Occupancy Sensor - Wall Mounted

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

### 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 wireless, solar-powered, and uses a passive infrared (PIR) sensor to detect motion. The occupancy sensor transmits RF signals to control lighting, HVAC and outlets more efficiently.

**Features Include:**
- Sends wireless signals to receiving devices when motion is detected
- Harvests indoor light to power the sensor and wireless communications
- Mounts flush on the wall or in a corner - adjustable ceiling and wall brackets 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 or alternative power supply options for extreme low-light conditions

### Specifications

| **Power Supply** | Indoor light energy harvesting
| Optional: Supplemental battery or 2-wire connector for external power or remote solar cell (3-5 VDC) |
| RF Communications | EnOcean 315 MHz |
| RF Transmission Range | 80 ft. (25 m) |
| Motion Sensing Range | Up to 100 ft. (25 m) (refer to coverage diagrams) |
| Minimum Operating Light | 50 lux (for auto-off only) |
| Startup Charge Times* (from empty) | Linking only 4 minutes @ 100 lux 1.5 minutes @ 200 lux Motion Transmission 6 minutes @ 100 lux 3.5 minutes @ 200 lux Light/Walk Test Modes 5.5 hours @ 200 lux |
| Time to Full Charge* | 9 hours @ 200 lux |
| Sustaining Charge Time | 3 hours per 24 hours @ 200 lux |
| Motion Transmission Interval | 2 minutes |
| Unoccupied Transmission | @ 10 and 30 minutes since last motion detection |
| Heartbeat Transmission Interval (unoccupied) | Disabled by default Enabled = heartbeat @ 1 hr interval (after unoccupied messages) |
| Operating Life in Total Darkness | 48 hours (after full charge) |
| EEP (EnOcean Equipment Profile) | A5-07-01 |
| Dimensions | 5.83” L x 2.52” W x 1.8” D (148 mm x 64 mm x 45.7 mm) |
| Weight | 4.09 oz. (116 g) |
| Mounting Height | 6-8’ (recommended) |
| Environment | Indoor use only 14° to 104°F (-10° to 40°C) 20% to 95% relative humidity (non-condensing) |
| Agency Compliance | EOSWU & EOSWC - FCC, IC, RoHS EOSWA - RoHS |

*Sunlight, bright lighting or a battery can be temporarily used to significantly shorten startup charge times.*
Wide Angle Coverage

A single occupancy sensor provides sufficient coverage for most applications. For some applications, multiple sensors may be required to provide complete coverage.

Installing

1. Remove the mounting plate from the sensor assembly by pressing the release tab located on the top of the sensor.
2. Orient the mounting plate
3. Mark the two mounting screw drill points.
4. Insert the first screw loosely and level the mounting plate.
5. Insert the second screw then hand-tighten the 1st screw.

Flush to the Wall

i. Orient the mounting plate using the pencil marks.
ii. Mark the two mounting screw drill points.
iii. Drill two holes with a 3/16" bit and install wall anchors.
iv. Insert the first screw loosely and level the mounting plate.

Angled in a Corner

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

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

Testing the Sensor

Before starting a test, ensure the sensor’s energy storage is charged by placing it under bright light (at least 500 lux) for 20 minutes, or insert a battery for 5 minutes while in a well-lit area. If the sensor does not have a sufficient charge, it cannot enter into the test modes. No LED light or 1 red blink when the test button is pressed indicates insufficient charge.

Linking

Two or more compatible devices can be linked and configured to provide the desired control. There are two basic types of devices in the system: transmitters and transceivers.

- Transmit-only: Transmitters are simple energy-harvesting devices that send RF messages to communicate a condition, level, or state. Transmitters can only be linked to transceivers. Examples > Self-powered Light Switches, Occupancy Sensors
- Transmit & Receive: Transceivers are 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 with transmitters as well as other transceivers. Examples > Relays, Gateways

The Occupancy Sensor is a Transmit-only Device.

To link the sensor to a transceiver, the transceiver must first be powered, within wireless range, and set to accept links.

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.

To Link or Unlink an Occupancy Sensor

1. Set the desired transmitter to the desired Link/Unlink mode (refer to that device’s installation guide).
2. Click the Menu button on the bottom of the sensor once. This sends a link/unlink radio telegram.

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

Refer to the “Linking” section of the transceiver/controller installation guides to complete the linking & setup process.

Heartbeat Transmission

- Unoccupied heartbeat message will be sent at 1 hr intervals with no motion (disabled by default).
- To enable/disable - press and hold Menu button for 5 seconds (both green and red LEDs will blink once)
- Enabled = 3 blinks from green Menu LED
- Disabled = 3 blinks from red Set LED

LED Blink on Motion Transmission

- Red LED under PIR sensor will blink whenever motion is transmitted (disabled by default).
- To enable/disable - press and hold Menu button for 3 seconds (green Menu LED will blink once)
- Enabled = 3 blinks from green Menu LED
- Disabled = 3 blinks from red Set LED
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.

NOTE: Ensure smooth side of lens faces out.

Lens Patterns

Wide Angle Lens

Long Range Lens

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. Ensure antenna is properly seated before replacing the front cover.
7. Replace the bottom screw and remount sensor on the wall.

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 cover and remount the sensor on the wall.

Troubleshooting

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| Sensor does not generate a wireless message | ▪ Press Set button to transmit motion message  
▪ Verify the LED blinks when motion is detected during a walk test  
▪ Verify the device is charged properly |
| Sensor is activated when there is nothing to detect | ▪ Verify there is 4 ft. (1.2 m) clearance from heat sources that may disturb sensing  
▪ Reduce sensitivity setting by moving the PIR sensitivity switch on the back from REG to LOW (the left-hand position) |
| Linked device does not respond to wireless messages | ▪ Force motion message by pressing Set button  
▪ 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 |

Explanation of Occupied & Heartbeat Message Data Telegrams

- Data Byte 3: Super Capacitor Voltage, 0-255 (% of 0-5V)
- Data Byte 2: Solar Panel Current, 0-127 uA
- Data Byte 1: 0xFF (occupied) or 0x00 (unoccupied)
- Data Byte 0: 0x09 (wall sensor) or 0x0B (ceiling sensor)

FCC contains:

- 315 MHz: FCC: SZV-EOSW01  
IC: 5713A-EOSW01

This device complies with part 15 of the FCC rules and Industry Canada ICES-003. 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.

IMPORTANT! Any changes or modifications not expressly approved by the party responsible for compliance could void the user’s authority to operate this equipment.

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.

IMPORTANT! Tous les changements ou modifications pas expressément approuvés par la partie responsable de la conformité ont pu vider l’autorité de l’utilisateur pour actioner cet équipement.