

# Wireless Occupancy Sensor User Guide

This Manual covers both the Wide angle and the Narrow long range occupancy sensor.

Dialight Part Numbers described here-in are:

WOSU22BG2	Wide angle
WOSU12BG2	Long Range

Wide optic version

Long Range Version



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Introduction



**Keep These Instructions  
READ AND FOLLOW ALL SAFETY INSTRUCTIONS**



Welcome to the Dialight Wireless Occupancy Sensor user manual. This product allows you to customize your entire lighting network using independent Occupancy Sensors throughout your facility by turning lights on when occupancy has been detected.

This guide provides you with the information you need to get started.

- ***Refer to operating temperature ratings of this device before installing.***
- ***DO NOT let the sensor touch hot surfaces.***
- ***DO NOT mount near gas or electric heaters***
- ***Equipment should be mounted in locations and at heights where it will not be subjected to tampering by unauthorized personnel.***
- ***The use of accessory equipment not recommended by the manufacturer may cause unsafe conditions.***
- ***DO NOT use this equipment for other than intended use.***
- ***DO take pictures of the installation, wiring and mounting for future reference.***
- ***Battery life will vary upon traffic area of the install***
- ***Contact your local Sales representative or Dialight when necessary***

**SAVE THESE INSTRUCTIONS!!**

- ***The installation and maintenance must be carried out by authorized personnel.***
- ***Repairs and Installation must only be carried out by a qualified electrician.***
- ***Only genuine or authorized Dialight replacement parts must be used when unforeseen repairs are required.***
- ***Observe the national safety rules and regulations during installation!***
- ***Mounting in extreme heat locations should be avoided. Failure to do so could void all warranties!***
- ***No alterations are allowed without the written agreement from Dialight Corp. Alterations other than written in this manual will void all warranties.***
- ***Batteries should be removed when the sensor is not being used***
- ***It is suggested that a maintenance schedule be set up for battery replacement.***

**SAVE THESE INSTRUCTIONS!!**



Wireless Occupancy Sensor Gen 2 Specifications

Description	Wide Angle and Narrow Long Range Wireless High Bay Occupancy Sensors
Certification	UL916, CSA C22.2 NO.205
Power Input	2x "AA" Lithium Batteries 1.5V
Operating Temperature	Operating Temperature: -40°C to +60°C
Estimated Battery Life	Up to 10 years
Radio Frequency	2.4Ghz
Sensing Area	Wide Angle 20'-30' (minor – major motion range), 1250 sq ft, 120° Long Range 100' (maximum range), 7600 sq ft (floor + distance coverage), 10° coverage angle
Sensing Technology	Passive Infrared
Dimensions	5"D x 2.38"H
Weight	~8.8oz
Material	Housing: Grey Polycarbonate Lens: High density polyethylene
IP Ratings	IP66
Green LED	Green LED flashes one time when motion is detected Indicates battery voltage above 2.7 Volts. Green LED flashes twice every 5 seconds while searching for a network connection.
Red LED	A single red LED3 flash indicates motion detected and low battery voltage below 2.7 Volts.
Reset Button	Resets the processor
LED On/Off Switch	Located on bottom of sensor board, it will turn the LED indicators ON or OFF.
Leave Button	Push and hold for 5 seconds to force sensor to leave its gateway
Join Button	Push and hold for 5 seconds. Sensor will double blink while trying to join a gateway, Sensor will stop blinking if it doesn't join a gateway within 30 minutes.



## Unboxing

Included in the box:

This Manual

Qty 1 – Wireless Occupancy Sensor

Qty 3 – #8 Plywood Screws

Qty 3 – #8-32 Machine Screws

Qty 2 – Lithium “AA” Batteries

Qty 2 – Battery Clips

**Take Note of the following information:**

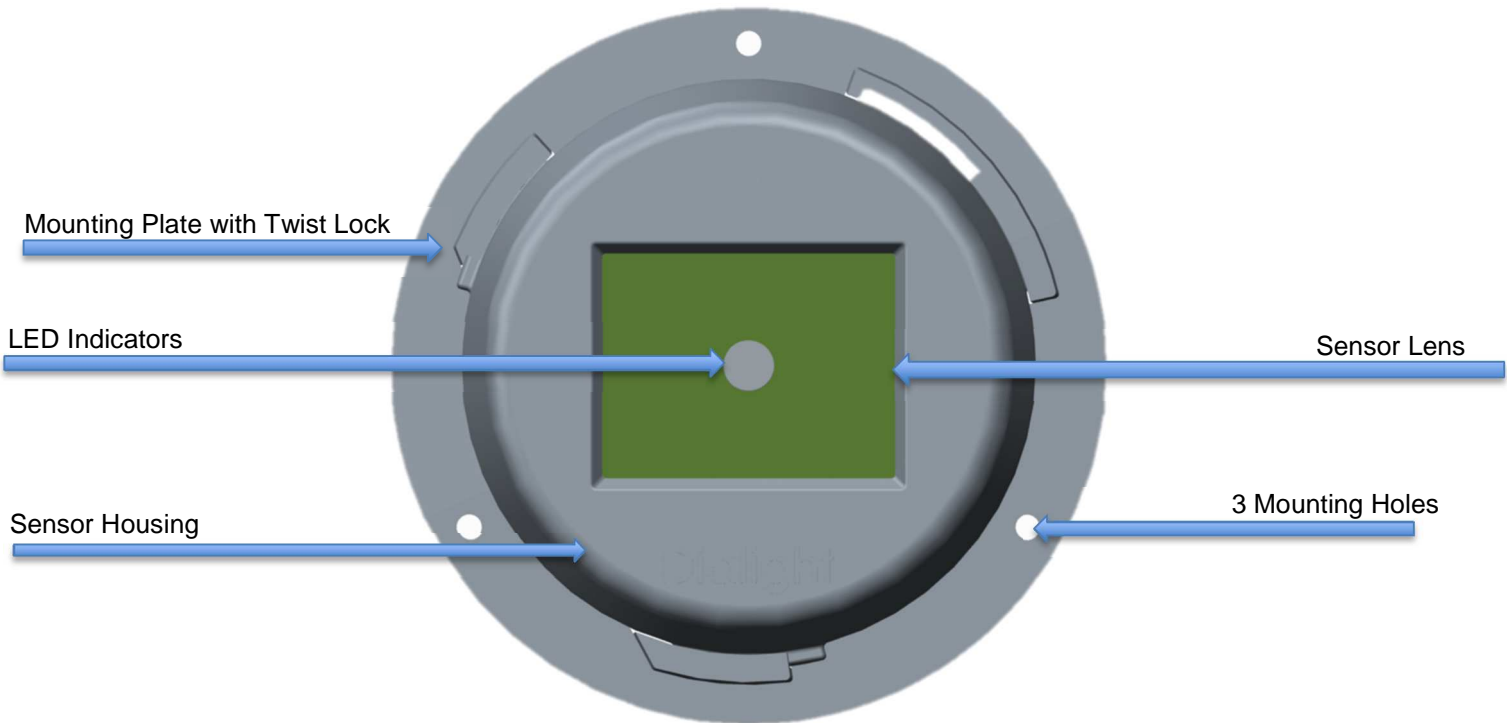
**Dialight Catalog Number:**

**Date Code:**

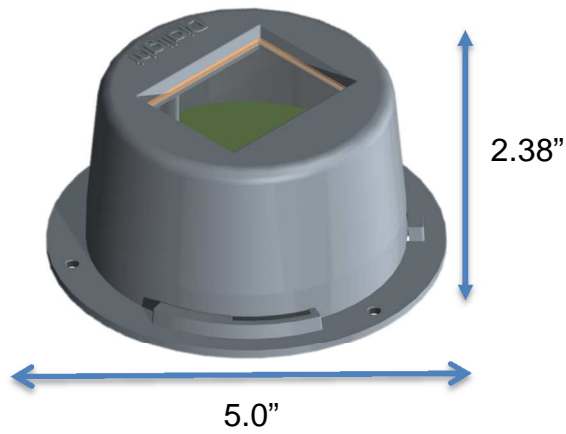
**Install Date:**



## Sensor Overview



Front View

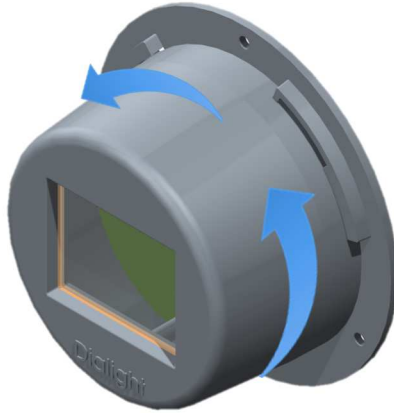


## Battery Installation/Removal

### Removing Battery Cover

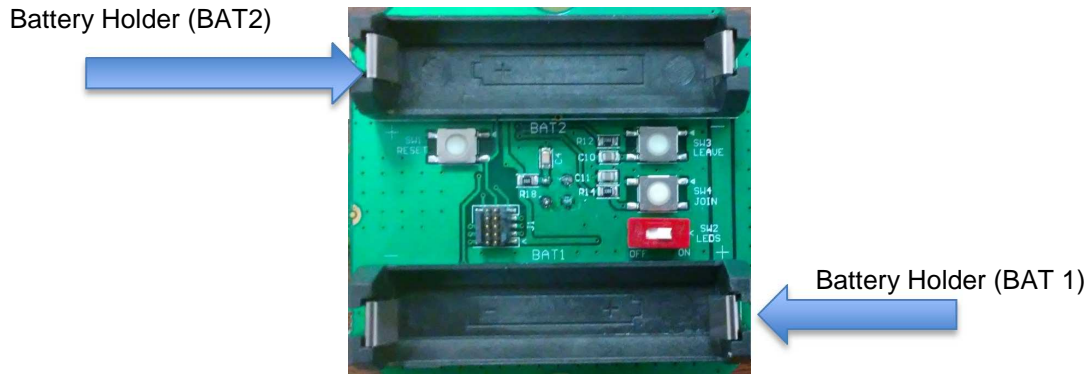
To remove the sensor, twist sensor cover counterclockwise to unlock it from the back plate.

Once cover has been removed you're now ready to add or remove the batteries.



## Installing Batteries

1. Remove AA batteries from their packaging.
2. Install batteries in the battery holder on the sensor making sure to orient them according to the +/- symbols on the holder. Install provided battery clips.



3. Lock sensor to the back plate. Installation is the opposite of removal.
4. The sensor is now on and ready to be discovered.

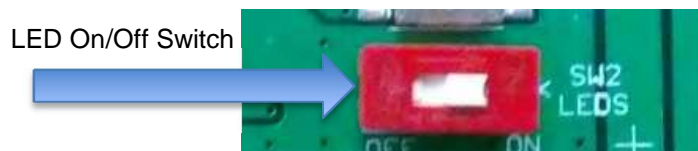
**NOTE:** There is no on/off switch in the sensor. To power off the sensor, remove the batteries from unit.

## Sensor Lights

### To turn on the LED Indicators

1. Twist open the sensor from the mounting plate.
2. Move the LED switch to the right to turn on the LED indicators.

**NOTE:** Turning switch to on will cause increase current draw to the batteries and will shorten life based on the amount of motion detection.



3. Twist close the sensor back on to the mounting plate.



**Sensor Notifications: NOTE there are only 1 led of each color. Below is for clarity**



One green blinking LED1 Motion means motion has been detected and indicates a battery voltage of more than 2.7V.



Green LED1 Motion blinking twice in a second means sensor is looking for a network to join and battery voltage is more than 2.7V. Sensor will double green blink while looking for a network for 30 minutes and then stop. Press the join button for 5 seconds to start a new 30 minute search.



A single red LED3 Low Bat flash indicates motion detected and low battery voltage below 2.7 Volts. Battery needs to be replaced.  
Only replace batteries with same size and type.



Red LED3 Low Bat blinking twice in a second means sensor is looking for a network and battery voltage is under 2.7V.



## Commissioning

**NOTE:** In order to confirm proper location it is advised to mount the sensor before discovering it.

### Adding Sensor to Gateway

1. When the green LED blinks twice a second on the sensor, the sensor is ready to be discovered/commissioned.
2. Use a Dialight gateway to discover the sensor. (Please refer to the gateway owner's manual for further instructions under the devices page.)
3. Once the sensor has been added to the gateway, the green LED will stop blinking at the rate of twice a second. You have now connected the sensor to the gateway.
4. The green LED will then blink when motion is detected.

**NOTE:** There is a 90 second ideal mode after a trigger detection. Thus quick repeating will not trigger additional events.

See the Gateway manual for setting up the sensor

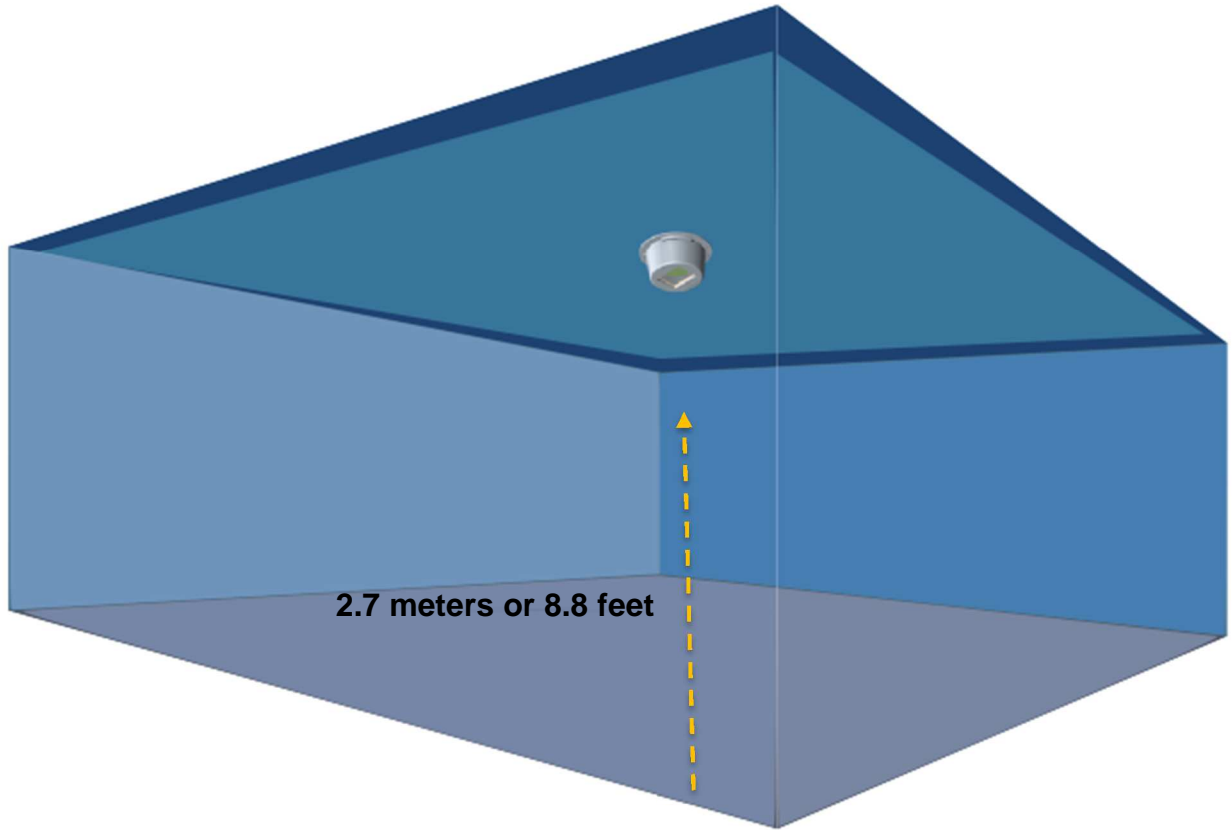
### Removing the Sensor from a Gateway

Due to failure or relocation

1. Go to the sensor and open it and hold the SW3 Leave button for 5 seconds
2. Sensor LED's should now be double blinking
3. Check the gateway's GUI to verify sensor was removed from device list. (Please refer to your gateway owner's manual for further instructions.)
4. Your sensor is now ready to be added to another gateway.

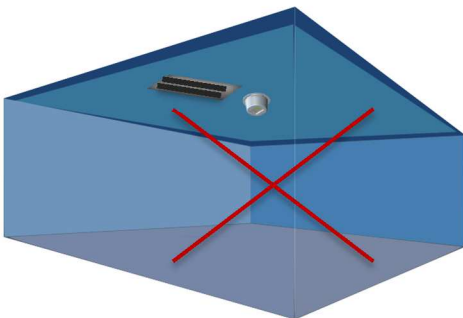


## Wide Angle Sensor Ceiling Mount



### Where to Mount

The wide optic sensor is best used as a ceiling mounted sensor. The recommended install for this sensor is 2.7 meters or 8.8 feet from the floor.

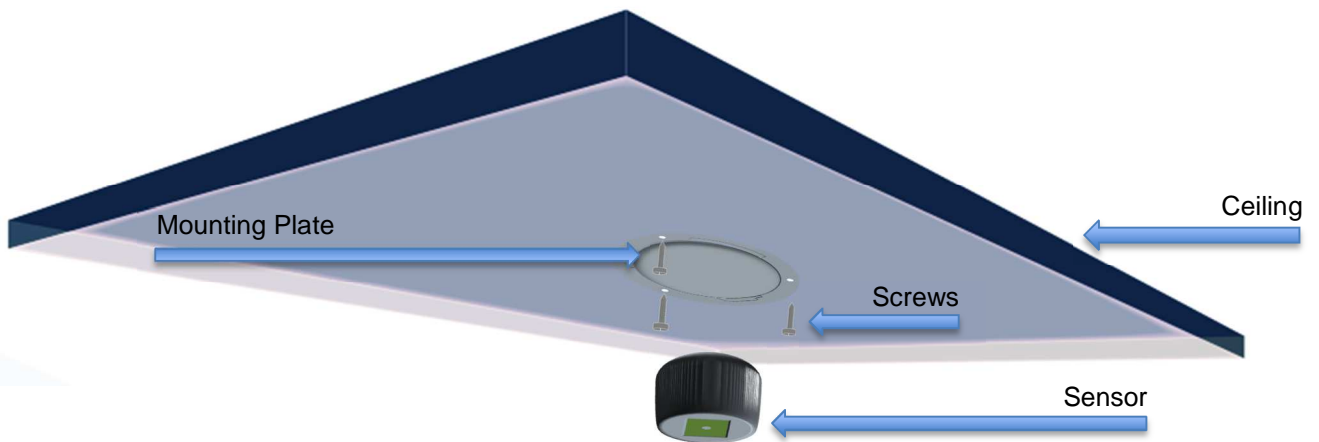


Sensor should be mounted 6ft away from any open air vent or strong air supply openings.

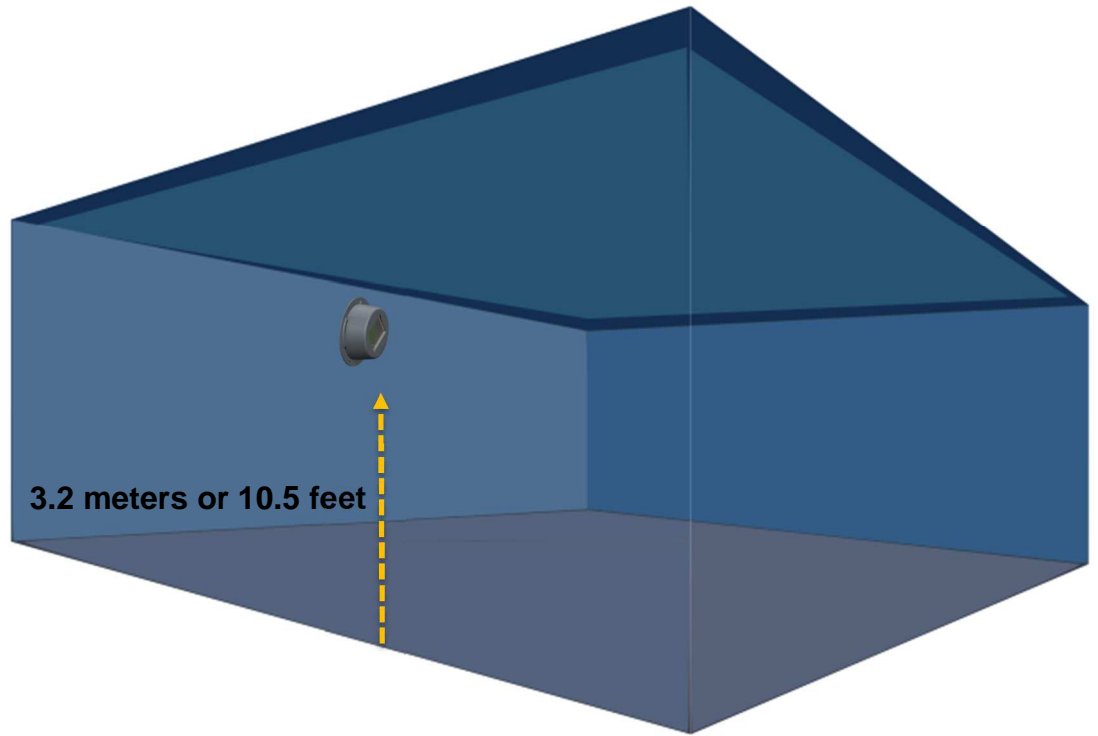
## How to Mount

### How to Mount (Installation should be performed by properly trained personnel)

1. Use the sensor's mounting plate to mark the surface of the ceiling with the appropriate hole spacing.
2. Drill holes in ceiling.
3. Align sensor mounting plate to the ceiling matching the drilled holes.
4. Use the three provided screws and secure sensor to the ceiling.
5. Attach and lock the sensor to the mounting plate.

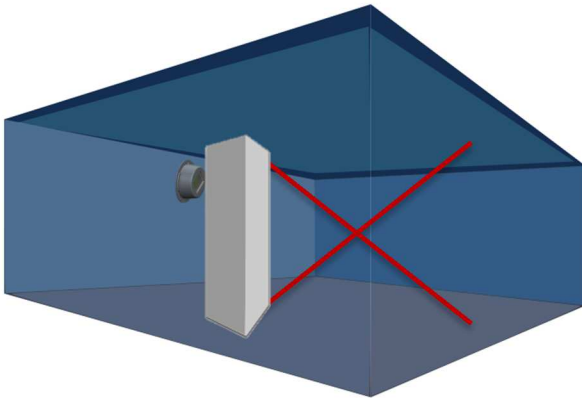


## Long Range Sensor Wall Mount



### Where to Mount

The long range sensor is best used as a wall mounted sensor. The recommended install for this sensor is 3.2 meters or 10.5 feet from the floor.

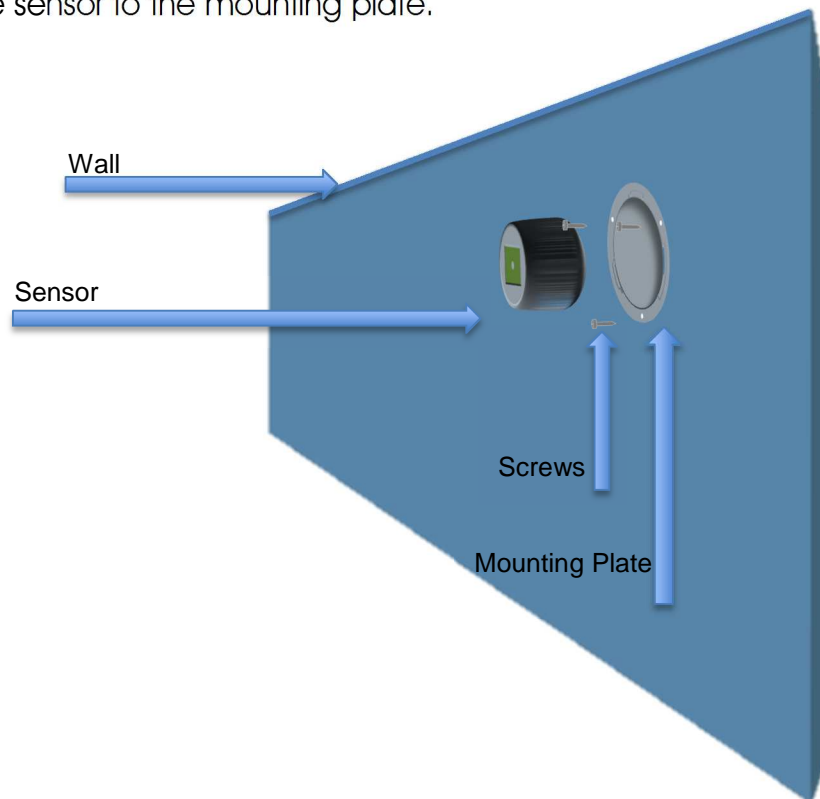


Avoid placing sensors where obstacles can block the sensor's line of sight.

## How to Mount

### How to Mount (Installation should be performed by properly trained personnel)

1. Use the sensor's mounting plate to mark the surface of the wall with the appropriate hole spacing.
2. Drill holes in wall.
3. Align sensor mounting plate to the wall matching the drilled holes.
4. Use the three provided screws and secure sensor to the wall.
5. Attach and lock the sensor to the mounting plate.



**Sensor is not discovered by the gateway.****NOTE: This section requires the Dialight Gateway and to be connected to a computer using the GUI interface.**

Steps to solve:

1. On the gateway web page verify that discovery is turned on.
2. Follow the provided instructions to turn the internal LED switch to ON.
3. Check the condition of the LED lights through the front lens of the sensor.
4. If the red LED is blinking then the batteries need to be replaced.
5. If the green LED is double blinking then the sensor is still trying to join a network, then:
  - a. Verify that it is within 100 ft. of a light that has already joined the network.
  - b. Verify the lights are powered by commanding them to turn on from the web page.
  - c. Replace the sensor.
6. If the green LED is not blinking at all then:
  - d. Remove both batteries.
  - e. Replace the batteries, verifying correct orientation.
  - f. When plugging in the second battery, if the red and green LED's do not come on for 2 seconds, then:
    - i. Try new batteries.
    - ii. Replace the sensor.

**Troubleshooting Continued:**

- g. After plugging in the second battery watch the behavior of the green LED. If the green LED double blinks then this sensor will try to join a network for 30 minutes. If the red LED is blinking then replace the batteries.
- h. If the Green LED is not blinking then it has already joined a network, possibly a different network than the desired network. Hold the leave button for 5 seconds to make the sensor leave the network. It will then double green blink and be ready to join a new network.

**Motion at the sensor does not turn on any lights.**

Steps to solve:

1. Verify that motion at the sensor blinks the green LED once. If you don't see it blink once then wait 90 seconds and try again as the sensor has a 90 second blackout time in which motion cannot be re-triggered.
  - a. If the sensor blinks green once then it is operating correctly. Continue with step 2.
  - b. If the sensor blinks red once then replace the batteries.
  - c. If the sensor does not blink at all then open the sensor and press the reset button.
  - d. If the green and red LEDs do not light for two seconds then verify the batteries are installed with the correct orientation. If they were correct then replace the batteries.
  - e. If the green and red LED do light for two seconds then observe the behavior of the green LED.
  - f. If the green or red LED is double blinking then this sensor is not joined to a network. Go to the system control and discover it.
  - g. If there is no double blinking then the sensor is joined to a network. Try trigger motion and see if the green led blinks once.
  - h. If it blinks for motion then the sensor is working correctly. Continue to step 2.
  - i. If it does not blink for motion.
  - j. Confirm the led SW2 is set to on.
  - k. If not then replace the sensor



### Troubleshooting Continued:

2. On the gateway web page verify that the sensor in question is assigned to a group and that a motion event is currently ON in the schedule (see gateway manual).
3. On the gateway web page verify that the nodes in the network show with no connection errors (consult gateway manual).
4. Follow the provided instructions to turn the sensor LED switch to ON.
5. Check the condition of the LED lights through the front lens of the sensor.
6. If the red LED is blinking then the batteries need to be replaced.
7. If the green LED is double blinking then the sensor is trying to join a network. Follow steps in the gateway manual to discover the sensor and see if the problem persists.
8. From your gateway's wireless devices page, display the motion sensors (consult the gateway manual for instructions).
9. Wait until no motion sensor in the network is showing motion present.
10. Trigger motion on the sensor in question.
11. If the green LED behind the front lens of the sensor does not blink once then:
  - a. Try new batteries.
  - b. Replace the sensor.
12. If the green LED does blink then verify that one sensor on the gateway web page shows motion present for a relatively short period of time.
13. If motion is shown on one sensor node then verify that that sensor is assigned to global mode or the group that you want to light up.
14. If none show motion present then this sensor is likely part of a different gateway network. Follow steps in this manual to remove the sensor from a different gateway.