User manual

ZT-MSH AC/DC smoke & heat alarm

CE 2831 19
GLT-317-DoP-2

330v/01

Approved to EN 14604:2005/AC:2008 and BS5446-2:2003

Model	CE	LPCB	Interconnection	Suitable for Leisure Accommodation Vehicles (LAV)
ZT-MSH	2831-CPR-F2800	330v/01	Yes	Yes

Cautions

ELECTRICAL HAZARD: Disconnect power from equipment prior to making any internal adjustments. Installation and service should only be performed by qualified personnel.

PRODUCT LIMITATIONS: This smoke & heat alarm does not detect gas, or flame, and should not be covered with a guard or similar obstructing item.

This smoke & heat alarm may not alert people who are hearing impaired. It is strongly recommended that the special-purpose smoke & heat alarms using visual or vibrating alerting devices, should be installed for these occupants.

This smoke & heat alarm may not be effective in fires where smoke and heat is prevented from reaching the device (eg where intermediate doors are closed), where the fire grows so rapidly that the egress path is blocked (even when correctly located), and where the fire is intimate to a person (eg where a victim's clothes catch fire).

SLEEPING OCCUPANTS: Studies have shown that smoke & heat alarms may not awaken all sleeping occupants, and it is the responsibility of individuals in the household that are capable of assisting other to provide assistance to those who may be awakened by the alarm sound, or to those who may be incapable of safely evacuating the area unassisted.

INSTALLATION LIMITATIONS This product is designed for use in a single residential unit, such as a family home or apartment. It should only be used in lobbies, hallways, basements etc. if interconnected with other compatible smoke or heat alarms. Smoke alarms, located outside the dwelling may not provide early warning to occupants.

This product is not designed for use in non-residential buildings. Non-residential buildings require special fire detection and alarm systems. This product alone is not a suitable substitute for a fire detection system installed in places of work or where people sleep on a temporary basis, such as hotels or motels, dormitories, hospitals, nursing homes or group homes of any kind, even if they were once dwellings. Please refer to local regulations for fire detection and alarm system requirements.

Features

ZT-MSH AC/DC smoke & heat alarms provide smoke/heat detection and alarm functions within a single unit. Advanced electronics in conjunction with a photoelectric smoke sensing chamber and an electronic thermistor provide early detection of smoke and high immunity against unwanted alarms. The heat sensor provides sensitive rate-of-rise operation or fixed-temperature operation when the response threshold value is exceeded.
ZT-MSH AC/DC smoke & heat alarms are mains powered, with battery backup, suitable for general residential applications. ZT-MSH AC/DC smoke & heat alarms is suitable for general application in residential area and also for detection of fire without smoke (e.g. ethanol fire). It provides home owners and installers with an easy-to-install, premium solution for life safety and property protection applications.

Audible and Visual Alarm Indicators

When operating normally, a green LED in the Test button illuminate. When smoke/heat is detected, an internal sounder will activate to alert occupants, and a red LED will flash rapidly. The sounder is a loud, pulsating alarm. Whenever alarm indication is given, it shall be assumed that is an actual fire.

Test Button

Pressing and holding the Test button for 3 s will activate the smoke & heat alarm to check its operation. The alarm will sound and the red LED will flash rapidly. Releasing the test button will return the unit to normal operation.

Low Battery

When the battery is depleted, the smoke & heat alarm will emit a short audible signal every 48 s for at least 30 days, while the red LED flashes simultaneously. When the Low Battery signal is given, change the battery without delay.

Fault

When the smoke chamber is degraded or contaminated over a limit or the thermistor is damaged, the smoke & heat alarm will emit two short audible signals every 48 s, while the red LED not flashes simultaneously. When the fault is given, try vacuum the product on the outer surface, especially the smoke inlet, to remove dirt. If the condition persists, return the product for service.

Hush Button

Pressing the Hush button will reduce the sensitivity of the smoke & heat alarm for approximately 10 min. The Hush button should only be used after the cause of the alarm is known (such as normal cooking fumes). The Hush feature allows time for the smoke/heat to clear. During the hush time, the red LED will flash once every 6 s. After the Hush time has expired, the smoke & heat alarm will return to normal sensitivity. If smoke/heat is still present in the unit, the alarm will re-activate. The Hush feature can be used repeatedly.

Under hush mode, press the hush button again will return the unit to normal operation.

Alarm Memory

Alarm Memory feature allows easy identification of any unit that has previously been in the Alarm condition. If a unit enters the Alarm condition and subsequently returns to the Normal condition, the Alarm Memory is set. Initially, the red LED will flash three times every 48 s. In order to preserve battery power, this visual indication will stop after 24 hours and the unit will return to normal operation.

If the Alarm Memory is active, pressing and releasing the Test/Hush button resets the Alarm Memory with 3 short beeps.

Interconnection Terminals

Interconnected smoke & heat alarms will activate sounders on all units if any smoke & heat alarm detects smoke/heat. In this case, only the smoke & heat alarm(s) that detected smoke/heat will flash the red LED indicator. This allows the home owner to quickly locate the cause of the alarm. Up to 24 units can be interconnected as long as the cabling is less than 250 m in length.

Specifications

Main power source	AC 220 V ~ AC 240 V, 50 Hz
Standby power source	DC 9 V battery
Operating temperature	0 °C ~ +45 °C
Operating humidity	10 % ~ 90 % RH, non-condensing
Alarm sounder output	≥ 85 dB @ 3 m
Interconnection (max)	24 units, 250 m cabling

Approvals

ZT-MSH AC/DC smoke & heat alarms have the following approvals.

EN 14604:2005/AC:2008	Smoke alarm devices
BS5446-2:2008	Fire detection and fire alarm devices for dwellings – Part 2: Specification for heat alarms
CE	2831-CPR-F2800

Installation Preparation

Equipment

Before commencing installation, ensure all equipment and tools to mount and test the device are available, such as drills, mounting screws (supplied), cables and ladders.

Location Selection in Homes and Apartments

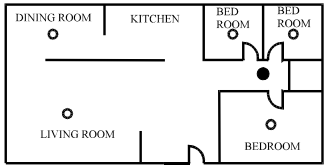
WARNING: Location and number of smoke and heat alarms may be specified in relevant regulations. Where these do not exist, the requirements for smoke alarm installation of NFPA 72 can be used. For your information, the National Fire Alarm Code, NFPA, reads as follows.

11.5.1 *Required Detection.
*Where required by applicable laws, codes, or standards for a specific type of occupancy, approved single- and multiple-station smoke alarms shall be installed as follows:
(1) *In all sleeping rooms and guest rooms
(2) *Outside of each separate dwelling unit sleeping area, within 6.4 m (21 ft.) of any door to a sleeping room, the distance measured along a path of travel
(3) On every level of a dwelling unit, including basements
(4) On every level of a residential board and care occupancy (small facility), including basements and excluding crawl spaces and unfinished attics
(5) *In the living area(s) of a guest suite
(6) In the living area(s) of a residential board and care occupancy

For complete coverage, smoke alarms should be installed in all rooms, halls, storage areas, basements, and attics in the dwelling. The minimum coverage is one smoke alarm on each floor and one outside each sleeping area. Please use the following location guide.

Single Storey Dwellings

Install a smoke alarm in the hallway outside every separate bedroom area, as shown in Fig. 1 a). Two smoke alarms should be installed in dwellings with two bedroom areas, as shown in Fig. 1 b).



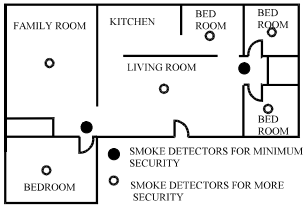


Fig. 1 a) – Single bedroom area Fig. 1 b) – Multiple bedroom areas

Multi-Storey Dwellings

Install a smoke alarm on every floor of a multi-floor dwelling, as shown in Fig. 2.

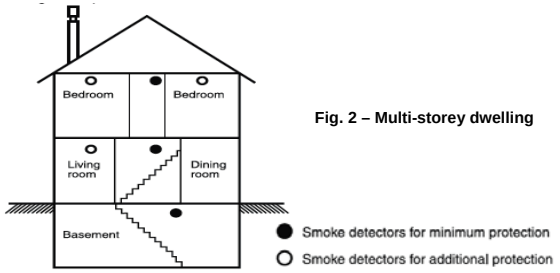


Fig. 2 – Multi-storey dwelling

Enhanced Safety

To improve early detection performance and safe evacuation, consider installing additional smoke alarms as follows.

- At least of two smoke alarms.
- Inside every bedroom.
- At both ends of a bedroom hallway if the hallway is more than 12 m.
- Inside every room where one sleeps with the door partly or completely closed, since smoke could be blocked by the closed door, and a hallway alarm may not wake up the sleeper if the door is closed.
- At the bottom of the basement stairwell.
- Second-floor smoke alarms at the top of the first-to-second floor stairwell.
- In your living room, dining room, family room, attic, utility and storage rooms.

Be sure no door or other obstruction blocks the smoke path to the smoke alarm.

Installation Location

Install smoke & heat alarms as close to the centre of the ceiling as possible, away from light fittings and air-conditioning ducts. If this is not practical, put the alarm on the ceiling, no closer than 50 cm from any wall or corner as shown in Fig. 3.

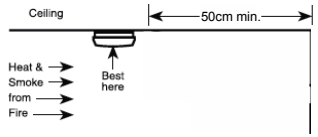


Fig. 3 – Smoke & heat alarm location from walls

Under flat horizontal ceilings, the horizontal distance from any point in the protected area to the detector nearest to that point should not exceed 5.3m for heat detectors

If some of your rooms have sloped, peaked, or gabled ceilings, try to mount alarms 0.9 m measured horizontally from the highest point of the ceiling.

Where *Not* to Install Your Smoke & heat alarm

Nuisance alarms occur when smoke & heat alarms are installed where they will not work properly. To avoid nuisance alarms, do not install smoke & heat alarms in the following situations.

- In or near areas where combustion particles are present, such as kitchens with few windows or poor ventilation, garages where there may be vehicle exhaust, near furnaces, combustion heaters, and space heaters. Combustion particles are the by-products of something that is burning, which the smoke & heat alarm may detect.
- Within 6 m of kitchens where combustion particles are normally present. If a 6 m distance is not possible, e.g. in a mobile home, try to install the smoke & heat alarm as far away from the combustion particles as possible, preferably on the wall. Ensure the area is well ventilated.
- In dead-air areas, where ventilation systems cause air-flow that would not pass through the smoke & heat alarm sensing chamber. Avoid also air-flow from areas where normal combustion particles are expected, such as kitchens. Fig. 4, which indicates the correct and incorrect smoke & heat alarm locations.

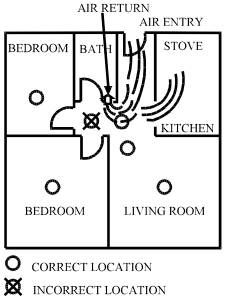


Fig. 4 – Dead-air areas

- In damp or very humid areas, or within 3 m of bathrooms with showers. Moisture in humid air can enter the sensing chamber, then condense into droplets upon cooling, which can cause nuisance alarms.
- In very cold or very hot areas, including unheated buildings or outdoor rooms. If the temperature rises above or falls below the operating range of smoke & heat alarm, it may not function properly. The temperature range for your smoke & heat alarm is 0 °C ~ 45 °C.
- In very dusty or dirty areas. Dirt and dust can build up on the smoke & heat alarm's sensing chamber, to make it overly sensitive. Additionally, dust or dirt can block openings to the sensing chamber and limit the smoke & heat alarm from sensing smoke.
- Near fresh air vents or high draft areas like air conditioners, heaters or fans, fresh air vents and drafts, which can drive smoke away from smoke & heat alarms.
- In dead air spaces, which are often at the top of a peaked roof or in apex of ceilings and walls. Dead air may prevent smoke from reaching a smoke & heat alarm. See Fig. 3 and 4 for recommended mounting locations.
- In insect-infested areas. If insects enter a smoke & heat alarm's sensing chamber, they may cause a nuisance alarm. Where insects are a problem, get rid of them before installing the smoke & heat alarm.
- Near fluorescent lights. Electrical "noise" from fluorescent lights may cause nuisance alarms. Do not install smoke & heat alarms within 1.5 m of such lights.

In the above locations, a heat alarm could be installed as additional protection.

Also the product shall not be contaminated by paint.

Installation and Test

Please read the previous section **Installation Preparation**, before commencing installation.

Installing the Smoke & heat alarm Mains and Interconnection Wiring

WARNING: To avoid the electrical shock hazard, turn off power to the area where you plan to install the alarm at the fuse box or circuit breaker box.

WARNING: Connect the smoke & heat alarm to a continuous source of mains power. Ensure the mains power cannot be inadvertently switched off.

It's recommended that the supply and interconnection wiring to be installed in accordance with BS 7671.

1. Unhinged the smoke & heat alarm from the base by pressing the PUSH button located on the side of the base part (see Fig. 5).

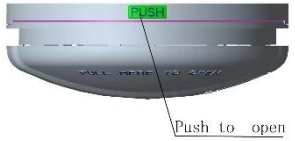
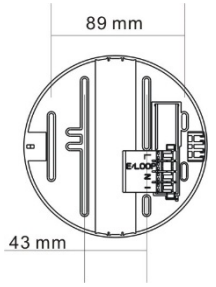


Fig. 5 – Press PUSH to unhinge base

2. Place the bracket on the ceiling and mark drill hole locations through the slots available in the base.
3. Remove the smoke & heat alarm from the ceiling.
4. Drill two 5 mm (3/16-inch) holes at the marks and insert the plastic mounting plugs (supplied), or other mounting solution (depending on the ceiling type).
5. Run the mains wiring. Use wiring with conductors of 1 mm^2 ~ 2.5 mm^2 cross-sectional area. Wiring should have an insulation resistance of at least 300 V.
6. Open the terminal cover to access the terminal screws and install the wiring as shown in Fig. 6.



Key

L	AC 230 V mains live/active
E/LOOP	Earth or loop
N	Neutral / interconnection common
I	Interconnection

Fig. 6 – Mains wiring terminals and mounting slots

7. Where interconnection to other ZT-MSH AC/DC smoke & heat alarms is used, install the interconnection wiring as shown in Fig. 7.

WARNING: Take care to ensure the insulation does not get clamped by the terminal contact.

WARNING: Do not connect this smoke and heat alarm to any device other than another ZT-MS smoke alarm, ZT-MH heat alarm or ZT-MSH smoke and heat alarm. Connecting anything else to this smoke and heat alarm may prevent it from working properly.

WARNING: To avoid the electrical shock hazard, do not use old wiring that may have been used for mains voltages. Use wiring with conductors of 1 mm^2 ~ 2.5 mm^2 cross-sectional area. Wiring should have an insulation resistance of at least AC 300 V.

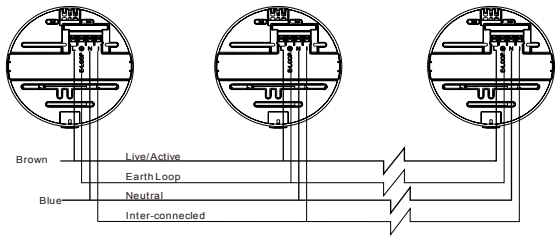


Fig. 7 – Interconnect wiring

Up to 24 ZT-MSH smoke & heat alarms can be interconnected, with a maximum cable length of 250 m.

8. After all wiring is installed, close the terminal cover.
9. Insert the ceiling plugs and attach the bracket to the ceiling with the screws supplied.

Installing the Battery

NOTE: The battery is purposefully reversed during production to keep it fresh until installation.

1. Remove the battery (supplied) from the battery compartment on the underside of the smoke & heat alarm (see Fig. 8). And correctly fit it in the battery compartment.

Fig. 8 – Fitting the battery

NOTE:

1) The battery will snap into place and should not shake loose.
2) The battery is polarity-dependent. Ensure it is inserted in the correct orientation.

WARNING: If the battery is not installed, the battery compartment will not close and the smoke & heat alarm will continually sound a Battery Missing signal.

NOTE: When the smoke & heat alarm battery is first contacted, the alarm sounder may sound for 1 s. This is normal and indicates that the battery is positioned properly.

2. Close the smoke & heat alarm and mounting base.
3. Connect the mains power.
4. Check that the green LED turns on and red LED in the Test button flashes every 48 s.

Tests

1. Press and hold the Test button for 3 s to check the smoke & heat alarm audible warning operates and the red LED flashes rapidly.

WARNING: The smoke & heat alarm has a loud alarm signal. Use hearing protection when testing smoke & heat alarms.

1. For interconnected smoke & heat alarms, press and hold the Test button for 3 s on each smoke & heat alarm, and check the smoke & heat alarm sounder operates on all interconnected smoke & heat alarms.
2. Check that the red LED in the Test button operates only on the smoke & heat alarm being tested.

NOTE: Smoke & heat alarms should be interconnected within only one family residence. Otherwise, you might encounter nuisance alarms when a smoke & heat alarm is operated or tested in another residence.

Normal Operation

Once installed and tested, your smoke & heat alarm will immediately start monitoring for smoke/heat. If the sounder in the smoke & heat alarm operates, check for a fire and execute your safety plan.

If the alarm was caused by a nuisance situation, open a window or fan the air to remove the smoke or dust from within the smoke & heat alarm. The alarm will turn off as soon as the air is completely clear. Do not disconnect the mains power and battery to silence the smoke & heat alarm.

Hush

WARNING: Before using the Hush feature, identify the source of smoke/heat and be certain that safe conditions exist.

If investigation of the alarm signal is likely caused by a known nuisance source (such as cooking fumes/steam), the Hush button can be pressed to silence the smoke & heat alarm for 10 min. Press the Hush button again will return the unit to normal operation.

The red LED on smoke & heat alarm will flash once every 6 s while in the Hush condition.

After the Hush time has expired, the smoke & heat alarm will return to normal sensitivity. If smoke is still present, the alarm will re-activate. The Hush feature can be used repeatedly.

Care and Maintenance

Weekly Tests

1. Press and hold the Test button for 3 s on each smoke & heat alarm.
2. Check the smoke & heat alarm sounder operates with a loud pulsating sound, and the red LED in the Test button flashes rapidly.

WARNING: The smoke & heat alarm has a loud alarm signal. Use hearing protection when testing smoke & heat alarms.

3. For interconnected smoke & heat alarms, check the smoke & heat alarm sounder operates with a loud pulsating sound on all interconnected smoke & heat alarms and the red LED in the Test button operates only on the smoke & heat alarm being tested. Repeat the test on all interconnected smoke & heat alarms.

The alarm shall also be tested when back from a long away/vacation from the house.

WARNING: Never use a naked flame of any kind to test your smoke & heat alarm. You may set fire to and damage the smoke & heat alarm, as well as your home. The built-in Test button accurately tests all alarm functions.

Annual Maintenance

1. Vacuum or carefully wipe the cover of the smoke & heat alarm to remove any dust, lint or dirt around the openings of the smoke & heat alarm. Do not spray aerosols into the smoke & heat alarm.
2. After annual maintenance, test all smoke & heat alarms.

Low Battery Alert

When the battery becomes depleted, the smoke & heat alarm will signal a short beep every 48 s. Immediately replace the battery with an approved model (see the section User Replaceable Parts).

NOTE: Batteries supply a lower voltage in cold conditions, so the Low Battery signal may start operating late at night. To avoid annoyance, keep a spare battery on hand. The Low Battery signal will operate for at least 30 days.

Protection From Fire

Installing smoke & heat alarms is only one step in protecting your family from fires. You should also reduce the chances that fires will start in your home and you must increase your chances of escaping safely if one does start. The following information will help you develop a fire safety program.

1. Install smoke & heat alarms properly. Carefully follow all the instructions in this manual. Keep your smoke & heat alarms clean, and test them every week.
2. Non-working smoke & heat alarms will not alert you. Replace your smoke & heat alarms immediately if they are not working properly.
3. Follow fire safety rules, and prevent 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 flames 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.
   - Keep a supply of extra batteries on hand for your battery powered smoke & heat alarms.

Prepare and practice a family escape plan. Review the following with your children each time you have fire escape drills. This will help everyone remember them in case of a real fire emergency.

1. Don't 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 have to in order to escape.
7. Meet at your planned meeting place after leaving the house.
8. Call the Fire Service as soon as possible from outside your house. Give the address and your name.
9. Never go back inside a burning building.
10. Contact your local Fire Service. They will give you more ideas about how to make your home safer from fires and how to plan your family's escape.

User Replaceable Parts

The following batteries are replaceable by the user, and may be purchased from general hardware stores. Use only the specified batteries. **Test the alarm for correct operation using the test facility, whenever the battery is replaced.**

Alkaline: **Gold Peak GN1604A, Pairdeer 6LR61**

Carbon zinc: Gold Peak 1604S. Pairdeer 6F22

Lithium: EVE CR9V/P

WARNING: When using lithium battery, there is a danger of explosion if the battery is incorrectly replaced. Replace only with the same or equivalent type.

References

Document	Description
31-0163	ZT-MSH AC/DC smoke & heat alarm datasheet
NFPA 72	*National Fire Alarm Code,* National Fire Protection Association, Inc. Quincy, MA 02269, USA

Disposal

Smoke & heat alarms or depleted batteries should not be disposed of as land-fill. Please dispose in an environmentally friendly manner.

Limited Warranty

NOTE: ***In order to protect your rights, please keep the original purchase receipt for the proof of purchase of this Zeta smoke & heat alarm from our authorized dealers. No warranty can be offered without the original purchase receipt.***

Zeta warrants its enclosed Smoke & heat alarm - but not the battery - to be free from defects in materials and workmanship under normal use and service for a period of five years from date of purchase. Zeta makes no other express warranty for this Smoke & heat alarm. No agent, representative, dealer, or employee of Zeta has the authority to increase or alter the obligations or limitations of this Warranty. Zeta's obligation of this Warranty shall be limited to the repair or replacement of any part of the Smoke & heat alarm which is found to be defective in materials or workmanship under normal use and service during the five-year period, commencing from the date of purchase.

During the initial one-year period, commencing from the date of purchase, such repair or replacement shall be made without charge. During the latter four years of the Warranty period, such repair or replacement shall be made at a charge to the Customer, not to exceed the manufacturer's cost. Units in need of repair should be returned, shipping prepaid, to ZETA ALARMS LIMITED, DETECTION HOUSE, 72-78 MORFA ROAD, SWANSEA, SA1 2EN, UNITED KINGDOM.

Zeta shall not be obligated to repair or replace units, which are found to be in need of repair because of damage, unreasonable use, modifications, or alterations occurring after the date of purchase. The duration of any implied Warranty, including that of merchantability or fitness for any particular purpose, shall be limited to the period of five years commencing with the date of purchase. In no case shall Zeta be liable for any consequential or incidental damages for breach of this or any other Warranty expressed or implied whatsoever, even if the loss or damage is caused by Zeta's negligence or fault. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. Zeta makes no warranty, expressed or implied, written or oral, including that of merchantability or fitness for any particular purpose, with respect to the batteries. This Warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

View the complete range of products at
www.Zetaalarmsystems.com

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