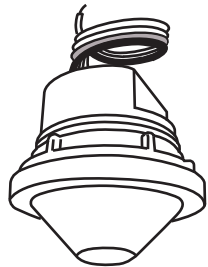


# TRANS

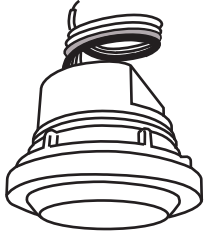
## LOD-509 series

Line Voltage SmartDIM Occupancy Sensor

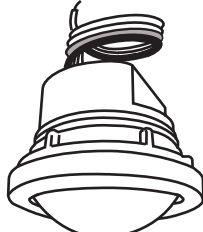
### INSTALLATION INSTRUCTIONS



w/Lens A/B/C



w/Lens D



w/Lens F

### OVERVIEW

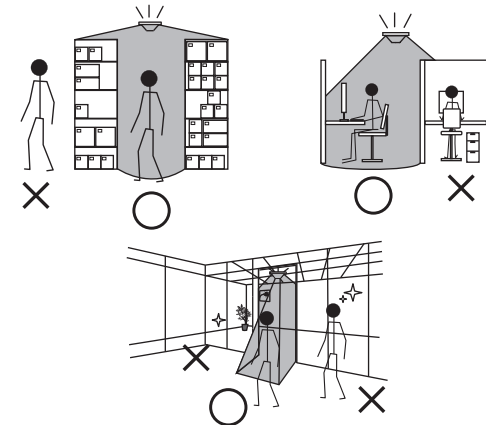
The LOD-509 series member of the TRANS family is a line voltage occupancy sensor featuring **SmartDIM** control to the lighting with 0-10V dimmable ballast or driver. **SmartDIM** is a state-of-the-art continuous dimming control technology developed by IR-TEC, which is capable of maintaining the overall 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 via 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  $-40^{\circ}\text{C}/^{\circ}\text{F}$ .

### INSTALLATION NOTES

1. The sensor is more sensitive to the movements “crossing” the detection zones than “toward” or “away” the sensor unit. To obtain better sensitivity, avoid placing the sensor in line with occupant path, if possible.
2. The closer the movement is to the sensor, the more sensitive the sensor is. The higher the sensor is installed, the larger movement is required to be detected.
3. Ensure to place the sensor at least at 1.5m (5 ft.) away from air supply ducts as rapid air flow may cause false activations.
4. The sensor cannot “see” the movements behind obstacles, such as furniture, shelf, glass or partitions. As a general rule, each occupant should be able to clearly view the sensor unit.
5. For open office areas with partition which could block the sensor view to occupant movements, it is best to place the sensors over the intersection of multiple workstations. For large areas of open office or space, place multiple sensors so that there is overlap coverage with each adjacent sensor.



### CAUTION

- Risk of Electric Shock - Disconnect power supply before servicing.
- Do NOT touch the square window of infrared sensor under the lens assembly.

Open Type Photoelectric Switches.

### PRUDENCE

- Risque de choc électrique - Débranchez l'alimentation avant l'entretien.
- Ne PAS toucher la fenêtre carrée de capteur infrarouge sous l'ensemble de l'objectif.

Ouvrir Type commutateurs optoélectroniques



www.irtec.com

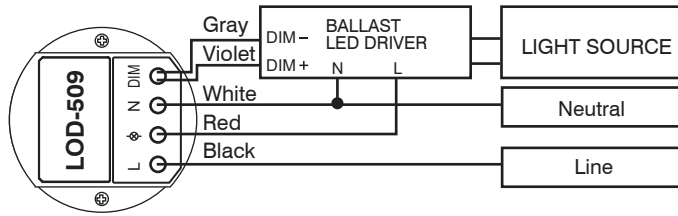
P/N: 058-50905-001

Printed in Taiwan

This product may be covered by one or more U.S. patents or patent applications. Please visit [www.irtec.com](http://www.irtec.com) for more information.

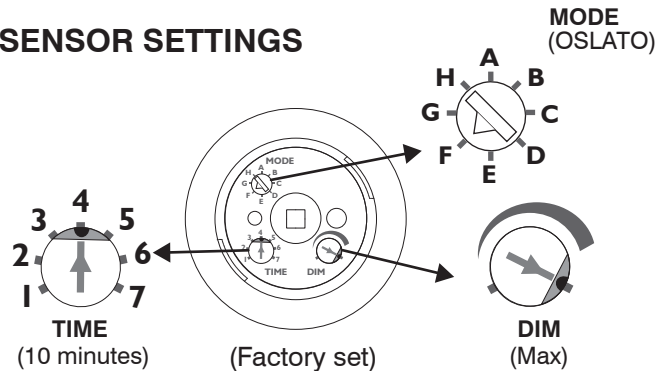
**IR-TEC**

## WIRING DIAGRAM



**NOTE:** The driver/ballast **MUST** be 0-10V dimmable to achieve dimming control.

## SENSOR SETTINGS



POS.	1	2	3	4	5	6	7
TIME	T	3'	5'	10'	15'	20'	30'

Factory Set

### TIME setting

The sensor provides 7 different times via pointing the TIME potentiometer to different positions (as above table). It is the time period that sensor will activate SmartDIM control to the connected light, starts from detecting the presence of an occupant and ends if no movement is detected before the time elapsed.

### SmartDIM setting

The SmartDIM level of each sensor is factory set at maximum position. If necessary, the SmartDIM level can be decreased by adjusting the potentiometer (DIM) counterclockwise. To achieve proper lighting level, avoid setting the SmartDIM when the space is having abundant daylight.

**NOTE:** If the ambient light level exceeds 2X of SmartDIM level for more than 20 minutes, the sensor may switch off the light even under occupancy.

## TESTING

To verify sensor control function normal, please proceed with the instructions as below to conduct test;

1. Remove the lens. Set the arrow of TIME potentiometer pointing at position "1" (TEST) and MODE switch at the desired control mode.
2. Walk within the expected range\* at normal speed. The sensor will switch ON (ALS and SmartDIM disabled) the light for 10 seconds whenever sensor detects the movement, and then switch OFF or dim to 1/2 output for 10 seconds as per the selected mode. The LED of sensor will also blink to indicate every motion detected.
3. After testing complete, ensure to set the TIME potentiometer to the position of desired time. **NOTE:** The sensor will automatically control the light as per the selected mode with factory set time delay (10 minutes) if the TIME potentiometer has NOT been set to other position.

\* The coverage may vary with the lens type and mounting height applied. Refer to the attached LENS DATASHEET for more details.

## SPECIFICATIONS

Power supply	120/230/277VAC, 50/60Hz
Maximum Load @ 40°C~55°C (-40°F~131°F-)	Incandescent/Halogen - 800/1200W@120/277V
	Fluorescent Ballast/CFL - 800/1200W@120/277V
	Ballast Electronic (LED) - 540/1200VA@120/277V
Maximum Load @ 55°C~70°C (131°F~158°F)	Incandescent/Halogen - 500/750W@120/277V
	Fluorescent Ballast/CFL - 500/750W@120/277V
	Ballast Electronic (LED) - 500/750VA@120/277V
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")

## MODE (Control mode selection)

The LOD-509 series features 8 different control modes for selection via rotary DIP switch. Please refer to the following table for selecting the control mode.

Mode	Sensor Control Description
<b>A</b> (ON/OFF)	<ol style="list-style-type: none"> <li>1. Ambient light sensor is disabled.</li> <li>2. Turn the light to full-ON as per TIME set under occupancy.</li> <li>3. Turn off the light after the delay time elapsed.</li> </ol>
<b>B</b> (OSO)	<ol style="list-style-type: none"> <li>1. Ambient light sensor is disabled.</li> <li>2. SmartDIM controls whenever sensor detects occupancy.</li> <li>3. Dim to 1/2 of SmartDIM level after delay time elapsed.</li> </ol>
<b>C</b> (OSLA)	<ol style="list-style-type: none"> <li>1. ALS inhibits lighting while ambient light &gt; 50 lux.</li> <li>2. Dim the light to 1/2 of SmartDIM if ambient light &lt; 20 lux.</li> <li>3. SmartDIM control as per TIME set under occupancy.</li> </ol>
<b>D</b> (OSMA)	<ol style="list-style-type: none"> <li>1. ALS inhibits lighting while ambient light &gt; 80 Lux.</li> <li>2. Dim the light to 1/2 of SmartDIM if ambient light &lt; 50 lux</li> <li>3. SmartDIM control as per TIME set under occupancy.</li> </ol>
<b>E</b> (OSHA)	<ol style="list-style-type: none"> <li>1. ALS inhibits lighting while ambient light &gt; 130 lux.</li> <li>2. Dim the light to 1/2 of SmartDIM if ambient light &lt; 80 lux</li> <li>3. SmartDIM control as per TIME set under occupancy.</li> </ol>
<b>F</b> (OSLATO)	<ol style="list-style-type: none"> <li>1. ALS inhibits lighting while ambient light &gt; 50 lux.</li> <li>2. SmartDIM control as per TIME set under occupancy if ambient light &lt; 20 lux. Dim the light to 1/2 of SmartDIM level for 10 min. as Time Off.</li> <li>3. Turn to SmartDIM control as per TIME set if sensor detects occupancy during Time Off. Turn off the light if no occupancy detected during TO.</li> </ol>
<b>G</b> (OSMATO)	<ol style="list-style-type: none"> <li>1. ALS inhibits lighting while ambient light &gt; 80 lux.</li> <li>2. SmartDIM control as per TIME set under occupancy if ambient light &lt; 50 lux. Dim the light to 1/2 of SmartDIM level for 10 min. as Time Off.</li> <li>3. Turn to SmartDIM control as per TIME set if sensor detects occupancy during Time Off. Turn off the light if no occupancy detected during TO.</li> </ol>
<b>H</b> (OSHATO)	<ol style="list-style-type: none"> <li>1. ALS inhibits lighting while ambient light &gt; 130 lux.</li> <li>2. SmartDIM control as per TIME set under occupancy if ambient light &lt; 80 lux. Dim the light to 1/2 of SmartDIM level for 10 min. as Time Off.</li> <li>3. Turn to SmartDIM control as per TIME set if sensor detects occupancy during Time Off. Turn off the light if no occupancy detected during TO.</li> </ol>