

TRANS

BBD-510 series

Low Voltage SmartDIM Occupancy Sensor

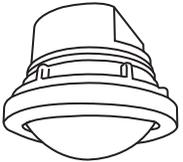
INSTALLATION INSTRUCTIONS



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

- Turn power OFF at circuit breaker before installing Power Pack or Sensors.
- Do NOT touch the square window of infrared sensor under the lens assembly.
- Do Not Install to and/or Cover a Junction Box Having Class 1, 3 or Power and Lighting Circuits.
- Class 2 Device Wiring Only – Do Not Reclassify and Install as Class 1, 3 or Power and Lighting Wiring.
- Suitable wiring range 16-20 AWG solid copper wire only.

AVERTISSEMENT & PRUDENCE

- Coupez l'alimentation au disjoncteur avant d'installer Power Pack ou capteurs.
- Ne PAS toucher la fenêtre carrée de capteur infrarouge sous l'ensemble de l'objectif.
- Ne pas installer ou couvrir une boîte de jonction ayant les classes 1 et 3 ou circuits de puissance et d'éclairage.
- Classe 2 Câblage de périphériques Seulement - Ne PAS reclasser et installer Classe 1, 3 ou alimentation et circuits d'éclairage.
- Convient gamme de câblage 16-20 AWG en cuivre massif seulement.

OVERVIEW

The BBD-510 series member of the TRANS family is a Bluetooth enabled low voltage occupancy sensor featuring an isolated dry contact for power pack switching and 0-10V output for dimming control. The sensor is capable of providing fully programmable multi-level high/low dim or SmartDIM control in a variety of control schemes to achieve top-notch energy efficient lighting control. All sensing control parameters can be set via IR-TEC Sensor Config App from an iOS or Android mobile phone or tablet.

The sensor will turn on the lights controlled by an IR-TEC power pack to the preset high dim or SmartDIM level when it detects the presence of an occupant or vehicle, and automatically dim the light down to the low level or shut off as programmed after the area is vacated for a period of time. SmartDIM is an automatic dimming control technology with the capability of maintaining the overall ambient light level within the preset range through a smooth, flawless continuous dimming control to the connected lighting.

SPECIFICATIONS

Power voltage	12-24VDC
Current Drain	10/25 mA @ 24 VDC, vacant/occupied
Infrared sensor	Omni-directional pyroelectric infrared sensor
Photo sensor	Digital ambient light sensor
Sensor output	Isolated dry contact, 48 VDC, 1A max.
Dim control	0-10V, max 25 mA sinking current
Detectable speed	0.15 ~ 3 m/sec. (0.3~10 ft./sec.)
Mounting height	Subject to the lens type applied
Detection range	Subject to the lens applied and height
Remote range	10 m (33 ft) indoor
Op. humidity	Max. 95% RH
Op. temperature	-40°C~70°C (-40°F~158°F)
Dimensions	Ø60 x H37mm (Ø2.36"x H1.45")

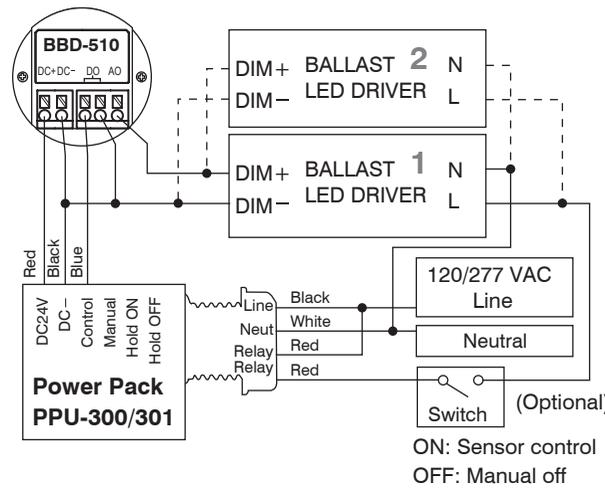
Federal Communication Commission Interference Statement FCC ID : SH6MDBT42Q

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. This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

WIRING DIAGRAM

SmartDIM control with power pack



NOTE: Each IR-TEC PPU-300/301 power pack can supply power for up to 4 BBD-510 sensors. When more sensors are connected, multiple power packs may be required.

MOUNTING OPTIONS

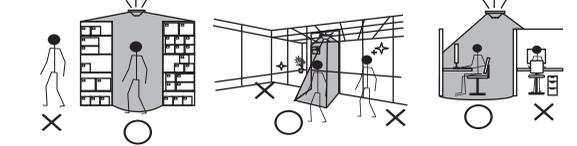
The sensor can be mounted on the ceiling, or integrated with a lighting fixture in various formats via specific mounting bracket. Please refer to the mounting instruction sheet separately attached for more details.

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.

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.



Industry Canada statement: IC : 8017A-MDBT42Q

This device complies with ISED's licence-exempt RSSs. 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. Le présent appareil est conforme aux CNR d'ISED applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) cet équipement doit être installé et utilisé à plus de 20 cm entre le radiateur susceptible de provoquer un fonctionnement indésirable.

Radiation Exposure Statement: This equipment complies with ISED radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with greater than 20cm between the radiator & your body.

Déclaration d'exposition aux radiations: Cet équipement est conforme aux limites d'exposition aux rayonnements ISED établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé à plus de 20 cm entre le radiateur et votre corps.



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This product may be covered by one or more U.S. patents or patent applications. Please visit www.irtec.com for more information.

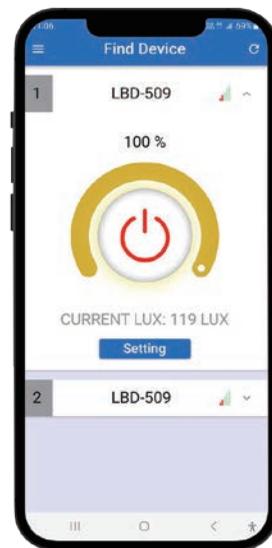


SETTING CONFIGURATION APP

The BBD-510 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.

Sensor Config App
User Guide



SENSOR SETTINGS

Settings	Description	Options	Default
Control	The mode that the sensor will control.	ON/OFF, OSO, OSLA, OSLATO, OFF	OSLATO
Photocell	For measuring ambient light level.	Enabled/Disabled	Disabled
Ambient lux	The ambient light level that sensor will perform the control.	10~2000 LUX/CURRENT LUX	80 LUX
Delay time	The delay time that sensor is set to turn off or dim the light.	10 sec.~30 min.	10 min.
Time off	The delay time that sensor will keep the light at low dim level after the off delay time elapsed. Only available if OSLATO is selected.	10 sec.~30 min.	10 min.
SmartDIM	The sensor will automatically regulate the lighting to maintain overall lighting.	Enabled/Disabled	Disabled
High dim	The output level set to control the light during occupancy.	30~100%	100%
Low dim	The output level set to dim the light when space is vacant for bi-level control.	10~70%	30%
Ramp up	The speed of increasing the lighting output to High dim level.	Instant/Soft/Slow	Instant
Fade down	The speed of decreasing the lighting output to Low dim level or off.	Instant/Soft/Slow	Soft
Sensitivity	The sensitivity of occupancy sensor.	High/Normal/Low	High
LED indicator	Enable/disable the LED indicator of sensor.	Enabled/Disabled	Enabled
Minimum dim	The lowest dim level applicable on the sensor.	12%/15%/Disabled	Disabled
Daylight o'ride	Enable/disable daylight override control. Sensor will shut off the light when ambient lux exceeds the override level set below. Only available if Photocell is enabled.	Enabled/Disabled	Disabled
Override level	The ambient lux level to enable daylight override. Only available if Daylight o'ride is enabled.	High/Normal/Low	Normal

CONTROL SCHEME

The BBD-510 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

Scheme	Description
ON/OFF	<ol style="list-style-type: none"> While ambient lux is higher than the level set, light stays OFF. While ambient lux is lower than the level set, and occupancy detected, switch the light to High dim. Turn OFF the light after occupant leave and delay time elapses.
OSO	<ol style="list-style-type: none"> Ambient light sensor disabled. Dim the light to Low dim at all time under vacancy. Switch the light to High dim under occupancy. Dim the light to Low dim after occupant leave and delay time elapses.
OSLA	<ol style="list-style-type: none"> While ambient lux is higher than the level set, light stays OFF. While ambient lux is lower than the level set, dim the light to Low dim under vacancy. While ambient lux is lower than the level set, and occupancy detected, switch the light to High dim. Dim the light to Low dim after occupant leave and delay time elapses.
OSLATO	<ol style="list-style-type: none"> While ambient lux is higher than the level set, light stays OFF. While ambient lux is lower than the level set, and occupancy detected, switch the light to High dim. Dim the light to Low dim after occupant leave and delay time elapses. Turn OFF the light when Time off delay elapses. When occupancy detected during Time off, switch the light to High dim.
OFF	All light controlled by the sensor will stay OFF before other scheme is selected.

SETTING ACKNOWLEDGEMENT

The sensor will acknowledge setting success or failure with different indications by sensor LED or connected lighting.

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