

SESD Installation Instructions



SESD - Line Voltage PIR
In-Fixture Dimming Sensor

Ratings

Max 1200W @ 277VAC
Max 1000W @ 208–240VAC
Max 800W @ 120VAC
IP66

Description

The SESD is a self-contained motion and light sensor with line voltage relay unit designed for installation inside commercial and industrial lighting fixtures such as troffers, pendants, and high bays. The sensor uses passive infrared (PIR) sensing technology to detect motion in its coverage area and automatically turn ON fixture lights. Once the sensor detects no movement and the Standby Time Delay expires, 0-10V dimming compatible lights are dimmed according to the Dimming Level and will eventually be switched OFF after the Dimming Time Delay expires. Setting an Ambient Light Threshold keeps lights OFF if there is sufficient natural light, leading to additional energy savings.

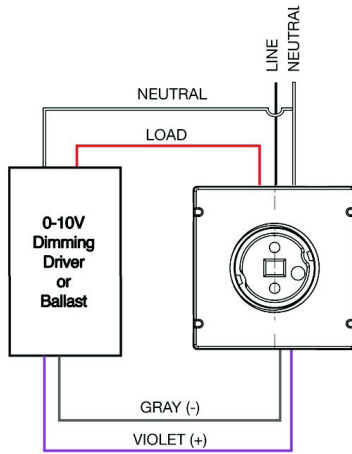
The sensor's detachable lens assembly connects to the main sensor housing through a 1.30" diameter hole that must be made available in the bottom of the light fixture. When properly installed, the sensor is rated weatherproof IP66, suitable for outdoor locations. The sensor must have clear line-of-sight of its coverage area; obstructions may block detection of a person's emitted infrared heat energy, so careful consideration must be given to fixture placement and lens selection (additional lenses sold separately).

Features

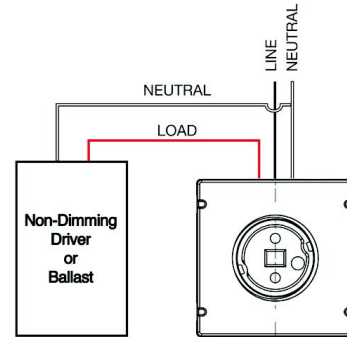
- Fixture mounted passive infrared (PIR) dimming occupancy sensor
- Adjustable standby/dimming time delays and dimming/light threshold levels
- 0–10V dimming control with compatible LED drivers and fluorescent ballasts
- Recommended mounting height from 8' to 40' using included LS2 lens assembly (additional lenses sold separately)
- Commission, adjust, and override via included compact IR remote control
- Rated weatherproof IP66 when properly installed inside rated light fixture
- Internal photodiode measures ambient light; sensor can keep lights off for additional energy savings (optional external photo sensor sold separately)
- Nonvolatile memory retains sensor settings in event of electrical fault
- 7" pre-stripped and tinned color-coded lead wires
- UL/cUL listed #E479515 for safe operation in the US and Canada

Wiring Diagrams

DIMMING APPLICATION



NON-DIMMING APPLICATION



Installation Procedure



WARNING: TO BE INSTALLED AND USED IN ACCORDANCE WITH APPROPRIATE ELECTRICAL CODES AND REGULATIONS.

WARNING: IF YOU ARE UNSURE ABOUT ANY PART OF THESE INSTRUCTIONS, CONSULT A QUALIFIED ELECTRICIAN.

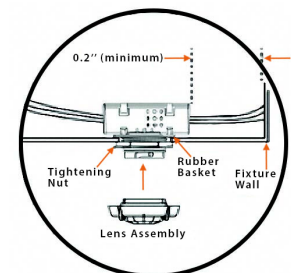
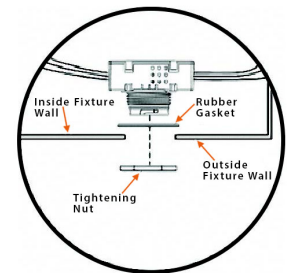
WARNING: CONTROLLING A LOAD IN EXCESS OF SPECIFIED RATINGS WILL DAMAGE SENSOR AND POSE RISK OF FIRE, ELECTRIC SHOCK, PERSONAL INJURY, OR DEATH. CHECK LOAD RATINGS TO DETERMINE SENSOR'S SUITABILITY FOR YOUR APPLICATION.

CAUTION: ALWAYS DISCONNECT POWER WHEN SERVICING LIGHT FIXTURE OR CHANGING BULBS.

CAUTION: USE ONLY COPPER OR COPPER CLAD WIRE CONNECTIONS WITH SENSOR.

CAUTION: DO NOT ATTEMPT TO DISASSEMBLE OR REPAIR SENSOR. CLEAN OUTER SURFACE WITH A DAMP CLOTH ONLY.

1. Turn AC power OFF at the circuit breaker before installing the SESD sensor.
2. Determine an appropriate mounting location inside the light fixture that minimizes the fixture's own light emission toward the sensor's photo diode. Allow a minimum distance of 0.2" from the wiring end of the sensor to the inside wall of the fixture. Because of the sensor's responsiveness to fluctuations in temperature, mount the unit at least 6' away from heating or cooling ventilation sources.
3. Drill a 1.30" diameter hole through the fixture's bottom sheet metal. The fixture's wall thickness must be less than or equal to 0.125" for optimal sensor mounting security. The sensor's thread designation (BSW) is G1; nominal size is 1".
4. Add the rubber gasket to the threaded collar and install the sensor face down, parallel to the mounting surface. Ensure the translucent rubber gasket makes complete contact with the inside surface of the fixture.
5. Install the screw-in tightening nut securely against the fixture with a torque of 25–30 in-lbs to ensure the IP66 rating is maintained.
6. Align the locking features between the sensor and lens assembly and push the lens assembly forward until the O-ring seals firmly.
7. Turn the lens assembly clockwise and ensure it locks into place completely.
8. Connect wire leads as shown in wiring diagrams above and restore AC power at the circuit breaker.



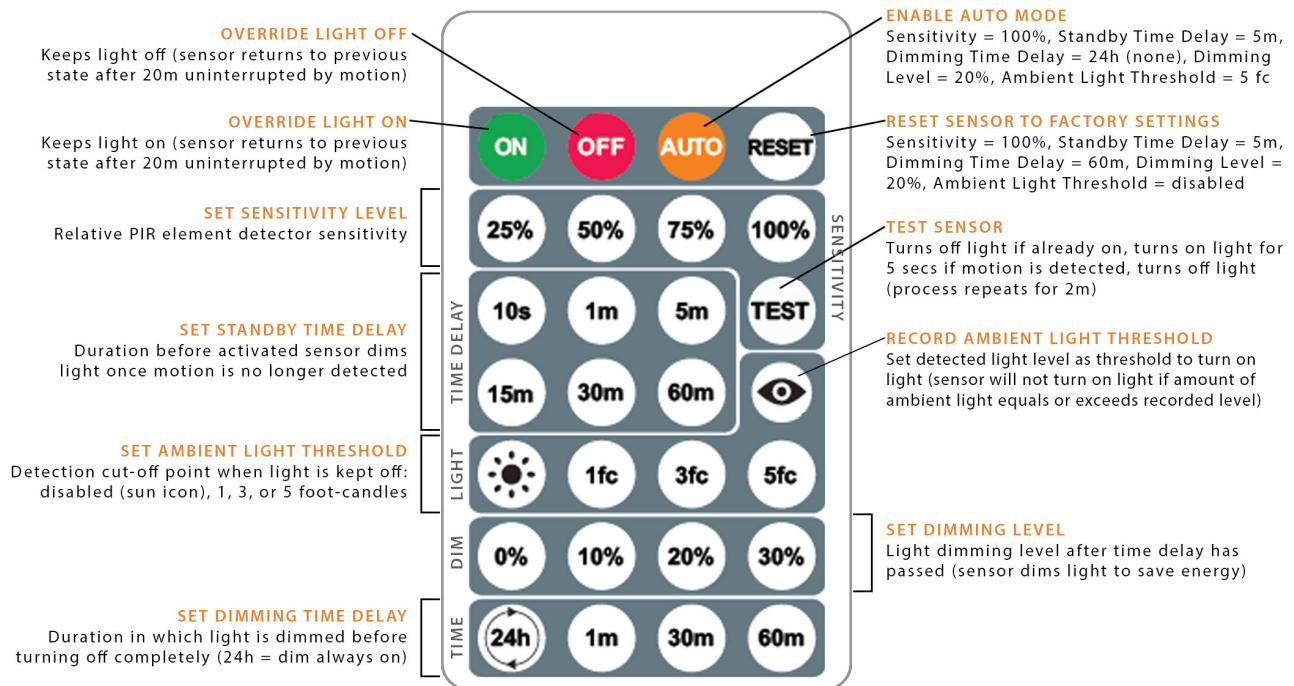
Initial Warm-Up Period

When connected to AC power for the first time or after an electrical fault, the SESD sensor undergoes a warm-up period that can last up to 8 seconds. During this time, the connected light fixture is switched ON and the sensor operates normally. (If modifications were previously made to the sensor's settings, they will be recalled from its nonvolatile memory.) Using either the default factory settings or modified settings, the sensor will keep the lights ON until the Standby Time Delay expires and will then dim them according to the Dimming Time Delay and Dimming Level. To adjust, test, and override the sensor's settings, use the compact and convenient IR remote control.

Settings & Remote Control Operation

Without requiring a ladder, the included IR remote control allows easy modification of sensor parameters from a distance of up to 30'. It operates on one standard CR2025 3V lithium battery, replaceable via the battery tray. The sensor's LED indicator light blinks when the unit receives IR commands, detects motion, or measures ambient light above the set threshold (if enabled). The following outline the SESD's operational procedure and defines the available settings adjustable by remote control:

1. The sensor keeps the light fixture OFF until motion is detected, depending on the Sensitivity Level (default = 100%).
2. Once motion is detected, the sensor turns ON the lights. This will be prevented if the current detected light level equals or exceeds the set Ambient Light Threshold (default = disabled).
3. The lights continue to stay ON during the Standby Time Delay (default = 5 minutes). Any instance of additional motion will reset the Standby Time Delay and keep the lights ON.
4. Once the Standby Time Delay has expired uninterrupted by motion, the sensor will dim the lights according to the Dimming Level (default = 20%) for the duration of the Dimming Time Delay (default = 60 minutes).
5. Once the Dimming Time Delay has expired uninterrupted by motion, the sensor will turn OFF the lights.
6. The sensor continues to keep lights OFF until motion is detected again.



To enable the Force-Off Function which keeps lights off in high traffic outdoor applications, enter these remote commands:

1. Press the AUTO button and then the TEST button after 3 secs (but no more than 10 secs).
2. Connected lights will flash 3 times to confirm that the Force-Off Function has been enabled.
3. Sending any further remote control command (excluding ON, OFF, AUTO, or RESET) will cause connected lights to flash 2 times to confirm that the Force-Off Function remains enabled.
4. To disable the Force-Off Function, press the RESET button, and the sensor will revert to factory settings.

Troubleshooting

If the remote control does not function properly...

- Verify that sensor's built-in red LED blinks through lens assembly each time it receives a command from the remote control. Stand directly under sensor and ensure no obstructions are present.
- Check that remote control's CR2025 battery has been installed correctly in its tray. Replace with fresh battery if necessary.
- Press RESET button and perform AC power cycle on the sensor.

If lights do not turn ON when motion is present...

- Ensure that all input/output wire connections were made correctly and verify that Load and Neutral wires are tightly secured.
- Make sure that sensor's coverage area is not obstructed.
- Confirm that sensor's red LED blinks when motion is present. If LED blinks with long pulses - as opposed to short pulses - sensor's Ambient Light Threshold has been exceeded and may need to be decreased.
- Check Ambient Light Threshold. Cover lens assembly completely to simulate darkness. If lights come ON, then threshold needs to be adjusted or disabled. For example, if threshold is set at 3 foot-candles (fc), more than 3 fc of ambient light will cause sensor to keep lights OFF.
- Test sensor's operation by pressing TEST button and moving out of sensor's coverage area. After sensing motion again, lights should turn ON, dim after about 5 seconds, and then turn OFF after about 10 seconds.

If lights do not dim after Standby Time Delay ends...

- Confirm that connected driver or ballast is compatible with 0–10V dimming signals and that positive and negative dimming wires are tightly secured.
- Ensure that Standby Time Delay is set to desired time period and that there is no movement within the sensor's coverage area during period.
- Increase Dimming Level if set to 0%. Otherwise, lights may appear OFF, but power is still supplied to driver or ballast.
- Check that sensor is not being falsely triggered by nearby heating or cooling ventilation sources, which should be located at least 6' away from sensor. If Sensitivity Level is set to 100%, reduce setting and recheck sensor operation.
- Test sensor's operation by pressing TEST button and moving out of sensor's coverage area. After sensing motion again, lights should turn ON, dim after about 5 seconds, and then turn OFF after about 10 seconds.

If lights do not turn OFF after Dimming Time Delay ends...

- Ensure that Dimming Time Delay is set to desired time period and that there is no movement within the sensor's coverage area during period.

If lights suddenly turn OFF and do not come back ON...

- Check sensor's red LED. If LED blinks with long pulses - as opposed to short pulses - sensor's Ambient Light Threshold has been exceeded and may need to be decreased.

If the recommendations above cannot resolve the issue...

- Please call Fidelux for technical support: 1-860-393-4018