STEINEL®
German Quality

IoT ENABLED BY autani building controls

HBS 200
HBS 300
HBS-DC

HBS 300

HBS 200

HBS-DC

English

Installation Instructions

Wireless High Bay Controls

c UL us LISTED

RoHS Compliant

⚠ **WARNING** ⚠

- **Turn power off at the circuit breaker before installing the sensor**
- **Sensor must be installed and used in accordance with appropriate electrical codes and regulations**
- **Installation by a qualified electrician is recommended**

Package Contents

- HBS 200 or HBS 300
- HBS-DC
- Two 1/2” KO locknuts
- Installation instructions
- HBS-DC Radio Module

Installation Overview

Needed for installation

- Wire nuts for termination

Applications

- HBS 300 with installed HBS-DC: Open areas where 360 degree coverage and wireless control is desired, such as in warehouses, distribution centers, gymnasiums
- HBS 200 with installed HBS-DC: High bay aisle ways where aisle coverage and wireless control is desired

Intended uses

- For indoor use only
- For individual fixture lighting control with grouping (zone control) capability

Autani HBS-DC Wireless System

Autani wireless lighting control devices work together to create groups (or control zones) without the need for additional wiring.

The devices are RF based, operating at a frequency of 2.4 GHz.

Autani HBS-DC Wireless System Specifications

Communication Frequency	2.4 GHz
Transmission Range	600 ft (182.8 m) depending on line of sight. Range may be less if signal needs to pass through obstacles.

Product Overview HBS 300 with installed HBS-DC

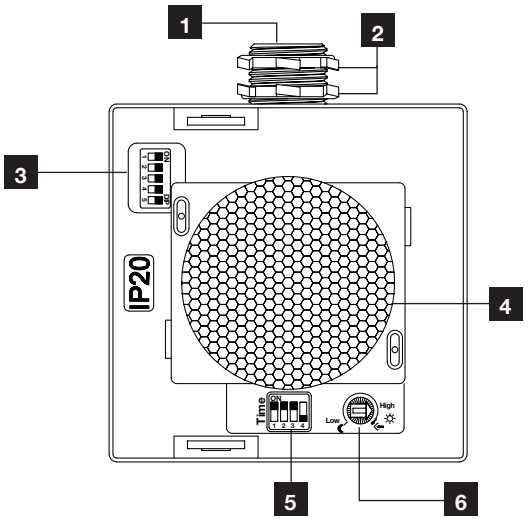
120/ 230/ 277 VAC 50/60Hz | PIR | 360° | IP20 | Fixture or J Box Mount | Wireless

Product description

The HBS 300 with installed HBS-DC High Bay Occupancy Sensor provides occupancy based lighting control in high bay applications and communicates wirelessly to other devices to create groups (lighting zones). The sensor contains three dual-element pyroelectric detectors and is engineered to perform at a wide range of mounting heights, up to 45 feet. It mounts directly to a high bay lighting fixture or junction box.

Specifications

Voltage	120/230/277 VAC, 50/60 Hz
Load rating	120 VAC: 0-800 watt ballast or Tungsten - 1/4 hp 230/277 VAC: 0-1200 watt ballast
Time delay	35 sec to 30 min
Light level	.2 - 200 footcandles; 2 - 2000 lux
Coverage	360°, up to 22 ft (6.7 m) radial reach, up to 60 ft (18.2 m) tangential reach
RF	See page 3
Environment	IP20 rated, -4°F to +122°F, -20°C to +50°C
Dimensions	3.9 x 3.9 x 2.6 in; 99 x 99 x 66 mm nipple length .62 in (15.75 mm)
UL and CUL Listed, RoHS Compliant, FCC and IC Compliant	



1. 1/2 inch threaded nipple
2. Lock nuts
3. Group address DIP switch
4. Detection lens
5. Time delay setting DIP switch
6. Light level trimpot

Product Overview HBS 200 with installed HBS-DC

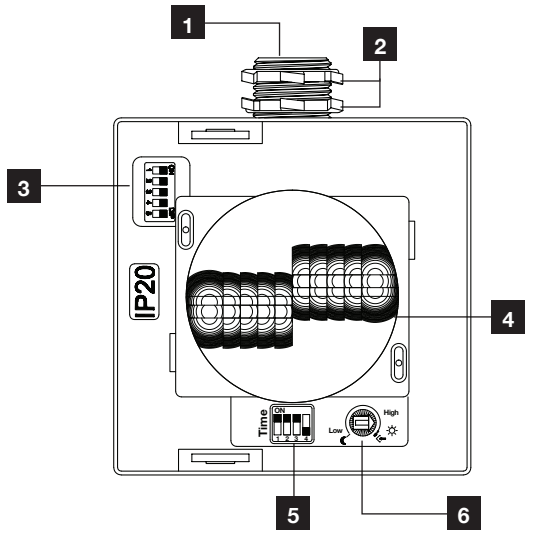
120/ 230/ 277 VAC 50/60Hz | PIR | Aisle way | IP20 | Fixture or J Box Mount | Wireless

Product description

The HBS 200 High Bay Occupancy Sensor provides occupancy based lighting control in high bay applications and communicates wirelessly to other devices to create groups (lighting zones). The sensor contains two dual-element pyroelectric detectors and is engineered to perform at a wide range of mounting heights, up to 45 feet. It mounts directly to a high bay lighting fixture or junction box.

Specifications

Voltage	120/230/277 VAC, 50/60 Hz
Load rating	120 VAC: 0-800 watt ballast or Tungsten - 1/4 hp 230/277 VAC: 0-1200 watt ballast
Time delay	35 sec to 30 min
Light level	.2 - 200 footcandles; 2 - 2000 lux
Coverage	100 x 13 ft (30.48 x 3.96 m) diameter reach
RF	See page 3
Environment	IP20 rated, -4°F to +122°F, -20°C to +50°C
Dimensions	3.9 x 3.9 x 2.72 in; 99 x 99 x 69.1 mm nipple length .62 in (15.75 mm)
UL and CUL Listed, RoHS Compliant, FCC and IC Compliant	



1. 1/2 inch threaded nipple
2. Lock nuts
3. Group address DIP switch
4. Detection lens
5. Time delay setting DIP switch
6. Light level trimpot

Product Overview HBS-DC

Product description

The HBS-DC Wireless Control Module works with STEINEL's HBS 200 and HBS 300 wireless lighting control devices to create control zones without the need for additional wiring.

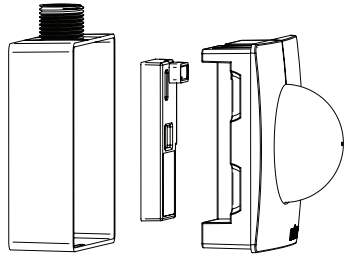
The HBS-DC typically comes preinstalled in the STEINEL wireless device. Devices are controlled via autaniNet, providing wireless fixture control on an individual or group basis. Through Autani's easy-to-use EnergyCenter interface, users can choose how individual fixtures or groups will behave based on changes in schedule and occupancy. Users can easily modify fixture behavior and how lights are grouped.

Specifications

Communication frequency	2.4 GHz
Operating temperature	-4°F to +122°F; -20° C to +50°C
Dimensions	2.96 x 1.38 x .62 in (75.2 x 35.05 x 15.75 mm)
Transmission range	600 ft (182.8 m) depending on line of sight. Range may be less if signal needs to pass through obstacles.
5 year warranty, RoHS compliant	

Installation

The HBS-DC typically is factory pre-installed to a wireless control device. If installation is necessary, the module just snaps into the connection terminal. No tools are required.



Setup & Commissioning

This sensor is commissioned remotely through the EnergyCenter software.

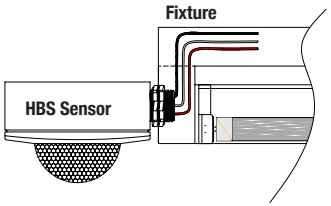
Mounting

Placement guidelines - HBS 300, HBS 200

- Sensor module mounts to a 1/2” knockout of a lighting fixture or junction box.
- Detection lens must have a clear, unobstructed view of controlled area and must project beyond the lamps.
- Sensor should be 6 to 8 feet away from heating/cooling supply ducts.
- Ideal mounting height is up to 45 feet.
- Must be mounted on a stable platform.

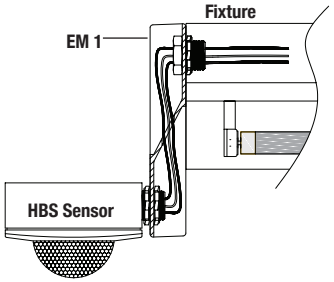
End of fixture mounting - HBS 300, HBS 200

The HBS 300 and HBS 200 typically mount to a 1/2” knockout at the end of a high/low bay lighting fixture. The sensor’s lens should be mounted below the bottom edge of the fixture.



EM 1 Extender Module

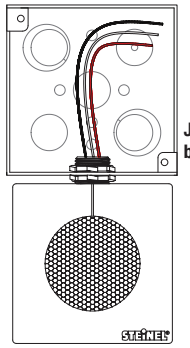
The **EM 1 Extender Module** is recommended for use with the HBS 300 and HBS 200 if the knockout at the end of the fixture is located greater than 1/2” from the bottom edge of the fixture.



Mounting (continued)

Junction box mounting - HBS 300, HBS 200

If mounting to the end of a fixture is not possible, the HBS 300, HBS 200 can be mounted to any junction box with a 1/2” (trade size) knockout. With the HBS 300 and HBS 200, this may be necessary if the fixture location has an obstruction that would block the view of the sensor (for example: racking is directly beneath the fixture).



HBS 300, HBS 200

Wiring - HBS 300, HBS 200

When installing, make sure power has been switched off at the breaker and check that the circuit is dead with a voltage tester.

The leads consist of three wires:

Black = line

White = neutral

Red = load

When the HBS-DC is installed:

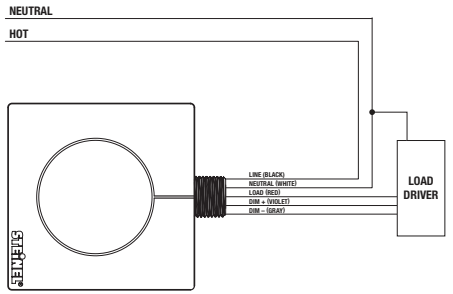
Violet = DIM +

Gray = DIM -

If in doubt, identify the individual conductors with a voltage tester or contact a qualified electrician.

Note 1: Dimming wires are only available with HBS-DC installed.

Note 2: All HBS and HBS-DC are Class 1 rated.



HBS 300, HBS 200

Operation – Without HBS-DC Installed

Operation - HBS 300, HBS 200

The HBS 300 and HBS 200 operate by turning lights ON automatically when occupancy is detected and OFF when the space is left vacant and the time delay has elapsed. The sensor communicates wirelessly to other wireless devices programmed to the same group to turn lights ON or OFF.

Light level function - HBS 300, HBS 200

The HBS sensor's light level feature keeps lighting OFF during daylight hours, regardless of occupancy. A light level delay-off function prevents the sensor from responding to temporary changes in ambient light level. If the ambient light level is brighter than the set target value, the sensor will wait for one minute before turning lights OFF. If motion is detected within this time, lights will remain ON. After no motion is detected for one minute and the light level has been greater than the target value, the lights will turn OFF and remain OFF until the daylight level drops below the target set point and motion is detected.

Initial power up - HBS 300, HBS 200

Upon initial power up, the load will turn ON for up to one minute. If no motion is detected, the load will switch OFF. If motion is detected and the target light level setting is less than the daylight level, the load will stay ON for the selected time delay setting (per DIP switch setting). If the daylight level at power up is greater than the target light level setting, the load will switch OFF regardless of occupancy.

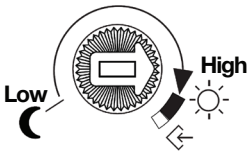
Surge protection - HBS 300, HBS 200

The HBS sensors contains built in surge protection. This feature will reset the unit automatically after: power surges, power outages, and power shortages. Surge protection protects the sensor if it is miswired as well. If miswired, shut off power, correct the wiring, and the sensor will then operate correctly.

Setup & Commissioning – Without HBS-DC Installed

Light level - HBS 300, HBS 200

The light level feature allows lighting to remain OFF during daylight, regardless of occupancy. Daytime operation is at 200 footcandles (factory setting). Nighttime operation is at .2 footcandles.



Light level: .2 (night) to 200 (day) footcandles

Light level teach mode - HBS 300, HBS 200

The light level teach mode reads the ambient light level in the space and selects this amount for the light level setting.

- Turn the light level setting to
- After 10 seconds, the value of the ambient brightness is saved.
- This value is also available after a power failure if the potentiometer is set to teach mode at power up.

After setup and commissioning are complete, adjust the light level settings to fit the application needs.

Operation – With HBS-DC Installed

Operation - HBS 300, HBS 200

The HBS 300 and HBS 200 operate by turning lights on and dimming lights in response to scheduled or manual overrides initiated from the Autani Energy Manager.

Multiple HBS 300 and HBS 200 units may be grouped together in the manager so that occupancy transitions are shared by the group, turning lights ON and OFF in unison.

Light level function - HBS 300, HBS 200

The HBS sensor's light level feature will dim the fixture automatically if enabled in the Autani Energy Manager.

The light harvesting feature allows each light to maintain a constant level of illumination directly under the fixture. These settings must be configured in the Autani Energy Manager if the HBS-DC radio is installed.

Initial power up - HBS 300, HBS 200

Upon initial power up, the load will <check with Bob Belz / Ibrahim for logic>

Surge protection - HBS 300, HBS 200

The HBS sensors contains built in surge protection. This feature will reset the unit automatically after: power surges, power outages, and power shortages. Surge protection protects the sensor if it is miswired as well. If miswired, shut off power, correct the wiring, and the sensor will then operate correctly.

Setup & Commissioning – With HBS-DC Installed

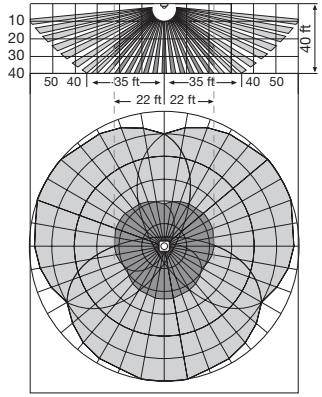
See Autani Manager documentation.

Setup & Commissioning

HBS 300 Coverage

The HBS 300 contains three pyroelectric sensors to detect occupancy. At an installation height of 8 to 45 feet, maximum reach is 22 feet radial and 60 feet tangential. If needed, the detection zone can be adjusted (see below).

Coverage may vary depending on mounting height and environmental conditions.

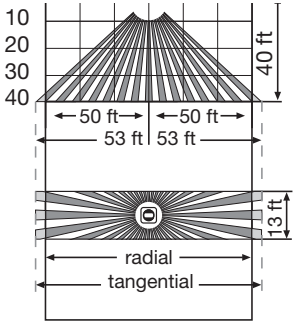


HBS 200 Coverage

The HBS 200 contains two pyroelectric sensors to detect occupancy and has an aisle way coverage of up to 100 feet when mounted at 40 ft. If needed, the detection zone can be adjusted with a lens cover (see below).

In addition, the view of the HBS 200 can be rotated 90 degrees. To do this, remove the sensor housing from the back box by pressing the tabs on either side of the sensor.

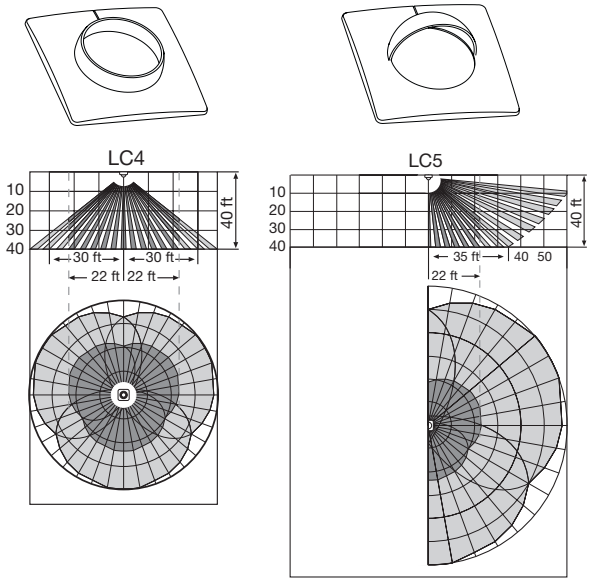
Coverage may vary depending on mounting height and environmental conditions.



Setup & Commissioning

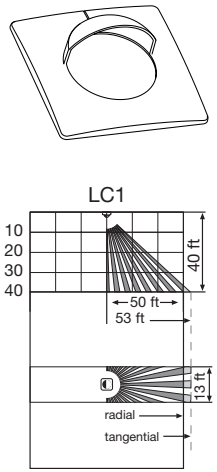
Lens Covers

Lens covers can be used to adjust the HBS 300's coverage as needed. The covers are plastic and snap to the front of an HBS 300 or HBS 200 sensor.



LC4 reduced range lens cover for HBS 300

LC5 180° half moon lens cover for HBS 300



LC1 aisle starter cover for HBS 200

Troubleshooting

HBS 300, HBS 200 sensor troubleshooting

Malfunction	Cause	Remedy
No power at the sensor	■ breaker has tripped; light switch is in OFF position ■ short circuit	■ reset breaker, turn light switch to ON position, check wiring with voltage tester ■ check for proper wiring connections
Lights do not switch ON	■ light level setting is in nighttime mode during daytime operation ■ lamp burned out ■ power is off ■ detection zone not correctly adjusted	■ adjust light level setting ■ replace lamp ■ turn power on at circuit breaker ■ readjust
Lights do not switch OFF	■ abundant heat from the fixture is within detection zone and keeps lights on as a result of temperature change	■ readjust zone or apply shroud
Lights keep switching ON/OFF	■ the fixture is moving from side to side	■ stabilize the fixture
Lights switch ON without obvious movement	■ HVAC vent is causing air flow to switch lights on	■ redirect air flow away from the sensor

Wireless communication troubleshooting

- Is the receiver device too far away from the transmitting device, resulting in too weak of a signal at the receiver? (See Transmission Range on page 3.)
- Can the radio signal leave the transmitter and reach the receiver or is it inhibited by interference (metal enclosure, etc.)
- Is there any possible interference from other transmitters operating on the same frequency?
- Are any other transmitters operating outside the system which, although working on a different frequency, are doing so at very high transmission power (ham radio etc.)?

Warranty

■ **HBS 200, HBS 300**

STEINEL America warrants its products against defects in material or workmanship for a period of **five** years. STEINEL will replace or repair the item provided that it has not been altered or subjected to abuse, accident, improper installation or improper use. There are no obligations or liabilities on the part of STEINEL 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.

■ **HBS-DC**

Autani warrants that Autani Products will be free from defects in materials and workmanship and conform to its Specifications for a specified, fixed period commencing on its date of shipment and continuing for five (5) years, except the fixed period for Autani Software, Managers, and any Autani Product not installed and commissioned by Autani or its factory authorized representatives shall be for one (1) year (the “Warranty Period”), unless otherwise specified. During the warranty period, if an Autani Product does not function substantially according to its Specification, Autani will either 1) make it do so or 2) replace it with one that is at least functionally equivalent. If Autani is not able to make the warranted product substantially conform with its specifications, Buyer may return it to Autani and the amount paid to Autani for such product will be refunded on a prorated basis relative to the Warranty Period remaining from the first date of the claim.

HBS-DC Certifications

■ Complies with UL 508 Standards

FCC ID: V8NHBS1000173

IC: 7737A-HBS1000173

This device complies with Part 15 of the FCC Rules. Operation is subject to the following conditions:

(1) this device may not cause harmful interference

(2) this device must accept any interference received including interference that may cause undesired operation

(3) Changes or modifications not expressly approved by the party responsible for compliance could void the user’s authority to operate the equipment

This equipment complies with the FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

■ NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct interference at his own expense.

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

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