LOW VOLTAGE DUAL TECHNOLOGY CEILING SENSORS

DT-300 SERIES

Architecturally appealing low-profile appearance

Walk-through mode increases savings potential

Ultrasonic diffusers give more comprehensive coverage

Plug terminal wiring for quick and easy installation

Accepts low-voltage switch input for manual-on operation

Supports automatic or manual-on operation

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.

APPLICATIONS

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.

FEATURES

- Advanced control logic based on RISC micro-controller 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
- Patented ultrasonic diffusion technology spreads coverage to a wider area
- LEDs indicate occupancy detection

- Sensors work with low-voltage momentary switches to provide manual control
- 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
- BAA/TAA-compliant models available
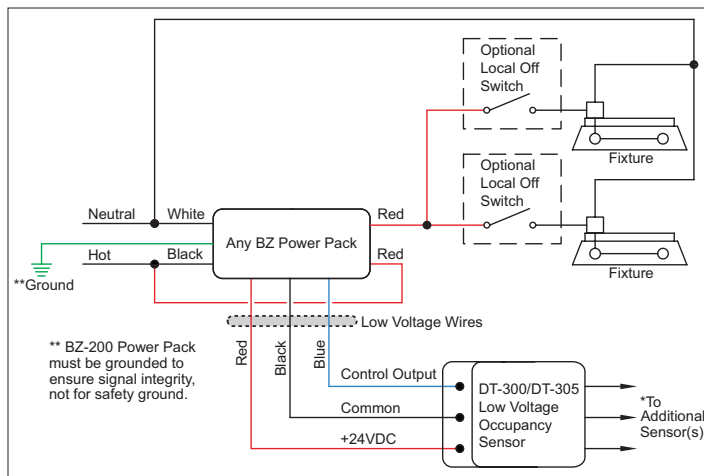- Sensor coverage tested to NEMA Guide Publication WD 7-2000

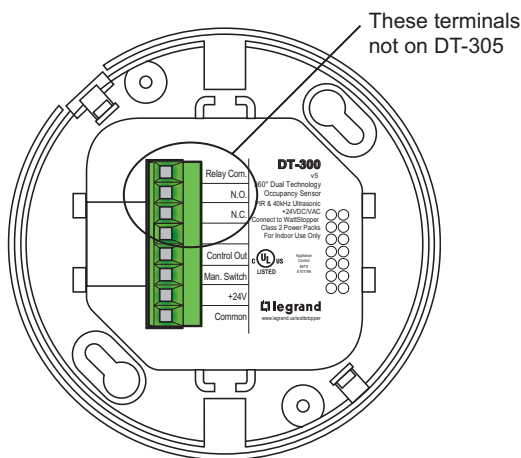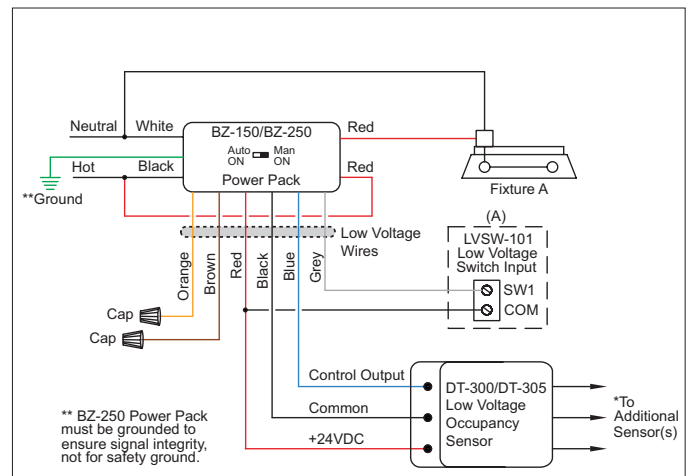| PROJECT		LOCATION/TYPE	

L1 legrand

SPECIFICATIONS

- 18–28 VDC/VAC
- Current Consumption @24VDC/VAC
  – DT-300: 25mA (DC)/74mA (AC)
  – DT-305: 16mA (DC)/69mA (AC)
- 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)
- Multi-level Fresnel lens provides 360° coverage

- 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
- Mounting options: ceiling tile; 4" octagonal J-box, 1.5" deep
- Max DT-300s per BZ power pack: 6
  Max DT-305s per BZ power pack: 7
- Dimensions: 4.50" diameter x 1.02" deep (114.3mm x 25.9mm)
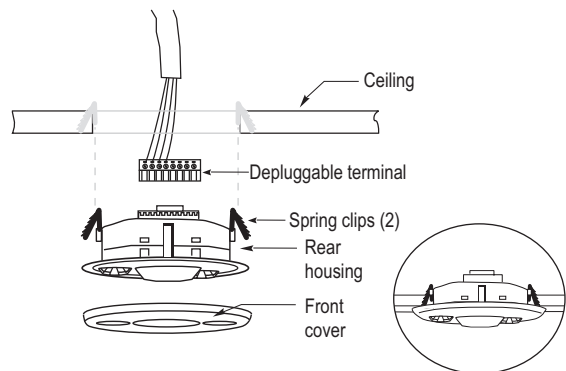- UL and cUL listed
- Five year warranty

WIRING

Standard wiring with two local off switches

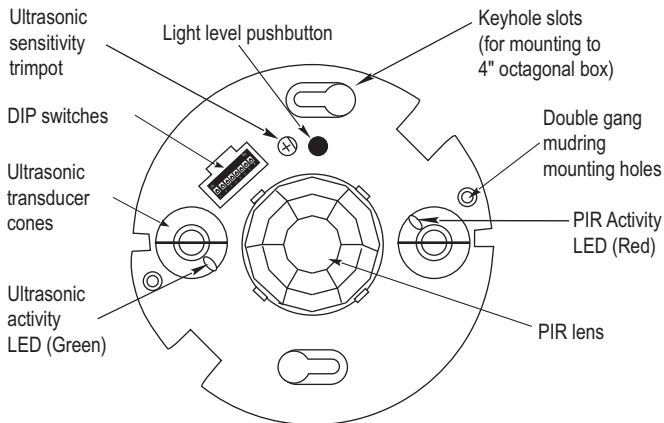

Manual-On wiring with low voltage momentary switch

MOUNTING

designed to be better.

CONTROLS & SETTINGS

Product Controls

Ultrasonic sensitivity trimpot

Light level pushbutton

Keyhole slots (for mounting to 4" octagonal box)

DIP switches

Double gang mudring mounting holes

Ultrasonic transducer cones

PIR Activity LED (Red)

Ultrasonic activity LED (Green)

PIR lens

DIP Switch Settings

Feature	Switch# 1	2	3
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

Trigger	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

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

36 ft (10.97m)

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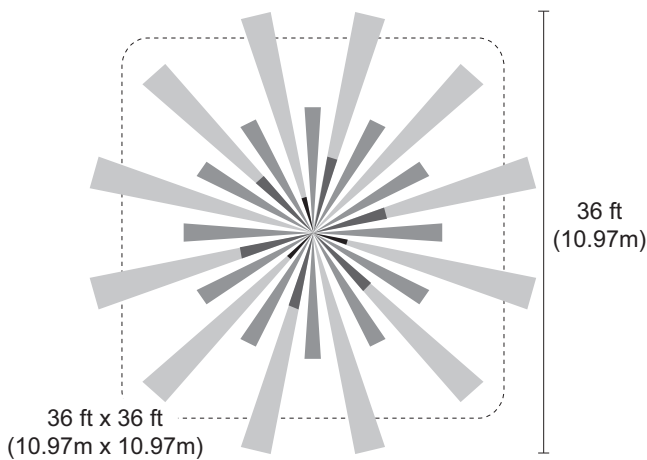
Coverage shown is maximum and represents half-step walking motion. Under ideal conditions, coverage for half-step walking motion can reach up to 1000 ft^2.

ORDERING INFORMATION

Catalog #		Voltage	Current	Coverage	Features
☐	DT-300	24VDC/VAC	25mA (DC)/ 74mA (AC)	up to 1000 ft^2 (92.9 m^2	Isolated relay, light level
☐	DT-300-U				
☐	DT-305	24VDC/VAC	16mA (DC)/ 69mA (AC)	up to 1000 ft^2 (92.9 m^2	
☐	DT-300-5-U				

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

-U = BAA/TAA compliant; product is compliant with Buy American Act and Trade Agreement Act

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DT-300 360° Dual Technology Sensor

DT-300
DT-305
DT-355

- The Dual Technology sensor shall be capable of detecting presence in the control area by detecting doppler shifts in transmitted ultrasound and passive infrared heat changes.

- Sensors shall use patent pending ultrasonic diffusion technology that spreads coverage to a wider area.

- Sensor shall utilize Dual Sensing Verification Principle for coordination between ultrasonic and PIR technologies. Detection verification of both technologies must occur in order to activate lighting systems. Upon verification, detection by either shall hold lighting on.

- Sensor shall have a retrigger feature in which detection by either technology shall retrigger the lighting system on within 5 seconds of being switched off.

- Sensors shall be ceiling mounted with a flat, unobtrusive appearance and provide 360° coverage.

- Ultrasonic sensing shall be volumetric in coverage with a frequency of 40 KHz. It shall utilize Advanced Signal Processing that automatically adjusts the detection threshold dynamically to compensate for changing levels of activity and airflow throughout controlled space.

- To avoid false ON activations and to provide immunity to RFI and EMI, Detection Signature Analysis shall be used to examine the frequency, duration, and amplitude of a signal, to respond only to those signals caused by human motion.

- The PIR technology shall utilize a temperature compensated, dual element sensor and a multi-element Fresnel lens. The lens shall be Poly IR4 material to offer superior performance in the infrared wavelengths and filter short wavelength IR, such as those emitted by the sun and other visible light sources. The lens shall have grooves facing in to avoid dust and residue build up which affects IR reception.

- DT-300 and DT-305 sensors shall operate at 24 VDC/VAC and halfwave rectified and utilize a Watt Stopper power pack.

- DT-355 shall incorporate a switching power supply for reduced power consumption; shall operate at 120/230/277/347 VAC, 50/60 Hz and shall not require a power pack.

- Sensors shall utilize SmartSet™ technology to optimize time delay and sensitivity settings to fit occupant usage patterns. The use of SmartSet shall be selectable with a DIP switch.

- Sensors shall have a time delay that is adjusted automatically (with the SmartSet setting) or shall have a fixed time delay of 5 to 30 minutes, set by DIP switch.

- Sensors shall feature a walk-through mode, where lights turn off 3 minutes after the area is initially occupied if no motion is detected after the first 30 seconds.

- The DT-300 and DT-355 sensors shall have a built-in light level sensor that works from 10 to 300 footcandles.

- The DT-300 and DT-305 sensors shall have a manual on function that is facilitated by installing a momentary switch.

- Sensors shall have eight occupancy logic options that give the ability to customize control to meet application needs.

- The sensors shall feature terminal style wiring, which makes installation easier.

- DT-300 sensor shall have an additional single-pole, double throw isolated relay with normally open, normally closed and common outputs. The isolated relay is for use with HVAC control, data logging, and other control options.

- Each sensing technology shall have an LED indicator that remains active at all times in order to verify detection within the area to be controlled. The LED can be disabled for applications that require less sensor visibility.

- To ensure quality and reliability, sensor shall be manufactured by an ISO 9002 certified manufacturing facility and shall have a defect rate of less than 1/3 of 1%.

WattStopper
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