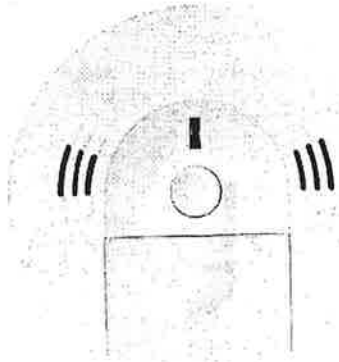




# Smoke and Carbon Monoxide Alarm User Guide

Model: KN-COSM-IBACA (900-0119)



120 V AC Operated with 2-AA Front-Loading Battery Backup

**ATTENTION:** Please take a few minutes to thoroughly read this user guide, which should be saved for future reference and passed on to any subsequent owner.

User Guide P/N 2544-7202-03 EN 1/2015

## What to do When the Alarm Sounds!

### Carbon Monoxide Alarm Procedure

**WARNING:** Activation of the CO Alarm indicates the presence of Carbon Monoxide (CO) which can kill you.

If the alarm sounds 4 quick "beeps", 5 seconds off:

- 1) Immediately move to fresh air – outdoors or by an open door/window. Do a head count to check that all persons are accounted for. Do not re-enter the premises nor move away from the open door/window until the emergency services responders have arrived, the premises have been aired out, and your alarm remains in its normal condition.
- 2) Call your local emergency service. (fire department or 911)

PHONE NUMBER:

Never restart the source of a CO problem until it has been corrected. Never ignore the sound of the alarm!

If the alarm is sounding, pressing the test/reset button will terminate the alarm. If the CO condition that caused the alert in the first place continues, the alarm will reactivate. If the unit alarms again within six minutes, it is sensing high levels of CO which can quickly become a dangerous situation.

## What to do When the Alarm Sounds!

### NEVER IGNORE THE SOUND OF THE ALARM!

Determining what type of alarm has sounded is easy with your Combination Smoke/CO Alarm. The voice message warning system will inform you of the type of situation occurring. Refer to the Features section on pages 4-5 for a detailed description of each alarm pattern.

### What To Do If The Alarm Sounds When the smoke alarm sounds:

Smoke alarms are designed to minimize false alarms. Cigarette smoke will not normally set off the alarm, unless the smoke is blown directly into the alarm. This unit contains nuisance alarm protection, which will reduce the impact of cooking particles. However, large quantities of combustible particles from spills or broiling could still cause the unit to alarm. Careful location of the unit away from the kitchen area will give the maximum nuisance alarm protection. Combustion particles from cooking may set off the alarm if located too close to the cooking area. Large quantities of combustible particles are generated from spills or when broiling. Using the fan on a range hood which vents to the outside (non-recirculating type) will also help remove these combustible products from the kitchen.

If the alarm sounds, check for fires first. If a fire is discovered follow these steps. Become thoroughly familiar with these items, and review with all family members!

- Alert small children in the home. Children sleep very sound and may not be awakened by the sound of the smoke alarms.
- Leave immediately using one of your planned escape routes (see page 26). Every second counts, don't stop to get dressed or pick up valuables.

## What to do When the Alarm Sounds!

- Before opening inside doors look for smoke seeping in around the edges, and feel with the back of your hand. If the door is hot use your second exit. If you feel it's safe, open the door very slowly and be prepared to close immediately if smoke and heat rush in.
- If the escape route requires you to go through smoke, crawl low under the smoke where the air is clearer.
- Go to your predetermined meeting place. When two people have arrived one should leave to call 911 from a neighbor's home, and the other should stay to perform a head count.
- Do not reenter under any circumstance until fire officials say that it is safe to do so.
- There are situations where a smoke alarm may not be effective to protect against fire as noted by the NFPA Standard 72. For instance:
  - Smoking in bed
  - Leaving children unsupervised
  - Cleaning with flammable liquids, such as gasoline
  - Fires where the victim is intimate with a flaming initiated fire; for example, when a person's clothes catch fire while cooking
  - Fires where the smoke is prevented from reaching the detector due to a closed door or other obstruction
  - Incendiary fires where the fire grows so rapidly that an occupant's egress is blocked even with properly located detectors

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## Introduction

Thank you for purchasing the Kidde Combination Smoke and Carbon Monoxide Alarm model KN-COSM-IBACA.

This unit is suitable as a Single Station and/or Multiple Station (24 devices) alarm. This alarm has a ten-year limited warranty.

**IMPORTANT: This unit is only approved to interconnect with the Kidde line of products. It is not approved to interconnect with any other manufacturer's products.**

Please take a few minutes to thoroughly read this user guide which should be saved for future reference. Teach children how to respond to the alarms, and they should never play with the unit.

Your Kidde Smoke/CO Alarm was designed to detect both smoke and carbon monoxide from any source of combustion in a residential environment. It is not designed for use in a recreational vehicle (RV) or boat.

If you have any questions about the operation or installation of your alarm, please call our toll free Product Support Line at 1 800-880-6788.

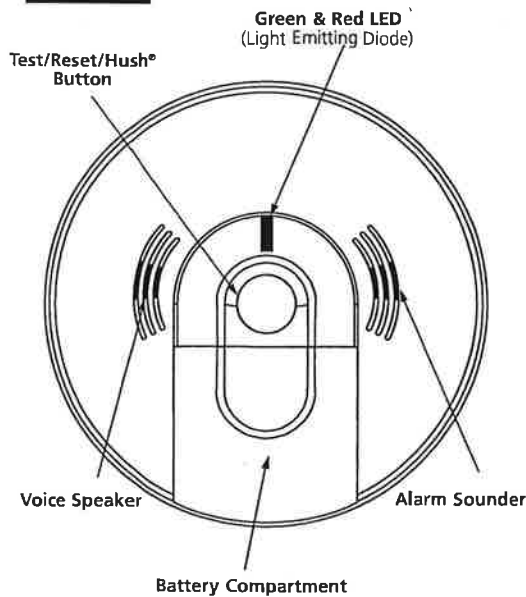
The guide on page 26 will help you determine the correct location of safety products that will help keep your home a safer place.

**⚠ WARNING: 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. It does not prevent CO from occurring, nor can it solve an existing CO problem.**

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## Product View

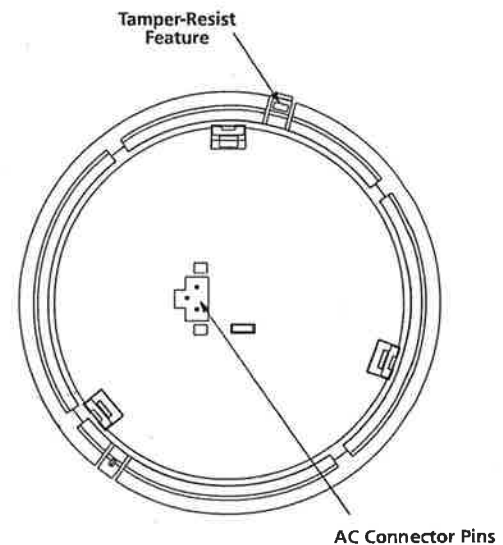
### Front



2

## Product View

### Back



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## Features

- Loud 85 decibel alarm.
- Permanent independent smoke and carbon monoxide sensors.
- **Smoke alarm takes precedence** when **both** smoke and carbon monoxide are present.
- Powered by 120V AC (60 Hz, 45 mA max) wire-in connector and two AA battery backup.
- Interconnectable to other Kidde smoke and CO alarms (see page 16 for details).
- Alarm/Voice message warning system that alerts you of the following conditions in the manner described below, thus eliminating any confusion over which alarm is sounding:

**FIRE:** The alarm/voice pattern is three long alarm beeps followed by the verbal warning message "FIRE!" This pattern is repeated until the smoke is eliminated. The red LED light will flash while in alarm/voice mode.

**CARBON MONOXIDE:** The alarm/voice pattern is four short alarm beeps followed by the verbal warning message "WARNING! CARBON MONOXIDE!". This continues until the unit is reset or the CO is eliminated. While powered by battery only, after four minutes the alarm/voice pattern will sound once every minute. The red Light Emitting Diode (LED) light will flash while in alarm/voice mode.

**LOW BATTERY:** When the batteries are low and need replacing the red LED light will flash and the unit will "chirp" one time, followed by the warning message "LOW BATTERY." This cycle will occur once every minute and will continue for at least seven days. Under battery power, the "LOW BATTERY" voice only occurs once every 15 minutes.

- Voice Message System that alerts user to the following conditions:
  - Only for smoke alarm Hush  
System announces "HUSH MODE ACTIVATED" when the unit is first put into HUSH Mode.

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## Features

- Only for smoke alarm Hush  
System announces "HUSH MODE CANCELLED" when unit resumes normal operation after Hush Mode has been cancelled.
- Only if button is pushed  
System announces "CARBON MONOXIDE PREVIOUSLY DETECTED" when the unit has detected CO concentrations of 100 ppm or higher.
- System announces "PUSH TEST BUTTON" when the unit is powered up, reminding user to activate the Test Button.
- End of Life Hush. At end of product life, the button can be pushed to silence the end of life "chirp" for approximately 3 days at a time, for a maximum of 30 days life extension.
- One "chirp" every 30 seconds coupled with a green LED flash twice a second is an indication that the alarm is malfunctioning. If this occurs call the Product Support Line at 1-800-880-6788.
- Test/Reset button performs functions.(See page 15).
- HUSH Control Feature that silences the unit during nuisance alarm situations (see pages 16-17).
- Peak Level Memory Feature which alerts user when the unit has detected CO concentrations of 100 ppm or greater (see page 17).
- Alarm Memory Feature that gives visual indication when an alarm has sensed a hazardous condition.
- Green and red LED lights that indicate normal operation and alarm status (see page 18 for details).
- Tamper Resist Feature that deters children and others from removing the alarm (see page 19).
- Battery reminder flag that prohibits installation when batteries are not present.

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## Features

### Smoke Alarm

The smoke alarm monitors the air for products of combustion that are produced when something is burning or smoldering. When smoke particles in the smoke sensor reach a specified concentration, the alarm/voice message warning system will sound, and be accompanied by the flashing red LED light. The smoke alarm takes precedence when both smoke and carbon monoxide are present.

**⚠ WARNING: PLEASE READ CAREFULLY AND THOROUGHLY**

NFPA 72 states: Life safety from fire in residential occupancies is based primarily on early notification to occupants of the need to escape, followed by the appropriate egress actions by those occupants. Fire warning systems for dwelling units are capable of protecting about half of the occupants in potentially fatal fires. Victims are often intimate with the fire, too old or young, or physically or mentally impaired such that they cannot escape even when warned early enough that escape should be possible. For these people, other strategies such as protection-in-place or assisted escape or rescue are necessary.

- Smoke alarms are devices that can provide early warning of possible fires at a reasonable cost; however, alarms have sensing limitations. Ionization sensing alarms may detect invisible fire particles (associated with fast flaming fires) sooner than photoelectric alarms. Photoelectric sensing alarms may detect visible fire particles (associated with slow smoldering fires) sooner than ionization alarms. Home fires develop in different ways and are often unpredictable. For maximum protection, Kidde recommends that both Ionization and Photoelectric alarms be installed.
- A battery powered alarm must have a battery of the specified type, in good condition and installed properly.
- Smoke alarms must be tested regularly to make sure the batteries and the alarm circuits are in good operating condition.
- Smoke alarms cannot provide an alarm if smoke does not reach the alarm. Therefore, smoke alarms may not sense fires starting in chimneys, walls, on roofs, on the other side of a closed door or on a different floor.

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## Features

- 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 one's ability to hear the smoke alarm. For maximum protection, a smoke alarm should be installed in each sleeping area on every level of a home.
- Although smoke alarms can help save lives by providing an early warning of a fire, they are not a substitute for an insurance policy. Home owners and renters should have adequate insurance to protect their lives and property.

### Carbon Monoxide (CO) Alarm

The Carbon Monoxide (CO) alarm monitors the air for the presence of CO. It will alarm when there are high levels of CO present, and when there are low levels of CO present over a longer period of time (see below for alarm times). When a CO condition matches either of these situations, the alarm/voice message warning system will sound, and be accompanied by the flashing red LED light. The carbon monoxide sensor uses an electrochemical technology.

**⚠ CAUTION: This alarm will only indicate the presence of carbon monoxide gas at the sensor. Carbon monoxide gas may be present in other areas.**

Individuals with medical problems may consider using warning devices which provide audible and visual signals for carbon monoxide concentrations under 30 ppm.

### CO Alarm Response Times

**Never restart the source of a CO problem until it has been fixed. NEVER IGNORE THE ALARM!**

The CO sensor meets the alarm response time requirements as follows:  
At 70 PPM, the unit must alarm within 60-240 minutes.  
At 150 PPM, the unit must alarm within 10-50 minutes.  
At 400 PPM, the unit must alarm within 4-15 minutes.

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## CO Alarm Response Times

**NOTE:** This carbon monoxide alarm is designed to detect carbon monoxide gas from ANY source of combustion. It is NOT designed to detect any other gases.

Fire departments, most utility companies and HVAC contractors will perform CO inspections. Some may charge for this service. It's advisable to inquire about any applicable fees prior to having the service performed. Kidde will not pay for, or reimburse, the owner or user of this product, for any repair or dispatch calls related to the alarm sounding.

## Installation Instructions

### Step 1 Installation Instructions

**IMPORTANT: THIS ALARM MUST BE MOUNTED ON A CEILING OR WALL. IT WAS NOT DESIGNED FOR USE AS A TABLETOP DEVICE! INSTALL ONLY AS DIRECTED!**

#### A. Recommended Installation Locations:

Kidde Safety recommends the installation of a Smoke/CO Alarm in the following locations. For maximum protection we suggest an alarm be installed on each level of a multilevel home, including every bedroom, hallways, finished attics and basements. Put alarms at both ends of bedroom, hallway or large room if hallway or room is more than 9.1 m (30 ft) long. If you have only one alarm, ensure it is placed in the hallway outside of the main sleeping area, or in the main bedroom. Verify the alarm can be heard in all sleeping areas.

Locate an alarm in every room where someone sleeps with the door closed. The closed door may prevent an alarm not located in that room from waking the sleeper. Smoke, heat and combustion products rise to the ceiling and spread horizontally. Mounting the alarm on the ceiling in the center of the room places it closest to all points in the room. Ceiling mounting is preferred in ordinary residential construction. When mounting an alarm on the ceiling, locate it at a minimum of 10 cm (4") from the side wall (see figure 1). If installing the alarm on the wall, use an inside wall with the top edge of the alarm at a minimum of 10 cm (4") and a maximum of 30.5 cm (12") below the ceiling (see figure 1).

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## Installation Instructions

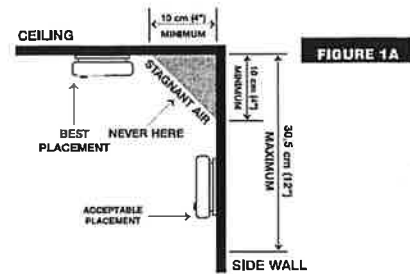


FIGURE 1A

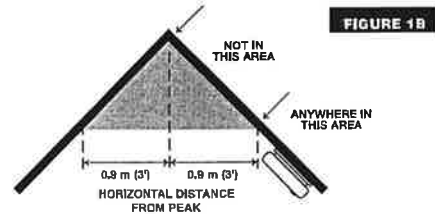


FIGURE 1B

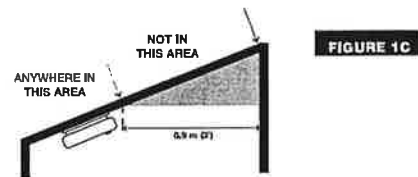


FIGURE 1C

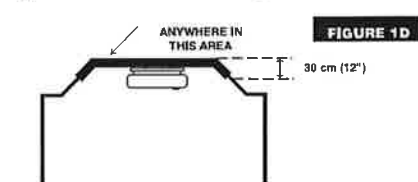


FIGURE 1D

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## Installation Instructions

### Sloped Ceiling Installation:

Install smoke alarms on sloped, peaked or cathedral ceilings at, or within 0.9 m (3') of the highest point (measured horizontally). NFPA 72 states "Smoke alarms in rooms with ceiling slopes greater than 0.3 m - 2.4 m (1' to 8') horizontally shall be located on the high side of the room". Do not place the alarm in the peak of an "A" frame type ceiling (see Figure 2B and 2C).

### Mobile Homes:

Modern mobile homes have been designed and built to be energy efficient. Install Smoke/CO alarms as recommended previously (refer to Recommended Installation Instructions and Figure 2B).

In older mobile homes that are not well insulated, extreme heat or cold can be transferred from the outside to the inside through poorly insulated walls and roof. This may cause a thermal barrier, which can prevent smoke from reaching an alarm mounted on the ceiling. In such mobile homes install your Smoke/CO Alarm on an inside wall with the top edge of the alarm at a minimum of 10 cm (4") and a maximum of 30.5 cm (12") below the ceiling (See Figure 1). If you are not sure about the insulation in your mobile home, or if you notice that the outer walls and ceiling are either hot or cold, install your alarm on an inside wall ONLY!

**THIS EQUIPMENT SHOULD BE INSTALLED IN ACCORDANCE WITH THE NATIONAL FIRE PROTECTION ASSOCIATION'S STANDARD 72**

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## Installation Instructions



**WARNING:** This product is intended for use in ordinary indoor locations of family living units. It is not designed to measure compliance with commercial or industrial standards.

### B. Locations to Avoid:

**WARNING:** Do not install in garages, kitchens, furnace rooms or bathrooms! INSTALL AT LEAST 1.5 M (5') AWAY FROM ANY FUEL BURNING APPLIANCE.

Do not install within 0.9 m (3') of the following: The door to a kitchen, or a bathroom that contains a tub or shower, forced air supply ducts used for heating or cooling, ceiling or whole house ventilating fans, or other high air flow areas. Avoid excessively dusty, dirty or greasy areas. Dust, grease or household chemicals can contaminate the alarm's sensors, causing the alarm to not operate properly.

Place the alarm where drapes or other objects will not block the sensors. Smoke and CO must be able to reach the sensors to accurately detect these conditions. Do not install in peaks of vaulted ceilings, "A" frame ceilings or gabled roofs. Keep out of damp and humid areas.

Install at least one 30.5 cm (12") away from fluorescent lights as electronic noise may cause nuisance alarms. Do not place in direct sunlight and keep out of insect infested areas. Extreme temperatures will affect the sensitivity of the Smoke/CO Alarm. 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 garages and unfinished attics. Do not install in areas where the relative humidity (RH) is greater than 85%. Place away from doors and windows that open to the outside.

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## Installation Instructions

### Step 2: Wiring Instructions

#### Wiring Requirements

- This smoke alarm should be installed on a CSA listed or recognized junction box. All connections should be made by a qualified electrician and all wiring used shall be in accordance with codes having jurisdiction in your area. The multiple station interconnect wiring to the alarms must be run in the same raceway or cable as the AC power wiring. In addition, the resistance of the interconnect wiring shall be a maximum of 10 ohms.
- The appropriate power source is 120 Volt AC Single Phase supplied from a non-switchable circuit, which is not protected by a ground fault interrupter.
- Smoke alarms are not to be used with detector guards unless the combination (alarm and detector guard) have been evaluated and found suitable for that purpose.
- **⚠ WARNING:** The alarm cannot be operated from power derived from a square wave, modified square wave or modified sine wave, inverter. These types of inverters are sometimes used to supply power to the structure in off grid installations, such as solar or wind derived power sources. These power sources produce high peak voltages that will damage the alarm.

#### WIRING INSTRUCTIONS FOR AC QUICK CONNECT HARNESS

**⚠ CAUTION! TURN OFF THE MAIN POWER TO THE CIRCUIT BEFORE WIRING THE ALARM.**

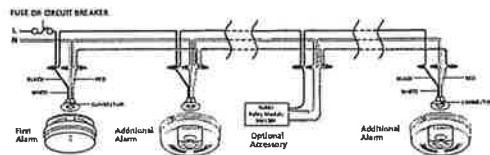
- For alarms that are used as single station, DO NOT CONNECT THE RED WIRE TO ANYTHING. Leave the red wire insulating cap in place to make certain that the red wire cannot contact any metal parts or the electrical box.
- When alarms are interconnected, all interconnected units must be powered from a single circuit.

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## Installation Instructions

- A maximum of 24 Kidde Safety devices may be interconnected in a multiple station arrangement. The interconnect system should not exceed the NFPA interconnect limit of 12 smoke alarms and/or 18 alarms total (smoke, CO, Smoke/CO Combination, heat, etc.). This Smoke/CO combination alarm must be counted as a smoke alarm when determining the number of units on an interconnect line. With 18 alarms interconnected, it is still possible to interconnect up to a total of 6 remote signaling devices and/or relay modules (see page 16 for details on interconnecting Kidde devices).
- The maximum wire run distance between the first and last unit in an interconnected system is 305 m (1000').
- Figure 2 illustrates interconnection wiring. Improper connection will result in damage to the alarm, failure to operate, or a shock hazard.
- Make certain alarms are wired to a continuous (non-switched) power line.

**NOTE: Use standard CSA Listed household wire (as required by local codes) available at all electrical supply stores and most hardware stores.**



**FIGURE 2** Interconnect Wiring Diagram

#### WIRES ON ALARM HARNESS CONNECTED TO

Black Hot side of AC line  
White Neutral side of AC line  
Red Interconnect lines (red wires) of other units in the multiple station set up

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## Installation Instructions

### Step 3: Mounting Instructions

**⚠ CAUTION: YOUR SMOKE/CO ALARM IS SEALED AND THE COVER IS NOT REMOVABLE!**

1. To help identify the date to replace the unit, a label has been affixed to the side of the alarm. Write the "Replace by" date (10 years from initial power up) in permanent marker on the label. See Alarm Replacement section for additional information.
2. Remove the mounting bracket from the back of the alarm by holding the mounting bracket and twisting the alarm in the direction indicated by the "OFF" arrow on the alarm cover.
3. After selecting the proper location for your Smoke/CO Alarm, as described on Pages 8-10, and wiring the AC QUICK CONNECT harness as described in the **WIRING INSTRUCTIONS** (NOTE: AC power should be turned off at this stage), attach the mounting bracket to the electrical box. To ensure aesthetic alignment of the alarm with the hallway, or wall, the "A" line on the mounting bracket must be parallel with the hallway when ceiling mounted, or horizontal when wall mounted.
4. Pull the AC QUICK CONNECTOR through the center hole in the mounting bracket and secure the bracket, making sure that the mounting screws are positioned in the small ends of the keyholes before tightening the screws.
5. Remove the cardboard square from the connector pins and plug the AC QUICK CONNECTOR into the back of the alarm (see figure 3), making sure that the locks on the connector snap into place. Then push the excess wire back into the electrical box through the hole in the center of the mounting bracket.



**FIGURE 3**  
Installing AC Quick Connect

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## Installation Instructions

6. Install the alarm on the mounting bracket and rotate the alarm in the direction of the "ON" arrow on the cover until the alarm ratchets into place (this ratcheting function allows for aesthetic alignment). Note: The alarm will mount to the bracket in 4 positions (every 90 degrees).
7. Turn on the AC power. The green AC Power On Indicator should be lit when the alarm is operating from AC power.
8. Install batteries, close battery door.

### Step 4: Testing the Alarm

**⚠ CAUTION: Due to the loudness (85 decibels) of the alarm, always stand an arms length away from the unit when testing.**

After installation, **TEST THE UNIT'S ELECTRONICS** by pressing and releasing the test/reset button. You will then hear the following sequence of "beeps" and verbal warnings:

Three long beeps.

Verbal warning: "FIRE!"

Three long beeps.

Four quick beeps.

Verbal warning: "WARNING! CARBON MONOXIDE"

Four quick beeps

Single beep to reset

**Weekly testing is required!** If at anytime it does not perform as described, verify power is connected correctly and that the battery doesn't need replacing. Clean dust and other buildup off the unit. If it still doesn't operate properly call the Product Support Line at 1-800-880-6788.

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## Operating Instructions

### Interconnect Feature

**IMPORTANT:** This unit is only approved to interconnect with the Kidde line of products. It is not approved to interconnect with any other manufacturer's products.

- When compatible smoke alarms and heat alarms are interconnected to this alarm, they will only respond to a smoke related event.
- When mixing compatible models with battery backup with models without battery backup, be advised that the models without battery backup will not respond during an AC power failure.
- This unit is only approved to interconnect with other Kidde products. It is NOT approved to interconnect with any other brand of detection product.
- This alarm is interconnect compatible with the following alarms and accessories:

**Smoke Alarms:** 1235CA, 1275CA, 1276CA, 1285CA, i12020CA, i12020ACA, i12040CA, i12040ACA, 12060CA, i12060ACA, KN-SMFM-I-CA, PE120CA, P12040CA, Pi2000CA, Pi2010CA

**CO alarms:** KN-COB-ICB-CA, KN-COB-IC-CA, KN-COP-IC-CA

**Combo alarms:** KN-COSM-ICA, KN-COSM-IBCA, KN-COSM-IBACA, KN-COPE-ICA

**Heat alarm:** HD135F

**Relay modules:** SM120X, CO120X

**Strobe Light:** SL177i, SLED177iCA

For more information about compatible interconnect units and their functionality in an interconnect system, visit our web site at: [www.kiddecanada.com](http://www.kiddecanada.com)

### Smoke HUSH® Control Feature

The HUSH feature has the capability of temporarily desensitizing the smoke alarm circuit for approximately 9 minutes. This feature is to be used only when a known alarm condition, such as smoke from cooking, activates the alarm. When the unit is in alarm you can put your Smoke/CO Alarm in HUSH mode by pushing the test/reset button. If the smoke is not too dense, the alarm will silence immediately, the unit will verbally announce "HUSH MODE ACTIVATED", and the green LED will flash every 2 seconds for approximately 9 minutes. This indicates that the smoke alarm is in a temporarily desensitized condition.

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## Operating and Installation Instructions

Your Smoke/CO Alarm will automatically reset after approximately 9 minutes. When the unit returns to normal operation after being in HUSH mode, it will verbally announce "HUSH MODE CANCELLED", and sound the alarm if smoke is still present. The HUSH feature can be used repeatedly until the air has been cleared of the condition causing the alarm. While the unit is in HUSH mode, pushing the test/reset button on the alarm will also end the HUSH period.

**NOTE: DENSE SMOKE WILL OVERRIDE THE HUSH® CONTROL FEATURE AND SOUND A CONTINUOUS ALARM.**

**CAUTION: BEFORE USING THE ALARM HUSH® FEATURE, IDENTIFY THE SOURCE OF THE SMOKE AND BE CERTAIN A SAFE CONDITION EXISTS.**

### Reset Feature

If the the Smoke/CO Alarm is sounding a CO alarm, pressing the test/reset button will silence the alarm.

If the CO condition that caused the alert continues, the alarm will reactivate within 200 seconds.

### CO Peak Level Memory

If the green LED is blinking once every 10 seconds, the unit has detected a hazardous CO condition. If the CO sensor has detected a CO level of 100 PPM or higher since last reset, it will be recorded by the Peak Level Memory function. To access the Peak Level Memory press the test/reset button. If a reading of 100 PPM or higher has been recorded, the unit will announce "Carbon Monoxide Previously Detected." If you've been away from home this feature allows you to check if there was a CO reading of 100, or higher, during your absence. Pushing the test/reset button resets the memory. It's also reset when the power is removed.

Note: When the unit is on battery power only, the green LED will not blink to indicate CO Peak Level Memory.

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## Operating and Installation Instructions

### LED Indicator Operation

#### Red LED

The red LED will flash as described below under the following conditions:

- During smoke or CO alarm, with every beep
- During testing (same as alarm)
- Low battery, single flash with chirp
- End of product life, double flash every 30 seconds with chirp
- Unit error mode, single flash with chirp
- Unit error mode, a Fault Code is flashed every 30 seconds (can be observed and reported to customer service for troubleshooting).

#### Green LED

The green LED will flash as described below under the following conditions:

- Standby Condition (powered by AC and battery backup): The LED will be constantly on.
- Standby Condition (powered by only battery backup): The LED will flash every 60 seconds.
- Alarm Memory Condition: The LED will flash every second during alarm. When the alarm condition goes away, the originating alarm unit will flash the LED every 16 seconds until the test/reset button is pressed, thus resetting the alarm.
- CO Peak Memory (10 second flash rate), AC powered only. Indicates CO greater than 100PPM was detected. Press Test button to announce Peak message and clear Peak Memory.
- Initiating Alarm condition (1 second flash rate), indicates the unit initiated an alarm.
- Trouble Fault/Error mode (1/2 second flash rate), AC powered only. Helps owner locate the mysterious chirping unit
- HUSH MODE Condition: The LED will flash every 2 seconds while the alarm is in HUSH mode.

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## Operating and Installation Instructions

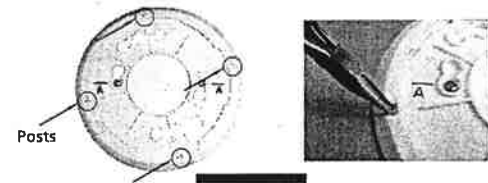


FIGURE 4A

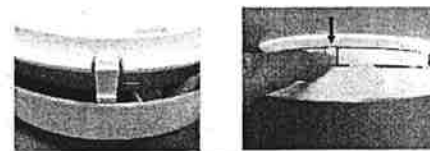


FIGURE 4B

### Tamper Resist Feature

To make your smoke/CO alarm tamper resistant, a tamper resist feature has been provided. Activate the tamper resist feature by breaking off the four posts in the square holes in the trim ring (see figure 4A). When the posts are broken off, the tamper resist tab on the base is allowed to engage the mounting bracket. Rotate the alarm onto the mounting bracket until you hear the tamper resist tab snap into place, locking the alarm on the mounting bracket. Using the tamper resist feature will help deter children and others from removing the alarm from bracket. NOTE: To remove the alarm when the tamper resist tab is engaged, press down on the tamper resist tab, and rotate the alarm off of the bracket (see figure 4B).

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## Alarm Removal

IF TAMPER RESIST FEATURE HAS BEEN ACTIVATED, REFER TO TAMPER RESIST FEATURE DESCRIPTION ABOVE FOR REMOVAL INSTRUCTIONS.

Remove the alarm from the mounting bracket by rotating the alarm in the direction of the "OFF" arrow on the cover.

If any form of battery failure is detected the red LED light will flash and the unit will "chirp" one time, followed by the warning message "LOW BATTERY". This cycle will occur once every minute, and will continue for at least seven days. On battery power, the "LOW BATTERY" voice occurs once every 15 minutes.

**If the red LED light flashes along with a chirp every 30 seconds, and is not followed by the voice message "LOW BATTERY" as described above, and if the green LED flashes twice per second (AC power only) your unit has malfunctioned.** Call our toll free Product Support Line at 1-800-880-6788 for instructions on how to return the unit.

## BATTERY INSTALLATION AND REMOVAL

To replace or install the batteries slide the battery door in the direction indicated on the cover of the alarm.

When installing new batteries into the carrier, make sure that the polarity matches the markings printed on the inside of the battery compartment, press the battery reminder finger down into the battery compartment and install the battery (see Figure 6). Completely slide the battery door to the closed position. A missing or improperly installed battery will prevent the battery door from closing and result in improper alarm operation.



SLIDE

OPEN

INSERT

FIGURE 5

20

## General Maintenance

To keep your Smoke/CO Alarm in good working order, please follow these simple steps:

- Verify the unit's alarm and LED lights operation by pushing the test/reset button once a week.
- Remove the unit from mounting bracket and vacuum the alarm cover and vents with a soft brush attachment once a month to remove dust and dirt. REINSTALL IMMEDIATELY AFTER CLEANING AND THEN TEST USING THE TEST/RESET BUTTON!
- Never use detergents or other solvents to clean the unit.
- Avoid spraying air fresheners, hair spray, or other aerosols near the Smoke/CO Alarm.

Do not paint the unit. Paint will seal the vents and interfere with the sensor's ability to detect smoke and CO. Never attempt to disassemble the unit or clean inside. This action will void your warranty.

Move the Smoke/CO Alarm and place in another location prior to performing any of the following:

- Staining or stripping wood floors or furniture
- Painting or wall papering
- Using adhesives

Storing the unit in a plastic bag during any of the above projects will protect the sensors from damage. Do not place near a diaper pail.

**WARNING:** Reinstall the Smoke/CO Alarm as soon as possible to assure continuous protection.

When household cleaning supplies or similar contaminants are used, the area must be well ventilated. The following substances can effect the CO sensor and may cause false readings and damage to the sensor:

Methane, propane, iso-butane, iso-propanol, ethyl acetate, hydrogen sulfide, sulfide dioxides, alcohol based products, paints, thinner, solvents, adhesives, hair spray, after shave, perfume, and some cleaning agents.

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## Battery Replacement

Replace batteries with one of the following approved brands: **Energyizer E91**. These batteries can be purchased at your local retailer.



Battery finger

FIGURE 6

**WARNING:** Use only the batteries specified. Use of different batteries may have a detrimental effect on the Smoke/CO alarm. A good safety measure is to replace the batteries twice a year, at the same time. A good safety measure is to replace the batteries twice a year, at the same time you change your clocks for daylight saving time.

**IMPORTANT:** Constant exposures to high or low humidity may reduce battery life. A good safety measure is to replace the battery at least once a year, or at the same time as you change your clocks for daylight saving time.

## Alarm Replacement

### End of Life Notification

Ten (10) years after unit is first powered, this alarm will beep two times every 30 seconds to indicate it is time to replace the alarm.

**REPLACE IMMEDIATELY! IT WILL NOT DETECT CO IN THIS CONDITION.**

End of Life Hush can be activated by pushing the test button to silence the End of Life chirp for approximately 3 days at a time for a maximum of 30 day life extension.

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## Carbon Monoxide Safety Information

### General CO Information

Carbon monoxide (CO) is a colorless, odorless, and tasteless poison gas that can be fatal when inhaled. CO inhibits the blood's capacity to carry oxygen.

### Possible Sources

CO can be produced when burning any fossil fuel: gasoline, propane, natural gas, oil and wood. It can be produced by any fuel-burning appliance that is malfunctioning, improperly installed, or not ventilated correctly. Possible sources include furnaces, gas ranges/stoves, gas clothes dryers, water heaters, portable fuel burning space heaters, fireplaces, wood-burning stoves and certain swimming pool heaters. Blocked chimneys or flues, back drafting and changes in air pressure, corroded or disconnected vent pipes, and a loose or cracked furnace exchanger can also cause CO. Vehicles and other combustion engines running in an attached garage and using a charcoal/gas grill or hibachi in an enclosed area are all possible sources of CO.

The following conditions can result in transient CO situations: Excessive spillage or reverse venting of fuel-burning appliances caused by outdoor ambient conditions such as: Wind direction and/or velocity, including high gusts of wind, heavy air in the vent pipes (cold/humid air with extended periods between cycles), negative pressure differential resulting from the use of exhaust fans, simultaneous operation of several fuel-burning appliances competing for limited internal air, vent pipe connections vibrating loose from clothes dryers, furnaces, or water heaters, obstructions in, or unconventional, vent pipe designs which can amplify the above situations, extended operation of unvented fuel-burning devices (range, oven, fireplace, etc.), temperature inversions which can trap exhaust gasses near the ground, car idling in an open or closed attached garage, or near a home.

### CO Safety Tips

Every year have the heating system, vents, chimney and flue inspected and cleaned by a qualified technician.

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## Carbon Monoxide Safety Information

Always install appliances according to manufacturer's instructions and adhere to local building codes. Most appliances should be installed by professionals and inspected after installation. Regularly examine vents and chimneys for improper connections, visible rust, or stains, and check for cracks in furnace heat exchangers. Verify the color of flame on pilot lights and burners is blue. A yellow or orange flame is a sign that the fuel is not burning completely. Teach all household members what the alarm sounds like and how to respond.

### Symptoms of CO Poisoning

Initial carbon monoxide poisoning symptoms are similar to the flu with no fever and can include dizziness, severe headaches, nausea, vomiting and disorientation. Everyone is susceptible but experts agree that unborn babies, pregnant women, senior citizens and people with heart or respiratory problems are especially vulnerable. If symptoms of carbon monoxide poisoning are experienced seek medical attention immediately. CO poisoning can be determined by a carboxyhemoglobin test.

The following symptoms are related to CARBON MONOXIDE POISONING and should be discussed with ALL members of the household:

1. **Mild Exposure:** Slight headache, nausea, vomiting, fatigue (often described as "Flu-like" symptoms).
2. **Medium Exposure:** Severe throbbing headache, drowsiness, confusion, fast heart rate.
3. **Extreme Exposure:** Unconsciousness, convulsions, cardiorespiratory failure, death.

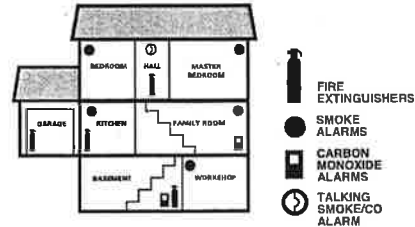
The above levels of exposure relate to healthy adults. Levels differ for those at high risk. Exposure to high levels of carbon monoxide can be fatal or cause permanent damage and disabilities. Many cases of reported carbon monoxide poisoning indicate that while victims are aware they are not well, they become so disoriented they are unable to save themselves by either exiting the building, or calling for assistance. Also, young children and household pets may be the first effected. Familiarization with the effects of each level is important.

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## Fire Safety Information

### Escape Plan

Familiarize everyone with the sound of the smoke alarm and train them to leave the home when they hear it. Practice a fire drill at least every six months, including fire drills at night. Ensure that small children hear the alarm and wake when it sounds. They must wake up in order to execute the escape plan. Practice allows all occupants to test your plan before an emergency. You may not be able to reach your children. It is important they know what to do. Know two ways out of every room (door & window) and identify a meeting place outside the home where everyone will gather once they have exited the residence. When two people have reached the meeting place, one should leave to call 911 while the second person stays to account for additional family members.



Current studies have shown smoke alarms may not awaken all sleeping individuals, and that it is the responsibility of individuals in the household that are capable of assisting others to provide assistance to those who may not be awakened by the alarm sound, or to those who may be incapable of safely evacuating the area unassisted.

### Fire Prevention

Never smoke in bed, or leave cooking food unattended. Teach children never to play with matches or lighters!

Train everyone in the home to recognize the alarm pattern, voice message warning and to leave the home using their escape plan when it's heard.

Know how to do "Stop, Drop and Roll" if clothes catch on fire, and how to crawl low under smoke.

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## Fire Safety Information

Install and maintain fire extinguishers on every level of the home and in the kitchen, basement and garage. Know how to use a fire extinguisher prior to an emergency. Second level and higher occupied rooms with windows, should have an escape ladder.

## Industry Safety Standards

### NFPA (National Fire Protection Association) Required Number of Smoke Alarms

Smoke Detection. Where required by applicable laws, codes, or standards for the specified occupancy, approved single- and multiple-station smoke alarms shall be installed as follows: (1) In all sleeping rooms. (2) Outside of each separate sleeping area, in immediate vicinity of the sleeping rooms. (3) On each level of the dwelling unit, including basements Exception: In existing one- and two-family dwelling units, approved smoke alarms powered by batteries are permitted. Check with local officials for specific regulations concerning your situation.

The required number of smoke alarms (protected areas mentioned on the previous page) might not be reliable enough to provide early warning for unprotected areas that are separated by a door. For this reason, it is recommended that the householder consider the use of additional smoke alarms for those unprotected areas, for increased protection. Additional areas include the basement, bedrooms, dining room, furnace room, utility room, and hallways not protected by the required number of smoke alarms.

The installation of smoke alarms in kitchens, attics (finished or unfinished), or garages is not normally recommended, as these locations occasionally experience conditions that can result in improper operation.

### NRC

Ionization type smoke alarms use a very small amount of a radioactive element in the sensing chamber to enable detection of visible and invisible combustion products. The radioactive element is safely contained in the chamber and requires no adjustments or maintenance. This smoke alarm meets or exceeds all government standards. It is manufactured and distributed under license from the U.S. Nuclear Regulatory Commission.

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## Limited Warranty

### Ten Year Limited Warranty

If after reviewing this user guide you feel that your alarm is defective in any way, do not tamper with the unit. In many cases, the quickest way to exchange your alarm is to return it to the original place of purchase. Alternatively, you may return it for servicing to Kidde. If you have questions, call Kidde Product Support Line at 1-800-880-6788.

Kidde warrants that the enclosed alarm (but not the battery) will be free from defects in material and workmanship or design under normal use and service for a period of ten years from the date of purchase. The obligation of Kidde under this warranty is limited to repairing or replacing the alarm or any part which we find to be defective in material, workmanship or design, free of charge, upon sending the alarm with proof of date of purchase, postage and return postage prepaid, to: Kidde Canada Inc., P.O. Box 40, Apsley, ON K0L 1A0.

This warranty shall not apply to the alarm if it has been damaged, modified, abused or altered after the date of purchase or if it fails to operate due to improper maintenance or inadequate A.C. or D.C. power. Any implied warranties arising out of this sale, including but not limited to the implied warranties of description, merchantability and fitness for a particular purpose, are limited in duration to the above warranty period. In no event shall the Manufacturer be liable for loss of use of this product or for any indirect, special, incidental or consequential damages, or costs, or expenses incurred by the consumer or any other user of this product, whether due to a breach of contract, negligence, strict liability in tort or otherwise. The Manufacturer shall have no liability for any personal injury, property damage or any special, incidental, contingent or consequential damage of any kind resulting from gas leakage, fire or explosion.

Since some provinces do not allow limitations of the duration of an implied warranty or do not allow the exclusion or limitation of incidental or consequential damages, the above limitations or exclusions may not apply to you. While this warranty gives you specific legal rights, you may also have other rights which vary from province to province. The above warranty may not be altered except in writing signed by both parties hereto.

Your Kidde Combination Smoke and Carbon Monoxide Alarm is not a substitute for property, disability, life or other insurance of any kind. Appropriate insurance coverage is your responsibility. Consult your insurance agent. Removal of the front cover will void your warranty.



Kidde Canada Inc., P.O. Box 40, Apsley, ON K0L1A0

QUESTIONS OR FOR MORE INFORMATION  
Call our Product Support Line at 1-800-880-6788 or contact  
us at our website at [www.kiddecana.com](http://www.kiddecana.com)





## Installation and Maintenance Manual

**IM 1152-5**

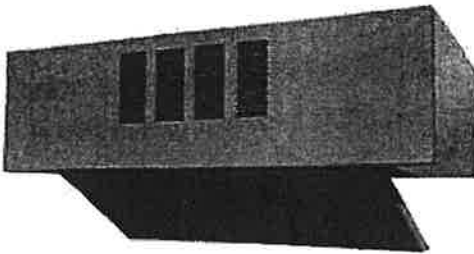
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Part Number: 910175957

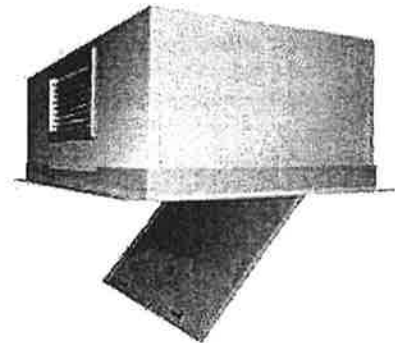
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## ThinLine Horizontal Fan Coils and Cabinet Unit Heaters

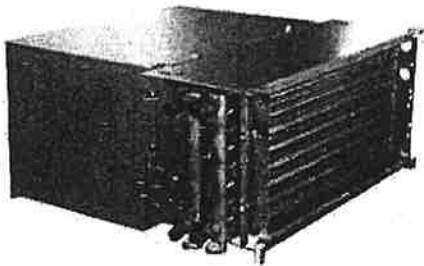
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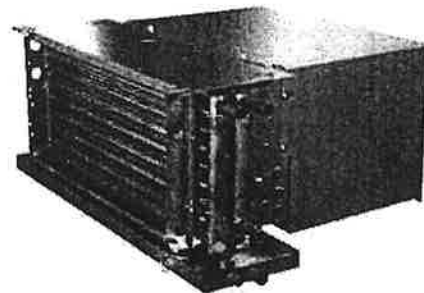
Exposed Horizontal Cabinet Fan Coil



Recessed Horizontal Cabinet Fan Coil



Concealed Horizontal Unit Heater



Concealed Horizontal Fan Coil

## General Maintenance

Normal maintenance on all units is generally limited to filter changes and cleaning the condensate drain pans. Units are provided with permanently lubricated motors and require no oiling.

Record performance measurements of volts, amps, and water temperature differences (both heating and cooling). A comparison of logged data with start-up and other annual data is useful as an indicator of general equipment condition.

## Filter Changes

Filter changes are required at regular intervals. The time period between changes will depend upon the project requirements. Some applications, such as motels, produce a lot of lint from carpeting and linen changes, and will require more frequent filter changes. Units equipped with a MicroTech III board may have Change Filter indicator lights set to be activated at certain time intervals (60, 90 or 120 days). For units which were not provided with MicroTech board check filters at 60-day intervals for the first year until experience is acquired. If light cannot be seen through the filter when held up to sunlight or a bright light, it should be changed. A more critical standard may be desirable.

Filters can be removed without removing any panels. See Figure 20 or Figure 21. Cabinet units are equipped with large bottom access doors allowing easy access to the filter media from any direction.

### A. To remove the filter

#### Bottom return:

1. Turn the tabs on the side of the filter frame.
2. Slide your fingers along the bottom of the filter until they reach the rear paperboard edge.
3. Pull the filter out of the unit.

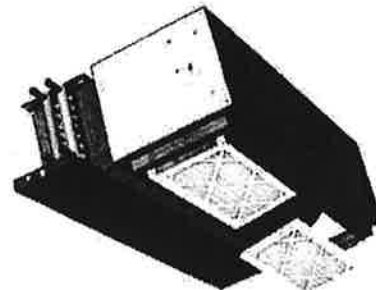
#### Back return:

1. Turn the tabs on the bottom of the filter frame. Open the frame.
2. Feel for the paperboard edge of the filter. Slide the filter down and remove it.

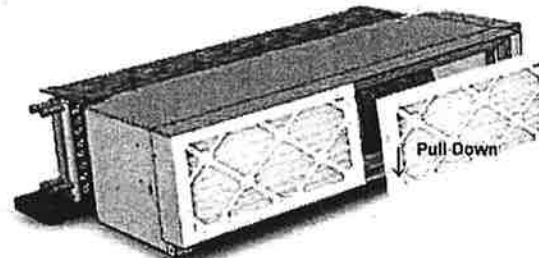
### C. To install a new filter

1. Bottom: Slide the filter in. Turn the tabs into place.
2. Back: Push the filter up until it clears the front lip on the filter housing, then turn the tabs into place.
3. Close the tabs of the filter frame.

**Figure 20: Filter Removal for Units with Bottom Returns**



**Figure 21: Filter Removal for Units with Rear Returns**



## Coils

Units provided with the proper type of air filters, even when replaced regularly, may require periodic coil cleaning. Coils may be cleaned in-place by removing the motor/blower assemblies and brushing the entering air face with a soft brush in a parallel motion with the fins. Do not brush perpendicular to the fin orientation, damage may occur. Brushing should be followed by blowing air through the fins with a vacuum cleaner from the leaving air side then removing all debris with the vacuum.

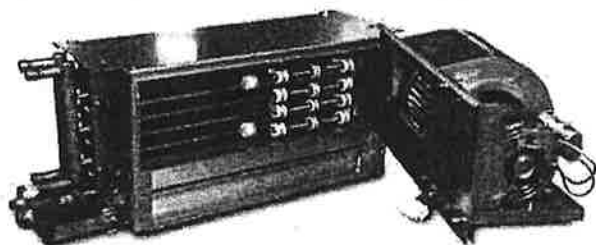
### Electric Resistance Heater Assembly

Electric resistance heaters typically require no periodic maintenance when the unit's air filters are changed properly. Other conditions and equipment in the system may affect the operation and service life of the heaters. The most important operating conditions for an electric heater is airflow and supply voltage. As a rule, Daikin recommends operating the electric heater on the High speed, never on Low. Restricted or insufficient airflow over the elements and/or high supply voltage to the elements will result in the unit overheating. This condition may result in the heater cycling on the high limit thermal cutout and premature failure of the heater.

Open-wire type heaters provided with ThinLine fan coils (see Figure 22) have an automatic reset switch with a back up high limit thermal switch. Automatic reset switches reset after the heater has cooled. High limit thermal switches must be manually reset. The high limit thermal cutout switch and automatic reset switch are only safety devices, not intended for continuous operation. With proper unit application and normal operation, the high limit thermal devices will not trip.

The need to reset the manual switches indicates there is a problem. Any conditions that causes high limit cutout MUST be corrected immediately. High supply voltage causes excessive amperage draw and may result in tripping the circuit breaker or blowing fuses on the incoming power supply.

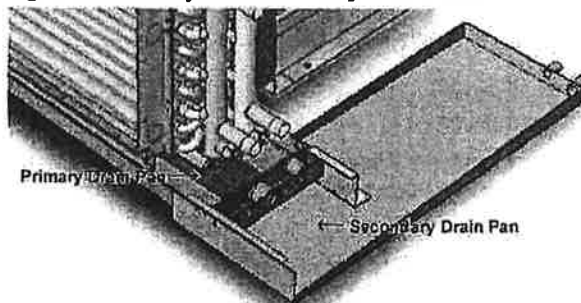
Figure 22: Exposed Electric Heater Assembly



### Condensate Drain Pans

The main and secondary condensate drain pans should be checked annually and cleaned and flushed as required. See Figure 23.

Figure 23: Primary and Secondary Drain Pans



### Accessing the Secondary Drain Pan

**⚠ DANGER**

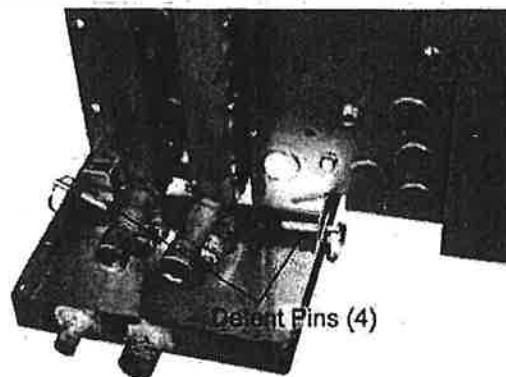
Water coils exposed to freezing temperatures should be drained or anti-freeze should be added to the water circuit to avoid freezing.

To access the secondary drain pan (cabinet units), remove the side panel from the side of the unit where the main piping connections are made (this is opposite the control panel side).

#### Drain Pan

1. Remove the 4 detent pins from the drain pan and move the pan to a location for inspection and cleaning.
2. After inspection and cleaning, reinstall the drain pans by reversing the procedure in Step 1.

Figure 24: Drain Pan Attachment to Coil Section



**Blower**

Dirt and dust should not be allowed to accumulate on the blower wheels or housing (see typical, Figure 25). Excessive debris can result in an unbalanced blower wheel condition which can damage the wheel and/or motor. The wheel and housing should be cleaned periodically using a brush and vacuum cleaner. Care must be taken to not dislodge the factory balancing weights on the blower blades.

**Accessing/Removing the Main Fan Deck and Motor Assembly**

Both the fan deck and the main condensate drain pan are easily removed for access and cleaning as follows.

Fan Deck:

1. Disconnect electrical power to the unit.
2. Remove the two screws that attach the fan deck to the chassis, see Figure 26 (on sizes 10 and 12 units, there are 4 screws to be removed).
3. Firmly grasp the fan deck and lift upward and off the unit. See Figure 27.
4. Disconnect the fan motor wiring harness by removing the plug where it attaches to the connector on the side of the chassis. See Figure 27.
5. To reinstall, follow these steps in reverse order.

**NOTE:** Push the tabs inward on the sides of the plug to free it from the connector base.

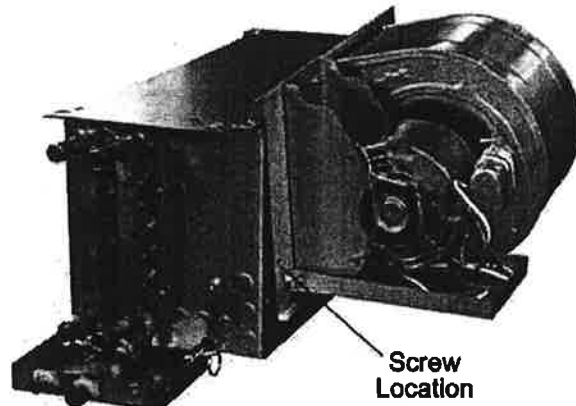
**Monthly Intervals**

- Inspect and clean the condensate drain pan to help avoid clogging of drainage by dirt, dust, etc. Inspect drainage piping for proper condensate flow.
- Check and clean the coil. Clean the coil with a low pressure water jet or low pressure air.
- Clean and tighten all the wiring connections.

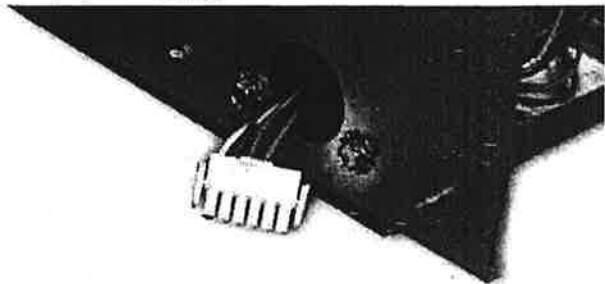
**Figure 25: Fan Housing**



**Figure 26: Removing Fan Deck Assembly**



**Figure 27: Unit Wiring Harness**



## Replacement Parts

Factory replacement parts should be used wherever possible to maintain the unit's performance, service life, operating characteristics and testing agency listings. Replacement parts may be purchased through a local Daikin sales representative.

Contact your local Daikin sales representative or Daikin Parts before attempting any unit modifications. Any modifications not authorized by Daikin could void all factory warranties and result in personal injury and/or unit damage.

When ordering replacement parts the following information must be supplied to ensure proper item identification:

1. Unit model number
2. Unit serial number
3. Unit orientation, hand connection (right or left hand when facing into the airstream)
4. Complete part description including any numbers

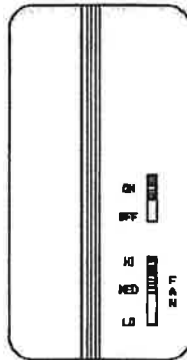
See replacement parts list for descriptions and part numbers. Contact Daikin for authorization of any returned parts, such as defective parts covered under warranty.

## Controls

A wide variety of control options are available for Daikin ThinLine Horizontal Fan Coils, both unit-mounted and remote-mounted. This section provides a brief overview of these options and their operation. For more complete information, contact your Daikin representative.

### 3-Position Fan Switch with Manual ON-OFF

This three-speed fan switch (High, Med, Low) with ON-OFF option, shown at the right, is available as unit- or remote-mounted. It operates on low-voltage or line-voltage power and can be provided with a factory-mounted low-voltage interface board, which contains three-24 volt relays with line voltage contactors and terminal connections. The transformer is factory-installed and wired.



#### Sequence of operation

- **OFF:** Fan is turned OFF. The motorized fresh-air damper, when supplied, is closed.
- **High, Medium, Low:** Fan runs continuously at the selected speed. The two-position, motorized fresh-air damper, when supplied, is opened.

### Low-Voltage (LV) Interface Board

The low-voltage interface board is used with any remote (wall mounted) Daikin thermostat or control. It can also be used in conjunction with a field-supplied controller of a building automation system (BAS) control where low voltage is needed to operate the fan coil. It is located in the control box for the unit (see Figure 28).

The LV interface board includes:

- Three 24-volt relays with line-voltage contactors to operate the fan motor speeds.
- Terminal connections for interfacing to:
  - An optional remote-mounted thermostat.
  - Low-voltage actuators for heating and cooling valves.
  - A return air sensor.
  - A pipe temperature sensor for changeover from heating to cooling on two-pipe systems.
- A factory-wired and installed transformer.

See Figure 28 for a list of connecting points to the board. For additional wiring information, see the typical wiring diagram Figure 53 on page 44 or the unit's wiring diagram, which is attached to the fan coil exterior. (see Figure 11 on page 13).

Figure 28: LV Interface Board 24 VAC connections

