Li legrand®

Wattstopper®
Line Voltage • High Frequency Occupancy Sensor

No: 24590 – 08/16 rev. 1

Installation Instructions • Instructions d'Installation • Instrucciones de Instalación

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Catalog Number • Numéro de Catalogue • Número de Catálogo: FM-105

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

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FM-105 with shield and mounting foot (2 shields included)

SPECIFICATIONS

Voltages...120/277VAC, 50/60Hz
Load Requirements
    @ 120VAC, 60Hz .... 0-800W ballast or tungsten
    @ 277VAC, 60Hz ....0-1200W ballast
Trimpot Adjustments
    Light Level...2-200fc
    Range/Sensitivity ....3' to 20' (1m to 6m)
    Time Delay .... 10 seconds to 30 minutes
Power Output ..... 1 mW (similar or less than a cell phone)
Frequency 5.8GHz

DESCRIPTION AND OPERATION

The FM-105 high frequency occupancy sensor uses ultra-high-frequency radio waves, also known as "microwaves," and the principle of the Doppler Effect to detect motion. The sensor sends out radio waves that bounce off of nearby surfaces and return to the sensor. Motion in the area changes the speed of the waves returning to the sensor. The sensor detects the change and interprets it as occupancy. This causes the sensor to turn **ON** the load.

High freqency radio waves can penetrate certain materials, therefore, the FM-105 can be installed behind a luminaries' plastic or glass lens.

The FM-105 can be used in a water-tight non-metallic box, or a water-tight luminaire for wet or damp location applications.

Daylighting Control

The FM-105 also has daylighting control capability. The daylight control on the FM-105 is a "HOLD-OFF" type. The sensor stops the load from turning **ON** if the ambient light is greater than the daylighting setpoint. If the load is already **ON**, the sensor will not turn **OFF** the load due to high ambient daylight.

SENSOR COVERAGE AREA

The coverage pattern may vary based on sensor location and characteristics of surrounding material. Shield placement, or the use of the second shield, may alter the coverage pattern.


Wall Mount

Ceiling Mount
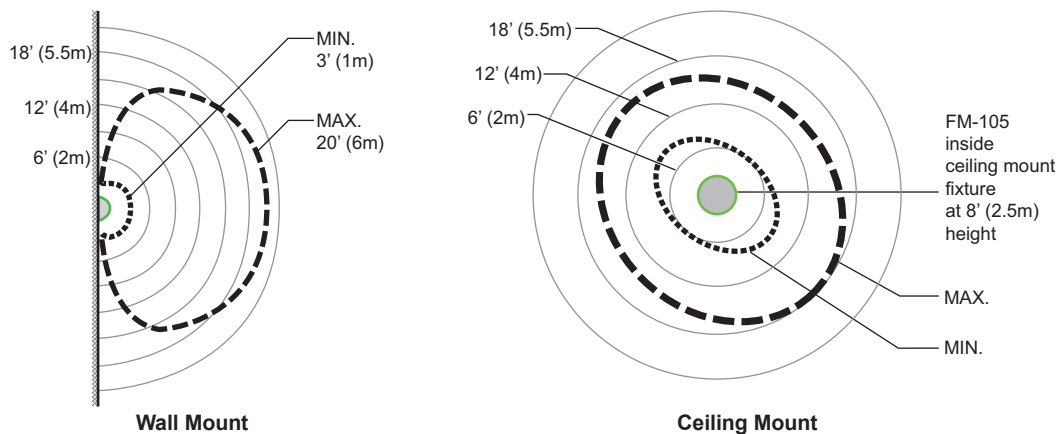
INSTALLATION

1. Determine the mounting location inside the luminaire or other suitable enclosure. If the daylight feature will be used, be sure to locate the sensor where daylight is not completely obscured from the sensor.

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

2. Attach a metal shield to the FM-105 so that the shield is located between the FM-105 and the lamp. If additional shielding is needed, attach the second optional shield to the other side of the FM-105. Make sure that the wiring terminals on the FM-105 are accessible.
3. Put the plastic mounting foot onto the base of the FM-105 to secure the metal shield(s) in place.
4. Secure the FM-105 assembly in place using screws through the plastic mounting foot.
5. Connect the line voltage and load wires to the FM-105 terminals as shown in the wiring diagram.
   - Do not allow bare wire to show.
   - Make sure all connections are secure.
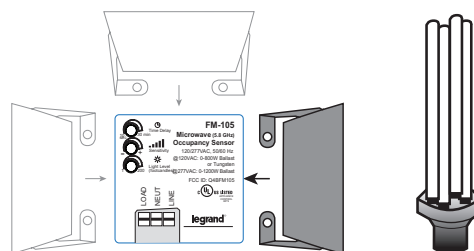6. Restore power from the circuit breaker.

WIRING
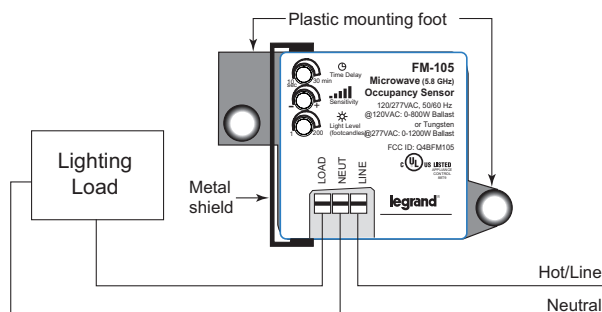
MOUNTING OPTIONS

Position metal shield between the FM-105 and lamp. Second optional shield may be mounted to the opposite side of the FM-105.


Bottom of FM-105

Align studs on the bottom of the FM-105 with the holes on the metal shield flanges. Do not block wiring terminals on the FM-105 with the shield.

The mounting foot provides 4 different mounting positions for use with a single shield. Only 2 mounting positions can be used with the 2 shields.
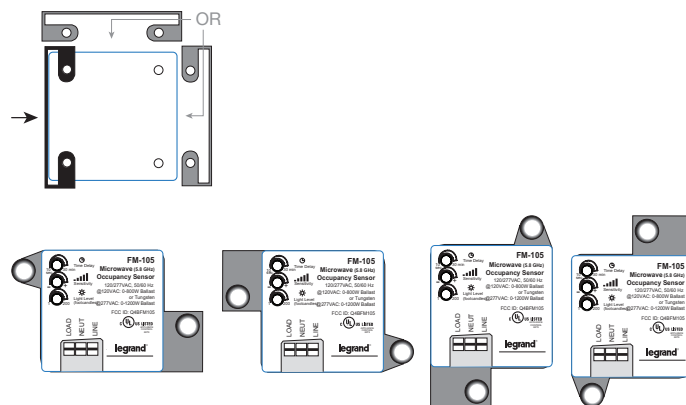
Mounting Foot

Align 4 corner studs on the bottom of the FM-105 with 4 corner slots on mounting foot. Twist to secure.
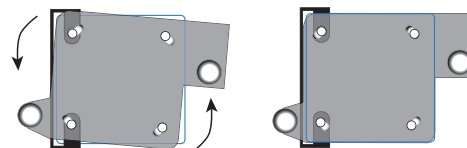
ADJUSTMENTS

Three trimpots on the FM-105 allow you to adjust the time delay, sensitivity/range, and light level setpoint. To reduce a setting, turn the associated trimpot counter-clockwise toward the minimum setting. To increase a setting, turn the trimpot clockwise toward the maximum setting.

Warning: Do not overturn the adjustment trimpots!

Time Delay

The FM-105 automatically turns **OFF** the load after the coverage area has been vacant for the amount of time set in the time delay. The minimum setting is 10 seconds, maximum is 30 minutes.

Range/Sensitivity

It is possible for a high frequency sensor to "see" through solid objects and detect motion if the sensitivity is set too high. If you are getting detections and the load will not turn **OFF**, reduce the sensitivity slightly and see if that corrects the situation.

Light Level

Adjust the daylighting setpoint when ambient light is sufficient to keep the lights **OFF**. Set the time delay to minimum. Adjust the light level trimpot in small increments. Wait 1 to 2 minutes between adjustments. After the time delay expires and the load turns **OFF**, move within the detection area of the sensor. If the load comes back **ON**, you need to repeat the procedure.

IMPORTANT STARTUP INFORMATION

The first time the sensor is powered-up, the load will flash **ON** then **OFF** once, then there will be 10 seconds while the sensor warms-up. After that time, the sensor will work normally.

TROUBLESHOOTING

To quickly test the unit, turn the time delay to minimum. Move out of the sensor's view. Lights should turn **OFF** after 10 seconds. Move into the sensor's view. The lights should turn **ON**.

Lights do not turn ON:

1. Cover the sensor to simulate darkness then move in the coverage area. If the load turns **ON**, adjust the light level.
2. Check all wire connections. Verify all wires are secure.

Lights do not turn OFF:

1. If there is no motion in the desired coverage area, the sensor may be picking up movement on the other side of a wall, partition, window or door. Reduce the sensitivity.
2. Verify time delay and that there is no movement within the sensor's view for that time period.

FCC NOTICE

FCC ID: Q4BFM105

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Caution: Any changes or modifications to this device not explicitly approved by Wattstopper could void your authority to operate this equipment.

Notice: The FM-105 may cause interference to a nearby WIreless Network operating at a similar frequency, around 5.8 GHZ.

WARRANTY INFORMATION

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