

OLS-2100 Occupancy Light Switch

Product/Technical Bulletin

OLS-2100-1

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Refer to the [QuickLIT website](#) for the most up-to-date version of this document.

The OLS-2100 Occupancy Lighting Switch is a passive infrared sensor that turns lights on when occupancy is detected and off when the area is empty. Three adjustments are available – light level, time delay, and sensitivity level – allowing for changes that best match the room's use and the occupant's needs.

Lighting is a large part of a typical commercial building's energy consumption, accounting for 40% of the electricity used. Whether used as standalone lighting control or as part of an existing lighting system, the OLS-2100 switch helps reduce energy costs.



Figure 1: OLS-2100 Occupancy Lighting Switch

Table 1: Features and Benefits

Features	Benefits
Standard, Single-toggle Switch Size	Allows quick and easy replacement of existing wall switches, reducing installation time.
Infrared Occupancy Sensor	Controls lighting usage based on occupancy.
120/277 VAC (60 Hz Only) Model	Provides compatibility with supply voltages in most commercial buildings.
Low-profile Design	Complements any building or office decor.
180° Field of View: Coverage to 900 sq ft (81 sq m)	Covers most typical offices, conference rooms, and storage areas.
Adjustment Cover with Anti-tampering Feature	Prevents unauthorized changes to selected settings.

Application

IMPORTANT: Use this OLS-2100 Occupancy Lighting Switch only as an operating control. Where failure or malfunction of the OLS-2100 Switch could lead to personal injury or property damage to the controlled equipment or other property, additional precautions must be designed into the control system. Incorporate and maintain other devices, such as supervisory or alarm systems or safety or limit controls, intended to warn of or protect against failure or malfunction of the OLS-2100 Switch.

IMPORTANT: Utiliser ce OLS-2100 Occupancy Lighting Switch uniquement en tant que dispositif de régulation. Lorsqu'une défaillance ou un dysfonctionnement du OLS-2100 Switch risque de provoquer des blessures ou d'endommager l'équipement contrôlé ou un autre équipement, la conception du système de contrôle doit intégrer des dispositifs de protection supplémentaires. Veiller dans ce cas à intégrer de façon permanente d'autres dispositifs, tels que des systèmes de supervision ou d'alarme, ou des dispositifs de sécurité ou de limitation, ayant une fonction d'avertissement ou de protection en cas de défaillance ou de dysfonctionnement du OLS-2100 Switch.

The OLS-2100 Occupancy Lighting Switch is a passive infrared sensor that turns lights on when occupant movement is detected within its field of view. The OLS-2100 switch replaces standard single-pole light switches that control incandescent or fluorescent fixtures with either magnetic or electronic ballasts. The switch is an indoor lighting control and should not be used outdoors or as a security device.

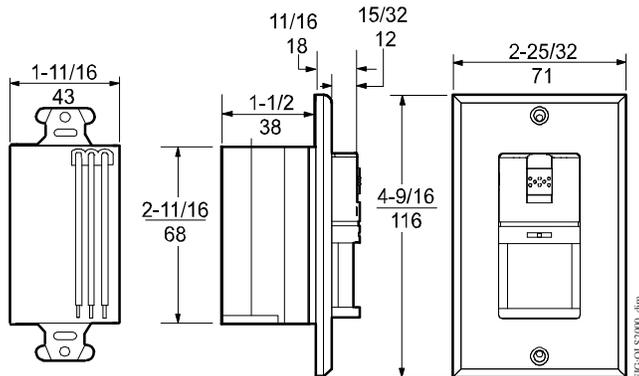


Figure 2: OLS-2100 Dimensions (in./mm)

Mounting

Install the OLS-2100 switch 3.5 to 4.5 feet (1.1 to 1.4 m) above the floor, with an unobstructed view of the work or traffic area to be monitored. The OLS-2100 switch has a 180° field of view (900 sq ft [81 sq m])

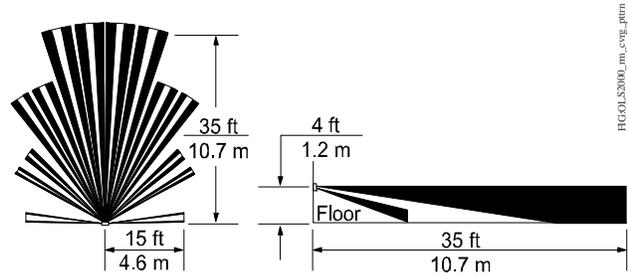


Figure 3: OLS-2100 Room Coverage Patterns

Avoid locating the switch in the following areas:

- in direct sunlight or near bright lights
- near intense heat or moisture sources
- where movement in adjacent areas could unintentionally turn the lights on

Wiring



WARNING: Risk of Electric Shock.

Disconnect the power supply before making electrical connections. Contact with components carrying hazardous voltage can cause electric shock and may result in severe personal injury or death.

AVERTISSEMENT : Risque de décharge électrique.

Débrancher l'alimentation avant de réaliser tout branchement électrique. Tout contact avec des composants porteurs de tensions dangereuses risque d'entraîner une décharge électrique et de provoquer des blessures graves, voire mortelles.



CAUTION: Risk of Property Damage.
Do not apply power to the system before checking all wiring connections. Short circuited or improperly connected wires may result in permanent damage to the equipment.

MISE EN GARDE : Risque de dégâts matériels.

Ne pas mettre le système sous tension avant d'avoir vérifié tous les raccords de câblage. Des fils formant un court-circuit ou connectés de façon incorrecte risquent d'endommager irrémédiablement l'équipement.

1. Check that the combined load connected to the OLS-2100 switch is within the load range listed in Table 3.
2. Remove the existing wall plate and switch.
3. Press the OFF/AUTO button to the OFF position. (Button out.)
4. Wire the OLS-2100 as shown in Figure 4.

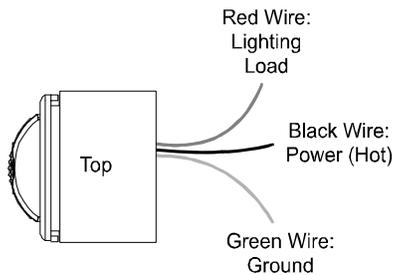


Figure 4: OLS-2100 Wiring Diagram

Note: Use the termination on the green wire and the mounting screw (provided) for grounding to a continuous grounding system.

5. Install the OLS-2100 switch in the utility box using the two flat-head screws provided. The OLS-2100 switch fits into a standard, 2 in. x 4 in. (51 mm x 102 mm) utility box with a minimum depth of 1-7/8 in. (48 mm).
 6. Apply power.
 7. Press the OFF/AUTO switch to AUTO (button in).
- The lights turn on within 10 seconds.

Setup and Adjustments

Wait 2 minutes after power is applied before making any adjustments. All adjustments are factory set to their **maximum** settings. Maximum is fully clockwise; minimum is fully counterclockwise.

IMPORTANT: Do not turn the adjustment screws past their limits. The adjustment screws can be damaged by exceeding their limits.

IMPORTANT: Touch the metal frame around the unit before removing the cover. When a wall plate is not installed, the unit may be damaged by static electricity.

Pull the cover surrounding the OFF/AUTO button straight off to access the adjustment screws. Use a small screwdriver to turn the adjustment screws to the desired settings. (See Figure 5.)

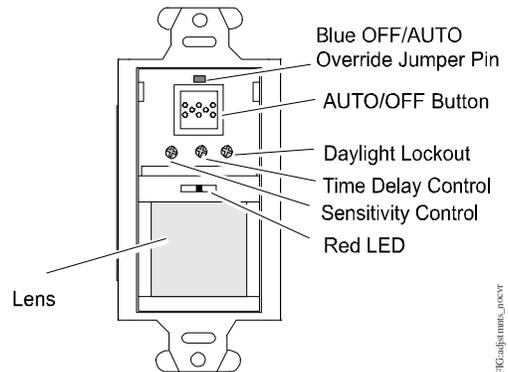


Figure 5: Location of Adjustments with Cover Removed

The following adjustments are available:

- **Sensitivity:** Controls the sensor's ability to detect motion, from less sensitive (minimum counterclockwise setting) to very sensitive (maximum clockwise setting). The maximum setting covers the entire 180° field of view. At the minimum setting, the sensor requires greater motions at closer distances to turn the lights on. The maximum setting is recommended.

Note: The **red LED** blinks when the sensor detects motion.

- **Daylight Lockout:** Prevents lights from turning on when adequate levels of natural light are available. Wait to set the daylight lockout until the natural light level is sufficient for work or traffic. Then, to enable daylight lockout, use the following steps:
 - a. Check that the OFF/AUTO switch is in the AUTO position (button in).

- b. Turn the daylight lockout adjustment screw completely counterclockwise.
 - c. Turn the time delay adjustment screw completely counterclockwise.
 - d. **Remain motionless** until the lights turn off (approximately 30 seconds). Do not cast a shadow in front of the sensor, as this movement turns the lights on.
 - e. Turn the daylight lockout adjustment screw slowly clockwise until the lights turn on. Then, turn the screw *slightly* back towards minimum.
 - f. Reset the delay time control if necessary.
- **Time Delay:** Controls the length of time between the last sensed movement and when the lights are turned off, from 30 seconds (minimum) to 30 minutes (maximum). A quarter turn counterclockwise is equal to 15 minutes. The maximum clockwise setting (30 minutes) is recommended.

When finished making adjustments, snap the cover back into place. Place the wall plate over the sensor and attach with two screws.

Remove the **blue OFF/AUTO override jumper pin** (Figure 5) to make the OLS-2100 switch function like a standard ON/OFF switch. After removing the jumper, press the AUTO/OFF switch to turn lights on or off.

Troubleshooting

Table 2: Troubleshooting

Problem	Possible Solutions
Unit does not function or LED does not flash (LED normally flashes when the sensor detects motion)	<ol style="list-style-type: none"> 1. Pull out the blue jumper (see Figure 5) to make the unit function as a regular ON/OFF switch. 2. Press the OFF/AUTO button. 3. If the lights still do not come on, verify that the ground connection is good. 4. If the unit still does not work, replace it.
Unit picks up movements outside the desired area to be monitored	<p>Limit the detection area by placing a strip of opaque adhesive tape (included with unit) over the part of the lens that views the area to be excluded.</p> <p>Adjust the sensitivity control counterclockwise to reduce sensitivity.</p>

Ordering Information

To order the OLS-2100 from your local Johnson Controls® branch or wholesale distributor, specify the complete model code number and quantity.

Table 3: Selection

Product Code Number	Voltage (VAC) ¹	Lighting Type	Load Range Limits (Watts)
OLS-2100-1	120 VAC, 60 Hz	Incandescent	25 to 800
		Fluorescent	40 to 800
	277 VAC, 60 Hz	Fluorescent only	40 to 1,200

1. This model does not operate at 50 Hz.

Technical Specifications

OLS-2100 Occupancy Light Switch

Sensor Type	Passive infrared
Power Requirement	120/277 VAC, 60 Hz
Load Range	(Standard or electronic ballast) 120 VAC, 60 Hz; 25 to 800 watts incandescent, 40 to 800 watts fluorescent 277 VAC, 60 Hz; 40 to 1,200 watts fluorescent
Current Consumption	Less than 0.5 mA
Warmup Time	60 seconds maximum
Wiring	3-wire installation (Requires a continuous grounding system.)
Ambient Conditions	32 to 95°F (0 to 35°C), 5 to 95% RH noncondensing; 85°F (29°C) maximum dew point
Field of View	180° (900 sq ft [81 sq m])
LED Indicator	Flashes when motion is detected
Daylight Lockout Control	Lights stay off if adequate light level is detected
Time Delay Control	30 seconds to 30 minutes (Factory set to 30 minutes.)
Sensitivity Control	Adjustable from 20 to 100% of maximum sensitivity. (Factory set to 100%.)
Shipping Weight	0.5 lb (0.23 kg)
Agency Listing	UL Listed (120 VAC and 277 VAC models), cUL Listed (120 VAC)

The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the local Johnson Controls office. Johnson Controls, Inc. shall not be liable for damages resulting from misapplication or misuse of its products.



Building Efficiency

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