMAND_CLASS_SUPERVISION_V1 COMMAND_CLASS_FIRMWARE_UPDATE_MD_V4	
Security Supported Report Command Classes		COMMAND_CLASS_ASSOCIATION_V2 COMMAND_CLASS_ASSOCIATION_GRP_INFO_V1 COMMAND_CLASS_VERSION_V2 COMMAND_CLASS_MANUFACTURER_SPECIFIC_V2 COMMAND_CLASS_DEVICE_RESET_LOCALLY_V1 COMMAND_CLASS_POWERLEVEL_V1 COMMAND_CLASS_CONFIGURATION_V1 COMMAND_CLASS_BATTERY_V1 COMMAND_CLASS_NOTIFICATION_V4 COMMAND_CLASS_WAKE_UP_V2 COMMAND_CLASS_SUPERVISION_V1 COMMAND_CLASS_FIRMWARE_UPDATE_MD_V4

9.2 NOTE FOR SPECIAL COMMANDS

9.2.1 Association Command

Water Leak Sensor supports two association groups.

Grouping Identifier	Max Nodes	Send Commands
Group 1	0x05	1. Notification Report. Sensor will send Notification Report when the water probe is triggered. 2. Battery Report. Sensor will send Battery Report when the battery level is low and the battery report's value is 0xFF. 3. Device Reset Locally.
Group 2	0x05	1.Basic Set Sensor will send Basic Set when the water probe is triggered.

9.2.2 Basic Command

There is no relevant commands are available for mapping.

9.2.3 Notification Command

1. Notification Supported Report;
   There are only one type notification is supported, Water Alarm (0x05).

2. Event Supported Report;
   Water Alarm: Water Leak Detected (0x02), State Idle (0x00).

3. How to trigger the notification;
   Water Alarm:
   Water Leak Detected (0x02): The water probe part detects water.
   State Idle (0x00): The water probe part is pulled out of the water.

9.2.4 Configuration Command

Water Leak 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.10 Level of low battery

This parameter defines a battery level as the “low battery”.

Available settings: 1**0-50 (10% - 50%)**
Default setting: **10 (10%)**
Parameter size: **1[byte]**

Parameter No.11

Beeping rate.

0- Buzzer keep on 1s, off 1s.
1- Buzzer keep on 0.5s, off 0.5s
2- Buzzer keep on beeping always
3- Buzzer keep silence

FCC Statement

15.19

1. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference.

(2) This device must accept any interference received, including interference that may cause undesired operation.

15.21

Note: The grantee is not responsible for any changes or modifications not expressly approved by the party responsible for compliance. Such modifications could void the user's authority to operate the equipment.

15.105(b)

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
-Consult the dealer or an experienced radio/TV technician for help

RF Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the radiator and your body.

IC Statement

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

(1) l'appareil ne doit pas produire de brouillage, et

(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

IC 20cm RF

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the radiator and your body.

Cet équipement est conforme aux limites d’exposition aux rayonnements de la IC établies pour un environnement non contrôé. Cet équipement doit être installé et fonctionner à au moins 20 cm de distance d’ un radiateur ou de votre corps.