DT-300 Series Low Voltage Dual Technology Ceiling Sensors

Architecturally appealing low-profile appearance

Plug terminal wiring for quick and easy installation

Accepts low-voltage switch input for manual-on operation

Walk-through mode increases savings potential

Supports automatic or manual-on operation

Ultrasonic diffusers give more comprehensive coverage
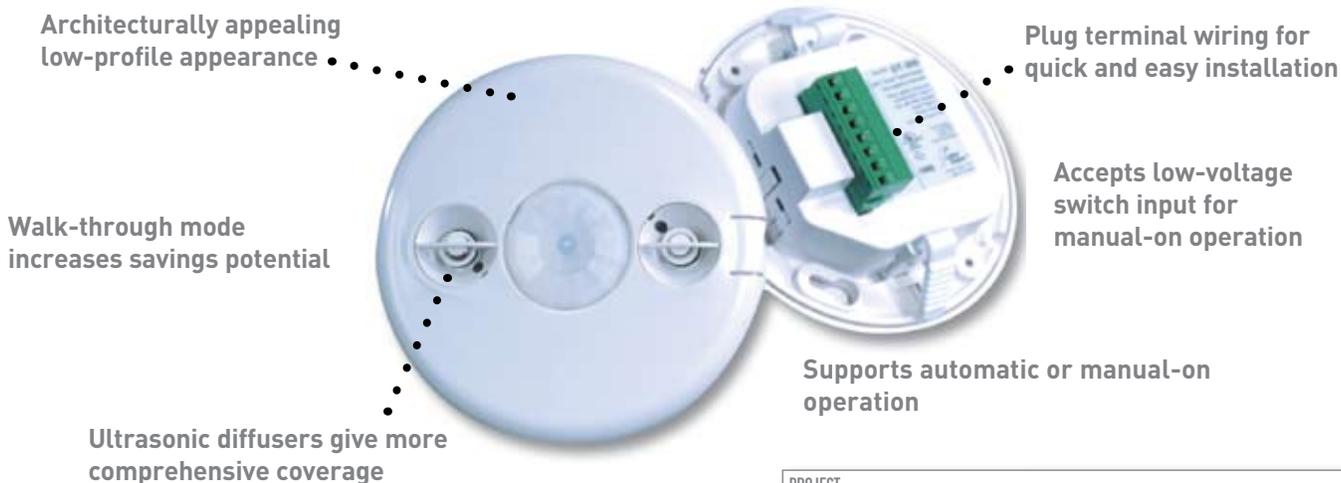
PROJECT
LOCATION/TYPE

Product Overview

Description

The DT-300 Series Dual Technology Ceiling Sensors combine the benefits of passive infrared (PIR) and ultrasonic technologies to detect occupancy. Sensors have a flat, unobtrusive appearance and provide 360 degrees of coverage.

Operation

Low voltage DT-300 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 40KHz high frequency ultrasound. Once lights are on, detection by either technology holds them on. When no occupancy is detected for the length of the time delay, lights turns off. DT-300 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.

Time Delay Options

The DT-300 is factory set for a 20 minute time delay, ideal for both energy savings and user satisfaction in most applications. Installers can quickly select other fixed time delays (5, 10, 15 or 30 minutes) via DIP switches. Fixed time delays eliminate the occupant dissatisfaction associated with an automatically adjusted time delay option, and reduce callbacks. Walk-through mode may be enabled for added energy savings in spaces with frequent transient traffic.

Application

DT-300 Series Dual Technology Sensors have the flexibility to work in a variety of applications, where one technology alone could cause false triggers. Ideal applications include classrooms, open office spaces, large offices and computer rooms. The DT-300 Series mounting system makes them easy to install in ceiling tiles or to junction boxes, providing the flexibility to be used in a wide range of spaces.

- LEDs indicate occupancy detection
- Uses plug terminal wiring system for quick and easy installation
- Eight occupancy logic options provide the ability to customize control to meet application needs
- Available with isolated relay for integration with BAS or HVAC
- Qualifies for ARRA-funded public works projects
- Sensor coverage tested to NEMA Guide Publication WD 7-2000

Features

- Advanced control logic based on RISC microcontroller provides:
  - Detection Signature Processing eliminates 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
- Sensors work with low-voltage momentary switches to provide manual control
- Patented ultrasonic diffusion technology spreads coverage to a wider area

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Specifications

- 24 VDC/VAC
- Ultrasonic frequency: 40kHz
- Time delays: 5, 10, 15, 20, or 30 minutes, Walk-through/Test Modes
- Sensitivity adjustment: High/low (PIR); variable with trim pot (ultrasonic)
- Built-in light level sensor: 10 to 300 footcandles (107.6 to 3,229.2 lux)
- Low-voltage, momentary switch input for manual on or off operation

- DT-300 contains an isolated relay with N/O and N/C outputs; rated for 1 Amp @ 30 VDC/VAC
- Multi-level Fresnel lens provides 360° coverage
- Mounting options: ceiling tile; 4″ octagonal J-box, 1.5″ deep
- Max DT-300s per power pack: B=2 , BZ=3
  Max DT-305s per power pack: B=3, BZ=4
- Dimensions: 4.50″ diameter x 1.02″ deep (114.3mm x 25.9mm)
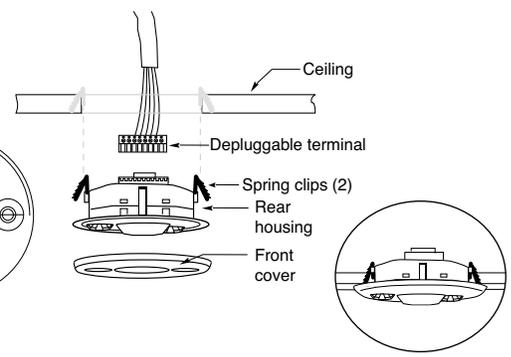- UL and cUL listed
- Five year warranty
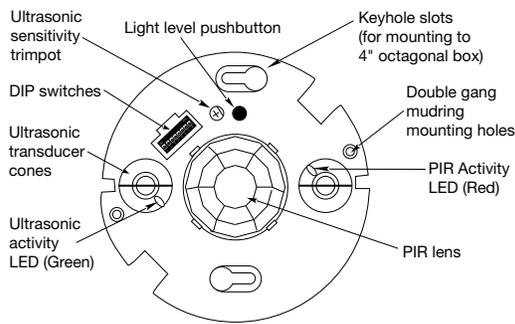
Wiring & Mounting

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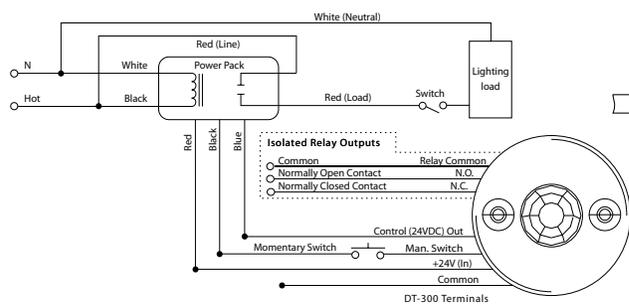
*Momentary switch connection is optional.
Connect only when momentary switch is installed.

Ceiling Mounting

Controls & Settings

Product Controls

- Ultrasonic sensitivity trimpot
- Light level pushbutton
- Keyhole slots (for mounting to 4" octagonal box)
- DIP switches
- Ultrasonic transducer cones
- Double gang mudring mounting holes
- PIR Activity LED (Red)
- Ultrasonic activity LED (Green)
- PIR lens

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**
Occupancy Logic	Standard	↓	↓	↓ ◀
	Option 1	↑	↓	↓
	Option 2	↓	↑	↓
	Option 3	↑	↑	↓
	Option 4	↓	↓	↑
	Option 5	↑	↓	↑
	Option 6	↓	↑	↑
	Option 7	↑	↑	↑

	Trigger	Initial Occupancy	Maintain Occupancy	Re-trigger (seconds duration)
Occupancy Logic	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

The control technology (occupancy logic) is selectable. The default setting requires both technologies to trigger on, either to hold on, and is recommended for most applications.

Coverage

Coverage Pattern

36 ft (10.97m)

36 ft x 36 ft (10.97m x 10.97m)
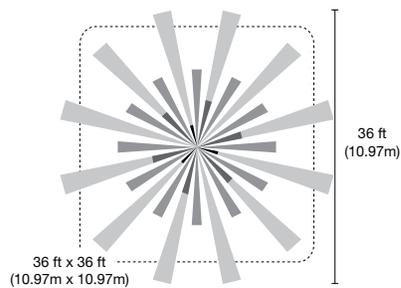
Coverage shown is maximum and represents half-step walking motion. Under ideal conditions, coverage for half-step walking motion can reach up to 1000 ft^2.

Ordering Information

Catalog No.	Voltage	Current	Coverage	Features
☐ DT-300 ☐ DT-300-U	24 VDC/VAC	43 mA	up to 1000 ft^2 (92.9 m^2)	Isolated relay, light level
☐ DT-305 ☐ DT-305-U	24 VDC/VAC	35 mA	up to 1000 ft^2 (92.9 m^2)	

Sensors are white and use WattStopper power packs. Current consumption can be slightly higher when only one sensor per power pack is used.
-U = ARRA compliant. Product produced in the U.S.