Ceiling Mount Occupancy Sensors

MSC Series

MSCD/MSCP

MSCU

SPECIFICATIONS

1 Year Warranty

Standards	UL and cUL Listed; FCC part 15 (Class B) for Home and Office Use
Input Voltage	24VDC
Isolated Relay	Contact rating: 1A@24VDC Resistive
Temperature	0° to 50°C (32° to 122°F)
Humidity	Max. 90% RH noncondensing
CURRENT CONSUMPTION@24VDC*	
PIR	21mA nominal
Ultrasonic	34mA nominal
Dual	37mA nominal
DIMENSIONS	
MSCU	4.6" (117 mm) diameter, 1.4" (35.1 mm) high
MSCD/MSCP	4.6" (117 mm) diameter, 1.8" (45.7 mm) high

For local line switching control, power must be provided by AA47 Power Pack or an approved equivalent.

Uses The Latest Passive Infrared And Ultrasonic Technologies

FEATURES

- Up to 2000 square foot coverage area and 360 degree field of view for application versatility
- Daylight level sensing (from 0.5 to 250 foot-candles)... avoids unneccessary lighting
- Adjustable time delay (preset time delays from 15 seconds [test] to 30 minutes)...provides ultimate flexibility
- Adjustable coverage sensitivity (from 60-100%)
- Auxiliary relay...easily communicates with building control system
- Adjustment compartment cover...tamper resistant
- LED motion indicator...provides quick visual status
- Manual bypass...for easy commissioning

APPLICATIONS

- Lighting control based on occupancy
- Reducing energy usage
- Key component for LEED* certification programs
- MSC1000 – best for conference rooms, classrooms, and other general applications
- MSCD2000 – best for multi-stall bathrooms, large conference rooms, and warehouses
- MSCU2000 – best for lobbies, aisles, and great for multi-stall bathrooms

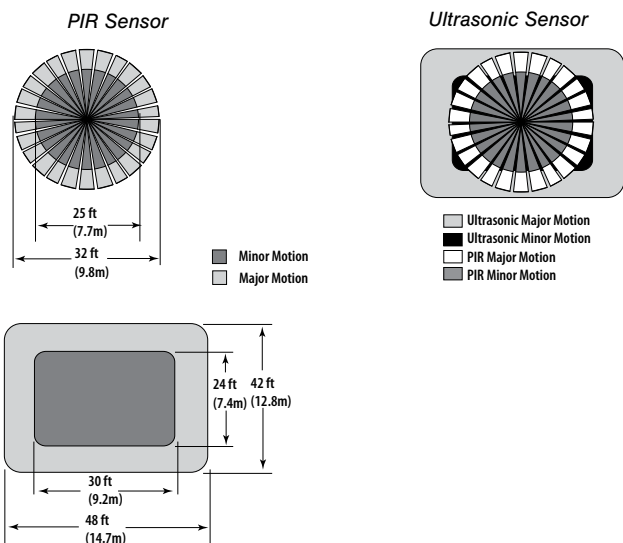*Leadership in Energy and Environmental Design (LEED) is a registered mark of the US Green Building Council*

Coverage Patterns for 9 ft (2.8m) Ceiling Height

PIR Sensor

25 ft (7.7m)
32 ft (9.8m)

Ultrasonic Sensor

- Ultrasonic Major Motion
- Ultrasonic Minor Motion
- PIR Major Motion
- PIR Minor Motion

■ Minor Motion
□ Major Motion

24 ft (7.4m)   42 ft (12.8m)
30 ft (9.2m)
48 ft (14.7m)

DESCRIPTION

MSC Series Occupancy Sensors employ passive infrared (PIR) and/or ultrasonic technologies to accurately detect occupancy and automatically switch room lighting.
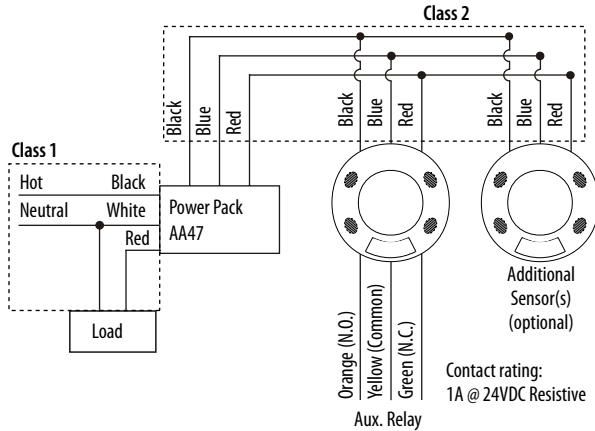
The low-profile sensor is ceiling-mounted to maximize motion sensitivity in large areas with obstructions. With a 360 degree field of view, and up to 2000 square feet of coverage area, the ceiling-mounted occupancy sensor is ideal for conference rooms, classrooms, multi-stall bathrooms, and large office areas.

The MSC series also incorporates an integral photosensor to prevent lights from switching on when sufficient ambient light is present, as commonly found in windowed areas.
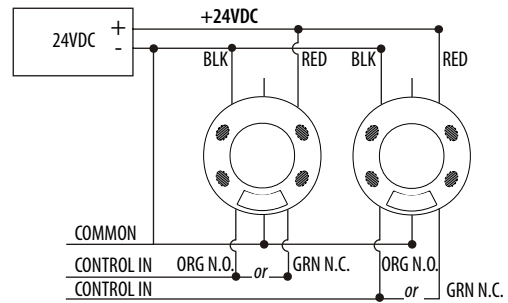
Installation and configuration are simple. The sensor readily mounts to drop ceilings, and it features front adjustments for setting sensitivity and time delay. The sensor also features an auxiliary relay for use with building automation and HVAC systems.
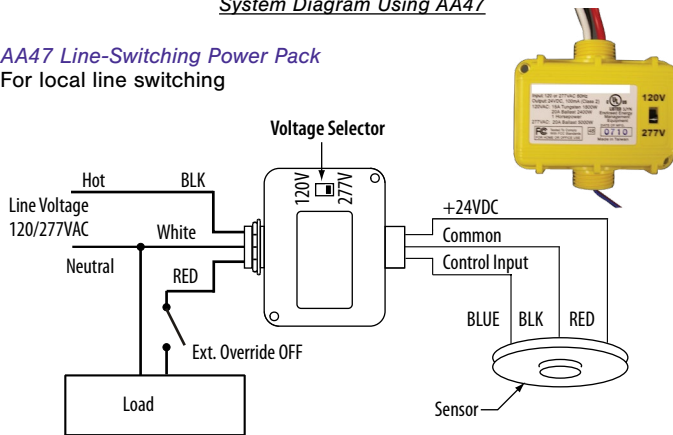
WIRING DIAGRAM

Local Line-Power Control MSC

Class 2

Class 1

Hot	Black
Neutral	White
	Red

Power Pack AA47

Load

Black Blue Red

Black Blue Red

Additional Sensor(s) (optional)

Orange (N.O.) Yellow (Common) Green (N.C.)

Aux. Relay

Contact rating: 1A @ 24VDC Resistive

System Diagram Using AA47

AA47 Line-Switching Power Pack
For local line switching

Voltage Selector

120V 277V

Hot BLK
Line Voltage 120/277VAC White
Neutral RED

Ext. Override OFF

Load

+24VDC
Common
Control Input

BLUE BLK RED

Sensor

System Diagram Using AA48

AA48 Auxilary Relay (Optional)

Override OFF Load

Load Ext. Override OFF

Neutral Red
White
Hot Black

AA47 Power Pack

+24VDC (Red)
0VDC (Blk)
Control (Blue)

AA48 Optional Auxiliary Relay

Red

Red Hot

Sensor

Building Control Panel

24VDC +24VDC

BLK RED BLK RED

COMMON
CONTROL IN ORG N.O. or GRN N.C. ORG N.O. or GRN N.C.
CONTROL IN

The AA47 Line-Switching Power Pack provides local switching capability to control loads at a signal from MSC Series occupancy sensors, independent of any connection to building control systems. The AA47 routes 120/277VAC, 60 Hz line power directly to a Form A relay contact (SPST) to control a load and generates full-wave, 24VDC to power up to four MSC sensors (dependent on model). The AA47 can be mounted either inside or outside an electrical box, and sensor power can be routed via plenum-rated cable to the sensor(s).
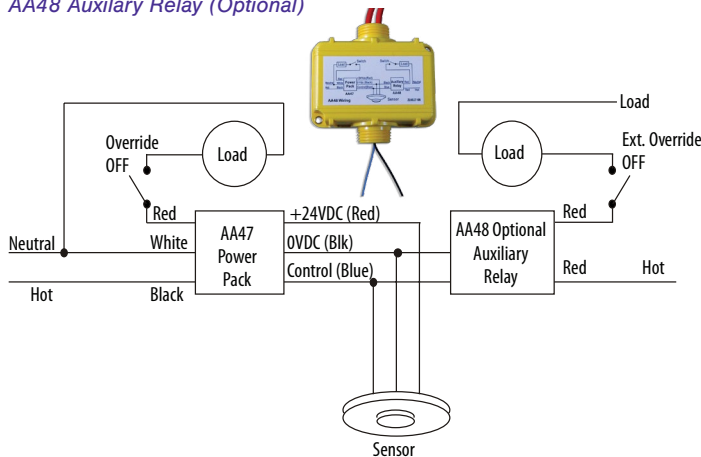
SPECIFICATIONS - AA47

Storage Temp	-29° to 65°C (-20° to 150°F)
Operating Temp	0° to 40°C (32° to 104°F)
Maximum Humidity	90% RH noncondensing
AC Power Input	120/277VAC ± 10%, 60 Hz
Output Voltage	24VDC
Output Current	100mA max.
Dimensions	3.2" (81.3 mm) x 3" (76.2 mm) x 1.75" (44.5 mm)
RELAY CONTACTS	
Horsepower Rating	1HP@120V
Switching Capacity	*120VAC,* 60 Hz; 15A tungsten 1800W
	277VAC, 60 Hz; 20A Ballast

The AA48 Auxiliary Relay is a low-voltage relay device for expanding the switching capacity of an AA47. It can be used to control loads connected to additional circuits in response to a signal from a connected sensor. It is essentially a relay with a SPST output controlled directly by the occupancy sensor. The auxiliary relay can be mounted inside or outside of an electrical junction box.

SPECIFICATIONS - AA48

Storage Temperature	-29° to 65°C (-20° to 150°F)
Operating Temperature	0° to 40°C (32° to 104°F)
Maximum Humidity	90% RH noncondensing
Control Input	24VDC, 36mA nominal
Dimensions	3.2" (81.3 mm) x 3" (76.2 mm) x 1.75" (44.5 mm)
RELAY CONTACTS	
Horsepower Rating	1HP@120V
Switching Capacity	*120VAC*, 60 Hz; 15A tungsten 1800W
	120/277VAC, 60 Hz; 20A ballast

ORDERING INFORMATION

Sensing Technology

MSC ☐

U = Ultrasonic
D = PIR + Ultrasonic
P = Passive Infrared (PIR)

Coverage

☐

1000 = 1000 Sq. Ft. (Passive Infared only)
2000 = 2000 Sq. Ft. (Ultrasonic or Dual technology only)

Example:

MSC D 2000