HB350T

High Bay • Line Voltage • Passive Infrared Occupancy Sensor Power Module

Installation Instructions

DESCRIPTION AND OPERATION

The HB350T occupancy sensors are designed for automatic lighting control in warehouse high bay applications. All models contain a passive infrared sensor (PIR). The HB350T series sensors are modular and are made up of two parts, a Power Module (HB350T) and a Lens (HBLx). The coverage area is determined by the lens module. The lenses are interchangeable with any HB3xx series sensor. See the Coverage Guide for more information.

The HB350T has dual load controlling relays with a separate adjustable time delay for each relay. The HB350T uses a set of DIP switches and a trimpot to set the time delay and PIR sensitivity.

HB350T-L3

HB350T-L1

COVERAGE

Coverage patterns, density and range, are determined by the type of Lens attached to the HB350T.

For a complete description of each lens coverage pattern, see the HBLx Lens COVERAGE GUIDE.

SPECIFICATIONS

HB350T Power Module

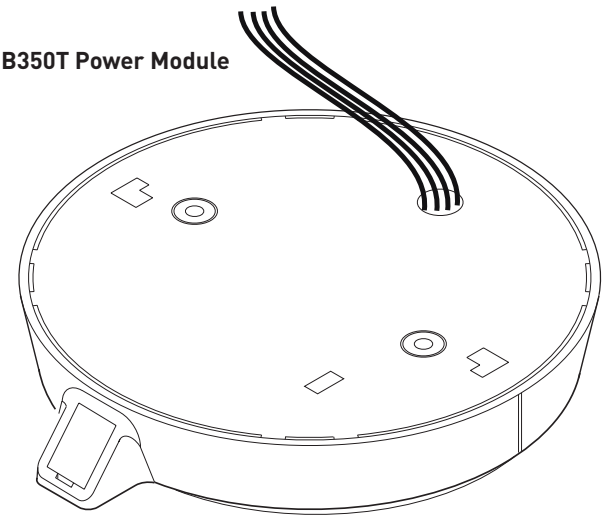
Voltages.....120/277VAC, 60Hz

Load Requirements (each relay)

- @ 120VAC, 60Hz.....0-800W ballast or tungsten
- @ 277VAC, 60Hz.....0-1200W ballast
- @ 120VAC.....1/6 hp

US Patents: .....4,787,722 • 4,874,962 • 5,124,566

HB350T Power Module



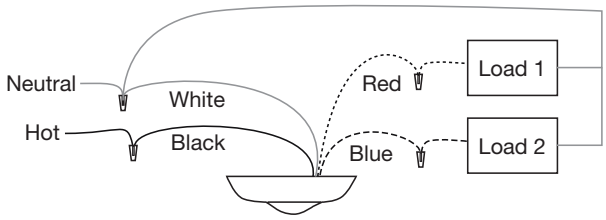
INSTALLATION

CAUTION

TURN THE POWER OFF AT THE CIRCUIT BREAKER BEFORE INSTALLING THE SENSOR.

1. Determine the mounting location appropriate to the features of the power module and the coverage area. Careful consideration must be given to sensor placement. Avoid placing the sensor where shelving or other obstructions may block the sensor's line of sight.
2. Make sure that you have the appropriate accessories for the sensor mounting configuration. (See Mounting Options.)
3. Assemble any necessary mounting accessories and attach them to the power module, making sure that the flying leads from the power module are accessible.
4. Connect the line voltage and load wires to the sensor leads as shown in the Wiring Diagram for the unit's application.
   - Do not allow bare wire to show.
   - Make sure all connections are secure.
5. Attach the Lens to the HB350T as shown in the assembly drawing on the next page.
6. Restore power from the circuit breaker.

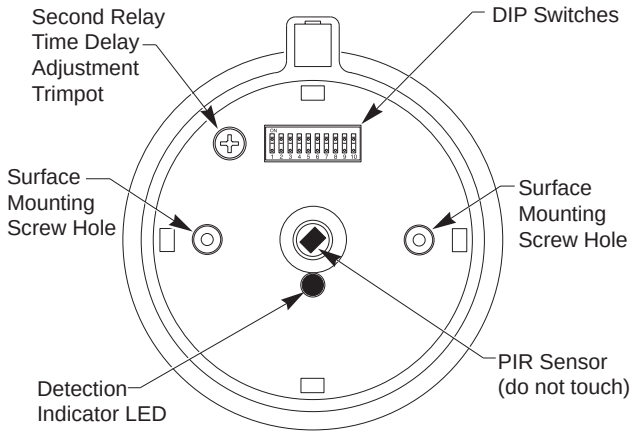
WIRING



MOUNTING OPTIONS

The HB350T can be attached either directly to the fixture surface via the two screw holes provided in the Power Module or using the HBNB3 back box and chase nipple. The Extender Module (HBEM3) allows attaching the sensor to the side of the fixture in a number of configurations using provided chase nipples.

Surface mounting requires holes in the fixture to pass wires and attach 2 screws through the surface mounting screw holes on the component side of the Power Module as shown below.

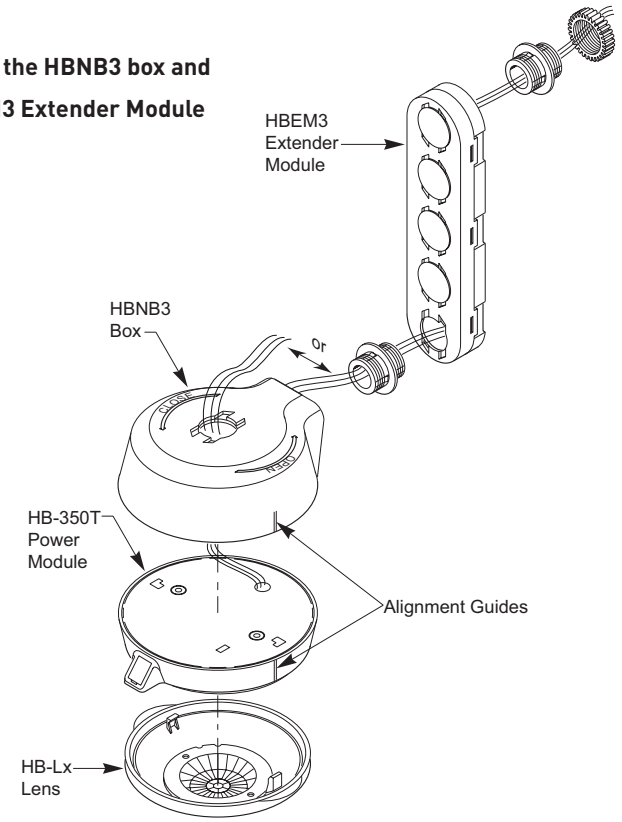


HBNB3 back box mounting requires a standard 1/2" knockout for the chase nipple. The box comes ready for side mounting. It can be modified for rear mounting as follows:

1. Pop out the cap in the rear knockout.
2. Un-snap the chase nipple from the side mount and snap into the rear mounting hole.
3. Use the cap to close the side mount hole.
4. The chase nipple provided can be pushed into a standard 1/2" knockout in a metal fixture (max of 1 mm (0.04") thick metal) without the need for the included internal nut. The nut can be used for added security if it is felt to be necessary.
5. The Power Module mounts to the back box with a bayonet type fitting requiring a slight twist of the units to lock them into place.

The HBEM3 extender module allows threading the wires through its chase nipples and into the fixture for connection. The two sides of the HBEM3 are then snapped together to protect the wires. The short chase nipple is designed to snap into the HBNB3 connection box while the longer chase nipple snaps into any metal fixture or connection box with a standard knockout. The caps on the HBEM3 can be removed in various configurations to allow moving the chase nipples and adjusting the height of the sensor on the fixture.

Using the HBNB3 box and HBEM3 Extender Module



ADJUSTMENTS

The sensor is factory pre-set as follows:

Load 2 Time Delay (trimpot) .....Fully clockwise: 30 minutes
PIR Sensitivity (switches 1 & 2)..... Medium 85%
Load 1 Time Delay (switches 3-7)..... 10 minutes
Override (switches 8-10) ..... Off (no override)

Factory Switch Settings

1	2	3	4	5	6	7	8	9	10
ON	**OFF**	**OFF**	**OFF**	**ON**	**ON**	**ON**	**OFF**	**OFF**	**OFF**

PIR Sensitivity (Switches 1-2)

The factory setting of 85% is suitable for most applications, but it may be necessary to adjust the PIR sensitivity if there is any environmental interference causing false triggers or if sensitivity needs to be increased for your particular application. Use DIP switches 1 & 2 to adjust sensitivity.

Switch	1	2	PIR SENSITIVITY
	OFF	OFF	100% (HIGH)
	ON	OFF	85% (MEDIUM)
	OFF	ON	75% (LOW)
	ON	ON	60% (LOW)

Time Delay for Load 1 (Switches 3-7)

Use DIP switches 3 to 7 to adjust the time delay for load 1 (red wire).

Switch	3	4	5	6	7	TIME DELAY
	ON	ON	ON	ON	ON	15 seconds
	OFF	ON	ON	ON	ON	5 minutes
	OFF	OFF	ON	ON	ON	10 minutes
	OFF	OFF	OFF	ON	ON	15 minutes
	OFF	OFF	OFF	OFF	ON	20 minutes
	OFF	OFF	OFF	OFF	OFF	30 minutes

PIR Override (Switches 8-10)

An override setting can disable the PIR occupancy sensing feature of the HB350T power module. The following table describes the override function.

Switch		HB350T PIR sensor, Dual Relay, Dual Time Delay
8	Off	Occupancy controlled
	On	Override PIR, loads always ON
9	Off	Not Used
10	Off	Not Used

Time Delay for Load 2 (Trimpot)

Turn the trimpot fully clockwise to set the time delay for load 2 (blue wire) to 30 minutes. As you turn the trimpot counter-clockwise, the time delay decreases. At fully counter-clockwise, the time delay for load 2 is 5 minutes.

IMPORTANT START-UP INFORMATION

When the power module is installed and power is connected, the loads come ON and stay ON for 50 seconds. This warm-up period only occurs during installation or after a power failure of 5 minutes or more.

- If the sensor detects occupancy during the warm-up, the loads stay ON as long as it continues to detect motion, plus the Time Delay.
- If no occupancy is detected during the warm-up, the loads turn OFF after the initial 50 second warm-up period.

TROUBLESHOOTING

During the sensor warm-up period, which can last up to a minute after power is applied to the power module (or after a power outage of 5 minutes or more), the load can be either ON or OFF, depending on the status of the relay before the sensor was powered down. After warm-up, the sensor will open or close the relay to correspond to the occupancy status of the room.

To quickly test the unit, turn the time delay to minimum. Wait for the warm-up period to end. Move out of the sensor's view. Lights should turn OFF after 30 seconds. Move into the sensor's view. The sensor's Red LED should blink and the lights should turn ON.

Red LED on power module does not blink:

Check sensor wire connections. Verify the neutral wire is tightly secured.

Red LED blinks but lights do not turn ON:

1. Make sure that power to the sensor has been ON continuously for at least one minute, then
   a) Turn OFF power to the sensor.
   b) The relays will close.
   c) Turn ON power to the sensor.
   d) The loads should come ON. If not, continue with 2 below.
2. Check power connections to the light fixture.
3. Check all sensor wire connections. Verify the load wire is tightly secured.

Lights will not turn OFF:

1. If there is no motion from people or equipment in the sensor's view but the red LED blinks, look for any nearby source of IR energy in motion, such as turbulent air from a heating or cooling supply, or other sources. Divert the air supply away from the sensor, or move the sensor.
2. Verify time delay. The time delay can be set from 15 seconds to 30 minutes. Ensure that the time delay is set to the desired delay and that there is no movement within the sensor's view for that time period.
3. Check DIP switch 8 setting. If it is ON, it overrides the PIR function and keeps the load ON.
4. Check sensor wire connections. Verify load and neutral wires are secure.

ORDERING INFORMATION

Catalog #	Description
HB350T*-L#+	High bay line voltage occupancy sensor consists of: • HB350T Power Module • An HBL# lens (L# indicates the lens number) (see COVERAGE GUIDE)
HBNB3	Back box with 2 chase nipples and nuts; 1 short (0.88") for connection to plastic, 1 long (1.24") for connection to metal
HBEM3	Extender module with 2 chase nipples and nuts 1 short (0.88") for connection to plastic, 1 long (1.24") for connection to metal

* See available feature suffix indicators below:

C is for colder ambient temperature applications: -40° to 131°F (-40° to 55°C)

\+ an additional -B suffix includes the HBNB3 back box

All units are White.

WARRANTY INFORMATION

Watt Stopper/Legrand warranties its products to be free of defects in materials and workmanship for a period of five (5) years. There are no obligations or liabilities on the part of Watt Stopper/Legrand for consequential damages arising out of, or in connection with, the use or performance of this product or other indirect damages with respect to loss of property, revenue or profit, or cost of removal, installation or reinstallation.

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