Ningbo Kingdun Electronic Industry Co.,Ltd.

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宁波金盾电子工业有限公司
NINGBO KINGDUN ELECTRONIC INDUSTRY CO.,LTD.

LM-109E SMOKE ALARM

User manual

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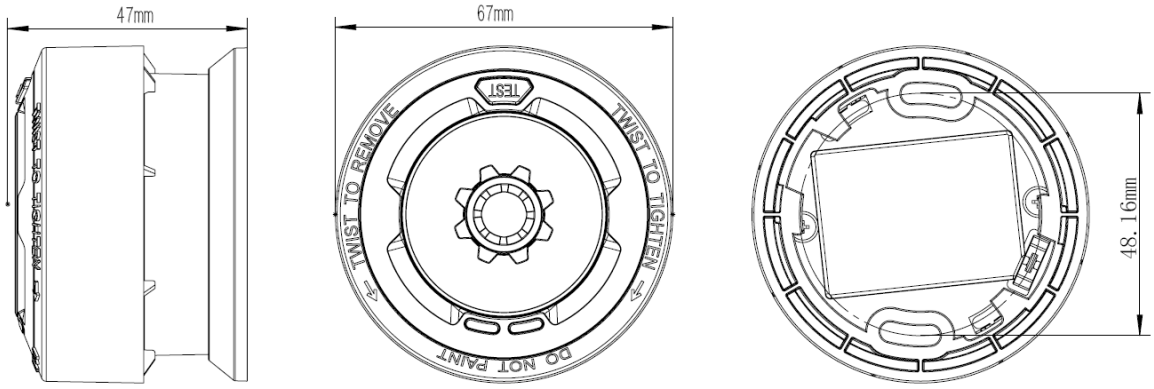
Product Specifications:

Technical parameters	Smoke detector		
	Voltage	DC3V（built-in CP952434）	
	Low-voltage inspection	2.2V	
	current	Working current	Quiescent current
		≤120mA	≤2uA
	Alarm loudness	≥85dB/3m	
	Working temperature	-10℃~+40℃	
	Ambient humidity	≤95%RH（no condensation）	
	Status display	Normal smoke detection	LED (red) flashes once about every 344 seconds, no alarm sound
		Smoke detection or key test	LED (red) flashes and continuous alarm is given
		Low sensitivity detection (silent mode)	LED (red) flashes about every 10 seconds, no alarm sound, automatically cancel low sensitivity detection about 9 minutes later
		Alarm memory	LED (green) flashed 3 times about every 43 seconds, and stops 24 hours later. The first time you press test/mute button after alarm is made, the detector will hint by special alarm mode.
		End of useful life	After working for 10 years, alarm sound is made, the buzzer buzzes 3 times about every 43 seconds
		Low-voltage inspection	LED (red) flashes once, make “di” alarm sound about every 43 seconds

Appearance and dimension（Figure 1）



LM-109E

(Figure1)

Operation:

- In areas where ventilation and/or air conditioning systems are used is must be ensured that air movement does not affect the function of the smoke detector.
- Smoke detectors must be permanently fixed on the ceiling. Mounting instructions must be observed.
- Choose a mounting method that ensures a holding force of at least 20N in vertical direction.
- The smoke detector is designed for monitoring residential buildings or residential premises (not for industrial or commercial usage).
- A function test must be performed on each smoke detector after installation.
- The functionality of each installed smoke detector must be regularly checked and maintenance measures must be ensured. Perform function test 1 per week, clean every 3 months.
- Smoke detectors must be taken out of service at the latest after 10 years and replaced with a new device.

Mounting locations

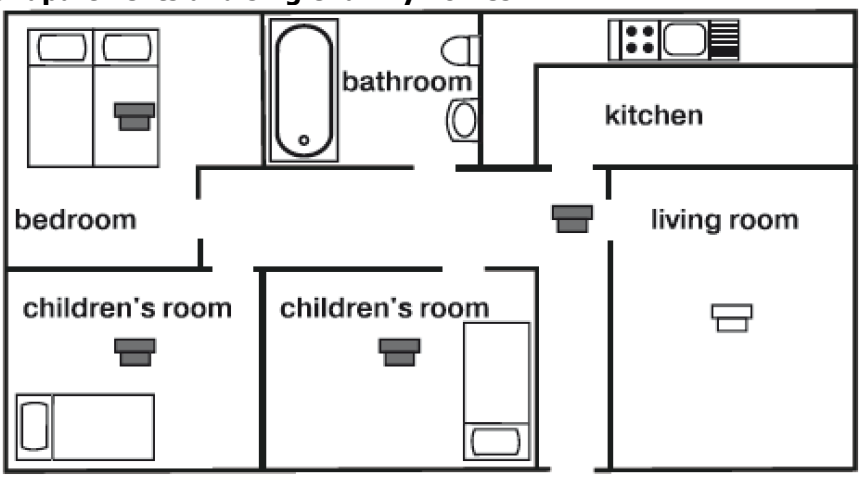
Mounting locations for smoke detectors:

- Bedrooms, children's rooms and corridors must be equipped (basic requirement) with smoke detectors.
- Always on the ceiling.
- 50 cm from the wall (or beam).
- If the room is subdivided by ceiling-high furniture etc., a smoke detector must be installed in each room partition.
- In rooms with a floor area ≤60m2, divided into ceiling boxes by beams or joists, the following applies:
    - In ceiling boxes bigger > 36m2 a smoke detector must be installed per ceiling box (see Figure 1a).
    - In ceiling boxes ≤36m2 and with ceiling slopes ≤20°as well as beams or joists with a height ≤0.2m, the individual ceiling boxes are not taken into account (see Fig 1.b). Install smoke detectors as centrally as possible in the room, in a ceiling box or on the joist.

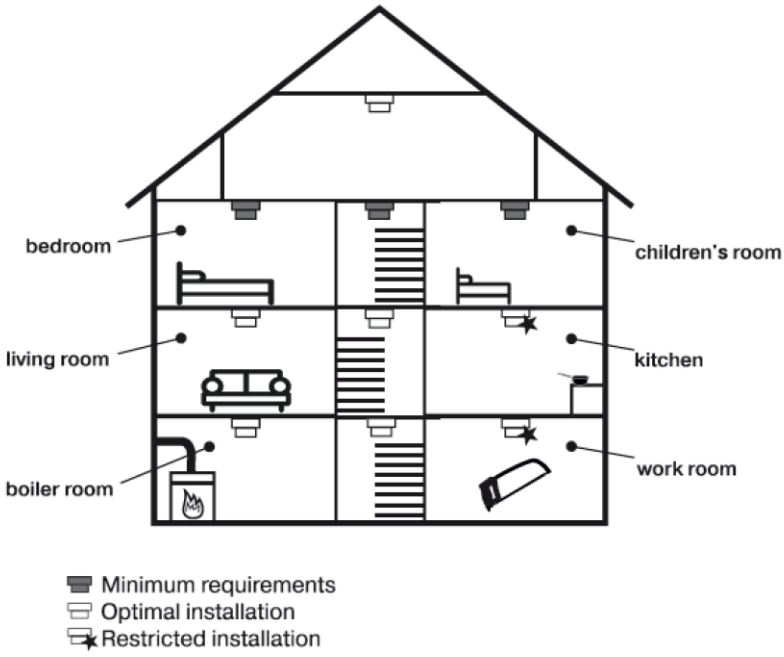
- In these rooms have beams or ceiling joists with a height >0,2m, the smoke detector must be installed on a beam or girder, as centrally as possible in the room (see Fig c).

- In rooms with a floor area of >60m2, an additional smoke detector must be installed per 60m2.

Planning examples
For apartments and single family homes



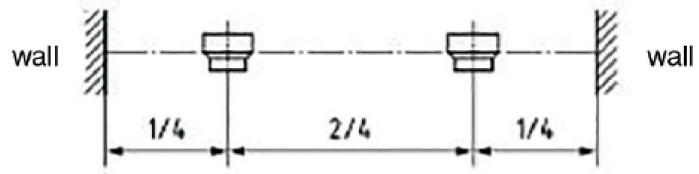
Example for use in a single-family home



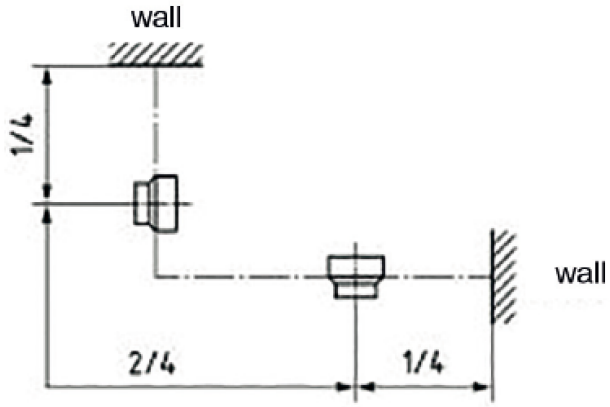
Arrangement in special room geometries

Following distance ratios and arrangements are recommended for detector positioning:

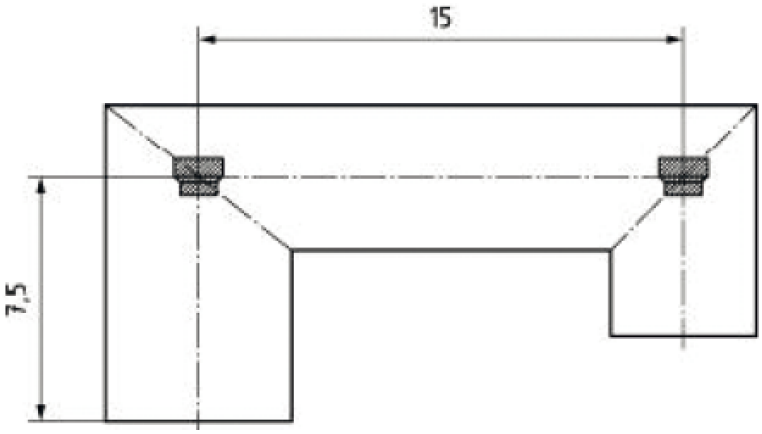
a) Linear corridor



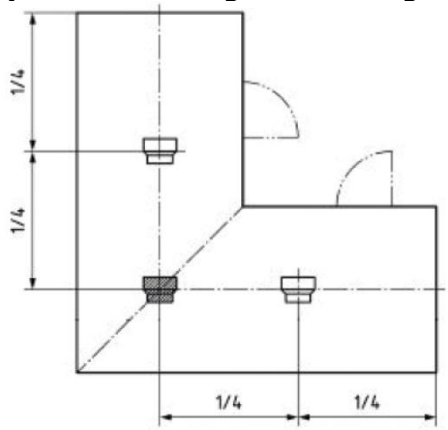
b) Rectangular corridor



c) Detector arrangement in large corridors



d) Detector arrangement in large corridors with corners



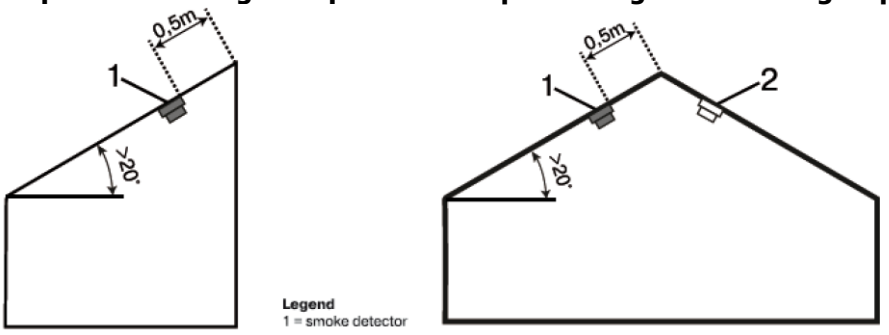
Constructional features

- If a room is divided in height by a podium or a gallery, a smoke detector is required beneath these

installations if the area exceeds 16m2 and the length and width exceeds each 2m.

- In rooms with ceiling slopes > 20 °to the horizontal, a heat pocket can form at the top of the ceiling which prevents smoke entry into the smoke detector.
- Therefore, smoke detectors in these rooms must be mounted at least 0,5m but no more than 1m from the ceiling top, see the following 2 illustrations.
- In rooms with a slope ≤20 °smoke detectors must be mounted centrally on the ceiling.

Example of mounting with pedestal-shaped ceiling with a ceiling slope > 20 °

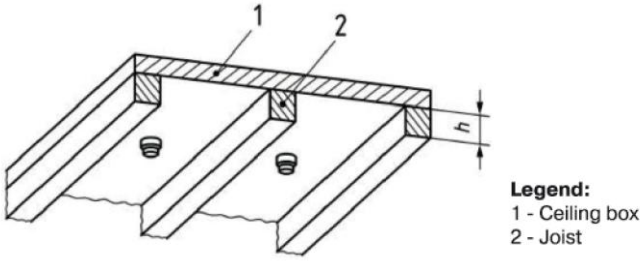


Remarks: smoke detectors can be attached on the position left (1) or on the position right (2).

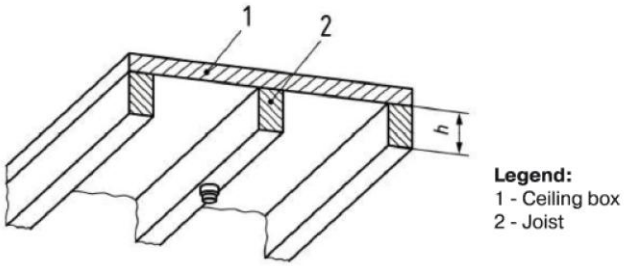
Notes for ceiling installation.

For ceiling with joists (height (h) of the joist ≤0.20m and an area of the ceiling box >36m2 or ≤36m2).

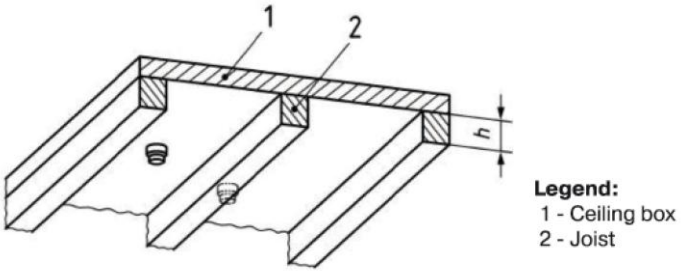
a) Example for ceiling >36m2



b) Example for ceiling box ≤36m2



c) Example of ceiling with joist (height (h) of the joist >0.2m)



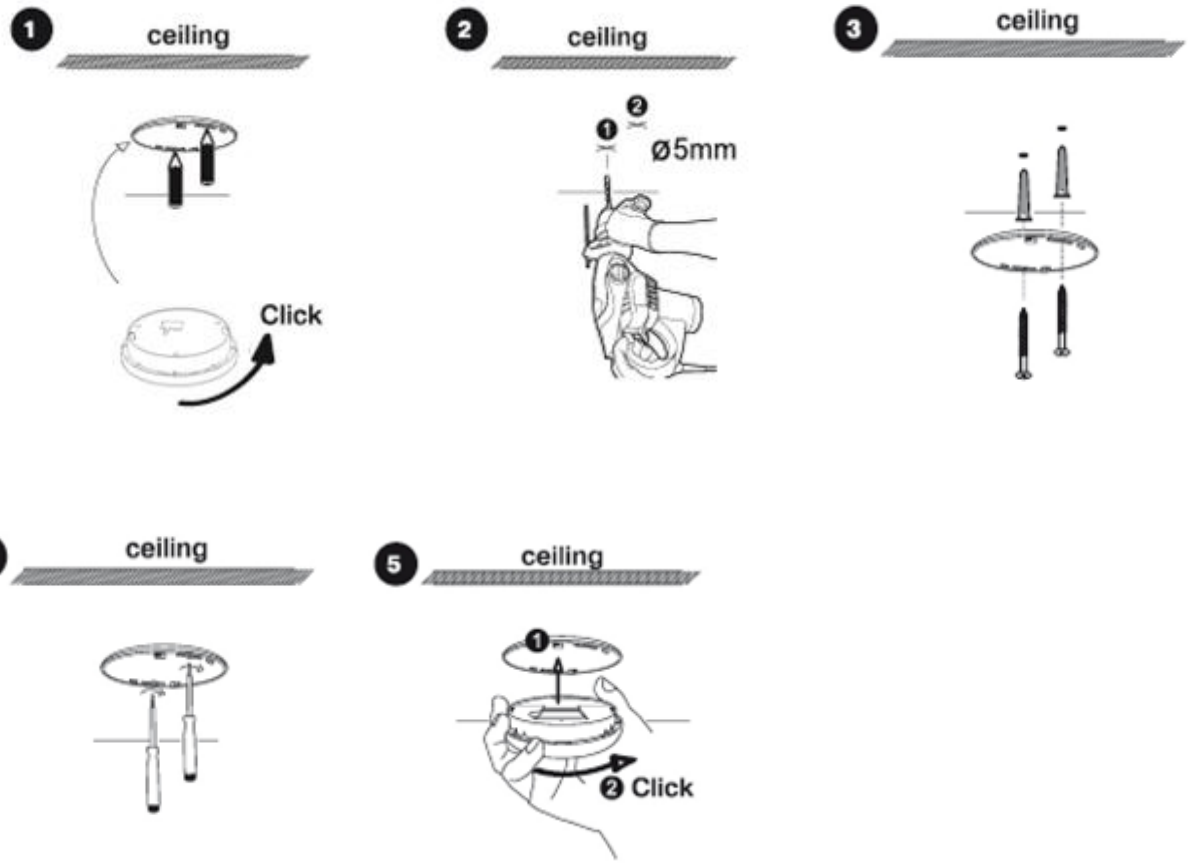
In corridors with a maximum width of 3m, the distance between two smoke detectors may not exceed 15m. The detector distance to the front face of the corridor must not exceed 7.5m. A detector must be arranged in crossings, junctions and corners (mitre line) of corridors. An example of an arrangement is shown in chapter "Arrangement in special room geometries".

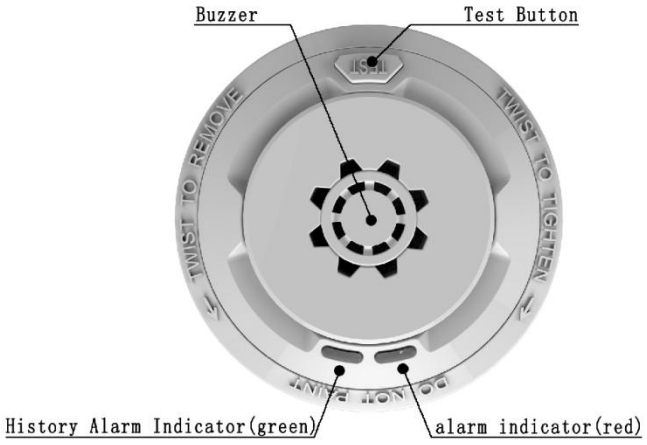
Mounting

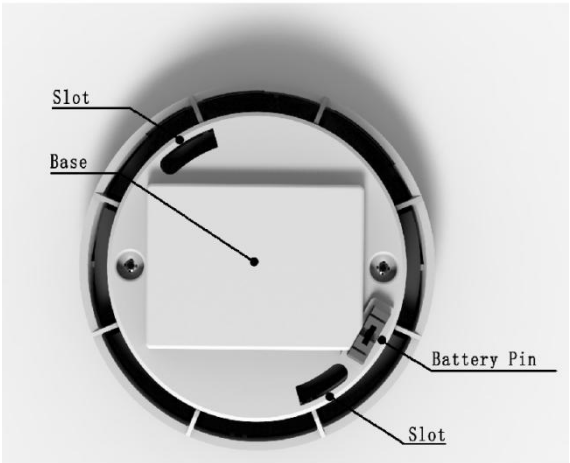
Loosen the mounting plate on the rear side of the device by turning it clockwise.

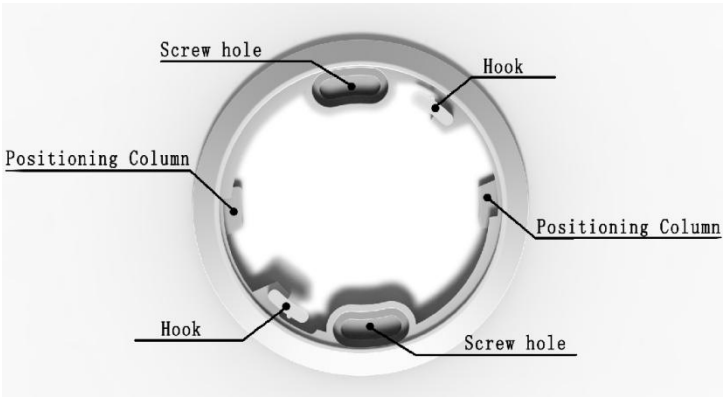
Fix the mounting plate with the help of the enclosed mounting material to the ceiling or wall. Check first whether the supplied mounting materials is suitable for the structural quality of the wall/ceiling.

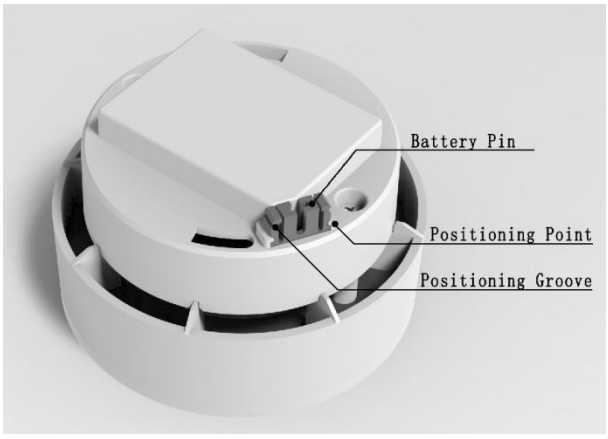
Insert the smoke detector in the mounting bracket and rotate the smoke detector anti-clockwise direction until it audibly engages.

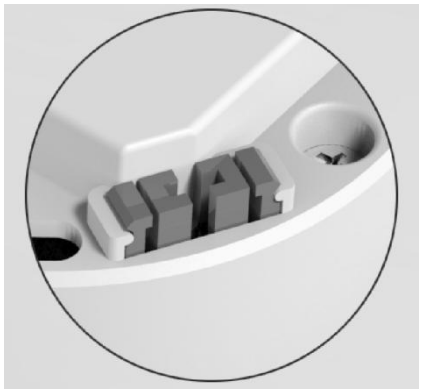












Power off Power on

The battery pin is raised at beginning of use (left photo). Press battery pin to power on (right photo).

Test after the installation.

Press the test/hush button, if the red indicator light flashes quickly and continue alarms at the same time, it means the detector is working properly. At the same time, the detector enters low sensitivity detecting state, the red LED light flashes every 10 seconds approx. About 9 minutes later, it enters normal detecting state from low sensitivity detecting state automatically. Or press the test/mute button again and cancel low sensitivity detecting state.

Erratic or low sound coming from your alarm may indicate a defective alarm, you can refer to "Trouble shooting"section for solution.

LED indicators

- RedLED-flashing once every 344 seconds: indicates that the smoke alarm device is operating properly.
- Red LED-flashing: when the test button is pressed, or when the smoke alarm device sense particles of combustion and goes into alarm (constant pulsating sound), the red LED will flash once per second. The flashing LED and pulsating alarm will continue until the air is cleared or release test button.
- Red LED alarm silencer (Hush mode) indication: The red LED will flash once every 10 seconds, indicating the smoke alarm device is in the alarm silence (hush) mode.
- Low battery indication: An intermittent "chirp"with red LED flashes once every 43 seconds: indicates that the smoke alarm device is low battery, you may press the test button longer time for pause alarm for 8 hours, but it will reset automatically after 8 hours.
- Fault indication: the alarm occurs every 43 seconds.
- Alarm memory: After alarm is made, the detector will have alarm memory. The green LED will flash quickly for 3 times every for 43 seconds. So the user can tell if the detector has entered alarm state from a distance without touching the detector. LED display will quit after 24 hours. The first time you press the test/mute button after alarm is made, the detector will hint by special alarm mode. After releasing the test/mute key, alarm memory will be reset. Then you press the test/mute button and it will be normal key test.

Alarm silence (hush mode)

During the unit is alarming, you push the test button, it will be paused the unit alarming for approx. 9 minutes. The red LED will flash once every 10 seconds, it indicates the smoke alarm device is running into the silence mode.
Smoke alarms devices are conceived to minimize nuisance alarms.
The smoke alarm will automatically reset after approximately 9 minutes, if after this period, particles of combustion are still present, the alarm will sound again.
The alarm silencer (silence mode) can be repeatedly used until the air has been cleared of the conditioning causing the alarm.
Caution: Before using the alarm silence (hush), identify the source of the smoke and be certain a safe condition exists.
Danger: If the alarm sounds, and it is not being tested, it means the unit is detecting smoke, THE SOUND OF THE ALARM REQUIRES YOUR IMMEDIATE ATTENTION AND ACTION.

Fraud alarm/ false alarms

False alarms can be triggered by the following, for example:
Welding and cutting work,
Soldering and other hot work,
Sawing and sanding work,
Dust due to construction or cleaning,
Water vapour, cooking vapours or odours,
Extreme electromagnetic influences,
Temperature fluctuations, which lead to the condensation of the humidity in the smoke detector.

In the event of works in the environment of the installed smoke detector which trigger false alarms (e.g. renovation), the detector should be temporarily covered or removed. After completion of the work, the original functionality of the installed smoke detector must be restored as described in previous sections.
Should the system report an alarm, please check whether the fire really exists. If so, call the fire brigade.
If not, please check whether the mentioned reasons could have raised the alarm. We would like to point out that we are not liable for the consequences of false alarms. We do not cover any costs incurred by false alarms, such as for deployment of police, fire or key services.

Maintenance

This includes at least a check of whether the smoke penetration openings are free (e.g. covers, pollution

caused by fluff and dust), whether there is function-related damage to the smoke detector and whether the area of 0.5m around the smoke detector is free of obstacles (such as furniture), which inhibit the penetration of fire smoke into the smoke detector. If contamination is detected in the smoke penetration openings, there should be cleaned according to manufacturer instructions. If there is function-related damage to the smoke detector, it must be replaced. If the installed smoke detector does not have the required clearance around it, the mounting location must be inspected and a new location determined if necessary.

WEE-reference of disposal

In accordance with European defaults used electrical and electronics devices may no more be given to the unsorted waste. The symbol of the waste bin on wheels refers to the necessity of separate collection. Please help with environmental protection and see to it that this device is given to the for this purpose designated systems of waste sorting if you do not use it any longer.

Trouble shooting

PROBLEM	ACTION	SOLUTION
Smoke alarm does not sound when tested	Must activate alarm before installation	Remove battery pin to ON
	Clean smoke alarm.	Refer to "Maintenance"
	If there are still failures after above actions	Return to your retailer
Alarm about every 43S	Battery low voltage	Replace the smoke alarm.
Unwanted alarms intermittently	Press test button to pause alarm. Clean smoke alarm	Refer to "Maintenance". Move smoke alarm to new location and press test button.
Alarm sounds different from normal use	Clean smoke alarm	Refer to "Maintenance"
	If there are still failures after above actions	Return to your retailer

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