

User Manual (Rev. 1.1)

Requirements: This product only works with the iCon Wireless Control Hub (WCH100) and BLE Dimmer (BLD100). Both are sold separately.

The Bluetooth Occupancy Sensor (BOS100) is a member of the Amptek Smart LED lighting system. The BOS100 features an infrared motion sensor (PIR), an ultrasonic motion sensor, and an opto sensor. These sensors together provide the maximum energy saving and daylight harvesting by detecting the presence of a person as well as the ambient light level in an area. In addition, there is a built-in single-pole single-throw, normally-open (SPST-NO) power relay which can be used to control external devices such as ventilation fan or conventional lightings.

By default, the PIR is always enabled for motion sensing. It cannot be disabled. The ultrasonic motion sensor acts as an aid to qualify every PIR detection in order to minimize false detection due to things such as portable heater or HVAC. The ultrasonic motion sensor detection range is relatively shorter than the PIR at about 4 meters. The ultrasonic motion sensor can be disabled through the mobile app if desired.

The opto sensor is capable of detecting ambient light. The BOS100 can automatically adjust the BLE Dimmer (sold separately) to a desirable level according to the ambient light level in order to achieve daylight harvesting. This feature can save more energy by leveraging natural light. The opto sensor can be disabled through the mobile app if desired.

The BOS100 must be assigned to a specific zone within a LED light network. Multiple sensors can be used within a single zone, but only one will be designated as the master sensor and the others will be as slave sensors. Sensors will communicate with each other as well as to the iCon and all BLE Dimmers in a network through our proprietary Bluetooth Low Energy mesh protocol.

Specifications

Model number	BOS100
Input	100-375VAC 50/60Hz, 13A
Output	100-375VAC, 13A Max., 4000VA Max.
Bluetooth	Bluetooth Low Energy 4.2
Infrared motion sensor range	360 degrees. 5.5 meters radius
Ultrasonic motion sensor range	4 meters
Dimensions (Length x Width x Height)	122mm x 128mm x 36mm

Contains FCC ID: QOQBGM113

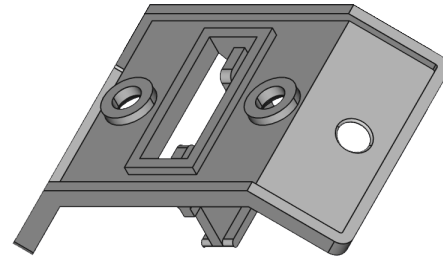
Contains IC: 5123A-BGM113

There are two status lights behind the PIR lens. The yellow light indicates the PIR has detected motions, whereas the green light indicates the ultrasonic motion sensor has detected motions.

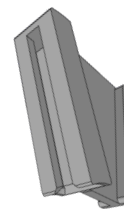
Installation

The sensor works best when mounted between 2 and 2.5 meters high with a direct line of sight to the area of monitoring. It is also best to mount the sensor no more than 15 meters from at least one BLE Dimmer.

The sensor can be mounted on the ceiling or at a corner with the supplied brackets. When mounted at a corner, the bracket provides a 25-degree tilted down angle.

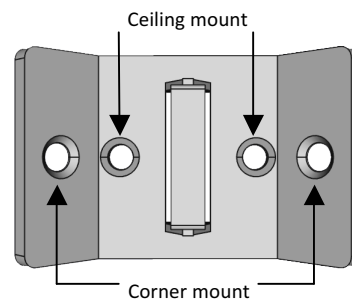


Ceiling bracket

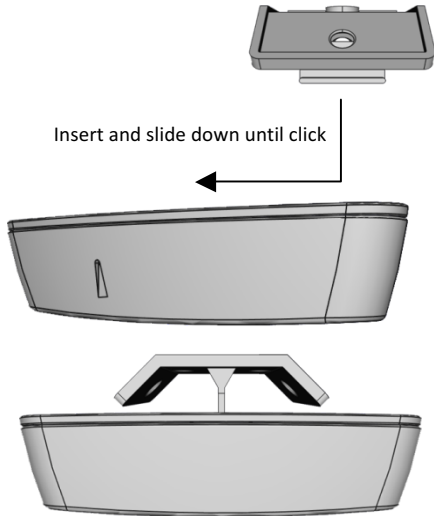


Corner bracket

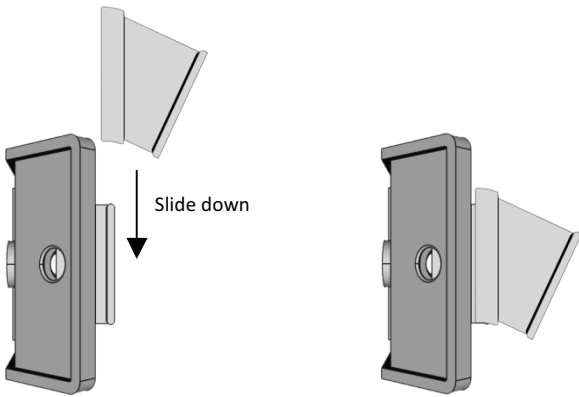
The ceiling bracket has four mounting holes. The two ceiling mounting holes near the center are 35mm apart, whereas the two corner mounting holes are 48mm from the corner. Use the provided wall anchors and M5 screws to secure the bracket.



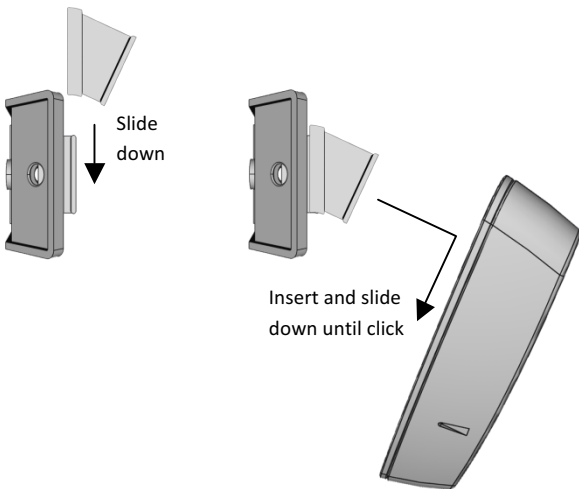
To mount the sensor on the ceiling, gently push the sensor into the T-shape latch and then slide the sensor towards the middle until you hear a click sound. Feed the wires through the rectangular slot in the middle of the bracket and connect to power. To remove the sensor from the bracket, gently press the lock at the back of the sensor and slide it off the bracket.



To connect the two brackets for corner mounting, slide the corner bracket into the ceiling bracket as shown below.

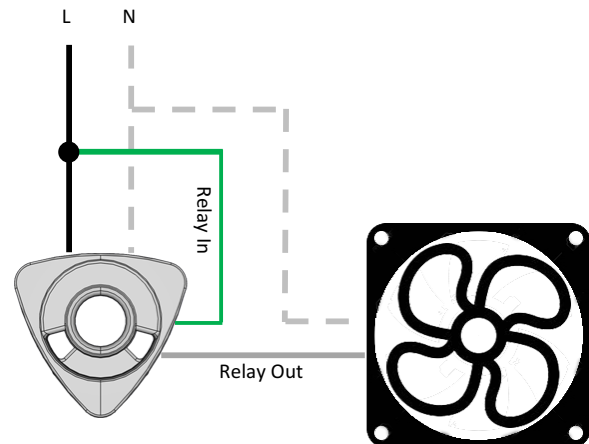
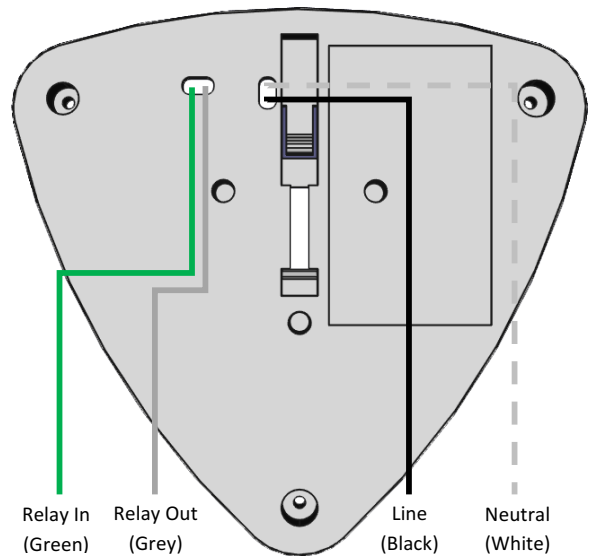


To mount the sensor at a corner, connect the two mounting brackets together and gently push the sensor into the T-shape latch at the corner bracket. Slide towards the middle of the sensor until you hear a click sound. Feed the wires through the rectangular slot in the middle of the bracket and connect to power.



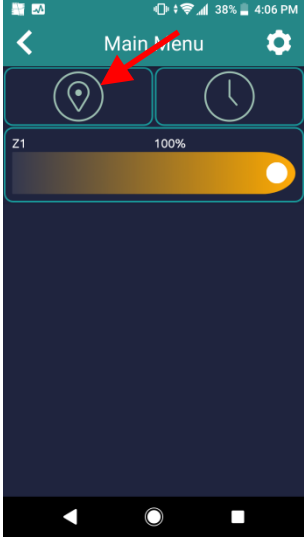
A CIRCUIT BREAKER SHALL BE INSTALLED ON THE AC LINES SUPPLYING THE SENSOR. IF YOU ARE NOT FAMILIAR WITH AC ELECTRICAL WIRING, PLEASE ALLOW A LICENSED ELECTRICIAN TO PERFORM THE INSTALLATION.

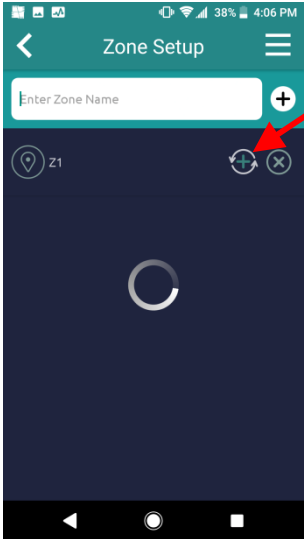
Wires are separated into two groups. Connect the Line (Black) and Neutral (White) wires to AC power. If the power relay function is being used, then connect the green and grey wires as shown in the diagram below. Otherwise, you can leave the relay wires unconnected.

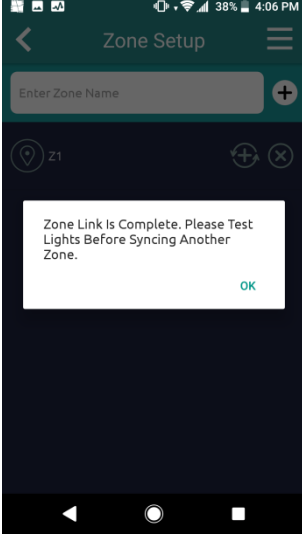


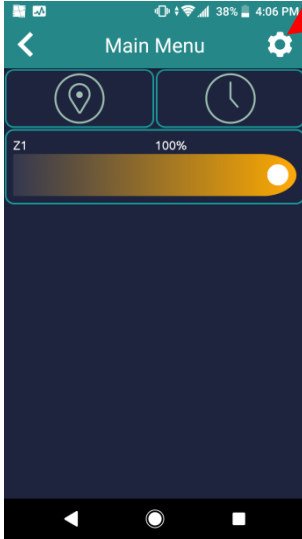
Mobile app setup

You can download the iConDimmer app from the Google Play Store or the Apple App store free of charge.

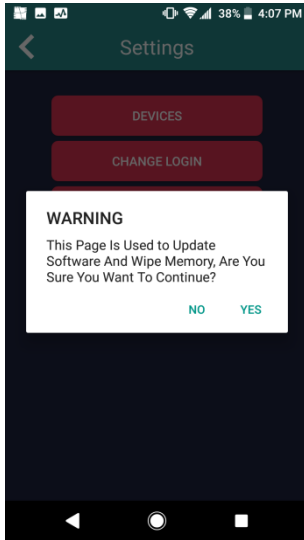
1.  To add a new Occupancy Sensor to an existing network, first login to your lighting network with the app. Then tap on the zone icon to see a list of zones available in the network. In this example, there is a zone called Z1 available.

2.  Switch on the power to the Occupancy Sensor. Then tap on the Sync button for the zone where the sensor is located. All lights in the zone will dim up and down while the zone is being synchronized.

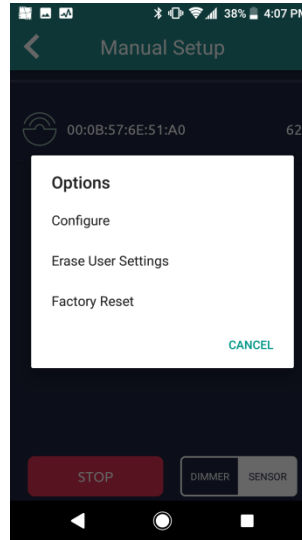
3.  A message will be displayed once the process is completed. The Occupancy Sensor is now connected to the zone. Tap on OK to exit the page.

4.  To configure the Occupancy Sensor, tap on the setup button at the top right corner of the screen.

5.  Tap on the DEVICES button and select YES when a warning message appears.



8.

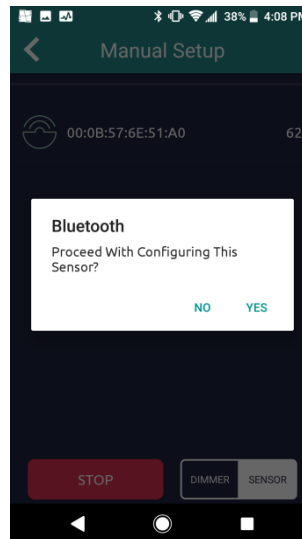


You will be given an option to configure the sensor, to erase all user settings, or to reset the sensor back to factory. Tap on Configure and answer YES to continue. Both yellow and green status light on the Occupancy Sensor will be turned on once a connection is established.

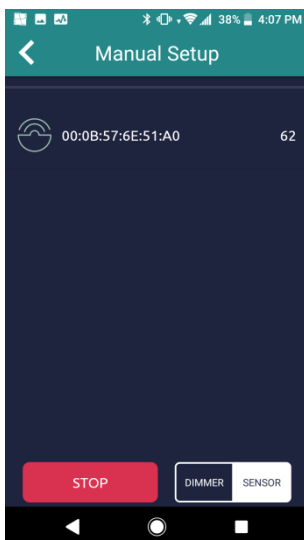
6.



Walk close to the sensor that you want to configure and tap on the SENSOR button at the lower right corner of the screen.

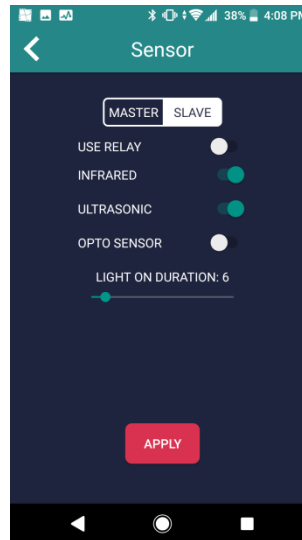


7.



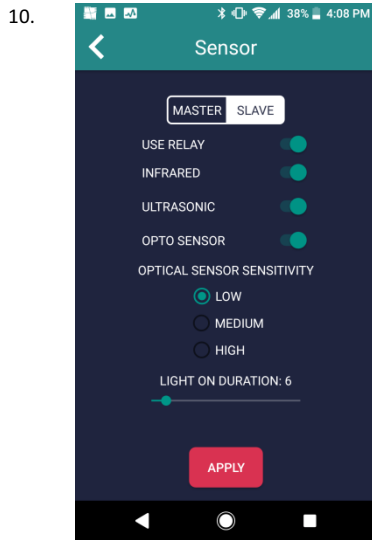
The app will list all Occupancy Sensors it can detect in the area. The sensor that is closest to the phone will be listed at the top of the list with the smallest number on the right. To select the sensor, simply tap on the sensor from the list.

9.

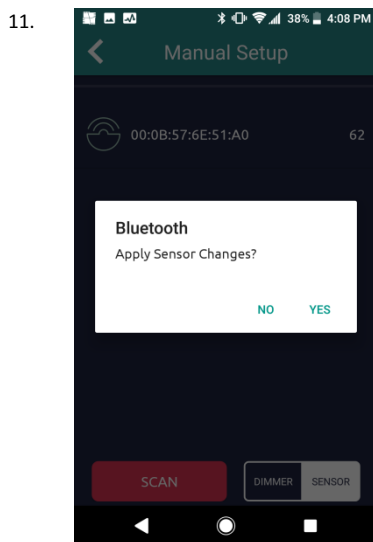


On the Sensor page, you can configure the Occupancy Sensor as a master or slave. When there are multiple sensors in a single zone, only one can be set as the master, the rest must be slaves. The opto sensor inside the master will dictate the daylight harvesting function for the entire zone. It is recommended to install the master sensor near the windows or the main source of daylight. You can enable or disable the various features of the sensor by toggling the buttons.

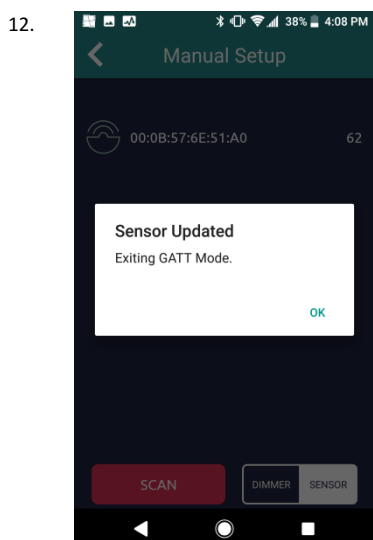
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If the opto sensor is enabled, you will be given the option to select three different levels of sensitivity. These levels of sensitivity correspond to the level of ambient light detected by the opto sensor. Move the slider to set the desired delay time (in minutes) for your lights. Tap on APPLY when you are done.



To store the setting to the sensor, simply tap on YES to complete the configuration.



Finally, tap on OK to exit configuration.

Disclaimer

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Amptek cannot assume responsibility for use of any circuitry other than circuitry entirely embodied in an Amptek product.

Amptek products are typically used in places where high voltages are present during operation. High-voltage safety precautions should be observed in design and operation to minimize the chance of injury. Certain applications may involve potential risks of death, personal injury, or severe property or environmental damage. Inclusion of Amptek products in such applications is understood to be fully at the risk of the customers.

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