

# Installation Instructions for the RF920 Passive Infrared Detector

## 1.0 General Information

The RF920 is a high performance PIR Motion Sensor which uses advanced signal processing to provide outstanding catch performance and unsurpassed false alarm immunity. It contains an integral RF transmitter capable of transmitting at least 500 feet (150 m) open air. (Actual acceptable transmitter range should be verified for each installation). The transmitter sends a battery report with each transmission and transmits a supervisory signal to the Control Panel every 65 minutes.

## 2.0 Specifications

- **Dimensions (HxWxD):** 3.875 in. x 2.75 in. x 2.25 in. (9.8 cm x 7.0 cm x 5.7 cm)
- **Coverage Area:** 35 ft. x 40 ft. (10 m x 12 m)
- **Operating Temperature:** -4°F to +120°F (-20°C to +49°C). 0% to 95% relative humidity (non-condensing). *For UL Certified Installations, the range is +32°F to +120°F (0°C to +49°C), 0% to 85% relative humidity (non-condensing).*
- **Supply Voltage:** Supplied by one 3 VDC lithium battery.
- **Battery Life:** Approximately five years under normal operating conditions with the recommended battery types.
- **Recommended Battery Types:** Duracell DL123A, Panasonic CR123A, or Sanyo CR123A.
- **Compatible Receivers:** RF3224, RF3222, RF3212, RF3213

**NOTE:** UL has not verified operation on the RF3212, RF3213, or RF3222.

- **Compliance:** This device complies with Part 15 of the FCC Rules and with RSS-210 of Industry and Science Canada. Operation is subject to the following two conditions:
  - (1) this device may not cause harmful interference, and
  - (2) this device must accept any interference received, including interference that may cause undesirable operation.

**NOTE:** Changes or modifications not expressly approved by Bosch Security Systems can void the user's authority to operate the equipment.

## 3.0 Mounting

### 3.1 Mounting Considerations



The maximum wireless range of the detector, in open air, is approximately 500 feet (150 m). In normal residential or commercial applications it is recommended that the detector be kept within 100 feet (30 m) of the control panel receiver to which it is assigned.

It is recommended that the detector be temporarily mounted, using double sided tape, and tested from the desired location before permanent mounting.



**Do Not** mount in areas with large metallic surfaces (e.g. heating ducts) or electrical wiring which may inhibit the sensor's RF signals from reaching the Control Panel Receiver.



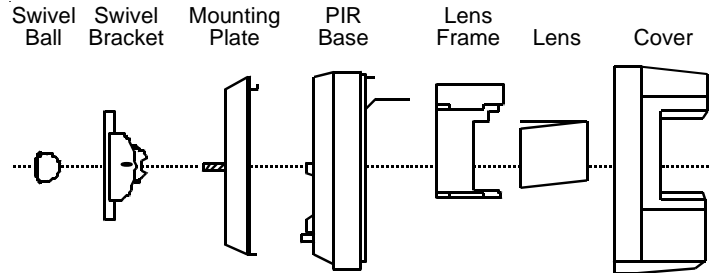
Consult the pattern drawings (see Section 6.0) and the following recommended adjustment table to choose an appropriate mounting height.

Standard Broad Coverage Lens Range	Mounting Height			
	6.5 ft. (2 m)	7.5 ft. (2.3 m)	8.5 ft. (2.6 m)	10.0 ft. (3 m)
20 ft. (6 m)	-7°	-10°		
35 ft. (10.7 m)	-4°	-6°	-7°	-10°

### 3.2 Surface or Corner Mounting (without swivel bracket)

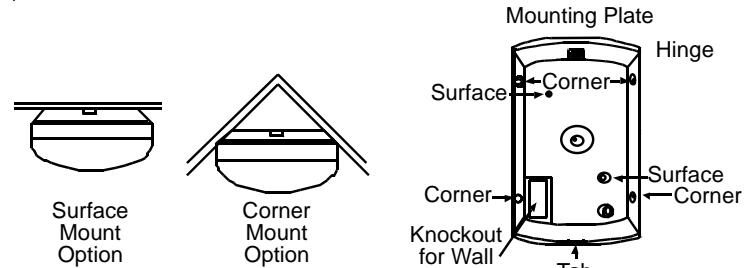
**NOTE:** Corner Mounting may **not** be used in Central Station Burglary, Grades AA and A, Installations.

- Remove the mounting plate (see Figure A) from the PIR Base by prying it up and out from the bottom.



**Figure A - Components (Side View)**

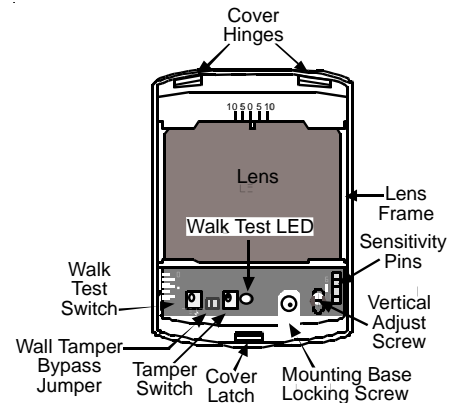
- Punch out two appropriate holes (see Figure B) in the mounting plate (for surface or corner applications).



**Figure B - Mounting Options and Plate**

**NOTE:** The wall tamper can **not** be used when corner mounting. Corner Mounting may **not** be used in Central Station Burglary, Grades AA and A, Installations.

- If the wall tamper function is required, remove the rectangular knockout. Locate the small spring in the hardware kit. Hold the PIR base so the battery is visible. Place the spring on the black plastic shaft of the wall tamper switch just below the battery.
- Remove the wall tamper bypass jumper (see Figure C) located next to the walk test switch.



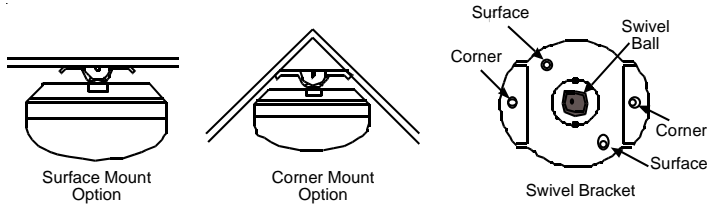
**Figure C - Enclosure (Front View) With Cover Off**

- Using the mounting plate as a template, mark the location of the required holes on the mounting surface.

- For installation on drywall or plaster, drill a 1/8-inch (3 mm) pilot hole to determine if a wall anchor is required.
- Secure the mounting plate to the wall with the wood screws (#6 x 1-inch) provided.

### 3.3 Swivel Bracket Mounting

- Using the swivel bracket as a template, mark the location of the required holes (see Figure D) on the mounting surface.



**Figure D - Mounting Options and Bracket**

- For installation on drywall or plaster, drill a 1/8-inch (3 mm) pilot hole to determine if a wall anchor is required.
- Secure the swivel bracket to the wall with the wood screws (#6 x 1-inch) provided.
- Attach the mounting plate to the swivel bracket using the machine screw (#6 x 5/8-inch) provided.
- Aim the mounting plate in the desired direction and tighten the screw.

**NOTE:** The wall tamper switch can **not** be used when mounting with the swivel bracket. Use of the swivel bracket may reduce PIR range and increase dead zones.

### 3.4 Coverage and Sensitivity Setting

- Remove the sensor's cover (see Figure A) by gently inserting a flatblade screwdriver into the notch at the bottom of the cover.
- \* Adjust the horizontal angle of coverage by sliding the lens (see Figure C) from side to side.
- Adjust the sensitivity setting by moving the Sensitivity Jumper (see Figure C) to the appropriate pair of pins.

**NOTE:** If the sensitivity jumper is not used or placed incorrectly, the sensor defaults to Intermediate sensitivity.

**S** **I** **H** **Standard** sensitivity is recommended for Broad coverage patterns. This setting is the most tolerant of environmental extremes.

**S** **I** **H** **Intermediate** sensitivity should be used for Long Range or Barrier type lens patterns or for any location where an intruder is expected to cover only a small portion of the protected area. This setting tolerates normal environments.

**S** **I** **H** **High** sensitivity should only be used in quiet environments where thermal and illumination transients are not anticipated. This setting has the fastest response to intruder signals.

### 3.5 Powering Up

- Remove the battery from its protective bag and insert into the battery holder on the back side of the PIR Base. When installing the battery it is necessary observe proper polarity or the sensor may not function correctly.

**NOTE:** When the battery is installed, wait at least five minutes before activating the Walk Test Mode.

- Attach the PIR base to the mounting plate and tighten the mounting plate locking screw.
- Replace the cover, engaging the top first then securing the bottom latch.

**NOTE:** For added security, the cover may be locked to the base latch using the small screw provided. The screw hole in the bottom of the cover must be knocked out prior to replacing the cover.

### 4.0 Panel Programming

See your Control Panel's Reference Guide for programming information for wireless type devices. There is an ID sticker located on the housing. You will need the nine-digit number from this sticker to program this device into the system.



### 5.0 Walk Testing



At least once a year, the range and coverage should be verified for proper operation. To assure daily operation, the end user should be instructed to walk through the far end of the coverage pattern to verify an alarm output prior to arming the system.

- Press the Walk Test Switch (see Figure C) to start a 90 second Walk Test Mode. During this Test Mode, any activity in the sensor's coverage pattern will cause a transmitted alarm and LED activation. Each alarm will also extend the Test Mode for an additional 90 seconds.

**NOTE:** Walk Testing should be done across the coverage pattern. The edge of the coverage pattern is determined by the first flash of the LED. This may change slightly depending upon the sensitivity setting. Walk Test the unit from both directions to determine the pattern boundaries.

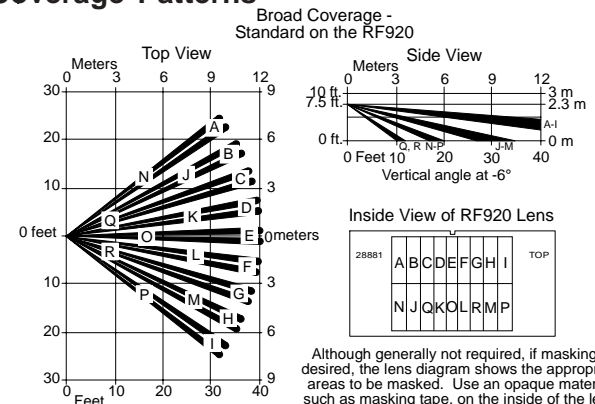


Excessive use of the Walk Test Mode may reduce battery life. Use only for initial setup and maintenance testing.

- If the rated range cannot be achieved, adjust the pattern up or down to assure the pattern is not aimed too low or high. The vertical angle of the pattern may be changed by adjusting the swivel bracket and/or by moving the circuit board vertical adjustment between  $-10^\circ$  and  $+2^\circ$ . Loosen the Vertical Adjust Screw to slide the circuit board. Moving the board up will angle the pattern downward. Tighten the Vertical Adjust Screw when positioning is complete. The detection pattern may also be shifted  $\pm 10$  degrees horizontally by rotating the lens left or right to the appropriate marks on the lens frame.
- While the detector is in the walk test mode, turn on all heating and air conditioning sources which would normally be active during the protection period. Stand away from the sensor and outside the coverage pattern and watch for alarms.
- After setup and tests are completed, and there has been no activity in the sensor's coverage pattern for approximately 90 seconds, the LED will flash to indicate that the Walk Test mode is ending.

**NOTE:** In the normal operating mode, an alarm can be transmitted only after three (3) minutes have passed since the previous alarm. This three-minute lockout time reduces unnecessary RF transmissions in high traffic areas thereby extending battery life.

### 6.0 Coverage Patterns



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