



Everspring

OUTDOOR MOTION DETECTOR

SKU: EVRESP816



Quickstart

This is a **secure Motion Sensor** for **Europe**. To run this device please insert fresh **3 * AA 1,5V** batteries. Please make sure the internal battery is fully charged. To add this device to your network execute the following action:

Press the tamper switch 3 times within 1.5 seconds to put the unit into inclusion mode.

What is Z-Wave?

Z-Wave is the international wireless protocol for communication in the Smart Home. This device is suited for use in the region mentioned in the Quickstart section. (For more information about frequency regulations please refer to [the frequency coverage overview at Sigma Designs Website](#).)



Z-Wave ensures a reliable communication by reconfirming every message (**two-way communication**) and every mains powered node can act as a repeater for other nodes (**meshed network**) in case the receiver is not in direct wireless range of the transmitter.

This device and every other certified Z-Wave device can be **used together with any other certified Z-Wave device regardless of brand and origin** as long as both are suited for the same frequency range.

If a device supports **secure communication** it will communicate with other devices secure as long as this device provides the same or a higher level of security. Otherwise it will automatically turn into a lower level of security to maintain backward compatibility.

For more information about Z-Wave technology, devices, white papers etc. please refer to www.z-wave.info.

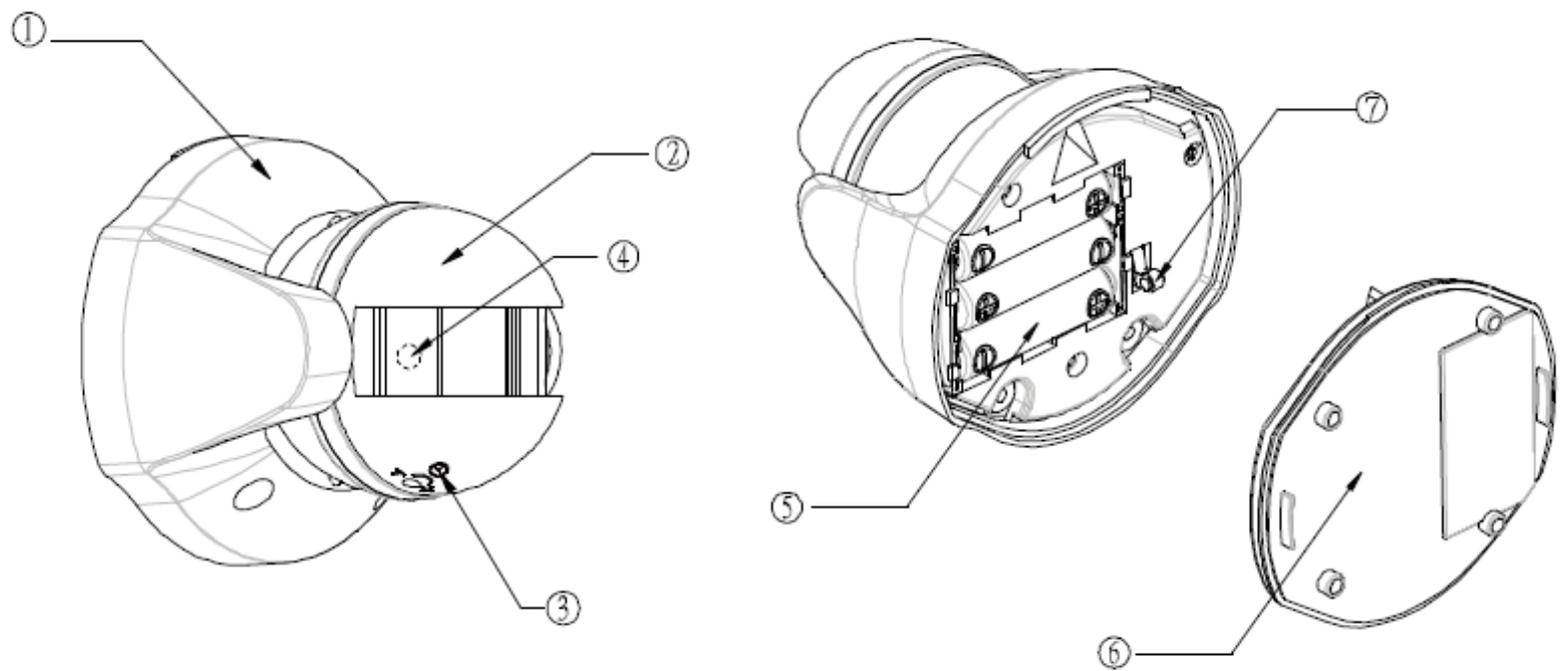
Product Description

The SP816 Outdoor Motion Detector is a Z-Wave Plus enabled device and is fully compatible with any Z-Wave™ enabled network. The device can be set up in a Z-wave network to communicate directly with other end devices such as lighting controllers, or to report directly to a Z-wave controller (usually a gateway).

This motion detector is primarily designed for outdoor lighting control application. It features a PIR motion detector to detect movement in a protected area and a lux sensor for determining brightness of its surroundings. It comes with a built in timer to set the duration for light turn on. The lux level and the timer can be set through knobs on the device itself.

If the PIR detects motion when lux level falls below a preset setting, the device will transmit a signal to turn on the outdoor lighting (or indirectly through gateway) and then later turns it off when its timer has elapsed.

This device can also be used as a basic motion sensor for indoor security application.



- 1 Front Cover
- 2 Motion Sensor
- 3 Time-off / Lux Knob
- 4 LED indicator (hidden behind lens)
- 5 Battery
- 6 Rear Cover
- 7 Tamper Switch

Prepare for Installation / Reset

Please read the user manual before installing the product.

In order to include (add) a Z-Wave device to a network it **must be in factory default state**. Please make sure to reset the device into factory default. You can do this by performing an Exclusion operation as described below in the manual. Every Z-Wave controller is able to perform this operation however it is recommended to use the primary controller of the previous network to make sure the very device is excluded properly from this network.

Reset to factory default

This device also allows to be reset without any involvement of a Z-Wave controller. This procedure should only be used when the primary controller is inoperable.

1. Press the tamper switch 3 times within 1.5 seconds to put the unit into exclusion mode.
2. Within 1 second of step 1, press the tamper switch again and hold until LED is off (about 5 seconds).
3. Node ID is excluded. The device reverts to factory default state and will be in auto-inclusion mode for 4 minutes.

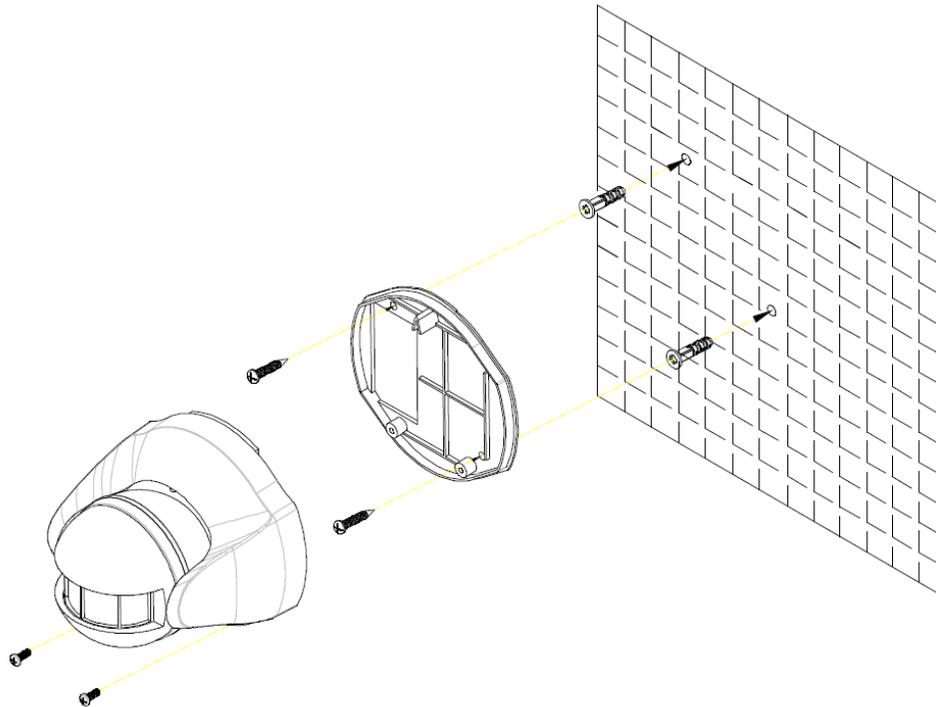
Safety Warning for Batteries

The product contains batteries. Please remove the batteries when the device is not used. Do not mix batteries of different charging level or different brands.

Installation

Installation

1. Use the rear cover to mark the two mounting holes.
2. Drill the holes, insert the plastic wall plugs and screw the rear cover to the wall using the screws supplied.
3. Assemble the detector back to its rear cover using screws as originally supplied.
4. The detector will enter Normal mode after 10 seconds.



Inclusion/Exclusion

On factory default the device does not belong to any Z-Wave network. The device needs to be **added to an existing wireless network** to communicate with the devices of this network. This process is called **Inclusion**.

Devices can also be removed from a network. This process is called **Exclusion**. Both processes are initiated by the primary controller of the Z-Wave network. This controller is turned into exclusion respective inclusion mode. Inclusion and Exclusion is then performed doing a special manual action right on the device.

Inclusion

Press the tamper switch 3 times within 1.5 seconds to put the unit into inclusion mode.

Exclusion

Press the tamper switch 3 times within 1.5 seconds to put the unit into exclusion mode.

Auto-Inclusion

Beside the standard inclusion this devices supports the so called **auto inclusion**. Right after powering up the device remains in inclusion state and can be included by (any) gateway without further actions on the device itself. The auto inclusion mode will time out after some time.

Product Usage

Warm-Up

It will take approximately 1 minute for the detector to warm up after a battery is inserted. During this period the LED behind the lens will turn on. When the LED turns off, it implies warm-up procedure is complete and the detector is ready for detection.

Note:

- This will not affect the Inclusion/Exclusion process.
- After removing batteries, wait for 5 seconds to refit batteries.

Quick Test

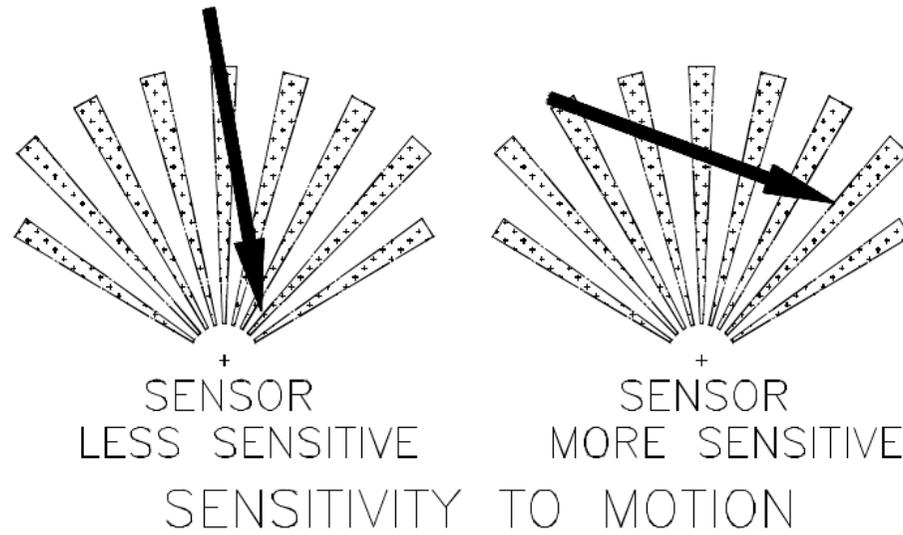
1. With the tamper switch not being pressed, the unit will enters Test mode to allow the user to test the device before it is mounted on the wall.
2. During Test mode, if movement is detected, the LED on the detector will illuminate implying the unit is working properly.
3. To exit the Test mode, simply press the Tamper switch for more than 10 seconds to enter Normal mode.

Mounting the Detector

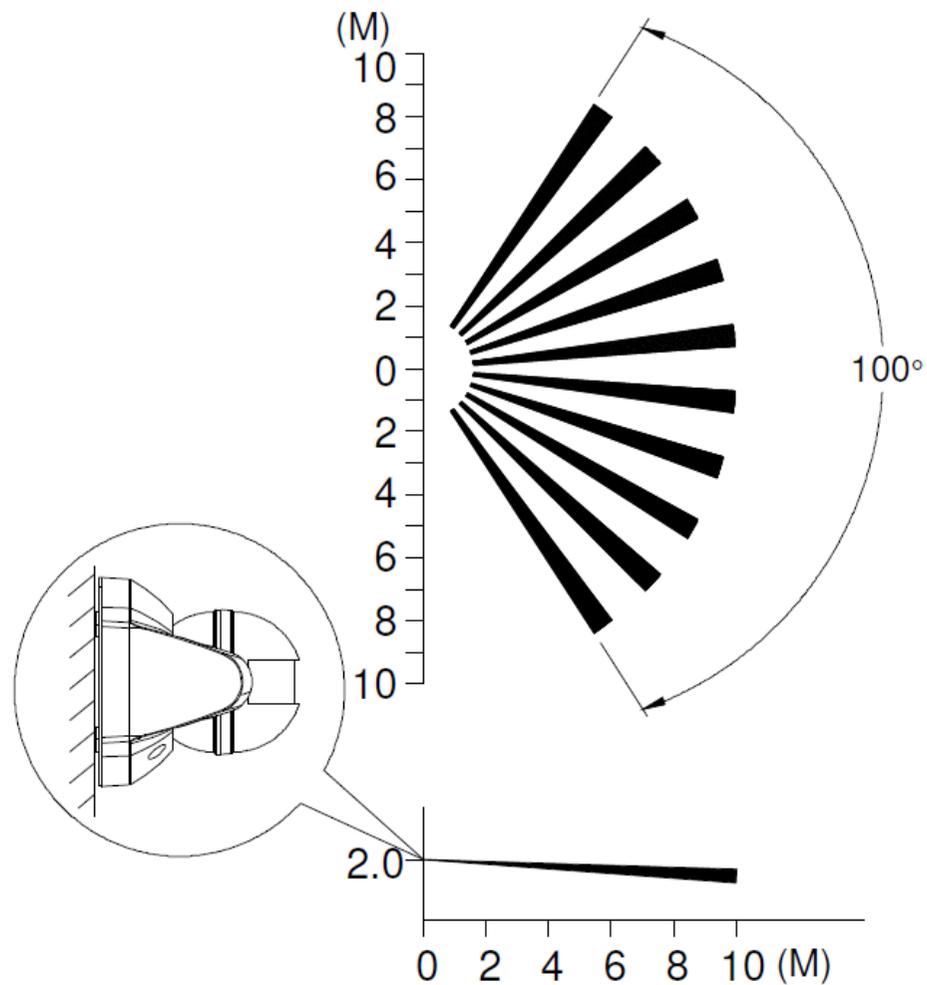
Choosing the location

The recommended location for the detector is outside the house under the eaves or other shaded areas where it is not directly exposed to sunlight. Though the detector is waterproof (IP44 rated), avoid direct contact with rain.

- Do not position the detector facing a window or direct sunlight.
- Do not position the detector directly above or facing any source of heat, eg: fires, radiators, boiler etc.
- Where possible, mount the detector so that the path of an intruder would cut across the fan pattern rather than directly towards the detector.



Mount the detector 2m from the floor. At this height, the detector will detect movement within its 100 degree fan-shaped detection pattern up to 6-12m depending on adjustment.



Walk Test

The user can perform a walk test to ensure the detector's detection range falls within the desired area of coverage. This test also checks if the detector is still within the communication range of the controller. For this test, the detector needs to be configured to turn on a connected lighting or other observable action set using the controller.

1. On the detector, turn both knobs Time-Off and Lux to the "T" mark.
2. Walk into the detector's range and check if the connected lighting turns on and off.

3. If necessary, tilt the head of the detector to achieve desired result.

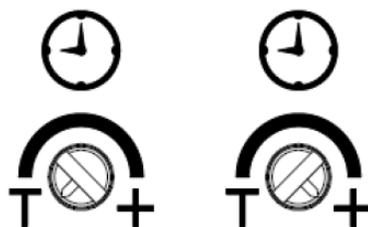
Operation

When the detector is mounted on the wall, i.e. tamper switch is pressed, for more than 10 seconds, it will enter Normal mode.

- Upon motion being sensed, the detector will turn ON the connected lighting. After the elapse of preset time-off, the detector will turn OFF the connected lighting (see Time adjustment knob below).
- In Normal mode, the red indicator LED on the detector will not illuminate when the detector is triggered in order to conserve battery life, unless the battery is low.
- If the Tamper switch is released, the detector will send a Notification command

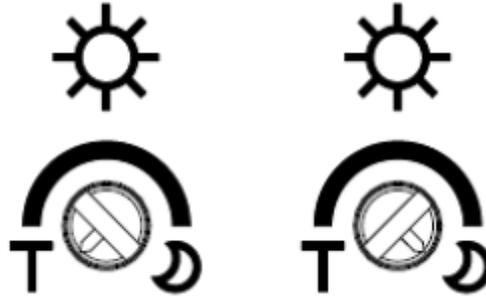
(1) Time adjustment

Time-off knob controls how long the connected lighting will stay on after the motion is detected. It can be set from 5 seconds to 12 minutes.



(2) Lux adjustment

The LUX adjustment sets the brightness level threshold that will activate the motion sensor in the detector.



For instance, turning the LUX knob clockwise to the MOON position will activate detector's motion sensor only night and inactivated during the day. The adjustable Lux range is about 30 - 200 Lux.

To set the lux level:

1. Turn the Time-off knob to "T" for maximum response.
2. Turn the LUX control knob to the edge clockwise at the "moon" (dusk) position.
3. Wait until the ambient light level reaches the level of darkness at which you wish the detector to activate.
4. Slowly rotate the Lux knob while anti-clockwise while keep creating motion during the process until the detector sends out a signal to turn on the connected lighting. At this position the light should become operative at approximately the same level of darkness each evening
5. Set the Time-off knob back to the desired preset time.

Maintenance

Low Battery: When the battery becomes low, the LED will flash for 1 second when motion is detected in Normal mode to indicate low battery condition to the user. When the battery becomes low in Test mode, the LED will flash once every 30 seconds.

Quick trouble shooting

Here are a few hints for network installation if things dont work as expected.

1. Make sure a device is in factory reset state before including. In doubt exclude before include.
2. If inclusion still fails, check if both devices use the same frequency.
3. Remove all dead devices from associations. Otherwise you will see severe delays.
4. Never use sleeping battery devices without a central controller.
5. Dont poll FLIRS devices.
6. Make sure to have enough mains powered device to benefit from the meshing

Association - one device controls an other device

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, sensor triggers, ...). In case the event happens all devices stored in the respective association group will receive the same wireless command wireless command, typically a 'Basic Set' Command.

Association Groups:

Group Number	Maximum Nodes	Description
1	1	Lifeline
2	4	PIR Control - Basic Set

Technical Data

Dimensions	99.000x94.000x95.000 mm
Weight	243 gr
Hardware Platform	ZM5202
EAN	4251295700625
IP Class	IP 44
Battery Type	3 * AA 1,5V
Device Type	Motion Sensor
Firmware Version	01.01
Z-Wave Version	04.3d
Certification ID	ZC08-13080009
Z-Wave Product Id	0x0060.0x0001.0x0005

Supported Command Classes

- Basic
- Association Grp Info
- Device Reset Locally
- Zwaveplus Info
- Alarm
- Manufacturer Specific
- Powerlevel
- Firmware Update Md
- Battery
- Wake Up
- Association
- Version
- Security
- Transport Service
- Security 2

Controlled Command Classes

- Transport Service
- Security 2

Explanation of Z-Wave specific terms

- **Controller** — is a Z-Wave device with capabilities to manage the network. Controllers are typically Gateways, Remote Controls or battery operated wall controllers.
- **Slave** — is a Z-Wave device without capabilities to manage the network. Slaves can be sensors, actuators and even remote controls.
- **Primary Controller** — is the central organizer of the network. It must be a controller. There can be only one primary controller in a Z-Wave network.
- **Inclusion** — is the process of adding new Z-Wave devices into a network.
- **Exclusion** — is the process of removing Z-Wave devices from the network.
- **Association** — is a control relationship between a controlling device and a controlled device.
- **Wakeup Notification** — is a special wireless message issued by a Z-Wave device to announce that it is able to communicate.
- **Node Information Frame** — is a special wireless message issued by a Z-Wave device to announce its capabilities and functions.

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