Bi-level Dimming Microwave Sensor

Overview

- Microwave sensor 10.525 GHz
- 0-10V Bi-level Dimming. Manual options: 0% (OFF)*, 10%, 25% or 50% dimming
- Time delay 1 adjustable 5 sec to 30 min
- Time delay 2 adjustable 10 sec to ∞
- Active High/Low outputs for Relay drive
- 92ft x 36ft (28m x 11m) coverage pattern at 30ft (9.1m) mounting height
- Bluetooth add-on enables remote sensor programming, granular customization of dimming levels, time delays, high-end trimming
- Bluetooth add-on also enables smart phone fixture control, with sensor override for instant 0-10V dimming and on/off control*

*PSC-BL-M-**FM**-DC0*

Suitable for indoor and outdoor use

*PSC-BL-M-**FC**-DC0*

Suitable for indoor use only

Suffix "-BLE-FSR" is also in compliance with IC, AS/NZS and JAPAN for Radio Communication

Applications

The PSC-BL-M-FM-DC0 actively emits microwaves at 10.525 GHz frequency and uses the Doppler shift of the return waves to detect motion.

The PSC-BL-M-FM-DC0 is a Class 2 Device designed to satisfy new CA Title 24 requirements for bi-level dimming of lighting fixtures. Using a 0-10V signal, the sensor is capable of dimming lighting loads down to 0%*, 10%, 25%, or 50%.

PSC-BL-M-**FC**-DC0 is the compact version of PSC-BL-M-FM-DC0, the smaller form factor PSC-BL-M-FC-DC0 does not come with option for bottom and side mount.

These sensors are suitable for a variety of indoor and outdoor applications. It supports fixture and ceiling mounts. Both sensor and power pack are rated for use in temperatures ranging from -30° to 70°C and relative humidity from 90 to 95% at 30°C.

0-10V: 100mA to drive up to 50 LED sink drivers on 0-10V output.
High Vin-2.5V 100mA source
Low 100mA sink current

*For dim to off, Pacific PSC-AC-PP-200 Power Pack or LED dimming driver capable of dimming to off is required.

Sensor Operation

End users can manually program length of time delay, sensor range and dimming level using a series of dipswitches and trimpots. Simply remove the cover to gain access.

Bi-level Dimming**: 0-10V bi-level dimmer connects to 0-10V control on the LED driver. When motion is detected the sensor will bring lighting up to 100% lumen output. When no motion is detected for the length of TD1, the sensor will send a signal to dim lighting to a specific level set by the end-user. If no motion is detected for the length of TD2, the sensor will send a signal to shut off the light.

Relay Control: Two additional High and Low motion outputs can be used to control relays or other control circuitry.

Bluetooth Mesh 1.0.1 (SIG): The Bluetooth Mesh 1.0.1 enabled version pairs with an iOS application to allow initial setup and subsequent sensor adjustments, beyond what the analog controls on the sensor can offer. The mobile application enables adjustment of sensor parameters such as time delay, dim level, sensitivity, daylight detection, and more. Additionally, features such as parameter profiles, manual dim control, and real-time feedback from the sensor can speed up configuration and provide custom user control. See TruBlu™ Commissioning: User Manual for more info.

Accessories

Power Pack: The PSC-BL-M-FM-DC0 operates on 12-24VDC input and requires a separate power pack such as the PacWave™ PSC-AC-PP-200/300/400/700C/800/900.

This power pack incorporates a high current relay and a high voltage transformer which can accept universal input (100-305VAC).

Alternatively, the sensor can also operate with a driver that has an auxiliary output (12V).

**The sensor will dim the light if motion is not detected for the first time delay (TD1) and shut off the light if motion is not detected for the second time delay (TD2). TD2 will only count down after TD1 has expired and the light has dimmed. If motion is detected during TD2, the light will return to full output, and TD1 will restart.

If using a power pack, the sensor will tell the power pack to shut off the driver after TD2 expires to turn off the light. If using a dimming driver without a power pack, the sensor will try to dim down to 0% upon expiration of TD2.

Since one trimpot configures both TD1 and TD2, a fixed TD2 is set to each value of TD1. See page 2 for the corresponding values.

How to Order

For Line to Low Voltage Power Supply/Controller, please check PacWave™ PSC-AC-PP-200/300/400/700C/800/900.

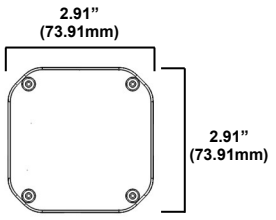
Model No.	Description	Input Voltage	Output
PSC-BL-M-FM-DC0	Bi-Level Microwave Occupancy Sensor, IP65	12-24VDC	0-10VDC Control High Control Low
PSC-BL-M-FC-DC0	Bi-Level Microwave Occupancy Sensor - Compact		
Add Suffix for options:			
-BLE	For PacWave Standalone Bluetooth Enabled Version		
-BLE-SR / -BLE-FSR	For Bluetooth Mesh in TruBlu™ Enabled Version / For Bluetooth Mesh in Future-Silvair Enabled Version		
-BLE-CB	For Bluetooth Mesh in Casambi Enabled Version		
/C	with Connector, see page 3, Lead Option B		
-B	with Bottom-mount IP65 enclosure. Option not available for **PSC-BL-M-FC-DC0 (-BLE)**		
-S	with Side-mount IP65 enclosure. Option not available for **PSC-BL-M-FC-DC0 (-BLE)**		

Summary	
Sensor Type	Microwave occupancy sensor
Input Voltage | Current Consumption	12-24VDC | 60mA sensor (85mA w/ BLE)
0-10V Output	100mA (multiple drivers)
High	Vin-2.5V 100mA source
Low	100mA sink current
Mounting Height	Ceiling/Wall Mount 8-12ft, Max 40ft (2.44-3.66m, Max 12.19m)
Max Range for Ceiling Mount*	36ft x 92ft (11m x 28m)
Max Range for Wall Mount*	10ft x 65ft (3m x 19.8m)
Time Delays **(TD1/TD2)****	5 sec/10 sec, 5 min/30 min, 15 min/45min, 30 min/60 min, 10 min/∞*****
Photocell Sensitivity	N/A
Max Bluetooth Range***	49 ~ 65ft (15 ~ 20m)
Operating Temperature	-30° C to 70°C
Storage Temperature	-40° C to 80°C
Relative Humidity	90-95% non-condensing at 30°C
Color	White
Warranty	5 years

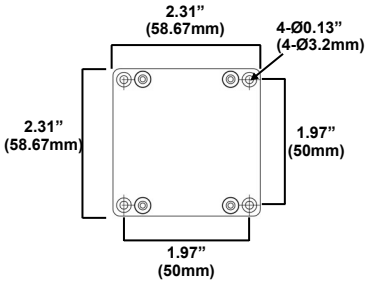
*Results may vary based on mounting height, angle, floor material, and line of sight
*If installed inside enclosure lens, detection range adversely affected by the type and density of the material used in the fixture lens or cover
**Bluetooth versions enable adjustment of sensor parameters such as time delay, dim level, sensitivity, and more.
***Bluetooth Range is highly dependent on the integration of fixtures, surrounding environment and conditions. It is recommended to conduct testing for range accuracy.
****If TD1 is set to 10 min, TD2 will never expire. So the light will remain at the dim level for as long as motion is not detected.

Physical Dimensions

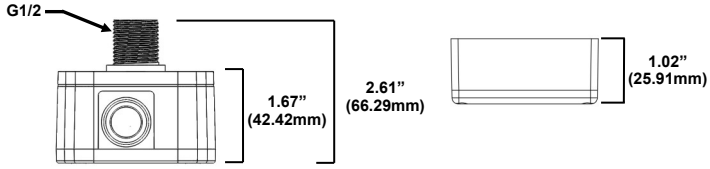
*PSC-BL-M-**FM**-DC0*



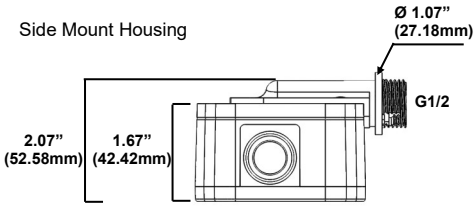
*PSC-BL-M-**FC**-DC0*



Bottom Mount Housing

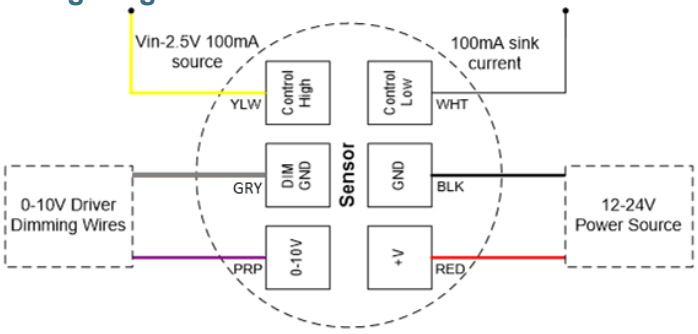


Side Mount Housing



Drawings are Not to Scale

Wiring Diagram



Note: If using a power pack other than PSC-AC-PP-200, connect either Control Hi or Control Low, depending on power pack relay circuitry.

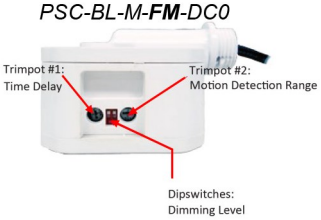
Settings Adjustment

Dipswitch 1	Dipswitch 2	DIM Level
OFF	OFF	OFF
OFF	ON	10%
ON	OFF	25%
ON	ON	50%

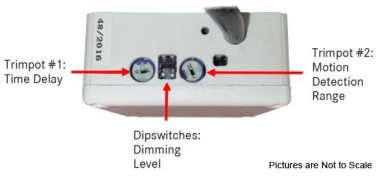
Trimpots

Trimpot #1 on left adjusts time delay. Trimpot #2 on right adjusts motion detection range and sensitivity. Turn clockwise to increase, turn counterclockwise to decrease.

*PSC-BL-M-**FM**-DC0*

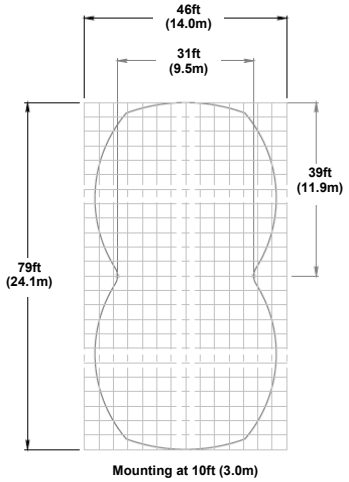


*PSC-BL-M-**FC**-DC0*

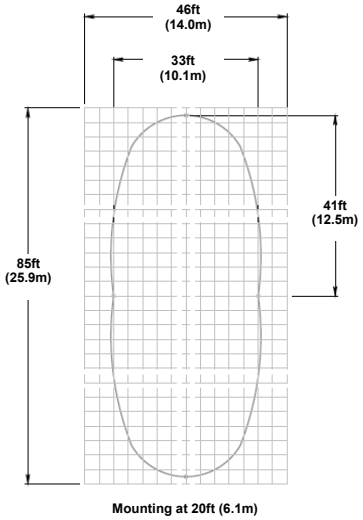


Pictures are Not to Scale

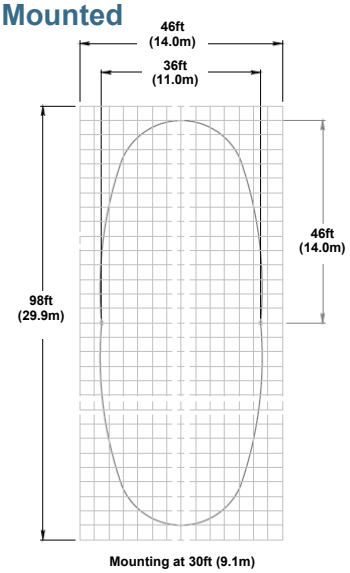
Detection Area for 10ft, 20ft, 30ft (3m, 6.1m, 9.1m) Ceiling Mounted



Mounting at 10ft (3.0m)



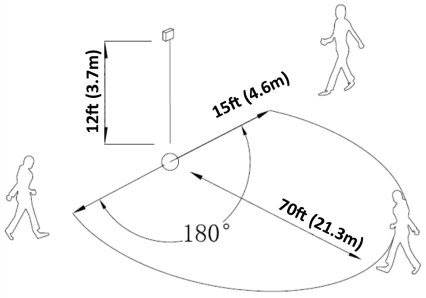
Mounting at 20ft (6.1m)



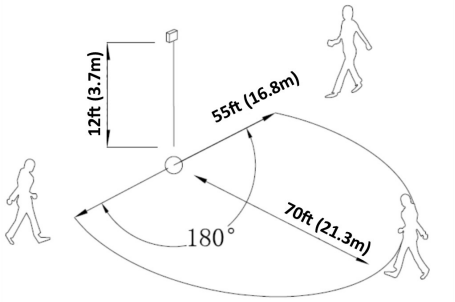
Mounting at 30ft (9.1m)

Note: Mount sensor with wires facing up (bottom mount) or side (side mount) and smooth face down for best performance (i.e. in ceiling mount application). Length of detection pattern (i.e. 79ft, 85ft, 98ft) (24.1m, 25.9m, 29.9m) is in line with the sensor face that has the trimpots/dipswitch.

Detection Area for 12ft, 35ft (3.7m, 10.7m) Sideways Mounted

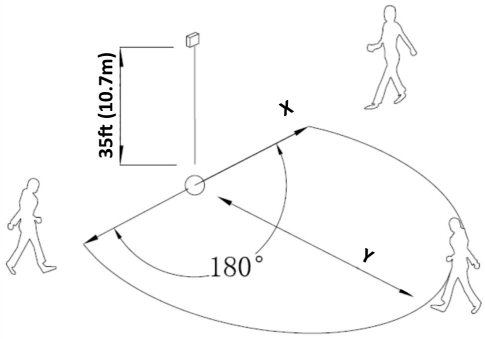


Dipswitches facing up or down



Dipswitches rotated 90°

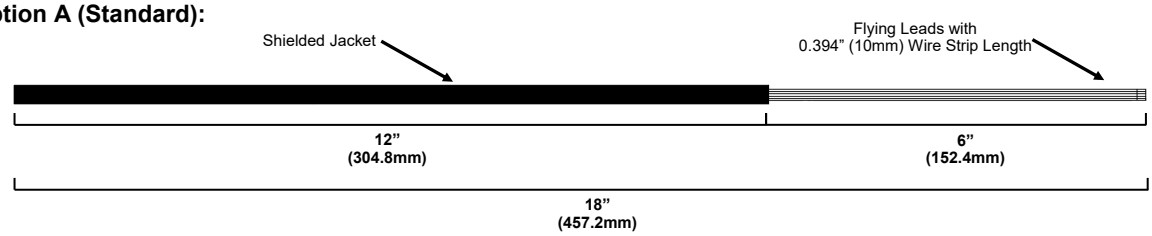
For pedestrians:
X = 10ft (3.0m)
Y = 65ft (19.8m)
For vehicles:
X = 45ft (13.7m)
Y = 185ft (56.4m)



Dipswitches facing up or down

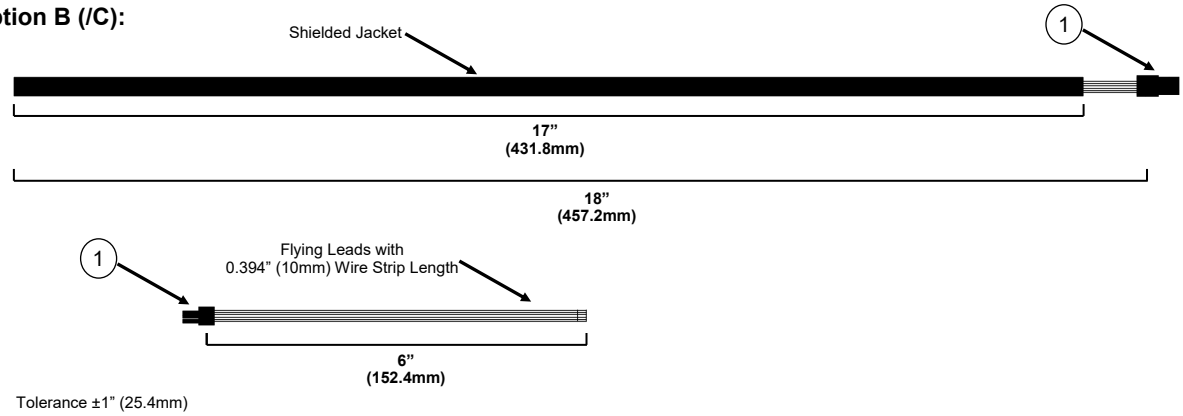
Lead Options:

Option A (Standard):



Tolerance ±1" (25.4mm)

Option B (/C):



Tolerance ±1" (25.4mm)

(1) Matching male and female connector: TE 794617, 794616 or equivalent