TRANS ✦

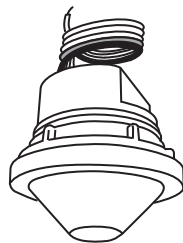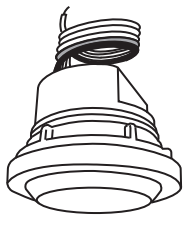## LBD-509 series
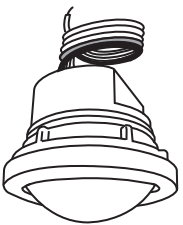Line Voltage SmartDIM Occupancy Sensor
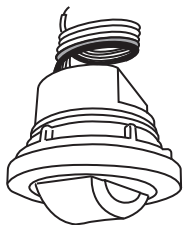
INSTALLATION INSTRUCTIONS

w/Lens A/B/C

w/Lens D

w/Lens F

w/Lens G/L

*More lens options are available for this sensor.
Please refer to the Lens Datasheet for more details.

⚠ WARNING & 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.**
- **Cycling the power to the sensors will cause failure over time.**

⚠ AVERTISSEMENT & 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.**

OVERVIEW

The LBD-509 series member of the TRANS family is a Bluetooth enabled line voltage occupancy sensor featuring multiple control schemes with 0-10V output for dimmable ballast or LED driver control. The sensor is capable of providing top-notch energy efficient lighting control with fully programmable multi-level high/low StepDIM or continuous SmartDIM control. All sensing control schemes and parameters can be set via IRTEC Sensor Config app capable of storing all sensor data and control profiles.
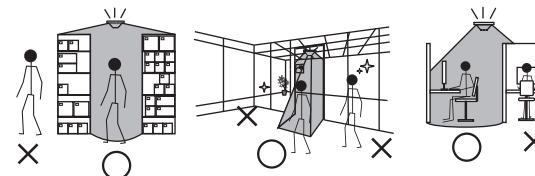
The sensor will turn on the connected lighting to the high dim or SmartDIM level as programmed when it detects the presence of an occupant or vehicle, and automatically dim the light to the low level or shut off as programmed after the area is vacated for a period of time. An iOS® or Android® app allows you to configure sensor control settings, or download the existing settings of the installed sensor from the floor. In addition, an exclusive Hybrid Switching technology protects the relay contacts from the high inrush current generated while switching on the LED driver.

APPLICATION NOTES

1. PIR sensor is more sensitive to the movements "crossing" the detection zones than "toward" or "away" the sensor. To obtain optimal sensitivity, avoid placing the sensor in line with occupant path if possible.

2. Ensure to place the sensor at least at 1.5m (5 ft.) away from air supply ducts as strong air flow may interfere sensor operation.

3. PIR sensor cannot "see" the movement behind obstacles, such as furniture, shelf, glass or partitions. Avoid placing the sensor where obstructions may block the sensor's line of sight.

4. For open office with partition which could block the sensor view to occupant's movement, it is best to place the sensor over the intersection of multiple workstations. For large areas of open office, place multiple sensors so that there is overlap coverage with each adjacent sensor.

5. IRTEC Sensor Config app should be available on the mobile device for sensor configuration. **If no configuration steps have been taken, the sensor will operate with factory default control and parameters.**

6. Typical Bluetooth radio range of mobile device is about 10 m (30 ft), the actual range may vary due to environmental characteristics.

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 pyroelectric		
Photo sensor	Digital ambient light sensor		
HIC protection	Max. 80A for 16.7msec.		
Dim control output	0-10V, ±5%, isolated, max. 25 mA		
Detectable speed	0.3 ~ 3 m/sec. (1~10 ft./sec.)		
Mounting height	Subject to the lens type applied		
Detection range	Subject to the lens type and mounting height		
Remote range	10m (33 ft.) indoor, no backlight		
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)
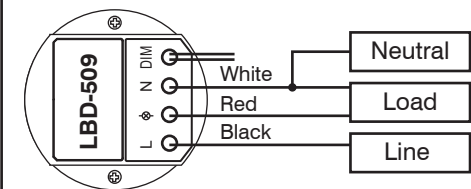
MOUNTING OPTIONS

The sensor can be moutned on the ceiling, or integrated with a lighting fixture in various formats via specific mounting bracket. Please refer to the mounting instruction sheet separately attached for more details.
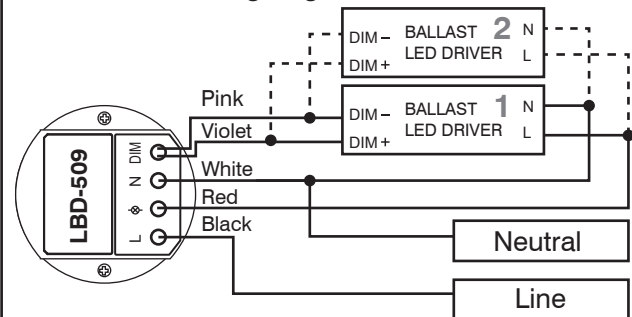
LENS OPTIONS

Different lenses can be applied to provide specific coverage at different mounting heights. Please refer to the lens datasheet attached for more details.

WIRING DIAGRAM

Non-dimmable Lighting (ON-OFF Switching only)

0-10V Dimmable Lighting

NOTE:

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

2. Ensure connection of LINE and NEUTRAL are not reversed to avoid damaging the sensor.

3. Ensure TOTAL isolation between DIM+/DIM- and GROUND to avoid damaging the sensor.

4. Conduct test with GROUND connected.

c UL us LISTED CE RoHS COMPLIANT FC TITLE 24

IR-TEC

CONTROL SCHEMES & PARAMETERS

The LBD-509 offers multiple occupancy sensor control schemes and parameter settings for selection

ON/OFF : ON-OFF Switching
OSO : Occupancy Sensing Only
OSLA : Occupancy Sensing at Low Ambient
OSLATO : Occupancy Sensing at Low Ambient with Time-Off
OFF : Light OFF all the time

Mode	Control
ON/OFF	1. While ambient lux is **higher** than the level set, light stays **OFF**. 2. While ambient lux is **lower** than the level set, and **occupancy detected**, switch the light to **100%**. 3. Turn **OFF** the light after occupant leave and delay time elapses.
OSO	1. Ambient light sensor disabled. 2. Dim the light to **LOW DIM** at **all time** under vacancy. 3. Switch the light to **HIGH DIM** under occupancy. 4. Dim the light to **LOW DIM** after occupant leave and delay time elapses.
OSLA	1. While ambient lux is **higher** than the level set, light stays **OFF**. 2. While ambient lux is **lower** than the level set, dim the light to **LOW DIM** under vacancy. 3. While ambient lux is **lower** than the level set, and **occupancy detected**, switch the light to **HIGH DIM** 4. Dim the light to **LOW DIM** after occupant leave and delay time elapses.
OSLATO	1. While ambient lux is **higher** than the level set, light stays **OFF**. 2. While ambient lux is **lower** than the level set, and **occupancy detected**, switch the light to **HIGH DIM**. 3. Dim the light to **LOW DIM** after occupant leave and delay time elapses. 4. Turn **OFF** the lights when **TIME OFF** delay elapses. 5. When **occupancy detected** during **TIME OFF**, switch the light to **HIGH DIM**.
OFF	All lights controlled by the sensor will stay off before other scheme is selected.

SENSOR ACKNOWLEDGMENT

Acknowledgement	Sensor LED	Lighting
Sensor setting upload completed	-	Flash
Sensor resume to factory default	-	Flash
SmartDIM level set completed	-	Flash
Motion detected	Slow flash	High dim
Bluetooth connected	Blinking	-

SENSOR CONFIGURATION APP

The LBD-509 can be configured via IR-TEC sensor configuration app to control the associated lighting as the scheme and parameters set. The app allows bi-directional communication between the sensor and the mobile device connected. All sensor settings can be configured via app with simple and intuitive operations.

NOTE: If necessary, multiple mobile devices can be used to configure "multiple sensors" simultaneously. However, categorizing the sensors in zone basis for different persons to conduct configuration respectively is recommended. Please note that a sensor can only be configured by the "connected" mobile device.

Finding and Rename the Sensors

1. Open the IR-TEC Sensor Configuration app on the mobile device and it will automatically scan the sensors within radio range and list in sequence of RSSI (Received Signal Strength Indication). All sensors will be top down listed with "names" (default "model number").
   NOTE: The top one is not necessarily the "nearest" sensor.

2. Long press on a sensor "name" will flash the controlled lighting to indicate and also allow renaming the sensor. After rename, press ENTER to confirm and exit. Repeat the same operation to rename other sensors.

Configure a Sensor

1. Tap the sensor on the device list, a manual control page will display for you to turn on/off or dim the light. Tap SETTING button and the existing settings of connected sensor will be shown respectively.

2. Select the setting item and parameter. After all configurations are done, tap UPLOAD to confirm the setting change.

NOTE: Frequently used setting combinations can be stored as EZ-SET profiles for quick and easy sensor configuration.

Testing a Sensor

After the sensor configuration completed, you can test the sensor performance by tapping the TEST button to enter a 10-minute test mode. All delay times will be shortening to 10 seconds for testing convenience. You may tap STOP to exit the test mode or the sensor will resume normal operation in 10 minutes.
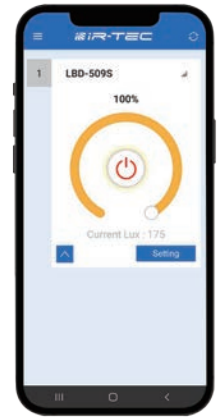
Sensor Setting Protection

A 4-digit password can be set to protect the sensor settings from unauthorized or accidental change. We recommend setting ONE password for all sensors on a jobsite and store it at Site Note. **Do NOT lose your jobsite password**. A lock sign (🔒) will display to indicate the sensor is protected; the sensor settings can be read but not changed.

NOTE: Forgetting the password or not sharing with the appropriate authority will require you to reset the sensor with factory default for communication.

Reset the Sensor to Factory Default

To reset the sensor, enter the SETTING menu after connecting the target sensor and tap MORE . Select DEFAULT and then confirm with YES . Sensor will resume factory default without password protection.

www.irtec.com