

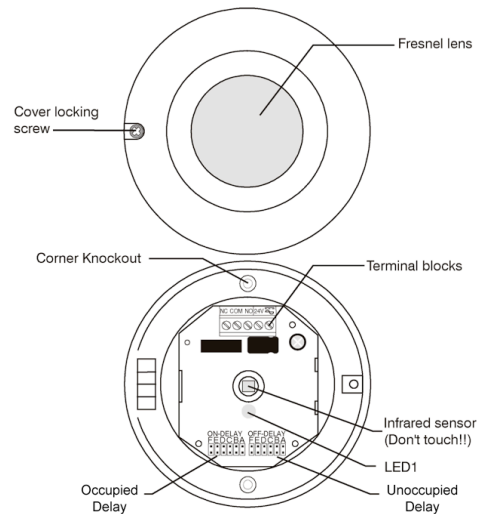
# NT-OSC

# Installation Instructions

## DESCRIPTION

The NT-OSC is a ceiling mount 360° occupancy sensor designed for automatic occupancy control of your HVAC system. This sensor provides an occupied / unoccupied signal to all Net/X™ Thermostats with CLK1/CLK2 terminals. A 4-wire cable (thermostat cable or CAT5) is all that's needed for connection.

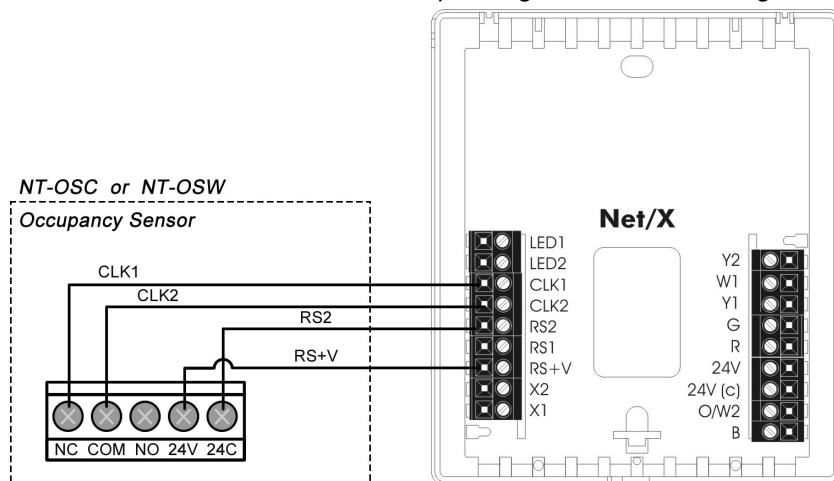
## DRAWING



## INSTALLATION & WIRING

### Installation

1. Open the cover by loosening the screw. Bend the clip and remove the PCB module.
2. Drill holes in any of the 4 prepared hole locations. Use 1 hole to pull through the wire and use 1 or 2 other holes for mounting to the ceiling. Lead the cable into the unit base and mount the base on the ceiling.
3. Replace the PCB module. Connect the cable to the corresponding terminals according to the following instructions.



4. Replace the front cover and then walk test can be conducted.
5. Change DIP switch on the NetX™ thermostat to 'Keyboard Lockout'. See separate thermostat manual for DIP switch number and location.

# WALK TEST

Apply power supply, re-attached the cover and allow approximately 60 seconds for the sensor to warm up. The LED will blink (long and short) during warm up period. Ensure the jumpers for both ON & OFF delays are placed at "A" position (shortest time). After the warm up expires, walk across the detection zones (invisible) at normal speed. The LED will turn on whenever the sensor detects the motion. Note: Once the Walk Test has been completed, detach the cover again and move the jumpers for ON (Occupied) and OFF (Unoccupied) to the desired settings. Re-attach the cover.

*Note: The LED will blink if any jumper is not properly placed.*

# OPERATION

## Operation Diagram

### A. Standby

After the warm up time expires, the sensor enters into standby mode. The sensor will check whether both delays are properly set. If not, the LED will blink to indicate the problem. There must be two jumpers installed, one in the ON jumper set and one in the OFF jumper set.

### B. Verify Occupancy (ON)

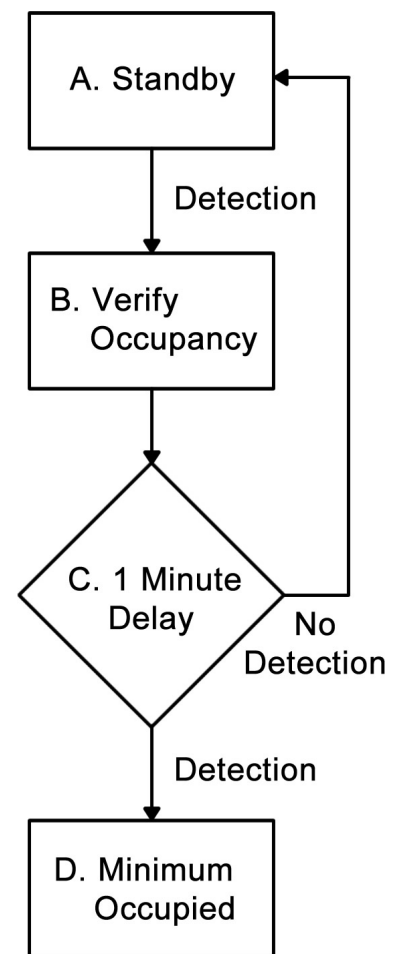
The 'Verify Occupancy' jumper is the time given for the sensor to verify true occupancy before activating the thermostat to Day (Occupied) mode. After the first trigger, any further detection during the verification process will NOT reset the timer. The valid settings for the motion sensor to verify occupancy are 0 sec, 10 sec, 30 sec, 1 min, 5 min, and 10 min. Select a time that is best for the operating environment.

### C. 1-Minute Delay

When the 'Verify Occupancy' process expires (based on the ON jumper setting), the sensor enters into a 1-minute delay count. If there is further sensor detection within the 1 minute delay, the relay will be triggered for Occupancy on the thermostat. Otherwise, if there is no further sensor detection within the 1 minute delay, the sensor will return to standby mode and NOT trigger Occupancy.

### D. Minimum Occupied Time (OFF)

The 'Minimum Occupied Time' jumper is the time the occupied signal will last without any additional sensor detection. Every detection during this period will reset the 'Minimum Occupied Time'. The valid settings for the minimum occupied time are 10 sec, 1 min, 5 min, 10 min, 20 min, and 30 min. Select a time that is best for the operating environment.



	A	B	C	D	E	F		
Verify (ON)	0 sec.	10 sec.	30 sec.	1 min.	5 min.	10 min.	ON	OFF
Min Occ (OFF)	10 sec.	1 min.	5 min.	10 min.	20 min.	30 min.	A	A
							B	B
							C	C
							D	D
							E	E
							F	F

# THERMOSTAT CONFIGURATION FOR OPTIMAL USE

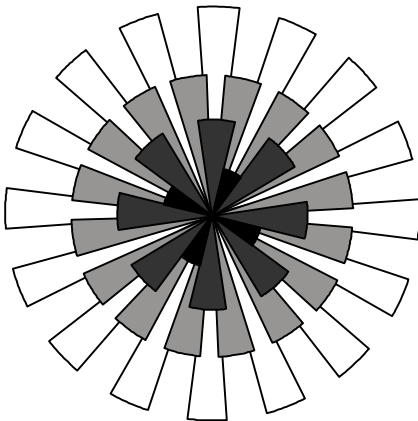
The NT-OSC is designed to be used with any Net/X™ thermostat with CLK1 /CLK2 terminals. The list of best practices below will help maximize the effectiveness of the NT-OSC when used with your thermostat.

- 1) Set the desired Cooling temperature for both Occupied (Day) and Unoccupied (Night) setpoints. This can be done manually, using the Net/X™ Command Center software, or NetX-Web™.
- 2) Set the desired Heating temperature for both Occupied (Day) and Unoccupied (Night) setpoints. This can be done manually, using the Net/X™ Command Center software, or NetX-Web™.
- 3) Engage the 'Keypad Lockout' using the DIP switch on the back of the thermostat. See separate thermostat instructions for the location of the DIP switch. It is important to engage the keypad lockout, otherwise it is possible for the Unoccupied (Night) setpoint to be changed to an ineffective temperature.
- 4) When creating schedules with either the Net/X™ Command Center software, or NetX-Web™, pay close attention to the Occupied (Day) and Unoccupied (Night) settings for each event, otherwise the thermostat may not set back as anticipated.

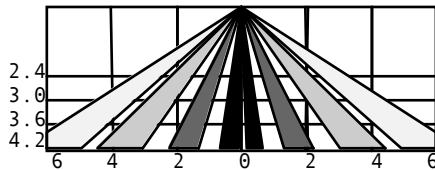
## DETECTION PATTERN

Top view

360°



Side view



Mount Height	7.9ft (2.4m)	9.8ft (3.0m)	11.8ft (3.6m)	13.7ft (4.2m)
Coverage (Dia.)	19.7ft (6.0m)	24.6ft (7.5m)	29.5ft (9.0m)	34.5ft (10.5m)

← Shown in Meters

## SPECIFICATIONS

Infrared sensor ..... Dual element  
Power supply .....  $24 \pm 2$  V AC/DC  
Detection range ..... Height x 2.5 at 25°C  
Output format ..... Form C, 30 VDC, 0.2A max.  
Current drain ..... 5 mA @ 24 VAC  
Mounting height ..... 7.9 ~ 13.7ft (2.4 ~ 4.2 m)  
Detectable speed ..... 0.1 ~ 3.0 m/sec.  
RFI immunity ..... Av. 20 V/m (10~1,000 MHz)  
Temperature ..... -4°F ~ 140°F (-20°C ~ 60°C)  
Humidity ..... 95% RH max.  
Dimensions ..... 4.3in (110mm) Dia. X 1.75in (44mm) Height



058-36308-001  
NT-OSC