

LOW VOLTAGE ULTRASONIC FIXTURE INTEGRATED OCCUPANCY SENSOR

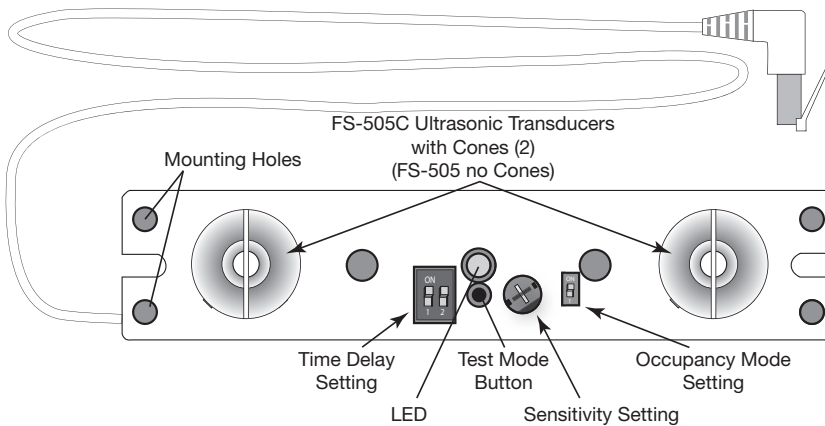


Product Overview

The FS-505 and FS-505C occupancy sensors turn lighting on and off based on occupancy. The sensors use ultrasonic sensing technology. Once the space is vacant and the time delay elapses, lights will turn off.

The FS-505 and FS-505C operate at 24VDC. They are designed for installation in a light fixture within 2' of an associated power supply.

The power supply for the sensors is an FS-PP power pack mounted inside a light fixture. The sensors are equipped with a 2' long cable fitted with a shielded male RJ45 plug. The FS-PP has a corresponding female RJ45 receptacle. This cable carries power to the sensor and the 24VDC maintained output to the power pack to signal that lights should be on. Optional cables and connectors are available for alternate configurations.



Time Delay sets the time interval that lights remain ON after motion ceases to be detected. A time delay of 30 minutes, the maximum allowable by ASHRAE 90.1, is recommended for most applications. Select shorter time delays by adjusting DIP switch settings on the sensor.

The Test Mode button enables installers to quickly verify the sensor's coverage area without waiting for lengthy time delay. A temporary state, Test Mode sets the time delay to five seconds and provides a five minute test period. After this period, the sensor reverts to the selected time delay.

Models

FS-505
FS-505C

Specifications and Features

Operating Voltage: 24 VDC

Power Consumption: 43mA @ 24VDC

Dimensions:

Sensor body: 5.19" L x 1.27" D x 0.73" W
(131.8mm x 32.6mm x 18.5mm)

Mounting base: 6.11" x 1.27"
(155.2mm x 32.6mm)

Mounting hole centers: 5.72" x 0.79"
(145.3mm x 20.1mm)

Requires FS-PP Power Pack for operation

Adjustable time delay: 5, 10, 15, or 30 minutes (test mode: 5 second delay for 5 minutes)

LED indicator of occupancy detection

Low-voltage 2-ft. whip with RJ45 connector

72-hour lamp burn-in feature

Operating conditions: 5% to 95% RH, non condensing

UL and cUL listed

Indoor use only

Five year warranty

Materials

ABS, Flame retardant

Meets materials restrictions of RoHS

Factory Defaults

Time Delay: 15 minutes

Sensitivity: 80%

The Occupancy Mode switch establishes the default lamp setting for instances when power is removed from the sensor. When using the FS-505 or FS-505C in luminaires, set the switch to OFF to ensure lights remain on if sensor is disconnected.

Adjustable sensitivity optimizes coverage in the space. Turning the trim pot clockwise increases sensitivity; turning the trim pot counterclockwise decreases sensitivity.

Coverage

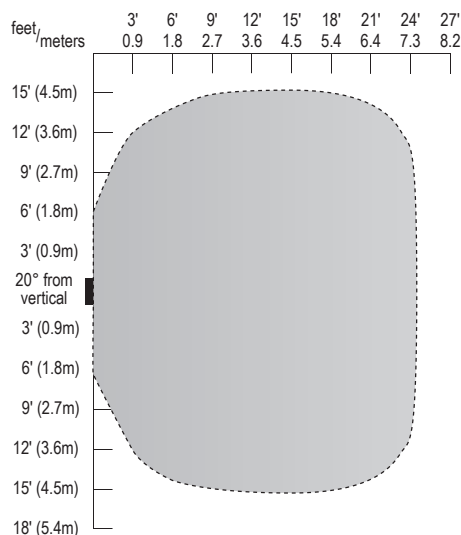


Figure 1. FS-505 coverage.

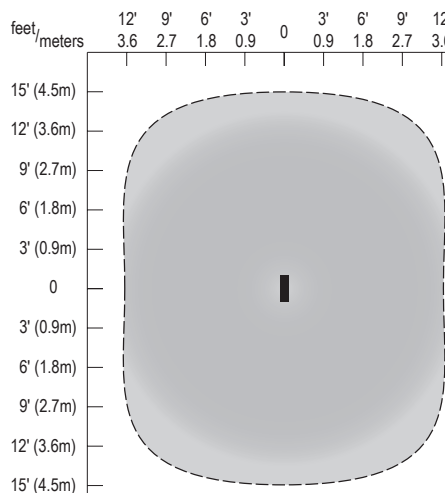


Figure 2. FS-505C coverage.

The coverage pattern is determined by sensor model, mounting height and the angle of the sensor relative to the floor in the covered area. The coverage shown represents full-step walking motion in a carpeted area, with no barriers or obstacles at a mounting height of 8 to 10 feet. Mounting above or below this range significantly affects coverage patterns.

Obstacles such as furniture or partitions, wall, ceiling and floor treatments can cause the coverage area to be less

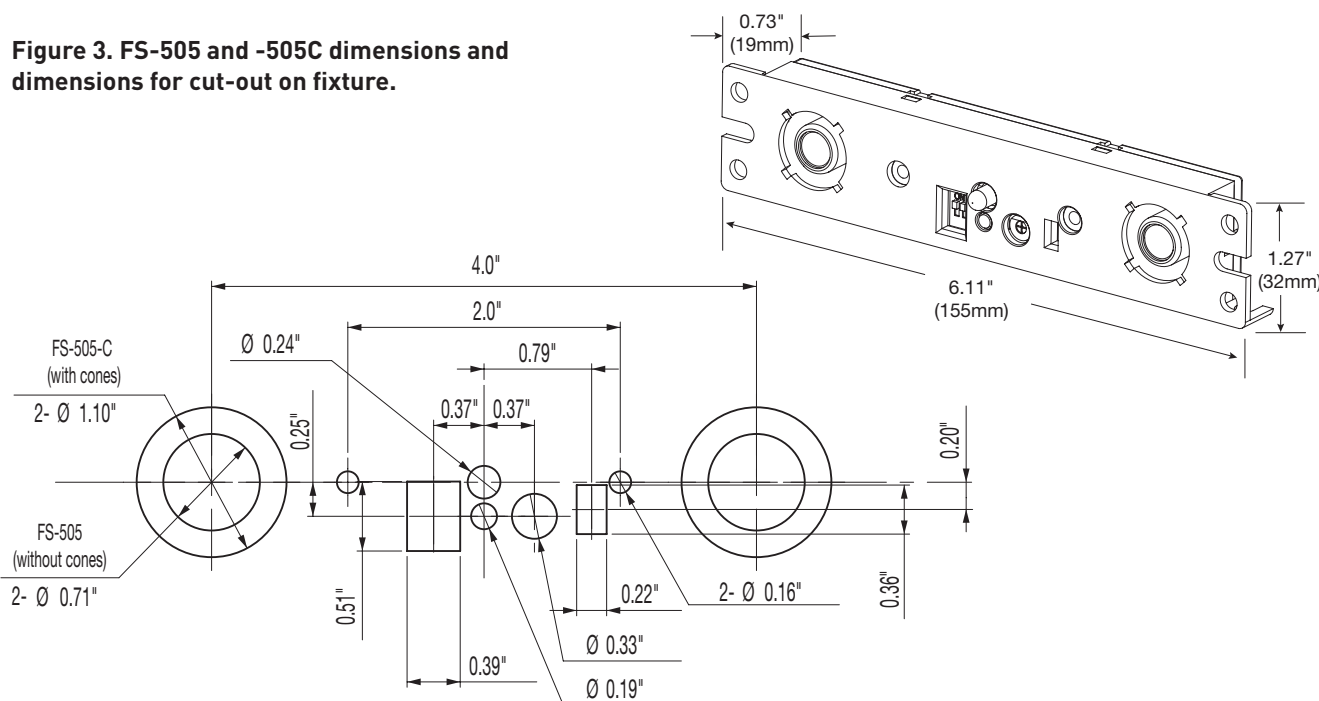
or more than the sensing distances shown in the coverage pattern. This must be considered when planning the number of sensors and their placement.

Place sensors at least 6 feet away from air supply ducts and other obstructions that may decrease sensing capabilities.

For complete coverage in open areas, install multiple sensors to provide a 20% overlap with each adjacent sensor's coverage area.

Dimensions

Figure 3. FS-505 and -505C dimensions and dimensions for cut-out on fixture.



Installing the FS-505/FS-505C Sensor and FS-PP Power Pack in Light Fixture

1. Install the FS-PP as directed in the installation instructions provided with the power pack. Review Figures 2, 3, and 11 in the instructions to determine appropriate load wiring to the FS-PP and Occupancy Mode Switch setting for the FS-505 or FS-505C.
2. Determine an appropriate mounting location inside the light fixture.
3. See template for dimensions to determine cut-out and mounting hole locations in the fixture.
4. Install the sensor to the inside of the fixture using screws.
5. Plug the FS-505 or FS-505C into the FS-PP.
6. Restore power from the circuit breaker.

Burn In

Some lamp and ballast manufacturers recommend running lamps at full output for the first 72 hours of operation.

The burn-in function initiates a 72-hour burn-in period. To start the burn-in process, push and hold the button for 5 seconds. The lamps will stay on for 72 hours continuously regardless of occupancy status. After 72 hours, the sensor returns to normal function. To indicate the sensor is in burn-in mode, the LED flashes rapidly and continuously for the full 72 hours. To turn off the burn-in mode, momentarily push the button again.

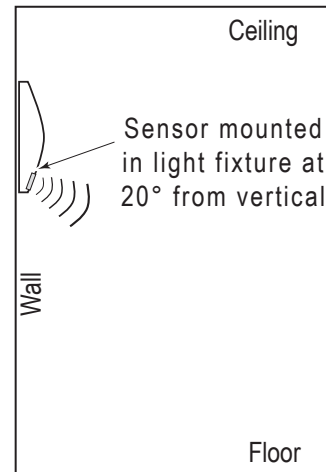


Figure 4. Wall mount of FS-505.

Wiring Diagrams

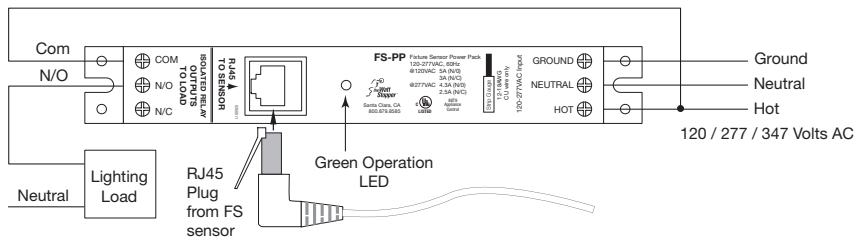


Figure 5. FS-PP wiring for On/Off control.

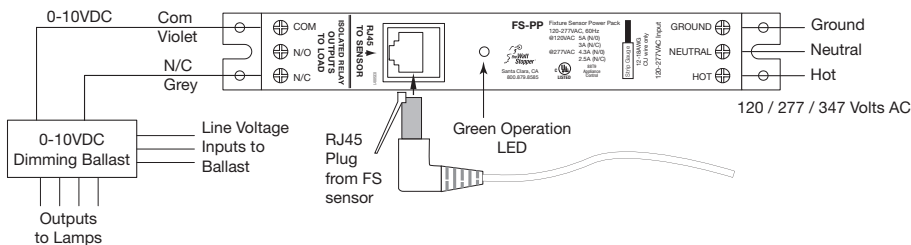


Figure 6. FS-PP wiring for High/Low control.

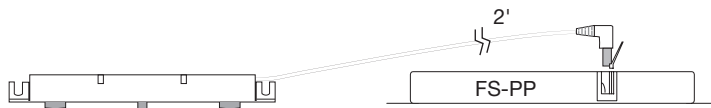


Figure 7. Standard connection between FS sensor and FS-PP power pack.

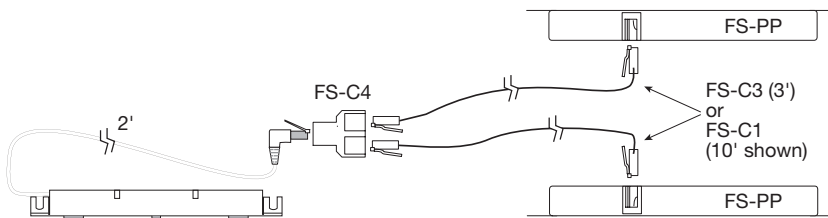


Figure 8. One FS sensor connected to two FS-PP power packs.

Wiring Diagrams/Control Configurations

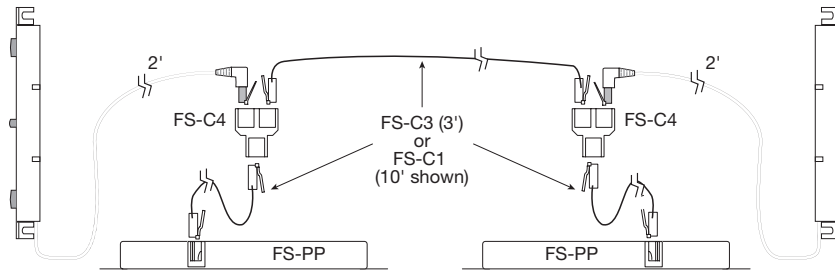


Figure 9. Two FS sensors connected to two FS-PP power packs.

Sequence of Operation

It may take up to a minute for the sensor to warm up during the initial power-up. The sensor has an “instant on” feature. This occurs during installation or after a lengthy power failure only. As soon as power is supplied to the FS-PP, the lights will come on and stay on for approximately 1 minute. If no movement is detected within that time the lights will turn off until detection occurs. If movement is detected during the initial 1 minute then the lights will stay on for whatever time has been set on the time delay.

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	
FS-505/FS-505C	100	21.14	19.72	10.31	21.84	N/A	N/A	N/A	N/A	N/A
FS-PPv2	100	21.14	19.72	10.31	21.8	N/A	N/A	N/A	N/A	N/A
FS-C1	160	14.17	11.02	11.02	31.62	10	13.0	9.0	2.0	1.9
FS-C2	700	15.0	18.50	19.0	16.82	20	13.0	9.0	2.0	20.0
FS-C3	350	15.0	13.50	19.0	28.08	10	13.0	9.0	2.0	0.76
FS-C4	750	16.34	12.75	20.27	40.0	15	9.0	7.0	1.0	0.76
FS-C5	600	14.17	11.02	14.17	22.34	30	12.0	6.0	1.0	1.04
FS-CK-2	320	20.0	17.50	14.0	24.04	80	19.50	8.0	6.25	80.0

Catalog #	Color	Description	Input Voltage
<input type="checkbox"/> FS-505	White	Fixture mount, low voltage ultrasonic occupancy sensor with adjustable sensitivity and time delay	24 VDC
<input type="checkbox"/> FS-505C	White	Fixture mount, low voltage ultrasonic occupancy sensor with adjustable sensitivity and time delay, two directional cones	24 VDC
<input type="checkbox"/> FS-PP v2	White	Fixture Mount Power Pack	120/277/347 VAC, 60 Hz with NO/NC relay output
<input type="checkbox"/> FS-C1		10' (3.048m) cable with shielded RJ45 male connectors at each end	
<input type="checkbox"/> FS-C2		6" (1.828m) cable with 3 flying leads at one end and a shielded RJ45 male connector on the other	
<input type="checkbox"/> FS-C3		3' (0.914m) cable with shielded 90° male RJ45 on one end and a shielded straight male RJ45 at the other	
<input type="checkbox"/> FS-C4		Shielded RJ45 splitter with female to dual female receptacles	
<input type="checkbox"/> FS-C5		Shielded RJ45 male to male coupler	
<input type="checkbox"/> FS-CK-2		RJ45 to 3-wire connection kit: one shielded RJ45 male to male connector, one 6" cable with 3 flying leads at one end and a shielded RJ45 male at the other. For connecting FS sensor to an alternate (non-FS-PP) power pack.	

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