LANSEN

WIRELESS BUILDING TECHNOLOGY

LONG BATTERY LIFE SINGLE STATION RF & BATTERY POWERED PHOTOELETRIC SMOKE DETECTOR SMK2 SERIES USER'S MANUAL

UM-EN_LAN-WMBUS-SMK2 REV1.2

INTRODUCTION

LANSEN's advanced single station photoelectric smoke detector SMK2 series is designed to sense smoke that comes into the sensing chamber. It does not sense gas or flame. This smoke detector is designed to give early warning of developing fires by giving sound alarm from its built-in alarm horn. It can provide precious time for you and your family to escape before a fire spread. However, the smoke detector only makes such pre-warning of fire accident possible if the smoke detector is located, installed, and maintained properly as described in this manual.

In addition, this smoke detector also integrates a high-performance radio transmitter that sends status messages via the Wireless M-BUS & OMS (Open Metering Standard) protocol. The integrated radio module is only used for monitoring and transmitting of the performance and functionality of the smoke detector.

OVERVIEW

Model	**LAN-WMBUS-SMK2 series**
Power source for radio communication	Panasonic CR123A or Duracell DL123A 3V lithium battery **(Replaceable)**
Battery lifetime	More than ten (10) years

Power source for smoke detection	Energizer L91 lithium battery **(NOT replaceable)**
Battery lifetime	More than ten (10) years

PRODUCT CHARACTERISTICS

Main function	Smoke detector	
Sensitivity standard	EN14604	
Method of mounting	Ceiling	
Alarm audibility	Over 85 dB/3m	
Interconnectable	No (Single station)	
RF communication	868.95 MHz	
Indicator	Alarm	Red LED flashing 3 times and horn emit 3 tones every 4 second
	Malfunction	Yellow LED flashing every 48 second
	Power	Green LED flashing every 48 second
Temporary deactivation facility	No	
Temporary muting facility	Silence alarm about eight minutes Silence malfunction (error) about one hour	
Operation temperature	0ºC~50ºC (32ºF~122ºF)	
Relative Humidity	5~90%	
Size	120mm diameter x 52.45mm depth	

WARNING: This smoke detector is designed for use in a single residential unit only, which means it should only be used inside a single-family apartment or home. The detectors are stand-alone units and have no interconnections to other smoke detectors.

WARNING: This detector must not be used in non-residential buildings. Warehouses, industrial or commercial buildings, and special purpose non-residential buildings require special fire detection and alarm systems. This smoke detector alone is not a suitable substitute for complete fire detection systems for places where many people live or work, such as hotels or motels. The same is true of dormitories, hospitals, nursing homes or group homes of any kind, even if they were once single-family homes.

WARNING: This smoke detector will not alert people who are hard of hearing. It is strongly recommended that special-purpose smoke detectors, using lights or vibrating devices, should be installed to alert occupants who are hard of hearing.

LOCATIONS TO INSTALL YOUR SMOKE DETECTORS

For complete coverage in residential units, smoke detectors should be installed in all rooms, halls, storage areas, basements, and attics in each family living unit. Minimum coverage is one detector on each floor and one in each sleeping area.

Useful tips:

- Install one separate smoke detector in every bedroom and one smoke detector on each floor as a minimum protection. Install a separate smoke detector in each separate room and exit way except kitchen, as shown in **Figure 1** and **Figure 2**.

Figure 1:
ONE SEPARATE SMOKE DETECTOR IN EVERY BEDROOM AND ONE SMOKE DETECTOR ON EACH FLOOR (IF MULTI-LEVEL BUILDING) FOR MINIMUM SECURITY.

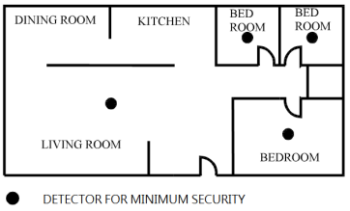
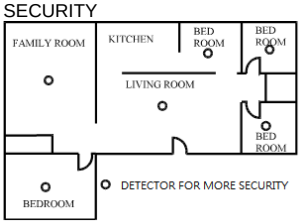


Figure 2:
ONE SEPARATE SMOKE DETECTOR IN EVERY ROOM, EXCEPT KITCHEN AND BATHROOM FOR MORE SECURITY



- Install a smoke detector on every floor of a multi-floor home or apartment, as shown in **Figure 3**.
- Install a minimum of two detectors in any household.
- Install a smoke detector inside every bedroom.
- Install smoke detectors at both ends of a bedroom hallway if the hallway is more than 40 feet (12 meters) long.
- Install basement smoke detector at the bottom of basement stairwell.
- Install second-floor smoke detectors at the top of the first-to-second floor stairwell. **Be sure no door or other obstruction blocks the path of smoke to the smoke detector.**

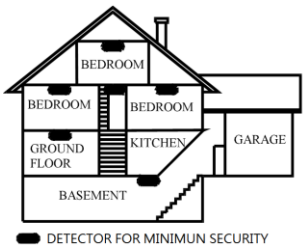


Figure 3:
LOCATION FOR PLACING SMOKE DETECTOR FOR A MULTI-FLOOR RESIDENCE

- Install additional smoke detectors in your living room, dining room, family room, attic, utility and storage rooms.
- Install smoke detectors as close to the center of the ceiling as possible. If this is not practical, put the detector on the ceiling, no closer than 20 inches (50 cm) from any wall or corner, as shown in **Figure 4**.
- If ceiling mounting is not possible and if wall mounting is permitted by your local and state codes, put wall-mounted detectors between 4 and 6 inches (10 ~ 15 cm) from the ceiling, as seen in **Figure 4**.
- If some of your rooms have sloped, peaked, or gabled ceilings (>20°) then the distance between the peak and the mounting point of the smoke detector shall be 0.5 – 1 m, measured along the peaked ceiling as shown in **Figure 5**.

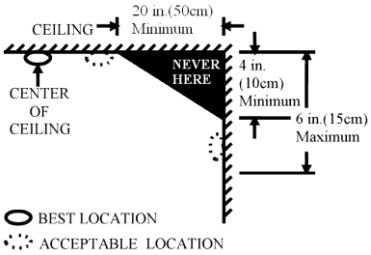


Figure 4:
RECOMMENDED BEST AND ACCEPTABLE LOCATIONS TO MOUNT SMOKE DETECTORS.

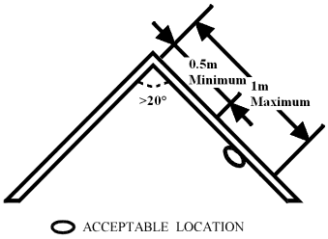


Figure 5:
RECOMMENDED LOCATION TO MOUNT SMOKE DETECTORS IN ROOMS WITH SLOPED, GABLED, OR PEAKED CEILING.

CAUTION: Early fire detection is best achieved by the installation of fire detection equipment in all rooms and areas of the household as follows: A smoke detector installed in each separate sleeping area (in the vicinity, but outside of the bedrooms), and heat or smoke detectors in the living rooms, dining rooms, bedrooms, kitchens, hallways, attics, furnace rooms, closets, utility and storage rooms, basements, and attached garages.

Smoke detector shall be installed outside of each separate sleeping area in the immediate vicinity of the bedrooms and on each additional story of the family living unit including basements and excluding crawl spaces and unfinished attics.

It is recommended that the householder consider the use of additional smoke detectors in areas separated by a door for increased protection. The recommended additional areas are living room, dining room, bedroom(s), kitchen, attic (finished or unfinished), furnace rooms, utility room, basement, integral or attached garage, and hallways. However, the use of additional detectors remains the option of the householder. We recommend complete coverage and use of additional smoke detectors.

LOCATIONS NOT TO INSTALL SMOKE DETECTORS

Nuisance alarms take place when smoke detectors are installed where they will not work properly. To avoid nuisance alarms, do not install smoke detectors in the following situations:

- Combustion particles are the by-products of something that is burning. Thus, nuisance alarms can be prevented by avoiding installation of smoke detectors in or near areas where combustion particles are present, for example, in kitchens with few windows or poor ventilation or garages where there may be vehicle exhaust, near furnaces, hot water heaters, and space heaters.
- Do not install smoke detectors less than 20 feet (6 meters) away from places where combustion particles are normally present, like kitchens. If a 20-foot distance is not possible, try to install the detector as far away from the combustion particles as possible, preferably on a wall. To prevent nuisance alarm, provide good ventilation in such places.

IMPORTANT: Never disable the unit to avoid nuisance alarms.

- Air streams passing by kitchens may affect how a smoke detector senses combustion particles. **Figure 6** graphically indicates the correct and incorrect location of smoke detector with normal air flow in a building.

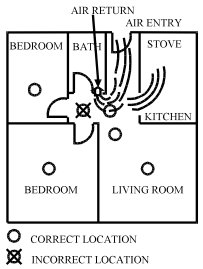


Figure 6:
RECOMMEDNDED SMOKE DETECTOR LOCATIONS TO AVOID AIR STREAMS WITH COMBUSTIONS PARTICLES

- In damp or very humid areas, or near bathrooms with showers. Moisture in humid air can enter the sensing chamber, then turns into droplets upon cooling which can cause nuisance alarms. Install smoke detectors at least 10 feet (3 meters) away from bathrooms.
- In very cold or hot areas, including unheated buildings or outdoor rooms. If the temperature goes above or below the operating range of smoke detector (-10ºC~50ºC / 14ºF~122ºF), they will not work properly.
- In very dusty or dirty areas. Dirt and dust can build up in the detector's sensing chamber, thus making it overly sensitive. Additionally, dust or dirt can block openings to the sensing chamber and keep the detector from sensing smoke.
- Near fresh air vents or very drafty areas like air conditioners, heaters or fans. Fresh air vents and drafts can drive smoke away from smoke detectors.
- Dead air spaces are often at the top of a peaked roof or in the corners between ceilings and walls. Dead air may prevent smoke from reaching the smoke detector. See **Figures 4 and 5** for recommended mounting locations.
- In insect-infested areas. If insects enter the detector's sensing chamber, they may cause a nuisance alarm. Where bugs are a problem, get rid of them before putting up a smoke detector.
- Near fluorescent lights. Electrical "noise" from fluorescent lights may cause nuisance alarms. Install smoke detectors at least 5 feet (1.5 meters) from such lights.

WARNING: Never try to remove battery from smoke detector to stop a nuisance alarm. Open a window or fan the air around the smoke detector to get rid of the smoke. The alarm will turn itself off when the smoke is gone. If nuisance alarms persist, attempt to clean the smoke detector as described in this manual.

WARNING: Do not stand close to the smoke detector when the alarm is sounding. The alarm is loud in order to wake you in an emergency. Too much exposure to the horn at close range may be harmful to your hearing.

INSTALLING YOUR SMOKE DETECTORS

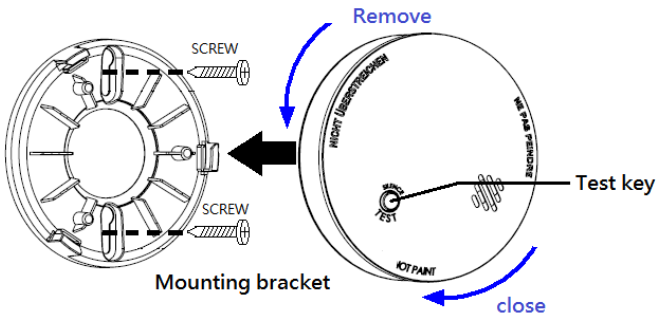
The SMK2 smoke detector is made to be mounted in the ceiling.

WARNING: Do not connect the SMK2 smoke detectors to any other detector or auxiliary device. Connecting anything else to this detector will keep it from working properly.

Read **"LOCATIONS TO INSTALL YOUR SMOKE DETECTORS"** and **"LOCATIONS NOT TO INSTALL SMOKE DETECTORS"** section in this manual first, then decide where to install a detector.

Please follow these steps to install your SMK2 smoke detector:

1. At the place where you are going to install your smoke detector, draw a six inches (15 cm) long horizontal line.
2. Remove the mounting bracket from your smoke detectors unit by rotating it counterclockwise.
3. Place the bracket so that the two longest hole-slots are aligned on the line drawn in step 1. In both keyhole slots, draw a mark to where the mounting plug and screw is going to be.
4. Remove the bracket.
5. Using a 3/16-inch (5mm) drill bit, drill two holes at the marks and insert plastic wall plugs. Put the smoke detector away when drilling to prevent dust from entering the smoke detector.
6. Use the two screws and plastic wall plugs (all supplied in the package) and mount the bracket on the wall.
7. Install the 3V battery supplied inside the SMK2 by removing the plastic battery pull tab.
8. Line up the slot of the bracket and the smoke detector. Push the smoke detector onto the mounting bracket and turn it clockwise to fix it into place. Pull onward on the smoke detector to make sure it is securely attached to the mounting bracket.



9. After being mounted on the bracket for 2 seconds, the alarm horn will beep once, and a green LED will flash once.
10. Press the test button at the front - the horn shall sound with a loud, pulsating alarm. This means the unit is working properly. For further info regarding the test, please refer to section **"MANUAL TEST OF THE SMOKE DETECTOR"**.

SMOKE DETECTOR MODES

STANDBY MODE

Green LED flashing once every 48 seconds means the smoke detector is in standby (operating) mode.

ALARM MODE

Red LED flashing 3 times and horn emit 3 tones every 4 seconds.

SILENCE FEATURE

The silence features can temporarily mute an alarm for up to 8 minutes. To use this feature, press test/silence button on the smoke detector when it alarms. If the smoke concentration around the smoke detector is still at an alarming level after 8 minutes of silence, then the smoke detector will re-alarm immediately.

MALFUNCTION (ERROR) SIGNAL

Please remove and replace the smoke detector if:

Horn emits sound 1 time and yellow LED flashing once 48 seconds: Detector does not work properly.

Horn emits sound 3 times and yellow LED flashing 1 time: Smoke trouble.

Horn emits sound 2 times and yellow LED flashing 1 time: "Low sensitivity".

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Horn emits sound 2 times and yellow LED flashing 2 times: "High sensitivity".

Horn emits sound 1 time and yellow LED flashing 1 time: The detector has low battery voltage.

HUSH FEATURE

The hush feature can temporarily mute warning of malfunctions for up to one hour. To use this feature, press the test/silence button when the smoke detector is in warning (malfunction) mode. To return the smoke detector to audible warning mode, press the test/silence button again.

LOW BATTERY WARNING SIGNAL

If the smoke detector horn begins to beep once every 48 seconds with yellow LED flashing, then the battery of the smoke detector is weak. This low battery warning signal should last for up to 7 days. The SMK2 battery for smoke detection is not replaceable so the detector must be replaced with a new unit.

END OF LIFE SIGNAL

After 10 years of operation, an audible indication will be given that the smoke detector should be replaced. This indication is distinguished by **horn emit sound 1 time and yellow LED flashing 4 times every 48 seconds.**

MANUAL TEST OF THE SMOKE DETECTOR

Test the smoke detector both at installation and then regularly (at least monthly) by pressing firmly on the test button with your finger for around 1 second until the horn sounds and then release your finger. The alarm horn will emit sound at least 3 times with the red LED flashing. If the smoke detector emits sound with yellow LED flashing every 48 seconds after the test is done, then the smoke detector is not working properly. See section "**MALFUNCTION (ERROR) SIGNAL**".

This type of test is the **only way to make sure that the smoke detector unit is working properly. If the unit fails this test, then it must be replaced immediately**.

If you have been away from home more than 1 week, always test the detector manually when you return to home.

NOTE: If no manual test has been performed for 28 days, the device will do an automatic self-test to determine if everything is okay. The alarm horn will emit sound during this test.

WARNING: Never use an open flame of any kind to test your smoke detector since you may cause fire damage to the smoke detector or your home. The built-in test button accurately tests all functions and is the only correct way to test the unit.

WARNING: When you are not testing the unit, but the alarm horn sounds, then the smoke detector has sensed smoke or combustion particles in the air. Investigate the cause of the alarm and take proper actions if the alarm is correct. The alarm could be caused by a nuisance situation, such as cooking smoke or a dusty furnace. If this happens, open a window, or fan the air to remove the smoke or dust. The alarm will turn off as soon as the air is completely clear.

WARNING: Do not dismantle, disconnect the power, or remove the battery from the smoke detector. This will remove your protection from fires.

NOTE: If the smoke detector horn begins to emit sound once in 48 seconds with yellow LED flashing, then the smoke detector's battery is weak.

NOTE: O**nly use the replacement lithium batteries listed below:**

1. (Duracell) DL123A
2. (Panasonic) CR123A

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WARNING: Do not use any other type of battery. The RF module of this smoke detector may not operate properly with another type of battery.

BATTERY INSTALLATION

1. Open battery compartment (see figure below).
2. Install 3V battery into compartment and make sure the "+" and "-" ends of the battery are aligned properly and close the hatch.
3. After the battery is installed, mount it on the bracket and press the test button immediately to check if it alarms properly.

CAUTION: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type.

CAUTION: This smoke detector comes with a cover latch that will prevent the smoke detector cover from closing if the battery is not installed. This tells you that the smoke detector will not work until a battery is properly installed.

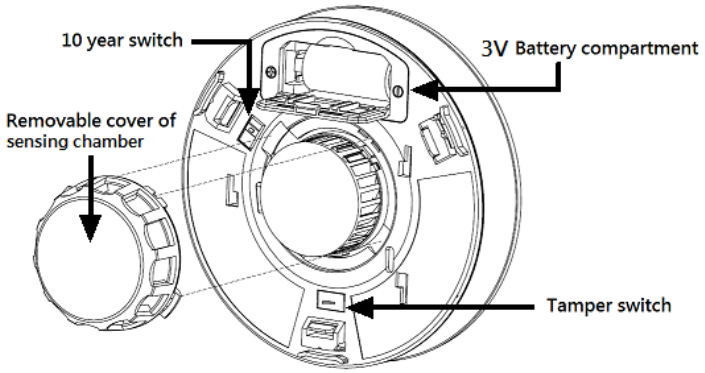
TAKING CARE OF YOUR SMOKE DETECTOR

Your SMK2 smoke detector is designed to be as maintenance-free as possible. To keep your smoke detector in good working condition, you must test the unit according to section "**MANUAL TEST OF THE SMOKE DETECTOR**".

Regular Maintenance:

Open the cover and vacuum the dust off the smoke detector's sensing chamber at least once a month.

To clean the smoke detector, use soft brush attachment on your vacuum. Carefully remove any dust on smoke detector components, especially on the openings of the sensing chamber. Test the smoke detector to make sure battery is working correctly. Never use water cleaners as they may damage the unit.



NOTE: If nuisance alarms keep coming from the unit, you should check if the smoke detector's location is adequate. Refer to section "**WHERE TO INSTALL SMOKE DETECTOR**" and move your smoke detector if it is not located properly. Clean the unit as described above.

TIPS TO ENHANCE YOUR PROTECTION FROM FIRES

Putting up smoke detectors is only one step in protecting your family from fires. You must also reduce the chances that fires will start in your home and you must increase your chances of escaping safely if one does start. To have a good fire safety program, you must apply the following tips to enhance your family's protection from fires:

1. Install smoke detectors properly. Carefully follow all the instructions in this manual. Keep your smoke detector clean and test them regularly.
2. Remember that smoke detectors that does not work will not alert you. Replace your smoke detectors immediately if they are not working.
3. Follow fire safety rules, and prevents hazardous situations:
   - Use smoking materials properly. Never smoke in bed.
   - Keep matches and cigarette lighters away from children.
   - Store flammable materials in proper containers. Never use them near open flame or sparks.
   - Keep electrical appliances in good condition. Do not overload electrical circuits.
   - Keep stoves, fireplaces, chimneys, and barbecue grills grease free. Make sure they are properly installed and away from any combustible materials.
   - Keep portable heaters and open flames, such as candles, away from combustible materials.
   - Do not allow rubbish to accumulate.
4. Develop a family escape plan and practice it with your entire family. Be sure to include small children in your practice.
   - Draw a floor plan of your home, and find two ways to exit from each room. There should be one way to get out of each bedroom without opening the door.
   - Explain to children what the smoke detector signal means. Teach them that they must be prepared to leave the home by themselves if necessary. Show them how to check to see if doors are hot before opening them. Show them how to stay close to the floor and crawl if necessary. Show them how to use the alternate exit if the door is hot and should not be opened.
   - Decide on a meeting place which has a safe distance from your house. Make sure that all your children understand that they should go and wait for you there if there is a fire.
   - Hold fire drills at least every 6 months to make sure that everyone, even small children, knows what to do to escape safely.
   - Know where to go to call the Fire Department from outside your home.
   - Provide emergency equipment, such as fire extinguishers, and teach your family to use this equipment properly.

MORE TIPS ON HOW TO FACE A FIRE IN YOUR HOME

If you have a family escape plan and practiced it with your family, you have increased their chances of escaping safely. Go over the following rules with your children each time you have fire drills. This will help everyone remember them in case of a real fire emergency.

1. Do not panic and stay calm. Your safe escape may depend on thinking clearly and remembering what you have practiced.
2. Get out of the house as quickly as possible. Follow a planned escape route. Do not stop to collect anything or to get dressed.
3. Feel the doors to see if they are hot. If they are not, open them carefully. Do not open a door if it is hot. Use an alternate escape route.
4. Stay close to the floor. Smoke and hot gases rise.
5. Cover your nose and mouth with a wet or damp cloth. Take short, shallow breaths.
6. Keep doors and windows closed. Open them only if you must to escape.
7. Meet at your planned meeting place after leaving the house.
8. Call the Fire Department as soon as possible from outside your house. Give the address and your name.
9. Never go back inside a burning building.
10. For more ideas on how to make your home safer from fires and how to plan your family's escape, contact your local Fire Department.

LIMITATIONS OF SMOKE DETECTORS

Although smoke detectors play a key role in reducing damage resulting from home fires, they can only work if they are properly installed, located and maintained.

- **Smoke detector may not be heard if residents are hearing impaired**

Special designed units such as those with visual and audible alarms should be installed for hearing impaired residents.

- **Smoke detector may not waken all individuals if they are sound sleepers**

If children or other family members do not waken readily to the sound of the smoke detector, or if there are infants or members with mobility limitations, make sure someone is assigned to assist them in fire drill and in the event of an emergency.