



AIBASE 4-in-1 Motion Sensor

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4-in-1 Motion Sensor

Quick Start Guide

1. Product Introduction

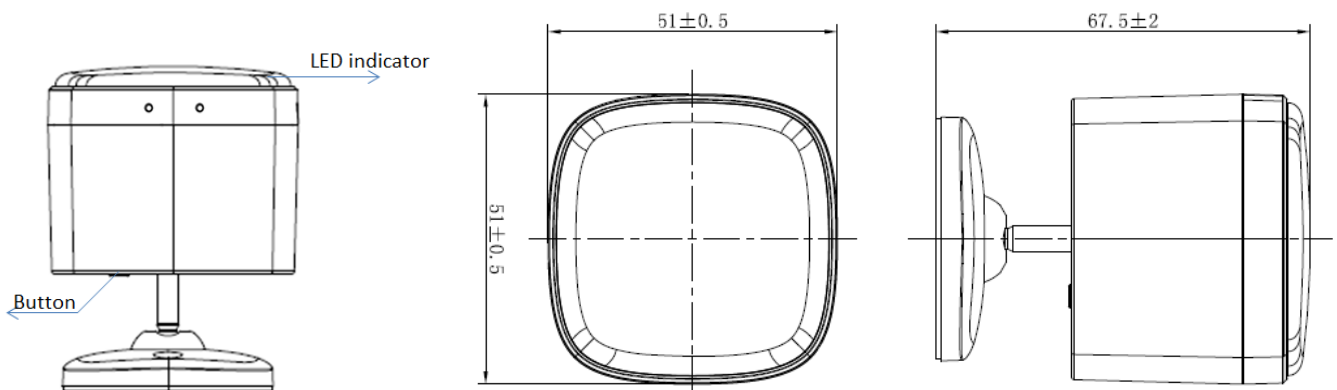
The 4-in-1 Motion Sensor is designed for using with scenes in home automation systems, integrate motion, light, temperature and humidity sensors, powered by CR123A battery or MicroUSB cable. The Motion Sensor lets you know when movement is detected in a certain area and can trigger different actions in response to that movement (or lack of movement). It also lets you know the ambient temperature and humidity to trigger different actions to make you more comfortable. This sensor integrated Z-Wave communication module to connect with Z-Wave gateway, and this device can be adapted to EU (868.42MHz) or US (908.42MHz).

If you want your 4-in-1 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.

4-in-1 Motion Sensor 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.

2. Product Appearance

Product appearance and function overview.



① Button:

- Short press reset button into learning mode, then the sensor can inclusion or exclusion from the Z-Wave network.
 - Hold the key for 5s to reset the sensor, after reset, 4-in-1 Motion Sensor will send “Device Reset Locally” to the main controller and exclude from the Z-Wave network when the Button is released, this procedure will reset the Sensor to factory default.
 - Short press button for 3 times then the sensor sending wake up notification to gateway, wake up for 10 seconds.
- ② LED Indicator: if sensor has not been added to controller, the LED will blink for 5 seconds. The LED will keep on 3 seconds when joined to controller successfully.

3. Specification

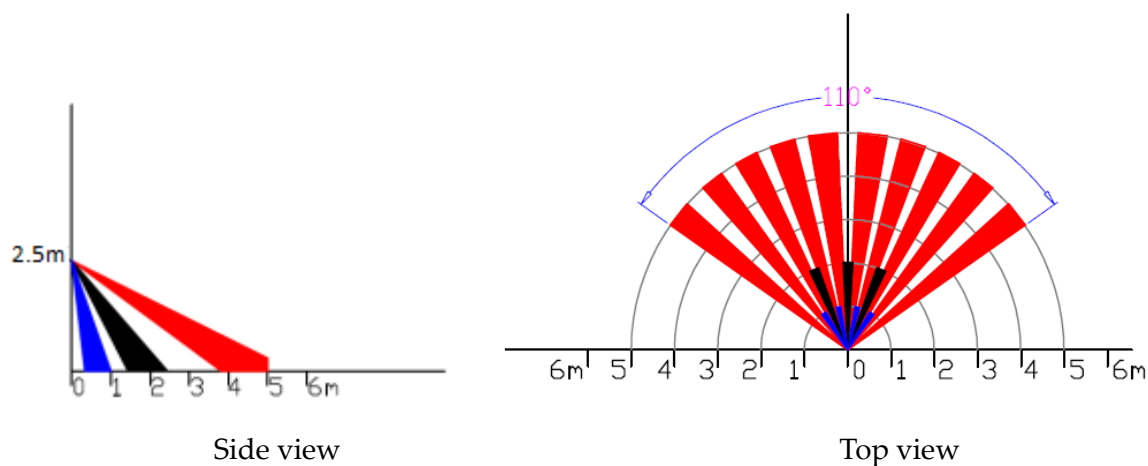
Module Name	HA-ZW-5SABC
Detection Technology	PIR （Passive Infrared）
Detection Angle	110°±10° with 2.5m mounting height
Detection Distance	5 meters
Temperature Accuracy	±1℃
Humidity Accuracy	±5%
Communication Protocol	Z-Wave
Radio Frequency	908.42MHz （US） 868.42MHz （EU） 921.42MHz （AU）
Wireless Range	More than 70m outdoors About 30m indoors (depending on building materials)
Power Source	CR123A battery or Micro USB(reserved)
Battery Life	2 years
Mounting	Screws or 3M Tape
Mounting Height (recommended)	6.5 ft to 8.5 ft (2m to 2.8m), recommend 2.5 meters
Mounting Location	Wall Surface
Operating Temperature	-10℃ to + 45℃
Operating Humidity	10%RH to 90%RH
Certifications	CE/FCC,Z-Wave
Dimensions (mm)	51(L)X51(W)X67.5(H)
OTA	Yes

4. Features/Capabilities:

- The AIBASE 4-in-1 Motion Sensor is a universal Z-Wave Motion Sensor.
- The AIBASE 4-in-1 Motion Sensor detects motion / Luminance intensity/ Temperature/ Humidity.
- The AIBASE 4-in-1 Motion Sensor is powered by the batteries or Micro USB reserved.
- The AIBASE 4-in-1 Motion Sensor is designed to be mounted on the wall and indoor use only.
- The AIBASE 4-in-1 Motion Sensor's Luminance intensity/ Temperature/ Humidity Report time interval can be configured by APP.
- The AIBASE 4-in-1 Motion Sensor has detective range 5 meters (max.).
- The AIBASE 4-in-1 Motion Sensor Support low battery alarm function.
- The AIBASE 4-in-1 Motion Sensor Support firmware OTA.
- After installation, the direction of detection can be adjusted by universal wheels.

5. Installation Position and Notes

1. Installation position should be chosen at the area which the pass-by will be across, try to make the pass-by in the detection area as below.



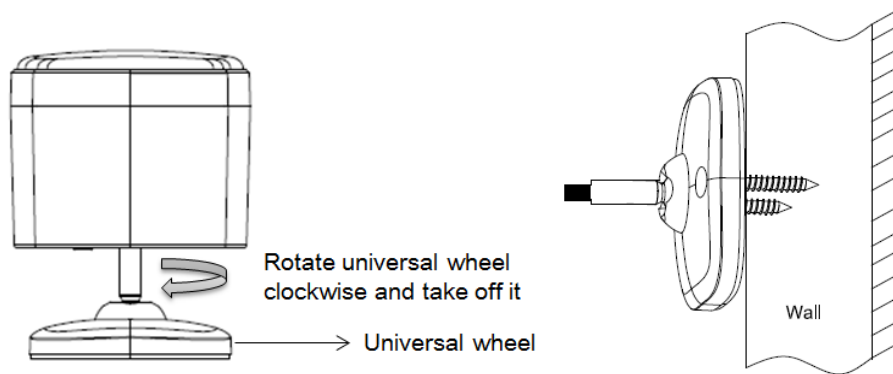
2. Do avoid installation near air-conditioner, electric fans, refrigerators, ovens or other places where temperature easy change.
3. In order not to affect the detecting result, there should be no object in front of the produces lens.
4. Building (such as the wall) will shorten the distance of wireless communication.

5. This device can be mounted on the wall only, it cannot be installed on the ceiling.

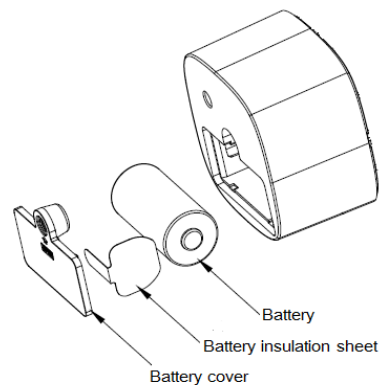
6. Product Installation

Adding the device as accessories, install it according to the diagram below:

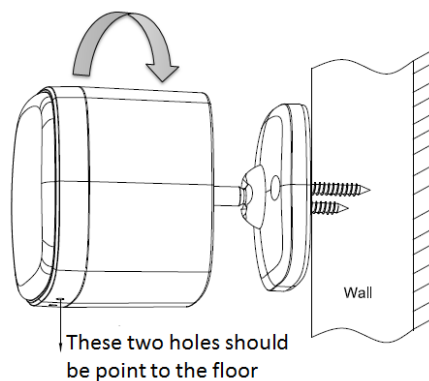
- ① Choose the installation location on the wall, Rotate universal wheel clockwise and take off it, fix the universal wheels by screw or 3M adhesion tape on the wall.



- ② Take off the battery cover in the back, and draw out the battery insulation sheet, then assembly the battery and battery cover.




- ③ Assembly the main body to the universal wheels and rotate main body clockwise tightly, then adjust the universal wheel to make sure two holes of the main body are point to floor.



7. Product Usage

Function of Action Button:

7.1 All functions of each trigger:

Trigger	Description
Power On	<p>In the network: 1. The LED turn on 5 seconds then turn off. 2. Send battery report and Wakeup Notification.</p> <p>Not in the network: 1. The LED will turn on 1 second then turn off. 2. Add for inclusion(Z-Wave SmartStart Inclusion): a. Add 4-in-1 Motion Sensor DSK into the primary controller Z-Wave SmartStart Provisioning List (If you don't know how to do this, refer to its manual). b. The 4-in-1 Motion Sensor Power on again. c. The 4-in-1 Motion Sensor will send "Explorer Auto inclusion" frame to start Z-Wave SmartStart Inclusion. d. The 4-in-1 Motion Sensor LED will blink, If the inclusion is successful, then LED will keep on 2 seconds. Otherwise, the 4-in-1 Motion Sensor will repeat the process from step c automatically.</p> <p>Note: The 4-in-1 Motion Sensor included via "Z-Wave SmartStart" inclusion, if failing Z-Wave network inclusion or if an error occurred during S2 bootstrapping, The 4-in-1 Motion Sensor will reset itself to factory default by sending "Device Reset Locally CC" .</p> <p>Quick Response Code (QR Code): The first 16 bytes of the ECDH Public Key and sometimes additional information is encoded into a QR Code graphic. When referred to in this document, "DSK" applies to the Full DSK, the combination of Full DSK and QR Code, or the combination of Pin Code and QR Code. Please refer to the below diagram. The QR code can be found on the bottom of the sensor.</p> 
Short press one time	1. Send Security Node Info frame.

(within 1 second)	<p>2. Add 4-in-1 Motion Sensor into a Z-Wave network:</p> <ol style="list-style-type: none"> Let the primary controller go into inclusion mode (If you don't know how to do this, refer to its manual). Short Press one time this Z-Button. The 4-in-1 Motion Sensor LED will blink, If the inclusion is successful, then LED will keep on 2 seconds. Otherwise, the LED will blink until timeout, in which case you need to repeat the process from step b. <p>3. Remove 4-in-1 Motion Sensor from a Z-Wave network:</p> <ol style="list-style-type: none"> Let the primary controller go into exclusion mode (If you don't know how to do this, refer to its manual). Short Press one time this Z-Button. The 4-in-1 Motion Sensor LED will keep on, If the remove is successful, then LED will blink 2 seconds. Otherwise, the LED will keep on until timeout, in which case you need to repeat the process from step b. <p>Note: 4-in-1 Motion Sensor will go away “Z-Wave SmartStart” Inclusion when it is removed from a Z-Wave network.</p>
Short press 3 times (within 1.5 second)	<p>In the network:</p> <ol style="list-style-type: none"> 4-in-1 Motion Sensor will send “wake up notification command” to the nodes which is assigned by “Wake Up Command”. LED Keep bright when receive the Wake up no more info notification or if 10 seconds timeout , LED will be turned off. <p>Not in the network: NOP</p>
Press and hold 5 seconds	<p>Reset 4-in-1 Motion Sensor to factory Default:</p> <ol style="list-style-type: none"> Press and hold the Z-Button for 5 seconds. If holding time is more than 5 seconds, the LED will blink fast at acceleration. If reset success 4-in-1 Motion Sensor LED will turn off. When the Z-Button is released, it will send “Device Reset Locally Command”. Otherwise please repeat step 2. <p>Note:</p> <ol style="list-style-type: none"> This procedure should only be used when the primary controller is inoperable. Reset 4-in-1 Motion Sensor to factory default settings. It will set the 4-in-1 Motion Sensor to not in Z-Wave network state; delete the Association setting and restore the Configuration setting to the default.

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.

7.2 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.

7.3 Z-Wave command.

7.3.1 Association Command

4-in-1 Motion Sensor supports two association groups.

Grouping Identifier	Max Nodes	Transmit Content
Group 1	0x05	1. Notification Report. Sensor will send Notification Report when Motion Detection Unknown Location and (Event inactive). 2. Multilevel Sensor Report Sensor will send Multilevel Sensor Report (Temperature, humidity, luminance) interval of 2 hours. 3. Battery Report. Sensor will send Battery Report when the battery level is low and the battery report's value is 0xFF. 4. Device Reset Locally.
Group 2	0x05	Send Basic Set when PIR trigger

7.3.2 Configuration Command Parameters

4-in-1 Motion Sensor offers a wide variety of advanced configuration settings. Below parameters can be accessed from main controllers configuration interface.

Parameter	Size	Default Value	Description
10 (0x0A)	1	0x0A	Low Battery Power Level of alarm threshold values: the value range are 10~50 for percentage, so the Battery Low Power level can setting 10%~50% .

12 (0x0c)	1	0x0A	Turn on/off PIR 0x0A indicates the highest sensitivity, 0x00 means off PIR detection function. Valid values: 0x00-0x0A
13 (0x0d)	2	0x1e	PIR triggers the waiting time value, Valid values: 0x05-0x3BC4
14 (0x0e)	1	0x00	Whether the BASIC SET command is sent after the PIR is triggered 0 = Unable 1 = Enable
15 (0x0f)	1	0	PIR triggers the correspondence between the value of the Basic set and the PIR state, When value is 0x00 PIR triggers Send the basic set command 0xff PIR alarm release send the basic set command 0x00, otherwise PIR triggers send the basic set command 0x00 PIR alarm release send the basic set command 0xff. Valid values:0-1
100 (0x64)	1	NA	Set 101 ~ 104 to default.
101 (0x65)	4	0x1C20	The interval time of sending the temperature reporting. if setting to 0 then the temperature reporting is disabled 1. Valid values: 0x00-0x28DE80 2. The minimum interval time is 1 minutes. For example, if the value is set to be more than 1 and less than 60, the interval time is 1 minutes, if the value is set to be more than 60 and less than 120, the interval time is 2 minutes.
102 (0x66)	4	0x1C20	The interval time of sending the humidity reporting. if setting to 0 then the humidity reporting is disabled 1. Valid values: 0x00-0x28DE80 2. The minimum interval time is 1 minutes. For example, if the value is set to be more than 1 and less than 60, the interval time is 1 minutes, if the value is set to be more than 60 and less than 120, the interval time is 2 minutes.
103 (0x67)	4	0x1C20	The interval time of sending the luminance reporting. if setting to 0 then the luminance reporting is disabled 1. Valid values: 0x00-0x28DE80 2. The minimum interval time is 1 minutes. For example, if the value is set to be more than 1 and less than 60, the interval time is 1 minutes, if the value is set to be more than 60 and less than 120, the interval time is 2 minutes.

104 (0x68)	4	0x15180	The interval time of sending the battery level reporting. if setting to 0 then the battery level reporting is disabled 1. Valid values: 0x00-0x28DE80 2. The minimum interval time is 1 minutes. For example, if the value is set to be more than 1 and less than 60, the interval time is 1 minutes, if the value is set to be more than 60 and less than 120, the interval time is 2 minutes.
110 (0x6E)	1	0	Enable 111 ~ 114 temperature/humidity/luminance/ battery level change reporting. 0 = Unable 1 = Enable
111 (0x6F)	2	0x000A	Configuration temperature change threshold. Valid values: 1-500(unit 0.1℃)
112 (0x70)	1	0x05	Configuration humidity change threshold. Valid values: 1-32(unit %)
113 (0x71)	2	0x0096	Configuration luminance change threshold. Valid values: 1-65528(unit lx)
114 (0x72)	1	0x0A	Configuration battery level change threshold. Valid values: 1-100(unit %)

8. Attention

1. If need to clean the sensor, please use a soft cloth with a little alcohol to wipe it after you cut off the power.
2. This product is just for indoor use.
3. Replace the battery timely on low battery warning to ensure the detector works properly. Please remove the battery and safe keeping, if you don't use this product for a long time.
4. This device can be mounted on the wall only, it cannot be installed on the ceiling.
5. The reference range template of PIR detection is tested at the indoor temperature (the range is 20℃～25℃), the target of the test is 77kg±10kg weight and 1.71m±0.3m height, the target of the test across movement speed is 4m/s±0.15m/s.
6. In order to prevent the PIR sensor's abnormal fault, please don't mounting and operating sensor in the bellow conditions,

Firstly, product mounting should prevent installed in the air flow environment such as in front of the door, window, heater, air conditioner and so on.

Secondly, the PIR detection area should not be shielded by other screen.

Thirdly, if the operating temperature range is out of the defined range of product specification may result in some product faults, which is not in the technique commitment of manufacturer.

Fourthly, this product has not pet immunity function, so when some animals go through in front of the product may trigger PIR function reported.