![Inovonics Wireless Corporation logo]

FA206S
Frequency Agile® 900MHz Transmitter
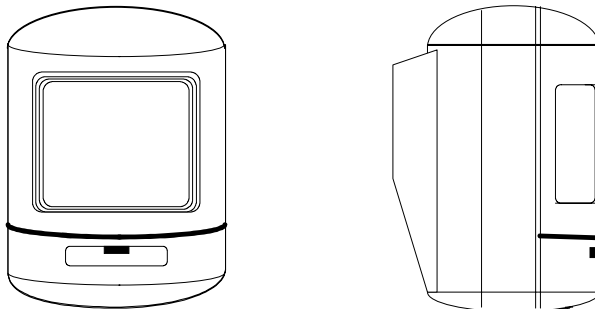3.0V Sharpshooter®
Passive InfraRed Motion Detector

Installation Instructions
02311D

Overview:

The FA206S is a low-current motion detector highly sensitive to moving heat (infrared radiation) sources. It features increased immunity to RFI, vibration, static, lightning, ambient temperature changes and other common causes of false alarms.

Features:

- Reliable 900 Megahertz transmitter operation.
- Inovonics' *Frequency Agile*™ radio link.
- Dual pyroelectric sensor with jumper-selectable one- or two-zone detection.
- Sequence processor with bi-directional pulse counting and event verification.
- Opaque fresnel lens focuses infrared energy on pyroelectric sensors, reducing false alarms caused by stray light or heat sources.
- 5 interchangeable fresnel lenses available for special applications.
- Mounting hardware and housings permit flat wall, corner or hallway mounting, with swivel adjustments for aiming for nominal coverage. Optional mirror-sighting accessory for precise mounting and lens selection.
- Fire-retardant antique white ABS plastic housing.

Important Notes

⚠ These products are designed to be installed and maintained by professional security technicians.
⚠ Products, unless specifically noted, are intended for indoor use.
⚠ Manually test all products regularly.

Sharpshooter Specifications:

- Dimensions: 2.875"W x 3.688"L x 2.063"D
- Operating temperature: 10°F to 120°F
- Humidity: 10% to 90% non-condensing
- Static and Lightning immunity: 2.5KV, 1msec rise/50 msec decay, 2 joule max impulse
- Voltage: 2.6-3.2 VDC
- Battery: Inovonics BAT604 (3.0V lithium Duracell DL123A, or equivalent)
  - Note: Battery is supervised
- Typical battery life: 2 years in location with low to moderate activity*
- Standard lens coverage area: 45' x 90°
- Long Range lens coverage area: 90' x 6°
- Extra Wide Lens coverage area: 20' x 140°
- Pet Alley coverage area: 35' x 90°
- Degrees of mounting swivel: +/- 10° right or left, 15° down

* The battery life of a PIR transmitter is highly dependent on "traffic" in its coverage area. PIRs installed in reception areas and similar areas experience reduced battery life.

Installation:

Mounting Note: Recommended mounting height for standard lens is 6'10" above floor level.
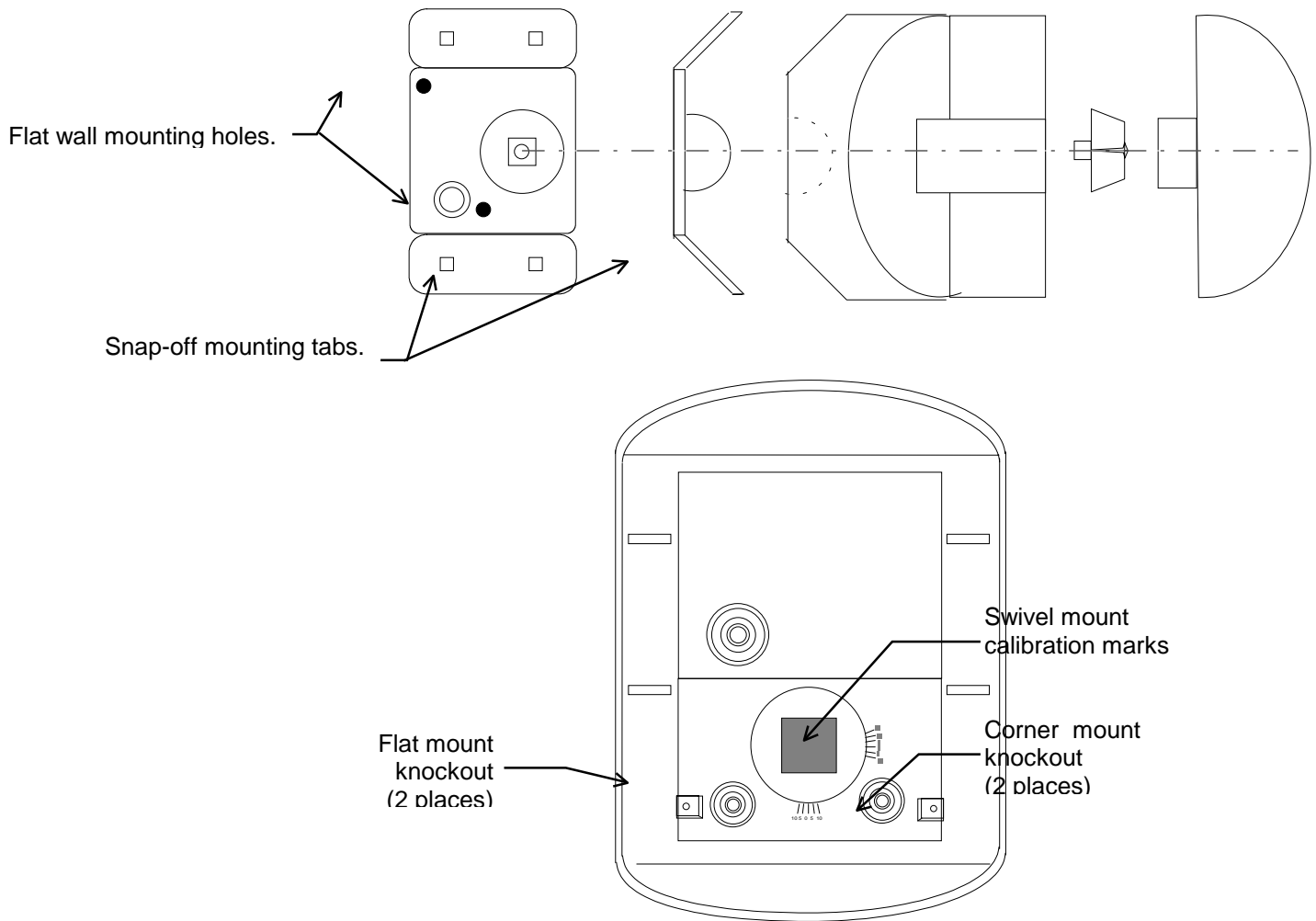
General mounting advice:

- For the most precise installation, Inovonics recommends using the optional C603 Sharpshooter sighting mirror. After you have selected the location of the mounting bracket, attach the C603 to the bracket and view coverage patterns of various lenses, identify potential sources of false alarms and determine areas that need to be masked. The Sharpshooter functions best when areas being protected are bounded by solid barriers. Walls and floors provide good backdrops for detecting changes in infrared energy.
- For best detection, locate Sharpshooters so that intruders move **across** detection zone patterns, rather than toward or away from the sensor.
- Check areas for potential sources of false alarms. Remember that the sensor responds to quick changes in heat patterns within its coverage pattern. Avoid locating it where it is exposed to direct or reflected sunlight, or to objects which can be heated quickly by sunlight. Do not place the Sharpshooter looking at windows. Don't place it near heat or cold sources, like heater ducts or air conditioners, which might direct hot or cold air onto the sensor. Look for appliances such as space heaters which can rapidly heat up. If necessary, mask the lens to eliminate potential sources of false alarms.
- Find out about normal use of the area. Are there pets? Might there be birds, bats, mice, for example, in a warehouse?
- When the sensor might detect users who enter the protected area through a delayed door, program the sensor as a "Follower" device.
- Make end-users aware of the location of the Sharpshooter and caution them about obstructing the coverage pattern when re-arranging furniture or stock.

Mounting Instructions:

The FA206S may be mounted with or without the Swivel bracket. Without the bracket the unit may be attached to walls or corners through the back of the detector housing. This provides a fixed mounting and aiming pattern.
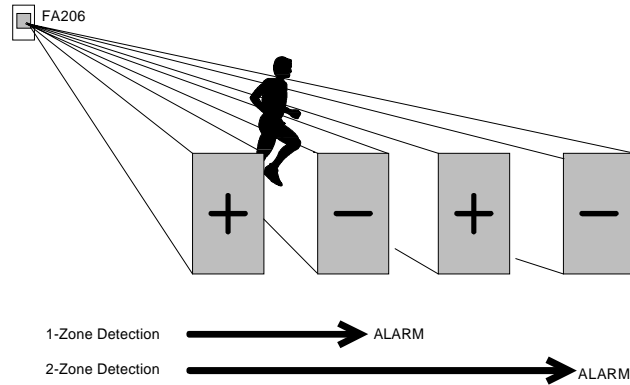
Where it is desirable to be able to adjust the viewing direction, use the swivel mounting bracket as shown. The most common use of the swivel adjustment bracket is to compensate for mounting the unit at heights other than the nominal 6'10". For every 1-foot variation from the 6'10" height, compensate with 1° of tilt. Use the tilt and swivel calibration marks to set correct compensation.

Swivel Mounting Bracket

Flat wall mounting holes.

Snap-off mounting tabs.

Flat mount knockout (2 places)

Swivel mount calibration marks
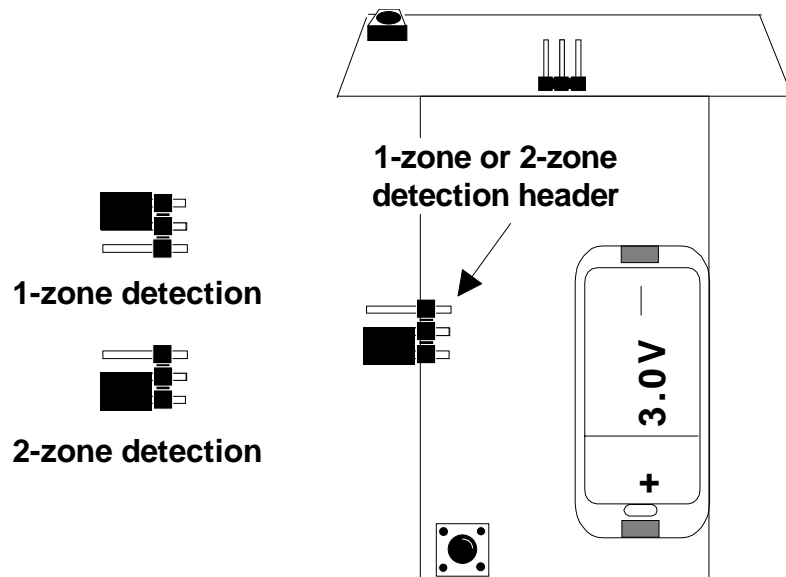
Corner mount knockout (2 places)

One-zone detection vs. Two-zone detection:

Placement of the Zone detection jumper determines how much motion it will take to trigger the Sharpshooter. By way of explanation, think of the Sharpshooter as looking out at the protected area in a series of wedge-shaped zones beginning inside the unit at 2 small pyroelectric sensors. Two of these wedges comprise a zone. Infrared energy travels up the wedges and is focused by the Fresnel lens onto the pyroelectric sensors. One sensor creates a positive voltage spike when subjected to a temperature change, the other a negative spike. A target moving across the adjacent positive and negative wedges of a zone creates a characteristic electrical "signature". Sophisticated software analyzes the waveforms created by the sensors before triggering an alarm.
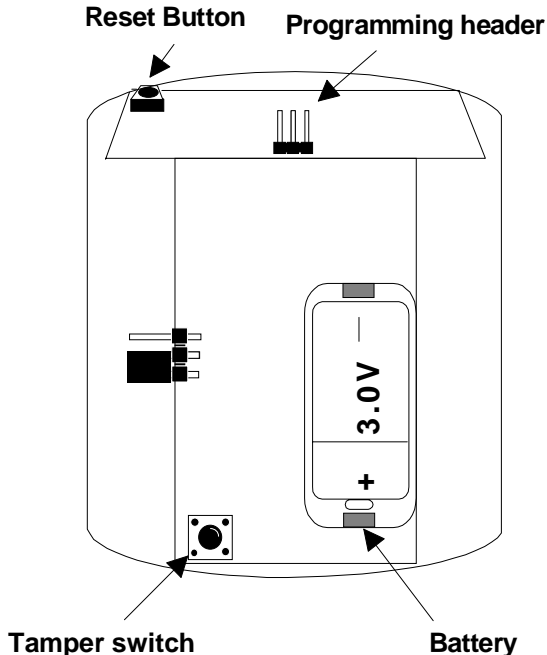

The one-zone detection option tells the Sharpshooter that changes in any adjacent wedges should cause an alarm. This setting is required for long-range lenses and curtain lenses. In standard lenses, however, one-zone detection makes the unit very sensitive to minor temperature variations in the environment, and can result in false alarms.

Two-zone detection requires intruders to move across at least four wedges. At typical operating distances from the Sharpshooter, the target has to move several feet before an alarm will be generated. False alarms due to localized heat fluctuations are nearly eliminated.

Programming the FA206S:

Reset Button   **Programming header**

Tamper switch   Battery

Program contacts:	N/C
Typical battery life:	2 years
	(in low activity area)
Battery type:	3.0V lithium Duracell DL123A
Sleep after trip:	90-103 seconds

Programming the transmitter:
1. Remove the Sharpshooter cover.
2. Insert the battery as shown.
3. Enter programming mode for the receiver unit, using the above recommendations as a guideline. Connect the programming cable between the transmitter and the receiver.
4. Press the transmitter reset button.
5. When programming is complete, disconnect the programming cable and replace the Sharpshooter cover.

Note: **The FA206S retains programming data in non-volatile memory. It does not require re-programming after loss of power. Install a new battery and press the reset button to re-initialize the transmitter and restore programming.**
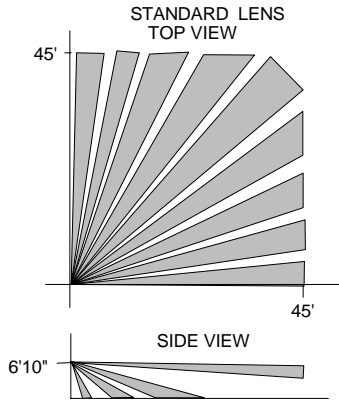
Walk test: When the cover is replaced on the FA206S, the unit will go into automatic walk test mode for 3 minutes. During this time the walk test LED will light as zones are crossed to help determine detection pattern. After the 3-minute period, the LED will not light again until the cover is opened and re-closed.

Operation: The Sharpshooter extends battery life by "going to sleep" for approximately 90 seconds after transmission of an alarm. At the end of the sleep period, the Sharpshooter will trip immediately if it still detects motion. It is useful after installation to allow the unit to stabilize for several minutes before conducting tests.
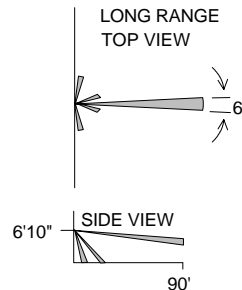
Appendix A: Zone patterns for standard and optional lenses

Selection of appropriate fresnel lens and selective masking of the lens let the installer customize the Sharpshooter for any site. Following are descriptions of the 5 lenses available in the optional C604 PIR lens assortment.
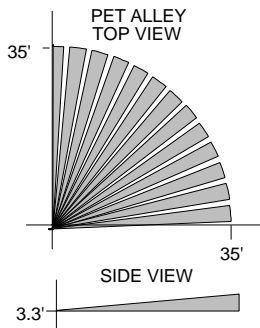
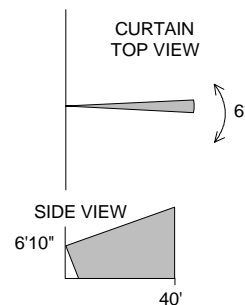Note: All range values are based upon a 6'10" mounting height, unless noted otherwise.

STANDARD LENS
TOP VIEW

45'

45'

SIDE VIEW

6'10"

Standard: The standard lens covers a 90° field, and has a 45-foot range. It has lookdown zones of 60°, 30°, 15° and 4°.

PET ALLEY
TOP VIEW

35'

35'

SIDE VIEW

3.3'

Pet Alley: The pet alley lens covers a 90° field, and has a 35-foot range. Recommended mounting height is 3.3'.

EXTRA WIDE AN
TOP VIEW

140'

SIDE VIEW

6'10"

20'

Extra wide angle: The extra wide angle lens covers a 140° field. It has a single lookdown zone. Range is 20 feet.

LONG RANGE
TOP VIEW

6°

SIDE VIEW

6'10"

90'

Long range: Designed to look down aisles, up or down stairwells or for perimenter protection. Range of 90 feet for long range zone. Three short-range lookdown zones protect the area near the Sharpshooter.
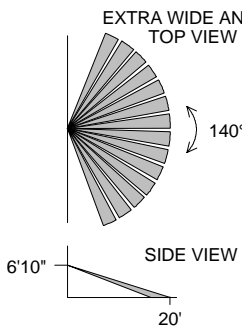
CURTAIN
TOP VIEW

6°

SIDE VIEW

6'10"

40'

NOTE: Turn curtain 90° for skylight protection.

Curtain: Designed to protect areas under skylights or near roof or ceiling accesses. Range of 40 feet, 6° view angle from sensor, blanket detect from about 60° down-angle to 45° up-angle.

Warranty & Disclaimer

Inovonics Wireless Corporation ("Inovonics") warrants its products ("Product" or "Products") to conform to its own specifications and to be free of defects in materials and workmanship under normal use for a period of twenty-four (24) months from the date of manufacture. Within the warranty period Inovonics will repair or replace, at its option, all or any part of the warrantied product. Inovonics will not be responsible for dismantling and/or reinstallation charges. To exercise the warranty, the User ("User", "Installer" or "Consumer") must be given a Return Material Authorization ("RMA") Number by Inovonics. Details of shipment will be arranged at that time.

This warranty does not apply in cases of improper installation, misuse, failure to follow installation and operating instructions, alteration, abuse, accident or tampering, and repair by anyone other than Inovonics.

This warranty is exclusive and expressly in lieu of all other warranties, obligations or liabilities, whether written, oral, express, or implied, including any warranty of merchantability or fitness for a particular purpose. Inovonics will not be liable to anyone for any consequential or incidental damages for breach of this warranty or any other warranties.

This warranty will not be modified, varied or extended. Inovonics does not authorize any person to act on its behalf to modify, vary or extend this warranty. This warranty will apply to Inovonics Products only. All other products, accessories or attachments used in conjunction with Inovonics equipment, including batteries, will be covered solely by their own warranty, if any. Inovonics will not be liable for any direct, incidental or consequential damage or loss whatsoever, caused by the malfunction of Product due to products, accessories, or attachments of other manufacturers, including batteries, used in conjunction with Inovonics Products.

This warranty does not warrant the replacement of batteries that are used to power Inovonics Products.

The User recognizes that a properly installed and maintained security system may only reduce the risk of events such as burglary, robbery, personal injury and fire. It does not insure or guarantee that there will be no death, personal damage and/or damage to property as a result. **Inovonics does not claim that the Product may not be compromised and/or circumvented, or that the Product will prevent any death, personal and/or bodily injury and/or damage to property resulting from burglary, robbery, fire or otherwise, or that the Product will in all cases provide adequate warning or protection.**

Inovonics shall have no liability for any death, injury or damage, however incurred, based on a claim that Inovonics Products failed to function. However, if Inovonics is held liable, directly or indirectly, for any loss or damage arising under this limited warranty or otherwise, regardless of cause or origin, Inovonics' maximum liability will not in any case exceed the purchase price of the Product, which will be fixed as liquidated damages and not as a penalty, and will be the complete and exclusive remedy against Inovonics.

 Warning: **The User should follow all installation, operation and maintenance instructions.** The User is strongly advised to conduct Product and systems tests at least once each week. Changes in environmental conditions, electric or electronic disruptions and tampering, may cause the Product to not perform as expected.

 Warning: Inovonics warrants its Product to the User. The User is responsible for exercising all due prudence and taking necessary precautions for the safety and protection of lives and property wherever Inovonics Products are installed. Inovonics strongly advises the User to program Products to be supervised whenever used in applications affecting life safety. Users are warned that unsupervised devices are subject to undetected failure due to malfunction, battery failure, tampering, or changes in environment.

Additional products from *Inovonics* include:

Frequency Agile® Receivers

FA416	16-channel / 4-output
FA416D	16-channel / 4-output with display
FA464	64-channel / 16-output

Frequency Agile® Transmitters

FA202	smoke detector transmitter
FA203(S/D)	pendant transmitter (Single or Dual Button)
FA204	pendant transmitter
FA205(S/D)	beltclip transmitter (Single or Dual Button)
FA207	glassbreak detector transmitter
FA210	reduced-size universal transmitter
FA209	billtrap transmitter
FA210W	reduced-size universal widegap transmitter
FA223S	pendant transmitter
FA223D	pendant transmitter

FA206S PIR detector transmitter accessories

C603	sighting mirror
C604	PIR lens assortment