

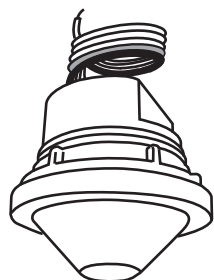
TRANS



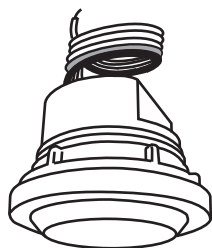
BRD-500 series

Low Voltage SmartDIM Occupancy Sensor

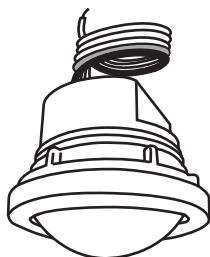
INSTALLATION INSTRUCTIONS



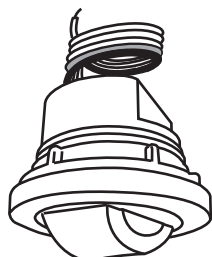
w/Lens A/B/C



w/Lens D



w/Lens F



w/Lens G

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

OVERVIEW

The BRD-500 series member of the TRANS family is a two-way IR remote programmable low voltage occupancy sensor with an isolated dry contact for power pack switching and 0-10V output for dimming controls. The sensor is capable of providing fully programmable multi-level high/low dim or SmartDIM control in various modes to achieve top-notch energy efficient lighting control. SmartDIM is a state-of-the-art automatic dimming control technology developed by IR-TEC, which is capable of maintaining the overall ambient light level within the preset range through a smooth, flawless continuous dimming control to the connected lighting.

The sensor will turn on the light connected via an IR-TEC power pack to the high dim or SmartDIM level as programmed 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. An exclusive two-way handheld remote programmer (SRP-280) allows you to configure sensor setting, or download the existing settings of the installed sensor from the floor.

Like all PIR sensors in the TRANS family, the BRD-500 series is also 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 $-40^{\circ}\text{C}/^{\circ}\text{F}$.

APPLICATION NOTES

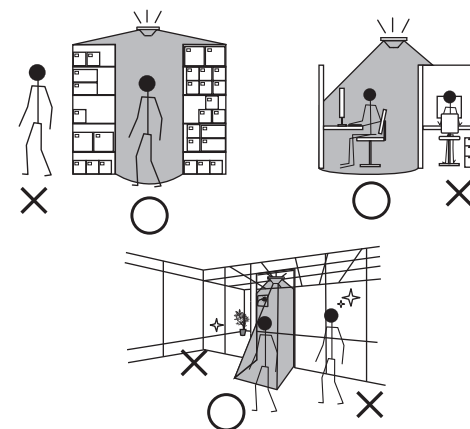
1. The sensor is more sensitive to the movements “crossing” the detection zones than “toward” or “away” the sensor unit. To obtain better sensitivity, avoid placing the sensor in line with occupant path, if possible.
2. The closer the movement is to the sensor, the more sensitive the sensor is. The higher 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 partition. 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.

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.

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.



www.irtec.com

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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.



MOUNTING

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

CONTROL MODE

The BRD-500 series can be programmed by SRP-280 to control the lighting in one of the following modes with various conditions as set. For more details of specific control mode, please visit www.irtec.com or contact an IR-TEC team member directly.

ON/OFF : ON-OFF Switching

OSO : Occupancy Sensing Only

OSLA : Occupancy Sensing at Low Ambient

OSLATO : Occupancy Sensing at Low Ambient with Time-Off

| Mode | Control (BRD-500Sxx) |
|---------------|--|
| 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 ON. 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 lights when TIME OFF delay elapses. When occupancy detected during TIME OFF, switch the light to HIGH DIM. |

SENSOR SETTINGS

The followings are settings and options available with BRD-500 that can be configured through the operation of SRP-280 remote programmer. For more details of remote sensor setting, please refer to the operation instruction of SRP-280.

| Settings | Description | Options (*Denotes factory default.) |
|-------------------------|--|---|
| CONTROL | The mode that the sensor will control. | ON/OFF, OSO, OSLA, OSLATO* |
| AMBIENT LUX | The ambient light level that sensor will perform the control. | 10/20/40/60/100/200/400 LUX/ DISABLED* |
| DELAY | The delay time that sensor is set to turn off or dim the light after the area is vacant. | 30 sec./1/3/5/ 10* /15/20/30/60 min. |
| TIME OFF | The delay time that sensor will keep the light at low dim level after the OFF delay time elapsed. | 10/30 sec./3/5/ 10* /15/20/30/45/60 min. |
| HIGH DIM | The output level set to control the light during occupancy. | 50/55/60/65/70/80/90/ 100%* /SmartDIM |
| LOW DIM/SmartDIM | The output level set to dim the light when space is vacant for bi-level control. Low dim setting will become SmartDIM bar if SmartDIM control is selected. | 0/5/10/15/20/25/ 30* /40% |
| RAMP UP | The speed of increasing the lighting output to HIGH DIM level. | INSTANT*/SOFT/SLOW |
| FADE DOWN | The speed of decreasing the lighting output to LOW DIM level or off. | INSTANT/ SOFT* /SLOW |
| SENSITIVITY | The sensitivity of occupancy sensor. | HIGH*/NORMAL/LOW |

SENSOR ACKNOWLEDGMENT

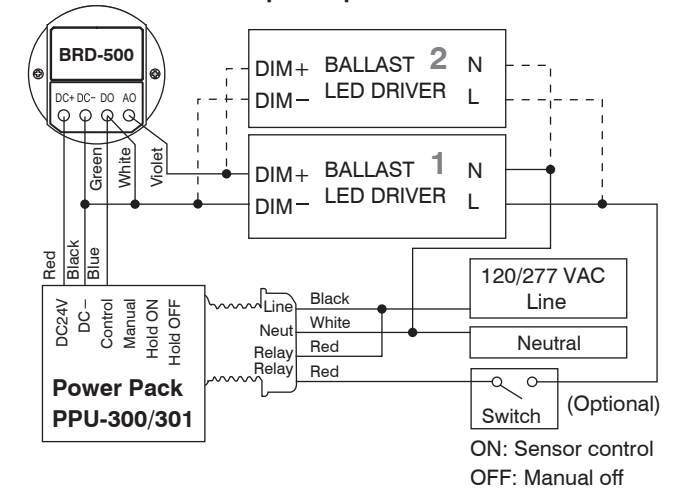
| Acknowledgement | Sensor LED | Beep | Lighting |
|--------------------------------------|------------|-----------------------|-----------|
| Full sensor setting upload completed | - | Long x 1 Short x 2 | Flash x 2 |
| Sensor resume to factory default | - | - | Flash x 2 |
| SmartDIM level set completed | - | Short x 2 | Flash x 2 |
| Single setting ok | - | Short x 2 | - |
| Occupancy detected | Flash x 1 | - | - |

SPECIFICATIONS

| | |
|------------------|--|
| Power voltage | 12-24 VDC |
| Current Drain | 11/23 mA @ 24 VDC, vacant/occupied |
| Infrared sensor | Omni-directional quad element pyroelectric |
| Photo sensor | Digital ambient light sensor |
| Sensor output | Isolated dry contact, 48 VDC, 1A max. |
| Dim control | 0-10V, ±5%, max. 25 mA sinking current |
| 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 applied and height |
| Remote range | 10 m (33 ft) indoor |
| Op. humidity | Max. 95% RH |
| Op. temperature | -40°C~55°C (-40°F~131°F) |
| Dimensions | Ø60 x H37mm (Ø2.36"x H1.45") |

WIRING DIAGRAM

SmartDIM control with power pack



NOTE: Each IR-TEC PPU-300/301 power pack can supply power for up to 6 BRD-500 sensors. When more sensors are connected, multiple power packs may be required.

WARRANTY

IR-TEC International Ltd. warrants this product to be free of defects in materials or workmanship for a period of five years from date of shipment. There are no obligations or liabilities on the part of IR-TEC International Ltd. for consequential damages arising out or in connection with the use or performance of this product or other indirect damages with respect to loss of property, revenue, profit, or cost of removal, installation or reinstallation.