

## LMS-509 series

### Line Voltage Occupancy Sensor



## OVERVIEW

The LMS-509 series member of the TRANS family is a line voltage switching occupancy sensor designed for all-purposes energy efficient lighting control. This occupancy sensor employs an advanced High Frequency Doppler (HFD) sensing technology to provide superior sensing performance of minor motions, such as typing, writing, or reading. The HFD technology is operating with high frequency (4~12GHz) radio waves which is capable of detecting the occupant's presence and movements without requiring unobstructed line-of-sight like PIR sensors.

The Accu-Set digital potentiometer makes the sensor setting easier, faster and more accurate than the conventional analog potentiometer. 4 levels of sensitivity can be selected to provide optimum range via DIP switch setting. An exclusive Hybrid Switching technology makes LMS-509 series ideal to control the lighting with exceptionally high inrush current (HIC) while switching on, such as multiple LED or CFL lightings connected in parallel. The sensor comes with ambient light sensor (ALS) to inhibit switching on the light if the ambient light level is higher than the threshold set.

Like all sensors in the TRANS family, the LMS-509 series is also available in various mounting options. This provides a second-to-none design and installation flexibility.

## FEATURES

- High Frequency Doppler sensing technology
- 120/240/277VAC line voltage operation
- Hybrid switching for controlling loads with HIC
- Accu-Set potentiometer for quick and easy setting
- 4 levels of HFD sensitivity setting programmable
- Ambient light sensor to inhibit unneeded lighting
- Available with a variety of mounting options

## APPLICATION

### ☒ Light Control

### ☒ Fan Control

The LMS-509 series occupancy sensor can be used to directly control the connected light, or other loads, by sensing the presence and movements of the occupant without requiring unobstructed line-of-sight. This makes the sensor suitable for applications such as an open office with partitions, a library reading area with cubicles, a restroom with stalls, inside a plastic wall box safety cover, or mounted inside of an enclosed lighting fixture.

NOTE: Do NOT place the sensor behind a metal plate or within an enclosure with high metallic wall.

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#### OPERATION

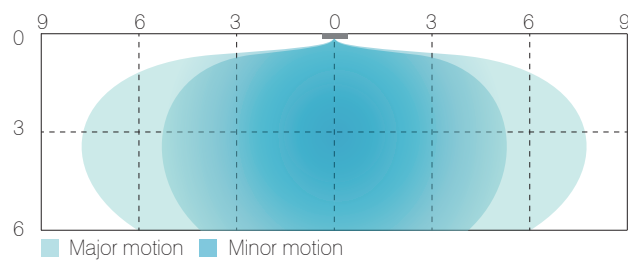
The LMS-509 series is a line voltage operating occupancy sensor with hybrid switching output to control the operation of connected load. The sensor will switch on the light when it detects the presence and movement of a moving object (human, or vehicle) within its coverage, and automatically shut off the light after the delay time elapses. Different delay times can be programmed by an Accu-Set digital potentiometer. An ambient light sensor is built-in to inhibit switching on the light when ambient light level is higher than the threshold set.

#### DETECTION PATTERN

|                     |     |     |
|---------------------|-----|-----|
| Mounting Height (m) | 3   | 6   |
| Coverage (sq. m)*   | 180 | 100 |

\*Sensitivity 100%

Side View



#### Mounting Options

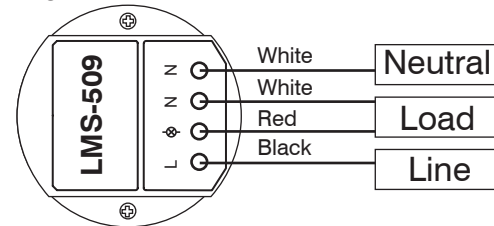
The LMS-509xX series can be mounted into the ceiling or integrated with an OEM lighting fixture in various options. The mounting options are available by combining a specific mounting bracket (if applicable) from the table below. The bracket will be shipped with the sensor when ordered with the respective code.

| Code | Mounting Option    | Mounting Bracket |
|------|--------------------|------------------|
| F    | Fixture Integrated | ---              |
| E    | Fixture External   | EMB-500          |
| S    | Ceiling Surface    | SMB-500          |
| C    | Junction Box       | CMB-500          |
| L    | Ceiling Recess     | LMB-500          |
| I    | Fixture Internal   | IMB-500          |

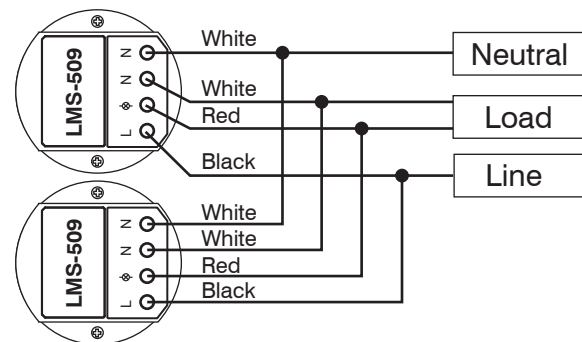
#### Wiring Diagram

Various control modes may be achieved by different wiring connections. Basic wiring diagrams are included as below for reference. Consult with an IR-TEC team member if a more complex control is required.

##### A. Single sensor control



##### B. Multiple sensors control



#### SPECIFICATIONS

|                           |                                                 |        |               |
|---------------------------|-------------------------------------------------|--------|---------------|
| Power supply              | 120/240/277VAC, 50/60 Hz                        |        |               |
| Maximum load              | 120VAC                                          | 240VAC | 277VAC        |
| -Incandescent/Halogen     | 540/*300W(VA)                                   | 5A     | 800/*600W(VA) |
| -Ballast Electronic (LED) | 540/*300VA                                      | 5A     | 800/*600VA    |
| HFD sensitivity           | 25/50/75/100% selectable via DIP switch setting |        |               |
| Load switching            | Zero-cross Hybrid-Switching                     |        |               |
| HIC protection            | Max. 80A for 16.7msec.                          |        |               |
| Detection range           | Up to 180 sq. m @ 3 m                           |        |               |
| Mounting height           | 2.4 ~ 6 m (8 ~ 20 ft)                           |        |               |
| Ambient light level       | 7 level Accu-Set digital potentiometer          |        |               |
| Delay time setting        | T/1'/3'/5'/10'/20'/30', T=10 sec. for testing   |        |               |
| Op. humidity              | Max. 95% RH                                     |        |               |
| Op. temperature           | -40°C~70°C (-40°F~158°F)                        |        |               |
| Dimensions                | Ø60 x H42mm (Ø2.36"x H1.65")                    |        |               |

\*Max load for operating temperature at 55°C~70°C (131°F~158°F)