



# Wattstopper®

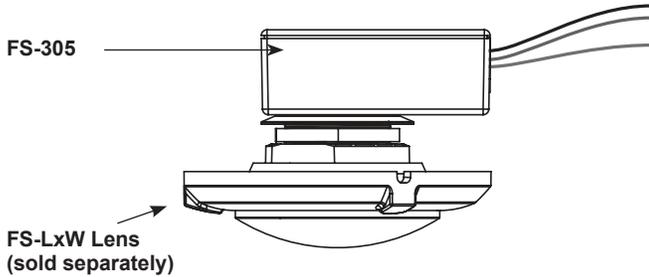
Occupancy and Light Level Sensor for Indoor/Outdoor Use  
Low Voltage • Fixture Mount (version 3)

No: 24039 – 02/18 rev. 1

Installation Instructions • Instructions d'Installation • Instrucciones de Instalación

**Catalog Number • Numéro de Catalogue • Número de Catálogo: FS-305**

Country of Origin: Made in China • Pays d'origine: Fabriqué en Chine • País de origen: Hecho en China



## SPECIFICATIONS

Voltage .....	12-30VDC
Adjustments	
Time Delay .....	30 seconds — 30 minutes
Factory Setting .....	12 minute
Light Level .....	minimum <10fc, maximum >120fc
Factory Setting .....	maximum (never hold OFF)
Wiring .....	+24V, control, common
Current Consumption .....	maximum 6.5mA @ 24VDC
Coverage	
FS-L2W Lens @ 8' height .....	48' diameter
FS-L3W Lens @ 20' height .....	40' diameter
FS-L6 Lens @ 8' height .....	20' diameter
FS-L7W Lens @ 40' height .....	100' diameter
Operating Temperature .....	-40°F (-40°C) to 131°F (55°C)
Dimensions	
Throat .....	1.14" diameter (28.8mm)
Collar .....	1.28" diameter (32.6mm)
Lens Pipe Length .....	0.38" (9.6mm)
Body .....	1.38" x 2.35" x 0.88" (35mm x 59.5mm x 22.7mm)

OPEN DEVICE for installation in a Listed Enclosure per Installation Instructions.

## DESCRIPTION AND OPERATION

The FS-305 occupancy sensor turns lighting ON and OFF based on occupancy and ambient light levels. The light level feature can be used to keep lights from turning ON if the ambient light level is sufficient. This slim, low-profile sensor is designed for installation inside the bottom of a light fixture body. The PIR lens connects to the FS-305 through a 13/16" diameter hole in the bottom of the fixture.

The sensors use passive infrared (PIR) sensing technology that reacts to changes in infrared energy (moving body heat) within the coverage area. Once the space is vacant and the time delay elapses (adjustable from 30 seconds to 30 minutes), lights will turn OFF. Sensors must directly "see" motion of an occupant to detect them, so careful consideration must be given to sensor placement. Avoid placing the sensor where shelving or other obstructions may block the sensor's line of sight.

The FS-305 operates between 12-30VDC with Watt Stopper class 2 power packs. It is designed for installation in a light fixture.

**OUTDOOR USE AT THE SENSOR COLLAR PART ONLY WHEN (SENSOR COLLAR PART EXPOSED AND) INSTALLED AT THE SPECIFIC LOCATION PER INSTALLATION INSTRUCTIONS WITH A LISTED OUTDOOR ENCLOSURE.**

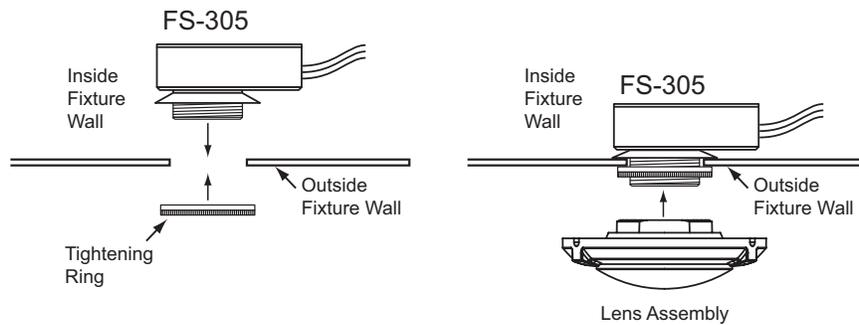
## INSTALLATION AND WIRING



**CAUTION**  
**TURN THE POWER OFF AT THE CIRCUIT BREAKER**  
**BEFORE INSTALLING THE SENSOR.**



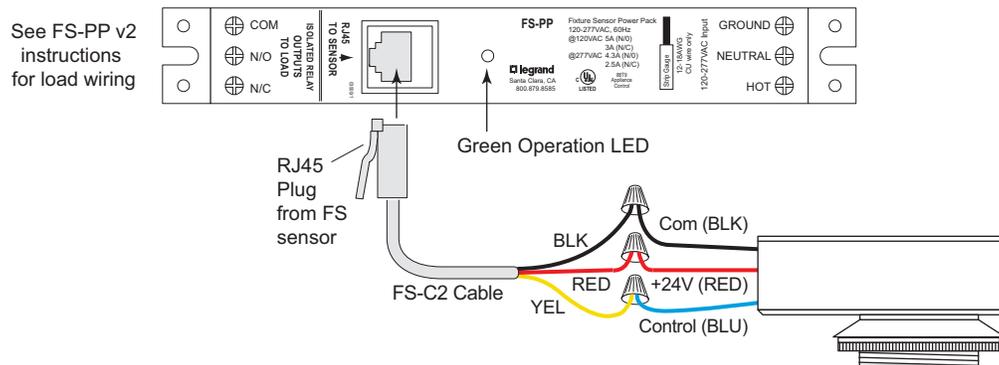
1. Install the FS-PP power pack as described in the instructions provided with the unit.
2. Determine an appropriate mounting location inside the light fixture for the FS-305. Allow a minimum distance of 1.3" (33mm) from the center of the sensor collar to the edge of the fixture.
3. Use a 13/16" (30mm) bit to drill a hole through the sheet metal in the bottom of the fixture.
4. From the inside of the fixture, insert the FS-305 lens pipe through the hole in the bottom of the fixture. Install the sensor face down, parallel to the mounting surface. Hand tighten the tightening ring securely against the outside of the fixture, followed by the lens.
5. Connect control, load and supply wires as shown in Figure 2.
6. Restore power from the circuit breaker



**Fig 1: FS-305 mounting in light fixture**

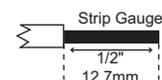
**NOTE:** The Outside Fixture Wall thickness should be between 0.032" and 0.10" (0.82mm and 2.54mm) for optimal sensor mounting and security.

## WIRING A SINGLE SENSOR



**Fig 2: FS-305 wiring**

**#14 — #18 AWG**



**Cu Wire Only**

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## LIGHT LEVEL FEATURE

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The Light Level feature holds lights OFF when the space is occupied and adequate ambient light exists. If the light level is low and the sensor detects occupancy, lights turn ON. If the light level rises above the set level during occupancy, lights stay ON.

In all cases, the sensor does not turn the lights OFF until the time delay expires.

The factory setting is for maximum, meaning that even bright ambient light will not cause the sensor to hold the lights OFF if it detects occupancy in the controlled area. \*



### WARNING

**DO NOT OVERTURN TRIMPOT WHEN ADJUSTING THE SENSOR.  
DO NOT TOUCH THE SQUARE INFRARED DETECTOR UNDER THE LENS ASSEMBLY.**



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## SENSOR ADJUSTMENT

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The Light Level and Time Delay adjustment trimpots are located under the lens assembly. The trimpots are accessed easily after the sensor is mounted in the fixture. Gently unscrew the lens assembly. Do not remove the thumbscrew collar; it holds the sensor in place on the fixture. Identify each trimpot.

Set the light level when the controlled light would normally be turned OFF due to the presence of sufficient daylight or other electric light. [If this feature is not needed, leave the light level at maximum (fully clockwise)].\*

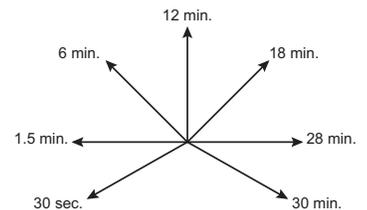
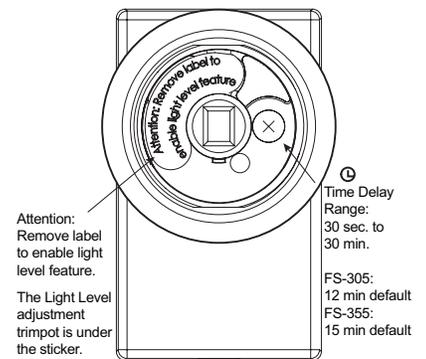
\* At the maximum setting, the light level entering the photosensor must exceed 120fc, which only happens in rare applications or when the lens is removed.

### Test Occupancy Sensor

1. Set Light Level to maximum (fully clockwise, factory setting) and Time Delay to minimum (fully counterclockwise). Put the lens assembly back onto the sensor.
2. Move out of the sensor's view. Lights turn OFF after 30 seconds.
3. Move into the controlled area. The red LED in the sensor lens should illuminate and the lights turn ON.

### Test and Adjust Light Level Sensor and Time Delay

1. Remove the lens assembly and adjust the light level and the time delay to minimum. Put the lens assembly back onto the sensor. Leave the controlled area and let the sensor time out so lights are OFF.
2. Enter the controlled area and lights should remain OFF.
3. Make sure your body does not cast a shadow on the sensor. Turn the light level trimpot clockwise in small increments. After each adjustment, put the lens back on the sensor then move about the controlled area. Wait 5-10 seconds to see if the lights turn ON.
4. Continue this procedure until the lights turn ON. At this setting the lights will not turn ON with occupancy if the light level is above the current level.
5. Set the time delay to the desired setting. The time delay can be set from 30 seconds (fully counterclockwise) to 30 minutes (fully clockwise).



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## COVERAGE PATTERN

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Density and range of the coverage pattern is determined by the type of lens and mounting height. See the FS-LxW Lens Module Coverage Guide for a description of the available coverage patterns.

## TROUBLESHOOTING

### Lights will not turn ON:

- LED does not flash
  - Check all wire connections.
- LED does flash:
  - Check all wire connections.
  - Check light level setting. Cover the sensor lens to simulate darkness in the room. If the lights come ON, the light level needs to be adjusted. If set for minimum, more than 10fc of ambient light will cause the lights to be held OFF. See Sensor Adjustment section for instructions.
- If lights still do not turn ON, call 800.879.8585.

### Lights will not turn OFF:

The time delay can be set from a minimum of 30 seconds (fully counter-clockwise) to a maximum of 30 minutes (fully clockwise). Ensure that the time delay is set to the desired delay and that there is no movement within the sensor's view for that time period.

- To quickly test the unit for proper operation, turn the time delay to minimum and move out of the sensor's view. Lights should turn OFF after 30 seconds.
- If lights still do not turn OFF, call 800.879.8585 for technical support.

### Operation during Power-Up

During the sensor warm-up period, which can last up to a minute after initial power-up (or after a lengthy power outage), the load will remain ON until the selected time delay expires.

## ORDERING INFORMATION

Catalog #	Description
FS-305	Fixture mount, low voltage occupancy sensor
FS-PP v2	Fixture mount power pack
BZ-50	Power Pack with flying leads for connecting low voltage wires
BZ-150	Power Pack with flying leads for connecting low voltage wires, hold-on/hold-off inputs, plus manual or auto mode option
FS-C2	One 6" (152mm) cable with 3 flying leads at one end and a shielded RJ45 male connector at the other (use with FS-PP)  6" (152mm)
FS-L2W	360° lens, maximum coverage 48' diameter at 8' height
FS-L3W	360° lens, maximum coverage 40' diameter at 20' height
FS-L6	360° lens, maximum coverage 20' diameter at 8' height
FS-L7W	360° lens, maximum coverage 100' diameter at 40' height

Sensor and Lenses are White. The FS-L7W is also available in gray (FS-L7-G).

### WARRANTY INFORMATION

Wattstopper warrants its products to be free of defects in materials and workmanship for a period of five (5) years. There are no obligations or liabilities on the part of Wattstopper for consequential damages arising out of, or in connection with, the use or performance of this product or other indirect damages with respect to loss of property, revenue or profit, or cost of removal, installation or reinstallation.

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Wattstopper garantit que ses produits sont exempts de défauts de matériaux et de fabrication pour une période de cinq (5) ans. Wattstopper ne peut être tenu responsable de tout dommage consécutif causé par ou lié à l'utilisation ou à la performance de ce produit ou tout autre dommage indirect lié à la perte de propriété, de revenus, ou de profits, ou aux coûts d'enlèvement, d'installation ou de réinstallation.

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