WIRELESS LUMINAIRE-LEVEL CONTROLLER WITH 0-10V DIMMING, MOTION SENSOR AND PHOTOCELL

FSP-600 SERIES

FSP-611 FSP-621 FSP-6x1-S FSP-6x1-D

PRODUCT OVERVIEW

The FSP-600 series by Wattstopper PLUS is an integrated luminaire level lighting controller and sensor for indoor/outdoor lighting applications that require networked wireless control. The FSP-600 is designed to integrate directly into exterior, high bay, parking garage, and general site lighting solutions. It is a passive infrared (PIR) sensor and closed loop photosensor with automatic calibration.

The FSP-600 series design intends to reduce installer labor time and make on-site start up easy for technicians.

Once commissioned and paired to a Wattstopper PLUS network, the devices can measure both motion and daylight contribution in order to automatically switch or dim lighting. It also provides the ability to communicate to other fixtures in the space, allowing for advanced group-level control.

The Wattstopper PLUS FSP-600 series is available in multiple mounting configurations: internal, external straight nipple, and external drop nipple. FSP-Lx lenses are sold separately and should be ordered based on designed mounting height and desired finish.

FEATURES AND BENEFITS

- High-and low-mounted solution designed for industrial and outdoor environments
- Integrated 0-10V dimming, occupancy, and daylight sensing
- Multiple lens options to meet a variety of mounting heights and coverage needs
- Programmable parameters include scheduling, grouping, time delay, high/low/off, time clock, and many more.
- Default-on operation during building construction phase
- Load and zone-based control to meet advanced energy codes
- Seamless integration into the Wattstopper PLUS lighting control platform
- Data insights via Polaris Monitor software
- Included in Wattstopper's OEM Partner Program
- End-of-line testing features to make install easy and "touchless" on the factory floor

MODELS

Internal Mount: FSP-611, FSP-621

External Mount Drop Nipple: FSP-6x1-D
External Mount Straight Nipple: FSP-6x1-S

SPECIFICATIONS and FEATURES

Load Ratings:
@120V 0–800W tungsten, ballast, LED driver, 1/6 HP motor
@230-240V 0–300W ballast, LED driver
@277V 0–1200W ballast, LED driver, 1/6 HP motor
@347V 0–1200W ballast, LED driver (all FSP-621 models only)
@480V 0–1200W ballast (all FSP-621 models only)

Wiring Terminals (FSP-611)
Line Voltage: Line, Neutral, Load, 16AWG–18AWG
Low Voltage: Dim +, Dim – , 18AWG–20AWG
Use Solid Copper Conductor

Wiring (FSP-611-S, FSP-611-D, all FSP-621 models): 18AWG
Length: 12" (30.5cm) from nipple
Line Voltage: Line, Neutral, Load
Low Voltage: Dim + (purple), Dim – (pink)

0–10V sinking current: 50mA

Wireless (2.4Ghz) Range: 500ft (150m) line-of-sight to other repeater devices, 100ft (30m) in parking garage applications.

Three interchangeable lenses for mounting between 8' and 40'

Adjustable Time Delay: 5-30 min

Adjustable High/Low/Off: 0-100%

PIR Sensitivity: 10-100%, Disable

Partial ON/OFF: 1-100%

Operating temperature: -40 to 140°F (-40 to 60°C)
Operating Humidity: 20-90%

Weight: FSP-611, 2.8 oz (80 g)
FSP-621, 5.5 oz (155 g)
FSP-6x1-S, 7.4 oz (210 g)
FSP-6x1-D, 8.1 oz (230 g)

UL/cUL listed under UL916 (E207852); Complementary Listed to Emergency Lighting Equipment (UL924)
CE
FCC Part 15 Class A

FSP-6x1-S and FSP-6x1-D IP66 rated (when fully assembled and installed) for use in wet locations
FSP-611 and FSP-621 IP66 rated (when fully assembled and installed with FSP-Lx lens into an IP66 or greater rated enclosure)

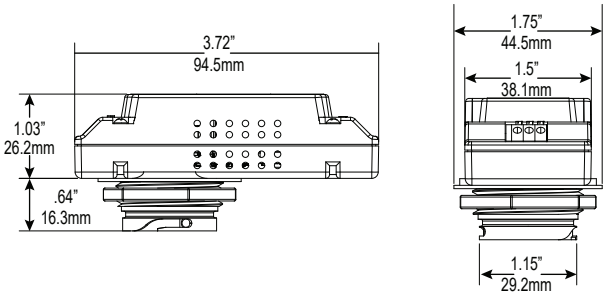
Five year warranty

MATERIALS

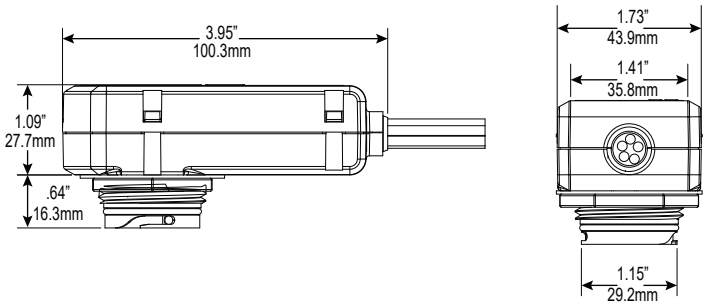
Polycarbonate, flame retardant, UV resistant, impact resistant, recyclable
Meets materials restrictions of RoHS

CONTROLLER DIMENSIONS

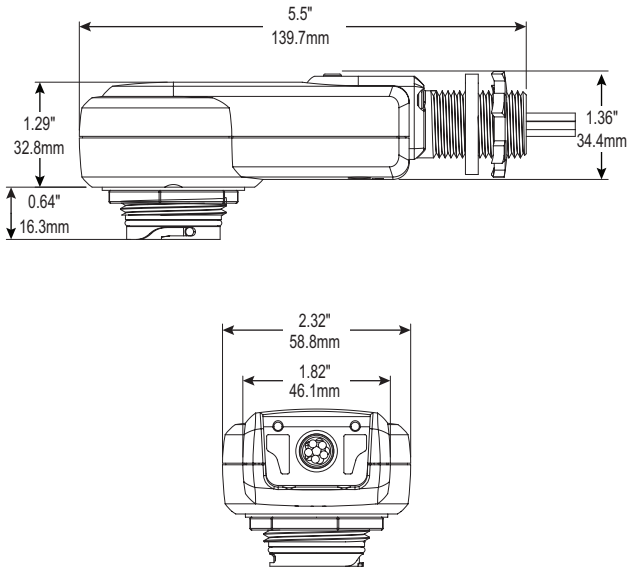
FSP-611



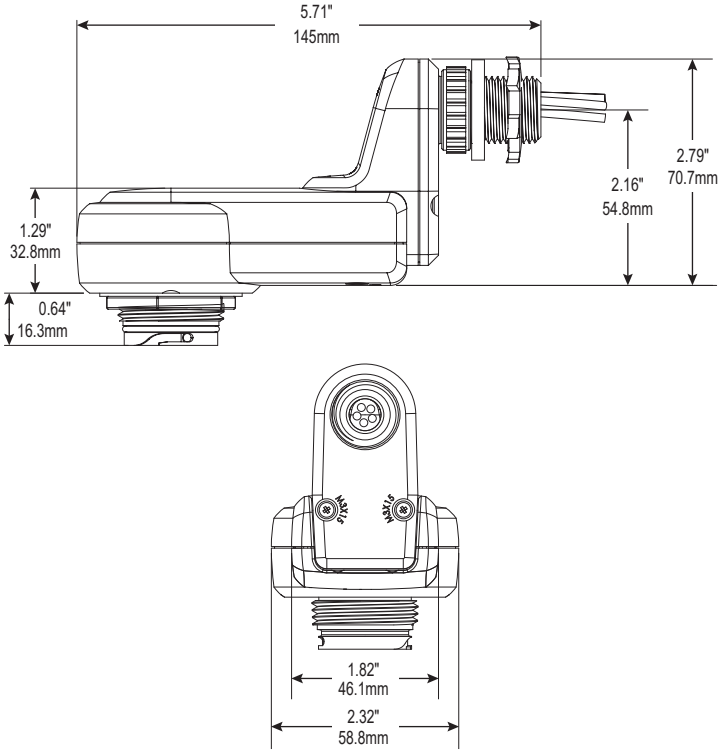
FSP-621



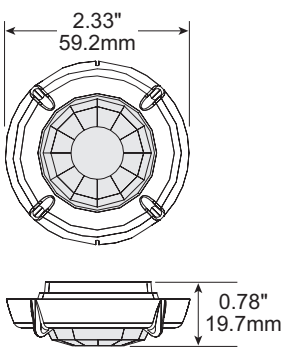
FSP-6x1-S



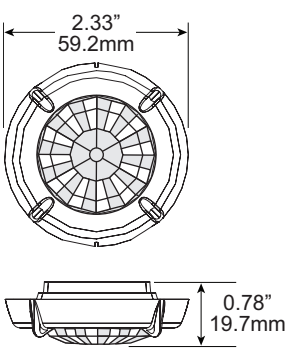
FSP-6x1-D



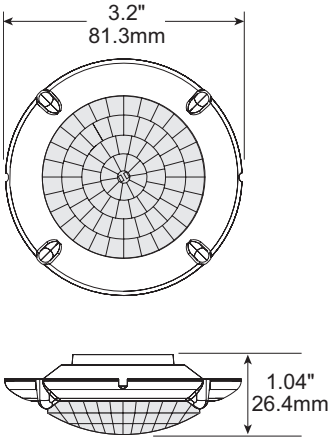
LENS DIMENSIONS



FSP-L2



FSP-L3

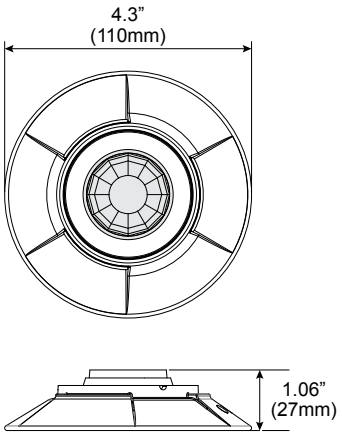


FSP-L7

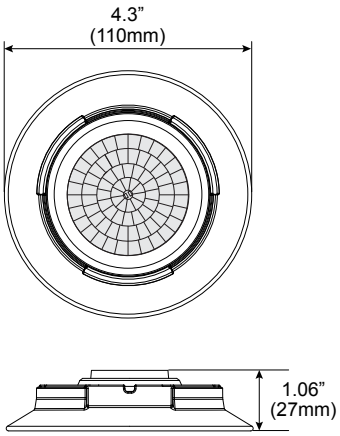
Lens with Shroud Dimensions

The FSP-Lx-S models include a shroud, which blocks high-angle light coming from the fixture, to improve photocell performance. All FSP-Lx-S shroud options have identical dimensions.

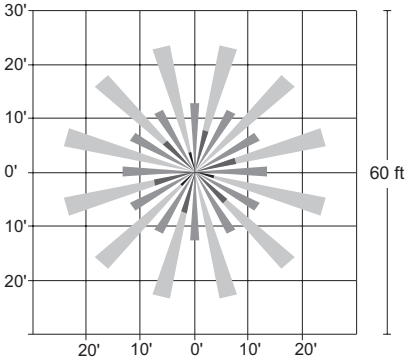
FSP-L2-S and FSP-L3-S

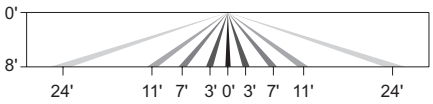


FSP-L7-S

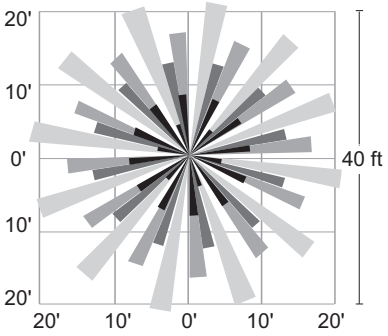


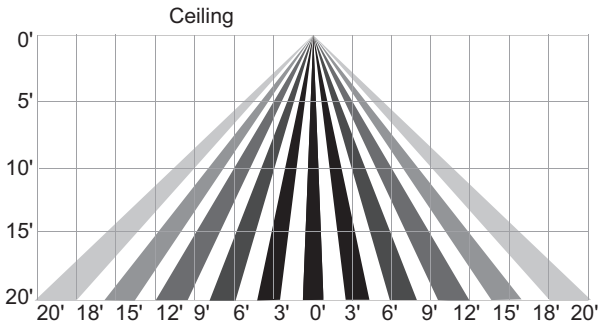
COVERAGE



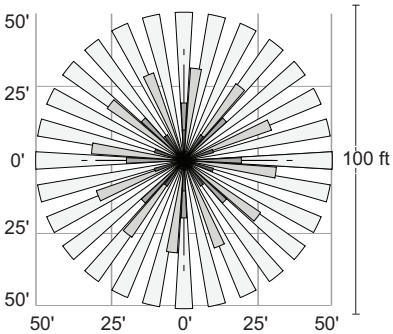


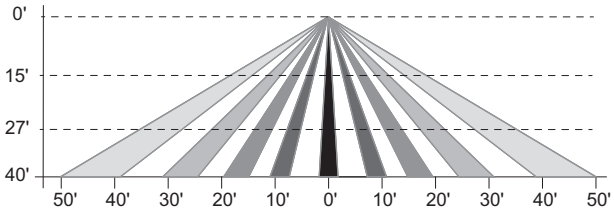
FSP-L2 top and side coverage patterns





FSP-L3 top and side coverage patterns





FSP-L7 top and side coverage patterns

INSTALLING THE FSP-6X1 SENSOR IN A LIGHT FIXTURE

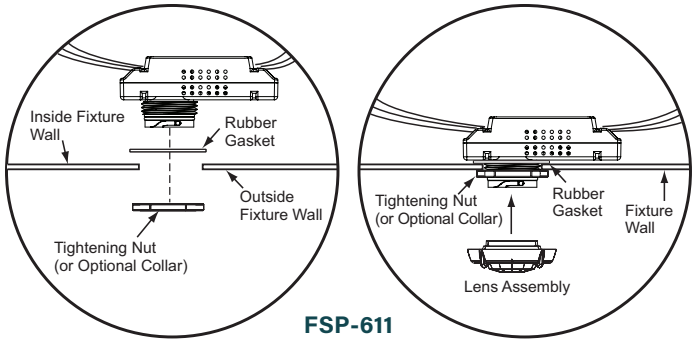
1. Determine an appropriate mounting location inside the light fixture. Allow a minimum distance of 0.2" (5.1mm) from the end of the sensor to the wall of the fixture.

   NOTE: The outside fixture wall thickness should be no greater than 0.125" (3.18mm) for optimal sensor mounting and security.

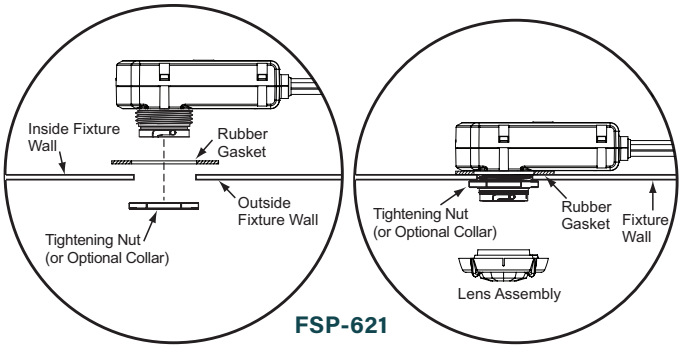
2. Drill a 1.31" (33.3mm) diameter hole through the sheet metal in the bottom of the fixture.
3. Place the rubber gasket on the threaded collar, and install the sensor face down, parallel to the mounting surface. Ensure the rubber gasket touches the inside surface of the fixture. Install the tightening nut securely against the fixture and torque to 25-30 in-lbs to maintain IP rating.
4. Align the locking features between the sensor and lens module and push the lens module forward until the 0-ring seals firmly. Turn the lens module clockwise to lock in place.
5. Connect load, supply and control wires
6. Restore power from the circuit breaker.

NOTE: An optional collar can be installed in place of the tightening nut on the FSP-6x1

NOTE: An optional shroud with integrated lens can be installed instead of the collar and a regular lens. The shroud blocks high-angle light coming from the fixture, to improve photocell performance.



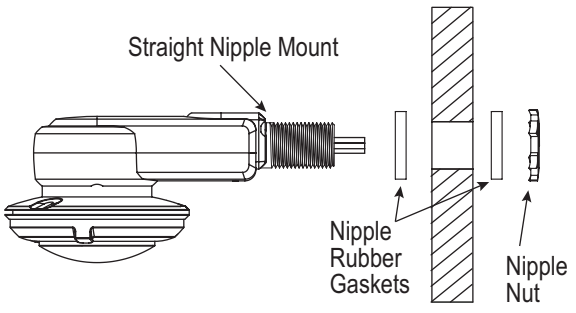
FSP-611



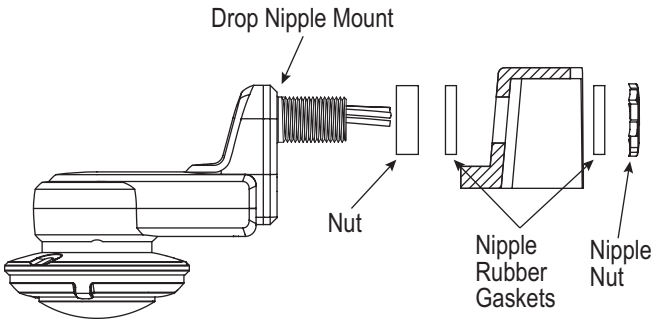
FSP-621

INSTALLING THE FSP-6X1-S OR FSP-6X1-D TO A FIXTURE OR POLE

1. Determine an appropriate mounting location minimizing the electrical light contribution to the sensor's photocell.
2. Drill a 0.875" (22mm) diameter hole through the mounting surface, or mount to a 1/2" knockout.
3. Place the rubber gasket on the threaded collar, and install the sensor face down, parallel to the mounting surface. Ensure the rubber gasket touches the mounting surface. If needed, add the spacer between the sensor body and the rubber gasket to ensure a secure fit. Install the nipple nut and torque to 25-30 in-lbs to maintain IP rating.
4. Align the locking features between the sensor and lens module and push the lens module forward until the 0-ring seals firmly. Turn the lens module clockwise to lock in place.
5. Connect wires (see wiring diagrams).
6. Restore power from the circuit breaker.



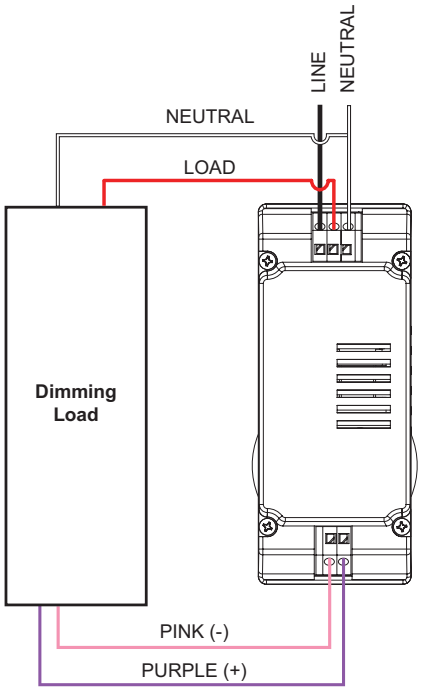
Installing the FSP-6x1-S to the exterior of a fixture



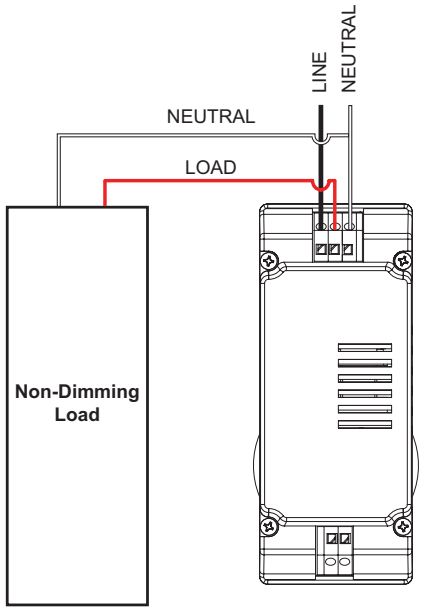
Installing the FSP-6x1-D to a pole using the optional nut

WIRING DIAGRAMS

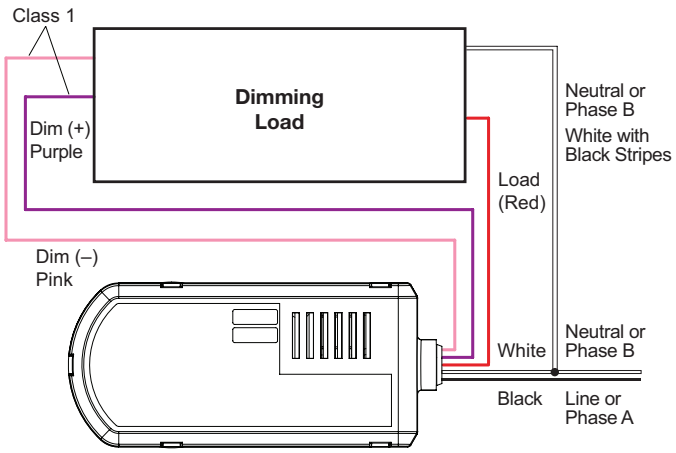
FSP-611 Dimming



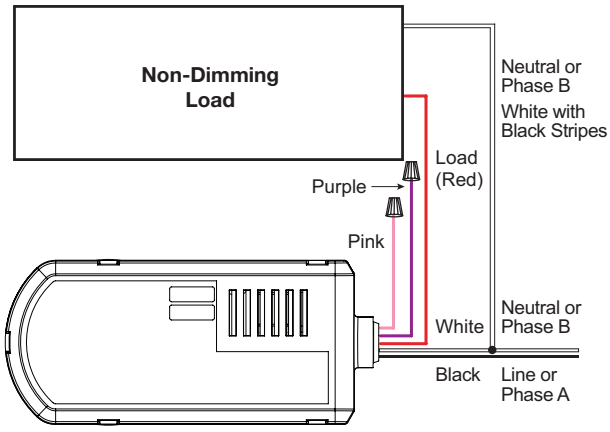
FSP-611 Non-Dimming



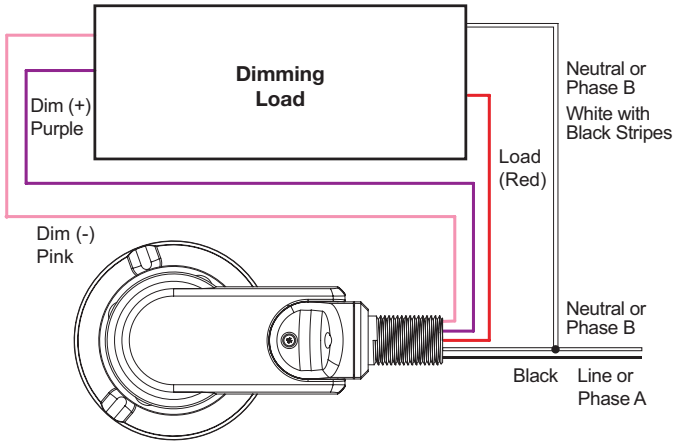
FSP-621 Dimming



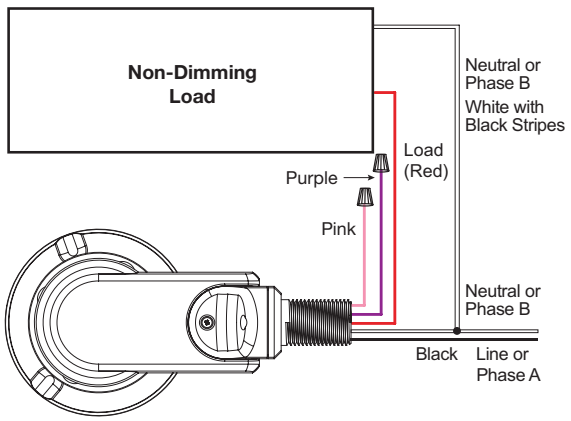
FSP-621 Non-Dimming



FSP-6x1-S/ FSP-6x1-D Dimming



FSP-6x1-S/ FSP-6x1-D Non-Dimming



END OF LINE TESTING AT THE INSTALLING MANUFACTURER

The FSP-600 features “no-touch” end-of-line testing to ensure the product is installed and functioning correctly prior to departing the installing manufacturer’s facility:

When the luminaire is powered, the luminaire turns ON and reaches its full output. The FSP-6x1 then cycles through the entire dimming range starting from 100% output level to OFF 2 times. This confirms that the module is receiving power and can communicate the dimming signals to the power supply. The blinking of the LED module is also an indicator that the module has not been paired and that it is actively scanning for open networks. The end-of-line testing routine repeats at each power cycle and will be performed the first 10 times the FSP-6x1 is powered up. Before commissioning, this routine can be used to determine if a device has been paired to a network.

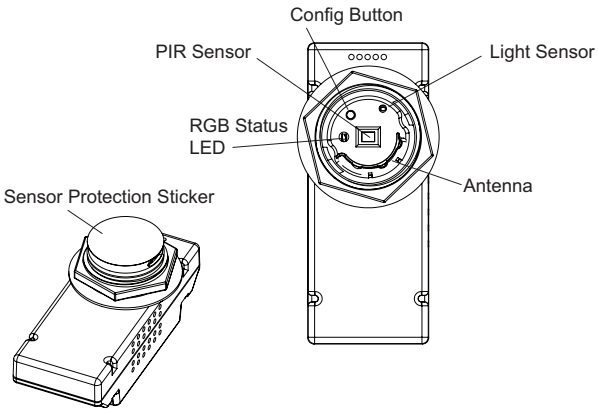
The Wiring Test Tool (EN-WTT-ZB) can also be used to toggle the luminaire ON,OFF, and Dimmed. This will indicate that the FSP-6x1 is wired correctly and ready to be paired to an open network.

STATUS LED AND CONFIG BUTTON FUNCTIONALITY

All FSP-600 series models include an RGB Status LED and a Config Button (example FSP-611 shown right). The Status LED is used to indicate various device events, most commonly occupancy detection which is signaled by a short red pulse.

The Config Button may be used to reset the FSP-600 to factory defaults (including resetting the End-of-line Testing “power up count”). To do so, tap the Config Button 10 times. The Status LED will flash blue each tap except for the 10th tap which will flash red. After a brief wait period, the device will perform a factory reset and the Status LED will flash a red/green/blue pattern to indicate reboot.

Additionally, to toggle the relay and turn the load ON or OFF, briefly press the Config Button.



NOTE: Remove Sticker before use

INITIAL POWER UP AND OTHER SETTINGS

Factory default setting is 100% light output until the FSP-6x1-y is commissioned into the Wattstopper PLUS network.

The commissioning process follows the same steps as other Wattstopper PLUS powered devices.

Scheduling/Grouping/Demand Response/Occupancy Response

- Set Astronomical and Time of Day scheduling with Polaris Config
- Set up grouping with Polaris Config
- Demand response commands are sent by Polaris
- Occupancy events are sent to the Wireless Manager, which in turn sends the appropriate brightness level(s) and ramp up/fade down timers to devices on the network

Energy Calculations

FSP-600 devices do not include an integrated power monitoring chip; energy calculations are available using Polaris software based on schedules, occupancy periods, and related parameters.

ORDERING INFORMATION

Catalog #	Master Pack Details					Inner Pack Details				
	Master Pack Quantity	Case dimensions (inches)			Weight (pounds)	Inner Pack Quantity	Case dimensions (inches)			Weight (pounds)
		Length	Width	Height			Length	Width	Height	
FSP-611	100	23.1	12.5	11.2	22.75	50	11.8	11.3	10	10.4
FSP-621	40	19.25	12.7	11.7	15.5	20	11.8	12.3	5.3	7
FSP-611-D	40	19.25	13.5	11.7	25.7	20	18.8	12.3	5.3	11.6
FSP-611-S	40	19.25	13.5	11.7	23.75	20	18.8	12.3	5.3	10.5
FSP-621-D	40	19.25	13.5	11.7	26.4	20	18.8	12.3	5.3	11.8
FSP-621-S	40	19.25	13.5	11.7	24.2	20	18.8	12.3	5.3	10.8

Catalog #		Color	Description	Voltage
☐	FSP-611*	White	Wireless fixture mount PIR motion sensor, line voltage, internal mount	120/277VAC, 50/60Hz or 230VAC, 50HZ
☐	FSP-611-D*	White	Wireless fixture mount PIR motion sensor, line voltage, external drop mount	
☐	FSP-611-S*	White	Wireless fixture mount PIR motion sensor, line voltage, external straight mount	
☐	FSP-621*	White	Wireless fixture mount PIR motion sensor, universal voltage, internal mount	100–347VAC (single phase) or 208/230/480VAC (phase-to-phase), 50/60Hz
☐	FSP-611-D*	White	Wireless fixture mount PIR motion sensor, universal voltage, external drop mount	
☐	FSP-611-S*	White	Wireless fixture mount PIR motion sensor, universal voltage, external straight mount	
☐	FSP-L2	White	360° lens, maximum coverage 48′ diameter from 8′ height	
☐	FSP-L2-B	Black		
☐	FSP-L2-BR	Bronze		
☐	FSP-L2-G	Gray		
☐	FSP-L2-S	White	360° lens, maximum coverage 48′ diameter from 8′ height, with shroud; Minimizes high-angle light contribution to photocell	
☐	FSP-L3	White	360° lens, maximum coverage 40′ diameter from 20′ height	
☐	FSP-L3-B	Black		
☐	FSP-L3-BR	Bronze		
☐	FSP-L3-G	Gray		
☐	FSP-L3-S	White	360° lens, maximum coverage 40′ diameter from 20′ height, with shroud; Minimizes high-angle light contribution to photocell	
☐	FSP-L7	White	360° lens, maximum coverage 100′ diameter from 40′ height	
☐	FSP-L7-B	Black		
☐	FSP-L7-BR	Bronze		
☐	FSP-L7-G	Gray		
☐	FSP-L7-S	White	360° lens, maximum coverage 100′ diameter from 40′ height, with shroud; Minimizes high-angle light contribution to photocell	
☐	FSP-C1-W	White	Small collar, for use with FSP-L2 and FSP-L3 lenses (Optional aesthetic collar to transition from fixture housing to lens) Note: Not used with lenses that include shroud	
☐	FSP-C2-W	White	Large collar, for use with FSP-L7 lens (Optional aesthetic collar to transition from fixture housing to lens) Note: Not used with lens that includes shroud	

*FSP-Lx series lens required for operation; order lens separately.

Information supplied above is subject to change.
Harmonization code: 8538908080. Country of origin: China.

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