

## BOA-516 series

### Low Voltage Bi-Level Occupancy Sensor



## OVERVIEW

The BOA-516 series member of the TRANS family is a low voltage passive infrared occupancy sensor designed to provide 0-10V analog output for occupancy based low voltage ballast control or multi-mode bi-level LED lighting control. Depending on the selected mode, this sensor will provide various voltages for the dimmable ballast/driver to control connected LED lighting according to the occupancy status and ambient light level change.

This PIR occupancy sensor employs a cutting edge quad element pyroelectric infrared sensor to provide omni-directional sensing capability of occupant's presence and motions. An advanced digital ambient light sensor is integrated to provide smart ambient light level sensing for bi-level or daylight harvesting control. The sensor offers 8 different control modes via rotary DIP switch selection.

Like all sensors in the TRANS family, the BOA-516 series is available with various mounting options and interchangeable lenses. This feature provides a second-to-none design and 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
- 12~24VDC low voltage power supply operation
- 0-10V analog output for dimmable control
- 8 rotary DIP switch selectable control modes
- Accu-Set adjustable TIME and DIM settings
- Motion sensing LED indicator for walk test
- Push-in locking terminals for easy connection
- Available with variety of mounting options
- Available with interchangeable lens options

## APPLICATION

- ☒ Lighting Control
- ☒ 0-10V Ballast Dimming
- ☒ LED Control

The BOA-516 series of occupancy sensor can be used to provide energy efficient bi-level or daylight harvesting for lighting control by sensing occupant's motion and ambient light levels. Basic wiring diagrams are included for reference. Consult with an IR-TEC team member if a more complex wiring diagram is required.

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#### CONTROL MODES

The BOA-516 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](http://www.irtec.com) or contact a IR-TEC team member directly.

**OSO** : Occupancy Sensing Only

**OSLA/OSMA/OSHA** : Occupancy Sensing at Low/  
Medium/High Ambient

**OSLATO/OSMATO/** : Occupancy Sensing at Low/  
**OSHATO** Medium/High Ambient with Time-Off

Mode	Day <sup>1</sup>	Night <sup>2</sup>	Remarks
<b>A TEST</b>	Turns ON light for 5 sec. at every motion detected. DIM the light for 10 sec. and then turn OFF.		
<b>B OSO</b>	Vac: DIM Occ: ON	Vac: DIM Occ: ON	
<b>C OSLA</b> <b>D OSMA</b> <b>E OSHA</b>	Vac: OFF Occ: OFF	Vac: DIM Occ: ON	
<b>F OSLATO</b> <b>G OSMATO</b> <b>H OSHATO</b>	Vac: OFF Occ: OFF	Vac: OFF Occ: ON -DIM	DIM during Time-Off delay

**Vac** : Vacant      **Occ** : Occupied

<sup>1</sup> While ambient light level is higher than the threshold.

<sup>2</sup> While ambient light level is lower than the threshold.

#### MOUNTING OPTIONS

The BOA-516Sxx series can be mounted on the ceiling or integrated with an OEM lighting fixture. 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. Mounting option code F and W allow the BOA-516Sxx to be directly integrated with OEM light fixture for indoor use or wet location respectively.

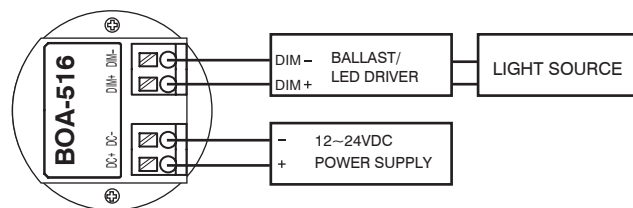
Code	Mounting Option	Mounting Bracket
<b>F</b>	Fixture Integrated	---
<b>W</b>	IP-66 Fixture Integrated	---
<b>E</b>	Fixture External	<b>EMB-500</b>
<b>P</b>	IP-66 Fixture External	<b>PMB-500</b>
<b>S</b>	Ceiling Surface	<b>SMB-500</b>
<b>C</b>	Junction Box	<b>CMB-500</b>
<b>R</b>	Ceiling Recess	<b>RMB-500</b>

#### LENS OPTIONS

The BOA-516Sxx 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
<b>A</b>	Standard	Cone	8~15 ft. 2.4~4.5m	2X height
<b>B</b>	Extra wide	Cone	8~10 ft. 2.4~3.0m	6X height
<b>C</b>	High bay	Cone	15~30 ft. 4.5~9.0m	3X height
<b>D</b>	Standard	Round	8~20 ft. 2.4~6.0m	2X height
<b>F</b>	Extra wide	Dome	8~20 ft. 2.4~6.0m	4X height
<b>G</b>	Aisle way	Arch	8~40 ft. 2.4~12.0m	3X height
<b>H</b>	High bay	Dome	30~50 ft. 9.0~15.0m	1X height
<b>L</b>	Long aisle	Arch	8~10 ft. 2.4~3.0 m	6X height

#### WIRING DIAGRAM



#### SPECIFICATIONS

Power supply	12~24VDC
Current Drain	8mA @ 24V, load off
Infrared sensor	Omni-directional quad element pyroelectric
Sensor output	0-10V analog
Detectable speed	0.15~3m/sec. (0.5~10 ft./sec.)
Mounting height	Subject to the lens type applied
Detection range	Subject to the lens applied and height
Ambient light level	L:20~50 lux, M:80~130 lux, H:500~600 lux
Low dim level	0/1.5/2/2.5/3/4/5V selectable
Delay time setting	1'/3'/5'/10'/15'/20'/30' selectable
Time-off delay	10 min., <b>TO</b> modes only
Op. humidity	Max. 95% RH
Op. temperature	-40°C~55°C (-40°F~131°F)
Dimensions	Ø60 x H37mm (Ø2.36"x H1.45")