

# DUAL TECHNOLOGY CEILING/WALL SENSORS

DT-200/DT-205

Combines passive infrared (PIR) and ultrasonic technologies

Auto set automatically selects optimal settings for each space

Walk-through mode increases savings potential



Built-in light level sensor

Accepts low-voltage switch input for manual-on operation

Automatic or manual-on operation when used with a BZ-150 Power Pack

## DESCRIPTION

Wattstopper's DT-200 Series Dual Technology Ceiling Sensors combine PIR and ultrasonic technologies into one unit to achieve precise coverage in detecting occupancy.

## OPERATION

Low voltage DT-200 Series Sensors utilize a Wattstopper power pack to turn lights on when both PIR and ultrasonic technologies detect occupancy. They can also work with a low voltage switch for manual-on operation. PIR technology senses motion via a change in infrared energy within the controlled area, whereas ultrasonic uses 40 kHz high frequency ultrasound. Once on, detection by either technology holds lights on. When no occupancy is detected for the length of the time delay, lights turn off. DT-200 Series Sensors can also be set to trigger lights on when either technology or both detect occupancy, or to require both technologies to hold lighting on.

## AUTO SET

The DT-200 requires no adjustment at installation. Auto set continuously monitors the controlled space to identify usage patterns. Based on these patterns, units automatically adjust time delay and sensitivity settings for optimal performance and energy efficiency. Sensors assign short delays (as low as five minutes) for times when the space is usually vacant, and longer delays (up to 30 minutes) for busier times.

## APPLICATIONS

DT-200 Series Sensors have the flexibility to work in a variety of applications. Mounted at ten feet, the sensors can cover up to 2000 square feet of walking motion and 1000 square feet of desktop motion. The sensors are designed to control lighting in difficult applications where one technology alone could encounter false triggers. The DT-200 works well in classrooms, warehouses, large offices, open office spaces and computer rooms.

## FEATURES

- Advanced control logic based on RISC micro-controller provides:
  - Detection Signature Processing to eliminate false triggers and provides immunity to RFI and EMI
  - Walk-through Mode turns lights off three minutes after the area is initially occupied – ideal for brief visits, such as mail delivery
  - Available with built-in light level sensor featuring simple, one-step setup
- LEDs indicate occupancy detection
- Sensors work with low-voltage momentary switches to provide manual control
- Eight occupancy logic options provide the ability to customize control to meet application needs
- Available with isolated relay for integration with BAS or HVAC
- Swivel mounting bracket for convenient corner mounting to wall or ceiling
- BAA/TAA-compliant models available

PROJECT

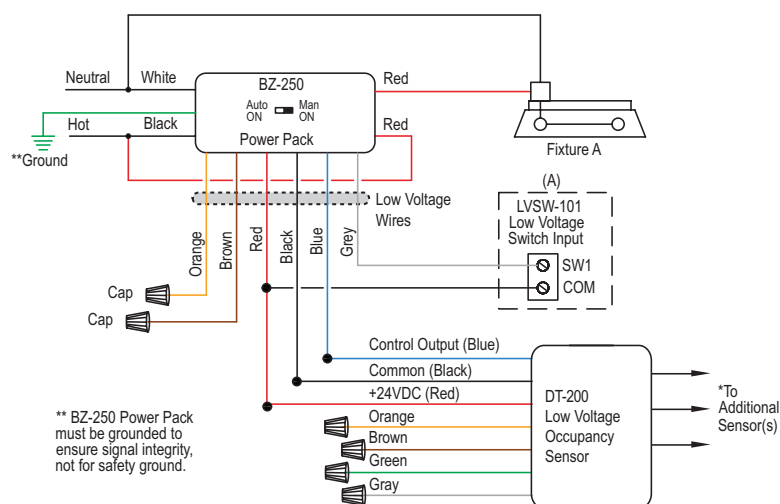
LOCATION/  
TYPE

## SPECIFICATIONS

- 18-28 VDC/VAC and halfwave rectified AC
- Current Consumption @24VDC/VAC
  - DT-200: 33mA (DC), 93mA (AC)
  - DT-205: 24mA (DC), 64mA (AC)
- 40 kHz frequency ultrasonic transmission
- Time delays: Auto set, fixed (5, 10, 15, 20 or 30 minutes), Walk-through/Test Modes
- Sensitivity adjustment: Auto set; reduced sensitivity (PIR); variable with trim pot (ultrasonic)
- Built-in light level sensor: 2 to 200 footcandles (21 to 2,152 lux)
- Low voltage, momentary switch input for manual operation
- DT-200 contains an isolated relay with N/O and N/C outputs; rated for 1 Amp at 24 VDC/VAC
- 2000 ft<sup>2</sup> of walking motion mounted at 10 ft; 1000 ft<sup>2</sup> of desktop motion
- Max. DT-200s per BZ power pack: 3  
Max. DT-205s per BZ power pack: 4
- Operating conditions: for indoor use only; 32-131°F (0-55°C), 5-95% RH, non-condensing
- Dimensions: 4.4" x 3.4" x 2" (110.3mm x 85.9mm x 49.6mm) L x W x D
- UL and cUL listed
- Five year warranty

## WIRING & MOUNTING

### Wiring Diagram



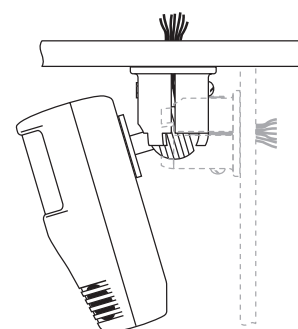
\*Momentary switch connection is optional.  
Connect only when momentary switch is installed.

### Mounting

A swivel mounting bracket attached to the sensor allows the sensor to be angled for wall or ceiling mounting.

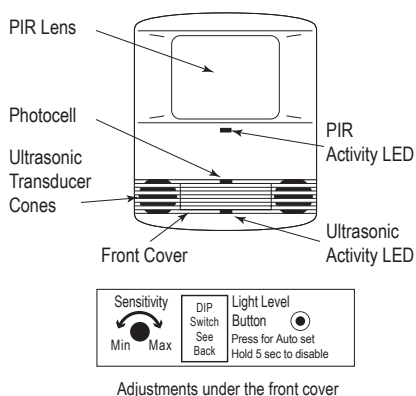
Grooves on the bracket help to achieve desired angle for coverage.

Mount to mud ring.



## CONTROLS & SETTINGS

### Product Controls



### DIP Switch Settings

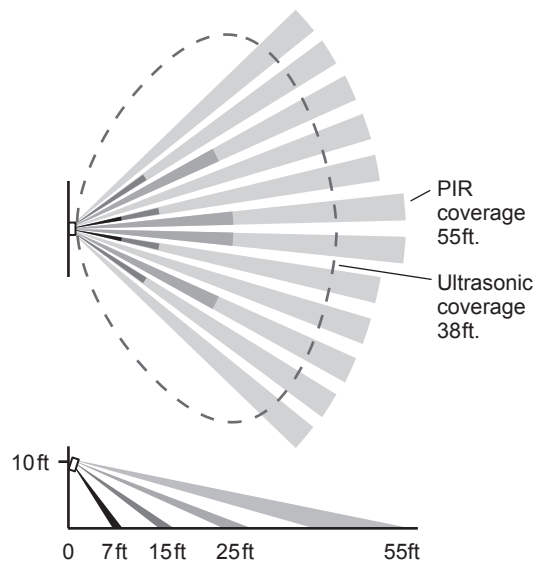
Feature	Switch#
Time Delay	1 2 3
Test Mode/20 min	↓ ↓ ↓
30 seconds	↓ ↓ ↓
5 minutes	↓ ↓ ↓
10 minutes	↓ ↓ ↓
15 minutes	↓ ↓ ↓
20 minutes	↓ ↓ ↓
25 minutes	↓ ↓ ↓
30 minutes	↓ ↓ ↓
Walk-Through	4
Enabled	↑
Disabled	↓
PIR Sensitivity	5
Minimum	↑
Maximum	↓

Settings	6	7	8
Standard	↓	↓	↓
Option 1	↑	↑	↓
Option 2	↑	↑	↓
Option 3	↑	↑	↓
Option 4	↑	↑	↓
Option 5	↑	↑	↓
Option 6	↑	↑	↓
Option 7	↑	↑	↓

Occupancy Logic	Initial Occupancy	Maintain Occupancy	Re-trigger (seconds duration)
Standard	Both	Either	Either(5)
Option 1	Either	Either	Either(5)
Option 2	PIR	Either	Either(5)
Option 3	Both	PIR	Both(5)
Option 4	PIR	PIR	PIR(5)
Option 5	Either	PIR	Either(5)
Option 6	Man.	Either	Either(30)
Option 7	Man.	PIR	Both(30)

◀ = Factory Setting  
↑ = ON  
↓ = OFF

## COVERAGE



Coverages shown are maximum and represent half-step walking motion. Under ideal conditions with no barriers or obstacles, coverage for half-step walking motion can reach up to 2000 ft<sup>2</sup>, while coverage for typical desktop activity can reach up to 1000 ft<sup>2</sup>.

## ORDERING INFORMATION

Catalog #	Voltage	Current Consumption	Coverage	Features
<input type="checkbox"/> DT-200	18-28 VDC/VAC	33mA (DC), 93mA (AC)	2000 ft <sup>2</sup> (185.8 m <sup>2</sup> )	Light level, isolated relay
<input type="checkbox"/> DT-200-U	18-28 VDC/VAC	33mA (DC), 93mA (AC)	2000 ft <sup>2</sup> (185.8 m <sup>2</sup> )	Light level, isolated relay
<input type="checkbox"/> DT-205	18-28 VDC/VAC	24mA (DC), 64mA (AC)	2000 ft <sup>2</sup> (185.8 m <sup>2</sup> )	

-U = BAA/TAA-compliant model. Product is compliant with Buy American Act and Trade Agreement Act

Sensors are white and use Wattstopper power packs. Current consumption can be slightly higher when only one sensor per power pack is used.

27408r2 Rev 10/2022

# DUAL TECHNOLOGY CEILING/WALL SENSORS

DT-200/DT-205

Combines passive infrared (PIR) and ultrasonic technologies

Auto set automatically selects optimal settings for each space

Walk-through mode increases savings potential



Built-in light level sensor

Accepts low-voltage switch input for manual-on operation

Automatic or manual-on operation when used with a BZ-150 Power Pack

## DESCRIPTION

Wattstopper's DT-200 Series Dual Technology Ceiling Sensors combine PIR and ultrasonic technologies into one unit to achieve precise coverage in detecting occupancy.

## OPERATION

Low voltage DT-200 Series Sensors utilize a Wattstopper power pack to turn lights on when both PIR and ultrasonic technologies detect occupancy. They can also work with a low voltage switch for manual-on operation. PIR technology senses motion via a change in infrared energy within the controlled area, whereas ultrasonic uses 40 kHz high frequency ultrasound. Once on, detection by either technology holds lights on. When no occupancy is detected for the length of the time delay, lights turn off. DT-200 Series Sensors can also be set to trigger lights on when either technology or both detect occupancy, or to require both technologies to hold lighting on.

## AUTO SET

The DT-200 requires no adjustment at installation. Auto set continuously monitors the controlled space to identify usage patterns. Based on these patterns, units automatically adjust time delay and sensitivity settings for optimal performance and energy efficiency. Sensors assign short delays (as low as five minutes) for times when the space is usually vacant, and longer delays (up to 30 minutes) for busier times.

## APPLICATIONS

DT-200 Series Sensors have the flexibility to work in a variety of applications. Mounted at ten feet, the sensors can cover up to 2000 square feet of walking motion and 1000 square feet of desktop motion. The sensors are designed to control lighting in difficult applications where one technology alone could encounter false triggers. The DT-200 works well in classrooms, warehouses, large offices, open office spaces and computer rooms.

## FEATURES

- Advanced control logic based on RISC micro-controller provides:
  - Detection Signature Processing to eliminate false triggers and provides immunity to RFI and EMI
  - Walk-through Mode turns lights off three minutes after the area is initially occupied – ideal for brief visits, such as mail delivery
  - Available with built-in light level sensor featuring simple, one-step setup
- LEDs indicate occupancy detection
- Sensors work with low-voltage momentary switches to provide manual control
- Eight occupancy logic options provide the ability to customize control to meet application needs
- Available with isolated relay for integration with BAS or HVAC
- Swivel mounting bracket for convenient corner mounting to wall or ceiling
- BAA/TAA-compliant models available

PROJECT

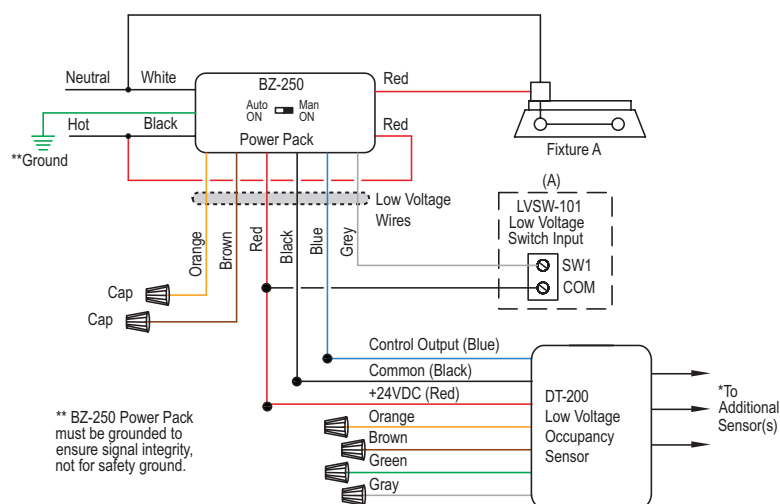
LOCATION/  
TYPE

## SPECIFICATIONS

- 18-28 VDC/VAC and halfwave rectified AC
- Current Consumption @24VDC/VAC
  - DT-200: 33mA (DC), 93mA (AC)
  - DT-205: 24mA (DC), 64mA (AC)
- 40 kHz frequency ultrasonic transmission
- Time delays: Auto set, fixed (5, 10, 15, 20 or 30 minutes), Walk-through/Test Modes
- Sensitivity adjustment: Auto set; reduced sensitivity (PIR); variable with trim pot (ultrasonic)
- Built-in light level sensor: 2 to 200 footcandles (21 to 2,152 lux)
- Low voltage, momentary switch input for manual operation
- DT-200 contains an isolated relay with N/O and N/C outputs; rated for 1 Amp at 24 VDC/VAC
- 2000 ft<sup>2</sup> of walking motion mounted at 10 ft; 1000 ft<sup>2</sup> of desktop motion
- Max. DT-200s per BZ power pack: 3  
Max. DT-205s per BZ power pack: 4
- Operating conditions: for indoor use only; 32-131°F (0-55°C), 5-95% RH, non-condensing
- Dimensions: 4.4" x 3.4" x 2" (110.3mm x 85.9mm x 49.6mm) L x W x D
- UL and cUL listed
- Five year warranty

## WIRING & MOUNTING

### Wiring Diagram



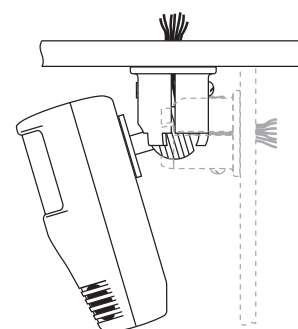
\*Momentary switch connection is optional.  
Connect only when momentary switch is installed.

### Mounting

A swivel mounting bracket attached to the sensor allows the sensor to be angled for wall or ceiling mounting.

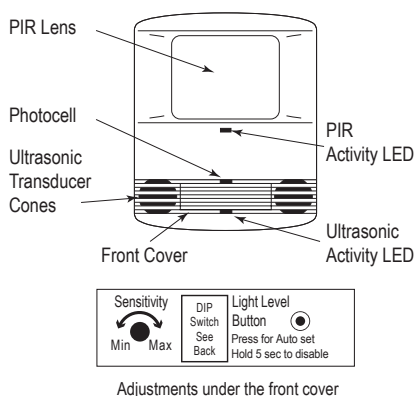
Grooves on the bracket help to achieve desired angle for coverage.

Mount to mud ring.



## CONTROLS & SETTINGS

### Product Controls



### DIP Switch Settings

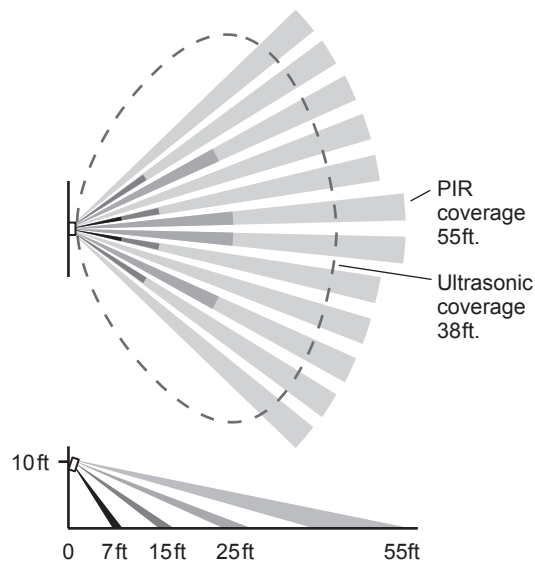
Feature	Switch#
Time Delay	1 2 3
Test Mode/20 min	↓ ↓ ↓
30 seconds	↓ ↓ ↓
5 minutes	↓ ↓ ↓
10 minutes	↓ ↓ ↓
15 minutes	↓ ↓ ↓
20 minutes	↓ ↓ ↓
25 minutes	↓ ↓ ↓
30 minutes	↓ ↓ ↓
Walk-Through	4
Enabled	↑
Disabled	↓
PIR Sensitivity	5
Minimum	↑
Maximum	↓

Settings	6	7	8
Standard	↓	↓	↓
Option 1	↑	↑	↓
Option 2	↑	↑	↓
Option 3	↑	↑	↓
Option 4	↑	↑	↓
Option 5	↑	↑	↓
Option 6	↑	↑	↓
Option 7	↑	↑	↓

Occupancy Logic	Initial Occupancy	Maintain Occupancy	Re-trigger (seconds duration)
Standard	Both	Either	Either(5)
Option 1	Either	Either	Either(5)
Option 2	PIR	Either	Either(5)
Option 3	Both	PIR	Both(5)
Option 4	PIR	PIR	PIR(5)
Option 5	Either	PIR	Either(5)
Option 6	Man.	Either	Either(30)
Option 7	Man.	PIR	Both(30)

◀ = Factory Setting  
↑ = ON  
↓ = OFF

## COVERAGE



Coverages shown are maximum and represent half-step walking motion. Under ideal conditions with no barriers or obstacles, coverage for half-step walking motion can reach up to 2000 ft<sup>2</sup>, while coverage for typical desktop activity can reach up to 1000 ft<sup>2</sup>.

## ORDERING INFORMATION

Catalog #	Voltage	Current Consumption	Coverage	Features
<input type="checkbox"/> DT-200	18-28 VDC/VAC	33mA (DC), 93mA (AC)	2000 ft <sup>2</sup> (185.8 m <sup>2</sup> )	Light level, isolated relay
<input type="checkbox"/> DT-200-U	18-28 VDC/VAC	33mA (DC), 93mA (AC)	2000 ft <sup>2</sup> (185.8 m <sup>2</sup> )	Light level, isolated relay
<input type="checkbox"/> DT-205	18-28 VDC/VAC	24mA (DC), 64mA (AC)	2000 ft <sup>2</sup> (185.8 m <sup>2</sup> )	

-U = BAA/TAA-compliant model. Product is compliant with Buy American Act and Trade Agreement Act

Sensors are white and use Wattstopper power packs. Current consumption can be slightly higher when only one sensor per power pack is used.

27408r2 Rev 10/2022