



Carbon Monoxide alarm Installer's Guide

230V Interconnectable Mains Operated Alarm with Rechargeable Lithium Ion Back Up

423D/9HIR CO Alarm with digital display, Peak level Memory and Smart Interconnect
423/9HIR CO Alarm with Smart Interconnect

Thank you for purchasing a Kidde Fyrnetics alarm.
Please read through our guide in full.

This Kidde Fyrnetics CO Alarm is suitable as a single station and/or multiple station device - up to 18 alarms. It is designed for residential premises only.

Electrical rating 230V AC,
50Hz 30mA max per alarm
(maximum 30mA for originating unit
with 18 alarms interconnected).



Lic No: KM 98848
EN50291:2001

Kidde Safety Europe, Mathisen Way, Colnbrook, SL3 0HB, UK.
www.kiddefyrnetics.co.uk

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The Owner's Manual should be left in a safe place
for the property owner. e.g. near Consumer Unit.

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Environmental Protection

Waste electrical products should not be disposed of with household waste. Please recycle where facilities exist. Check with Local Authority or Distributor for recycling advice.



IMPORTANT!

THIS CARBON MONOXIDE ALARM IS DESIGNED TO DETECT CARBON MONOXIDE FROM ANY SOURCE OF IMPROPER OR MALFUNCTIONING APPLIANCES. IT IS NOT DESIGNED TO DETECT SMOKE, FIRE, OR ANY OTHER GAS.

THIS CARBON MONOXIDE ALARM WILL NOT SENSE SMOKE, FIRE, OR ANY POISONOUS GAS OTHER THAN CARBON MONOXIDE. FOR THIS REASON YOU MUST INSTALL SMOKE ALARMS TO PROVIDE EARLY WARNING OF FIRE AND TO PROTECT YOU AND YOUR FAMILY FROM FIRE AND ITS RELATED HAZARDS. THIS ALARM IS NOT SUITABLE FOR INSTALLATION IN HAZARDOUS LOCATIONS AS DEFINED IN THE NATIONAL ELECTRIC CODE.

WARNING: THIS ALARM IS NOT A SMOKE DETECTOR

WARNING: THIS ALARM WILL NOT WORK WITHOUT POWER. THIS ALARM REQUIRES A CONTINUOUS SUPPLY OF POWER.

DURING A POWER OUTAGE, UNIT WILL OPERATE FOR A PERIOD OF AT LEAST FIVE (5) HOURS ON A FULLY CHARGED KIDDE RECHARGEABLE BATTERY PACK.

WARNING: THIS PRODUCT IS INTENDED FOR USE IN ORDINARY INDOOR RESIDENTIAL AREAS. IT IS NOT DESIGNED TO MEASURE COMPLIANCE WITH COMMERCIAL AND INDUSTRIAL STANDARDS. THE INSTALLATION OF THIS DEVICE SHOULD NOT BE USED AS A SUBSTITUTE FOR PROPER INSTALLATION, USE AND MAINTENANCE OF FUEL-BURNING APPLIANCES, INCLUDING APPROPRIATE VENTILATION AND EXHAUST SYSTEMS.

1. Installation Instructions

This alarm is designed for installation by a qualified electrician, in accordance with the latest I.E.E. Regulations and relevant British Standards.

- ⚠ Read these instructions **thoroughly** before proceeding.
- ⚠ This CO alarm must be installed by a competent person.
- ⚠ **This manual** is supplied for your guidance and is for use by qualified electricians.
- ⚠ AC alarms must be powered by a constant 230V AC, 50Hz supply that is not controlled by any form of switch.
- ⚠ CO alarm is interconnectable with other multiple station Kidde products (refer to list on page 5). It is not designed to interconnect with any other manufacturer's products.
- ⚠ When testing the alarm, stand back so your hearing is not damaged by the 85dB sounder.
The 17th Edition (2008) of the Wiring Regulations requires that circuits of safety services be independent of other circuits (560.7.1). This would include Smoke, CO & Heat Alarms.

Danger – electrical shock hazard!

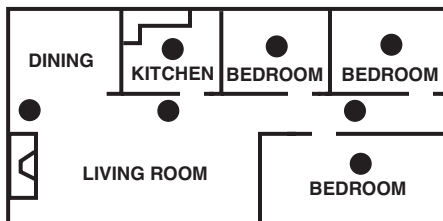
Never restore power supply until all alarms are completely installed. Doing so before hand can cause serious injury. Electrical shock or malfunction may occur if tampered with, or not installed in accordance with manufacturer's instructions.

2. Recommended Locations for CO Alarms

Where To Install The CO Alarm The Kidde CO alarm should be mounted in or near bedrooms and living areas. It is recommended that a Kidde CO alarm is installed on each level of a multi-level home. You may use the number and location of smoke alarms installed in the home according to current requirements as a guide to the location of the Kidde CO alarm(s).

WHEN CHOOSING THE INSTALLATION LOCATIONS, MAKE SURE YOU CAN HEAR THE ALARM FROM ALL SLEEPING AREAS. IF ONLY ONE CARBON MONOXIDE ALARM IS INSTALLED IN THE HOME, INSTALL THE ALARM NEAR BEDROOMS, NOT IN THE BASEMENT OR BOILER ROOM.

Recommended Locations



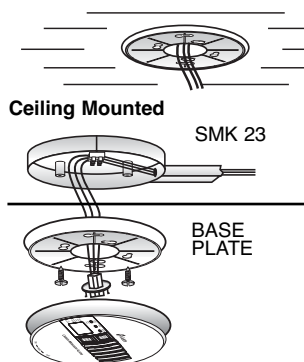
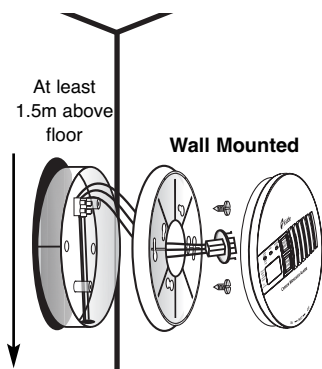
3. Where not to install your alarm

To avoid causing damage to the unit, to provide optimum performance, and to prevent unnecessary nuisance alarms.

- ⊖ Do not install in bathrooms, garages or boiler rooms or anywhere that may expose the sensor to substances that could damage or contaminate it.
- ⊖ Do not install in areas where the temperature is colder than 4.4°C (40°F) or hotter than 37.8°C (100°F) such as attics, porches and garages.
- ⊖ Near vents, flues, chimneys or any forced/unforced air ventilation openings.
- ⊖ Near ceiling fans, doors, windows or areas directly exposed to the weather.
- ⊖ In dead air spaces, such as peaks of vaulted ceilings or gabled roofs, where carbon monoxide may not reach the sensor in time to provide early warning.
- ⊖ Do not site within 1.8m of a fuel burning appliance
- ⊖ Do not site within 1.8m of a steam/moisture source e.g. bathroom, garage or above a kitchen sink.
- ⊖ Do not site within 1m of dimmer control cabling.
- ⊖ Do not site within 1.5m of any light fixture or adjacent to a heat source e.g. directly above a cooker.
- ⊖ In areas of humidity below 5% + above 95% (non-condensing).
- ⊖ In very dusty, greasy, or dirty areas e.g. boiler rooms.
- ⊖ Any location where the free flow of air to the alarm's vents could be interrupted (e.g. behind curtains/furniture).
- ⊖ Areas where routine maintenance or operating test/reset button is difficult (e.g. top of stairwells).

4. Installing the Alarm

- These are mains powered alarms, so isolate the mains supply before commencing installation. **They are for installation by a qualified electrician in accordance with the current I.E.E. regulations** (See section 7 if interconnecting additional alarms).
- Select suitable location having regard to earlier advice.
- Bring house wiring through a dry lining box or Kidde surface pattress, (SMK 23) into terminal block (not included).
- If wall mounting, connect supply through a 3 amp fused spur into Kidde surface pattress SMK 23.
- Site the alarm at least 1.5m above the floor. When sited in same room as an appliance, the alarm should be sited no closer than 1.8m from the appliance.
- The appropriate power source is 230V AC power supply from a non-switchable circuit, which is not protected by a ground fault interufter.
- When alarms are interconnected, all interconnected must be



4. Installing the Alarm

powered from a single circuit.

- The SMK 23 has 2 external alignment marks to assist in lining up.
- If alarm is not being interconnected, the white interconnect cable from the alarm is unused. Leave the encapsulated sheathing in place
- Connect flying leads from cable harness to terminal block.
- Secure base plate to SMK 23 or dry lining box, using screws provided.
- Plug in harness after pulling through central hole of base plate – if you need to remove, squeeze on sides of connector.
- Check harness is secure into back of alarm.
- Slide on/off switch located on back of the alarm to “ON” position.
- Reinstall on alarm base plate affixed to wall or ceiling. When the alarm is rotated onto its base, it will lock by default. To remove, insert a screwdriver onto locking lug and depress and rotate alarm in “off” direction as illustrated.
- Push and release test button to verify battery operation.
- After connecting all alarms to be installed, reconnect mains supply and check green L.E.D. is lit – indicating healthy AC supply.
- AC power must be applied to the alarm to reset the battery protection circuit which has been shut off for shipping purposes.
- Do not reconnect alarm to AC power with battery switch in “Off” position as unit will beep every 15 seconds to alert you of flat/missing battery.

5. Battery Checking/Charging

Note: This CO alarm is not battery operated. Battery backup will be limited until the battery has fully charged. It may take up to 24 hours for the battery backup to fully charge.

Warning: Do not use any other type of rechargeable battery in your alarm or attempt to recharge the battery pack yourself. Improper charging may even cause the battery pack to overheat or leak, thus posing possible injury to the user. The Lithium-Ion battery is to supply short term backup during a power cut.

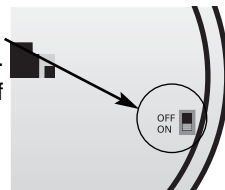
Do not attempt to replace the battery as the alarm has no user serviceable parts. Opening the alarm will invalidate the guarantee and could expose you to live parts.

(Digital model only), During the first 10-hour initial charge period or, until the battery has charged, "Lb" will be displayed along with the CO level (usually "0") and without an audible "chirp". When the initial charge is complete, the "Lb" will disappear. If however, after 10 hours the battery is not charging properly, "Lb" may continue to flash AND there will be an audible "chirp" once every 15 seconds indicating the battery is not charging.

The unit will notify you of a battery error condition by flashing the red SERVICE LED, amber Low Battery LED, and beeping once every 15 seconds (and on the Digital model displaying "Lb").

If this happens, the battery is discharged or has been damaged. Ensure switch on back of unit is ON.

Ensure that AC power is being supplied to the unit. If the unit has been without AC power, the battery voltage will be low and needs to be recharged. Turn the AC power on and the battery will automatically re-charge. Note, a discharged battery will require approximately 24 hours to fully charge and provide the maximum protection while on battery-back-up.

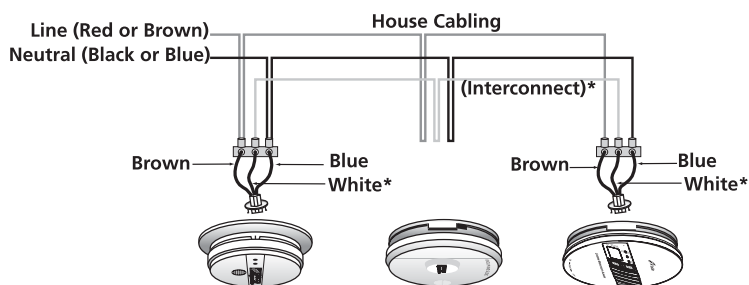


If AC power is ON, and after 10 hours the red SERVICE LED and amber Low Battery LED are still flashing, contact your Installer, landlord or Kidde Fyrnetics.

6. Initial Checking and Testing of Alarm

- Having energised the circuit, press and release the test button. The alarm should sound and all the other interconnected alarms will also sound within a few seconds.
- Do this for all alarms.
- If any alarms do not sound, isolate the mains and recheck the cabling.
- Advise the house-holder as to how to test the alarms, referring to enclosed Operator Manual.

7. Interconnect Wiring



* Interconnect only – if single alarm installation, leave white disconnected .
Interconnect using Yellow strand on old 3 core and earth cable, or Black on New harmonised colours; if interconnecting using old and new cable, take great care/follow IEE Regs.

These are double insulated products and do not need earthing – never use earth conductor to interconnect – use 3 core and earth.

This CO alarm can be used independently or interconnected up to 17 Kidde Fyrnetics AC smoke, heat or CO alarms. i.e. 18 in total, as listed below.

- ⊖ Crossing line and neutral connections or line and interconnect connections will fatally damage all interconnected alarms invalidating the guarantee.
- ⚠ All interconnected alarms must be powered off the same fuse/circuit breaker. (See section 1)
- ⚠ Total cable length between alarms must not exceed 250m (273yds) and be 1.0mm in diameter, 3 core and earth (BS6243Y). Wiring must conform to the IEE regulations - BS7671, or latest edition.

Interconnection:

Interconnects directly with Kidde Fyrnetics:

Ion Smoke Alarms: 123i - 123/9hi - 123/9hill - 1SF23/9hi - 1SF23/9hir - 1SF23/9hire

Photo Smoke Alarms: 223i - 223/9i - 223/9hi - 223/9hill - 223/9hill - 2SF23/9hi - 2SF23/9hir - 2SF23/9hire

Heat Alarms: 323/9hi - 323/9hill - 3SF23/9hi - 3SF23/9hir

Carbon Monoxide Alarms: 423D/9hir - 423/9hir

8. Interconnecting with Kidde CO, Smoke and Heat Alarms

When compatible Kidde smoke alarms and heat alarms are interconnected to your CO alarm, they will only respond to a smoke or heat related event.

When mixing Kidde alarms which have battery back-up with models without battery back-up, be advised that the models without battery back-up will not function during an A.C. power failure.

Testing

When pressing the Test/Reset button, if the unit is operating properly, the red LED will flash and you will then hear a series of quick beeps for 4 seconds, followed by 1/2 second of silence, followed by another series of quick beeps. Models with digital display will show **BBB** and then show a number (usually around 200) for several seconds. After internal testing is complete, **F** will be displayed and the alarm will begin monitoring of carbon monoxide.

If interconnected to Kidde Fyrnetics Smoke/Heat alarms, pressing the Test/Reset button on the CO alarm will have no effect on the Smoke/Heat alarms. The Smoke/Heat alarms will not be tested and will not alarm. However, when pressing the Test button on an interconnected Smoke/Heat alarm, the CO alarm will emit a Smoke/Fire audible and visual alarm pattern of 3 long beeps, 1 second of silence, repeated. Note: You do not need to press the Test button to take a CO reading.

Smoke/Heat Alarm Indicator

When an interconnected Kidde Fyrnetics smoke alarm detects smoke, or a heat alarm detects 57°C, this unit will sound an alarm pattern of 3 long beeps, followed by a 1 second silence. This cycle repeats as long as smoke signal persists to alert you of the condition. In addition on digital display models the word "FirE" will scroll across the digital display. If this happens, leave the premises immediately by your escape plan and call the emergency services.

WARNING: This unit is not a smoke alarm and will not detect smoke or fire. The digital model will only display "FirE" and alarm for Smoke/Fire if it receives a signal from an interconnected Kidde Fyrnetics Smoke/Heat alarm.

Note: A smoke/heat alarm situation will override a CO alarm condition.

Refer to Operator's Manual for additional instructions on testing the alarms.

9. Timing of Installing

New Build

- Install the base plate (and surface pattress if used) at first fix.
- Do not install alarm itself until following trades have finished e.g. plasterers, painters, carpet fitters, etc.
- Do not install if property remains damp or unheated.
- Dust and other contaminants e.g. paint fumes, will enter the alarm causing possible nuisance alarms and damage the sensitive components within (it will also invalidate the guarantee provisions).
- Never plug in or remove cabling when circuit is live as you could short circuit it and invalidate the guarantee.

10. Decorating

- Never paint the alarm.
- During redecoration, all alarms should be removed from the area to prevent contamination of the sensor by fumes. (Fumes can permanently damage the alarm).

Do not install or replace the alarm until the surrounding paint-work is thoroughly dried and there are no paint fumes present.

11. Ongoing Maintenance

CAUTION: This unit is sealed. The cover is not removable.

- Test the alarm once a week by pressing the Test/Reset button.
- Vacuum the alarm cover and wipe with a cloth once a month to remove accumulated dust.
- Never use detergents or solvents to clean the alarm. Chemicals can permanently damage or temporarily contaminate the sensor.
- Avoid spraying air freshener, hair spray, paint or other aerosols near the alarm.

The following is a list of substances that at high levels can damage the sensor or cause temporary readings on the digital display that are not carbon monoxide readings:

Ethylene, ethanol, alcohol, iso-propanol, benzene, toluene, ethyl acetate, hydrogen, hydrogen sulfide, sulfur dioxides, most aerosol spray, alcohol based products, paint, thinner, solvent, adhesive, hair spray, after shave lotion, perfume, auto fumes (cold start), and some cleaning agents.

12. Repair/Serviceing

If the alarm is not functioning, first check the troubleshooting section.

If this does not rectify the problem:

- Ensure that the green L.E.D. is lit.
- If within guarantee, contact your installer or landlord, or return postage paid to the address at the end of this manual, with a copy of the invoice or proof of date of installation.
- There are no user serviceable parts.

Opening/interfering with alarm, invalidates the guarantee.

13. Limitations of CO Alarms

- This alarm will only indicate the presence of CO at the sensor.
- CO may be present elsewhere in the property.
- All alarms must be tested regularly to make sure the back up batteries and the alarm circuits are in good operating condition.
- CO alarms cannot provide an alarm if the CO does not reach the unit.
- Therefore, they may not sense CO on the other side of a closed door or on a different floor. If the alarm is located outside the bedroom or on a different floor, it may not wake up a sound sleeper.
- The use of alcohol or drugs may also impair ones ability to hear the alarm.
- For maximum protection a CO alarm should be installed in each sleeping area and on every level of a home. Hearing impaired occupants should consider fitting additional strobe accessories to give a visual alarm.
- CO Alarms are not a substitute for annual routine servicing of appliances by a qualified installer.

14. Troubleshooting

- Always turn off the mains supply to AC alarms before checking connections etc..

Symptom	Possible cause/solutions
1. Green L.E.D. not lit.	<p>a. Loss of mains power – check at Consumer Unit for Blown Fuse or tripped Circuit Breaker.</p> <p>b. Check that cables at back of alarm are correctly seated/wired in and the alarm is pushed fully home.</p>
2. Unit flashing “Lb” at power up.	See section 5. Also reference enclosed “Operator’s Manual”.
3. Alarm Beeping every 30 seconds.	See Paragraph 5 for Battery Guidance
4. Alarm does not sound when test button pressed.	See parts 1a and 1b above.
5. Interconnected alarms do not sound when test button is pressed and held.	Check integrity of interconnect wiring connections. Do not use 2 core and earth for this function, only 3 core and earth

15. Service and Guarantee

If after reviewing this manual you feel that your alarm is defective in any way, do not tamper with the unit. Return it prepaid to: Kidde Safety Europe, Mathisen Way, Colnbrook, SL3 0HB, UK – Email: info@kiddesafety.co.uk, or refer to your installer or Landlord.

Guarantee

Kidde Fyrnetics guarantees to you as a purchaser that this CO alarm will be free of defects in material, workmanship or design under normal use and service for a period of 6 years, (from the date of installation) including the back up battery/powercell.

The Guarantee is not assignable. Our liability to you, under this guarantee is limited to repairing or replacing any part which we find to be defective in material, workmanship or design, free of charge to the customer, who is situated within the UK, upon sending the alarm with proof of date of purchase, postage prepaid, to Kidde Safety Europe, Mathisen Way, Colnbrook, SL3 0HB, UK.

The terms of this guarantee will not apply in the following circumstances: If alarm has been damaged, modified, neglected, dismantled, contaminated, abused or altered after the date of purchase, or if it fails to operate due to incorrect selection, siting, installation, maintenance or inadequate AC electrical power, or damage caused by failure to abide by the instructions supplied.

The liability of Kidde Fyrnetics, arising from the sale of this alarm or under the terms of this guarantee shall not in any case exceed the cost of replacement of the alarm, in no case, shall be liable for consequential loss or damage resulting from the failure of the alarm or for the breach of this or any other guarantee, express or implied, or for damage caused by failure to abide by the instructions supplied.

This guarantee does not affect your statutory rights.

16. Specifications

Power:

230 volts AC, 50 Hz, 30 mA max, rechargeable lithium ion battery back-up

Sensor:

Electrochemical

Temperature:

Operating Range: 40°F (4.4°C) to 100°F (37.8°C)

Humidity:

Operating range: 5-95% non-condensing

Alarm:

85+ dB at 3m (10') @ 3.4±0.5 KHz pulsing alarm

Accuracy of Digital Display:

30-999 ppm +/-20% +15 ppm when measured in conditions of 80° F (27°C) (+/- 10° %), atmospheric pressure +/- 10% and 40% +/- 3% relative humidity.

Display readings may vary slightly depending on changes in the ambient condition (temperature, humidity) and the condition of the sensor.



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**The additional Owner's Manual should be left in a safe place
for the property owner, e.g., near Consumer Unit.**

Patent Pending

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