PHOTOELECTRIC

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FASD1 Battery-Powered Photoelectric Smoke Detector

User manual

version 1

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1. Introduction

This product is a battery-powered photoelectric smoke detector, utilizing a unique design and advanced photoelectric sensor technology, capable of monitoring and detecting smoke particles in real time, specifically detecting visible particles (associated with smoldering fires) faster than ionization alarms.

When smoke particles or a fire hazard are detected, the alarm will sound and the red LED will flash rapidly to alert you and your family in time. Furthermore, this alarm features dustproof, insect-proof, and anti-light protection, ensuring stability thanks to its design, making it suitable for indoor environments such as homes, factories, shopping malls, hotels, etc.

Photoelectric sensors are generally more effective at detecting slow, smoldering fires that smolder for hours before bursting into flames. Sources of these fires can include cigarettes burned on couches or inbedding.

Ionization sensors are generally more effective at detecting fast, violent fires that quickly consume combustible materials and spread rapidly. Sources of these fires can include, for example, flammable liquids or paper burning in a waste container.

However, both types of sensors provide adequate detection of both types of fire. If you want to detect both smoldering and rapidly spreading fires as quickly as possible, you should install a smoke detector that combines photoelectric and ionization detection technologies.

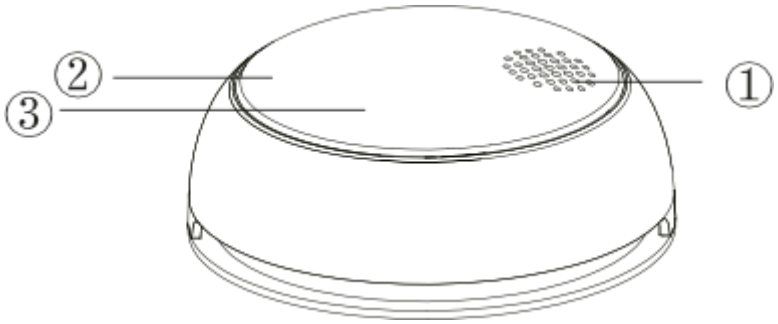
Thank you for purchasing this sensor. To ensure you can use it freely and fully enjoy its functionality, we have described its basic functions in this user manual. Before use, please read this manual carefully and retain it for future reference.

If you give your sensor to someone else, make sure you include all relevant documentation.

2. Disposal

- If you need to dispose of your device in the future, remember that electrical and electronic equipment must be disposed of separately from municipal waste at official collection points.
- Avoid environmental damage and health risks by disposing of it properly.
- For more information, please contact your local authorities, waste collection points or the store where you purchased the appliance.
- Dispose of packaging in an environmentally friendly manner.
- Cardboard boxes should be taken to waste paper containers or paper waste collection points.
- Foils and plastic packaging elements should be delivered to local collection points.
- Respect the environment. Used batteries should not be disposed of with household waste. They should be taken to a battery collection point. Please remember that batteries must be fully discharged before disposal. For partially charged batteries, take precautions to prevent short circuits.

3. Sensor construction



1. Siren
2. LED indicator
3. Test/Mute

4. Technical specifications

- **Detection technology:**Photoelectric (based on optical detection of contaminants in the chamber)
- **Operating voltage:**3V (powered by a single CR123A or CR17335 battery – non-replaceable)
- **Operating time/battery:**Up to 10 years of uninterrupted operation – no need to replace batteries throughout the service life
- **Alarm signal:**An audible signal of approximately 85 dBA (measured at 3 meters from the sensor) provides immediate warning
- **Visual signal:**LED – in normal operation mode, it lights up approximately every 53 seconds; in the event of an alarm, the signaling changes (rapid flashing of red LEDs)
- **Working conditions:**Temperature: 0°C to +55°C; Humidity: 35–60% (non-condensing)
- **Dimensions:** Φ60 mm x H34,5 mm
- **Installation:**Can be mounted on the ceiling or wall – professional mounting kit included (bracket, wall plugs and installation instructions)
- **Standards and certificates:**
    - CE mark – confirmation of compliance with European Union CE standards (Directive 2014/53/EU, 1999/5/EC)

    - CPR Certificate – meeting the stringent requirements related to the safety of fire protection devices CPR 2531-CPR-CSP11309 (EN 14604:2005/AC:2008)
    - DOP
    - Other industry standards for alarm systems
    - Compliance with ROHS/REACH standards (regarding materials used in production)
- **Additional functions:**
    - Push-button test – allows for periodic device checks
    - Automatic switch from alarm mode to normal mode after 10 minutes if the alarm pause function is activated
    - Low battery indicator – LED signal and sound notification that the battery needs to be replaced
- **Lifespan and maintenance:**Regular cleaning (e.g., once a month using a soft brush) and periodic testing (weekly recommended) ensure long-lasting, reliable operation. The device should be replaced after 10 years of use or if any irregularities are observed.

5. Distinguishing features of the FASD1 sensor

- **Up to 10 years of battery life**
  Under normal operating conditions, the sensor does not require battery replacement for practically its entire service life.
- **Information about correct operation (LED)**
  The smoke alarm flashes approximately every 53 seconds to confirm that it is on and working properly.
- **Low battery warning**
  The sensor beeps every 53 seconds when the battery level is low.
- **Alarm pause (silent mode)**
  The smoke alarm can be silenced by momentarily pressing the test button if non-alarm smoke causes a nuisance alarm. The red light flashes every 10 seconds to remind you to silence the smoke alarm. The alarm will automatically reset after 10 minutes and will sound if smoke particles are still present.
- **Test function**
  Press the test button periodically to check and confirm that the smoke alarm is working properly.

- **Audible and visible alarm signals**
  When detected smoke reaches the smoke sensor alarm threshold, the red light will flash rapidly and the siren will emit loud and rapid beeps.

- **Easy installation**
  Mounting elements included.

6. Important safety information

ATTENTION! PLEASE READ AND SAVE THESE INSTRUCTIONS.

- To silence the smoke detector, open the windows and ventilate the room.

- The test button thoroughly tests all functions of the smoke alarm. DO NOT USE any other testing methods. The device should be tested weekly to ensure proper operation.

- Smoke alarms should only be installed by a licensed, qualified electrician. All local and national electrical and building codes regarding installation must be observed and followed.

- This device is NOT designed for PRIMARY protection in buildings requiring a complete fire alarm system. These types of buildings include hotels, motels, student residences, hospitals, nursing homes, and group homes. This applies even to those that were once single-family homes. However, this alarm device CAN be used inside individual rooms for ADDITIONAL protection.

- Install a smoke detector in every room and on every floor of your home. Smoke may not reach the device for many reasons. For example, if a fire starts in a remote part of the house, on another floor, in a chimney, wall, roof, or on the other side of a closed door, the smoke may not reach the device in time to alert the household. The device will not immediately detect a fire EXCEPT in the area or room where it is installed.

- The device may not alert every household member every time. The alarm is loud enough to alert people to potential danger. However, there may be circumstances in which a household member may not hear the alarm (e.g., noise outside or inside, sleeping, drug or alcohol use, hearing problems, etc.).

- If you suspect the sensor won't alert a household member, install and maintain dedicated fire alarm devices. Household members must hear the alarm's warning sound and respond quickly to reduce the risk of damage, injury, or death that may result from a fire. If a household member has hearing problems, install dedicated fire alarm devices with lights or vibrations to warn household members.

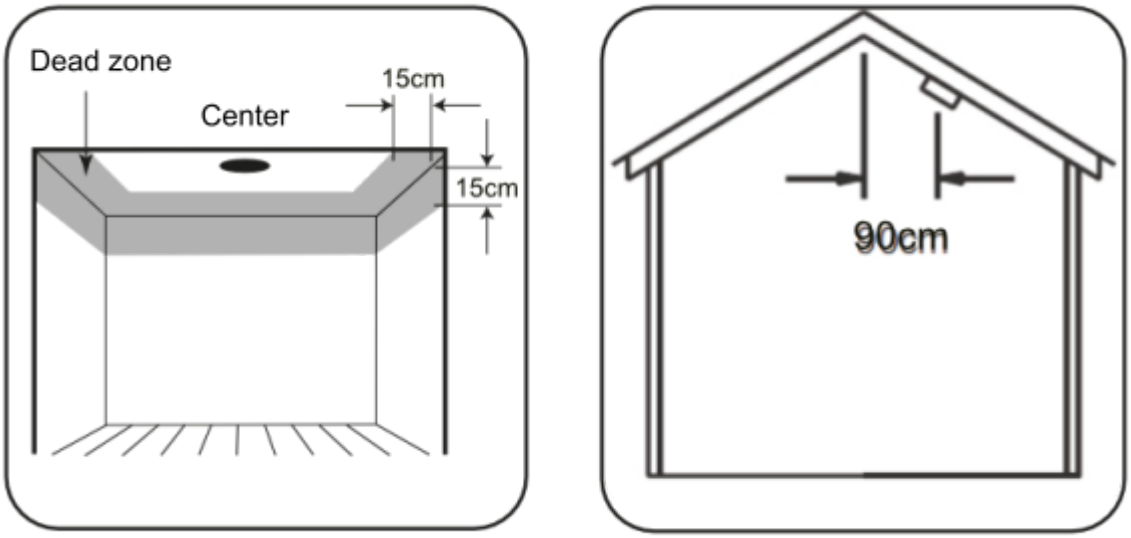
- Sensors can only trigger alarms when they detect smoke. They detect combustion particles in the air. They do not sense heat, flame, or gas. This device is designed to provide an audible warning of a developing fire. However, many fires spread quickly,

ignite, or are intentional. Others are caused by carelessness or safety hazards. Smoke may not reach the fire alarm device quickly enough to ensure a safe escape.

- Smoke detectors have certain limitations. This smoke detector is not foolproof and does not guarantee protection against fire. Smoke detectors are not a substitute for insurance. Homeowners and renters should insure their lives and property. Furthermore, a smoke detector can fail at any time. For this reason, smoke detectors should be tested weekly.

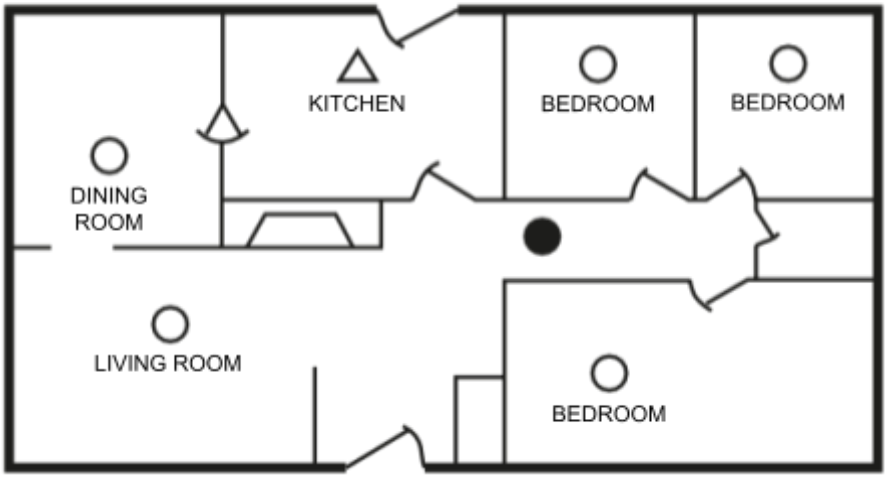
7. Where to place the sensor?

1. Smoke alarms should be located at least between sleeping areas and potential fire sources, such as living rooms and kitchens. In single-story homes with one sleeping area, a smoke alarm should be installed in the hallway, as close as possible to the living areas. To ensure audibility in bedrooms, no smoke alarm should be located more than 3 meters from bedroom doors. It may be necessary to install more than one smoke alarm, especially if the hallway is more than 15 meters long. In single-story homes with two separate bedrooms, at least two smoke alarms are required, one outside each bedroom. In multi-story or two-story homes, a smoke alarm should be installed at least on the ground floor between the stairwell and rooms where fires could break out, and on each floor in circulation areas that form part of the escape route (usually hallways and landings).
2. Additional sensors should be installed in bedrooms in case of fires caused by faulty wiring, lighting, appliances, smokers or other hazards.
3. For best protection, smoke alarms should be installed in every room in your home, except those listed in section 8, LOCATIONS TO AVOID. Heat alarms should be used in kitchens, boiler rooms, laundry rooms, garages, and similar rooms where smoke alarms would be inappropriate.
4. Smoke detectors should be installed in passageways at a distance of no more than 7.5 m from the farthest wall, no more than 7.5 m from the door to a room where a fire may break out and no more than 7.5 m from the next smoke detector.
5. Because the source of a fire cannot be predicted, the best location for a smoke alarm is usually the center of a room or hallway. If a smoke alarm must be placed on a wall, always place the detector 150 mm to 300 mm (6 to 12 inches) below the ceiling and the bottom above the level of doors and other openings.
6. In rooms with straight sloped, gabled or pitched ceilings, install smoke alarms on the ceiling 900 mm (3 ft) from the highest point of the ceiling. A "dead zone" at the top of the ceiling may prevent smoke from reaching the alarm in time to provide an early warning.

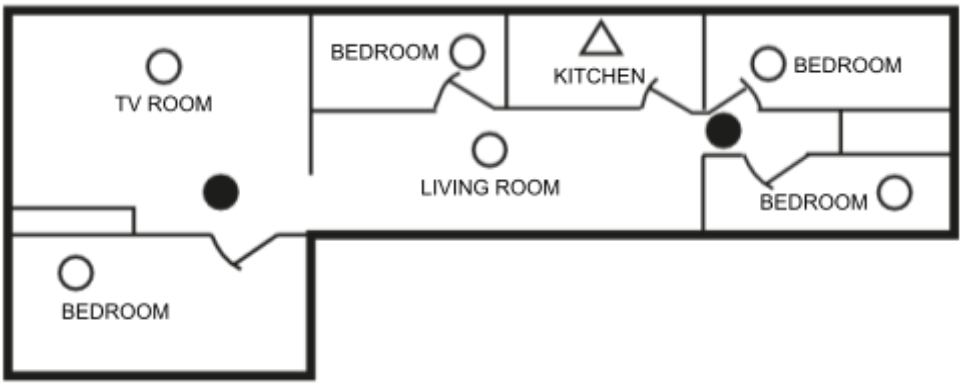


7. Read Section 8 LOCATIONS TO AVOID and Section 12 SMOKE ALARM LIMITATIONS in this manual.

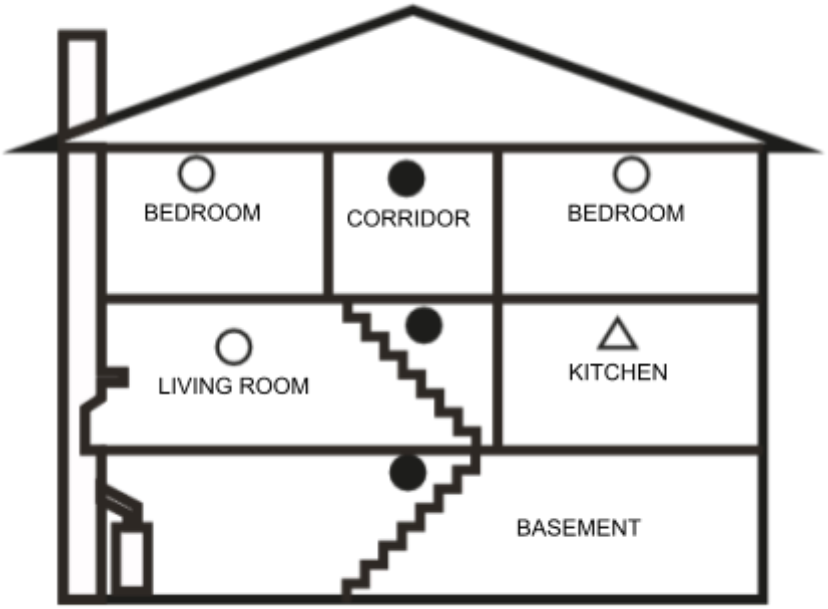
Single storey, one sleeping area



Single floor, more sleeping areas



Two-story house



- Smoke detectors provide limited protection
- Additional smoke detectors for better protection
- △ Heat sensors

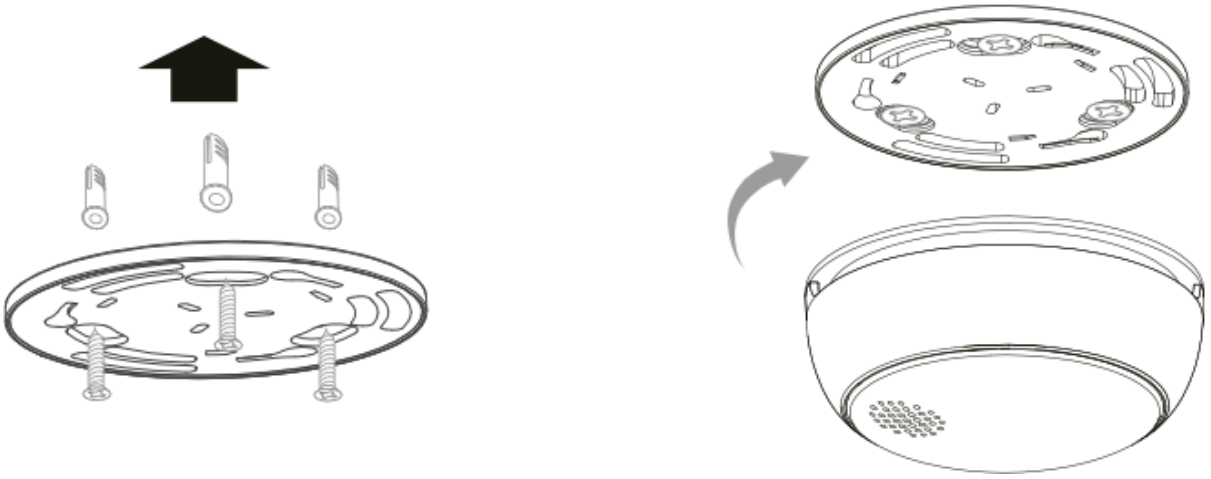
8. Places to avoid

DO NOT place smoke alarm devices:

1. Near fans, radiators, doors, windows, etc., which may draw smoke away from the sensor.
2. On top of an A-frame ceiling, a "dead zone" at the top can prevent smoke from reaching the detector in time to provide an early warning.
3. In insect-infested areas. Small insects may affect performance.
4. In kitchens, boiler rooms, laundries, and garages, combustion particles from cooking or vehicle exhaust, as well as dust and moisture, can trigger false alarms.
5. In very dusty or dirty areas. Dirt and dust can accumulate and reduce performance.
6. Within 300 mm (12 inches) of light fixtures or room corners.
7. In locations where routine testing or maintenance would be unsafe (e.g. above a stairwell).
8. On poorly insulated walls or ceilings.
9. Near objects such as ceiling decorations that may obstruct the path of smoke to the alarm.
10. Within 1500 mm (5 ft) of fluorescent lamps.

9. Sensor installation

1. Avoid installation in places with smoke, dust, high water vapor content, high oil vapor content, high humidity (>95%) and drafts (>5 m/s).
2. Select a suitable installation location, prepare holes on the mounting surface using a drill.
3. Place the mounting pins in the holes.
4. Attach the mounting base with screws.



5. Rotate the smoke alarm in the mounting base until you hear a "click" sound, indicating that installation is complete.
6. Once the alarm is properly installed in the mounting base, press the test button once to activate it. The green LED will flash for 5 seconds.

If the test button is not pressed within 10 minutes, the alarm will automatically sound and return to normal operation.

10. Visual and audio indications

STATE	LED	SIREN
Power on	The LED flashes green for 5 seconds	Lack
Normal operation	The LED flashes red once every 53 seconds	Lack
Functional test	The LED flashes red rapidly	Short, quick beeps
Alarm signal	The LED flashes red rapidly	Short, quick beeps
Low battery	The LED flashes red once every 53 seconds	One beep every 53 seconds
Malfunction	The LED flashes red once every 53 seconds	Lack
Alarm silence mode	The LED flashes red once every 10 seconds	None (Duration: about 10 minutes)
Low battery alarm silence mode	The LED flashes red once every 53 seconds	None (Duration: approximately 12 hours)

11. False alarm control

The sensor is equipped with a false alarm control feature that, when activated, silences unwanted alarms for up to 10 minutes.

How to activate false alarm control:

To silence the sound during a false alarm, press and release the test button. This indicates the device is in false alarm check mode. If the device does not enter false alarm check mode and continues to emit a loud sound, or if it initially enters false alarm check mode and then emits an alarm again, the smoke is too dense and this could be a potentially dangerous situation. Take immediate emergency action.

12. Testing and Maintenance

1. Test at least once a week.

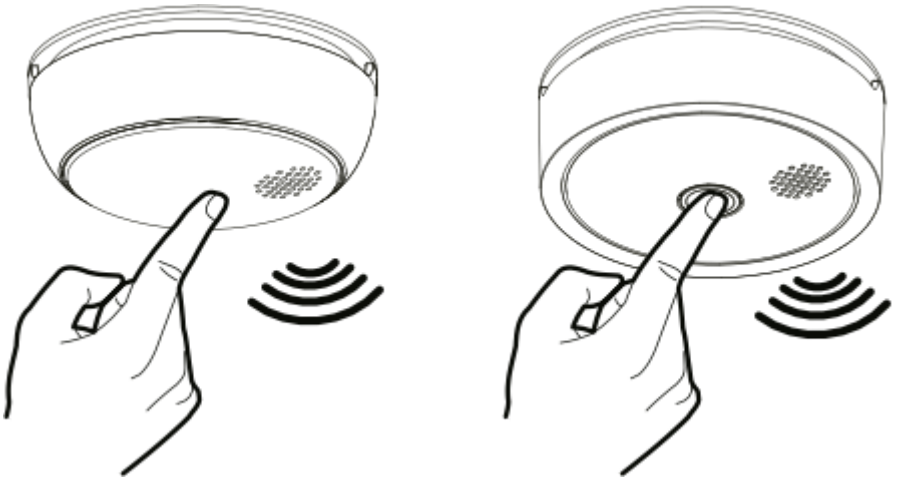
    1.1. The test button thoroughly tests all functions. DO NOT use an open flame to test the sensor. You may damage the device or cause a fire, endangering your home.

    1.2. Test your fire alarm devices weekly and when you return from vacation or when no one has been home for several days.

    1.3. When testing, make sure you stand at least an arm's length away from the device. The alarm siren is designed to be loud enough to alert you to an emergency, but it can also be harmful to your hearing.

        1.3.1. Press and hold the test button for more than 1 second to test the alarm. The alarm will emit loud short beeps.

        1.3.2. If the device does not make a sound, check that the sensor is properly attached to the mounting bracket.



NOTE: IF THE TEST FUNCTION DOES NOT OPERATE CORRECTLY, THE SENSOR MUST BE REPLACED.

If the sensor emits an alarm signal and the smoke detection device is not tested, it means that the device is detecting smoke.

THE SOUND OF THE ALARM SIGNAL REQUIRES YOUR IMMEDIATE ATTENTION AND ACTION.

2. Clean the sensor at least once a month by gently wiping the exterior with a soft cloth. Be sure to test the sensor after cleaning. Do not use water, cleaning agents, or solvents to clean the device, as they may cause damage.

3. If the device becomes heavily contaminated with dirt, dust or debris and cannot be cleaned effectively to prevent unwanted alarms, the device should be replaced immediately.
4. If the device generates frequent false alarms, consider changing its location. For more information, see Section 8, LOCATIONS TO AVOID.
5. When the battery is low, the device will beep once every 53 seconds as a low battery warning. It's important to replace the sensor immediately for continued protection.

13. Safety rules

If the device emits an alarm and you haven't pressed the test button, it's warning you of a dangerous situation. Immediate action is necessary. To prepare for such events, develop family evacuation plans, discuss them with ALL household members, and practice them regularly.

1. Demonstrate to everyone the sound of a smoke detector and explain what the sound means.
2. Determine TWO exits from each room and an escape route to the outside from each exit.
3. Teach everyone in your household to touch the door and use an alternative exit if the door is hot. INSTRUCT THEM NOT TO OPEN THE DOOR IF IT IS HOT.
4. Teach household members to crawl on the floor to stay below dangerous smoke, fumes and gases.
5. Designate a safe meeting place for all members outside the building.

14. Firefighting procedures

1. Don't panic, stay calm.
2. Leave the building as quickly as possible. Before opening the door, touch it to check if it's hot. If necessary, use an alternate exit. Crawl on the floor and DO NOT stop to grab anything.
3. Meet at a pre-arranged location outside the building.
4. Call the fire department from OUTSIDE the building.
5. DO NOT ENTER A BURNING BUILDING. Wait for the fire department to arrive.

NOTE: These guidelines will be helpful in the event of a fire. However, to reduce the likelihood of a fire breaking out, it is necessary to follow fire safety rules and prevent dangerous situations.

15. Troubleshooting

PROBLEM	SOLUTION
The smoke detector is not responding	Check that the sensor is properly attached to the mounting base
The LED flashes red and the device beeps once every 53 seconds	Low battery - REPLACE WITH A NEW SENSOR!
LED flashes red twice every 53 seconds	The alarm is malfunctioning, clean the smoke detector OR IMMEDIATELY REPLACE THE SMOKE DETECTOR WITH A NEW ONE!
The smoke detector triggers unwanted alarms sporadically or when occupants are cooking, taking a bath, etc.	Clean the smoke detector. See section 12 TESTING AND MAINTENANCE.

16. Limitations of smoke detectors

Fire alarms have played a crucial role in reducing deaths from home fires worldwide. However, like any warning device, fire alarms can only function if they are located on the property, installed, and maintained, and smoke reaches the alarms. They are not foolproof.

1. **The smoke detector cannot operate without power.**
   Battery-powered devices will not work if the batteries are missing, disconnected or discharged, if the wrong type of batteries are used, or if the batteries are not installed correctly.

2. **Smoke detection devices may not wake everyone.**
   Practice your fire escape plan at least twice a year, ensuring everyone is involved—from children to grandparents. Let children master fire escape planning and practice before conducting fire drills at night when they are asleep. If children or others don't wake easily to the sound of a fire alarm, or if there are infants or family members with limited mobility, ensure someone is designated to assist them during fire drills and in the event of an emergency. It's recommended to conduct fire drills when family members are asleep to gauge their reaction to a fire alarm while sleeping and determine if they might need assistance in an emergency.

3. **Smoke detection devices are not reliable.**
   Like any electronic device, fire alarms contain components that can wear out or fail at any time. You should test your device weekly to ensure continued protection. Fire alarms do not prevent or extinguish fires. They are not a substitute for property or life insurance.

4. **Smoke detection devices cannot detect a fire if the smoke does not reach the sensors.**

Smoke from fires in chimneys or walls, on roofs, or on the other side of closed doors may not reach the sensor chamber to trigger an alarm. Therefore, install one device inside each bedroom or area, especially if the bedroom door is closed at night, as well as in the hallway between them.
Although the alarm signal in your device meets or exceeds current standards, it may not be audible if:

a. the device is located outside a closed or partially closed door,

b. residents have recently consumed alcohol or taken drugs,

c. the alarm is drowned out by noise from the radio, television, traffic, air conditioning or other devices,

d. residents have hearing problems or sleep deeply.

Special purpose units, such as those with visual and audible alarms, should be installed for residents with hearing difficulties.

5. **Fire alarm devices may not have time to sound an alarm before the fire itself causes damage, injury, or death because smoke from some fires may not reach the device immediately. Examples include people smoking in bed, children playing with matches, or fires caused by violent explosions caused by a gas leak.**

6. **INFire alarm devices have a limited lifespan.**
The device should be replaced immediately if it is not functioning properly. You should always replace a fire alarm device 10 years after the date of purchase.

17. Fire safety tips

Compliance with fire safety rules and prevention of dangerous situations:

- Flammable liquids, such as gasoline, should be stored in appropriate containers.
- Never smoke in bed. After smoking, extinguish your cigarette and place it in an appropriate container.
- Check power outlets, plugs, or switches for damage. If cables are frayed or broken, replace them promptly.
- When using electrical appliances such as heaters or heating units, do not overload the circuit and periodically check that these appliances are working properly.
- Portable heaters and open flames (e.g., lit candles) should be kept away from flammable materials. 6. Keep matches and lighters out of reach of children.
- Keep at least one working fire extinguisher on each floor and an additional one in the kitchen. Have fire escape ladders or other reliable means of escape from the upper floor in the event of a blocked staircase.

- Make sure all family members know what to do when they hear the alarm.
- Install smoke detectors according to the instruction manual. Keep devices clean and free from dust accumulation. If they are not working properly, replace them immediately.

18. Compliance

This device has been approved for compliance with the essential and other essential requirements of the RED Directive 2014/53/EU, the ErP Directive 2009/125/EC and the RoHS Directive 2011/65/EU.

Simplified declaration of conformity

Importer: Ferguson Sp. z o.o., ul. Dworska 1, 61-619 Poznań

Name: FASD1 Photoelectric Smoke Detector

Device type: Smoke detector

The above-mentioned product complies with Directive 2014/53/EU of the European Parliament and of the Council of 16 April 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC.

The full Declaration of Conformity can be downloaded from the website: https://ferguson-digital.eu/deklaracje-zgodnosci/