

Occupancy Sensor OCS 100C • Setup Guide

The OCS 100C is a ceiling mounted occupancy sensor that incorporates ultrasonic (US) and passive infrared (PIR) into a dual technology sensor. The US sensor emits ultrasonic sound waves into an area and measures the speed of their return to detect the presence of people. Frequency changes are caused by the movement of people, which is detected by the US waves. The PIR sensor detects the presence of people based on the difference between the heat generated by moving people versus the ambient room temperature.

The OCS 100C has a 24 VDC power input, ground/common connection, normally open/closed relay, photocell, and occupancy output connections.

Front Panel Features

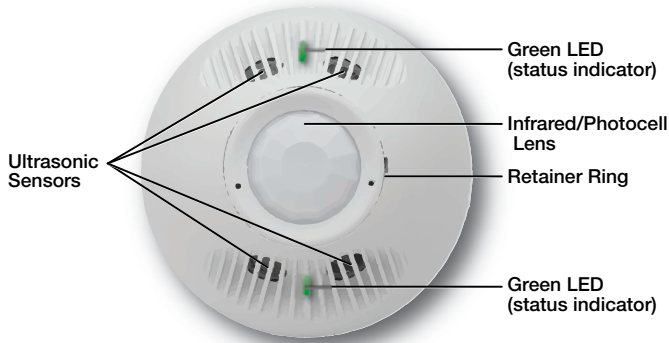


Figure 1. OCS 100C Front Panel Features

- **Ultrasonic sensors (4)** — Detect movement in the room, based on ultrasonic sound waves.
- **Green LED status indicators (2)** — Flash when the ultrasonic sensors detect occupancy.
- **Infrared/Photocell lens** — Diffracts the incoming light and directs the light to the infrared/photocell sensor. The infrared/photocell sensor, controls and DIP switches are located behind the lens.
 - **Red LED status indicator** — Located behind the infrared lens, this LED flashes when the infrared sensor detects occupancy.
- **Retainer Ring** — Holds the optional IR mask in place. Remove to access all controls and DIP switches.

Control

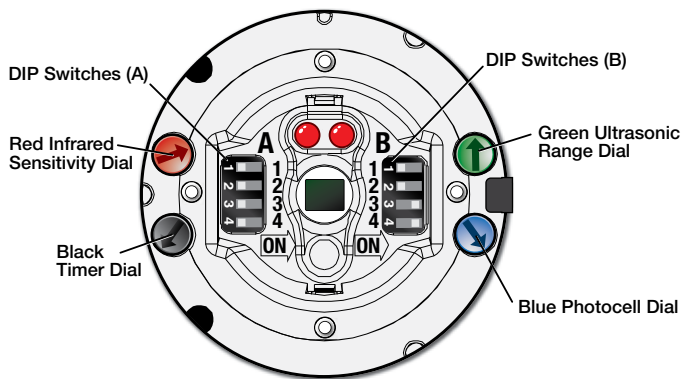


Figure 2. OCS 100C Controls

- **Black Timer Dial** —
 - Ranges from 8 minutes to 42 minutes.
 - Full counter clock wise (CCW) = 8 minutes
 - Full clock wise (CW) = 42 minutes
 - To enter the test mode (8 second timer) follow the steps below:
 1. Open the retainer ring.
 2. Rotate the black timer dial to about midway (12 o'clock).
 3. Return to minimum setting (full CCW).
 4. The timer will remain in the 8 second test mode for 1 hour, then automatically reset to 8 minutes.
 5. To manually force the timer out of the 8 second test mode, turn the timer adjustment approximately 1/16 inch clockwise. The setting is slightly above minimum (just above the 8 minute setting).
- **Red Infrared Sensitivity Dial** — Adjust this dial to increase (CW) or decrease (CCW) infrared sensitivity (default = 75%).
- **Green Ultrasonic Range Dial** — Adjust this dial to increase (CW) or decrease (CCW) ultrasonic sensitivity (default = 50%).

- **DIP Switches A** —

A	OPERATION	OFF	ON
1	Not used	Not used*	Not used
2	Threshold	Auto threshold adjustment*	High sensitivity (low turn on threshold)
3	LED indicators	LEDs enabled*	LEDs disabled
4	Automatic adjust reset	Toggle to reset (Default: OFF)	

*Default

- **DIP Switches B** —

B	OPERATION	OFF	ON
1	Strong airflow compensator	Disabled*	Enabled
2	Over doorway mount	Disabled*	Enabled
3	Timer adjust	Automatic	Manual*
4	Sensitivity adjust	Automatic	Manual*

*Default

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- **Blue Photocell Dial** (see [figure 2](#) on the previous page) — The photocell prevents the sensor from turning on when the area is adequately lit with natural light and motion is detected. The sensor must be mounted directly over an area that is representative of the average, natural room lighting. Before setting the photocell control, wait until the natural light is brightest (optional). Adjust this dial to increase or decrease photocell sensitivity.
 - Turn counter clockwise to decrease photocell sensitivity, causing it to activate with less light.
 - Turn clockwise to increase photocell sensitivity, requiring brighter light to activate the sensor.
 - Factory default is 100% (full clockwise).
 - Full clockwise — Photocell sensor is disabled.
 - Range — 10 to 1000 LUX

Mask Patterns and Sensor Coverage

An infrared mask may be needed to achieve the desired sensory coverage. Any area masked will block the PIR sensor from detecting motion in that area.

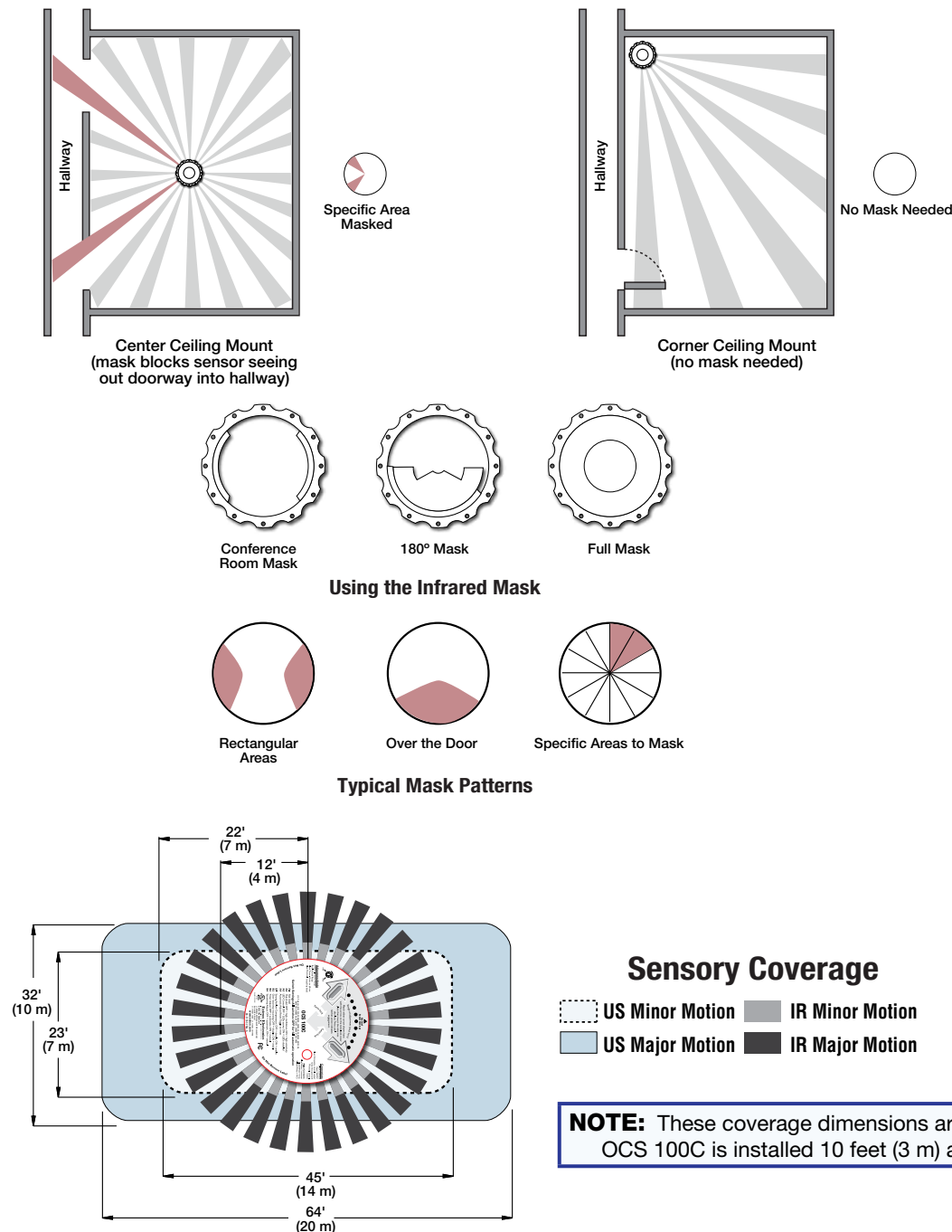
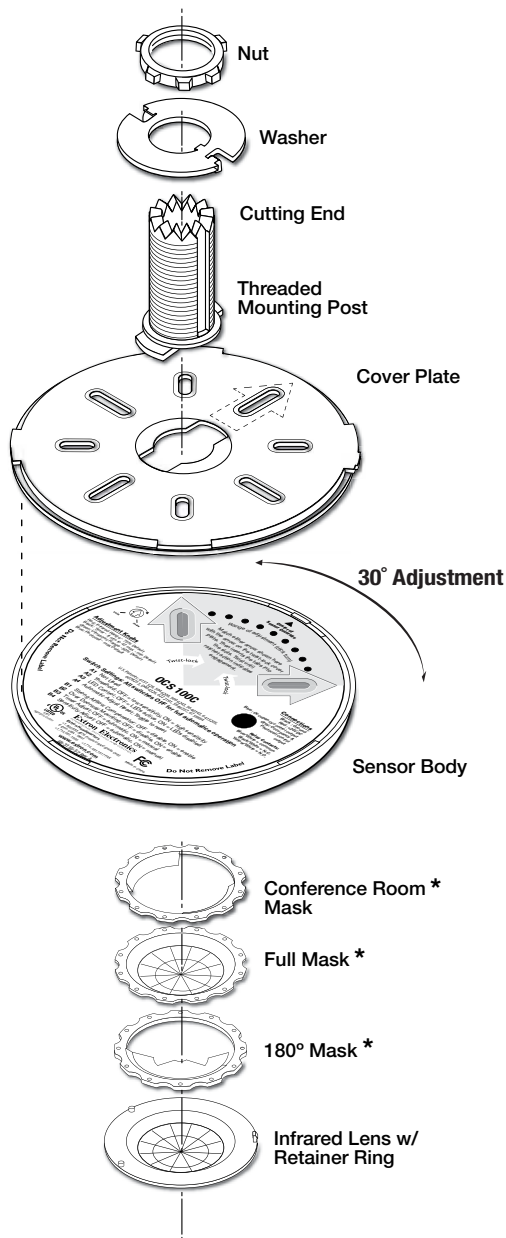


Figure 3. Mask Patterns and Sensor Coverage Diagrams

Installation

OCS 100C Parts

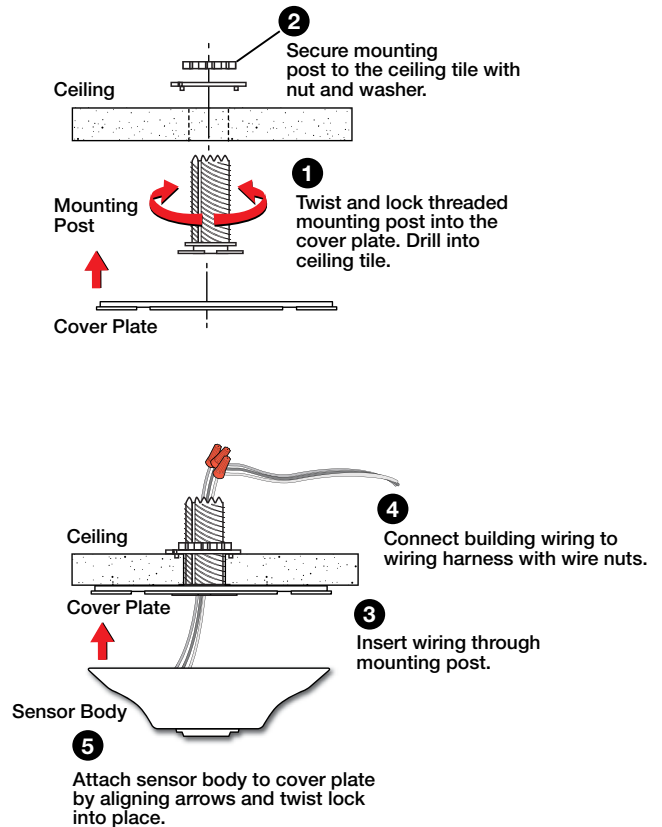


NOTE: *Only use a mask if the PIR sensor needs to be blocked. Only one mask should be installed at any given time.

ATTENTION:

- All structural steps and electrical installation must be performed by qualified personnel in accordance with local and national building codes and electrical codes.
- Toute étape structurelle et installation électrique, doit être effectuée par un personnel qualifié, conformément aux codes du bâtiment, aux codes incendie et sécurité, et aux codes électriques, locaux et nationaux.

Installation Method 1



Installation Method 2

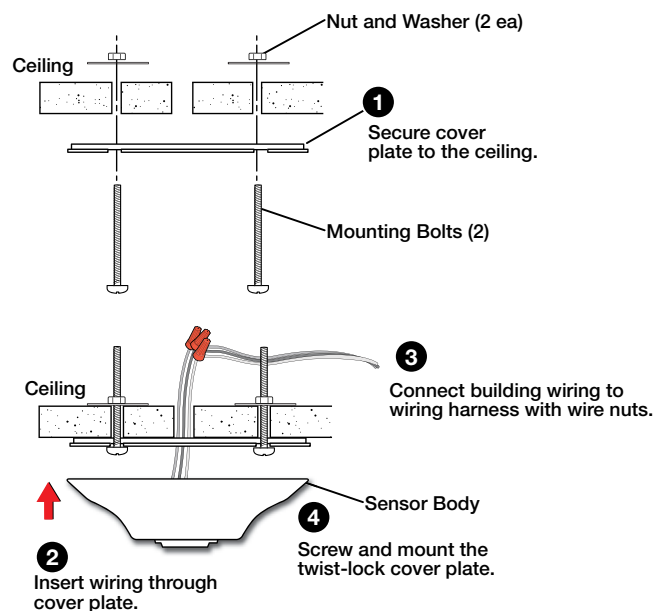
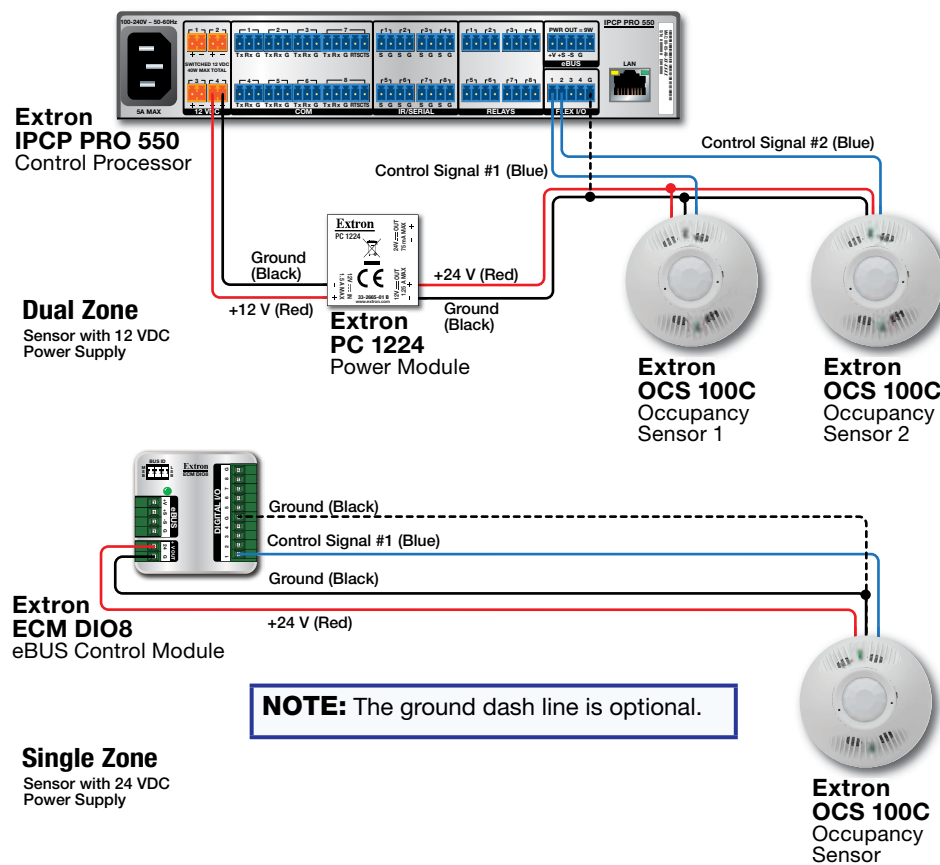


Figure 4. Installation Diagram

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OCS 100C Wiring Diagram



Connections	
Black	Ground
Red	+24 VDC
Blue	Occupancy control output
Gray	Occupancy and photocell control output

NOTE: The gray wire is used when the control system needs to know when the area is adequately lit with natural light and when motion is detected (for example, automatic lighting through Extron control system).

Relay Contacts	
Blue/White	Common
Black/White	Normally closed when unoccupied
Yellow/White	Normally open when unoccupied

NOTE: Relay contacts could be used to trigger third party devices, such as HVAC, based on occupancy.

Figure 5. OCS 100C Wiring Diagram

PC 1224 Wiring

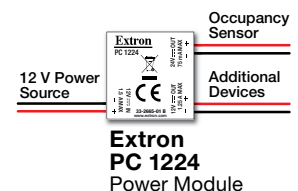
ATTENTION:

- Do not connect power until you have read the **ATTENTIONS:** notices on the next page.
- Ne branchez pas l'alimentation avant d'avoir lu les mises en garde «**ATTENTIONS**» de la page suivante.
- Remove power from the system before making any connections.
- Mettez le système hors tension avant d'effectuer tout raccordement.

The OCS 100C requires 24 VDC. If the sensors are connected to a device that does not provide 24 VDC:

- Connect a 12 VDC power source to the 12 VDC input on the supplied PC 1224 power converter, using a 2-pole captive screw connector.
- Wire the PC 1224 24 VDC 2-pole captive screw connector to the black and red wires on the OCS 100C.

A 12 VDC pass-through is available to power additional 12 VDC devices.



Troubleshooting

Problem	Possible Cause	Test	Solution
Sensor remains on.	Constant noise.	Reduce both green and red knobs by 1/4 turn and remove noise source.	Move sensor to a less noisy area within the room.
Sensor remains on too long.	Timer setting is too high.	Check DIP switch settings.	Reduce timer setting.
Hallway traffic turns sensor on.	Infrared sensor can see into the hallway.	Put sensor in timer test mode and walk the hallway.	Move sensor, so it cannot see into the hallway.

Safety Instructions

For information on safety guidelines, regulatory compliances, EMI/EMF compatibility, accessibility, and related topics, see the [Extron Safety and Regulatory Compliance Guide](#) on the Extron website.

FCC Class A Notice

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. The Class A limits provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause interference. This interference must be corrected at the expense of the user.

NOTE: For more information on safety guidelines, regulatory compliances, EMI/EMF compatibility, accessibility, and related topics, see the [Extron Safety and Regulatory Compliance Guide](#) on the Extron website.

Power Attentions

ATTENTIONS:

- These products are intended for use with a UL Listed LPS type power source.
- Ces produits doivent être utilisés avec une source d'alimentation de type LPS certifiée UL.
- Use of a non-LPS or unlisted power supply will void all regulatory compliance certification.
- L'utilisation d'une source d'alimentation non-listée ou non-certifiée LPS annulera toute certification de conformité réglementaire.
- Unless otherwise stated, the AC/DC adapters are not suitable for use in air handling spaces or in wall cavities. The power supply is to be located within the same vicinity as the Extron AV processing equipment in an ordinary location, Pollution Degree 2, secured to the equipment rack within the dedicated closet, podium, or desk.
- Sauf mention contraire, les adaptateurs CA/CC ne conviennent pas à une utilisation dans les espaces d'aération ou dans les cavités murales. La source d'alimentation doit être placée à proximité de l'équipement Extron dans un emplacement ordinaire soumis à un degré de pollution de catégorie II, solidement fixé au rack d'équipement d'une baie technique, d'un pupitre, ou d'un bureau.
- The installation must always be in accordance with the applicable provisions of National Electrical Code ANSI/NFPA 70, article 725 and the Canadian Electrical Code part 1, section 16.
- Cette installation doit toujours être conforme aux dispositions applicables du Code américain de l'électricité (National Electrical Code) ANSI/NFPA 70, article 725, et du Code canadien de l'électricité, partie 1, section 16.
- The power supply shall not be permanently fixed to building structure or similar structure.
- La source d'alimentation ne devra pas être fixée de façon permanente à la structure de bâtiment ou à d'autres structures similaires.

