LEVITON®

Multi-Technology Wall Switch Occupancy Sensor

OSSMT-MD/OSSMT-GD

The OSSMT combines Multi-Technology with all-digital architecture to minimize false triggering. The result is a trouble-free, "install and forget" solution for wall box lighting control.

DESCRIPTION

Leviton's Cat. No. OSSMT Multi-Technology Decora Style Wall Switch Occupancy Sensor is used to provide automatic lighting control for energy savings and convenience in a variety of commercial applications, including:

• Retrofit
• Private and Executive offices
• Conference rooms
• Storage areas
• Restrooms
• Classrooms
• Lounges
• Training areas

The OSSMT provides for automatic switching of incandescent lamps, low-voltage lighting with electronic and magnetic transformers, and electronic and magnetic fluorescent ballasts. The OSSMT features a manual override switch that can be used to keep lights OFF while an area is occupied, which may be desired in conference rooms, classrooms and other areas during video presentations. Designed to replace a single-pole Decora wall switch, it fits in a standard wall box. The OSSMT-MD model requires a neutral and a ground connection. For retrofit applications, the OSSMT-GD model does not require a neutral wire for installation.

OPERATION

Occupancy sensors have two tasks: keeping the lights on while the space is occupied and, conversely, turning the lights off when unoccupied. Ultrasonic motion detection gives maximum sensitivity yet can be vulnerable to false ON from air conditioning air movement, corridor activity, and movement of objects such as curtains in the space. Infrared motion detection provides immunity to false ON, but lacks sensitivity of small motion. Leviton's OSSMT combines ultrasonic (US) and passive infrared (PIR) sensor technology to monitor a room for occupancy to deliver unrivaled performance and reliability. The PIR is used to detect motion and turn lights on, while either technologies are used to keep lights on while occupied. This allows the US to be set to higher sensitivity levels minimizing false OFF conditions.

The PIR portion gives immunity to false ON through a specialized Fresnel lens which divides the field of view into sensor zones. When a person passes into or out of a sensor zone, the sensor detects motion and switches the lights ON.

The US sensors give maximum sensitivity and range in difficult spaces with irregular shaped rooms and partitions that can block the PIR field of view. A pair of US sensors will detect Doppler shifts caused by motion in a space. These sensors are more sensitive to small movements since they do not rely on zones. Sensitivity can be field adjusted to Low-Medium-High. This feature makes the OSSMT perfect for a wide variety of room sizes and configurations.

Multi-Technology Wall Switch Occupancy Sensors

Leviton Mfg. Co., Inc. Lighting Management Systems

PRODUCT DATA

SELF-ADAPTIVE TECHNOLOGY

Designed for "install and forget" use, the OSSMT automatically analyzes room conditions and adapts to errors or changing environment.

AUTOMATICALLY ADAPTS

INTERFERENCE		SYMPTOMS	OSSMT ACTION
Airflow	≈	Lights on Frequently	Auto adjust US threshold Low pass filter
Auto adjust		US Security False-offs	False-ons/ time-out
Time-Out-Too-Long		Lights on too long	Auto adjust time delay

HOW THE OSSMT-MD AUTOMATICALLY ADAPTS

CONDITION	EXAMPLE	ADAPTIVE REACTION
False-On: the sensor incorrectly turns the lights on.	The sensor detects movement in the corridor or hallway and the room light turn on.	After an initial movement is sensored, if another movement is not sensed within the timer setting then the delayed off-time setting is automatically reduced.
False-Off: the sensor incorrectly turns the lights off.	The sensor does not detect movement because an occupant sits virtually motionless at a desk and the lights turn off.	If motion is needed within a short period after the lights go off, then the current delayed off-time setting is increased.

"WALK-THROUGH" SENSING

An exclusive Walk-Through feature addresses the common situation where personnel may only enter a room momentarily. The Walk-Through feature provides increased energy savings by not leaving the lights ON for an extended period after only momentary occupancy. The unit will switch lights ON when it detects a person entering the area it is monitoring. However, if the OSSMT does not continue to detect activity during the first 2-1/2 minutes, the OSSMT will turn the lights OFF 2-1/2 minutes from last detection. If the person stays in the room for longer than 2-1/2 minutes, the OSSMT will operate as normal.

## PUSH-BUTTON MANUAL OVERRIDE CONTROL

For manual control, the OSSMT features a convenient push-button switch. If the lights are OFF, pressing the button will turn lights ON and keep them ON for as long as the room is occupied. The lights will be turned OFF once the room is vacant, after the delayed-OFF time expires. If the lights are ON, pressing the button will turn lights OFF and keep them OFF even if the room is occupied. This feature is particularly useful for video presentations. The lights can be turned back ON by simply pressing the button. The unit will then return to normal operation. If the button is not pressed to turn the lights back ON and the unit does not detect any motion during the delayed-OFF time interval, the lights will remain OFF. The unit will then return to normal operation where the lights will remain OFF until it detects occupancy and automatically switches lights ON.

MANUAL-ON/ AUTO-OFF MODE

In this mode, the unit will not turn lights ON automatically when motion is detected. Lights can only be turned ON manually by pressing the push-button. The lights will remain ON as long as the unit detects activity in the sensor zones. It will shut lights OFF automatically after the space becomes unoccupied and the delayed-OFF time expires. Lights can also be turned OFF manually at any time by pressing the push-button. This mode is ideal for areas where manual ON switching is required but automatic OFF switching is desired for energy savings.

FIELD OF VIEW

The OSSMT provides a 180° field of view with a maximum coverage area of approximately 2400 square feet. The maximum sensing distance in front of the sensor is 40 feet, and side to side is 30 feet. A "small-motion" zone detects relatively small body movements and allows the lights to stay ON even though a person may not be moving or walking around the room. The remainder of the field of view, the "large-motion" zone, exhibits a lesser degree of sensitivity and requires larger movements.
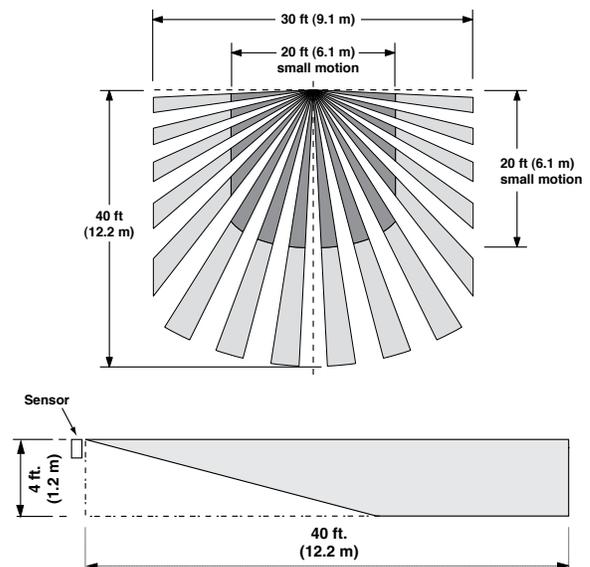
ENHANCED ADJUSTMENT OPTIONS

The OSSMT is preset to deliver optimum performance in a wide variety of commercial applications. There are optional adjustments for sensitivity, ambient light override, delayed-OFF time, and field-of-view. These adjustments will customize the performance to meet the needs of a specific installation. To avoid tampering, all adjustments can only be accessed by removing the control panel cover. A small flat-head screwdriver can be used to adjust the control knobs, and the field-of-view blinders are finger-tip operated. Controls are labeled as follows:

Blinders - Integral sliding blinders on each side of the lens may be used to restrict the 180° field of view down to 32°. This will prevent unwanted detection in areas such as hallways.

Time - The delayed OFF time is preset at 30 minutes in the Auto Adapting mode. A choice of four delayed-OFF time settings are available: 30-seconds (for walking test purposes only), 10, 20, and 30 minutes for fixed time and auto adapting. The LED will flash when the adjusting knob is set to the indicated time value.

Range (PIR) - Adjusting the range allows the unit to ignore motion at the far end of its range and avoid unnecessarily switching lights ON. The range can be adjusted from 100% to 35% of the total coverage area.

Sensitivity (US) - Users can adjust internal ultrasonic operation to maximize detection of motion while minimizing the effects of environmental noise (electrical noise, air currents, temperature changes, etc.). Adjustment is made by pushing the ON-OFF button in a prescribed sequence to Low-Medium-High sensitivity (see installation sheet).

Light - The OSSMT is factory preset without any ambient light override in effect. This means the unit will switch lights ON when it detects occupancy, regardless of the amount of natural sunlight present. To maximize energy savings in some installations, the ambient light override feature will prevent the unit from switching lights ON when there is ample natural sunlight, regardless of occupancy. This adjustment should be made when the ambient light is at the level where no artificial light is needed.

FEATURES

- Self-Adaptive Technology: Callbacks for adjustment are eliminated. Time delay and sensitivity settings are continually adjusted to occupant patterns of use in auto adapt mode.
- Exclusive Walk-through Feature: Provides increased energy savings by not leaving the lights ON for an extended period after only momentary occupancy.
- Maximum Reliability, Low Cost: All digital circuitry uses a minimum of components.
- Convenient Push-Button: Provides manual ON/OFF light switching at any time.
- Fast, Simple Installation: Fits in a standard wall box and replaces a single-pole wall-switch; neutral and no neutral options available. Sensor can be ganged together with other units in a multiple-switch wall plate.
- Adjustable Horizontal Field of View (PIR): May be adjusted between 180° and 32° of arc by using integral blinders located on either side of the lens.
- Optional Manual Adjustment for Delayed-OFF Time Settings: Allows customized adjustments to maximize energy savings.
- Ambient Light Recognition: Integrated photocell prevents lights from turning on when the room is adequately illuminated by natural light.
- Small Motion Sensitivity (US): The ultrasonic technology provides excellent small motion sensitivity.
- True Zero-Cross Relay: Switches at the zero crossing point of the AC power curve to ensure maximum contactor life and compatibility with electronic ballasts.

DIMENSIONAL DIAGRAMS
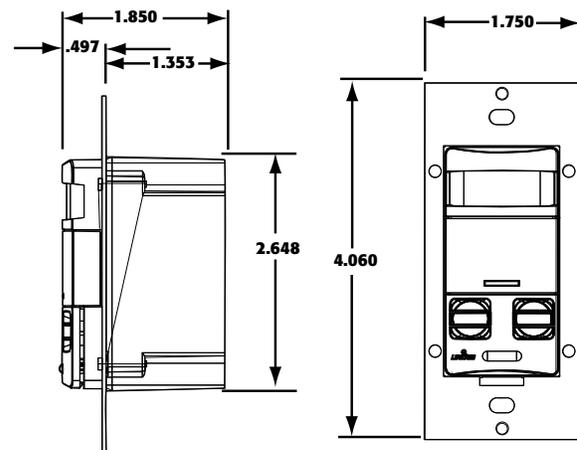
Cat. No. OSSMT

INSTALLATION

The OSSMT is preset to deliver optimum performance in a wide variety of applications without requiring any adjustments during installation. Exclusive self-adjusting operating features will automatically compensate for real-time occupancy patterns to provide maximum convenience and energy savings. The unit may replace a single-pole wall switch mounted in a standard wall box. The OSSMT-MD must have a neutral and be properly grounded in order to operate. The OSSMT-GD does not require a neutral for installation. The unit's integral blinders may be used to restrict the field of view to prevent unwanted detection of hallway traffic. It should be positioned at least 4 feet away from HVAC registers. Note that whenever the unit is powered up, it will take approximately 1 minute to begin normal operation.
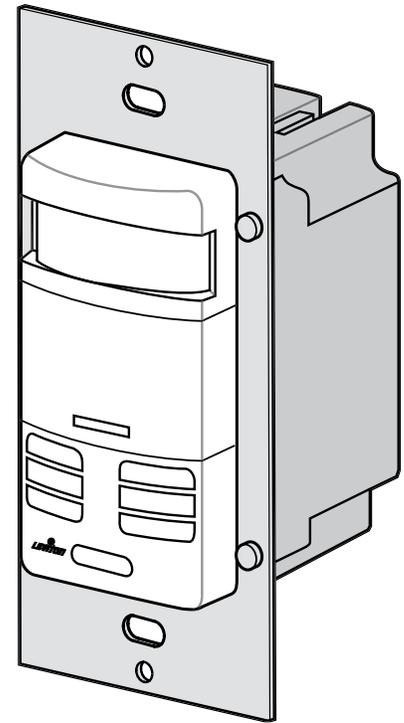
Cat. No. OSSMT

ELECTRICAL SPECIFICATIONS

Input Voltage	120-277 VAC
Operational Frequencies	60Hz
Ultrasonic Operating Frequency	40kHz
Load Rating	Incandescent/Tungsten:800W @ 120V Fluorescent: 1200VA @ 120V 2700VA @ 277V Motor: 1/4 HP @ 120V
Wire Designation	Line—Black Neutral-White Load—Blue Ground—Green

ENVIRONMENTAL SPECIFICATIONSP0°C TO 50°C

Storage Temperature Range	-10°C to 85°C
Relative Humidity	20% to 90% non-condensing

PHYSICAL SPECIFICATIONS

Size	4.06" H x 1.75" W x 1.85" D (103.2mm x 44.4mm x 47.2mm)
Colors	White, Ivory, Almond, Light Almond, Gray, Black
Listings	UL and cUL listed, CEC Title 24 Compliant, FCC Compliant
Warranty	Limited 5-year warranty

ORDERING INFORMATION

CAT. NO.	DESCRIPTION
OSSMT-MDx	Multi-Technology Wall Switch Occupancy Sensor
OSSMT-GDx	No Neutral, Multi-Technology Wall Switch Occupancy Sensor

* Replace x with (W) White, (I) Ivory, (A) Almond, (T) Light Almond, (G) Gray, or (B) Black

LEVITON SPECIFICATION SUBMITTAL

JOB NAME:	CATALOG NUMBERS:
JOB NUMBER:	