Section D
Occupancy Sensors

Index

H-MOSS® Occupancy Sensors
Adaptive Technology Occupancy Sensors
Introduction

Adaptive Technology sensing technology is a Hubbell breakthrough that not only delivers benefits for those who occupy offices, conference rooms and other interior spaces, but significant advantages for architects, specifiers, contractors and building owners as well. That's because Adaptive Technology sensors use microprocessor-based technology to solve the three major problems of conventional occupancy sensors–false-ons, false-offs and the need for continuous manual adjustment.

Switching lights off accidentally, even when a space is occupied, is no longer a nuisance with Hubbell Adaptive Technology sensors. Likewise, the false-ons caused by HVAC systems and

other factors are a thing of the past.

Adaptive Technology Sensors Head a Complete Family of Hubbell Occupancy Sensors.
Hubbell offers a full line of occupancy sensors that incorporates all three sensing technologies: Dual Technology, Passive Infrared (PIR) and Ultrasonic. Adaptive Technology is offered on Dual Technology, PIR and Ultrasonic models. For non-critical areas–for instance, seldom-used spaces such as storage closets–Hubbell also offers PIR wall switches without Adaptive Technology.

Hubbell occupancy sensors are available in wall and ceiling-mount models as well as hallway

and outdoor sensors. The product family also includes control units, adapter plates and all other accessories and peripheral devices.
Hubbell occupancy sensors featuring Adaptive Technology sensing technology: They're assuring a bright future for all types of buildings, including yours.
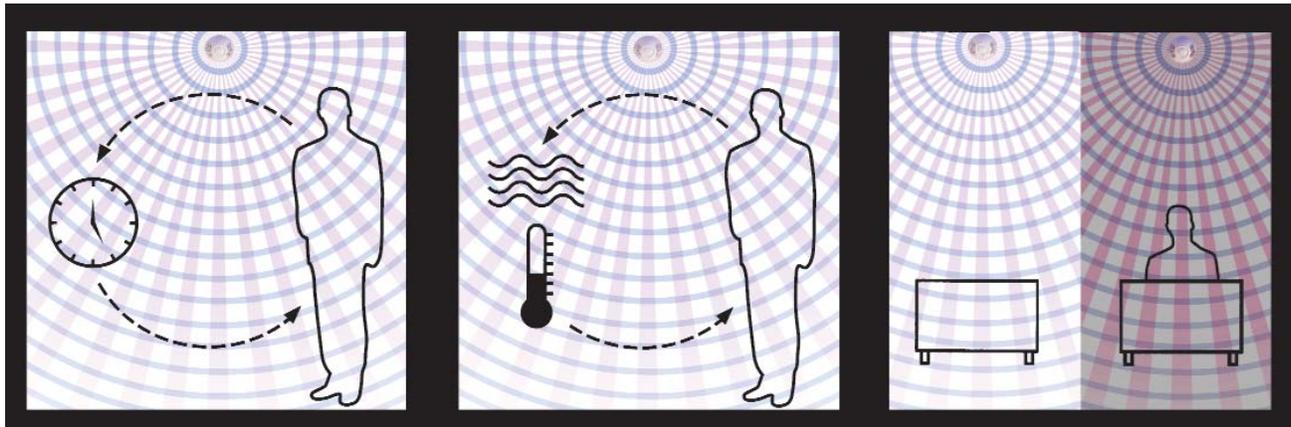
Adaptive Technology Sensors Automatically Adjust Time Delays
Adaptive Technology sensors automatically adjust the time delay setting found in all occupancy sensors based on the activity level of the area's occupant or occupants. It literally "fingerprints" movements, motion patterns and occupancy habits by recording them in the microprocessor's memory. This prevents "false-offs" that result when a sensor's time delay is too short for the occupant's activity level.

Adaptive Technology Sensors Automatically Adjust Sensitivity
Not only can seasonal temperature changes cause false-offs, changes in office layout, including arrangement and density of furniture and the number of occupants, can cause them as well. Conversely false-ons are caused by air currents created by HVAC systems and hallway traffic outside an area controlled by a nonadaptive sensor. Adaptive Technology sensors prevent these problems by automatically adjusting their sensitivity.

Adaptive Technology Sensors Put an End to False-Offs
Many people have had the experience: They're sitting in an office, not moving much and, suddenly, the lights go off. They wave their arms to get them back on. The same problem may occur when a large room is occupied in off-peak hours. With an Adaptive Technology sensor, if motion is detected within 15 seconds of a lights-off command, it is logged as a major error by the microprocessor. A number of corrections are initiated automatically by the sensor to adapt to the areas usage pattern.

H-MOSS® Occupancy Sensors
## Adaptive Dual Technology Wall Switches
Features and Benefits

Ivory and white models available to match office decor.

Dual Technology sensing combines the individual advantages of passive infrared and ultrasonic detection.

Available in standard or hard lens versions for high abuse applications.

Digital pushbutton ambient light level control located behind wall plate allows for quick, accurate setting of ambient light threshold.
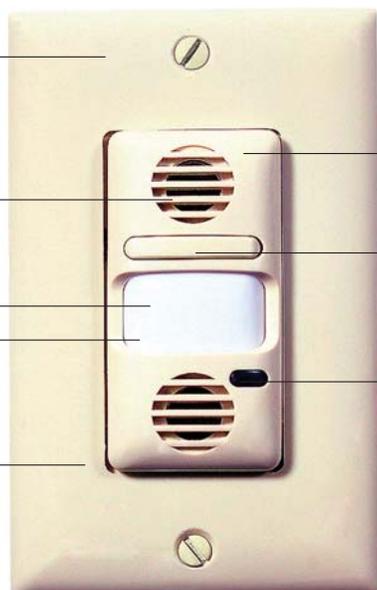
Designed for use on 120 or 277V AC circuits.

Override switch allows lights to be manually turned off.

Bi-colored LED. Red indicates passive infrared detection. Green indicates ultrasonic detection.

Adaptive Passive Infrared Wall Switches
Features and Benefits

Ivory and white models available to match office decor.

High density 1200 square foot coverage.

Two-color LED provides instant feedback of sensor status.

Front press switch allows the occupant to switch the sensor from automatic operation to momentary off mode. The sensor returns to automatic operation mode 30 minutes after the last detected motion.

Designed for use on 120 or 277V AC circuits.

Heavy-duty relay controls up 1800 watts at 120V AC or 4155 watts at 277V AC.

Soft tone alert provides aud indication of sensor time-ou 12 seconds prior to switchin lights out.

Digital pushbutton ambient light level control located beh cover allows for quick, accura setting of ambient light thresh

H-MOSS® Occupancy Sensors
Adaptive Technology Wall Switches
Dual Technology and Ultrasonic

**ATD1277I, ATD1277W
ATD1277HI, ATD1277HW**

Hubbell ATD series wall switch sensors incorporate both ultrasonic and passive infrared detection technologies. These dual technology sensors provide the most reliable means of automatic lighting control. The product offering includes standard and hard lens versions for high abuse applications. Hubbell dual technology wall switch sensors are the best choice for enclosed office applications.

Description	Catalog Numbers
Adaptive Technology, dual (passive infrared and ultrasonic-40kHz), wall switch, ivory, 120/277V AC, 25 to 600 watts at 120V AC, 60 to 1200 watts at 277V AC, 1000 sq. ft. coverage, with photocell.	**ATD1277I**
Same as above except white.	**ATD1277W**
Adaptive Technology, dual (passive infrared and ultrasonic-40kHz), wall switch, hard lens, ivory, 120/277V AC, 25 to 600 watts at 120V AC, 60 to 1200 watts at 277V AC, 300 sq. ft. coverage, with photocell.	**ATD1277HI**
Same as above except white.	**ATD1277HW**

ATU1277I, ATU1277W

Hubbell ATU series wall switch sensors detect occupancy based on an ultrasonic signal. Since these sensors do not require line of sight to detect occupancy, they work particularly well in areas with obstructions such as storage areas and restrooms. The manual override switch is eliminated on the restroom model to prevent the light from being turned off.

Description	Catalog Numbers
Adaptive Technology, ultrasonic- 40 kHz, wall switch, ivory, 120/277V AC, 25 to 600 watts at 120V AC, 60 to 1200 watts at 277V AC, 1000 sq. ft. coverage.	**ATU1277I**
Same as above except white.	**ATU1277W**
Adaptive Technology, ultrasonic- 40 kHz, wall switch for restroom use, ivory, 120/277V AC, 25 to 600 watts at 120V AC, 60 to 1200 watts at 277V AC, 1000 sq. ft. coverage.	**ATU1277RRI**
Same as above except white.	**ATU1277RRW**

Notes: Nylon wall plate supplied with each sensor.
ATD and ATU series wall switch sensors are gangable.
See section K for additional wall plates.
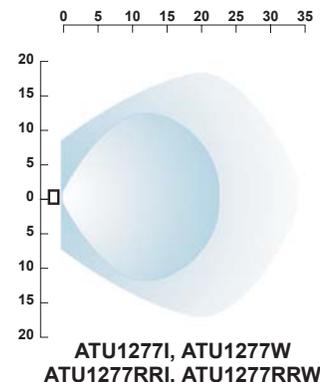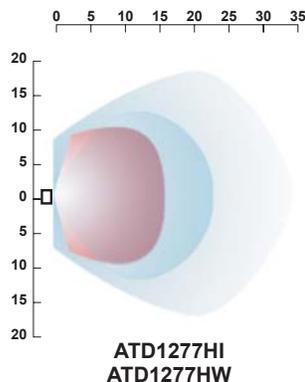*See page D-14 for technical data and wiring schematics.*

ATU1277RRI, ATU1277RRW

Coverage Patterns ● **Passive Infrared** ● **Ultrasonic**

**ATD1277I
ATD1277W**

**ATD1277HI
ATD1277HW**

**ATU1277I, ATU1277W
ATU1277RRI, ATU1277RRW**

H-MOSS® Occupancy Sensors
Adaptive Technology Wall Switches
Passive Infrared

Hubbell AT1277 and ATP1277 series wall switch occupancy sensors utilize passive infrared technology to determine occupancy. These sensors require line of sight to detect body heat in motion. Wall switch occupancy sensors are best suited for small enclosed spaces such as offices, conference rooms, storage closets, small lunch rooms and copy rooms. Hubbell's complete offering of wall switch sensors enables you to choose the right product for these various applications.

Hubbell AT1277 series wall switches feature a heavy duty relay and zero crossing circuitry to provide the ability to switch up to 15A lighting loads. In addition, they incorporate Adaptive Technology for performance critical applications such as enclosed offices and conference rooms. Adaptive Technology sensors automatically adjust the time delay setting to fit the application. This prevents false-offs that result when a sensor's time delay is set too short for the activity level of the occupant. Product features and benefits are provided on page D-3.

AT1277I, AT1277W

Description	Catalog Numbers
Adaptive Technology, passive infrared, wall switch, ivory, 120/277V AC, 1800 watts at 120V AC, 4155 watts at 277V AC, 1200 sq. ft. coverage, with photocell.	**AT1277I**
Same as above except white.	**AT1277W**

Hubbell ATP series Adaptive Technology wall switch sensors are dual voltage rated for use on 120V or 277V AC applications. These sensors feature a pushbutton ambient light level control that allows for quick, accurate setting of the ambient light level threshold.

Description	Catalog Numbers
Adaptive Technology, passive infrared, wall switch, ivory, 120/277V AC, 800 watts at 120V AC, 1200 watts at 277V AC, 1200 sq. ft. coverage, with photocell.	**ATP1277I**
Same as above except white.	**ATP1277W**
Same as above except gray.	**ATP1277GY**

**ATP1277I, ATP1277W
ATP1277GY**

Notes: Nylon wall plate supplied with each sensor.
AT and ATP series wall switches are gangable.
See section K for additional wall plates.
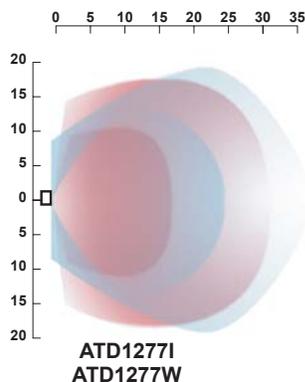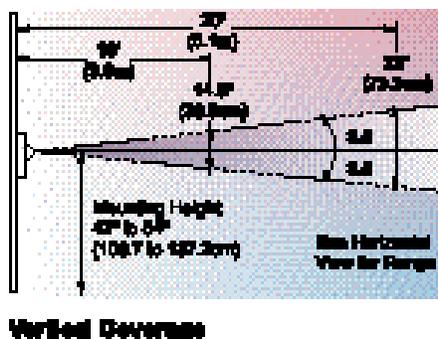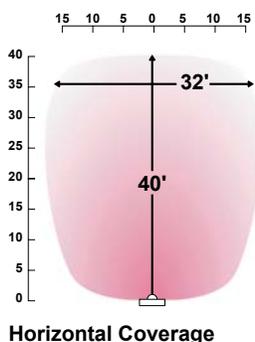*See page D-15 for technical data and wiring schematics.*

Coverage Patterns ● **Passive Infrared**

Horizontal Coverage

Vertical Coverage

H-MOSS® Occupancy Sensors
Wall Switches
Passive Infrared

WS1277I, WS1277W

Hubbell WS1277 series wall switch sensors include a manual adjustment that allows the time delay to be set from 20 seconds to 30 minutes. This adjustment is concealed behind a front cover to prevent tampering. These sensors also feature a pushbutton ambient light level control that allows for quick, accurate setting of the ambient light level threshold.

Description	Catalog Numbers
Passive infrared, wall switch, ivory, 120/277V AC, 800 watts at 120V AC, 1200 watts at 277V AC, 1200 sq. ft. coverage, with photocell.	**WS1277I**
Same as above except white.	**WS1277W**

Hubbell WS series wall switch sensors include a manual adjustment that allows the time delay to be set from 30 seconds to 30 minutes. These sensors provide the most economical means of automatic lighting control.

Description	Catalog Numbers
Passive infrared, wall switch, ivory, 120V AC, 800 watts incandescent, 1000 watts fluorescent, 900 sq. ft. coverage.	**WS120I**
Same as above except white.	**WS120W**
Passive infrared, wall switch, ivory, 277V AC, 1800 watts fluorescent, 900 sq. ft. coverage.	**WS277I**
Same as above except white.	**WS277W**

WS120I, WS120W WS277I, WS277W

Hubbell WS1277W2 passive infrared wall switch sensor is a double pole, single throw wall switch with two separate relays. This wall switch can be used for dual level switching from one or two circuits.

Description	Catalog Numbers
Passive infrared, wall switch, ivory, double pole, white 120/277V AC, 600 watts per circuit at 120V AC incandescent, 1000 watts per circuit at 120V AC fluorescent, 1800 watts at 277V AC fluorescent, 1000 sq. ft. coverage.	**WS1277W2**
Wall switch adapter plate for Hubbell WS1277W2. Two-gang wall plate allows one WS1277W2 to mount to a two gang box.	**WSAP**

Notes: Nylon wall plate supplied with each sensor except WS1277W2 (not required in 1-gang applications).
All wall switches are gangable except WS1277W2.
See section K for additional wall plates.
See pages D-15-16 for technical data and wiring schematics.

WS1277W2

Coverage Patterns   **Passive Infrared**
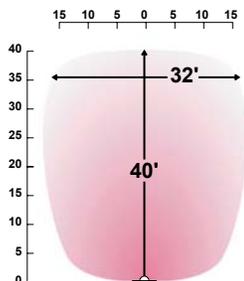
WS1277I, WS1277W   **WS120, WS277 Series**   **WS1277W2**

Wall Switches
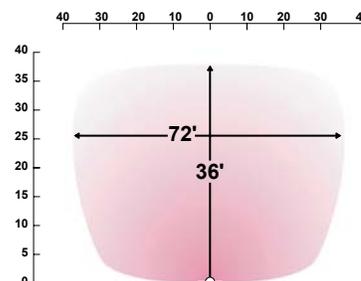
H-MOSS® Occupancy Sensors
Adaptive Technology Ceiling Sensors
Features and Benefits

LED sensing indicators - red for PIR, green for ultrasonic.

Isolated relay included on sensors with "RP" suffix for interfacing sensor to auxiliary systems such as HVAC.

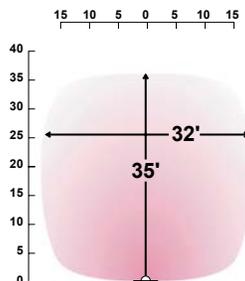Ultrasonic transmitter and receiver for coverage in each direction for superior sensing of motion.

Off-white ABS enclosure blends with ceiling tile.

Ambient light level control featured on sensors with "RP" suffix to prevent unnecessary lighting usage when natural light is sufficient.

Dual element passive-infrared detector and lens sense heat in motion.

Adaptive Technology Wall Mount Sensors
Features and Benefits

Swivel mounting bracket allows sensor to be easily adjusted in ceiling or wall mount applications.

Dual technology sensing combines the individual advantages of passive infrared and ultrasonic detection.

Green LED indicates ultrasonic detection.

110 degree coverage provides complete room sensing when corner mounted.

Ambient light level control featured on sensors with "RP" suffix to prevent unnecessary lighting usage when natural light is sufficient.

Red LED indicates passive infrared detection.

H-MOSS® Occupancy Sensors
Adaptive Technology Ceiling Sensors
Dual (Ultrasonic and Passive Infrared)

Hubbell ATD series sensors incorporate both ultrasonic and passive infrared detection technologies. These dual technology sensors provide the most reliable means of automatic lighting control. Common applications include open office spaces, conference rooms, classrooms and executive offices where flawless performance is necessary. An isolated relay and photocell are included on models with "RP" suffix. A CU series control unit is required for use with ATD series sensors.

ATD2000CRP, ATD2000C

ATD500CRP, ATD500C
ATD1000CRP, ATD1000C

Description	Catalog Numbers
Adaptive Technology, dual (passive infrared & ultrasonic-32kHz), 2000 sq. ft. coverage, with isolated relay and photocell.	**ATD2000CRP**
Adaptive Technology, dual (passive infrared & ultrasonic-32kHz), 2000 sq. ft. coverage.	**ATD2000C**
Adaptive Technology, dual (passive infrared & ultrasonic-32kHz), 1000 sq. ft. coverage, with isolated relay and photocell.	**ATD1000CRP**
Adaptive Technology, dual (passive infrared & ultrasonic-32kHz), 1000 sq. ft. coverage.	**ATD1000C**
Adaptive Technology, dual (passive infrared & ultrasonic-40kHz), 500 sq. ft. coverage, with isolated relay and photocell.	**ATD500CRP**
Adaptive Technology, dual (passive infrared & ultrasonic-40kHz), 500 sq. ft. coverage.	**ATD500C**

Notes: A CU series control unit is required for use with ATP series ceiling sensors.
See page D-12 for control units and Add-A-Relay.
See pages D-17–20 for technical data and wiring schematics.

Coverage Patterns   ● **Passive Infrared**   ● **Ultrasonic**
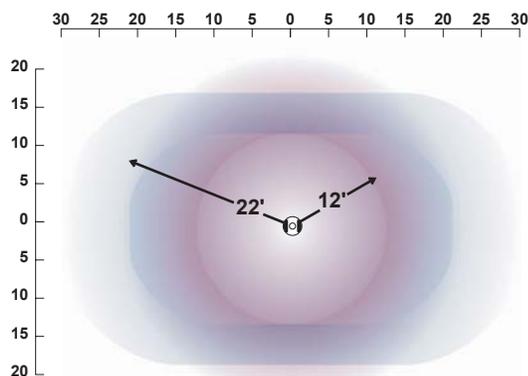
ATD2000CRP, ATD2000C
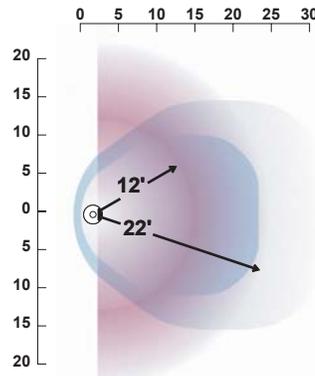
ATD1000CRP, ATD1000C
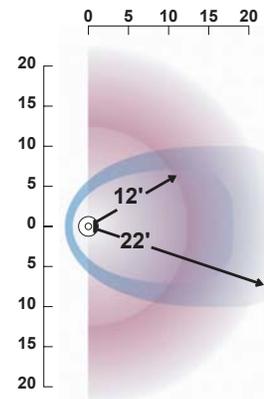
ATD500CRP, ATD500C

H-MOSS® Occupancy Sensors
Adaptive Technology Ceiling Sensors
Ultrasonic

Hubbell ATU series sensors detect occupancy based on an ultrasonic signal. Since these sensors do not require line of sight to detect occupancy, they work particularly well in areas with obstructions such as restrooms and storage rooms. Another common application is hallways. An isolated relay and photocell are included on models with "RP" suffix. A CU series control unit is required for use with ATU series sensors

Description	Catalog Numbers
Adaptive Technology, ultrasonic-32kHz, 2000 sq. ft. coverage, with isolated relay and photocell.	ATU2000CRP
Adaptive Technology, ultrasonic-32kHz, 2000 sq. ft. coverage.	ATU2000C
Adaptive Technology, ultrasonic-32kHz, 1000 sq. ft. coverage, with isolated relay and photocell.	ATU1000CRP
Adaptive Technology, ultrasonic-32kHz, 1000 sq. ft. coverage.	ATU1000C
Adaptive Technology, ultrasonic-40kHz, 500 sq. ft. coverage, with isolated relay and photocell.	ATU500CRP
Adaptive Technology, ultrasonic-40kHz, 500 sq. ft. coverage.	ATU500C

Notes: A CU series control unit is required for use with ATU series ceiling sensors.
See page D-12 for control units and Add-A-Relay.
*See pages D-17–20 for technical data and wiring schematics.*

ATU2000CRP, ATU2000C

ATU500CRP, ATU500C
ATU1000CRP, ATU1000C

Coverage Patterns   **Ultrasonic**

ATU2000CRP, ATU2000C
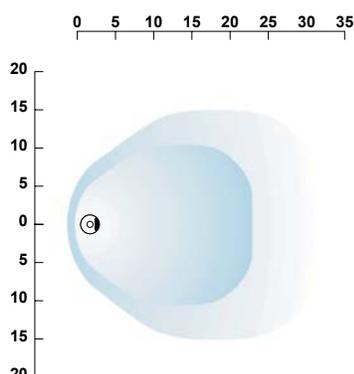
ATU1000CRP, ATU1000C

ATU500CRP, ATU500C

Dimensions in Inches (mm)   www.hubbell-wiring.com   **HUBBELL** Wiring Device-Kellems   D-9
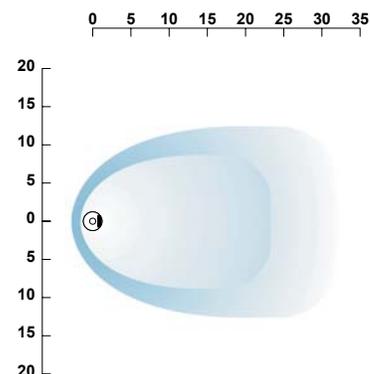
H-MOSS® Occupancy Sensors
Adaptive Technology Ceiling Sensors
Passive Infrared

Hubbell ATP series ceiling sensors detect occupancy based on a passive infrared signal. They are available with a wide view lens (ATP 1500C series) for large areas with multiple occupants and a high density lens (ATP600C series) for areas with a single occupant where small motion detection is desired. Each sensor includes an infrared masking kit which can be used to reduce the coverage area. Models with an "RP" suffix include an isolated relay and photocell. A CU series control unit is required for use with ATP series ceiling sensors.

ATP600CRP, ATP600C
ATP1500CRP, ATP1500C

Description	Catalog Numbers
Adaptive Technology, passive infrared, wide view lens, 1500 sq. ft. coverage, with isolated relay and photocell.	**ATP1500CRP**
Adaptive Technology, passive infrared, wide view lens, 1500 sq. ft. coverage.	**ATP1500C**
Adaptive Technology, passive infrared, wide view lens, 600 sq. ft. coverage, with isolated relay and photocell.	**ATP600CRP**
Adaptive Technology, passive infrared, wide view lens, 600 sq. ft. coverage.	**ATP600C**

Notes: A CU series control unit is required for use with ATP series ceiling sensors.
See page D-12 for control units and Add-A-Relay.
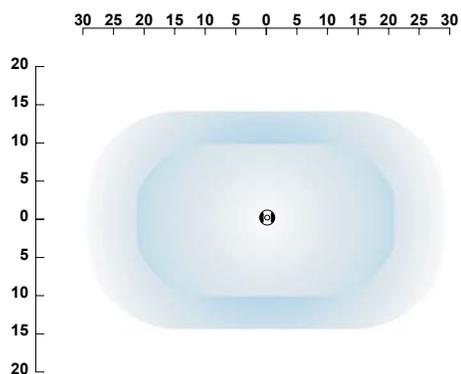*See pages D-17–20 for technical data and wiring schematics.*

Coverage Patterns   **Passive Infrared**

22'   **12'**

ATP1500CRP, ATP1500C

12'   **6'.5"**

ATP600CRP, ATP600C

HUBBELL® Wiring Device-Kellems   www.hubbell-wiring.com   *Dimensions in Inches (mm)*

H-MOSS® Occupancy Sensors
Adaptive Technology Wall Mount Sensors
Dual (Ultrasonic and Passive Infrared) and Passive Infrared

The Hubbell Adaptive Technology wall mount sensor offering includes dual technology and passive infrared sensors with a 1600 square foot coverage pattern as well as passive infrared sensors for high bay applications in warehouse aisle ways. The wall mount sensors include a swivel mounting bracket that allows the sensor to be ceiling or wall mounted. This makes them suitable for applications with ceiling heights over 12 ft. The ceiling bracket is also designed to accept surface raceway for hard ceiling applications. Models with "RP" suffix include an isolated relay and photocell. A CU series control unit is required for use with ATD and ATP series wall mount sensors.
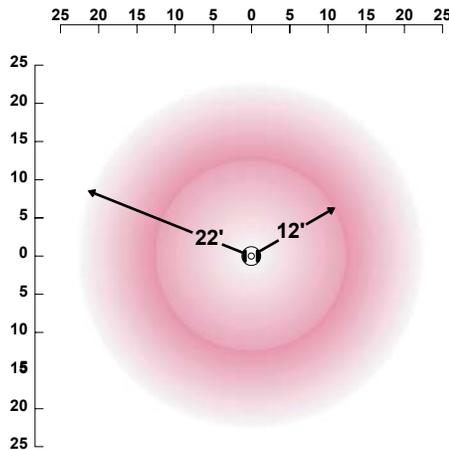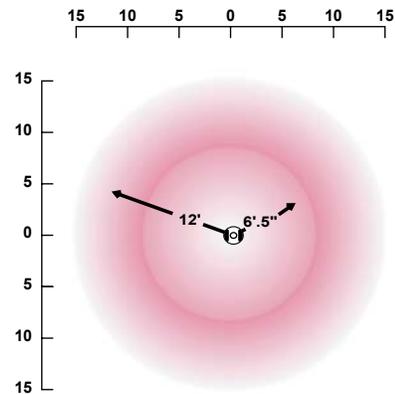
Dual Technology

Description	Catalog Numbers
Adaptive Technology, dual (passive infrared & ultrasonic-32kHz), 1600 sq. ft. coverage, with isolated relay and photocell.	ATD1600WRP
Adaptive Technology, dual (passive infrared & ultrasonic-32kHz), 1600 sq. ft. coverage.	ATD1600W

Passive Infrared

Description	Catalog Numbers
Adaptive Technology, passive infrared, 1600 sq. ft. coverage, with isolated relay and photocell.	ATP1600WRP
Adaptive Technology, passive infrared, 1600 sq. ft. coverage.	ATP1600W
Adaptive Technology, passive infrared, 120 linear ft. coverage for aisle ways in high bay applications, with isolated relay and photocell.	ATP120HBRP
Adaptive Technology, passive infrared, 120 linear ft. coverage for aisle ways in high bay applications.	ATP120HB

Notes: A CU series control unit is required for use with ATD & ATP series sensors.
See page D-12 for control units and Add-A-Relay.
See pages D-17–20 for technical data and wiring schematics.

ATD1600W, ATD1600WRP

ATP1600W, ATP1600WRP
ATP120HB, ATP120HBRP

Coverage Patterns — Passive Infrared — Ultrasonic
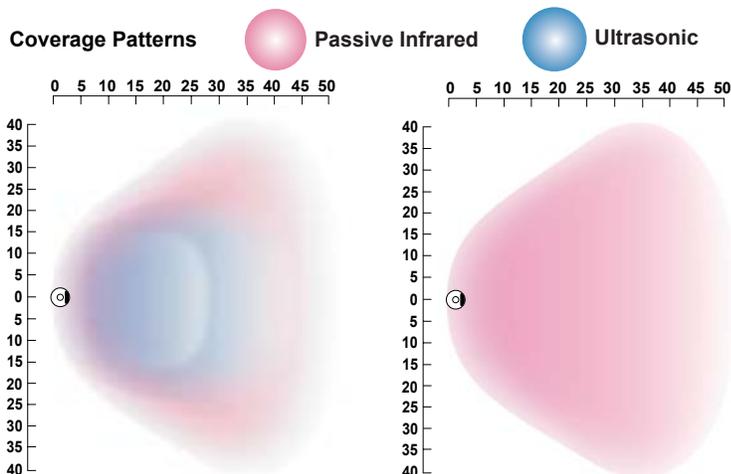
ATD1600WRP, ATD1600W

ATP1600WRP, ATP1600W

Side View

Top View

ATP120HBRP, ATP120HB

Dimensions in Inches (mm)

www.hubbell-wiring.com · HUBBELL Wiring Device-Kellems · D-11

H-MOSS® Occupancy Sensors
Control Units and Add-A-Relay

**CU120A, CU230A
CU277A, CU347A**

Control Units

Hubbell CU series control units are required for use with Hubbell ATD, ATU and ATP series ceiling and wall mount sensors. The control units provide a 24V DC power supply for 1 to 3 sensors or sensor/Add-A-Relay combinations and contain an internal relay for the control of an external lighting load.

Description	Catalog Numbers
Control Unit, 120V AC, 60 Hz, for use with ATD, ATU and ATP series ceiling and wall mount sensors.	**CU120A**
Control Unit, 230V AC, 50/60 Hz, for use with ATD, ATU and ATP series ceiling and wall mount sensors.	**CU230A**
Control Unit, 277V AC, 60 Hz, for use with ATD, ATU and ATP series ceiling and wall mount sensors.	**CU277A**
Control Unit, 347V AC, 60 Hz, for use with ATD, ATU and ATP series ceiling and wall mount sensors.	**CU347A**

Add-A-Relay

Hubbell AAR Add-A-Relay is designed for use with Hubbell CU series control units and Hubbell ATD, ATU and ATP series ceiling and wall mount sensors. The AAR contains an internal relay for control of an external lighting load. The AAR requires a 24V DC power supply from the Hubbell CU series control unit. The AAR is typically used when:

1. It is desired to switch more than one circuit when occupancy is sensed.
2. The lighting load exceeds the maximum rating of the control unit.

Description	Catalog Number
Add-A-Relay, for use with CU series control units.	**AAR**

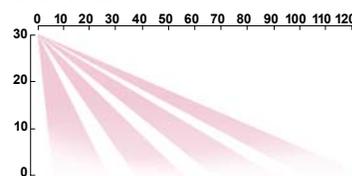*Note: See pages D-18-20 for technical data and wiring schematics.*

AAR

HUBBELL *Wiring Device-Kellems*   www.hubbell-wiring.com   *Dimensions in Inches (mm)*

H-MOSS® Occupancy Sensors
MOTION ALERT Outdoor Sensor
Passive Infrared

Hubbell OS270BZ is a passive infrared sensor specifically designed for outdoor applications. The OS270BZ features a rugged metallic housing with an integral lens guard for abuse resistance, a conformal coated printed circuit board to prevent premature failure caused by moisture ingress and a durable multi-segmented lens for improved coverage and reliability. The OS270BZ provides a 270 degree coverage pattern with a range of up to 100 feet. Hubbell OS270BZ offers energy savings, convenience and security in outdoor applications.

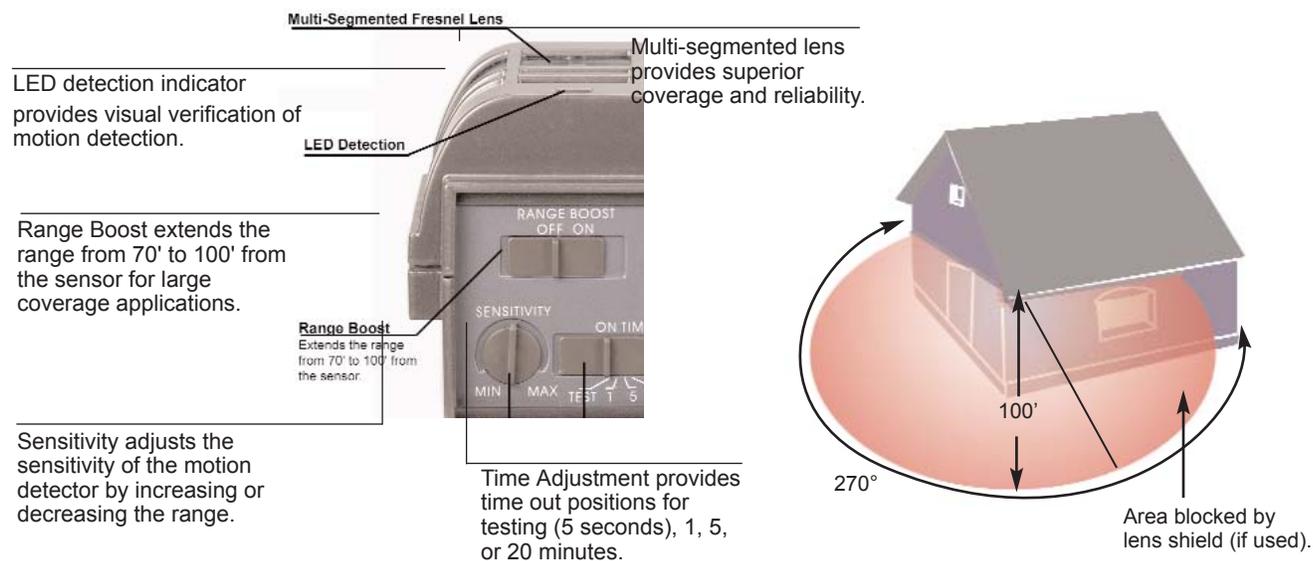| Description	Catalog Number
Outdoor sensor, passive infrared, bronze, 120V AC, 1000 watts, incandescent, with photocell.	**OS270BZ**

Operating Characteristics

Time Out	Test (5 seconds), 1, 5 or 20 minutes.
Horizontal field of view	270 degrees.
Vertical field of view	3 levels of vertical fields.
Recommended mounting height	6-12 feet above ground.

Control Adjustments

The Hubbell OS270BZ motion detector has adjustments for time, sensitivity and range. The controls are located in a concealed control compartment on the bottom of the motion detector and are illustrated below.

OS270BZ

LED detection indicator provides visual verification of motion detection.

Multi-Segmented Fresnel Lens

Multi-segmented lens provides superior coverage and reliability.

LED Detection

RANGE BOOST OFF ON

Range Boost extends the range from 70' to 100' from the sensor for large coverage applications.

Range Boost
Extends the range from 70' to 100' from the sensor.

SENSITIVITY

ON TIME

MIN MAX TEST 1 5

Sensitivity adjusts the sensitivity of the motion detector by increasing or decreasing the range.

Time Adjustment provides time out positions for testing (5 seconds), 1, 5, or 20 minutes.

100'

270°

Area blocked by lens shield (if used).

H-MOSS® Occupancy Sensors
Specifications and Wiring Schematics
Dual Technology and Ultrasonic Wall Switches

Adaptive Dual Technology Wall Switch
ATD1277 Series Wall Switches

Electrical	ATD1277 Series
Power Supply	120/277V AC, 60 Hz.
Load Capacity	
120V AC	25 to 600 watts.
277V AC	60 to 1200 watts.
Agency Approvals	UL Listed, cUL Certified.

Physical	
Housing	High impact plastic.
Lens	Polyethylene.
Dimensions	Face 2.60"H x 1.28"W, 0.58"D (from wall out).
Mounting Height	42 to 54 inches above floor.

Environmental	
Operating	32° F to 104° F (0° C to 40° C) with rate of change not exceeding 20° F (11° C) per hour; 0% to 95% non-condensing relative humidity.
Storage	-20° F to 150° F (-29° C to 65° C); 0% to 95% non-condensing relative humidity.

Controls	
Time Delay	Digital, adaptive 4-32 mins.
Ambient Light	Digital pushbutton, 30 to 300 foot candles.
Front Press Switch	Auto/Off.
Sensitivity	Adaptive 0% to 100%.
Service Switch	Air gap off.

Sensing Indicator	
Passive Infrared	Red LED.
Ultrasonic	Green LED.

Adaptive Technology Ultrasonic Wall Switch
ATU1277 Series Wall Switches

Electrical	ATU1277 Series
Power Supply	120/277V AC, 60 Hz.
Load Capacity	
120V AC	25 to 600 watts.
277V AC	25 to 1200 watts.
Agency Approvals	UL Listed, cUL Certified.

Physical	
Housing	High impact plastic
Dimensions	Face 2.60"H x 1.28"W, 0.58"D (from wall out).
Mounting Height	42 to 54 inches above floor.

Environmental	
Operating	32° F to 104° F (0° C to 40° C) with rate of change not exceeding 20° F (11° C) per hour; 0% to 95% non-condensing relative humidity.
Storage	-20° F to 150° F (-29° C to 65° C); 0% to 95% non-condensing relative humidity.

Controls	
Time Delay	Digital, adaptive 4-32 mins. (Restroom Model) 20 min. default.
Front Press Switch	Auto/Off except Restroom Model.
Sensitivity	Adaptive 0% to 100%.
Service Switch	Air gap off.

Sensing Indicator	
Ultrasonic	Green LED.

Wiring Schematic
ATD1277 and ATU1277 Series
Wall Switch Sensors

Low Wattage Applications (yellow wire):
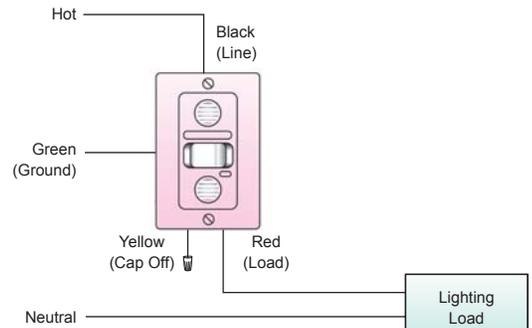**25-240 Watts at 120V AC**
60-550 Watts at 277V AC

Normal Wiring
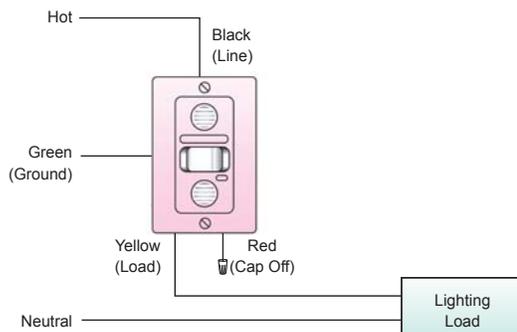
Hot — Black (Line)
Green (Ground)
Yellow (Load) — Red (Cap Off)
Neutral — Lighting Load

Wiring Schematic
ATD1277 and ATU1277 Series
Wall Switch Sensors

Low Wattage Applications (red wire):
160-600 Watts at 120V AC
370-1200 Watts at 277V AC

Normal Wiring

Hot — Black (Line)
Green (Ground)
Yellow (Cap Off) — Red (Load)
Neutral — Lighting Load

HUBBELL® **Wiring Device-Kellems** www.hubbell-wiring.com   *Dimensions in Inches (mm)*
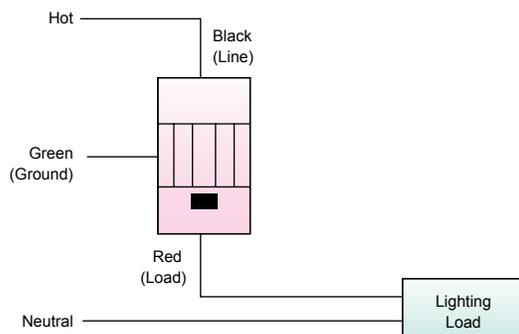
H-MOSS® Occupancy Sensors
Specifications
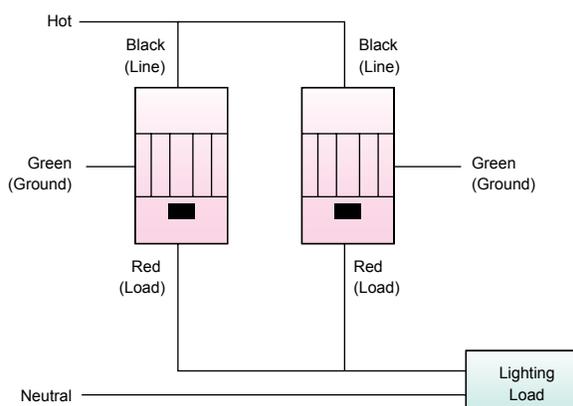*Passive Infrared Wall Switches*

Adaptive Technology PIR Wall Switch
AT1277 Series Wall Switches

Electrical	AT1277 Series
Power Supply	120/277V AC, 50/60 Hz.
Load Capacity	
120V AC	0 to 1800 watts.
277V AC	0 to 4155 watts.
Agency Approvals	UL Listed, cUL Certified.

Physical	
Housing	Flame retardant UL 94 V-0 ABS
Lens	Polyethylene.
Dimensions	Face 2.61" H x 1.29" W, 0.73" D (from wall out).
Mounting Height	42 to 54 inches above floor.

Environmental	
Operating	32° F to 122° F (0° C to 50° C) with rate of change not exceeding 20° F (11° C) per hour; 20% to 90% non-condensing relative humidity.
Storage	-20° F to 150° F (-29° C to 65° C); 20% to 90% noncondensing relative humidity.

Controls	
Time Delay	Digital, test (15 seconds), Adaptive 5 to 30 minutes.
Ambient Light	Digital, pushbutton, 30 to 300 foot candles.
Front Press Switch	Auto/Momentary Off (30 minutes after last motion, switch returns to automatic mode).
Service Switch	Auto/Off.

Sensing Indicators	
Passive Infrared	2-color LED, (red,green).

Adaptive Technology PIR Wall Switch
ATP1277 and WS1277 Series Wall Switches

Electrical	ATP1277 Series, WS1277 Series
Power Supply	120/277V AC, 60 Hz.
Load Capacity	
Incandescent	0 to 800 watts
120V Ballast	0 to 800 watts.
277V Ballast	0 to 1200 watts.
Agency Approvals	UL Listed, cUL Certified.

Physical	
Housing	Flame retardant UL 94 V-0 ABS
Lens	Polyethylene.
Dimensions	Face 2.61" H x 1.29" W, 0.73" D (from wall out).
Mounting Height	42 to 54 inches above floor.

Environmental	
Operating	32° F to 122° F (0° C to 50° C) with rate of change not exceeding 20° F (11° C) per hour; 20% to 90% non-condensing relative humidity.
Storage	-40° F to 150° F (-40° C to 65° C); 20% to 90% noncondensing relative humidity.

Controls	
Time Delay	
ATP1277 Series	Digital, test (20 seconds), Adaptive 5 to 30 minutes.
WS1277 Series	Manual 20 seconds -30 minutes.
Ambient Light	Digital, pushbutton, 30 to 300 foot candles.
Front Press Switch	Auto/Momentary Off (30 minutes after last motion, switch returns to automatic mode).
Service Switch	Auto/Off

Sensing Indicators	
Passive Infrared	Red LED.

Wiring Schematic
AT1277, ATP1277 and WS1277 Series Wall Switches

Normal Wiring

Parallel Wiring

H-MOSS® Occupancy Sensors
Specifications and Wiring Schematics
Passive Infrared Wall Switches

Passive Infrared Wall Switches
WS120I, WS120W, WS277I, WS277W

Electrical	WS120I, WS120W	WS277I, WS277W
Power Supply	120V AC, 60 Hz.	277V AC, 60 Hz.
Load Capacity		
Incandescent	0 to 800 watts.	NA
120V Ballast	0 to 1000 watts.	NA
277V Ballast	NA	0 to 1800 watts.
Agency Approvals	UL Listed, cUL Certified.	UL Listed, cUL Certified.

Physical	WS120I, WS120W, WS277I, WS277W
Housing	High-impact ABS.
Lens	Polyethylene.
Dimensions	Face 2.6"H x 1.3"W, 0.51"D (from wall out).
Mounting Height	42 to 54 inches above floor.

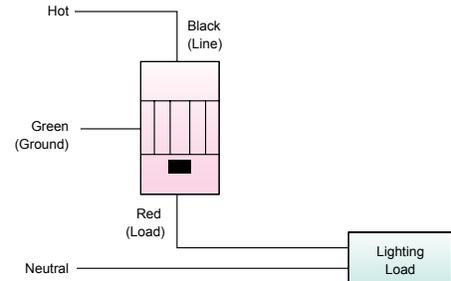| Environmental	
Operating	32° F to 122° F (0° C to 50° C) with rate of change not exceeding 20° F (11° C) per hour; 20% to 90% noncondensing relative humidity.
Storage	-40° F to 150° F (-40° C to 65° C); 20% to 90% noncondensing relative humidity.

Controls	
Time Delay	30 seconds to 30 minutes.
Front Press Switch	Auto/Off.
Manual Override Bypass	Override ON key provided.

Sensing Indicator	
Passive Infrared	Red LED.

Wiring Schematic
WS120 and WS277 Series Wall Switches

Normal Wiring

Parallel Wiring

Passive Infrared Wall Switch for Dual Level Lighting
WS1277W2

Electrical	WS1277W2
Power Supply	120/277V AC, 60 Hz.
Load Capacity	
Incandescent	0 to 600 watts each circuit.
120V Ballast	0 to 1000 watts each circuit.
277V Ballast	0 to 1800 watts each circuit.
Agency Approvals	UL Listed, cUL Certified.

Physical	
Housing	High-impact ABS.
Lens	Polyethylene.
Dimensions	Face 4.54"H x 2.79"W, 0.95" (from wall out).
Mounting Height	42 to 54 inches above floor.

Environmental	
Operating	32° F to 122° F (0° C to 50° C) with rate of change not exceeding 20° F (11° C) per hour; 20% to 90% noncondensing relative humidity.
Storage	-40° F to 150° F (-40° C to 65° C); 20% to 90% noncondensing relative humidity.

Controls	
Time Delay	3 to 30 minutes.
Front Rocker Switches (two)	Auto/Off.
Manual Override Bypass	Override ON key provided.

Sensing Indicator	
Passive Infrared	Red LED.

Wiring Schematic
WS1277W2 Wall Switch

Dual Level Switching of Two Circuits

WS1277W2
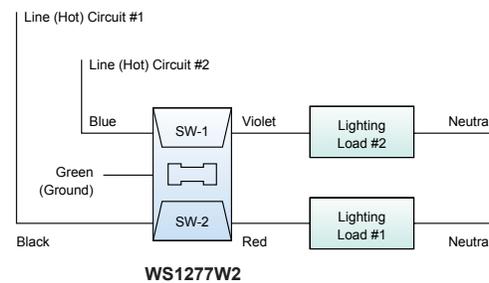
Dual Level Switching of a Single Circuit
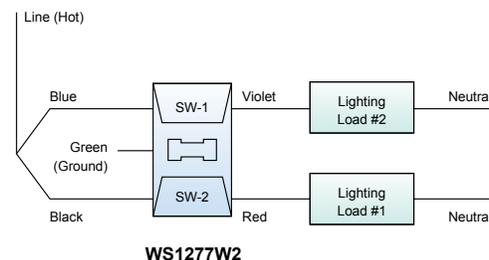
WS1277W2

H-MOSS® Occupancy Sensors
Specifications and Wiring Schematics
Ceiling and Wall Mount Sensors, Outdoor Sensor

Adaptive Dual Technology, Ultrasonic and Passive Infrared Ceiling and Wall Mount Sensors
**ATD, ATU, ATP Series Ceiling and Wall Mount Sensors**

Electrical	
Power Requirements	24V DC nominal, 33mA from Hubbell CU series control unit
Isolated Relay (sensors with RP suffix)	Normally open and normally closed. terminals available.
Agency Approvals	UL Listed.

Physical	Ceiling Sensors
Housing	Flame retardant UL 94 V-0 ABS.
Lens	Polyethylene.
Dimensions	4.5" diameter, 1.5" height.
Color	Office white.
Mounting Height	8 to 12 feet.

Physical	Wall Mount Sensors
Housing	Flame retardant UL 94 V-0 ABS.
Lens	Polyethylene.
Dimensions	6" H x 2" W x 1.5" D.
Color	Office white.
Mounting Height	8 to 12 feet.

Environmental	
Operating	32° F to 104° F (0° C to 40° C) with rate of change not exceeding 20° F (11° C) per hour; 0% to 95% non-condensing relative humidity.
Storage	-20° F to 150° F (-29° C to 65° C); 0% to 95% non-condensing relative humidity.

Controls	
Time Delay	Test (8 seconds), adaptive 8 to 40 minutes.
Ambient Light	1 to 1000 foot candles.
(sensors with RP suffix)	terminals available
Sensitivity	Adaptive 0 to 100%.

Sensing Indicators	
Ultrasonic (ATD and ATU Series)	Green LED.
Passive Infrared (ATD and ATP Series)	Red LED.

MOTION ALERT Passive Infrared Outdoor Sensor
OS270BZ

Electrical	
Power Supply	120V AC, 60 Hz.
Sensor Load Capacity	1000W (8.3 amps) Incandescent.
Agency Approvals	UL Listed, cUL Certified.

Physical	
Housing	Cast metal.
Lens	Polyethylene.
Dimensions	9.75" L x 4" W x 2.75" H.
Mounting Height	6 to 12 feet above ground.

Environmental	
Operating	-40° F to 150° F (-40° C to 66° C) with rate of change not exceeding 20° F (11° C) per hour.
Storage	-40° F to 150° F (-40° C to 66° C).
Relative Humidity	Raintight per UL773A.

Controls	
Time Delay	Test (5 seconds), 1, 5 or 20 minutes.
Ambient Light	Photocell deactivates unit in daylight.
Sensitivity	0 to 100%.
Range Boost	Extends range from 70 ft. to 100 ft.

Sensing Indicators	
Passive Infrared	Red LED.

Wiring Schematic
OS270BZ Outdoor Sensor

Normal Wiring
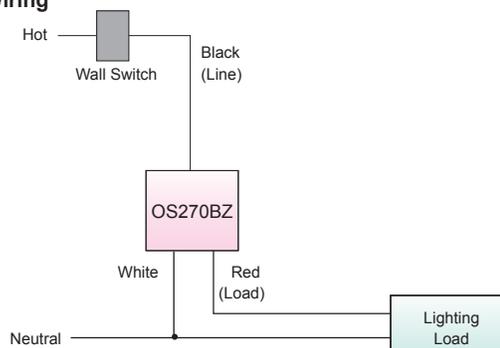
H-MOSS® Occupancy Sensors
Specifications
Control Units and Add-A-Relay

CU Series Control Units
CU120A, CU230A, CU277A, CU347A

Electrical	CU120A	CU230A	CU277A	CU347A
Power Supply	120V AC, 60 Hz.	230V AC, 50/60 Hz.	277V AC, 60 Hz.	347V AC, 60 Hz.
Power Output	24V DC, 100mA.	24V DC, 100mA.	24V DC, 100mA.	24V DC, 100mA.
Load Capacity				
Incandescent	0 to 1800 watts.	NA	NA	NA
120V Ballast	0 to 2400 watts.	NA	NA	NA
230V Ballast	NA	0 to 3680 watts.	NA	NA
277V Ballast	NA	NA	0 to 5540 watts.	NA
347V Ballast	NA	NA	NA	0 to 5205 watts.
AT Sensor/AAR Capacity	1 to 3 combined.	1 to 3 combined.	1 to 3 combined.	1 to 3 combined.
Agency Approvals	UL Listed, cUL Certified.	UL Listed, cUL Certified.	UL Listed, cUL Certified.	UL Listed, cUL Certified.

Physical	All CU Series Control Units
Housing	Flame retardant UL 94-5V plastic.
Dimensions	3.69"L x 2.33"W x 1.36"H.
Color	Black.

Environmental	
Operating	32° F to 104° F (0° C to 40° C); 0% to 90% noncondensing relative humidity.
Storage	-20° F to 150° F (-29° C to 65° C); 0% to 90% noncondensing relative humidity.

Add-A-Relay
AAR

Electrical	
Power Input	24V DC nominal, 33mA from Hubbell CU series control unit.
Load Capacity	
Incandescent	0 to 1800 watts.
120V Ballast	0 to 2400 watts.
230V Ballast	0 to 3680 watts.
277V Ballast	0 to 5540 watts.
347V Ballast	0 to 5205 watts.
Agency Approvals	UL Listed.

Physical	
Housing	Flame retardant UL 94-5V plastic.
Dimensions	3.69" L x 2.33" W x 1.36" H.
Color	Black.

Environmental	
Operating	32° F to 104° F (0° C to 40° C); 0% to 90% noncondensing relative humidity.
Storage	-20° F to 150° F (-29° C to 65° C); 0% to 90% noncondensing relative humidity.

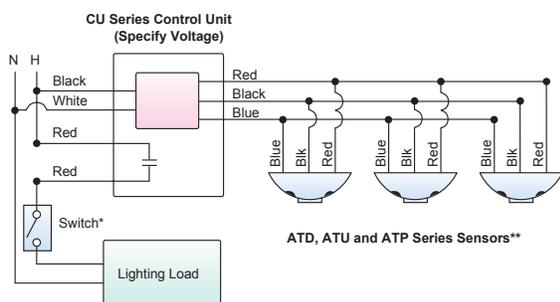# H-MOSS® Occupancy Sensors
Wiring Schematics
Ceiling and Wall Mount Sensors

**Adaptive Dual Technology, Ultrasonic, and Passive Infrared Ceiling and Wall Mount Sensors
ATD, ATU and ATP Series Ceiling and Wall Mount Sensors**
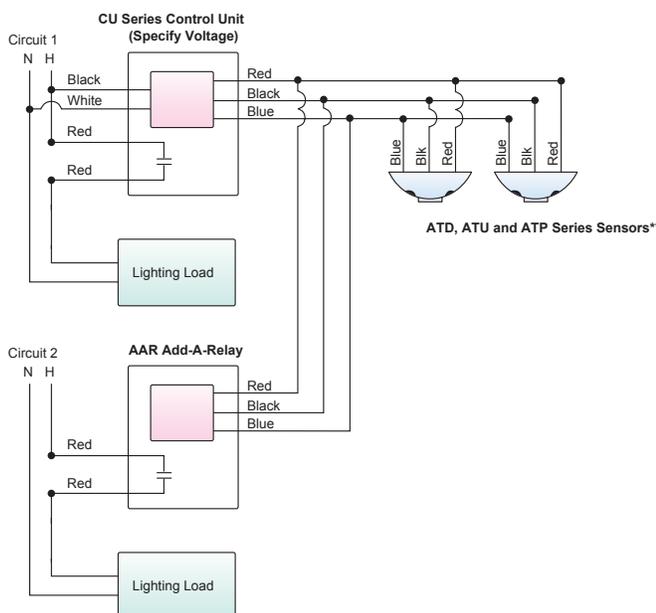
Single Circuit Application:
1 to 3 sensors wired to control unit with optional override off switch.

* Optional Override Off Switch
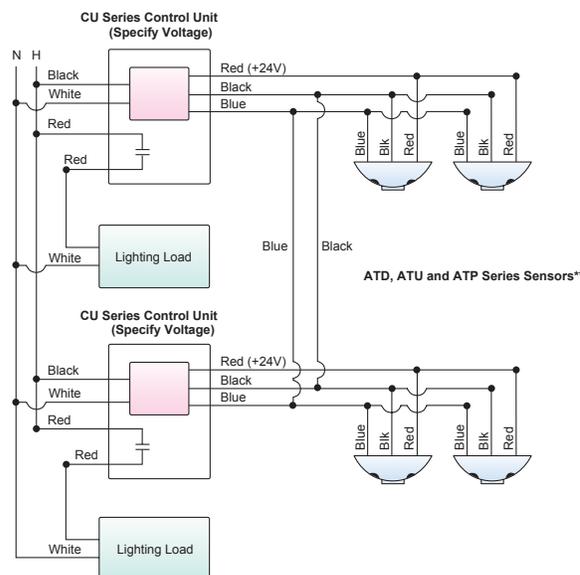
Two Circuit Application:
1 to 2 sensors wired to control unit and Add-A-Relay (control unit switches circuit 1, Add-A-Relay switches circuit 2).

Single Circuit Application:
Two control units wired in parallel to operate 4 to 6 sensors in a single zone. Maximum 3 sensors per control unit. (Any sensor will activate lighting.)

Two Circuit Application:
Two control units wired in two circuits to operate 3 to 6 sensors in a single zone. Maximum 3 sensors per control unit. (Any sensor will activate both lighting loads.)

NOTE: For wiring sensors with isolated relay and photocell option (models with "RP" suffix): Photocell Option: Cap off Blue sensor wire. Connect Grey sensor wire to Blue control unit wire. Isolated Relay Option: Common-Blue/White wire, Normally Closed-Black/White wire, Normally Open-Yellow/White wire.
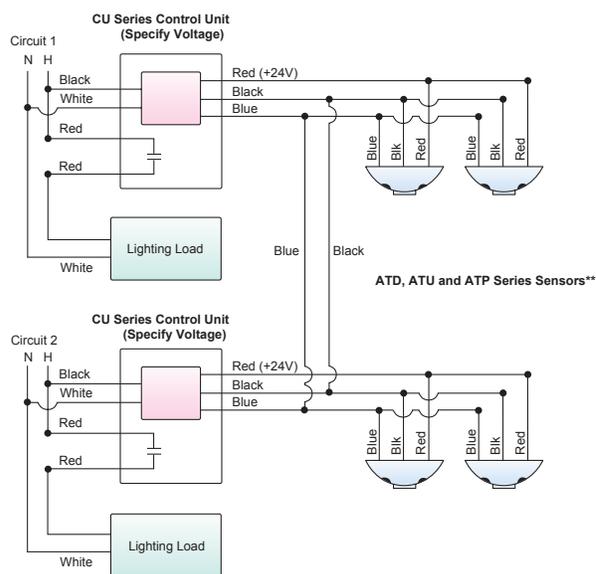
H-MOSS® Occupancy Sensors
Wiring Schematics
Ceiling and Wall Mount Sensors

**Adaptive Technology Dual, Ultrasonic, and Passive Infrared Ceiling and Wall Mount Sensors.
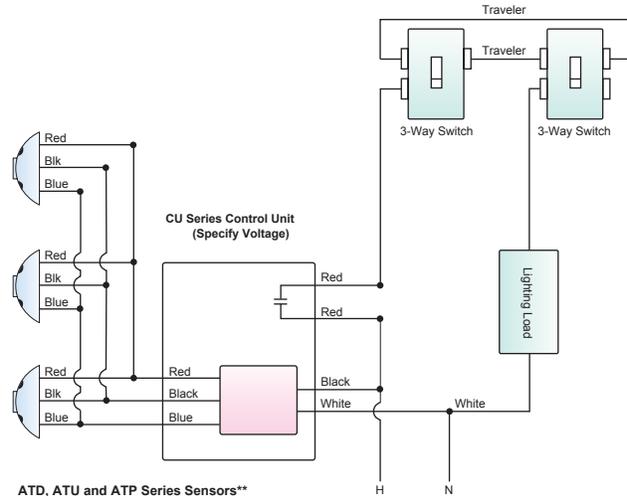ATD, ATU and ATP Series Ceiling and Wall Mount Sensors**

Single Circuit, Dual Level Switching Application:
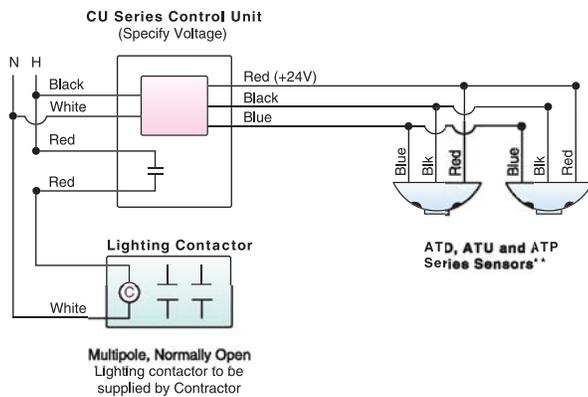1 to 3 sensors wired to control unit with optional override off switches.

ATD, ATU and ATP Series Sensors**
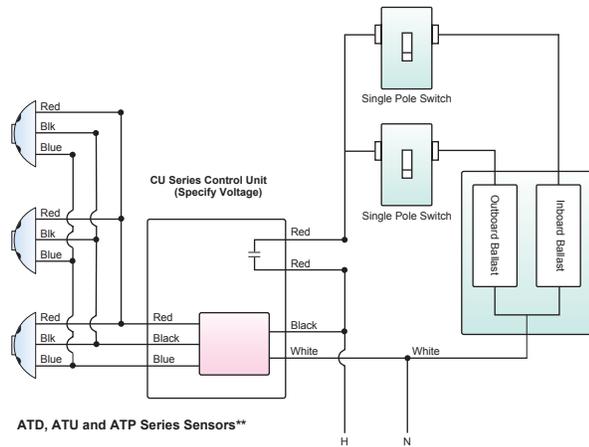
Single Circuit, 3-Way Switching Application:
1 to 3 sensors wired to control unit with optional override off switches.

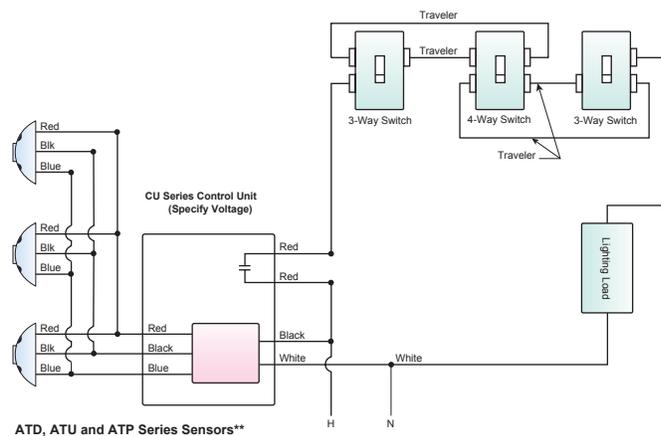ATD, ATU and ATP Series Sensors**

Multi-Circuit Application:
1 to 3 sensors wired to control unit that is wired to a multi-pole lighting contactor.

Single Circuit, 4-Way Switching Application:
1 to 3 sensors wired to control unit with optional override off switches.

ATD, ATU and ATP Series Sensors**

NOTE: For wiring sensors with isolated relay and photocell option (models with "RP" suffix): Photocell Option: Cap off Blue sensor wire. Connect Grey sensor wire to Blue control unit wire. Isolated Relay Option: Common-Blue/White wire, Normally Closed-Black/White wire, Normally Open-Yellow/White wire.