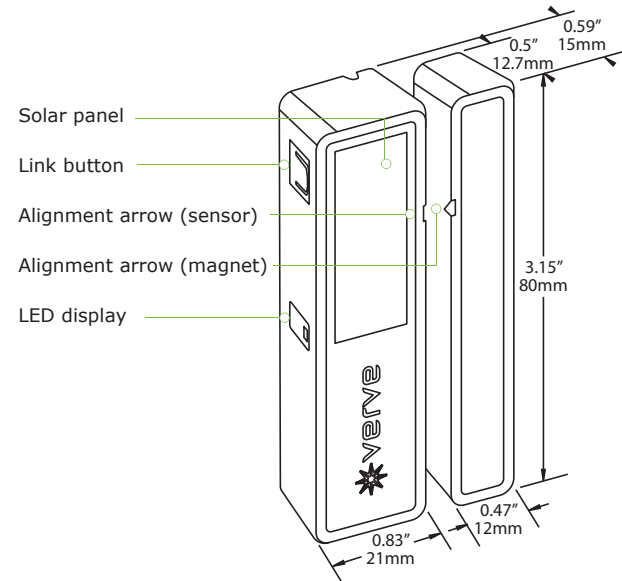


Door/Window Sensor



Package Contents

- Sensor and magnet
- 4 screws

Tools Required

- Screwdriver
- Leveling tool
- Light meter

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 actuations/hour 50 lux for 30 actuations/hour 100 lux for 60 actuations/hour
Charge Time to Startup	2.7 hours @ 10 lux 3.7 minutes @ 200 lux
Charge Time to Fully Charge	21 hours @ 200 lux (after startup) 42 hours @ 200 lux (cold start)
Fully Charged Operating Life in Darkness	174 hours: heartbeat only 67 hours @ 10 actuations/hour 10 hours @ 100 actuations/hour
Maximum Sensor Gap	0.25 inch (6.4 mm)
Sensor Dimensions	3.15" L x 0.83" W x 0.59" D (80mm x 21mm x 15mm)
Magnet Dimensions	3.15" L x 0.47" W x 0.5" D (80mm x 12mm x 13mm)
Total Weight	0.97 oz. (27.5 g)
Environment	<ul style="list-style-type: none"> • Indoor use only • 32° to 131° F (0° to 55°C) • 5% to 95% relative humidity (non-condensing)
Agency Compliance	FCC and I.C.

1 Planning

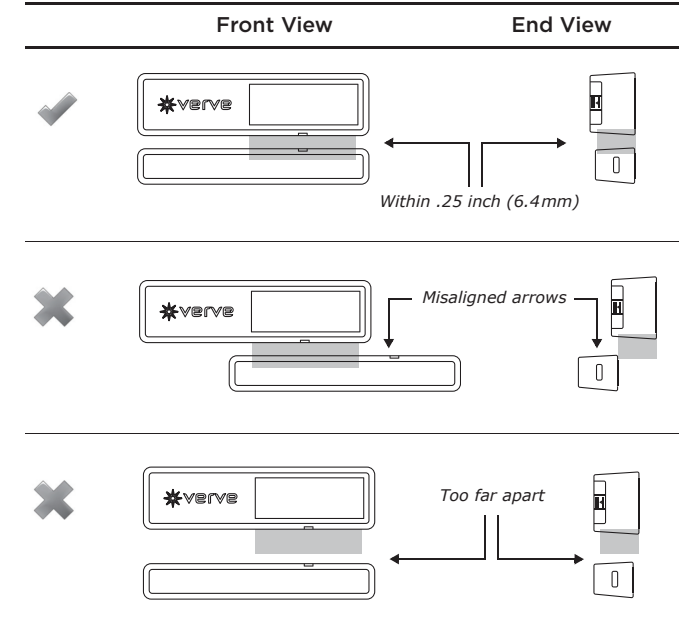
Take a moment to plan for the sensor's successful operation and optimal communication with other system components.

Remove the sensor from its packaging and place it under a strong light to charge it for installation.

- Ensure the location provides consistent and adequate light
- Install according to the alignment requirements
- Determine which sensor profile is appropriate, see the Linking section
- Consider the construction materials in the space and obstacles that may interfere with RF signals

Alignment Requirements

The proximity of the magnet to the sensor is important for proper detection. The alignment arrows on the sensor and the magnet must point to each other and the gap between them must not exceed .25 inch (6.4mm) in any direction.



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

2 Installing

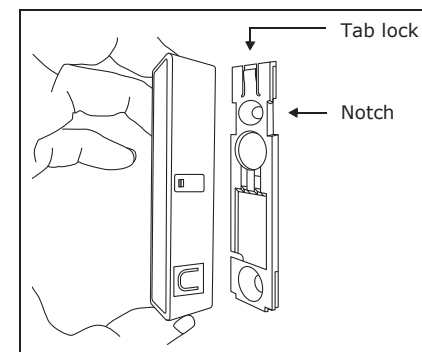
estimated time: 15 minutes



- Based on your requirements, decide where you want to install the sensor and the magnet. For door installations, locate the sensor:
 - On the knob side of the door jamb, away from hinges.
 - At least 1 ft. (30cm) above the floor to avoid damage.

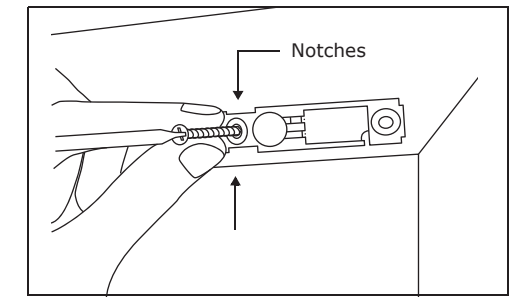
For window installations, make sure the location does not expose the sensor to contact with water.
- Follow the alignment requirements that are described in the Planning section.

Note: For easy access and handling, it is recommended that the sensor be linked to a transceiver before installing it, see the Linking section.
- Install the sensor on the interior side of the fixed frame.
 - Remove the mounting bracket from the sensor.

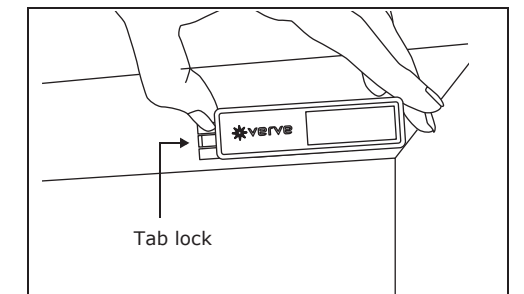


- Position the mounting bracket and mark the two mounting screw drill points.

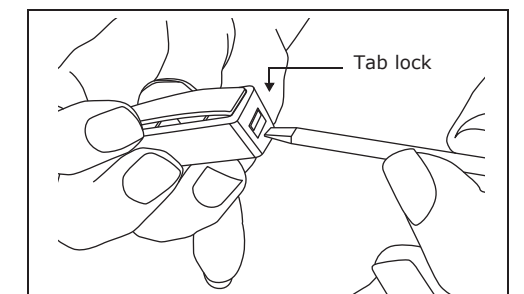
- Insert the first screw loosely and level the mounting bracket.



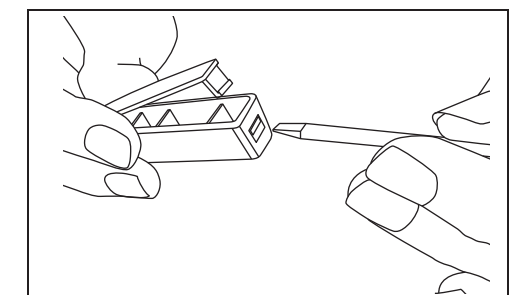
- Install the second screw, and then hand-tighten the first screw.
- Snap the sensor onto the mounting bracket where the notches are located.



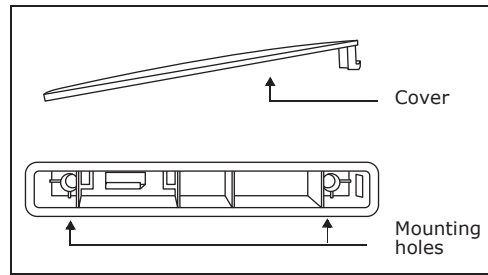
- Slide the sensor on the bracket until it snaps into place on the tab lock.
- Install the magnet on the moving part of the door or window.
 - Use a screwdriver to press the tab lock and flex the magnet cover to remove it.



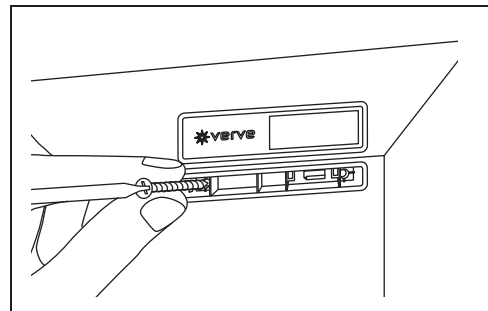
The cover is removed from the magnet body.



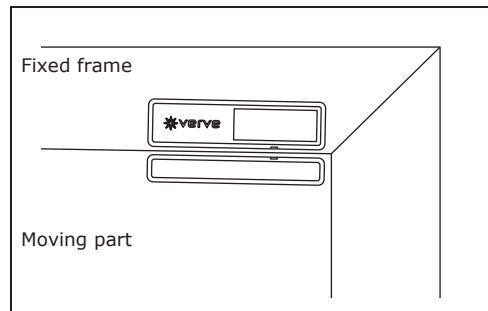
The two mounting holes are exposed.



b. Position the magnet with the proper spacing and alignment, and then install it with the provided screws.



c. Replace the magnet cover and snap it into place on the tab lock.



Note: For low activity applications, the magnet can be mounted with double-sided tape (not included).

5. Check the alignment arrows and the distance between the sensor and magnet when the door or window is closed. There is a faintly audible click when the sensor and magnet close and open.

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 Door/Window Sensor is a Transmitter

To link devices, the transceiver must first be powered, within the transmission range, and set to accept links using the setup 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.

Sensor Profiles

The sensor profile determines how the sensor is used within the Verve system, whether it is for occupancy detection, HVAC control, or single load control. How the sensor interacts with other Verve devices depends on where it is installed and how it is linked. There are three sensor profiles.



Entry Door for Occupancy Detection

For this profile, the sensor is installed on an entry door and operates with a motion sensor as follows:

Door Opens	Door Closes
 <p>The door/window ajar timer starts. If the timer runs out, shutdown mode is activated on the HVAC system.</p>	 <p>The door/window ajar timer is reset if all monitored doors and windows are closed. The vacancy check timer starts, if the motion sensor detects occupancy, normal mode is activated on the HVAC system.</p>

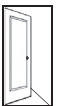
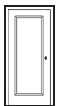
Window or Patio Door for HVAC Control

For this profile, the sensor is installed on a window or patio door and operates as follows:

Window Opens	Window Closes
 <p>The door/window ajar timer starts. If the timer runs out, shutdown mode is activated on the HVAC system.</p>	 <p>The door/window ajar timer is reset if all monitored doors and windows are closed. Normal mode is activated on the HVAC system.</p>

Closet Door for Single Load Control

For this profile, the sensor is installed on a closet door and operate as follows because it is the only linked device:

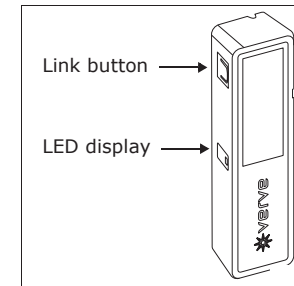
Door Opens	Door Closes
 <p>The switched auto-off timer starts and the light turns on. If the timer runs out the light turns off.</p>	 <p>The light turns off.</p>

To link the sensor:

When a Door/Window Sensor is linked, the position of the magnet indicates to the transceiver which type of sensor profile is being used.

1. Set the desired transceiver to Accept a Link.
2. Do one of the following according to the desired profile:
 - a. Entry door for occupancy detection, place the magnet beside the sensor (closed position).
 - b. Window or patio door for HVAC control, move the magnet way from the sensor (open position).
 - c. Closet door for single load control, move the magnet away from the sensor (open position).

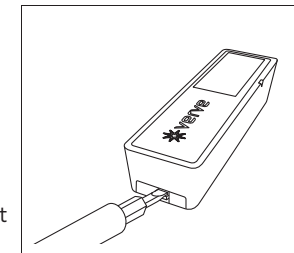
3. Press the Link button on the sensor once. The Set button on the transceiver will be solid green for 3 seconds. The device is now linked.



Installing Supplemental Battery (optional)

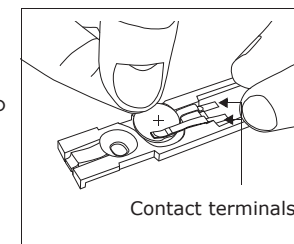
If the sensor is installed where the light levels are consistently too low or there are days of darkness, battery power can be used to supplement the solar energy harvester. Only use a CR1216 battery.

1. Press the tab lock to release the sensor from the mounting bracket.
2. Slide the sensor about 1/2" (1cm) and remove it from the mounting plate.
3. Insert the battery with the positive pole (+) up and slide it between the two contact terminals with your finger.



Warning: Ensure the battery is properly oriented. Improper handling of lithium batteries may result in heat generation, explosion, or fire.

4. Replace the sensor on the mounting plate and slide it until it snaps into place.
5. Open and close the contact to test for power. There should be a faintly audible click and a fast LED blink.



Troubleshooting

Problem	Solution Checklist
The sensor does not generate a wireless message	<ul style="list-style-type: none"> • Verify there is a faintly audible click when the contact is closed and opened • Verify the LED blinks once when the contact is closed and opened • Verify the solar cell is charged properly • Check that the magnet is oriented to the sensor properly • Check that the alignment arrows are not spaced more than .25 inch (6.4mm)
The linked device does not respond to wireless messages	<ul style="list-style-type: none"> • Check for environment or range issues. Tip: Reorienting the sensor may overcome adverse RF conditions • 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

FC FCC SZV-STM311C
I.C. 5713A-STM311C
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 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.