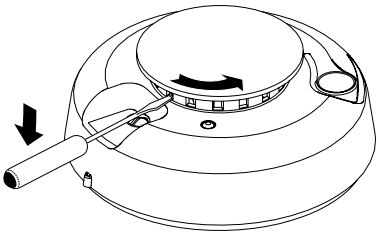
Overview

The ISW-EN1242 Smoke Detector-Transmitter is a wireless, battery-powered photoelectric smoke sensor. Under non-alarm conditions, the LED flashes once every 8 sec while the sensor monitors the surrounding conditions. When the sensor detects smoke, the LED lights, the built-in sounder beeps loudly, and the detector sends an alarm signal. The smoke sensor is powered by two 3 V lithium batteries.

1.0 Open the Detector-Transmitter Housing

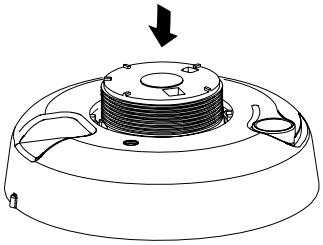
1. Using a small screwdriver, press the sensor cap release tab and turn the cap approximately 25 mm (1 in.) counter-clockwise to remove the cap (*Figure 1*).

Figure 1: Remove the Sensor Cap



2. Place both thumbs on opposite sides of the optical chamber and push down to detach the sensor housing (*Figure 2*).

Figure 2: Push Down the Optical Chamber



2.0 Mount the Housing Back Plate

Use the provided anchors and screws to mount the smoke detector, while following these best practices:

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 0.9 m (3 ft) 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 10 cm (4 in.) from any wall or corner.
- If ceiling mounting is not practical, install the sensor on an inside wall between 10 and 15 cm (4 and 6 in.) from the ceiling.
- Put smoke sensors at both ends of a bedroom hallway if the hallway is more than 9 m (30 feet) long. Large rooms over 84 square meters (900 square feet) require more than a single sensor.
- Areas with rough ceilings or short 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. Ensure that no door or other obstruction blocks the path of smoke to the sensor.

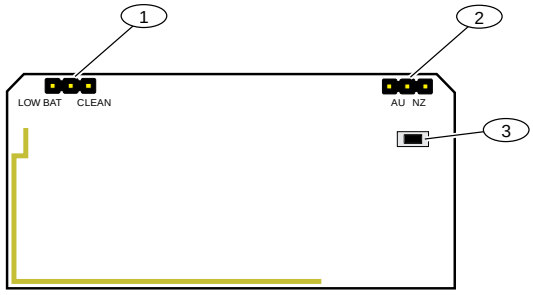
Do not install sensors:

- On a drop ceiling tile. Mount them on 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 1.5 m (5 ft) away from bathrooms.
- In very cold or very hot areas. Refer to *Section 8.0* on page 2 for operating temperature specifications.
- 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 a wall or ceiling intersection. Dead air might prevent smoke from reaching smoke sensors.
- Near fluorescent light fixtures. Install smoke sensors at least 3 m (10 ft) away from fluorescent light fixtures.
- Between protruding ceiling structures such as beams or walls which might prohibit smoke from reaching the sensors.

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 might not detect smoke on other levels of a building; sensors might not warn in time when fires are caused by smoking in bed, explosions, improper storage of flammables, overloaded electrical circuits, or other hazardous conditions.

3.0 Configure the Detector

Figure 3: Detector-Transmitter Components



1 - LOW BAT/CLEAN pins (default = CLEAN)

2 - Frequency Band pins:
No jumper (default) = North America 902 – 928 MHz
AU = Australia 915 – 928 MHz
NZ = New Zealand 921 – 928 MHz

3 - Reset button

3.1 Select the Frequency Band

Select the appropriate frequency band for your geographic area.

1. Place a selection jumper on the appropriate Frequency Band pins (refer to *Figure 3*). The default is no jumper (North America).
2. Press the Reset button.

When pressing the Reset button, do not touch the Frequency Band pins. Touching the Frequency Band pins while pressing the Reset button can inadvertently set the detector to the wrong frequency band.

3.2 Set Clean/Low Battery Reporting

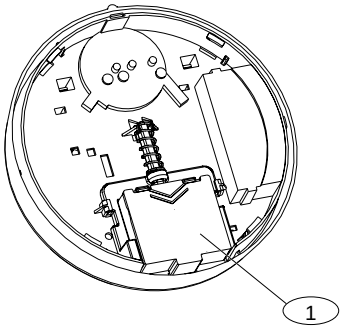
With the factory default CLEAN setting (refer to *Figure 3*), the smoke detector combines the low battery signal with a signal indicating that the detector needs cleaning. If multiple-condition indication is not desired, disable wireless reporting of the CLEAN status by moving the jumper to LOW BAT. With the LOW BAT setting, the detector sends only a low battery signal.

If CLEAN notification is disabled, the sensitivity test still indicates the sensor condition.

4.0 Install the Battery

1. Rotate the sensor housing counterclockwise approximately 25 mm (1 in.), and then detach it from the mounting base.
2. Remove the battery compartment cover (*Figure 4* on page 2).

Figure 4: Battery Compartment Cover



1 - Battery compartment cover

3. Install or replace the two 3 V batteries.
4. Allow up to 10 sec for sensor and transmitter to fully power on before registration and testing.

5.0 Register the Transmitter

To ensure that the detector is supervised by the system receiver, you must register its transmitter with the system receiver. Each detector has a unique factory-programmed identification number. Refer to the receiver, network coordinator, or control panel installation instructions for details on registering a transmitter.

1. Open the detector-transmitter housing. Refer to *Section 1.0* on page 1.
2. When prompted to reset the detector, press the Reset button. Refer to *Figure 3* on page 1.
3. Close the detector housing.

6.0 Test the Detector

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

You can test the smoke detector sensor in two ways: the sensitivity test and the smoke test. Perform the sensitivity test every week, and perform the smoke test at least once a year. Both tests activate the alarm sounder and send alarm signals.

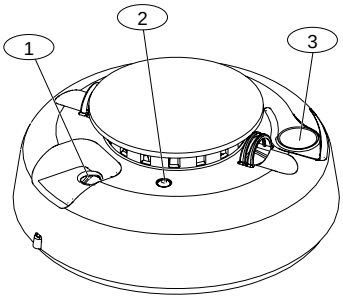
The smoke detector should also be tested after initial registration, as well as each time the smoke chamber is changed or the batteries are replaced.

6.1 Smoke Test

Test smoke sensors annually using aerosol simulated smoke.

The LED illuminates while the built-in transmitter sends an alarm signal, and the sensor produces a three-beep pattern until you press the Test/Silence button (*Figure 5*). The sensor automatically resets when smoke is no longer present. A sensor that fails to activate might require cleaning. If a sensor still fails to activate after cleaning, return the unit for service.

Figure 5: Smoke Detector Features



1 - Sounder vent
2 - LED
3 - Test/Silence button

6.2 Sensitivity Test

Press and hold the Test/Silence button for 4 sec, then release it. The LED flashes correspond to the sensor's sensitivity.

Flashes	Sensor Condition/Action
1	Self-diagnostics failure. Return sensor for service/replacement.
2 - 3	The sensor is becoming insensitive. Clean the sensor (refer to *Section 7.1*) and repeat the test. If the error persists, replace the sensor.
4 - 7	The sensor is within the normal sensitivity range.
8 - 9	The sensor is becoming too sensitive. Verify that the smoke chamber is snapped down securely. Clean the sensor and repeat the test.

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

If the control device does not respond, it is possible the smoke detector failed to reset properly when the batteries were installed. To force a reset, remove the batteries from the smoke detector for at least 30 sec, reinstall them, press the RESET button, and then repeat the test as described above.

7.0 Operation and Maintenance

Test/Silence button	Press to perform the sensitivity test, as well as to silence the low battery chirp. The low battery chirp resumes after 24 hours if the condition is not corrected.
Status LED	Flashing = Normal operation On = Sensor detects smoke, and is sending an alarm Off = Maintenance required

7.1 Clean the Smoke Detector

Clean the sensor cover with a dry or damp cloth as needed to keep it free of 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:

1. Remove the sensor body from the mounting base.
2. Remove the batteries.
3. Slide a flat-blade screwdriver into the slot on the sensor cap and gently push the handle down to pry the cap off.
4. Squeeze the optical chamber where indicated on the chamber and pull it up and away from the sensor. Then discard the optical chamber.
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 into place.
7. Replace the sensor cap.
8. Reinstall the batteries.
9. Replace the battery cover.

The base does not fit properly if the batteries are not installed.

10. Reattach the sensor to the mounting base.
11. Perform the sensitivity test. Refer to *Section 6.2*.

8.0 Specifications

Dimensions (H x W x D):	Detector: 14.2 cm x 6.1 cm (5.6 in. x 2.4 in.) Base: 13.7 cm x 1.17 cm (5.4 in. x 0.46 in.)
Operating Temperature:	-20°C to 60°C (-4°F to 140°F)
Humidity:	10 - 90% (non-condensing)
Battery:	(2) 3 V lithium (CR123A recommended)
Transmitter Frequency Range:	902 – 928 MHz (United States) 915 – 928 MHz (Australia) 922 – 928 MHz (New Zealand)
Average Alarm Current:	70 mA
Average Standby Current:	35 µA
Typical Test Current:	25 mA Low Battery
Chirp Rate:	1 every 45 sec ± 2 sec

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