

PIP-300EB Motion Sensor Installation Notes

CAUTION

- Read and understand these instructions prior to starting installation.
- **TURN THE POWER OFF** before installation. Live installation is hazardous to you and can damage the motion sensor.
- Capacitor charge storage in a de-powered HID fixture can be lethal. Only qualified personnel familiar with high voltage should install this motion sensor.
- This product must be installed in accordance with applicable electrical codes and regulations pertinent to the city of installation.



Product Description. The PIP-300EB is a two-relay motion sensor designed to work with electronic HID ballasts. One relay controls the dimming port of the ballast. The other relay interrupts the AC power to the ballast.

The dimming relay opens each time motion is observed, driving the ballast to its high-wattage step.

If the sensor sees activity at least once per hour the ballast remains constantly powered. After one hour of inactivity the ballast is turned off by the sensor. This number is not adjustable.

PIP-300EB is intended to operate a single electronic ballast. It is not suitable for ganged control of multiple electronic ballasts. The dimming signal cannot be exported to multiple fixtures using low voltage wiring.

The polarity of the dimming relay is "open upon observed motion". This behavior is consistent with the most popular electronic ballasts.

PIP-300EB's internal power supply self-adjusts to line voltage. It adapts to voltages 208-277VAC applied to the sensor between the black and white wires.

Dimming Port Architectures. As of 2007 there are two prevailing E-ballast dimming port designs on the market. One approach (Type A) is shared by Metrolight, Advance Dynavision, Universal, and Aurora ballasts. The other approach (Type B) is used in ballasts manufactured by Delta Power Supply and Venture.

Type A dimming ports are powered by the ballast itself. Only a resistor or a contact closure on the dimming wires is required to reduce the lamp power. The dimming port has an internal pull-up resistor to +10VDC that holds the lamp wattage at maximum when the dimming port is unused.

Type B dimming ports require the motion sensor to supply +10VDC power to the port to reduce lamp wattage. When the dimming port is unused the lamp wattage is at maximum.

PIP-300EB does not supply power to the dimming port for either sensor type. Only a relay contact closure is offered to the ballast. Use of the PIP-300EB with Type B ballasts requires an extra cost 4-wire device known as Viewpoint part number PDC-010.

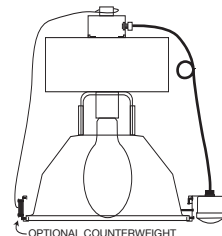
Step Dimming Only. PIP-300EB steps the ballast between its maximum and minimum permitted lamp wattages as defined by the ballast manufacturer. The sensor has no capability to invoke intermediate lamp wattages. There are no provisions for photocell-driven operation.

Different Step Dimming Rates. Users of PIP

sensors with electronic ballasts report different dimming slew rates among the various ballast manufacturers. Venture Lighting, Delta Power, and Aurora ballasts respond quickly to dimming commands from the sensor (less than five seconds) whereas Metrolight and Universal ballasts feature dimming rates exceeding thirty seconds. These differences are related to ballast design and are not affected by the sensor. Contact ballast vendor for further information on dimming slew rates.

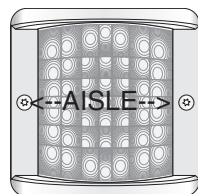
Not Class II Wiring. All E-ballasts regardless of vendor have isolated dimming ports that can be "floated" with respect to earth ground. This feature is exploited in the PIP-300EB to reduce the number of conductors in the sensor-to-ballast wire harness. One side of the sensor's dimming relay is connected to the AC input power. For this reason, do not export the PIP-300EB's line-referenced dimming signal to other fixtures using Class II wiring.

Sensor Mounting: The PIP-300EB motion sensor is intended to mount on the rim of the reflector using the pinch bracket included in the shipping carton. This bracket holds the sensor in the shadow of the reflector, thus shielding it from the effects of heat and UV



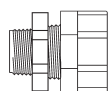
light from the hot lamp. Bundle any excess STOW cable with the wire tie provided and store the excess close to where the wire enters the ballast housing.

Field Swappable Fresnel Lenses. The motion sensor's area-sensing Fresnel lens is covered with a green protective label at the factory. Remove the label before the sensor is used.



The coverage pattern for the area lens is not round but oval-shaped. When used in warehouse aisles the area lens works best when oriented as shown in the adjacent picture.

Viewpoint offers a field replaceable aisle-only lens that is better suited than the area lense for narrow warehouse aisles. The aisle lens has closer-spaced sensing zones and it cannot "see" through empty inventory racks.



UL Requirement for Strain Relief. The Underwriters Laboratories listing for this product requires that the wire harness

be strain relieved where it enters the ballast housing. The following cord grips are approved for this application:

www.remke.com (877)438-8833
Part No. RSR5-107 (metallic)
Part No. RSP-107 (non-metallic)

www.sealconusa.com (303)699-1135
Part No. CD16NR-BK (non-metallic)

Bushings intended for use with metallic flexible conduit are not suitable for this application, nor are connectors intended for "Romex" wire.

DayBrite and Widelite Fixtures: Die-cast aluminum ballast housings from DayBrite and Wide-Lite feature an internal wiring compartment covered by a detachable access door. The motion sensor's wire harness should pass through this door using an approved cord grip.

Alternatively, motion sensors can be shipped from Viewpoint with a DayBrite/Widelite access door and strain relief pre-installed. DayBrite's EHO Series fixtures with sheet metal ballast housings are wired through the concentric knock-outs of the top-mounted wiring box using a cord grip.

Hubbell Fixtures: Hubbell's die-cast ballast housings are offered with a Slick-ON pendant mounting box suffixed -SO. Located above the ballast clamshell, the SO box has knock-outs that accept a cord grip and the sensor's wire harness. Alternatively, motion sensors can be shipped from Viewpoint with a Hubbell access door and strain relief pre-installed.

Cooper Fixtures. Cooper's die-cast ballast housings are offered with a -QD suffixed mounting box that will accept a cord grip and the sensor's wire harness. Cooper's "Steeler" fixtures with sheet metal ballast housings are wired through knock-outs in the top-mounted wiring box.

Lithonia Fixtures. Lithonia's die-cast ballast housings are offered with a -TOB Thru-Wire Outlet Box that will accept a cord grip and the sensor's wire harness.

Why so many screws on the pinch bracket claw? The pinch bracket claw can be flipped upside down depending on the reflector design. Choose the claw width that best fits the thickness of your reflector rim. The longer screws in the claw provide a tighter pinch to the upper edge of the reflector for better vertical alignment of the motion sensor.

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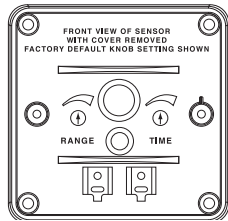
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PIP-300EB Installation Notes Continued

TEST SWITCH HERE dot. The motion sensor contains a manual override switch that is activated by placing a strong permanent magnet near the red TEST SWITCH HERE dot on the enclosure. A pocket magnet is usually sufficiently strong but a flexible refrigerator magnet is not. The override magnet causes the relay to change state with an audible "click". Using the override magnet zeroes-out whatever time remains in the full shutdown and TIME timer intervals.

Blinking Red Diagnostic Lamp. The sensor contains a red LED behind the Fresnel lens that "blinks" three diagnostic patterns. The triple-blink pattern indicates observed motion.

Pattern	Motion Observed	Fixture State
Single	No	Low Brightness
Double	No	High Brightness
Triple	Yes	High Brightness



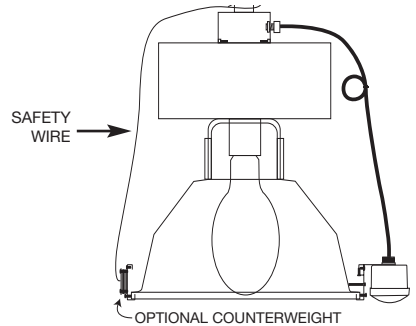
Range Adjustment. As shipped from the factory, the RANGE setting is preset for half scale and is appropriate for most applications. Sensor range is influenced by the temperature of the floor below the sensor. A warm floor reduces IR contrast and range.

A lower RANGE setting is indicated if motion in adjacent aisles false-triggers the sensor. Higher RANGE settings give better IR sensitivity but may result in false-triggering from moving air blown from ceiling-mounted HVAC equipment.

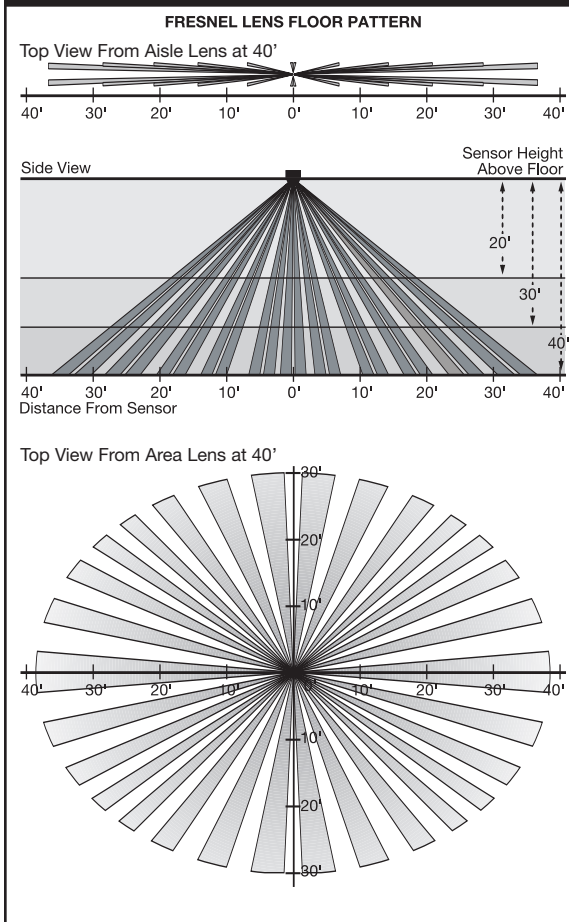
Power-On Lock-out Interval. Upon restoration of AC power to the sensor a lock-out period of one minute applies. During the lock-out period the sensor will not respond to motion.

Additionally, the sensor "remembers" the last state of the fixture when AC power to the sensor is lost. It attempts to return the fixture to this state when AC power is restored.

What if the sensor's weight tilts my high bay fixtures slightly? Some fixture hook configurations allow slight tilting to occur. Contact Viewpoint Electronics to obtain counterweight part number PCW-001



Fresnel Lens Floor Pattern



Specifications

eBallast Compatibility	Metrolight/Universal/Advance/Delta Power/Aurora
Dimming Method	1 form A relay contact closure
On/Off Relay Current Rating	4 amperes RMS maximum
Dimming Relay Current Rating	50 milliamperes RMS maximum
Maximum Fixture Wattage	450 watts
AC Line Voltage (white and black wires)	208/240/277VAC
Sensor Power Consumption	3 watts maximum
Usable PIR range (@25 degrees C floor temp)	50 feet on axis
Available Fresnel Lens Pattern	Area (standard) or Aisle (upon request)
Ambient Temperature Range	0-50° C non-condensing
Observed Motion Go-to-High time	0-15 minutes (user adjustable by TIME knob)
Ballast Shut off Timer	60 minutes (not adjustable)
Installation Assists	Magnetic Test Switch and Blinking LED
Mounting Options	1/2" NPT nipple or adjustable pinch bracket
Wire Harness	4 Conductor 18AWG stranded copper STOW
Wire Harness Length	36 inches
Harness Termination	Bare wire or Molex connector
Off-center Weight	10 ounces without optional counterweight
Dimensions (including mounting nipple)	3.25" x 3.25" x 3.25"
UL File Number	Category FNFT File No. E234927

Ballast-to-Sensor Wiring Schematic: Type A (Metrolight & Aurora)

