

Occupancy Sensor – Wall Mounted

Specifications

Power Supply	Solar harvesting supplemental battery option
Transmission Range	80 ft. (25 m)
Radio Frequency	315 MHz
Light Required to Maintain Operation	15 lux for 6 transmissions/hour 50 lux for 30 transmissions/hour 100 lux for 60 transmissions/hour
Charge Time to Startup	1 minute @ 15 lux 5 seconds @ 200 lux
Charge Time to Fully Charge	3 hours @ 200 lux (after startup) 6 hours @ 200 lux (cold start)
Fully Charged Operating Life in Darkness	48 hours
Dimensions	5.83" L x 2.52" W x 1.8" D (148mm x 64mm x 45.7mm)
Weight	4.09oz. (116 g)
Environment	• Indoor use only • 14° to 131°F (-10° to 55°C) • 20% to 95% relative humidity (non-condensing)
Agency Compliance	FCC and I.C.

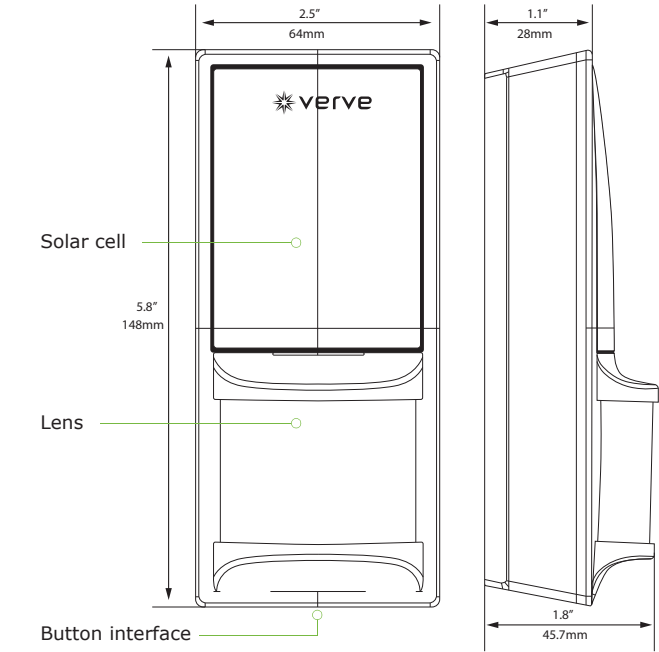
1 Planning

Take a moment to plan for the sensor's successful operation and optimal communication with other system components.

Remove the sensor from its packaging and place it in a strong light to provide the required startup charge.

Tip: To quickly ensure the sensor energy storage is fully charged, insert a CR2032 battery for 30 seconds.

- Ensure the location provides consistent and adequate light
- Install with the appropriate lens for the required coverage
- Locate the sensor between 8 and 10 ft (2.4 to 3 m) high with an unobstructed view of the space
- For wide angle coverage, locate the sensor where traffic moves across the detection pattern, not in and out
- Provide a minimum clearance of 4 ft. (1.2m) away from heat sources, light bulbs, forced air, or ventilation systems
- Consider the construction materials in the space and obstacles that may interfere with RF signals



Package Contents

- Occupancy Sensor
- 2 screws, 2 wall anchors
- 1 wide angle lens (installed)
- 1 long range lens

Tools Required

- Power drill, 3/16" bit
- Screwdriver
- Leveling tool
- Light meter
- Battery (CR2032) for testing

Product Description

The Verve wall-mounted Occupancy Sensor saves energy and adds convenience by accurately detecting when an area is occupied or vacant.

It is a wireless, solar-powered sensor that detects occupancy using passive infrared (PIR) heat and motion sensing. The sensor transmits RF messages to Verve lighting, HVAC, and outlets to use energy more efficiently.

Features Include:

- Sends wireless messages to other devices whenever motion is detected
- Harvests ambient solar energy to power the sensor and wireless communication
- Mounts flush on the wall or in a corner; adjustable ceiling corner bracket sold separately
- Works with other sensors for enhanced occupancy tracking
- Interchangeable lenses for tailored sensor coverage
- Built-in tests to confirm operation at installed location
- Supplemental battery option for extreme low-light failover

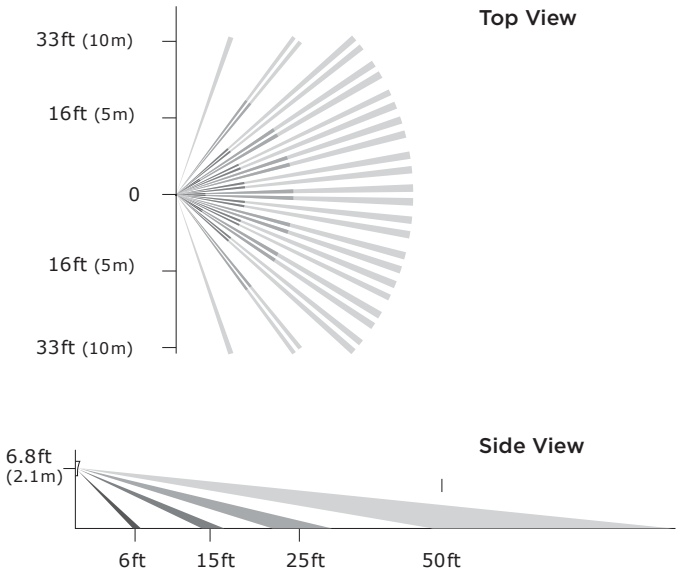
Sensor Range

A single occupancy sensor provides sufficient coverage for most applications. Make sure the sensor is installed with the correct lens type for the area.

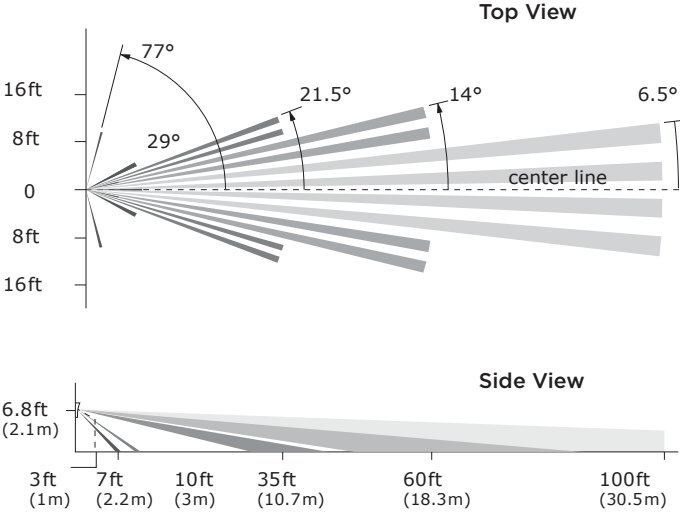
Note: For some applications, multiple sensors may be required to provide complete coverage.

For detailed information, see the *Verve System Planning Guide* at www.vervelivingsystems.com.

Wide Angle Coverage



Long Range Coverage



2 Installing

estimated time: 20 minutes

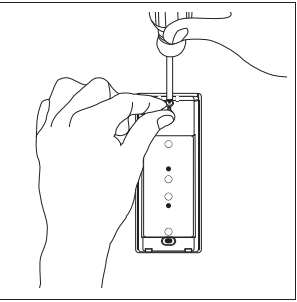


The mounting plate can be installed flush to the wall or angled in a corner.

1. Remove the mounting plate from the sensor assembly.
2. Using a level and a pencil, lightly mark two small dots to align the upper edge of the mounting plate.
3. Decide which of the two installation options is appropriate.

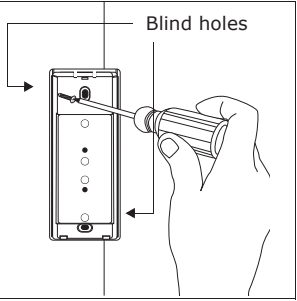
Flush to the Wall

- a. Orient the mounting plate using the pencil marks. Mark the two mounting screw drill points.
- b. Drill two holes with a 3/16" drill bit and insert the wall anchors.
- c. Insert the first screw loosely and level the mounting plate.
- d. Insert the second screw and then hand-tighten the first screw.

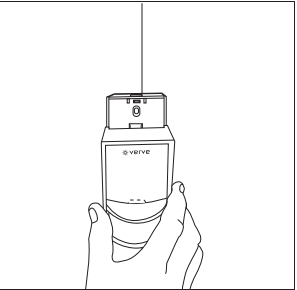
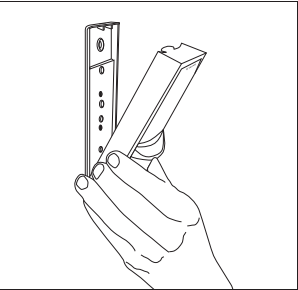


Angled in a Corner

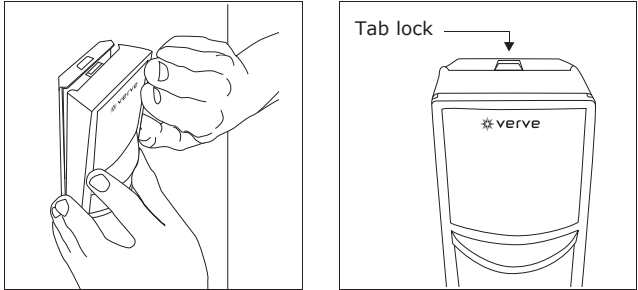
- a. Orient the mounting plate using the pencil marks.
- b. Carefully drill through two of the four blind holes on the angled sides of the mounting plate (one on each side).
- c. Mark the two mounting screw drill points and drill two pilot holes with a 3/16" drill bit and insert the wall anchors.
- d. Insert the two screws and hand-tighten them.



5. Fit the sensor into the groove at the bottom of the mounting plate and close the top.



The sensor snaps into the tab at the top.



Note: It may be easier to link the sensor before it is mounted on the wall. See the Linking section.

6. Confirm the sensor is properly positioned to detect motion and has sufficient light to operate, see the Walk Test and Light Test sections.

3 Linking

Verve wireless systems are highly flexible; two or more compatible devices can be linked and configured to provide the desired control.

There are two basic types of devices in the Verve system; transmitters and transceivers.

- **Transmitters** are simple energy-harvesting devices that send RF messages to communicate a condition, level, or state. Transmitters can only be linked to transceivers.
- **Transceivers** are wire-powered controlling devices that send as well as receive RF messages. They also process relevant control logic, and actuate the appropriate outputs (switching a light on or off for example). Transceivers can be linked to transmitters as well as other transceivers. A Verve transceiver can have up to 30 devices linked to it.

The Occupancy Sensor is a Transmitter

To link devices, the transceiver must first be powered, within the transmission range, and set to accepts links using the 2-button interface on the transceiver.

Next, the desired transmitter, or another transceiver, is triggered to send a special link message. The awaiting transceiver receives and stores the link permanently so the devices can interact to provide a variety of intelligent control options.

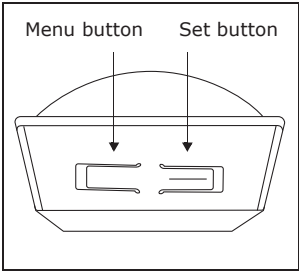
For detailed information on Verve system capabilities and options, see the *Verve System Planning Guide* at www.vervelivingsystems.com.

To link an Occupancy Sensor to a transceiver:

Note: If the sensor is the only device linked to the transceiver, Auto-On and Off will be enabled.

1. Set the desired transceiver to Accept a Link.
2. Click the Menu button on the bottom of the sensor once.

Note: The button interface on the sensor is used for linking and testing only. The occupancy timer settings are configured on the transceiver to which the sensor is linked.



The Set LED on the transceiver displays solid green for 3 seconds, if the link was successfully established.

Testing the Sensor

Before starting a test, ensure the sensor's energy storage is fully charged by placing it in a strong light (200 lux) for 20 minutes, or insert the battery for 30 seconds.

If a battery is used to charge the sensor for a light test, ensure it is removed to get an accurate light measurement.

A test mode will stay active for 3 minutes. To exit a test and resume normal operation, press and hold the Menu button for 5 seconds.

Walk Test

Use the walk test to confirm that motion is within the sensor's range.

1. Press and hold the Set button for 5 seconds.
The red LED will blink to confirm that a walk test is active.
2. Move in and out of the sensor's range to determine its coverage area.
The sensor will blink when it detects motion.
3. Make small hand movements just inside the limit of the sensor's range to see if the motion triggers a response.

Light Test

Use the light test to measure real-time light levels and confirm whether the occupancy sensor has sufficient light.

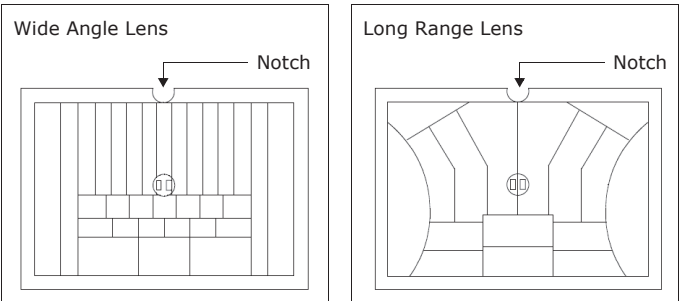
1. Create a realistic lighting condition (the test measures the real-time light level).
2. Press and hold the Set button for 10 seconds.
The red and green LEDs will blink to confirm that a light test is active.
3. Watch the LED blink rate to determine the light strength.
The highest is 5 blinks which indicates very good light (200 lux or more). 1 blink indicates minimum light (15 lux).

Note: If there is no blink rate, consider relocating the sensor or installing a battery to provide supplemental power.

Changing the Lens

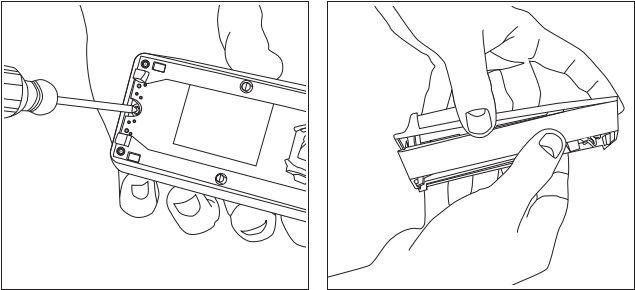
The Occupancy Sensor package contains two lenses: a wide angle lens and a long range lens. The wide angle lens is installed by default and can be distinguished from the long range lens by the pattern.

Lens Patterns



To change the lens:

1. If the sensor is mounted, press the top tab and remove it from the mounting plate.
2. Unscrew the small screw on the back at the bottom and remove the front cover.



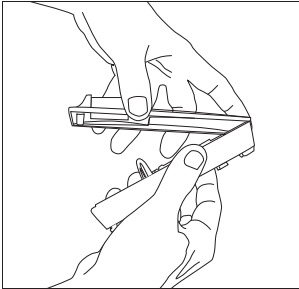
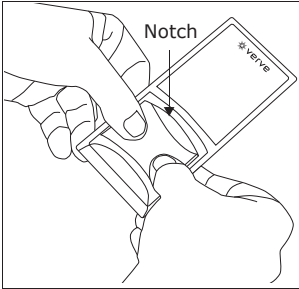
3. Remove the installed lens by gently squeezing it to ease one side out of its groove, and then the other.
4. Insert the lens you want to use by aligning the notch with the top on the front cover.

Orient the smooth side facing out, and the textured side facing the sensor.

5. Hold both edges of the lens, flex it gently and push until it pops into the grooves. Make sure the edges are flush.

Note: If the lens is out of position, the sensor will not detect activity properly.

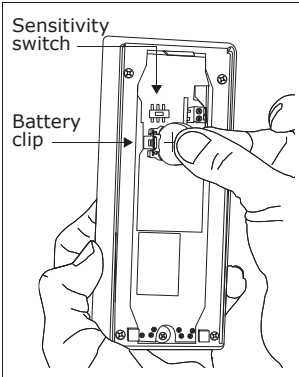
6. Replace the top edge of the front cover and then close it on the sensor.
7. Replace the screw at the bottom and remount the sensor on the plate.



Installing Supplemental Battery (optional)

If light levels are very low where the sensor is installed, auxiliary battery power (CR2032) can be used to supplement the solar energy harvester.

1. Remove the sensor from the mounting plate.
2. Unsnap sensor cover and identify the battery holder on the circuit board.
3. Insert the battery under the clip with the positive pole (+) up and press it in place.
4. Replace the cover and remount the sensor on the wall.



Troubleshooting

Problem	Solution Checklist
The sensor does not generate a wireless message	<ul style="list-style-type: none">• Verify the LED blinks when motion is detected• Verify the solar cell is charged properly
The sensor is activated when there is nothing to detect	<ul style="list-style-type: none">• Verify there is 4 ft. (1.2m) clearance from heat sources that may disturb sensing• Reduce the sensitivity setting by moving the switch on the back of the sensor to the left-hand position
The linked device does not respond to wireless messages	<ul style="list-style-type: none">• Check for environment or range issues• Verify the device is linked• Check the transceiver connection and the wiring for errors• Check if appropriate devices are linked according to good system planning

FCC FCC SZV-STM300C
I.C. 5713A-STM300C
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.

Limited Warranty

Verve™ Products Limited Warranty. Subject to the other terms of this warranty, Liberty Hardware Mfg. Corp. ("Liberty Hardware") warrants you the original purchaser that this Verve™ product will be free from defects in material and workmanship for five years from the date of your purchase of the product. During that period, if the product does not comply with this limited warranty, Liberty Hardware will, at its discretion, repair or replace the product. Repair or replacement is your sole remedy under this or any other warranty of the product, whether express or implied. Coverage Limitations. This limited warranty extends only to the original purchaser and is not transferable. This limited warranty expressly excludes any defects or damages resulting from any product installed improperly or in an improper environment, overloaded, misused, opened, abused, or altered in any manner. Instructions for Warranty Service. To obtain warranty service return the Verve™ product, a description of the problem, together with your proof of purchase, securely packaged and with postage prepaid, to: Liberty Hardware Mfg. Corp. Attn: Customer Service - Verve Living Systems 140 Business Park Drive Winston Salem NC 27107 You may be required to provide other information or evidence of the defect. Any returned product that is replaced becomes the property of Liberty Hardware. Implied Warranties. TO THE EXTENT PERMITTED BY LAW, ANY IMPLIED WARRANTIES, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO THE SAME DURATION AS THIS EXPRESS WARRANTY. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. NO OTHER EXPRESS WARRANTY HAS BEEN MADE OR WILL BE MADE BY LIBERTY HARDWARE MFG. CORP. WITH RESPECT TO THIS PRODUCT. Limitation of Liability. LIBERTY HARDWARE SHALL NOT BE RESPONSIBLE FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES SUCH AS THE COST OF LABOR FOR REMOVAL OR REINSTALLATION OF THE PRODUCT, WHETHER ARISING OUT OF BREACH OF WARRANTY, BREACH OF CONTRACT, TORT, OR OTHERWISE. Some states do not allow the exclusion of incidental or consequential damages, so the above exclusion and limitation may not apply to you. If you have any questions about this warranty, contact us at 1-877-874-8774. This limited warranty gives you specific legal rights, and you also may have other rights which vary from state to state. In Canada, the above provisions are not intended to operate where prohibited by law and do not preclude the operation of any applicable provisional consumer protection statute which in certain circumstances may extend the express warranties herein.

