



Catalog Number	
Notes	Type

PRODUCT OVERVIEW

The **nWSX/nWSX PDT** Series nLight wall switch occupancy sensor provides a simple control solution for a small room. Capable of detecting small motion up to 20 ft (6.10 m), this sensor is perfect for private offices, private restrooms, copy rooms, closets, or any small enclosed space. The **nWSX** uses Passive Infrared (PIR) detection while the **nWSX PDT** utilizes PIR/Microphonics Dual Technology (PDT). These stylish, low-profile sensors can be programmed locally (via the front push-buttons) or remotely (via the nLight SensorView software). The **nWSX/nWSX PDT** also includes an integrated photocell (disabled by default).

SENSOR OPERATION — The sensor detects changes in the infrared energy given off by occupants as they move within the field-of-view. When occupancy is detected, the integrated relay switches the line voltage loads on. Sensors with Passive Dual Technology (PDT) first see motion using Passive Infrared (PIR) and then engage Microphonics to hear sounds that indicate continued occupancy. This patented technology dynamically adapts a sensor to its environment by filtering out constant background noise and detecting only sounds generated by typical human activity. A factory-set internal time delay of 10 minutes keeps the sensor in the occupancy state during brief periods of inactivity. This time delay (also adjustable) is reset every time occupancy is re-detected. The sensor requires no field calibration or sensitivity adjustments.

nLIGHT OPERATION — The **nWSX/nWSX PDT** is a native nLight device, meaning it is individually addressable and communicates digitally over an nLight network to integrate with other nLight enabled devices, such as wall switches, power packs, and other sensors. Create a local nLight control zone by simply wiring together nLight devices using CAT-5e cabling. When an nLight zone is linked to an nLight Gateway (nGWY2) - either directly via an nLight network backbone (nBRG 8) or wirelessly via nWiFi - the zone becomes capable of remote status monitoring and control with nLight SensorView software.

OPTIONS

LOW TEMPERATURE / HIGH HUMIDITY OPTION (LT)

- Device electronics are coated for corrosion resistance - required for cold storage or humid areas
- Operates down to -40° F/C (-4° F / 20° C for PDT)

SPECIFICATIONS

PHYSICAL

SIZE: 2.74" H x 1.68" W x 1.63" D (6.96 cm x 4.27 cm x 4.14 cm)

WEIGHT: 5 oz

MOUNTING: Single Gang Switch Box

nLIGHT NETWORK CONNECTION: 2 RJ-45 Ports

ELECTRICAL

nLIGHT BUS POWER CONSUMPTION: <3 mA

RELAY LOAD:

800 W @ 120 VAC; 1200 W @ 277 VAC; 1500 W @ 347 VAC; (Fluorescent/Tungston)

360 W @ 120 VAC; 830 W @ 277 VAC; 1040 W @ 347 VAC; (LED)

1A @ 24 VAC/VDC

MINIMUM LOAD: None

MOTOR LOAD: 1/4 HP

FREQUENCY: 50/60 Hz

WIRES: 18 AWG (2), Interchangeable Hot & Load

ENVIRONMENTAL & OTHER

OPERATING TEMP

Standard: 14° to 85° F (-10° to 29° C)

LT Option (PIR): -40° to 85° F (-40° to 29° C); (PDT): -4° to 85° F (-20° to 29° C)

RELATIVE HUMIDITY:

Standard: 20 to 75% non-condensing

LT Option: 20 to 90% non-condensing (electronics coated for corrosion resistance)

SILICONE-FREE, ROHS COMPLIANT

TITLE 24

COMPLIES WITH NEC 725.55

ASSEMBLED in U.S.A.

5 YEAR WARRANTY



ORDERING LOGIC

Example: nWSX PDT WH

Series

nWSX Passive Infrared
nWSX PDT Dual Technology

Color

WH White **AL** Lt. Almond **GY** Gray
IV Ivory **BK** Black

Temp / Humidity

Blank Standard
LT Low Temp/ High Humidity

nWSX nWSX PDT



WALL SWITCH SENSOR • LINE VOLTAGE PASSIVE INFRARED (PIR) or DUAL TECH (PDT)

FEATURES

- 100% digital PIR detection, vandal resistant lens standard, includes wall plate (screwless sold separate)
- Push-button programmable, adjustable time delays, multiple operating modes
- Multiple **nWSX** sensors or WallPods can be used in 3 way (or greater) configurations w/o traveller wires
- Photocell standard (disabled by default) — prevents lights from initially turning on if there is sufficient daylight
- Green LED status indicator
- Broadcasts occupancy, photocell, and switch information over a local and/or global nLight channel
- Remotely upgradeable firmware

CONTROL MODES

A control zone with an **nWSX/nWSX PDT** can operate in several modes:

1. Auto On / Auto Off (i.e. Fully Automatic)
2. Manual On / Automatic Off (i.e. Semi-Automatic)
3. Auto On (initial state) to Override On (with expiration timer)
4. Manual On (initial state) to Fully Automatic
5. Predictive Off Switch (returns zone to auto-on unless person remains in room after an off switch press)
6. Manual On (initial state) to Override On (with expiration timer)

Additionally, an **nWSX/nWSX PDT** can be set to function in a **Multi-Level Operating Mode (MLO)** which enables the user to sequence through multiple on/off (or preset dimming level) lighting states using just the unit's single pushbutton. MLO modes are ideal for bi-level applications and eliminate user confusion created when wall stations have multiple buttons. In addition to the **nWSX/nWSX PDT**, a device with a second relay (or a dimming output for some modes) must be present within the local zone. Several different transition sequences are available in order to comply with energy codes or user preference. Depending on the sequence selected and initial lighting state, every subsequent button press steps through states according to below tables (repeating after All Off state).

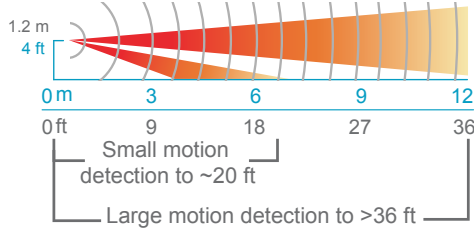
MLO Mode		State of load after each pushbutton press			
		1st Press	2nd Press	3rd Press	4th Press
2-State (Alternating)	Load A	On	Off	Off	-
	Load B	Off	On	Off	-
2-State (Both On, A First)	Load A	On	On	Off	-
	Load B	Off	On	Off	-
2-State (Both On, B First)	Load A	Off	On	Off	-
	Load B	On	On	Off	-
3-State	Load A	On	Off	On	Off
	Load B	Off	On	On	Off
A and B On *	Load A	On	Off	-	-
	Load B	On	Off	-	-
A On Only *	Load A	On	Off	-	-
	Load B	Off	Off	-	-
A and B On & Dim High *	Load A	High	Off	-	-
	Load B	High	Off	-	-
Dim Low / High	Load A	Low	High	Off	-
Dim Low / High	Load A	High	Low	Off	-

* NOTE: Modes for use only when Auto-On state of Load A & B is different than first MLO state

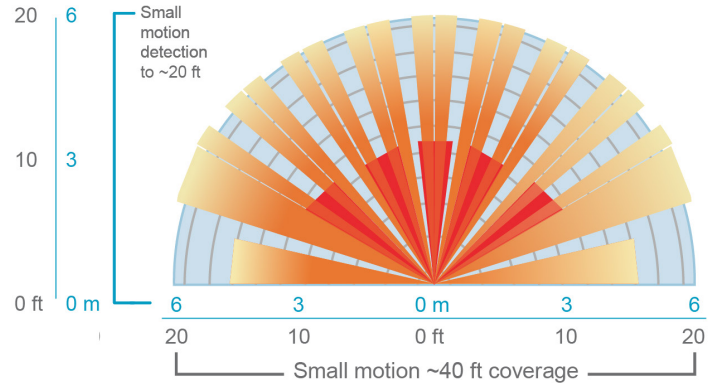
COVERAGE PATTERN

- Small Motion (e.g. hand movements) detection up to 20 ft (6.10 m)
- Large motion (e.g. walking) detection greater than 36 ft (10.97 m)
- Wall to Wall Coverage
- Passive Dual Technology (Microphonics) provides overlapping detection of human activity over the complete PIR coverage area. Advanced filtering is utilized to prevent non-occupant noises from keeping the lights on.

SIDE VIEW



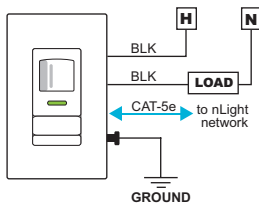
TOP VIEW



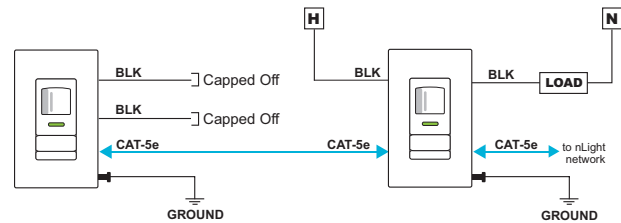
TYPICAL WIRING DIAGRAMS (DO NOT WIRE HOT)

Sensor power is provided via the CAT-5e connection to an nLight power pack/supply, nLight-enabled digital luminaire, or nLight Bridge.

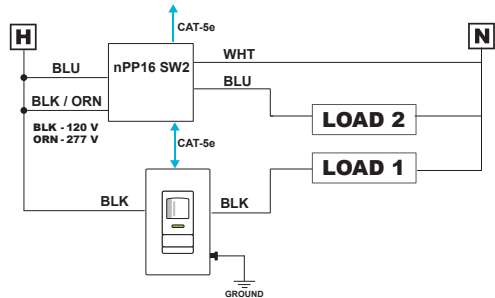
SINGLE LOAD SWITCHING



3-WAY SWITCHING W/ WALL SWITCH SENSORS ONLY



BI-LEVEL CONTROL USING nWSX IN MULTI-LEVEL (MLO) MODE



NOTES:

- For bi-level operation the nWSX/nWSX PDT must be programmed to Multi-Level Operating Mode (MLO) via pushbutton or nLight SensorView software
- Loads 1 & 2 may be replaced with a step ballast
- Any nLight relay pack (such as an nPP16) may be used, however, it must be programmed to follow switch tracking channel 2

INSTALLATION

- Mount sensor using holes that align with standard single gang switch box
- Connect unit's black 18 AWG wires to line voltage feed and load
- Access RJ-45 ports by sliding plastic guard up
- Insert CAT-5e cable(s) into port(s), T568B pin/pair convention recommended
- Slide guard back onto metal strap
- Using CAT-5e cables, interconnect unit with other nLight devices in zone (ports are interchangeable)
- Once power is received via the CAT-5e connection, all devices in the zone will automatically begin functioning together according to respective device defaults

ATTENTION! Only use non-booted CAT-5e cables.

PROGRAMMING

Refer to included instruction card for default settings and directions on programming the wall switch sensor via the push-button. All settings can also be programmed via SensorView software.



WARRANTY

5-year limited warranty. Complete warranty terms located at www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

Sheet#: TN-409-02