



EN1242 EchoStream® Smoke Detector Transmitter

Installation Instructions

1 Overview

The EN1242 smoke detector is a wireless, battery powered photoelectric smoke sensor. The sensor includes a built-in sounder for alarm alerts, a visual status LED, and an Inovonics Wireless EchoStream transmitter. The sensor works as part of a security/fire alarm system and communicates with the system control panel. Under normal (non-alarm) conditions, the LED flashes once every eight seconds while the sensor monitors the surrounding conditions. When the sensor detects smoke, the LED lights, the built-in sounder beeps loudly, and an alarm signal is transmitted. The smoke sensor is powered by the two included three-volt lithium batteries. When the EN1242 detects an inactive smoke sensor a tamper message will be transmitted.

Note: The EN1242 smoke detector transmitter is intended for use as a supplemental residential fire alarm device, and is only UL listed to provide localized functional annunciation.

1.1 Inovonics Wireless Contact Information

If you have any problems with this procedure, contact Inovonics Wireless technical services:

- E-mail: support@inovonics.com
- Phone: (800) 782-2709; (303) 939-9336

1.2 EN1242 External Components

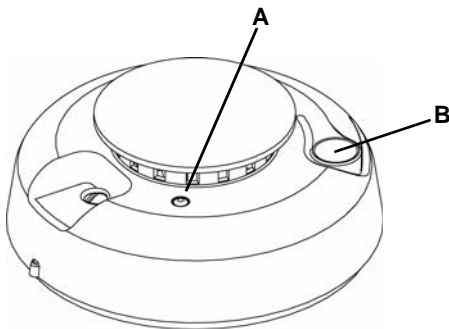


Figure 1 EN1242 external components

- A** LED **B** Test/silence button

Status LED: The LED indicates the status of the sensor as follows:

- LED flashes every 8 seconds to indicate normal operation.
- LED stays on when the sensor detects smoke, and is sending an alarm.
- LED stays off when maintenance is required.

Test/silence button: Test/silence is pressed to perform the sensitivity test, as well as to silence the low battery chirp. The low battery chirp will resume after 24 hours if the condition is not corrected.

1.3 EN1242 Internal Components



Figure 2 EN1242 internal components

- A** Low battery/CleanMe selection pins **B** Frequency band selection pins **C** Reset button

1.4 What's In The Carton

- Two BAT604 Duracell DL123A lithium batteries
- Two drywall anchors
- Two mounting screws
- Two frequency band selection jumpers

2 Installation and Startup

2.1 Installation Notes

- These products are designed to be maintained by professional security technicians
- Products are tested for indoor use
- All products should be manually tested weekly

2.2 Install Batteries

1. Turn the sensor housing counterclockwise fifteen degrees and detach it from the mounting base.
2. Remove the battery compartment cover.

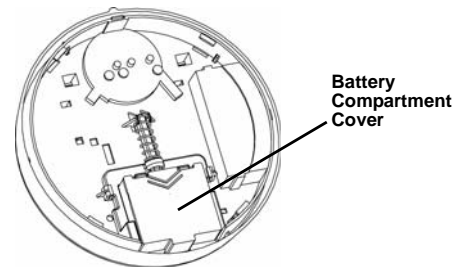


Figure 3 Remove the EN1242 battery compartment cover

3. Install the two three-volt batteries.
4. Replace the battery compartment cover

Note: A tamper message will transmit for approximately ten seconds while the unit powers up after the installation of both batteries. If only one battery is installed, the tamper message will transmit continuously.

2.3 Open the Housing

5. Using a small screwdriver to press the sensor cap release tab, apply downward pressure and turn the cap about one inch counter-clockwise to remove the cap..

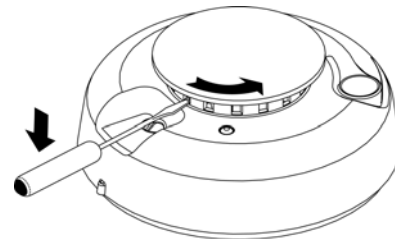


Figure 4 Remove the sensor cap

6. Place both thumbs on either side of the optical chamber and push down to detach the sensor housing.

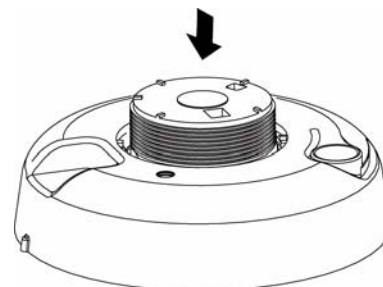


Figure 5 Push down on the optical chamber

2.4 Select the Frequency Band

EchoStream products are able to use a range of radio frequencies, and must be configured for your geographic area. This product ships with a default frequency range of 902-928 MHz for use in North America. If you are using the product in North America, skip to 2.5, "Set CleanMe®/Low Battery Reporting"; if you are using the product in Australia or New Zealand, you will need to configure the transmitter.

- Place a selection jumper on the frequency band selection pins appropriate to your geographic area.
 - Place the jumper on the right two pins, marked NZ, to set the frequency range to 921-928 MHz for New Zealand
 - Place the jumper on the left two pins, marked AUS, to set the frequency range to 915-928 MHz for Australia.
- Press the reset button to complete configuration.

Caution: When pressing the reset button, make sure you don't also touch the frequency band selection pins. Touching the frequency band selection pins while pressing the reset button can inadvertently set the device to the wrong frequency band.

2.5 Set CleanMe®/Low Battery Reporting

Set as the factory default, the EN1242 combines the low battery signal with a signal indicating the detector needs cleaning. If you want to use this multiple condition indication, skip to 2.6, "Register the EN1242". If multiple-condition indication is not desired, you can disable wireless reporting of the CleanMe status.

- To disable CleanMe reporting, move the jumper on the low battery/CleanMe selection pins to Low Bat.

Note: Low battery/CleanMe messages are suppressed when an alarm is being transmitted.

Note: Even if CleanMe notification is disabled, the sensitivity test will still indicate sensor condition.

2.6 Register the EN1242

The EN1242 must be registered to function in your EchoStream system. Refer to your receiver, network coordinator or control panel manual for registration instructions. Inovonics Wireless recommends all EchoStream transmitters be supervised.

- When prompted, press the EN1242 reset button to complete registration.

2.7 Mount the EN1242

- Use the provided anchors and screws to mount the EN1242, paying careful consideration to the following best practices:

Caution: Regulations pertaining to smoke sensor installations vary. For more information, contact your local fire department or local authority having jurisdiction.

- Install a minimum of two smoke sensors in any household.
- Put a smoke sensor in the hallway outside of every bedroom area.
- Put a smoke sensor on every level of a multi-level residence.
- In rooms with sloped ceilings, install smoke sensors 0.9m (3 feet) measured down from the highest point of the ceiling.
- Install basement sensors on the ceiling as close to the center of the room as possible. If this is not practical, install on the ceiling no closer than 10cm (4 inches) from any wall or corner.
- If ceiling mounting is not practical, install on an inside wall between 10 an 15cm (4 and 6 inches) from the ceiling.
- Put smoke sensors at both ends of a bedroom hallway if the hallway is more than 9m (30 feet) long. Large rooms over 84 square meters (900 square feet) require more than a single sensor.
- Areas with rough ceilings or short, transom-type walls coming down from the ceiling require additional smoke sensors.
- Install second-floor smoke sensors on the ceiling at the top of the first-to-second floor stairwell. Be sure that no door or other obstruction blocks the path of smoke to the sensor.

Do not locate sensors:

- To a drop ceiling tile; mount it to a metal runner.
- In or near areas such as kitchens or garages, where smoke or vehicle exhausts normally occur (protect these areas with heat-detection devices, not with smoke sensors); near furnaces, hot water heaters, or gas space heaters.
- In damp or very humid areas, or next to bathrooms with showers. Install sensors at least 1.5m (5 feet) away from bathrooms.

- In very cold or very hot areas.
- In dusty, dirty, or insect infested areas.
- Near fresh air inlets or returns or excessively drafty areas. Air conditioners, heater, fans, and fresh air intakes and returns can drive smoke away from smoke sensors.
- In dead air spaces at the top of a peaked ceiling or wall/ ceiling intersect. Dead air may prevent smoke from reaching a smoke sensor.
- Near fluorescent light fixtures. Install smoke sensors at least 3m (10 feet) away from fluorescent light fixtures.
- Between protruding ceiling structures such as beams or walls which can create dead air spaces and may prohibit smoke from reaching the detector.

Caution: All sensors are subject to possible compromise or failure-to-warn for a variety of reasons. For example: Smoke sensors cannot detect smoke in chimneys, walls, roofs, or smoke blocked by a closed door; sensors may not detect smoke on other levels of the building; sensors may not warn in time when fires are caused by smoking in bed, explosions, improper storage of flammables, overloaded electrical circuits, or other hazardous conditions.

3 Test the EN1242

Caution: To avoid a fire department dispatch, contact the central monitoring station or, if possible, put the system into sensor test mode.

There are two ways to test the EN1242 smoke detector sensor. The sensitivity test should be performed every week; the smoke test should be performed at least once a year. Both tests activate the alarm sounder and send alarm signals.

The EN1242 should also be tested after initial registration, as well as each time the smoke chamber is changed or the batteries are replaced.

3.1 Smoke Test

- Use aerosol simulated smoke, such as ESL Smoke! In a Can® (ESL Part No. SM-200) to perform the smoke test.

The LED will remain on while the built-in transmitter sends an alarm signal, and the sensor will produce a three-beep pattern.

- Press the test/silence button to end the test.

The sensor automatically resets when smoke is no longer present. A sensor that fails to activate may require cleaning. If a sensor still fails to activate after cleaning, return the unit for service.

3.2 Sensitivity Test

- Press and hold the test button for four seconds, then release it. The LED will flash corresponding to the sensor's sensitivity.

Flashes Sensor Condition/Action

- | | |
|-----|--------------------------------------------------------------------------------------------------------------------------|
| 1 | Self-diagnostics failure. Return sensor for service/ replacement. |
| 2-3 | Sensor is becoming insensitive. Clean the sensor (see "Clean the EN1242") and retest. If error persists, replace sensor. |
| 4-7 | Sensor is within normal sensitivity range. |
| 8-9 | Sensor is becoming too sensitive. Verify that the smoke chamber is snapped down securely. Clean the sensor and retest. |

During this test, the control panel, serial receiver or network coordinator should receive an alarm and a low battery signal, if low battery is selected, followed a few seconds later by a restoral.

If the control device fails to respond, it is possible the EN1242 failed to reset properly when the batteries were installed. To force a reset, remove the batteries from the EN1242 for a least 30 seconds, reinstall them, press the reset button, then retest as described above.

4 Clean the EN1242

Clean the sensor cover with a dry or damp cloth as needed to keep it free from dust and dirt. Clean the sensor interior and replace the optical chamber at least once each year. Use only ESL model 211 optical chambers for replacement. To clean the sensor chamber:

- Remove the sensor body from the mounting base.
- Remove the batteries.
- Slide a flat-blade screwdriver in the slot on the sensor cap and gently push the handle down to pry the cap off.
- Squeeze the optical chamber where indicated and pull it up and away from the sensor. Discard.

5. Use a soft-bristled brush to remove dust and dirt from the smoke chamber base.
6. Align the new optical chamber with the base and snap it down into place.
7. Replace the sensor cap.
8. Reinstall the batteries.
9. Replace the battery cover.

Note: The base will not fit properly if the batteries are not installed.

10. Reattach the sensor to the mounting base.
11. Perform the sensitivity test.

5 US Patent Numbers

- 7,154,866
- 7,554,932
- 7,746,804

6 Specifications

Sensor dimensions: Detector: 14.2cm x 6.1cm (5.4" x 2.4") Base: 13.7cm x 1.17cm (5.4 in. x 0.46 in.)

Install temperature: 32°F to 100°F (-0°C to 38°C)

Humidity: 10% to 90% non-condensing

Battery: 2 3V-Lithium batteries. Panasonic CR123A is recommended.

Transmitter frequency range: 900 MHz

Average alarm current: 120mA

Average standby current: 35µA

Typical test current: 2mA Low Battery

Chirp rate: 1 every 45 ± 2 sec

UL listings: UL 217

7 Television and Radio Interference

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

8 FCC Part 15 and Industry Canada Compliance

This device complies with part 15 of the FCC Rules and Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

9 Warranty/Disclaimer

Inovonics Wireless Corporation ("Inovonics") warrants its EchoStream 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 thirty-six (36) 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 work directly through their authorized distributor who will be given a Return Material Authorization ("RMA") number by Inovonics. Details of shipment will be arranged directly through the authorized distributor.

This warranty is void in cases of improper installation, misuse, failure to follow installation and operating instructions, alteration, 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. There is no warranty by Inovonics that Inovonics product will be merchantable or fit for any particular purpose, nor is there any other warranty, expressed or implied, except as such is expressly set forth herein. In no event shall Inovonics be liable for an incidental, consequential, indirect, special, or exemplary damages, including but not limited to loss of profit, revenue, or contract, loss of use, cost of down time, or interruption of business, nor any claim made by distributor's customers or any other person or entity.

This warranty will not be modified or extended. Inovonics does not authorize any person to act on its behalf to modify or extend this warranty.

This warranty will apply only to Inovonics Products. 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.