

**Catalog Number • Numéro de Catalogue • Número de Catálogo: FS-205**

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



## DESCRIPTION AND OPERATION

The FS-205 occupancy sensors turn 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.

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 power supply for the FS-205 is a FS-PP power pack mounted inside a light fixture. Each WattStopper FS-PP power pack can supply power for up to ten FS-205 sensors.

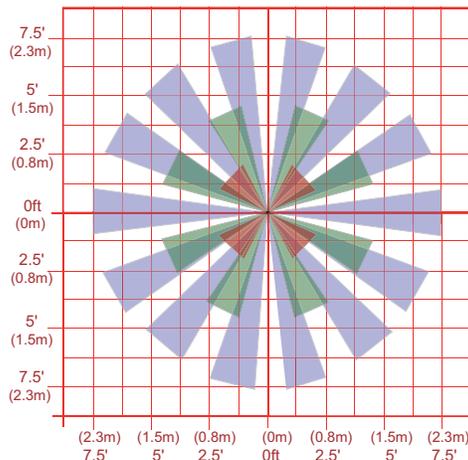
The sensor is equipped with a 6’ long cable fitted with a male RJ45 plug. The FS-PP has a corresponding female RJ45 receptacle. This cable carries power to the sensor and the 24VDC maintained output to the power pack to signal that lights should be on.

**Important: There is an initial warm-up period external load to the sensor.**

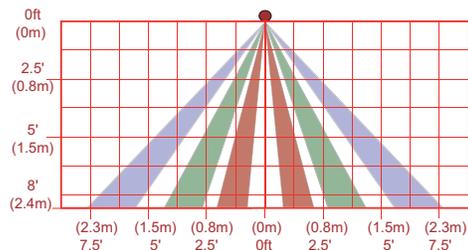
It may take up to a minute for the sensor to warm-up during the initial power-up. The sensor has an “instant on” feature. This occurs during installation or after a lengthy power failure only. As soon as power is supplied, the lights will come **ON** and stay **ON** for approximately 1 minute. If no movement is detected within that time the lights will turn **OFF** until detection occurs. If movement is detected during the initial 1 minute then the lights will stay **ON** for whatever time has been set on the time delay.

## COVERAGE PATTERN

Density and range of the coverage pattern is determined by mounting height. The FS-205 has a multi-cell, multi-tier Fresnel lens with a view of 360°. This lens is designed to detect small motion when mounted within 6’ of occupants. Coverage shown in the diagrams below is maximum. They represent full-step walking motion, with no barriers or obstacles. When mounted at a height of 8’, the coverage area is approximately 14’ diameter.



**FS-205 coverage pattern, top view**



**FS-205 coverage pattern, side view**

## INSTALLATION



**WARNING:**  
TURN THE POWER OFF AT THE CIRCUIT  
BREAKER BEFORE WIRING.

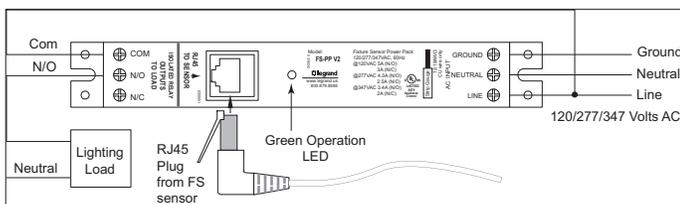


1. 24VDC class 2 power supply is required.
2. Determine an appropriate mounting location inside the light fixture.
3. Cut a 3/4 " diameter hole through the sheet metal in the bottom of the fixture.
4. Remove the beauty ring and thumbscrew collar from the FS-205-LE lens pipe.
5. Insert the lens through the hole in the bottom of the fixture; then put the thumbscrew collar onto the lens pipe. Tighten it securely to the outside of the fixture.
6. Use the holes or mounting slots at both ends of the sensor to secure it to the fixture.
7. Re-tighten the thumbscrew collar, then put the beauty ring onto the lens pipe and tighten it.
8. Restore power from the circuit breaker.

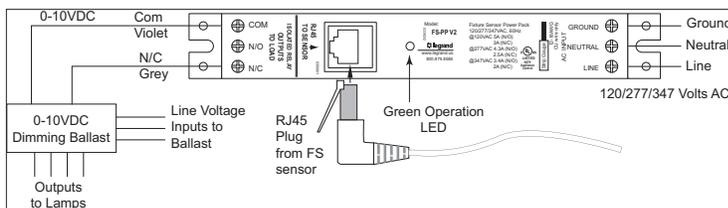
## WIRING A SINGLE SENSOR

All power wiring goes through the FS-PP. The only connection to the FS-505 is through the RJ45. The Occupancy Mode Switch should be set to **ON** for these wiring configurations.

**FS-PP direct wiring to lighting load**

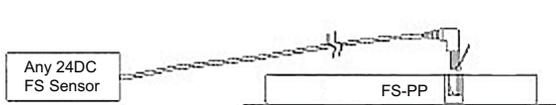


**FS-PP wiring to control ballast**

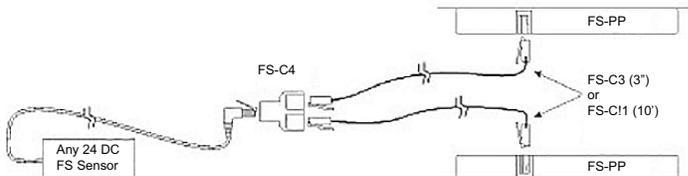


## CONTROL CONFIGURATIONS

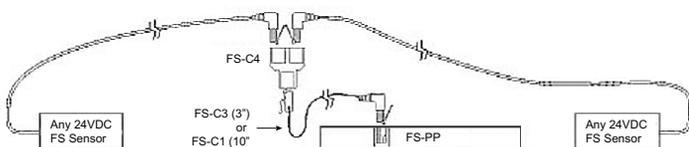
**One Sensor controlling one Power Pack**



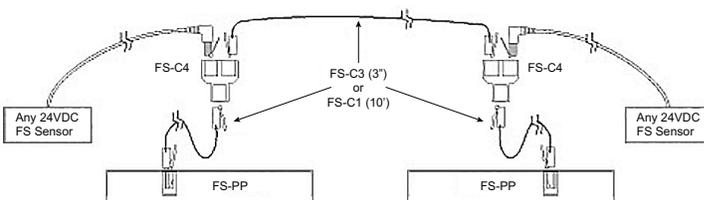
**One Sensor controlling two Power Packs**



**Two Sensors controlling one Power Pack**



**Two Sensors controlling two Power Packs**



## LIGHT LEVEL FEATURE

The Light Level feature holds lights **OFF** upon initial occupancy if adequate ambient light exists. It will not turn the lights **OFF** if they are **ON**. The default setting is for maximum, meaning that even the brightest ambient light will not hold the lights **OFF**.

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## SENSOR ADJUSTMENT

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The Time Delay and Light Level adjustment potentiometers are on the top of the FS-205 body. It may be necessary to adjust the sensor before the fixture is fully assembled. Adjust the light level setting during daylight hours when ambient light is at the desired level.



### Test Occupancy Sensor

1. Turn the time delay to minimum and light level to maximum.
2. Move out of the sensor's view. Lights should turn **OFF** after 30 seconds.
3. Move into the detection area. The red LED in the sensor lens should illuminate and the lights should turn **ON**.

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

1. Adjust the light level and the time delay to minimum.
2. Leave the area and let the sensor time out so lights are **OFF**.
3. Enter the space, and lights should remain **OFF**.  
Make sure your body does not cast a shadow on the sensor.
4. Turn the light level trimpot clockwise in small increments.
5. After each adjustment, move about the coverage area and wait 5-10 seconds to see if the lights turn **ON**.
6. Continue this procedure until the lights turn **ON**.  
At this setting, the lights will not turn **ON** if light levels are above the current natural illumination.
7. Set the time delay to the desired setting.  
The time delay can be set from 30 seconds to 30 minutes.

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## TROUBLESHOOTING

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### Lights will not turn on:

#### Sensor LED does not flash when motion is within 6 feet of detector:

- Is green power pack LED on?
  - If yes, check all RJ45 connections between sensors and power pack.
  - If no, check circuit breaker and wiring to power pack.
- Check all wire connections

#### •Sensor LED does flash when motion is within 6 feet of detector:

- 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.
- Check all wire connections and verify the load wires are tightly secured at the power supply.
- If lights still do not turn **ON**, call 800.879.8585 for technical support.

### Lights will not turn off:

The time delay can be set from 30 seconds to 30 minutes. 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 be on for 1 minute. After warm-up, the sensor will open or close the relay to correspond to the occupancy status of the room.

## ORDERING INFORMATION

Catalog Number	Description
FS-205 v2	Fixture mount, low voltage PIR occupancy sensor, adjustable time delay and light level
FS-PP	Fixture Mount Power Pack, 120-277VAC, 60Hz with No/NC Relay output
FS-C1	One 10' cable with a shielded RJ45 male connector at each end.
FS-C2	One 6' cable with e flying leads at one end and a shielded RJ45 male connector at the other.
FS-C3	One 3' cable with a shielded 90o RJ45 male connector and a shielded straight male RJ45 connector.
FS-C4	Shielded RJ45 splitter with female to dual female receptacles.
FS-C5	Shielded RJ45 male-to-male couple.
FS-CK-2	RJ45 to 3-wire connection kit.

Sensors are White.

### WARRANTY INFORMATION

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