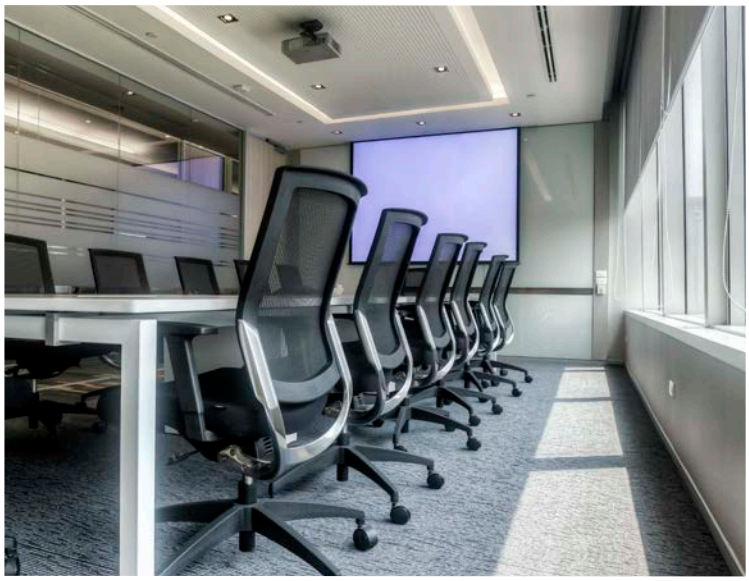
TRANS

LOD-509 series

Line Voltage SmartDIM Occupancy Sensor



OVERVIEW

The LOD-509 series member of the TRANS family is a line voltage occupancy sensor featuring SmartDIM control to the lighting with 0-10V dimmable ballast or driver. SmartDIM is a state-of-the-art continuous dimming control technology developed by IR-TEC, which is capable of maintaining the overall ambient light level with the preset range through a smooth continuous dimming control to the connected lighting. The LOD-509 is designed to provide multi-mode occupancy sensing based continuous dimming control, ease of use, and the simplest installation.

This sensor will turn on the connected lighting to the preset SmartDIM level when it detects the presence of an occupant or vehicle, and switch off or to 1/2 of SmartDIM level (as per mode selected) after the area is vacant for a period of time. The LOD-509 offers 8 selectable control modes via a rotary DIP switch setting. Additionally, 7 different delay times can be easily and accurately set by an Accu-Set digital potentiometer. The SmartDIM level can be manually adjusted to provide consistent lighting as required. An exclusive Hybrid Switching technology makes this sensor ideal to control lighting with exceptionally high inrush current (HIC) while switching on, such as multiple LED or CFL lights connected in parallel.

Like all sensors in the TRANS family, the LOD-509 series is available with various mounting options and interchangeable lenses. This provides a second-to-none design and complete installation flexibility. The sensor is designed to operate in the coldest of environments, down to -40°C/°F.

FEATURES

- Omni-directional quad element infrared sensor
- 100/230/277VAC line voltage power operation
- Hybrid switching for controlling loads with HIC
- 0-10V output for continuous dimming control
- Walk test and sensor operation LED indicator
- Direct lead wires for easy wiring connections
- 8 control modes selectable by rotary DIP switch
- Accu-Set potentiometer delay time setting
- Individually adjustable SmartDIM level setting
- Variety of mounting options, including IP66
- Available with interchangeable lens options

APPLICATIONS

☑ 0-10V Continuous Dimming Control

The LOD-509S series occupancy sensor can be used to directly control the lighting with 0-10V dimmable ballasts, or drivers, in different modes by sensing the presence and movements of the occupant. Within the maximum load allowed, one LOD-509 sensor can control up to 50 dimmable ballasts/drivers in parallel with sinking current less than 0.5mA each. A basic wiring diagram is included on the next page for reference. Consult with an IR-TEC team member if a more complex wiring diagram is required.

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IR-TEC Specializing in Building Sensors

LOD-509 series

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SmartDIM

SmartDIM is an exclusive automatic dimming control algorithm developed by IR-TEC to provide a smooth continuous dimming performance. The output of the controlled lighting will be constantly adjusted to maintain the overall ambient light level within the pre-set range by sensing the daylight available in the space.

CONTROL MODES

The LOD-509 series can be set to control the lighting in one of the following modes. For more details of specific control modes, please visit www.irtec.com or contact an IR-TEC team member directly.

Mode		Day[1]	Night[2]	Remarks
A	ON/OFF	Vac: OFF Occ: ON	Vac: OFF Occ: ON	For non-dimmable lighting. ALS disabled at all time.
B	OSO	Vac: LD Occ: SmartDIM	Vac: LD Occ: SmartDIM	LD: 1/2 of SmartDIM (min. 1V)
C	OSLA	Vac: OFF Occ: SmartDIM	Vac: LD Occ: SmartDIM	LA threshold: 20-50 lux MA threshold: 50-80 lux HA threshold: 80-130 lux
D	OSMA			
E	OSHA			
F	OSLATO	Vac: OFF Occ: SmartDIM	Vac: OFF Occ: SmartDIM Time-Off: LD	
G	OSMATO			
H	OSHATO			

Vac : Vacant **Occ** : Occupied

[1]While ambient light level is higher than the respective ALS threshold.
[2] While ambient light level is lower than the respective ALS threshold.

MOUNTING OPTIONS

The LOD-509S**X**x series can be mounted into the ceiling, attached to a fixture or mounted into a junction box. The mounting options are available by combining a specific mounting bracket (if applicable) from the chart below. The bracket will be shipped with the sensor when ordered with the respective code. Codes F and W allow the sensor to be integrated with OEM light fixtures in any environment.

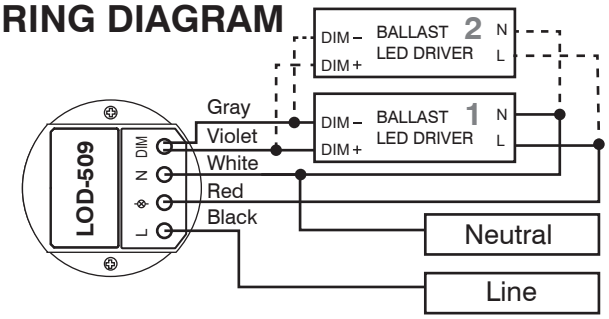
Code	Mounting Option	Mounting Bracket
F	Fixture Integrated	---
W	IP-66 Fixture Integrated	---
E	Fixture External	EMB-500
P	IP-66 Fixture External	PMB-500
S	Ceiling Surface	SMB-500
C	Junction Box	CMB-500
L	Ceiling Recess	LMB-500

LENS OPTIONS

The LOD-509xx**X** series is available with following lens options which provide different coverage at different mounting height (H). When adding the lens code the lens is then automatically shipped with the sensor.

Lens		Shape	Mounting Height		Coverage
A	Standard	Cone	8~15 ft.	2.4~4.5m	2X height
B	Extra wide	Cone	8~10 ft.	2.4~3.0m	6X height
C	High bay	Cone	15~30 ft.	4.5~9.0m	3X height
D	Standard	Round	8~20 ft.	2.4~6.0m	2X height
F	Extra wide	Dome	8~20 ft.	2.4~6.0m	4X height
G	Aisle way	Arch	8~40 ft.	2.4~12.0m	3X height
H	High bay	Dome	30~50 ft.	9.0~15.0m	1X height
L	Long aisle	Arch	8~10 ft.	2.4~3.0 m	6X height

WIRING DIAGRAM



SPECIFICATIONS

Power supply	100/120/230/277VAC, 50/60 Hz		
Maximum Load	100-120VAC	230VAC	277VAC
-Incandescent/Halogen	800/*500W(VA)	5A	1200/*750W(VA)
-Fluorescent Ballast/CFL	800/*500W(VA)	5A	1200/*750W(VA)
-Ballast Electronic (LED)	540/*500VA	5A	1200/*750VA
Infrared sensor	Omni-directional quad element pyroelectric		
Photo sensor	Digital ambient light sensor		
HIC protection	Max. 80A for 16.7msec.		
Dim control	0-10V, max 25mA sinking current		
Detectable speed	0.15 ~ 3 m/sec. (0.5~10 ft./sec.)		
Mounting height	Subject to the lens applied		
Detection range	As per lens applied and mounting height		
Delay time setting	T/3/5/10/15/20/30 min., T: 10 sec.		
Time-off delay	10 min., OSxATO modes only		
Op. humidity	Max. 95% RH		
Op. temperature	-40°C~70°C (-40°F~158°F)		
Dimensions	Ø60 x H37mm (Ø2.36"x H1.45")		

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