

ECOELER YM2112

ECOELER Motion Sensor Light Switch

Model: YM2112 - Instruction Manual

1. INTRODUCTION

The ECOELER Motion Sensor Light Switch (Model YM2112) provides automated lighting control using Passive Infrared (PIR) motion detection. This device is designed for single-pole applications and requires a neutral wire for installation. It offers adjustable settings for sensitivity, ambient light detection, and time delay, allowing customization for various indoor environments such as bathrooms, laundry rooms, closets, and garages.

CUSTOMIZABLE SETTINGS

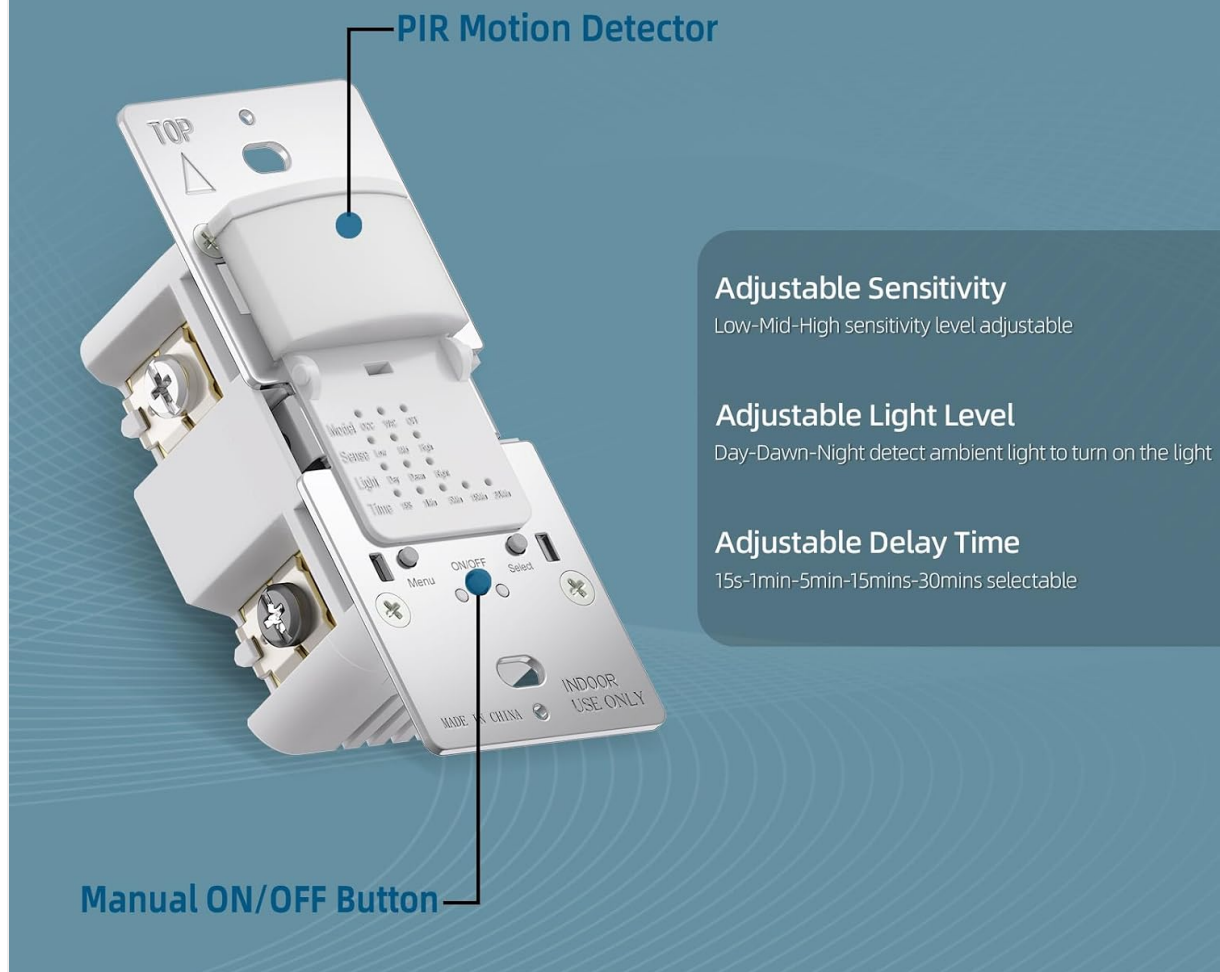


Figure 1: ECOELER Motion Sensor Light Switch with faceplate.

2. SAFETY INFORMATION

- **WARNING:** To avoid fire, shock, or death, turn off power at the circuit breaker or fuse box and test that power is off before wiring.
- Installation must be performed by a qualified electrician or a person with a thorough understanding of electrical wiring.
- This device is for single-pole applications only. Do not use in 3-way or multi-way circuits.
- A neutral wire is required for operation. Ensure your electrical box has a neutral wire (typically white) before installation.
- Do not exceed the maximum wattage ratings: 150W for LED/CFL, 300W for Incandescent/Halogen.
- Use only copper wire.

3. PACKAGE CONTENTS

Verify that all components are present before beginning installation:

- Motion Sensor Light Switch (YM2112)
- Wall Plate

- Installation Instructions
- Mounting Screws (4 pieces)



Figure 2: Included components: Motion Sensor Light Switch, wall plate, and mounting screws.

4. FEATURES

- **Hands-Free Control:** Automatically activates lighting upon motion detection.
- **Mode Selection:** Choose between Occupancy (OCC) and Vacancy (VAC) modes.
- **Adjustable Settings:** Customizable time delay (15s to 30min), sensitivity (20% to 100%), and ambient light sensing (dark to day).
- **Wide Compatibility:** Supports LED/CFL (up to 150W) and Incandescent/Halogen (up to 300W) bulbs.
- **Single Pole Control:** Designed for single-pole circuits only.
- **Wide Detection Range:** 180° detection angle with a maximum range of 26 feet (8 meters).
- **Durable Construction:** Features a tough thermoplastic housing for impact and scratch resistance.

5. INSTALLATION

5.1 Pre-Installation Checklist

1. Ensure power is OFF at the circuit breaker before starting.
2. Confirm the presence of a neutral wire (typically white) in your electrical box. This switch requires a neutral wire.
3. Verify that the circuit is a single-pole setup. This switch is not compatible with 3-way or multi-way circuits.

5.2 Wiring Instructions

Follow the wiring diagram carefully. If you are unsure about any steps, consult a qualified electrician.

1. Turn off power at the circuit breaker.
2. Remove the existing wall plate and switch.
3. Identify the wires: Hot (Black), Load (Red, or another color connected to the light), Neutral (White), and Ground (Green or bare copper).
4. Connect the wires from the wall box to the corresponding terminals on the ECOELER Motion Sensor Light Switch as shown in the wiring diagram below.
5. Secure the switch into the wall box with the provided screws.
6. Attach the new wall plate.
7. Restore power at the circuit breaker.
8. Allow a 30-second warm-up period after power is restored for the sensor to calibrate.

ACCESSORIES



Figure 3: Wiring Diagram for Model YM2112.

Wiring Connections for YM2112 Series Switch

Circuit Box Wire	Screw on YM2112 Switch
Power wire (hot)	Black
Load to power light or fan	Gold
Green or non-insulated (copper) ground wire	Green
Neutral (required)	Silver

Note: There is a 30-second warm-up period after each power reset. During this time, the sensor may not respond immediately.

6. OPERATION

The ECOELER Motion Sensor Light Switch offers three primary operation modes: Occupancy (OCC), Vacancy (VAC), and OFF. These modes are selected using the internal switches located behind the faceplate.

LARGE COVERAGE

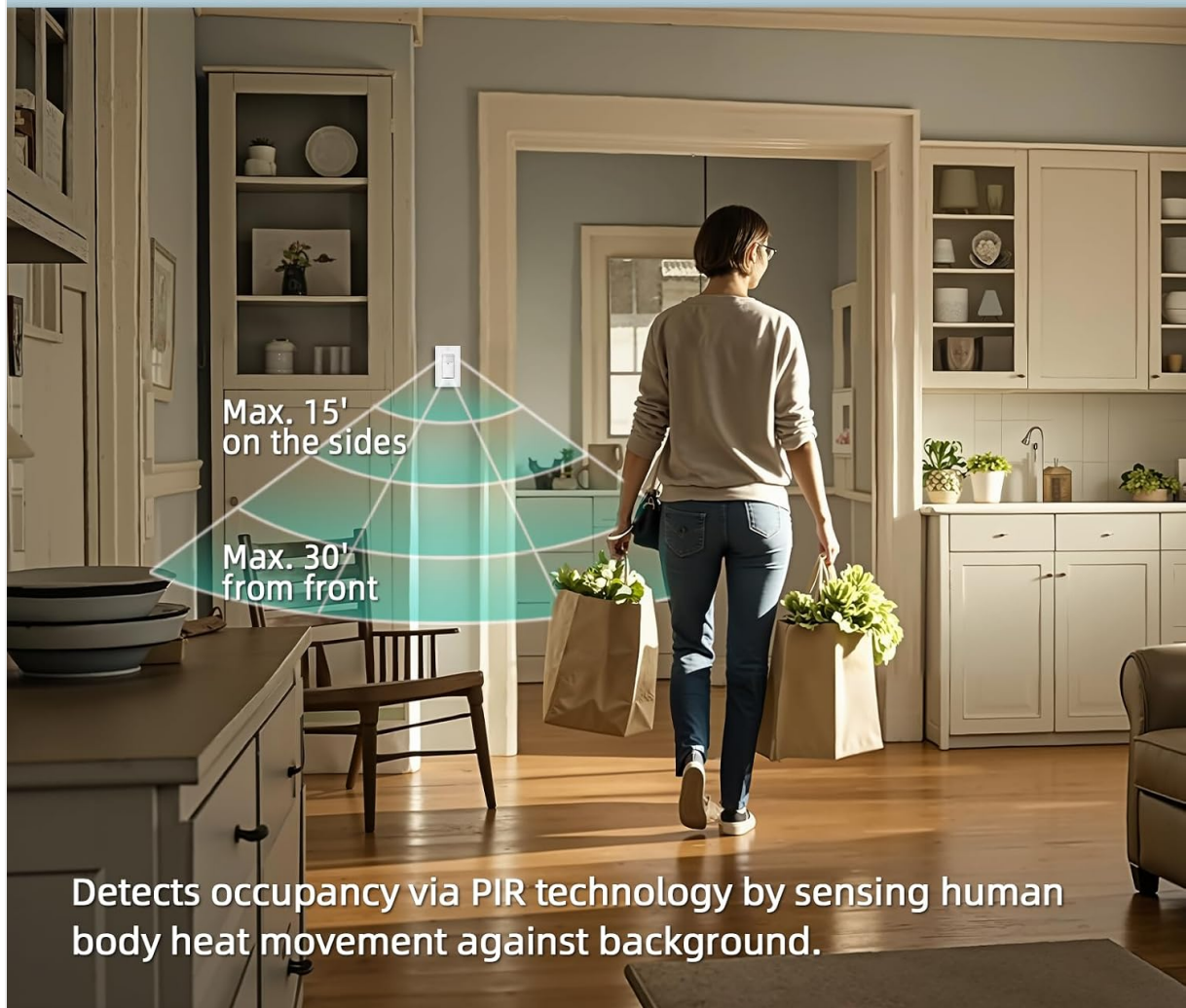


Figure 4: Operation Modes Diagram.

6.1 Occupancy (OCC) Mode

- **Function:** Automatic ON and Automatic OFF.
- **Behavior:** The light automatically turns ON when motion is detected and automatically turns OFF after a set time delay when no motion is detected.
- **Ideal for:** High-traffic areas where hands-free operation is desired, such as bathrooms, laundry rooms, and closets.

6.2 Vacancy (VAC) Mode

- **Function:** Manual ON and Automatic OFF.
- **Behavior:** The light must be manually turned ON by pressing the ON/OFF button. It will then automatically turn OFF after a set time delay when no motion is detected.
- **Ideal for:** Areas where you prefer to control when the light turns on, but still want the energy-saving benefit of automatic shut-off, such as offices or living rooms.

6.3 OFF Mode

- **Function:** Manual ON and Manual OFF.
- **Behavior:** The light is controlled entirely manually by pressing the ON/OFF button. Motion detection is disabled for light activation, but the sensor may still detect motion (indicated by an LED flash) without triggering the light.
- **Ideal for:** Situations where automatic control is not desired, or for testing purposes.

7. CUSTOMIZABLE SETTINGS

The ECOELER Motion Sensor Light Switch features adjustable settings for optimal performance. These settings are accessed by carefully removing the faceplate to reveal the adjustment dials and switches.



Figure 5: Internal view of adjustable settings.



Figure 6: Detailed view of customizable settings.

7.1 Adjustable Sensitivity (SENSE)

- **Range:** Low (20%) to High (100%).
- **Function:** Controls how easily the sensor detects motion.
- **Adjustment:** Turn the 'SENSE' dial to increase or decrease the detection range and responsiveness. Higher sensitivity detects smaller movements or movements further away.

7.2 Adjustable Light Level (LIGHT)

- **Settings:** Day, Dim, Dark.
- **Function:** Determines the ambient light level at which the sensor will activate the lights.
- **Adjustment:** Select 'Day' for activation regardless of ambient light, 'Dim' for activation in low light conditions (evening), and 'Dark' for activation only in very low light (night).

7.3 Adjustable Time Delay (TIME)

- **Range:** 15 seconds, 1 minute, 5 minutes, 15 minutes, 30 minutes.
- **Function:** Sets how long the light remains ON after the last detected motion.
- **Adjustment:** Select the desired time delay using the 'TIME' dial.

8. DETECTION RANGE

The ECOELER Motion Sensor Light Switch utilizes Passive Infrared (PIR) technology to detect human body heat movement. It offers a wide detection area for effective coverage in various room layouts.

- **Detection Angle:** 180 degrees.
- **Maximum Range:** Up to 26 feet (approximately 8 meters) from the front, and up to 15 feet (approximately 4.5 meters) on the sides.
- **Placement:** For optimal performance, install the switch in a location where its field of view is not obstructed by furniture, doors, or other objects.

HANDS-FREE LIGHT CONTROL

Passive Infrared (PIR) sensor detects motion with a 180° field of view



Figure 7: Motion Detection Coverage Area.

9. MAINTENANCE

The ECOELER Motion Sensor Light Switch requires minimal maintenance. Follow these guidelines to ensure proper function and longevity:

- **Cleaning:** Gently wipe the surface of the switch and sensor lens with a soft, dry cloth. Do not use abrasive cleaners, solvents, or excessive moisture, as these can damage the device.
- **Obstructions:** Ensure the sensor lens is free from dust, dirt, or any obstructions that could interfere with motion detection.
- **Regular Checks:** Periodically test the switch's functionality to ensure it is operating correctly in your chosen mode and settings.
- **Power Off for Service:** Always turn off power at the circuit breaker before performing any maintenance that involves removing the wall plate or accessing internal components.

10. TROUBLESHOOTING

If you experience issues with your ECOELER Motion Sensor Light Switch, refer to the following common problems and solutions:

Troubleshooting Guide

Problem	Possible Cause	Solution
Light does not turn ON with motion.	<ol style="list-style-type: none">1. Power is off.2. Incorrect wiring.3. Sensor lens obstructed.4. Sensitivity set too low.5. Light level setting too high (e.g., 'Dark' in a bright room).6. Switch is in VAC or OFF mode and not manually activated.	<ol style="list-style-type: none">1. Check circuit breaker.2. Verify wiring connections (refer to Section 5.2). Ensure neutral wire is connected.3. Clear any obstructions from the sensor lens.4. Increase sensitivity setting (refer to Section 7.1).5. Adjust light level setting (refer to Section 7.2).6. Switch to OCC mode or manually activate in VAC mode.
Light turns ON too frequently or unexpectedly.	<ol style="list-style-type: none">1. Sensitivity set too high.2. Sensor detecting motion outside desired area (e.g., pets, drafts).3. Switch is in OCC mode in a high-traffic area.	<ol style="list-style-type: none">1. Decrease sensitivity setting (refer to Section 7.1).2. Reposition the switch or adjust sensitivity to narrow detection.3. Consider switching to VAC mode if manual activation is preferred.
Light turns OFF too quickly or stays ON too long.	Time delay setting is incorrect.	Adjust the time delay setting to your preference (refer to Section 7.3).
Light flickers or does not work with certain bulbs.	Incompatibility with bulb type or wattage exceeded.	Ensure bulbs are within specified wattage limits (LED/CFL up to 150W, Incandescent/Halogen up to 300W). Try a different type of compatible bulb.
Switch does not respond after power restoration.	Warm-up period not completed.	Allow 30 seconds for the sensor to warm up and calibrate after power is restored.

11. SPECIFICATIONS

Product Specifications

Attribute	Detail
Model Number	YM2112
Power Source	Corded Electric
Voltage	120V AC, 60Hz
Max Load (LED/CFL)	150W
Max Load (Incandescent/Halogen)	300W
Mounting Type	Wall Mount
Detection Angle	180 degrees
Maximum Range	26 feet (8 meters)
Operating Temperature	32°F to 104°F (0°C to 40°C)
Product Dimensions (D x W x H)	115D x 40W x 68H millimeters (4.53 x 1.57 x 2.68 inches)
Item Weight	0.15 Pounds (68 grams)
Neutral Wire	Required
Country of Origin	China

12. WARRANTY

The ECOELER Motion Sensor Light Switch (Model YM2112) comes with a one-year warranty from the date of purchase. This warranty covers defects in materials and workmanship under normal use. For warranty claims or service, please contact ECOELER customer support.

13. SUPPORT

For technical assistance, troubleshooting, or general inquiries regarding your ECOELER Motion Sensor Light Switch, please contact our support team:

- **Email:** SUPPORTS@ECOELER.COM
- **Manufacturer:** ECOELER ELECTRIC INC