

HSD-200Z Z-Wave Motion Sensor

The HSD-200Z is a Z-Wave™ enabled device and is fully compatible with any Z-Wave™ enabled network. Z-Wave™ enabled devices displaying the Z-Wave™ logo can also be used with it regardless of the manufacturer, and ours can also be used in other manufacturer's Z-Wave™ enabled networks. This Motion Detector is controllable by our modules via a controller as a bridge. Inclusion of this Motion Detector on other manufacturer's Wireless Controller menu allows remote turn-on of connected modules and their connected lighting when the Detector is triggered.

The HSD-200Z Motion Detector is designed to combine an ordinary PIR function with a complementary Light Sensor Threshold function in single unit. Owing to this merit, there will be two modes variable: (I) Security Mode: Use PIR to detect movement in a specific area by detecting changes in infra-red radiation levels caused, for example, when a person moves within or across the device's field of vision, a trigger radio signal will be transmitted. This mode can be used to threaten intruders and even stop them. (II) Home Automation Mode: Use Light Sensor Threshold to detect the darkness level in a specific area, once the darkness level is lower than the preset value and a movement is detected; the included devices (usually a lamp) will be triggered. It can connect with your lamps outdoor, on the hallway, bathroom etc...to make life more convenient and energy-efficient.

Adding to Z-Wave™ Network

In the rear casing, there is a learning key which is used to carry out inclusion, exclusion or association. Put a Z-Wave™ Wireless Controller into inclusion/exclusion mode, press the learning key on the detector more than 3 seconds, the LED will illuminate green steadily along with 3 times of short beeps and then a medium beep can be heard which implies it is entered the code learning mode. To complete the inclusion/exclusion process, the Motion Detector supports one association group with five nodes. This has the effect that when the Detector triggers, all devices associated with the Detector will be operated.

The Motion Detector will stay "awake" for ten minutes when power is first applied to allow time for configuration.

Note: If the code learning fails, HSD-200Z will show no idea code learnt mode by

LED

flashing orange on and off alternately every 2 seconds along with a beep tone every ten seconds.

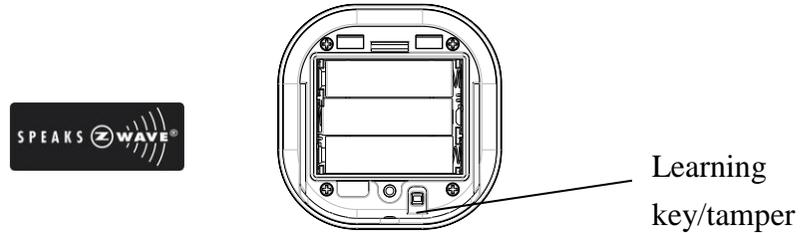
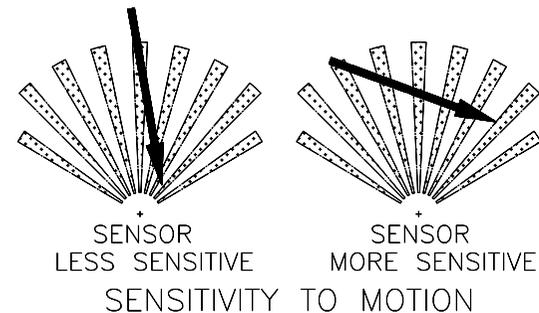
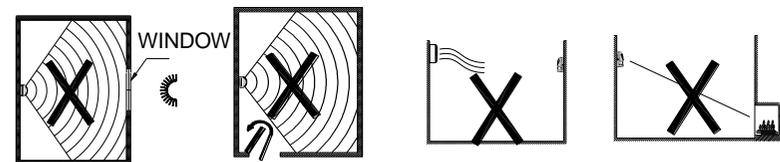


FIGURE 2

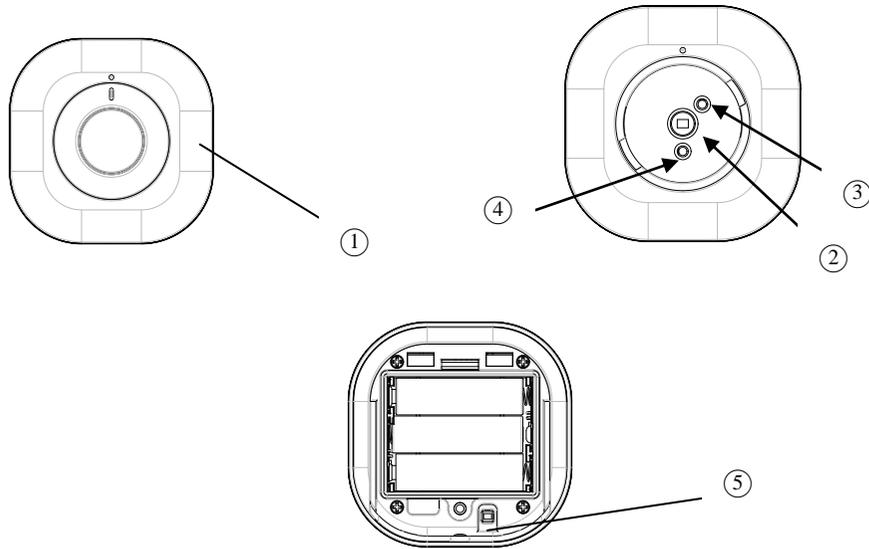
Choosing A Mounting Location

Select the mounting location so that the expected motion of an intruder would cross the detector's coverage pattern. The HSD-200Z comes with 2 methods to mount it: Wall-mounted and Ceiling-mounted. Before selecting a position for a Motion Detector, the following points should be noted:

1. Do not position the detector facing a window /fan /air-condition or direct sunlight. Motion Detectors are not suitable for use in conservatories or draughty areas.
2. Do not position the detector directly above or facing any source of heat, eg: fires, radiators, boiler etc.
3. Where possible, mount the detector so that the logical path of an intruder would cut across the fan pattern rather than directly towards the detector. (FIGURE 2)



Installation



① Front Cover	④ LED indicator
② PIR Sensor	⑤ Learning key/Tamper
③ Light Sensor	

Wall-Mounted

The recommended position for wall-mounted detection is in the corner of a room, mount the detection at the height of 1.8m from the floor. At this height, the optimum detect range is up to 10m (32.81 ft). (FIGURE 3a) Also, in this position, the 110 degrees fan-shaped detection pattern can normally offer greater protection than mounting on a flat wall.

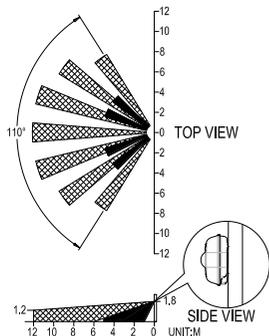


FIGURE 3a

1. Use a screwdriver to undo the bracket.
2. Insert 3 AA-size 1.5V alkaline batteries to the battery compartment, ensuring that correct polarity is put.
3. Hold the bracket in position and mark the two mounting holes. Drill the holes, insert the plastic wall plugs and screw the bracket to the wall using the screws supplied.
4. Engage the HSD-200Z detector to the bracket firmly. (FIGURE 3b.)

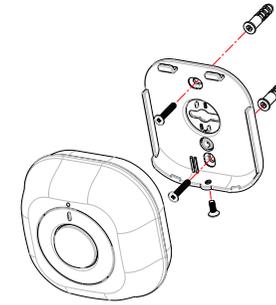


FIGURE 3b

Ceiling-Mounted

The factory setting of HSD-200Z is to be wall-mounted. However ceiling-mounted is a thoughtful option Everspring provides. Simply remove the Wall-PIR (FIGURE 4b) then reload the Ceiling-PIR. (FIGURE 4c) and follow the instruction below.

The optimum detect range for ceiling-mounted detection is at the height of 2.5M (8.2 ft), which can provide the coverage range of 5m (16.4ft) X 360 degree (FIGURE 4a).

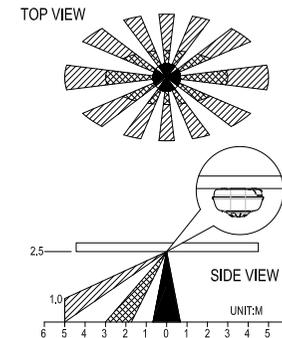


FIGURE 4a

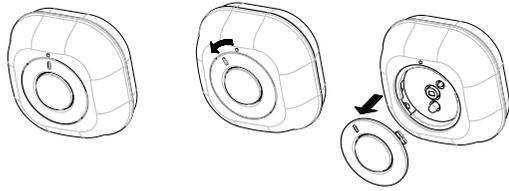


FIGURE 4b

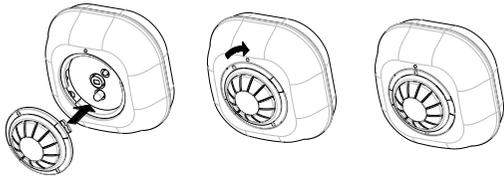
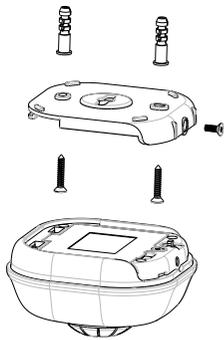


FIGURE 4c

1. Use a screwdriver to undo the bracket.
2. Insert 3 AA-size 1.5V alkaline batteries to the battery compartment, ensuring that correct polarity is put.
3. Hold the bracket in position and mark the two mounting holes. Drill the holes, insert the plastic wall plugs and screw the bracket to the ceiling using the screws supplied.
4. Engage the HSD-200Z detector to the bracket firmly.



Note: After removing batteries, wait for 30 seconds to refit batteries.

Operation

HSD-200Z has two modes variable via a controller: (I) Security Mode (II) Home Automation Mode. The default setting is for security mode, but you can switch to your desired mode via a controller. Some general operations are similar in both modes which are listed below (1~7). As for the parameter settings, it will need someone who has experience setting up a Z-Wave system or someone that has computer software running a Z-Wave controller.

Configure Command

Message	Parameter Number	Size	Range	Default
Security Mode / Home Automation Mode	2	1/1	1/2	1 (Security Mode)

1. Enable

The HSD-200Z is set to be controlled by a Z-wave controller or other compatible units, use a controller to emit a signal of "System On" to HSD-200Z to enable PIR and Light sensor function. Upon motion/preset darkness level being sensed, the Detector will turn ON the load or the lamp connected.

2. Disable

The HSD-200Z is set to be controlled by a controller or other compatible units, use a controller to emit a signal of "System Off" to HSD-200Z to disable PIR and Light sensor function.

Configure Command

Message	Parameter Number	Size	Range	Default
System On/Off	3	1/1	1/0	1 (System On)

Note: When the battery is connected, HSD-200Z needs a warming-up duration, during that, it will release a short beep every 3 seconds. Once the Motion Sensor has stabilized, the LED behind the lens will illuminate red for 5 seconds with a long beep can be heard.

3. Recover the default setting:

Press the learning key more than 3 seconds and release, and then press it again more than 6 seconds. Within the six seconds, it will beep shortly once every second and end with a long beep which means all setting is recovered to default as shown below:

Mode	Security Mode
PIR function	Enable (System ON)
PIR Sensitivity	Level 4 (The farthest distance of detection is 10M/32.81ft)
PIR Re-trigger interval	5 seconds
Time-off setting	2 minutes
Light Sensor Threshold	15%

4. PIR Adjustable Sensitivity level setting:

In order to provide the best efficiency of HSD-200Z, it is recommend that to test the movement PIR can detect from the farthest end of the coverage area at the first time use. There will be ten sensitivity levels can be defined and set at user's own choice. You can define it referring the table below. (10 represent the maximum sensitivity, 1 means the least sensitivity).The maximum sensitivity setting of the detector is suitable for long range detection which can be used in larger room.

Sensitivity Level definition:

Level	Wall-Mounted	Ceiling-Mounted
1~4	~10m	~5m
4~10	10m~15m	5m~6m

Configuration Command

Message	Parameter Number	Size	Range	Default
PIR sensitivity level	4	1	1~10	4

5. Time-off setting:

The stayed "ON" duration of activated lamps or appliances can be set by user from 5 seconds to 60 minutes via a controller. As long as HSD-200Z is triggered, it will emit a ZWave ON Command to associated units wait until the time set is terminated, HSD-200Z will send a ZWave OFF Command to the associated units. It means whatever you like, you can determine for "how long "the units be connected should be stayed "ON" mode after it is triggered.

Configuration Command

Message	Parameter Number	Size	Range	Default
Trigger time-off interval	7	#b 1~2	5~3600	120

#b (when value larger than 255, the size would be 2)

6. Low Battery Indication:

When the battery power of HSD-200Z is low, it will emit a Z Wave Low battery command to compatible controller; meanwhile, the LED of HSD-200Z will flash once every 30 seconds.

7. Wakeup Command Class

The Motion Detector will send a Wakeup Notification Command if it has been included into a Z-Wave network. The prerequisite is the connected Z-Wave controller needs to emit a node ID and wakeup time interval to the Detector.

The Motion Detector will wake up periodically as desired depending on time interval

you set from wake up command class and resend the Wakeup Notification Command unless configured for another time interval. The Motion Detector will stay awake for 10 seconds and then go back to sleep to conserve battery life.

The time interval between Wakeup Notification Commands can be adjusted if you have a device in which that is supported. Refer to that device's instructions.

Advanced Operation

For some specific functions of HSD-200Z only can be operated in the individual mode are elaborated below:

(I) Security Mode Only:

PIR Re-trigger interval setting:

This function is designed to set the interval between two times of PIR trigger occur. The interval can be set from 5 seconds to 60 minutes via a controller. If the first movement is detected and then the connected units triggered, only wait after the expiry of preset time is off, the PIR can detect the second movement and re-trigger the units connected again.

Configuration Command

Message	Parameter Number	Size	Range	Default
PIR re-trigger time	5	#a 1~2	5~3600	5

#a (when value larger than 255, the size would be 2)

(II) Home Automation Mode Only:

PIR Re-trigger interval setting (Combine with light sensor threshold) :

This function is designed to set the interval between two times of PIR trigger occur under the condition of that the darkness level is lower than preset one. The interval can be set from 5 seconds to 60 minutes via a controller. If the first movement is

detected then triggers the connected units, only wait after the expiry of preset time is off, the PIR can detect the second movement and re-trigger the units connected again.

Configuration Command

Message	Parameter Number	Size	Range	Default
PIR re-trigger time	5	#a 1~2	5~3600	5

#a (when value larger than 255, the size would be 2)

Lighten Sensor Threshold:

Excepted for motion detection, this HSD-200Z is with a complementary function of light sensor threshold which can sense the darkness level of home. If the darkness level is lower than preset value and people pass by, it will trigger the lamp or appliances included. The darkness level is defined from 0 % to 100%, the lower % represent the unit will be triggered under the darker circumstance, on the contrary; the higher % represent the unit will be triggered for brighter circumstance.

Configuration Command

Message	Parameter Number	Size	Range	Default
Lighten Sensor Threshold	6	1	1%~100%	15%

Troubleshooting

Symptom	Possible Cause	Recommendation
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Cannot carry out inclusion and association	<ol style="list-style-type: none"> 1. Run out of battery power 2. Check if reverse battery polarity 3. Check if the detector is out of order 	<ol style="list-style-type: none"> 1. Replace a new battery 2. Refit the battery with correct polarity 3. Ensure the detector is working properly
Cannot control the connected modules	<ol style="list-style-type: none"> 1. Run out of battery power 2. Check if the detector is out of order 	<ol style="list-style-type: none"> 1. Replace a new battery 2. Ensure the detector is working properly
The detector not working	<ol style="list-style-type: none"> 1. Run out of battery power 2. Check if the mounting location is proper 3. Check if the detector is out of order 	<ol style="list-style-type: none"> 1. Replace a new battery 2. Reposition its mounting location 3. Do not open HSD-200Z, send it to the local retailer to be fixed.

Specifications

Battery	1.5V AA type size x 3
Range	Up to 100 meters line of sight
Warm Up Time	About 5 minute
PIR Detection Coverage	
Wall-Mounted:	Up to 10m x 110° (at the height of 1.8 m & Op. temp. 25°C)
Ceiling-Mounted	Up to 5m x 360° (at the height of 2 m & Op. temp. 25°C)
Frequency Range	908.42 MHz (US) / 868.42 MHz (EU)

**Specifications are subject to change without notice*

A501110874R02



Federal Communication Commission Interference Statement

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 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.

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.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

WARNING:

Do not dispose of electrical appliances as unsorted municipal waste, use separate collection facilities.

Contact your local government for information regarding the collection systems available.

If electrical appliances are disposed of in landfills or dumps, hazardous substances can leak into the groundwater and get into the food chain, damaging your health and well-being.

When replacing old appliances with new once, the retailer is legally obligated to take back your old appliance for disposal at least for free of charge.