

## OPERATING MANUAL

### MOTION SENSOR

#### HKZW-MS02

Motion sensor is a universal Z-Wave Sensor. It can detect motion and communicate with other associated Z-Wave devices, such as Gateway, Siren, Smart Switch, etc.

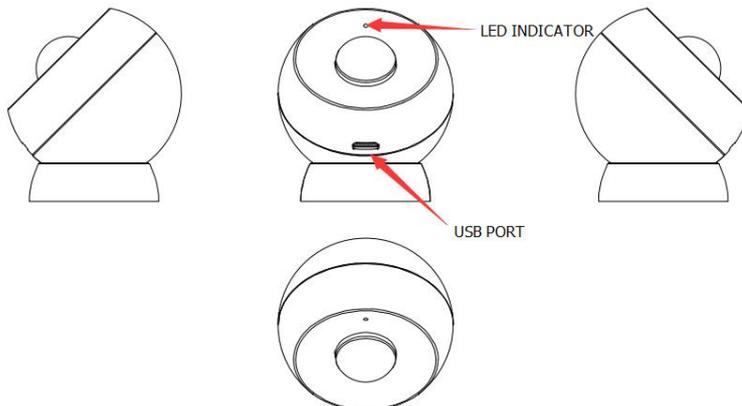
Motion sensor can be included and operated in any Z-Wave network with other Z-Wave certified devices.

The features list:

- 1) Z-Wave Plus certified for wide compatibility (500 series product).
- 2) Supports security 0 and security 2 protected mode with AES-128 encryption.
- 3) Motion sensor.
- 4) Product shock alarm.
- 5) The battery life is up to 1 year.
- 6) Low battery alarm.
- 7) Support firmware OTA.

### I . GENERAL INFORMATION ABOUT MOTION SENSOR

#### 1. Product layout

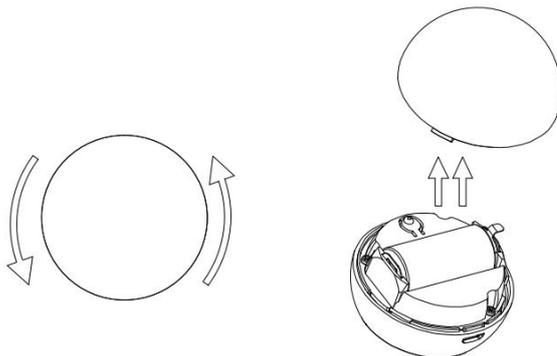


## 2. Specifications

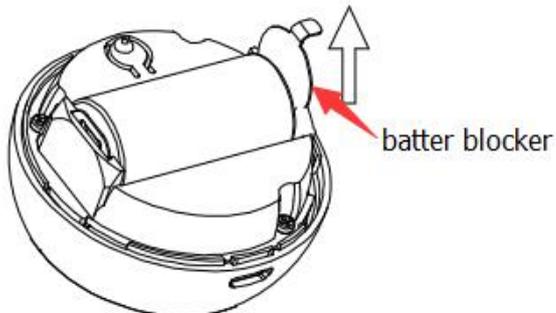
Power Supply:	3V: 1*CR123A or Micro USB
Storage environment:	-40 -70 °C
Operational temperature :	0 - 40 °C
Radio protocol:	Z-Wave Plus
Radio frequency:	868.42MHz (EU) 908.42MHz (US) 921.42MHz(ANZ)
Range:	More than 100m outdoors About 30m indoors
Dimensions:	50mm(Φ)
Working current:	About 50mA
Standby current:	About 20uA
Recommended installation height:	2m ~ 4m

## II . INSTALLATION

1. Turn the cover counter-clockwise and open it.

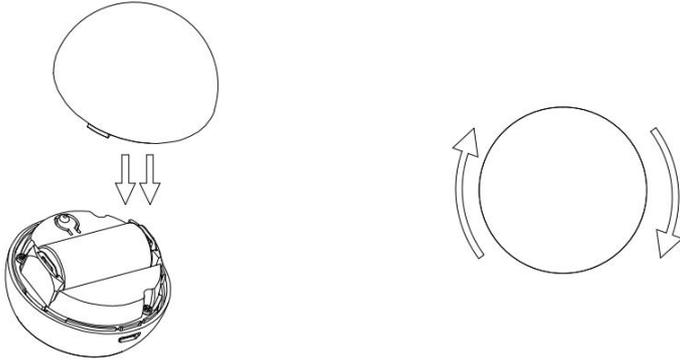


2. Remove the battery blocker.

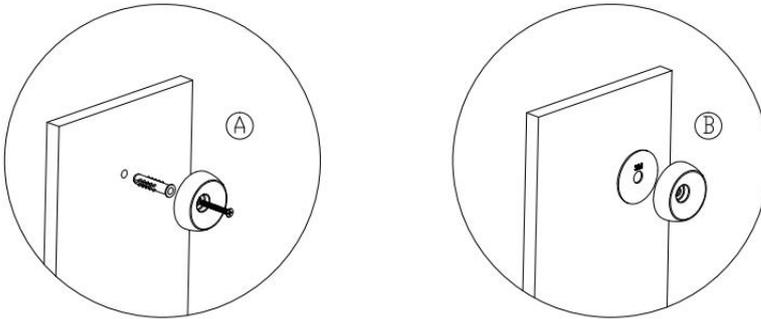


3. Add the device (see "Adding/removing the device" on page 4).

4. Close the cover and turn it clockwise.

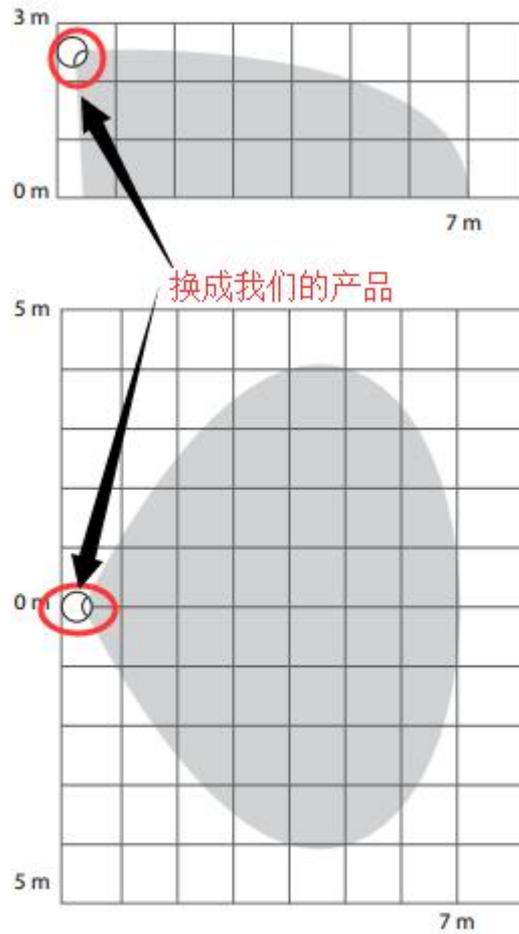


5. Place the sensor to anywhere you want.



### **III. DETECTION AREA**

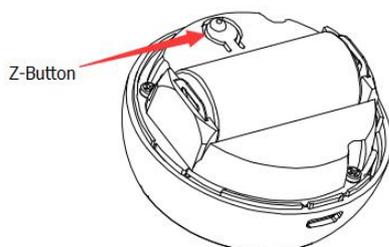
Motion Sensor's motion detection area is shown below. Actual range of the sensor can be influenced by environment conditions. Should false motion alarms be reported, check for any moving objects within the sensor's detection area, such as trees blowing in the wind, cars passing by, windmills. False motion alarms may be caused by moving masses of air and heat as well. If the device keeps on reporting false alarms, despite eliminating all of the above-mentioned factors, install the device in another place.



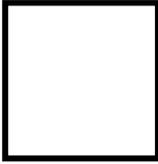
#### IV. ADDING/REMOVING THE DEVICE

##### Adding

- 1) Open the cover.
- 2) Place the device within the direct range of your Z-Wave controller.
- 3) Set the main controller's adding mode (see the controller's manual).
- 4) Click the Z-button once or triple click the Z-button quickly, the LED indicator should blink fast.



- 5) Wait for the adding process to end.
  - 6) Successful adding will be confirmed by the Z-Wave controller's message.
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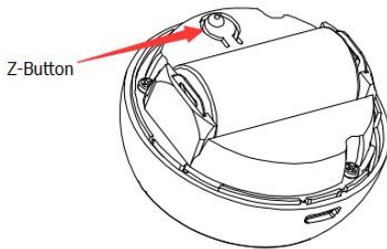
**NOTE**

If you want your motion sensor 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.

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**Removing**

- 1) Open the cover.
- 2) Place the device within the direct range of your Z-Wave controller.
- 3) Set the main controller remove mode (see the controller’s manual).
- 4) Triple click the Z-button quickly, the LED indicator should blink fast.



- 5) Wait for the removing process to end.
- 6) Successful adding will be confirmed by the Z-Wave controller’s message.

**V. ASSOCIATION**

Association allows Motion sensor to control another Z-Wave device such as Smart Switch, Smart Dimmer, etc.

Motion sensor supports two association groupings.

Motion sensor can max associate 5 nodes in each group.

Group 1 reports the motion detection and battery level.

Group 2 is assigned to send BASIC SET command.

**VI. WAKE UP**

**Wake up interval:**

Available settings: **0-2678400**

Default setting: **0**

Defining a time period by which the motion sensor sends a wake up notification command frame to communicate with the assigned device, update parameters, update software, detects battery level.

Wake up interval set to 0 disables the sending wake up notification command, in such configuration it is needed to manually wake the device up by press the Z-button.



**NOTE:**

3600 seconds is the step of wake up interval time, which means motion sensor will send wake up notification command by a timeline that is multiple Of 3600 seconds.

Setting examples:

**0~3599** = 0 second, the device will not wake up by itself.

**3600~7199** = 3600 seconds, the device will wake up every 3600 seconds.

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## VII. RESETTING

Reset procedure clears the motion sensor's memory, including Z-Wave network controller information. To reset Motion sensor:

- 1) Power on the device,
  - 2) Press and hold the Z button for more than 20 seconds,
  - 3) If holding time more than 20seconds, the LED indicator will keep on for 2 seconds, which means resetting is complete.
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### NOTE

Use this procedure only in the event that the network primary controller is missing or otherwise inoperable.

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## VIII. ADVANCED CONFIGURATION

Motion sensor offers a wide variety of advanced configuration settings. Below parameters can be accessed from main controllers configuration interface.

### Parameter NO. 12 MOTION SENSOR'S SENSITIVITY

The higher the value, the more sensitive the PIR sensor.

Available settings: **1-8**

Default setting: **8**

Parameter size: **1 [byte]**

### Parameter No.14 ENABLE/DISABLE BASIC SET COMMAND

Motion sensor can send BASIC SET command to nodes associated with group 2 when motion is triggered.

**0** – Disable.

**1** – Enable.

Default setting: **0**

Parameter size: **1 [byte]**

#### **Parameter No.15 VALUE OF THE BASIC SET**

Motion Sensor can reverse its value of BASIC SET when motion is triggered.

**0** –Send BASIC SET VALUE = 255 to nodes associated with group 2 when motion alarm is triggered.

Send BASIC SET VALUE = 0 to nodes associated with group 2 when motion alarm is canceled.

**1** –Send BASIC SET VALUE = 0 to nodes associated with group 2 when motion alarm is triggered.

Send BASIC SET VALUE = 255 to nodes associated with group 2 when motion alarm is canceled.

Default setting: **0**

Parameter size: **1[byte]**

#### **Parameter No.18 MOTION ALARM CANCELLATION DELAY**

Motion alarm will be canceled in the main controller after 3 seconds, the alarm cancellation can be delay by this parameter. Any motion detected during the cancellation delay time countdown will result in the countdown being restarted.

Available settings: **0-65535 (seconds)**

Default setting: **30 (seconds)**

Parameter size: **2[byte]**

#### **Parameter No.32 LEVEL OF LOW BATTERY**

Define a battery level as the “low battery”.

Available settings: **10-50 (10- 50%)**

Default setting: **20 (20%)**

Parameter size: **1[byte]**

### **IX.FCC NOTICE**

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.

The manufacturer is not responsible for any radio or tv interference caused by unauthorized modifications or change to this equipment. Such modifications or change could void the user’s authority to operate the equipment.

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 warning statement:

The device has been evaluated to meet general RF exposure requirement.  
The device can be used in portable exposure condition without restriction.