

## 8 | Specifications

Frequency (operating)	2.4 GHz
Max Power transmitted	20 dBm
Battery replacement (1 per detector)	3 VDC ≥ 750mAh Energizer CR2 Lithium Duracell Ultra CR2 Lithium Panasonic CR2 Lithium Sanyo CR2 Lithium
Battery life	≥ 5 years with 16 open/close alarm events per day (door window detector), ≥ 6 years (water detector), TBD (tilt detector)
Dimensions (detector)	1.8 in. x 0.92 in. x 0.79 in. (46.0 mm x 23.5 mm x 20.3 mm)
Dimensions (magnet)	1.8 in. x 0.32 in. x 0.79 in. (46.0 mm x 8.3 mm x 20.3 mm)
Temperature (operating)	-4°F to +122°F (-20°C to +50°C)
Storage temperature	14°F to +131°F (-10°C to +55°C)
Relative humidity	5% to 93% at +32°C (+90°F)
Magnet gap break distance	≥ 1.3 in. (33 mm) mounted to metal, vinyl, or wood

## 9 | Certifications

Agency	Certification
	Control No.3170792 Conforms to ANSI/UL Std. 634 ULC/ORD-C634-86
FCC	FCC ID: T3X-012
IC	IC ID: 1249A-012
	This ZigBee® Certified product works in global 2.4 GHz networks supporting ZigBee HA 1.2.1. ZigBee® Certified is a registered trademark of the ZigBee Alliance. ZigBee Cert No.xxx

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### Trademarks

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### Bosch Security Systems, Inc. product manufacturing dates

Use the serial number located on the product label and refer to the Bosch Security Systems, Inc. website at <http://www.boschsecurity.com/datecodes/>.

### FCC

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.

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.

### IC

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada.

To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

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.

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada.

Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.



## RADION Multi-Sensor ZB RFMS-ZBMS



en Installation Guide  
fr Guide de l'installateur

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## 1 | Overview

The RADION Multi-Sensor ZB is a surface-mount wireless detector for monitoring door or window position (open or closed), and impact. The ZigBee® compatible radio allows connection to a security or home automation system. The detector also monitors temperature, and includes a tamper cover. You can optionally configure the multi-detector for use as a Water Detector or Tilt Detector.

## 2 | Product contents

The product box contains:

- 2 detectors with installed batteries
- 2 magnets
- 2 mounting brackets
- 2 tape strips for mounting brackets
- Installation instructions

## 3 | Installation considerations

- Suitable flat surfaces for installation include wood, metal, vinyl, glass, and painted surfaces.
- Installation on metal surfaces can affect the RF propagation pattern of the radio transceiver.
- Verify proper clearance with the latch of the window or door and the detector. Failure to do so might make it difficult to access and open the detector for maintenance.
- Moving the home automation or security system may improve RF performance. In some instances, installing another device, such as a repeater, might be required.

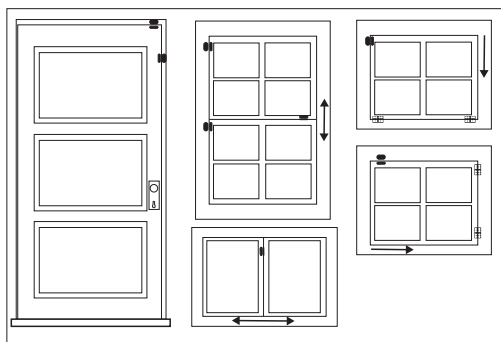
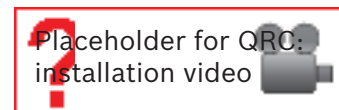


Figure 3.1: Door/window installation locations

For installation and mounting considerations, use a smart phone and scan the following QR code:



## 4 | Installation

The detector requires 1 battery to operate, which is pre-installed in the detector.

1. Pull the tab from the back of the detector to activate the battery. The detector powers up, and the green LED lights. The detector enters pairing mode when the green LED begins flashing 3 times every 5 seconds. Continue with *Section 4.2, Pairing process*.
2. If you are installing a:
  - Door Window Detector, continue with *Section 4.2, Pairing process*.
  - Water or Tilt Detector, continue with *Section 4.1, Configuring the detector type*.

### 4.1 | Configuring the detector type

By default, the detector type is a surface-mount detector for monitoring door or window position (open or closed). You can change the detector to operate as a Water Detector or a Tilt Detector.



#### NOTICE!

Configure the detector type, within the allotted time before beginning pairing with a home control system or security control panel.

#### 4.1.1 | Water Detector

Changing the detector type to Water Detector:

1. Move the magnet at least 1 ft (30.5 cm) away from the detector.
2. Push and hold the tamper switch, and reinsert the battery. When the green LED turns on, release the tamper switch before the LED turns off (within 4 seconds).

3. Place the detector horizontally on the floor as shown in Figure 4.1.
4. Tap the detector 3 times within 30 seconds of powering the detector. The green LED flashes 2 times to indicate Water Detector.
5. Place the detector on the horizontal surface of the area to monitor for water. Refer to *Figure 4.1*.

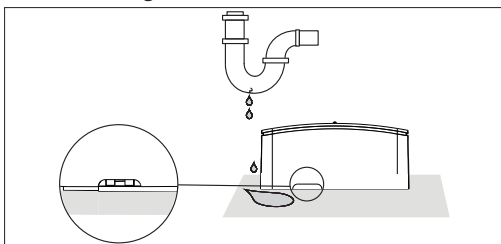


Figure 4.1: Water Detector orientation



#### NOTICE!

The Water Detector may be damaged if submerged in water.

### 4.1.2 | Tilt Detector

Changing the detector type to Tilt Detector:

1. Move the magnet at least 1 ft (305 mm) away from the detector.
2. Push and hold the tamper switch, and reinsert the battery. When the green LED turns on, release the tamper switch before the LED turns off (within 4 seconds).
3. Orient the detector vertically with the alignment marker facing left.
4. Tap the detector 3 times within 30 seconds of powering the detector. The green LED flashes 3 times to indicate Tilt Detector.
5. Mount the detector on the top section of the moving surface with the alignment mark facing left. Refer to *Figure 4.2*.

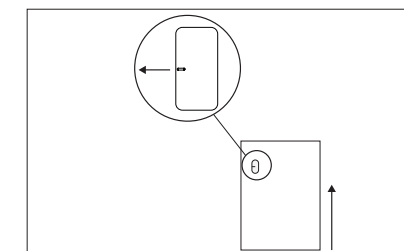


Figure 4.2: Tilt Detector orientation

### 4.1.3 | Test Tilt Detector

Test the proper operation of the Tilt Detector:

1. Go to *Section 4.2* and perform the pairing process.
2. When finished pairing, move the surface with the mounted detector to a horizontal position. The green LED turns on to indicate a tilted or open position.
3. The green LED turns off after the test is complete.

## 4.2 | Pairing process



### NOTICE!

Verify that the home automation or security system is powered up and operating. Then, put the system or control panel into pairing mode.

Pairing the detector with the controller:

1. With the detector in pairing mode, go to the home automation or security system and complete the pairing process according to the system manufacturer's instructions.
2. When pairing is complete, the detector enters test mode, and is ready for installation. If the system does not discover the detector within 2 minutes, the detector exits pairing mode. Restart pairing mode by either opening/closing the cover, moving the magnet, or powering the detector off, then on.

The LED provides feedback during installation or test mode.

LED	Condition
Flashing	<ul style="list-style-type: none"> <li>• Flashes at a variable rate indicates magnetic field strength</li> <li>• Flashes 3 times every 5 seconds during a 2 minute interval indicates pairing mode</li> <li>• Flashes 2 times or 3 times during type configuration indicates Water or Tilt Detector type.</li> </ul>
Green	Good RF signal strength performance
Red	Poor RF signal strength performance
Off	<ul style="list-style-type: none"> <li>• Normal operation and use</li> <li>• Optimal magnet gap distance</li> <li>• 90 seconds of inactivity after test mode complete</li> </ul>

5. When the location is acceptable, permanently mount the detector and magnet using the double-sided tape on the base. Refer to *Figure 4.3*. If using screws for mounting, remove the detector and magnet covers to access the mounting holes. You might have to remove the tape on the bottom of the detector and magnet bases to mount flush on the surface. Refer to *Figure 4.4* for surface mounting, *Section 4.5*, and *Section 5* for removing the magnet and detector covers. For additional security, use an adhesive with the screws.

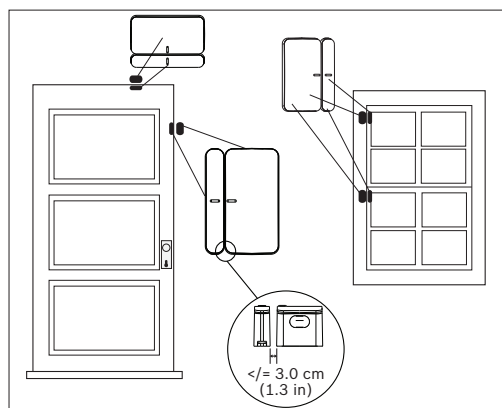


Figure 4.3: Correct alignment and placement

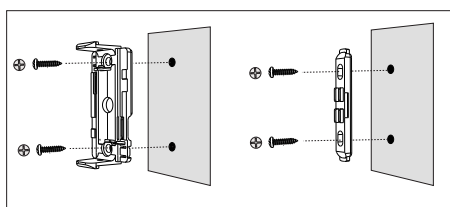


Figure 4.4: Surface mounting using screws

## 4.4 | Door Window Detector mounting and testing

Identify and test desired mounting locations before you permanently install the detector and magnet. Refer to *Section 3* for installation guidelines.

Mounting the detector and magnet:

1. Select a location for the detector on a stationary surface of an interior door or window frame. The exception is double hung windows, where the detector is mounted to a moving sash. Temporarily mount the detector.
2. Place the magnet near the detector and move it to the desired mounting location, making sure the alignment marks on the detector and magnet align. Place the magnet and detector side by side, and as close together as possible. The LED flash rate indicates the strength of the magnetic field. The LED turns off at the optimal placement of the magnet to the detector. Temporarily mount the magnet. The recommended magnet gap distance is 0.75 inches (19.05 mm).
3. To verify proper RF signal strength, open the door or window and check the color of the LED. If the LED is green, the signal strength is acceptable. If the LED is red, reposition the magnet and detector, then recheck the LED color. When the device RSSI (Received Signal Strength Indicator) or LQI (Linked Quality Indicator) level is poor, the LED is red. Refer to *Section 4.3, LED Behavior*.
4. Open the door or window to test for proper clearance, and alarm operation. When the distance between the detector and magnet is greater than or equal to 1.3 inches (33 mm), the alarm triggers.

## 4.5 | Door Window detector bracket mounting

The mounting bracket allows mounting of the magnet on its left or right side (90°), instead of its base. For example, use the mounting bracket for installations where the detector is mounted to the inside of a door frame. Refer to *Figure 4.5*.

Using the mounting bracket:

1. Remove the base of the magnet by inserting a small flat head screwdriver or similar tool in the slots on either end of the magnet base and carefully pry off.
2. Push the magnet cover onto the bracket.
3. Add a tape strip to the bottom of the bracket.
4. Continue with *Section 4.4*. If using screws, mount the bracket first, then replace the magnet cover. Refer to *Figure 4.6*.

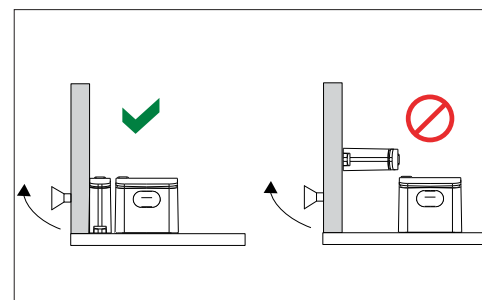


Figure 4.5: Mounting bracket installation

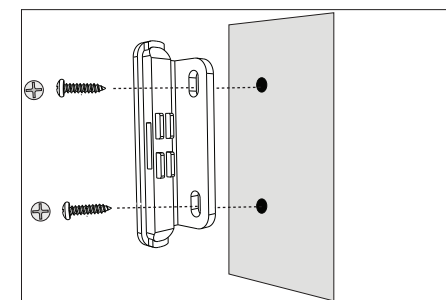


Figure 4.6: Mounting bracket using screws

## 4.6 | Door/Window Detector mounting on thin windows

Use this procedure for special applications, such as thin windows where the magnet cover may prevent the window from opening.

Installing on thin windows:

1. Remove the base of the magnet by inserting a small flat head screwdriver or similar tool in the slots on either end of the magnet base and carefully pry off.
2. Pry out the enclosed magnets from the magnet cover using a small flat head screwdriver or similar tool. See *Figure 4.7*.
3. Remove the round perforated section of tape from the base of the detector.
4. Attach the round section of tape to 1 magnet and place the magnet on the window opposite the detector. Use the alignment mark on the detector to align and center the magnet with the detector. Refer to *Figure 4.8*.

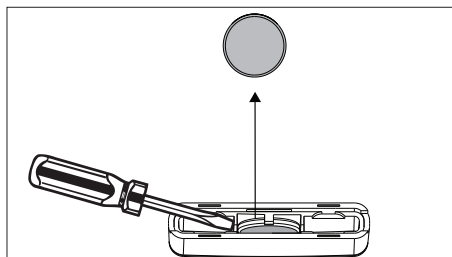


Figure 4.7: Remove magnet from magnet cover

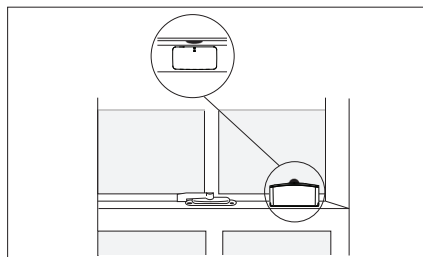


Figure 4.8: Magnet and detector alignment

## 6 | Resetting the detector

The detector transmits a tamper fault, and turns on the LED when the detector is removed from its base. The tamper switch also resets the detector configuration back to factory defaults.

Resetting the detector:

1. Open the detector and remove the battery. Refer to *Section 5* for opening the detector.
2. Push and hold the tamper switch, and reinsert the battery. When the green LED turns on, release the tamper switch before the green LED turns off (within 4 seconds). Refer to *Figure 6.1*.
3. The LED turns off, then turns on for 2 seconds, and starts the pairing sequence (indicated by 3 LED flashes). The detector is now reset to factory defaults. See *Section 4.2* for pairing process.
4. Close the cover. Refer to *Section 5* for closing the detector.



### NOTICE!

You can reset the detector remotely using the supporting controller.

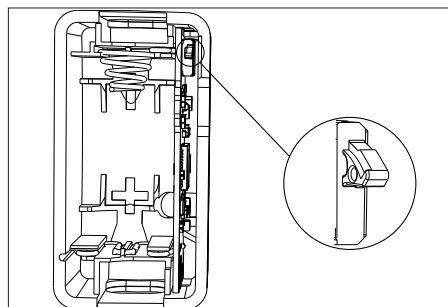


Figure 6.1: Tamper switch

## 5 | Battery replacement

Replacing the battery:

1. Open the detector by pushing in the 2 buttons on either side of the cover, while pulling the base.
2. Remove the old battery.
3. Refer to the diagram on the inside cover for correct polarity orientation, then insert the new battery. The green LED lights.
4. Close the detector cover by pushing the detector cover onto the detector base until the buttons “click” into place and secure the cover.



### NOTICE!

Bosch is committed to responsible environmental stewardship. Please dispose of batteries in accordance with local laws and regulations in your area. Contact your local waste disposal authorities or consult [www.ecyclingcentral.com](http://www.ecyclingcentral.com) to find an electronics recycling center near you.

## 7 | Troubleshooting

A trouble status reported on the controller might be the result of low batteries on the detector. To trouble-shoot the condition, begin by replacing the batteries. Refer to *Section 5* for replacing the batteries.

Monitor the LED for issues when pairing or mounting the detector and magnet. The LED flashing pattern indicates RF strength or magnetic field strength depending on color. Refer to *Section 4.3* for LED behavior.