

Watt Stopper DT-205

Wattstopper DT-205 Dual Technology Sensor Instruction Manual

Model: DT-205

1. INTRODUCTION

The Wattstopper DT-205 Dual Technology Sensor is a ceiling-mounted occupancy sensor designed to provide precise coverage by combining Passive Infrared (PIR) and Ultrasonic technologies. This low-voltage sensor works in conjunction with a Wattstopper power pack to control lighting based on occupancy detection. It is engineered to detect motion through changes in infrared energy (PIR) and 40 kHz high-frequency ultrasound (Ultrasonic).

Key features of the DT-205 sensor include:

- Advanced control logic based on a RISC microcontroller.
- Detection signature processing to minimize false triggers and provide immunity to RFI and EMI.
- Walk-through mode, which turns lights off three minutes after the area is initially occupied.
- An isolated relay for integration with Building Automation Systems (BAS) or HVAC systems.



Image showing the Wattstopper DT-205 Dual Technology Sensor, a white, circular device designed for ceiling mounting.

2. SETUP AND INSTALLATION

The DT-205 is a low-voltage, ceiling-mount sensor that requires connection to a Wattstopper power pack for operation. Ensure all power is disconnected before beginning installation.

Mounting

The sensor is designed for ceiling installation. For optimal performance, mount the sensor at a height of 10 feet to achieve a walking motion coverage of up to 2000 square feet and desktop motion coverage of up to 1000 square feet.

Wiring

Connect the DT-205 sensor to a compatible Wattstopper power pack. The sensor operates on 24 VDC/VAC or half-wave rectified AC. Refer to the power pack's instruction manual for specific wiring diagrams. The DT-205 contains an isolated relay with normally open (N/O) and normally closed (N/C) outputs, rated for 1 amp at 24 VDC/VAC, allowing integration with lighting controls, HVAC systems, or other compatible devices.

A maximum of 3 DT-205 sensors can be connected to a 'B' type power pack, and up to 4 DT-205 sensors can be connected to a 'BZ' type power pack.

3. OPERATING INSTRUCTIONS

The DT-205 sensor utilizes both PIR and Ultrasonic technologies to detect occupancy. The sensor's behavior can be configured to suit various application needs.

Occupancy Detection Logic

- **Default Operation:** Lights turn on when both PIR and Ultrasonic technologies detect occupancy.
- **Hold-On Logic:** Once lights are on, detection by either PIR or Ultrasonic technology will maintain the lights in the ON state.
- **Configurable Logic:** The sensor can be set to trigger lights on when either technology or both detect occupancy. It can also be configured to require both technologies to hold lighting on.

Time Delay Settings

The time delay determines how long the lights remain on after the last detected occupancy. Available settings include:

- **Auto Set:** Automatically adjusts the time delay based on usage patterns.
- **Fixed:** Selectable fixed delays of 5, 10, 15, 20, or 30 minutes.
- **Walk-Through Mode:** Turns lights off three minutes after the area is initially occupied if no further sustained occupancy is detected.
- **Test Mode:** For quick verification of coverage during installation.

Sensitivity Adjustment

The sensitivity of the detection technologies can be adjusted:

- **PIR:** Auto set or reduced sensitivity options.
- **Ultrasonic:** Variable sensitivity adjustable via a trim pot on the sensor.

Light Level Sensor

A built-in light level sensor allows for daylight harvesting, preventing lights from turning on if sufficient natural light is present. It is adjustable from 2 to 200 foot-candles (21 to 2,152 lux).

Manual Operation

The sensor includes a low-voltage, momentary switch input for manual-on operation, allowing users to override automatic control when desired.

4. MAINTENANCE

The Wattstopper DT-205 Dual Technology Sensor is designed for reliable, long-term operation with minimal maintenance. To ensure optimal performance, it is recommended to periodically inspect the sensor lens for any dust or obstructions. If necessary, gently wipe the lens with a soft, dry cloth. Avoid using abrasive cleaners or solvents, as these can damage the sensor's components.

5. TROUBLESHOOTING

If the DT-205 sensor is not functioning as expected, consider the following troubleshooting steps:

- **Lights not turning on:** Verify that the power pack is receiving power and that all wiring connections between the sensor and power pack are secure. Check the sensitivity settings for both PIR and Ultrasonic technologies; they may be set too low. Ensure the light level sensor is not preventing

activation due to sufficient ambient light.

- **Lights not turning off:** Confirm that the time delay setting is appropriate for the environment. Check for any persistent motion within the sensor's coverage area that might be continuously detected. Adjust sensitivity settings if false detections are occurring.
- **Intermittent detection:** Ensure the sensor's lens is clean and free from obstructions. Verify that the sensor's coverage area is not blocked by new furniture or partitions. Adjust sensitivity if necessary.
- **Sensor not responding:** Check the power supply to the power pack and the sensor. If the issue persists, consult a qualified electrician or contact Wattstopper technical support.

6. SPECIFICATIONS

Feature	Specification
Model Number	DT-205
Brand	Watt Stopper
Technology	Dual Technology (PIR & Ultrasonic)
Power Source	Corded Electric (requires Wattstopper power pack)
Voltage	24 VDC/VAC and half wave rectified AC
Ultrasonic Frequency	40 kHz
Coverage Area (Walking Motion)	2000 Sq. Ft. (mounted at 10 ft.)
Coverage Area (Desktop Motion)	1000 Sq. Ft.
Mounting Type	Ceiling Mount
Dimensions (L x W x D)	4.4 inch x 3.4 inch x 2 inch (110.3mm x 85.9mm x 49.6mm)
Item Weight	0.56 Pounds
Time Delays	Auto set, Fixed (5, 10, 15, 20, 30 min), Walk-through/Test modes
Light Level Sensor	2 to 200 foot-candles (21 to 2,152 lux)
Relay Output	Isolated relay with N/O and N/C outputs; 1 amp at 24 VDC/VAC
Compatible Devices	Lighting Controls, HVAC Systems, Power Packs
Certifications	UL and CUL listed
UPC	754182910717

7. WARRANTY AND SUPPORT

Warranty

The Wattstopper DT-205 Dual Technology Sensor comes with a five-year warranty from the date of purchase. This warranty covers defects in materials and workmanship under normal use. Please retain your proof of purchase for warranty claims.

Technical Support

For technical assistance, troubleshooting beyond the scope of this manual, or warranty inquiries, please contact Wattstopper customer support. Contact information can typically be found on the manufacturer's official website or product packaging.