



FA404
4 Transmitter / Single Output Receiver
FA404R
4 Transmitter / Single Relay Output Receiver

Installation Instructions
02327C

Document revision history		
Rev. Level	Description	Date
B	Create F:\Eng\parts\02327\02327B.doc from P:\Master.dox\FA_dox\FA404_v2.doc	7/19/01
C	Replace ISO logo	8/08/01

Important Notes

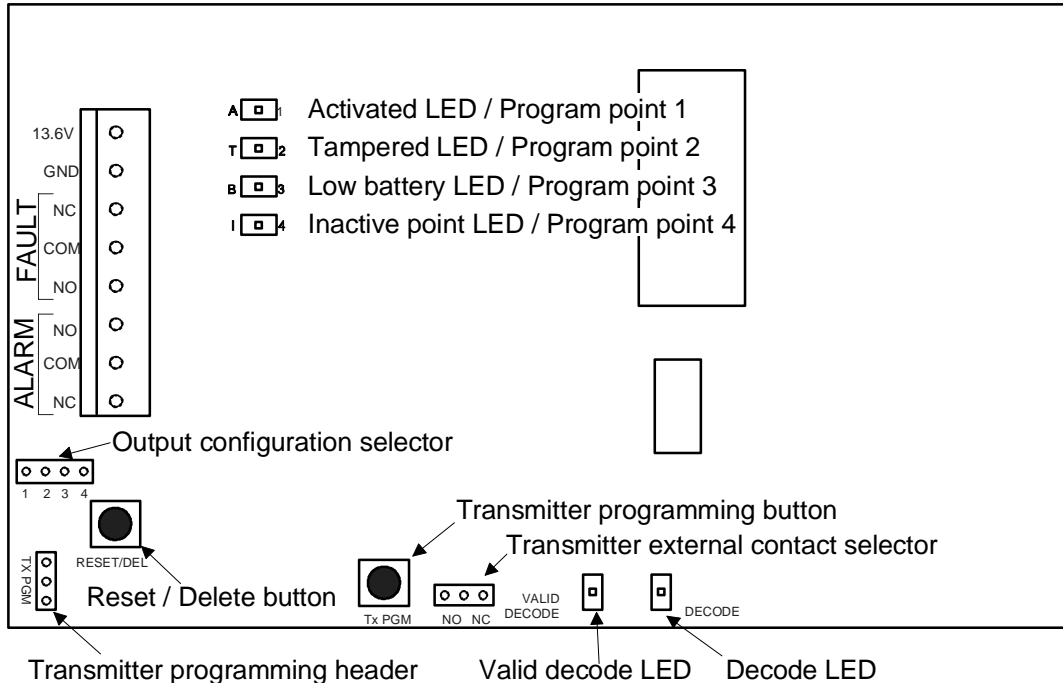
- ▲ The FA404 is designed to be installed and maintained by professional security technicians.
- ▲ Unless specifically noted, Inovonics products are intended for indoor use. This receiver is intended for use with *indoor* security systems. Use in outdoor applications may impair performance.
- ▲ Test system regularly.



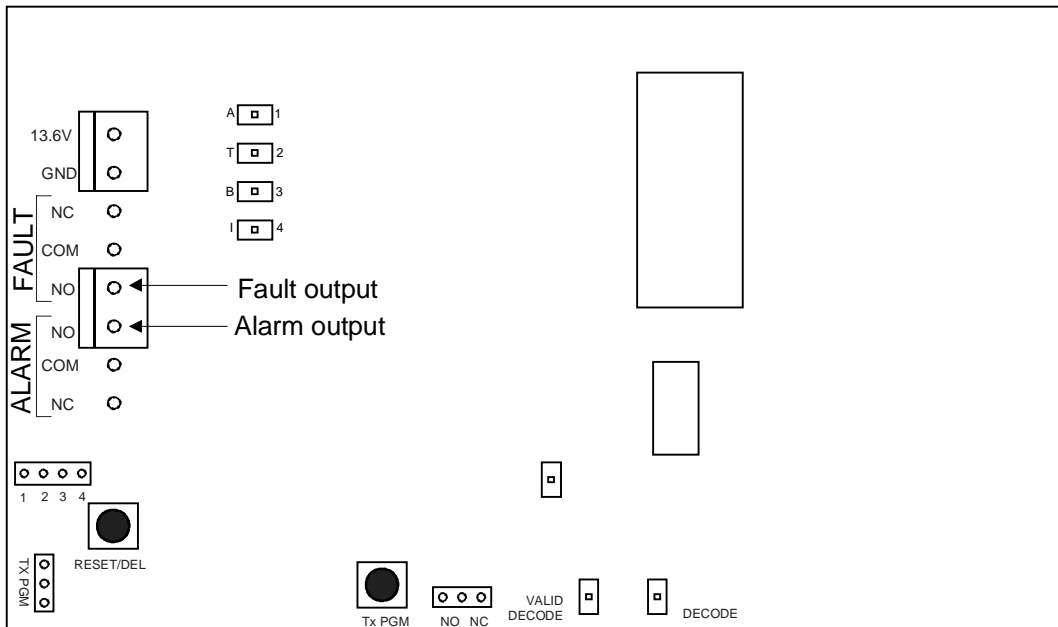
Overview:

FA404 and FA404R slave receivers fully supervise up to four wireless transmitters. The FA404 has open collector Alarm and Fault outputs. The FA404R has Form-C Alarm and Fault relay outputs.

FA404R receiver



FA404 receiver



Technical Specifications:

Dimensions (housing):	6.38" x 3.60" x 1.10"
Weight:	6.9 oz.
Environmental:	
Operating temperature:	32°-120°F (0°-50°C)
Relative Humidity:	95% (non-condensing)
Electrical:	
Power Requirement:	11-14 VDC
Power Consumption:	130mA (max, relays activated)
Typical:	40mA (quiescent)
FA404R output relay	Form C, 1A @ 28VDC, 0.5A @ 30VAC (resistive)
Receiver:	
Type:	frequency-hopping spread spectrum
Operating frequency:	902-928 MHz

The **VALID DECODE LED** indicates transmissions from transmitters programmed to the receiver.

The receiver programs transmitters with the following fixed parameters:

- No EOL resistor.
- No Internal Contact. (The FA404 and FA404R will **not** support the FA200W or FA210W widegap internal magnet contact.)
- 60-second supervisory check-in. (The transmitter sends a supervisory signal every 60 seconds. Some transmitters check in at 150-second intervals.) The receiver, with a fixed 4-hour supervisory window, will declare a programmed point inactive if no transmission is received during every 4 hour window.
- The Fault Output is Latching for low battery or tamper faults. It is Follower for Inactive faults.
- The Alarm Output is user-selectable to be follower, momentary, latching or toggle.

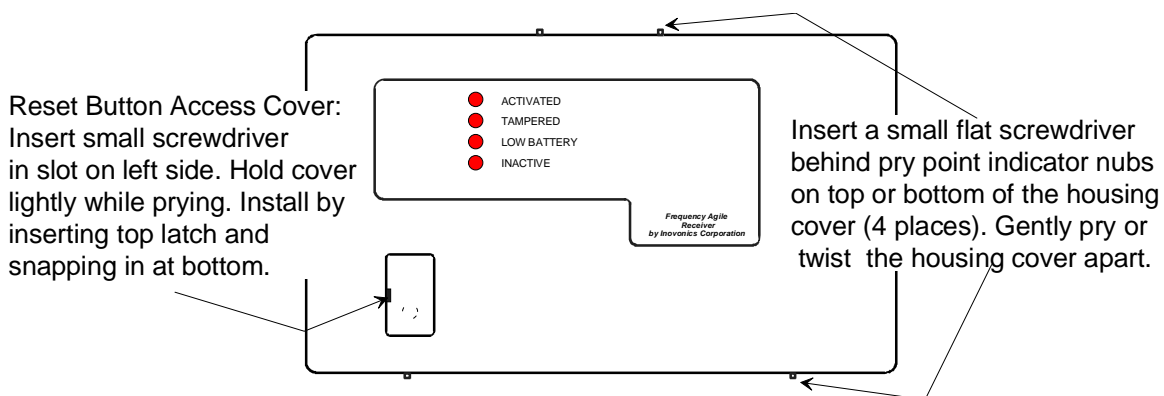
Note: **FA transmitters have non-volatile memory.** It is not necessary to reprogram transmitters after losing power or changing batteries. Press the transmitter reset button to restore programming.

Installation:

Power: Supply power and ground to terminals marked **13.6V** and **GND** on the terminal block.

Mounting: Use supplied hardware to attach FA404 or FA404R housing to wall or surface. To route wiring out the back of the unit, use a small side cutter or utility knife to remove the knockout in the housing base.

Opening the housing:



Programming Alarm Output Configuration:

- 1) Select alarm output trip options according to the following table. Set jumpers on the **OUTPUT CONFIGURATION SELECTOR** as indicated.

Pins 1-2	Pins 3-4	Output Trip Mode
Off	Off	Follow
On	Off	Momentary (Output will remain on for 4 to 10 seconds from last alarm transmission. Output will stay on during continuous alarm transmissions.)
Off	On	Latch
On	On	Toggle (After releasing the button allow at least 5 seconds between transmissions to toggle devices on and off.)

WARNING: Do not use the FA404 toggle mode in applications requiring precision control or timing.

Programming transmitters:

- 1) Select Normally Open (NO) or Normally Closed (NC) transmitter contact by positioning the jumper on the receiver's 3-pin transmitter external contact selector.
- 2) Plug programming cable to 3-pin **TRANSMITTER PROGRAMMING HEADER** on the receiver. Orientation of the cable connector to the header pins makes no difference.
- 3) Press the **TRANSMITTER PROGRAMMING BUTTON** on the receiver. **Hold for at least 1 second** to select the transmitter. The receiver goes into program mode. Continue pressing until the desired transmitter is selected (1-4). A flashing LED indicates that a point has not been previously programmed. Program mode ends as soon as the transmitter is programmed or times out after 30 seconds.
- 4) Connect the programming cable to 3-pin header on transmitter. Orientation of the connector to header pins does not matter.
- 5) **Press the transmitter reset button for at least 2 seconds.** (Refer to pages 6 and 7 for locations of transmitter reset buttons.)
- 6) If programming is successful, the program point LED will change from flashing to steady when the reset button is released.

Note: Any combination of N/O or N/C transmitters can be programmed.

Replacing one transmitter with another:

- 1) Before programming a new transmitter to a previously used point, delete the first transmitter as shown below.
- 2) Pull the battery from the first transmitter to prevent it from continuing to transmit with the same point identification.
- 3) **WARNING: Inovonics strongly advises against using more than one transmitter per point.** Discrete supervision is lost and the possibility exists that alarm transmissions might be missed or cancelled by concurrent restoral or supervisory signals from identically programmed transmitters.

Deleting a transmitter:

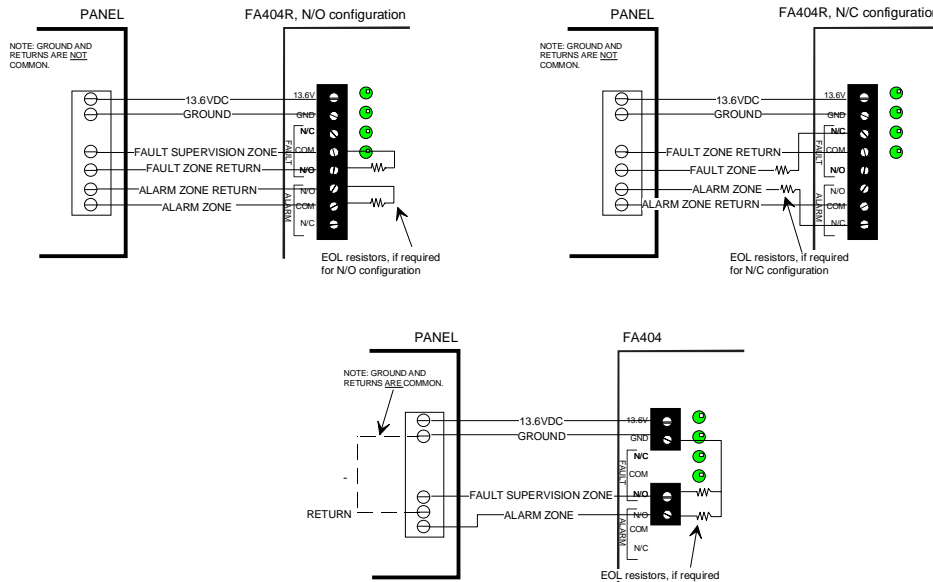
- 1) Press the **TRANSMITTER PROGRAMMING BUTTON** on the receiver to select the transmitter point number.
- 2) Press the **RESET / DELETE BUTTON**. This instructs the receiver that there is no longer a transmitter programmed to the point. The LED will change from steady to flashing when the point is deleted.

NOTE: Transmitters which have been programmed to the receiver but which are subsequently removed or not used must be deleted from the system to prevent occurrence of Inactive fault in 4 hours.

Receiver Operation:

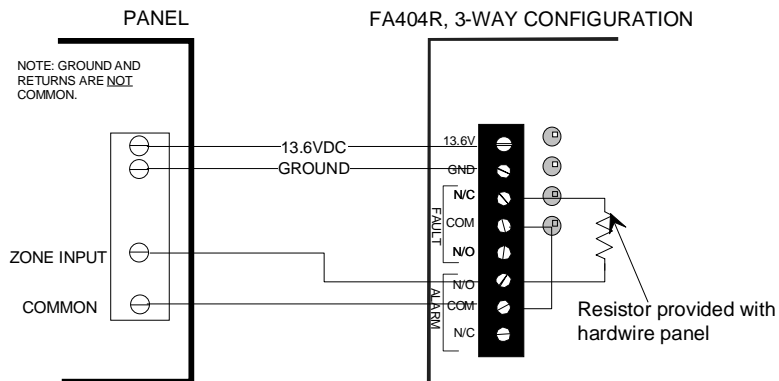
Output activation: The FA404 has N/O open collector Alarm and Fault outputs. Output is open relative to ground. On activation, output pulls to common ground. The FA404R has Form C Alarm and Fault relay outputs. Output activation is indicated by illumination of the **ACTIVATED LED**. Note: if a receiver is being connected to a normally closed zone, the FA404R must be used.

Connection to hardwire panels: When an FA404 or FA404R receiver is used with a hardwire security panel, the panel will typically supply power and ground to the receiver. When the ground supplied to the receiver is common to the return loops of the hardwire panel, use one wire to connect each of the FA404 receiver outputs to the zone input of the panel. Supervision resistors in N/O loops must be placed in parallel. Supervision resistance in N/C loops must be in series. The examples below show typical connections of both the FA404 and the FA404R.



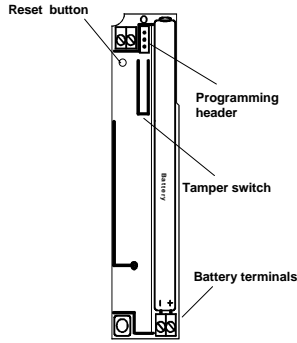
WARNING: To clear a latched fault or alarm, press **RESET**. **Make sure that the receiver is not in program mode or the transmitter will be deleted.** Test all transmitters prior to leaving the site.

If the panel has N/O zones and can recognize 3 zone conditions (open=fault, short=alarm and EOL resistance=normal), both the alarm and the fault outputs can be attached to the same zone as shown below.



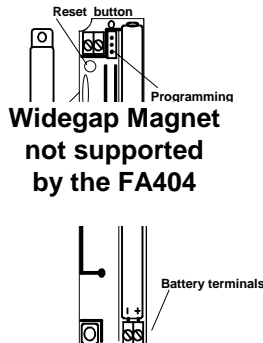
Frequency Agile® Series Transmitters

**FA200
Universal Transmitter**



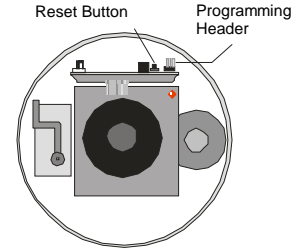
Program contacts: N/O or N/C, as needed
 Typical battery life: 3 years
 Battery type: 4.5V alkaline battery pack
 Switch trigger: 1.5 seconds, minimum
 Dimensions: 1.25" x 6.00" x 0.750"

**FA200W
Universal Widegap Transmitter**



Program contacts: N/O or N/C, as needed
 Internal contact: not supported by FA404
 Typical battery life: 3 years
 Battery type: 4.5V alkaline battery pack
 Switch trigger: 1.5 seconds, minimum
 Dimensions: 1.25" x 6.00" x 0.750"

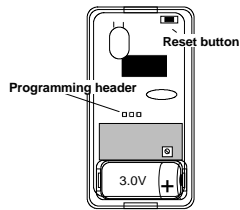
**FA202
Smoke Detector**



Program contacts: N/C
 Typical battery life: 1 year
 2 Batteries: 3V lithium
 Dimensions: 6.0" Diameter

Note: Remove jumper to program, replace jumper after programming.

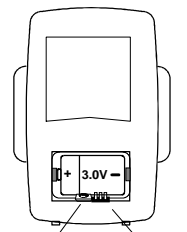
**FA203
Pendant Transmitter**



Program contacts: N/O
 Typical battery life: 3-5 years
 Battery (or equivalent): 3.0V lithium Sanyo CR2
 Dimensions: 3.10" x 1.62" x 0.750"

* To extend battery life, actual check-in interval of the FA203 is 2 to 3 times the programmed value.

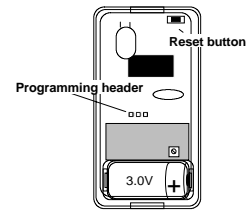
**FA204
Pendant Transmitter**



Note: Remove battery cover to access Reset Button and Programming Head

Program contacts: N/O
 Typical battery life: 2 years
 Battery: 3.0V Sanyo LiMn CR14250
 Dimensions: 2.8" x 1.7" x 0.83"

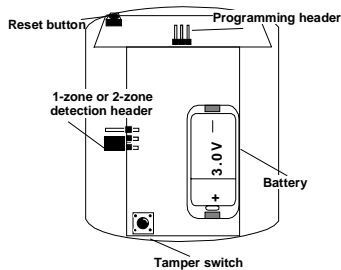
**FA205
Beltclip Transmitter**



Program contacts: N/O
 Typical battery life: 3-5 years
 Battery (or equivalent): 3.0V lithium Sanyo CR2
 Dimensions: 3.10" x 1.62" x 0.750"

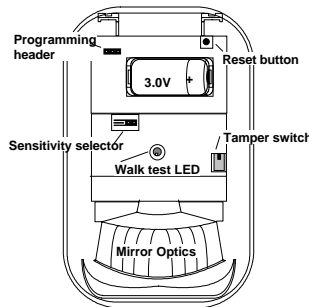
* To extend battery life, actual check-in interval of the FA205 is 2 to 3 times the programmed value.

**FA206S
PIR Motion Detector**



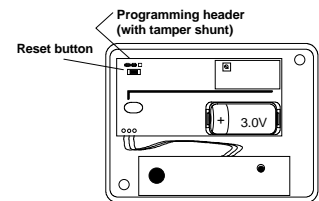
Program contacts: N/C
 Typical battery life: 2 years
 Battery: 3.0V lithium Duracell DL123A
 Sleep after trip: 90-103 seconds
 Dimensions: 3.75" x 2.88" x 2.40"

**FA206DS
PIR Motion Detector**



Program contacts: N/C
 Typical battery life: 2 years
 Battery: 3.0V lithium DL123A
 Sleep after trip: 180 seconds
 Dimensions: 3.75" x 5.75" x 2.50"

**FA207
Glassbreak Detector**



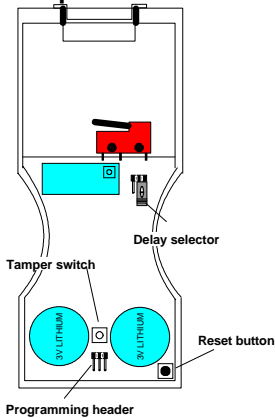
Program contacts: N/O
 Typical battery life: 2 years
 Battery: 3.0V lithium DL123A
 Dimensions: 4.25" x 3.12" x 1.63"

Note: Remove jumper to program, replace jumper after programming.

Note: Batteries are always supervised. Lithium batteries are capacity-tested at 18-hour intervals. Typical battery life is based on 60-second check-in. The transmitter will deactivate 2 weeks after low battery is detected. **Test weekly.**

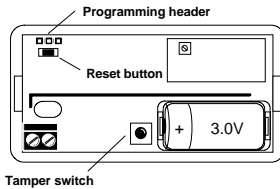
Frequency Agile® Series Transmitters (Continued)

**FA209
Billtrap Transmitter**



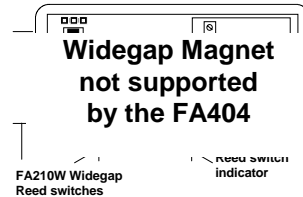
Programming header
 Program contacts: N/O
 Typical battery life: 1-2 years
 Battery type (Qty. 2): 3.0V lithium CR2450N
 Dimensions: 2.63" x 6.19" x 0.750"

**FA210
Reduced-size
Universal Transmitter**



Program contacts: N/O or N/C, as needed
 Typical battery life: 4 years
 Battery type: 3.0V lithium DL123A
 Switch trigger: 1.5 seconds, minimum
 Dimensions: 3.55" x 1.70" x 0.920"

**FA210W
Reduced-size
Universal Widegap Transmitter**



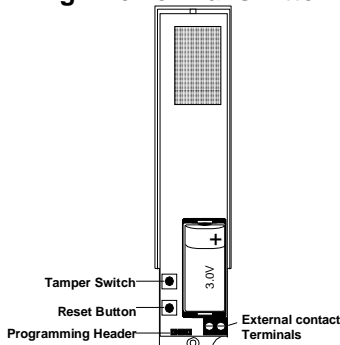
**Widegap Magnet
not supported
by the FA404**

FA210W Widegap
Reed switches

reed switch
indicator

Program contacts: N/O or N/C, as needed
 Internal contact: not supported by FA404
 Typical battery life: 4 years
 Battery type: 3.0V lithium DL123A
 Switch trigger: 1.5 seconds, minimum
 Dimensions: 3.55" x 1.70" x 0.920"

**FA250
High Power Transmitter**



Program contacts: N/O or N/C, as needed
 Typical battery life: 1-2 years
 Battery type: 3.0V lithium DL123A
 Switch trigger: 1.5 seconds, minimum
 Dimensions: 1.25" x 6.00" x 0.750"

Note: Batteries are always supervised. Lithium batteries are capacity-tested at 18-hour intervals. Typical battery life is based on 60-second check-in. The transmitter will deactivate 2 weeks after low battery is detected. **Test weekly.**

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 warranted 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.

**Frequency Agile[®] Receivers
from *Inovonics*:**

FA401	Single Transmitter / Single Output
FA401R	Single Transmitter / Single Relay Output
FA404	4-Transmitter / Single Output
FA404R	4-Transmitter / Single Relay Output
FA416	16-Transmitter / 4-output
FA416D	16-Transmitter / 4-output with display
FA416R	16-Transmitter / 4-relay output
FA416DR	16-Transmitter / 4-relay output with display
FA464DR	64-Transmitter / 16-relay output with display

Receiver Accessories:

FA116	Executive Programmer for FA416 / FA464
FA516	Display module for FA416 and FA416R

**Inovonics Wireless Corporation
315 CTC Blvd
Louisville CO 80027
(800)782-2709
FAX: (303)939-8977
E-MAIL: support@inovonics.com**

www.inovonics.com