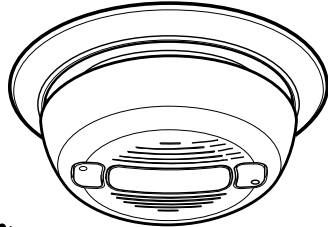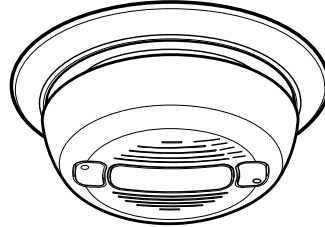**BRK ELECTRONICS®**

User's Manual
Smoke Alarms

(i) **AC Powered Ionization Smoke Alarm with Battery Back-Up and Silence Feature**

Cat. 4120SB
Input: 120V AC, 60Hz, 0.5A

(i) **AC Powered Ionization Smoke Alarm with Battery Back-up**

Cat. 4120B
Input: 120V AC, 60Hz, 0.5A

(i) Ionization smoke alarms are generally more effective at detecting flaming fires which consume combustible materials rapidly and spread quickly. Sources of these fires may include paper burning in a wastebasket, or a grease fire in the kitchen.

(p) Photoelectric smoke alarms are generally more effective at detecting smoldering fires which smolder for hours before bursting into flame. Sources of these fires may include cigarettes burning in couches or bedding.

For maximum protection, use both types of smoke alarms on each level of your home.

(UL) Model
4120B
4120SB

M06-2016-007 06/00

INSIDE THIS MANUAL

IMPORTANT!
PLEASE READ CAREFULLY AND SAVE.

This user's manual contains important information about your smoke alarm's operation. If you are installing this smoke alarm for use by others, you must leave this manual--or a copy of it--with the end user.

Other Features of Smoke Alarms

Battery (DC) operated smoke alarms: Provide protection even when electricity fails, provided the batteries are fresh and correctly installed. Units are easy to install, and do not require professional installation.

AC powered smoke alarms: Can be interconnected so if one unit senses smoke, all units alarm. They do not operate if electricity fails. Units must be installed by a qualified electrician.

AC/DC powered smoke alarms: (AC with battery back-up): Can be interconnected so if one unit senses smoke, all units alarm. They will operate if electricity fails, provided the batteries are fresh and correctly installed. Units must be installed by a qualified electrician.
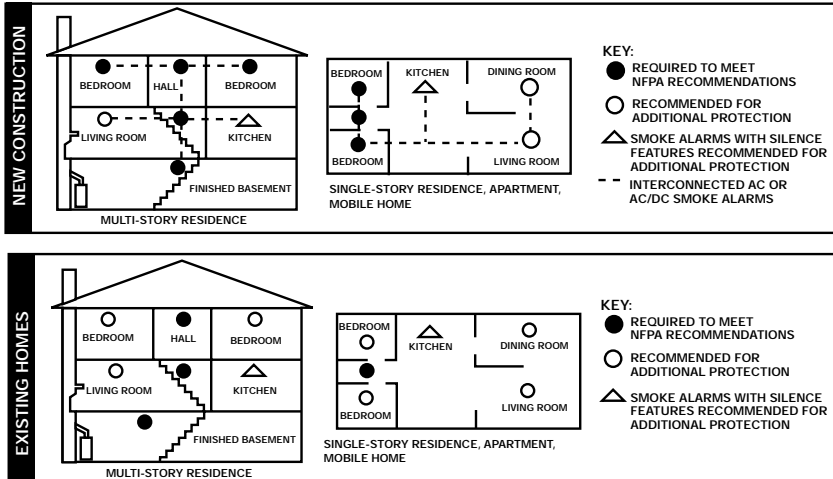
Smoke alarms for the hearing impaired: *Special purpose smoke alarms should be installed for the hearing impaired.* They include a visual alarm and an audible alarm horn, and meet the requirements of the Americans With Disabilities Act. These units can be interconnected so if one unit senses smoke, all units alarm. They do not operate if electricity fails. Units must be installed by a qualified electrician. ***BRK Electronics***® Cat. 100S is an AC powered unit that has an 85 decibel alarm and a 177 candela strobe light, which flashes rapidly when the unit is in alarm.

All these units are designed to provide early warning of fires if located, installed and cared for as described in the user's manual, and if smoke reaches them. If you are unsure which type of unit to install, refer to Chapter 2 of the National Fire Protection Association (NFPA) Standard 72 (National Fire Alarm Code) and NFPA 101 (Life Safety Code). National Fire Protection Association, One Batterymarch Park, Quincy, MA 02269-9101. Local building codes may also require specific units in new construction or in different areas of the home.

Where To Install Smoke Alarms

Installing Smoke Alarms in Single-Family And Multi-Family Residences

The National Fire Protection Association (NFPA), recommends one smoke alarm on every floor, in every sleeping area, and in every bedroom. In new construction, the smoke alarms must be AC powered and interconnected. See "Agency Placement Recommendations" for details. For additional coverage, it is recommended that you install a smoke alarm in all rooms, halls, storage areas, finished attics, and basements, where temperatures normally remain between 40°F (4°C) and 100°F (38°C). Make sure no door or other obstruction could keep smoke from reaching the smoke alarms.

NEW CONSTRUCTION

BEDROOM · HALL · BEDROOM

LIVING ROOM · KITCHEN

FINISHED BASEMENT

MULTI-STORY RESIDENCE

BEDROOM · KITCHEN · DINING ROOM

BEDROOM · LIVING ROOM

SINGLE-STORY RESIDENCE, APARTMENT, MOBILE HOME

KEY:
- ● REQUIRED TO MEET NFPA RECOMMENDATIONS
- ○ RECOMMENDED FOR ADDITIONAL PROTECTION
- △ SMOKE ALARMS WITH SILENCE FEATURES RECOMMENDED FOR ADDITIONAL PROTECTION
- ‑ ‑ INTERCONNECTED AC OR AC/DC SMOKE ALARMS

EXISTING HOMES

BEDROOM · HALL · BEDROOM

LIVING ROOM · KITCHEN

FINISHED BASEMENT

MULTI-STORY RESIDENCE

BEDROOM · KITCHEN · DINING ROOM

BEDROOM · LIVING ROOM

SINGLE-STORY RESIDENCE, APARTMENT, MOBILE HOME

KEY:
- ● REQUIRED TO MEET NFPA RECOMMENDATIONS
- ○ RECOMMENDED FOR ADDITIONAL PROTECTION
- △ SMOKE ALARMS WITH SILENCE FEATURES RECOMMENDED FOR ADDITIONAL PROTECTION

More specifically, install smoke alarms:

- On every level of your home, including finished attics and basements.
- Inside every bedroom, especially if people sleep with the door partly or completely closed.
- In the hall near every sleeping area. If your home has multiple sleeping areas, install a unit in each. If a hall is more than 40 feet long (12 meters), install a unit at each end.
- At the top of the first-to-second floor stairway, and at the bottom of the basement stairway.

IMPORTANT!

Specific requirements for smoke alarm installation vary from state to state and from region to region. Check with your local Building Inspector and/or Fire Department for current requirements in your area. If you install AC or AC/DC units, it is recommended (and may be required) they be interconnected for added protection.

Installing Smoke Alarms in Mobile Homes

For minimum security install one smoke alarm as close to each sleeping area as possible. For more security, put one unit in each room. Many older mobile homes (especially those built before 1978) have little or no insulation. If your mobile home is not well insulated, or if you are unsure of the amount of insulation, it is important to install units on inside walls only. Smoke alarms should be installed where temperatures normally remain between 40°F (4°C) and 100°F (38°C).

IMPORTANT!

This equipment should be installed in accordance with the National Fire Protection Association's Standard 72. National Fire Protection Association, One Batterymarch Park, Quincy, MA 02269-9101. **Additional local building and regulatory codes may apply in your area. Always check compliance requirements before beginning any installation.**

Smoke Alarms Recommended In Hotels, Motels, Hospitals, Extended Care Facilities
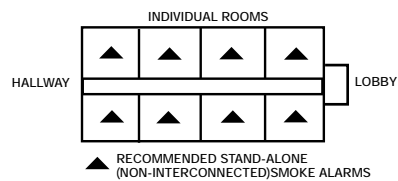
Install stand-alone (non-interconnected) AC powered smoke alarms with battery back-up for maximum protection in each sleeping room.

Agency Placement Recommendations

NFPA Standard 72 Section 2-2.1.1.1

2-2.1.1.1 Smoke alarms shall be installed outside of each separate sleeping area in the immediate vicinity of the bedrooms and on each additional story of the family living unit, including basements and excluding crawl spaces and unfinished attics. In new construction a smoke alarm shall also be installed in each sleeping room. Chapter 2 also reads as follows: 2-2.2.1: In new construction, where more than one smoke alarm is required by 2-2.1, alarms shall be so arranged that operation of any one alarm shall cause the operation of all alarms within the dwelling. A-2.5.2.1 Smoke Detection-Are More Smoke Alarms Desirable? The required number of smoke alarms might not provide

reliable early warning protection for those areas separated by a door from the areas protected by the required smoke alarms. For this reason, it is recommended that the householder consider the use of additional smoke alarms for those areas for increased protection. The additional areas include the basement, bedrooms, dining room, furnace room, utility room, and hallways not protected by the required 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.
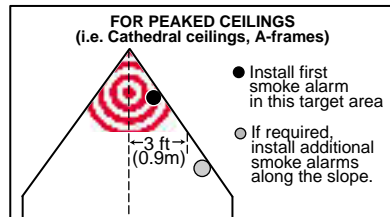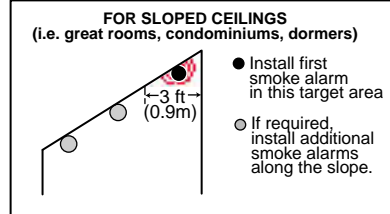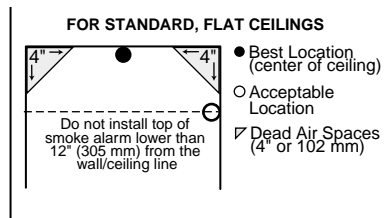
California State Fire Marshall

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

Where Not To Install Smoke Alarms

For best performance, do not install the unit:

- Where combustion particles are produced. Combustion particles form when something burns. Areas to avoid include poorly ventilated kitchens, garages, and furnace rooms. Keep units at least 20 feet (6 meters) from the sources of combustion particles (stove, furnace, water heater, space heater) if possible. Ventilate these areas as much as possible.

- In air streams near kitchens. Air currents can draw cooking smoke into the sensing chamber of a smoke alarm near the kitchen.

- In very damp, humid or steamy areas, or directly near bathrooms with showers. Keep units at least 10 feet (3 meters) away from showers, saunas, dishwashers, etc.

- Where the temperatures are regularly below 40° F (4°C) or above 100° F (38° C) including unheated buildings, outdoor rooms, porches, or unfinished attics or basements.

- In very dusty, dirty, or greasy areas. Do not install a smoke alarm directly over the stove or range. Clean a laundry room unit frequently to keep it free of dust or lint.

- Near fresh air vents, ceiling fans, or in very drafty areas. Drafts can blow smoke away from the unit, preventing it from reaching the sensing chamber.

- In insect infested areas. Insects can clog openings to the sensing chamber and cause unwanted alarms.

- Less than 12 inches (305 mm) away from fluorescent lights. Electrical "noise" can interfere with the sensor.

- In "dead air" spaces. "Dead air" spaces may prevent smoke from reaching the smoke alarm.

Avoiding Dead Air Spaces

FOR STANDARD, FLAT CEILINGS

4" → ← 4"

Do not install top of smoke alarm lower than 12" (305 mm) from the wall/ceiling line

● Best Location (center of ceiling)

○ Acceptable Location

◸ Dead Air Spaces (4" or 102 mm)

FOR SLOPED CEILINGS
(i.e. great rooms, condominiums, dormers)

←3 ft→
(0.9m)

● Install first smoke alarm in this target area

○ If required, install additional smoke alarms along the slope.

FOR PEAKED CEILINGS
(i.e. Cathedral ceilings, A-frames)

←3 ft→
(0.9m)

● Install first smoke alarm in this target area

○ If required, install additional smoke alarms along the slope.

4

"Dead air" spaces may prevent smoke from reaching the smoke alarm. To avoid dead air spaces, follow the installation recommendations below.

On ceilings, install smoke alarms as close to the center of the ceiling as possible. If this is not possible, install the smoke alarm at least 4 inches (102 mm) from the wall or corner.

For wall mounting (if allowed by building codes), the top edge of smoke alarms should be placed between 4 inches (102 mm) and 12 inches (305 mm) from the wall/ceiling line, below typical "dead air" spaces.

On a peaked, gabled, or cathedral ceiling, install the first smoke alarm within 3 feet (0.9 meters) of the peak of the ceiling, measured horizontally. Additional smoke alarms may be required depending on the length, angle, etc. of the ceiling's slope. Refer to NFPA 72 for details on requirements for sloped or peaked ceilings.

Important! Read Before You Install This Smoke Alarm

Read "Where To Install Smoke Alarms" and "Where Not To Install Smoke Alarms" before beginning. This unit monitors the air, and when smoke reaches its sensing chamber, it alarms. It can give you more time to escape before fire spreads. This unit can ONLY give an early warning of developing fires if it is installed, maintained and located where smoke can reach it, and where all residents can hear it, as described in this manual. This unit will not sense gas, heat, or flame. It cannot prevent or extinguish fires.

⚠️DANGER!

ELECTRICAL SHOCK HAZARD. Turn off power to the area where you will install this unit at the circuit breaker or fuse box before beginning installation. Failure to turn off the power before installation may result in serious electrical shock, injury or death.

⚠️ WARNING!

This unit will not alert hearing impaired residents. It is recommended that you install special units which use devices like flashing strobe lights to alert hearing impaired residents.

⚠️ WARNING!

Installation of this unit must conform to the electrical codes in your area; Article 760 of the National Electrical Code (NFPA 70), NFPA 72, 101; SBC (SBCCI); UBC (ICBO); NBC (BOCA); OTFDC (CABO), and any other local or building codes that may apply. Wiring and installation must be performed by a licensed electrician. Failure to follow these guidelines may result in injury or property damage.

⚠️ WARNING!

This unit must be powered by a 24-hour, 120VAC 60Hz circuit. Be sure the circuit cannot be turned off by a switch, dimmer, or ground fault circuit interrupter. Failure to connect this unit to a 24-hour circuit may prevent it from providing constant protection.

⚠️ WARNING!

This alarm must have AC or battery power to operate. If the AC power fails, battery back-up will allow the alarm to sound for at least 4 minutes (if the battery is weak, protection should last for up to 7 days.) If AC power fails and the battery is dead or missing, the alarm cannot operate.

⚠️ WARNING!

It is possible an electrical fire could occur on the circuit powering this unit. If this happened, the power to the unit could be cut off and it may fail to alarm. Some safety experts recommend wiring warning devices like this unit on separate circuits from other appliances, since these circuits are not as likely to be overloaded. Other safety experts recommend wiring these units on the same circuits as appliances so it is more readily apparent if the circuit fails. Whichever circuit you choose, it is recommended you also install battery powered units as back-ups in case of fire on the circuit powering the AC powered units.

⚠️ WARNING!

Never disconnect the power from an AC powered unit to stop an unwanted alarm. Doing so will disable the unit and remove your protection. In the case of a true unwanted alarm open a window or fan the smoke away from the unit. The alarm will reset automatically when it returns to normal operation. Never remove the batteries from a battery operated unit to stop an unwanted alarm (caused by cooking smoke, etc.). Instead open a window or fan the smoke away from the unit. The alarm will reset automatically.

5

⚠ CAUTION!
Connect this unit ONLY to other compatible units. See "How To Install and Interconnect This Smoke Alarm" for details. Do not connect it to any other type of alarm or auxiliary device. Connecting anything else to this unit may damage it or prevent it from operating properly.

⚠ CAUTION!
Do not stand too close to the unit when the alarm is sounding. It is loud to wake you in an emergency. Exposure to the horn at close range may harm your hearing. When testing the unit, step back when the horn starts sounding.

⚠ CAUTION!
Do not paint over the unit. Paint may clog the openings to the sensing chamber and prevent the unit from operating properly.

⚠ CAUTION!
The battery door will not close unless a battery is installed. This warns you the unit will not operate under DC power without a battery.

## Understanding The Indicator Lights and Alarm Horn Patterns

	Normal Operation	Test Condition	Alarm Condition* (Initiating Unit)
AC Power	Constant Green LED Flashing Red LED No Audible Alarm	Constant Green LED Rapidly Flashing Red LED Audible Alarm	Constant Green LED Rapidly Flashing Red LED Audible Alarm
DC Power	Green LED Off Flashing Red LED No Audible Alarm	Green LED Off Rapidly Flashing LED Audible Alarm	Green LED Off Rapidly Flashing LED Audible Alarm

**NOTE: When power is applied, unit(s) may alarm momentarily.**

*When any smoke alarm in an interconnected series triggers an alarm, its red LED will flash rapidly. The red LEDs will remain OFF on any remaining alarms in the series. This feature helps responders identify which unit(s) triggered the alarm.

Important Installation Parts
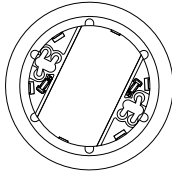
The Mounting Bracket : To remove the mounting bracket from the smoke alarm base, hold the smoke alarm base firmly and twist the mounting bracket off. The mounting bracket installs onto the junction box. It has a variety of screw slots to fit most boxes.
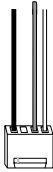
The Power Connector: The power connector plugs into a power input block on the smoke alarm. It supplies the unit with AC power.

•The black wire is "hot."

•The white wire is neutral.

•The orange wire is used for interconnect.

If you need to remove the power connector, insert a flat screwdriver blade between the power connector and the security tab inside the power input block. Gently pry back the tab and pull the connector free.

Optional Locking Features

The optional locking features are designed to prevent unauthorized removal of the battery or alarm. It is not necessary to activate the locks in single-family households where unauthorized battery or alarm removal is not a concern.

These smoke alarms have two separate locking features: one to lock the battery compartment, and the other to lock the smoke alarm to the mounting bracket. You can choose to use either feature independently, or use them both.

Tools you will need: • Needle-nose pliers or utility knife • Standard/Flathead screwdriver.

Both locking features use locking pins, which are molded into the mounting bracket. Using needle nose pliers or a utility knife, remove one or both pins from the mounting bracket, depending on how many locking features you want to use.
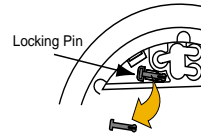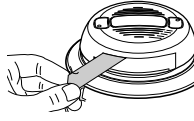
Locking Pin

IMPORTANT!
To permanently remove either lock insert a flathead screwdriver between the locking pin and the lock, and pry the pin out of the lock.

7

To Lock The Battery Compartment
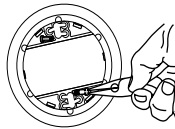
IMPORTANT!

Do not lock the battery compartment until you have activated the battery and tested the battery back-up.

1. Activate the battery back-up by removing the "Pull to Activate Battery Back-Up" tab.

2. Push and hold test button until the alarm sounds: 3 beeps, pause, 3 beeps, pause.
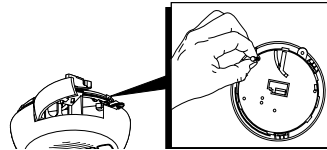
If the unit does not alarm during testing, DO NOT lock the battery compartment! Install a new battery and test again. If the smoke alarm still does not alarm, replace it immediately.

3. Using needle-nose pliers or a utility knife, detach one locking pin from the mounting bracket.

4. Push the locking pin through the black dot on the label on the back of the smoke alarm.

To Un-Lock The Battery Compartment

IMPORTANT!

Once the smoke alarm is installed, you must disconnect it from the AC power before unlocking the battery compartment.

⚠DANGER!

ELECTRICAL SHOCK HAZARD. Turn off the power to the area where the smoke alarm is installed before removing it from the mounting bracket. Failure to turn off the power first may result in serious electrical shock, injury or death.

⚠WARNING!

Always discharge the branch circuit before servicing an AC or AC/DC smoke alarm. First, turn off the AC power at the circuit breaker or fuse box. Next, remove the battery from smoke alarms with battery back-up. Finally, press and hold the test button for 5-10 seconds to discharge the branch circuit.

1. Remove the smoke alarm from the mounting bracket. If the unit is locked to the bracket, see the section "To deactivate the locking feature."

2. Disconnect the power connector by gently prying it away from the back of the smoke alarm.

3. Insert a flathead screwdriver under the head of the locking pin, and gently pry it out of the battery compartment lock. (If you plan to relock the battery compartment, save the locking pin.)
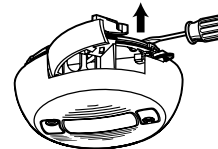
4. To relock the battery compartment, close the battery door and reinsert locking pin in lock.

5. Reconnect the power connector to the back of the smoke alarm, reattach the smoke alarm to the mounting bracket, and restore the power.
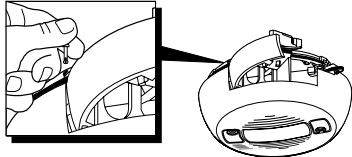
IMPORTANT!

When replacing the battery, always test the smoke alarm before relocking the battery compartment.

To Lock The Mounting Bracket:

1. Using needle-nose pliers, detach one locking pin from the mounting bracket.
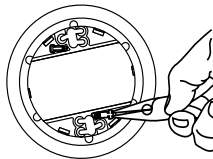
2. Insert the locking pin into the lock located on the pivoting hinge of the battery door.

3. When you attach the smoke alarm to the mounting bracket, the locking pin's head will fit into a notch on the bracket.

To Un-Lock The Mounting Bracket:

⚠DANGER!

ELECTRICAL SHOCK HAZARD. Turn off the power to the area where the smoke alarm is installed before removing it from the mounting bracket. Failure to turn off the power first may result in serious electrical shock, injury or death.

⚠WARNING!

Always discharge the branch circuit before servicing an AC or AC/DC smoke alarm. First, turn off the AC power at the circuit breaker or fuse box. Next, remove the battery from smoke alarms with battery back-up. Finally, press and hold the test button for 5-10 seconds to discharge the branch circuit.

1. Insert a flathead screwdriver between the mounting bracket pin and the mounting bracket.
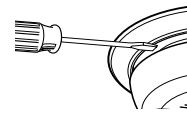
2. Pry the smoke alarm away from the bracket by turning both the screwdriver and the smoke alarm clockwise (right) at the same time.

9
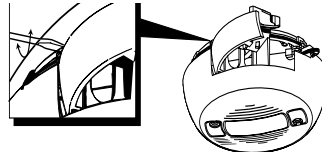
How To Install This Smoke Alarm

This unit is designed to be mounted on any standard wiring junction box up to a 4-inch diagonal size, on either the ceiling or wall. Read "Where to Install" and "Where Not To Install" smoke alarms before you begin installation. If a junction box is not already in place, install one using standard #12 or #14 gauge solid copper Appliance Wiring Material.

IMPORTANT!

Activate the battery back-up by removing the "Pull to Activate Battery Back-Up" tab. You do not need to open the battery compartment and reposition the battery during installation.
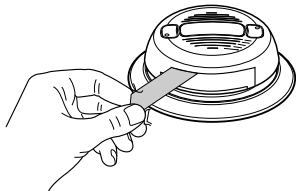
When the battery is activated, the red light will shine continuously for 5-10 seconds, then begin to flash about once a minute.

Test the battery back-up. Press and hold the test button on the cover until the alarm sounds.
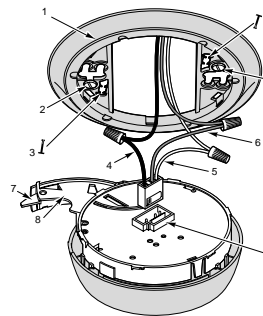
The Parts Of This Unit

1	Mounting bracket
2	Mounting slots and screws
3	Optional locking pins (break out of bracket)
4	Hot (black) AC wire
5	Neutral (white) AC wire
6	Interconnect wire
7	Latch to open battery compartment
8	Swing-out battery compartment
9	Quick-connect power connector

10

Installing a Single (Stand-Alone) Smoke Alarm

Tools you will need: Standard/Flathead screwdriver

⚠ DANGER!

ELECTRICAL SHOCK HAZARD. Turn off power to the area where you will install this unit at the circuit breaker or fuse box before beginning installation. Failure to turn off the power before installation may result in serious electrical shock, injury or death.

To install this unit, follow these steps:

1. Remove the mounting bracket from the base, and attach it to the junction box.

2. Using wire nuts, connect the power connector to the household wiring.

   - Connect the white wire on the power connector to the neutral wire in the junction box.

   - Connect the black wire on the power connector to the hot wire in the junction box.

   - **Tuck the orange wire inside the junction box. It is used for interconnect only.**

3. Plug the power connector into the back of the smoke alarm.

4. Position the base of the alarm over the mounting bracket and turn. The alarm can be positioned over the bracket every 60°. Turn the smoke alarm clockwise (right) until the unit is in place.

5. If you are only installing one unit, restore power to the junction box.

⚠ DANGER!

ELECTRICAL SHOCK HAZARD. Do not restore power until all smoke alarms are completely installed. Restoring power before installation is complete may result in serious electrical shock, injury or death.

6. Make sure the unit is receiving AC power. Under normal operation, the Green power indicator light will shine continuously.

7. If the Green power indicator light does not light, **TURN OFF POWER TO THE JUNCTION BOX** and recheck all connections. If all connections are correct and the Green power indicator still does not light when you restore the power, the unit should be replaced immediately.

IMPORTANT!

Cat. 4120SB Only: During installation, if you accidentally press the Silence button, the alarm will "chirp" once a minute for up to 15 minutes and the Test feature will be temporarily disabled. This is normal. The "chirping" will stop once the alarm returns to normal operation.

Interconnecting Multiple Smoke Alarms

Interconnected units can provide earlier warning of fire than stand-alone units, especially if a fire starts in a remote area of the dwelling. If any unit in the series senses smoke, all units will alarm. To determine which smoke alarm initiated an alarm, see table:

On Initiating Alarm(s)	Red LED(s) flashes(flash) rapidly
On All Other Alarms	Red LED is Off

All wiring must conform to all local electrical codes and Article 760 of the National Electrical Code (NFPA 70). Refer to NFPA 72, Chapter 2 and/or your local building code for further connection requirements.

⚠ WARNING!

AC and AC/DC smoke alarms can be interconnected. Under AC power, all units will alarm when one senses smoke. When power is interrupted, only the AC/DC units in the series will continue to send and receive signals. AC powered smoke alarms will not operate.

IMPORTANT!

Interconnect units within a single family residence only. Otherwise all households will experience unwanted alarms when you test any unit in the series.

Interconnected units will only work if they are wired to compatible units and all requirements are met. This unit is designed to be compatible with: *BRK Electronics*® Smoke Alarms 100S, 2002RAC, 4120B, 4120SB, 4919, 5919, 5919TH, 86RAC; *BRK Electronics*® Heat Alarm HD6135F; and *First Alert*® Smoke Alarms SA4120B, SA4121B, SA4919B, SA86B, SA100B.

Interconnected units must meet ALL of the following requirements:

- A maximum of 18 units total may be interconnected (Maximum of 12 smoke alarms).

- The same fuse or circuit breaker must power all interconnected units.

- The total length of wire interconnecting the units should be less than 1000 feet (300 meters). The interconnect wire should be #18 gauge or larger, rated at least 300V.

- If an interconnect wire is not already part of your household wiring, you will need to install one. This type of wire is commonly available at Hardware and Electrical Supply stores.

⚠ WARNING!

Failure to meet any of the above requirements could damage the units and cause them to malfunction, removing your protection.

Interconnecting Multiple Smoke Alarms
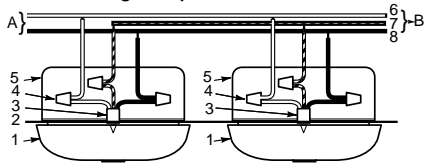
A	Unswitched 120V AC 60Hz source	4	Wire nut
B	To additional units Maximum = 18 (Max. 12 smoke alarms)	5	Junction box
1	Smoke alarm	6	Neutral (white) AC wire
2	Ceiling or wall	7	Interconnect wire
3	Power connector	8	Hot (black) AC wire

To install and interconnect multiple alarms:

1. Remove mounting bracket from the base. Position screw slots on mounting bracket over screws in the junction box. Tighten screws.

2. Strip off about 1/2″ (12 mm) of the plastic coating on the orange wire on the power connector.

3. Using wire nuts, connect the power connector to the household wiring.

    • Connect the white wire on the power connector to the neutral wire in the junction box.
    • Connect the black wire on the power connector to the hot wire in the junction box.
    • Connect the orange wire on the power connec-tor to the interconnect wire in the junction box.

Repeat for each unit you are interconnecting. Never connect the hot or neutral wires in the junction box to the orange interconnect wire.

4. Plug the power connector into the back of the smoke alarm.

5. Position the base of the alarm over the mounting bracket and turn. The alarm can be positioned over the bracket every 60°. Turn the unit clockwise (right) until the unit is in place.

⚠DANGER!

ELECTRICAL SHOCK HAZARD. Do not restore power until all smoke alarms are completely installed. Restoring power before installation is complete may result in serious electrical shock, injury or death.

6. Make sure each unit is receiving AC power. Under normal operation, the green power indicator light will shine continuously.

7. Test each smoke alarm. Press and hold the test button until the unit alarms.

When testing a series of interconnected units you must test each unit individually. Make sure all units alarm when each one is tested.

NOTE: When power is applied, unit(s) may alarm momentarily.

IMPORTANT!

If any unit in the series does not alarm, **TURN OFF POWER** and recheck connections. If it does not alarm when you restore power, replace it immediately.

13

IMPORTANT!

Cat. 4120SB Only: During installation, if you accidentally press the Silence button, the alarm will "chirp" once a minute for up to 15 minutes and the Test feature will be temporarily disabled. This is normal. The "chirping" will stop once the alarm returns to normal operation.

Testing and Maintenance
Weekly Testing

⚠ WARNING!

NEVER use an open flame of any kind to test this unit. You might accidentally damage or set fire to the unit or to your home. The built-in test switch accurately tests the unit's operation as required by Underwriters Laboratories, Inc. (UL). If you choose to use an aerosol smoke product to test the smoke alarm, be certain to use one that has been Listed to Underwriters Laboratories, Inc. Safety Standards, and use it only as directed. Use of non-UL Listed products or improper use of UL Listed products may affect the smoke alarm's sensitivity.

It is important to test this unit every week to make sure it is working properly. Using the test button is the recommended way to test this smoke alarm. Press and hold the test button on the cover of the unit until the alarm sounds (the unit may continue to alarm for a few seconds after you release the button). If it does not alarm, make sure the unit is receiving power and test it again. If it still does not alarm, replace it immediately. **During testing, you will hear a loud, repeating horn pattern: 3 beeps, pause, 3 beeps, pause.**

When testing a series of interconnected units you must test each unit individually. Make sure all units alarm when each one is tested.

Regular Maintenance

This unit has been designed to be as maintenance-free as possible, but there are a few simple things you must do to keep it working properly:

- Test it at least once a week.
- Gently vacuum off any dust on the cover at least once a month using your vacuum's soft brush attachment. Test the unit after vacuuming the cover.
- Never use water, cleaners or solvents since they may damage the unit.
- Relocate the unit if it sounds frequent unwanted alarms. See "Where Not To Install Smoke Alarms" for details.
- When the battery back-up becomes weak, the smoke alarm will "chirp" about once a minute (the low battery warning). This warning should last 7 days, but you should replace the battery immediately to continue your protection.

Choosing a replacement battery:
Your smoke alarm's battery back-up requires one standard 9V battery. The following batteries are acceptable as replacements. This list supplements the list on the smoke alarm battery door: Eveready #216, #522 (Energizer), #1222; Duracell #MN1604, MX1604 (Ultra); Gold Peak #1604P, #1604S; Rayovac 1604, D1604. You may also use a Lithium battery like the Ultralife U9VL-J for longer service life between battery changes. These batteries are available at many local retail stores.

IMPORTANT!

Most carbon zinc batteries have an average service life of 1 year; most alkaline batteries have an average service life of 1-2 years; most Lithium batteries have an average service life of 6-10 years. Actual service life depends on the smoke alarm and the environment in which it is installed. All the batteries specified above are acceptable replacement batteries for this unit. Regardless of the manufacturer's suggested battery life, you MUST replace the battery immediately once the unit starts "chirping" (the "low battery warning").

If This Smoke Alarm Sounds

If the alarm sounds and you are not testing it, it is warning you of a potentially dangerous situation that requires your immediate attention.

⚠WARNING!

NEVER ignore any alarm. Ignoring the alarm may result in injury or death. If the unit alarms and you are not absolutely certain of the source of the smoke, get everyone out of the house immediately.

Responding To An Alarm

If the unit alarms and you are not absolutely certain of the source of the smoke, get everyone out of the dwelling immediately. Stay calm and follow your family escape plan. Stay as low to the ground as possible, and cover your mouth with a damp cloth. Never open a door before testing to see if it is hot. Call the Fire Department from outside, and give them your address then name. Read "What To Do In Case Of Fire" at the end of this manual for more information.

If the unit alarms and you are certain that the source of smoke is not a fire—cooking smoke or an extremely dusty furnace, for example—open a nearby window or door and fan the smoke away from the unit (Model 4120SB only: use the Silence Feature to silence the alarm). This will silence the alarm, and once the smoke clears the unit will reset itself automatically.

NOTE:

When an interconnected system of AC powered units is in alarm, the alarm indicator light on the unit(s) that initiated the alarm will blink rapidly. It will remain OFF on any remaining units.

⚠CAUTION!

Never disconnect the AC power to quiet an unwanted alarm. Disconnecting the power disables the alarm so it cannot sense smoke. This will remove your protection.

⚠DANGER!

ELECTRICAL SHOCK HAZARD: Attempting to disconnect the power connector from the unit when the power is on may result in electrical shock, serious injury or death.

15

Cat. 4120SB Only—
Using The Silence Feature

The silence feature on this unit can temporarily quiet an unwanted alarm for several minutes.

⚠ CAUTION!

The silence feature does not disable the unit—it makes it temporarily less sensitive to smoke. For your safety, if smoke around the unit is dense enough to suggest a potentially dangerous situation, the unit will stay in alarm or may re-alarm quickly. If you do not know the source of the smoke, do not assume it is an unwanted alarm. Not responding to a fire can result in property loss, injury, or death.

IMPORTANT!

While the unit is in the "silence mode," the test button will not operate. The alarm cannot be tested while in the silence mode.

**To silence smoke alarms
in an interconnected series:**

1. To silence multiple alarms in an interconnected series, you must press the silence button on the unit(s) that triggered the alarm.

NOTE:
The red light under the silence button on the initiating alarm will flash rapidly. The red light will be off on all other smoke alarms.

2. Once you activate the silence feature, you will hear a reminder "chirp" on the initiating alarm about once a minute (for up to 15 minutes).

3. While the units are in the "silence mode," the test buttons will not operate. The alarms cannot be tested while in the silence mode.

4. The "chirping" on the initiating alarm will stop once the unit returns to normal operation.

IMPORTANT!

The silence feature on these units can temporarily quiet an unwanted alarm fo several minutes. To use this feature, press the "Push to Silence" button on the cover. Once you activate it, you will hear a reminder "chirp" about once a minute (for up to 15 minutes) and the Test feature is temporarily disabled. The "chirping" will stop once the unit returns to normal operation. **If the unit will not silence and no heavy smoke is present, or if it stays in silence mode continuously, it should be replaced immediately**.

Protecting Your Family From Fire

Putting up smoke alarms is just one step in protecting your family from fires. You must also reduce the chance a fire will start in your dwelling, and have a plan for escaping safely if one does. To have a good fire safety program, you must:

Develop a family escape plan and practice it with everyone in your family, including small children. 1) Draw a floor plan of your residence and identify at least two exits from each room and one way to get out of each bedroom without opening the door; 2) Decide on a meeting place a safe distance from residence, and make sure everyone knows to wait there; 3) Know where to go to call the Fire Department from outside the residence; 4) Make sure everyone—including all children—know what the alarm signal means and how to react to it. Teach them they must be prepared to leave the residence by themselves if needed; 5) Hold fire drills every 6 months and practice how to escape safely. Show children how to check if doors are hot before opening them. Show them how to use an alternate exit if a door is hot and shouldn't be opened. Teach them to stay close to the floor and crawl if necessary.

Install at least one smoke alarm on every level of your dwelling and/or dwelling unit, in every bedroom, and in every sleeping area. Keep alarms clean, and test them weekly. Replace smoke alarms immediately if they are not working properly. Smoke alarms that do not work cannot alert you to a fire.

Keep at least one working fire extinguisher on every floor, and an additional one in the kitchen. Have fire escape ladders or other reliable means of escape from an upper floor in case stairs are blocked.

Follow safety rules, and prevent hazardous situations: 1) Use smoking materials properly. Never smoke in bed. 2) Keep matches or lighters away from children; 3) Store flammable materials in proper containers; 4) Keep electrical appliances in good condition and don't overload electrical circuits; 5) Keep stoves, barbecue grills, fireplaces and chimneys free from grease and debris; 6) Never leave anything cooking on the stove unattended; 7) Keep portable heaters and open flames, like candles, away from flammable materials; 8) Don't allow rubbish to accumulate.

What To Do
In Case Of Fire

- Don't panic; stay calm. Follow your escape plan. Your safe escape may depend on thinking clearly and remembering what you have practiced.

- Get out of the dwelling as quickly as possible. Don't stop to get dressed or collect anything.

- Feel doors with the back of your hand before opening them to see if they are hot. If a door is cool, open it slowly. Don't open a hot door—use an alternate escape route.

- Cover your nose and mouth with a cloth (preferably wet). Take short, shallow breaths.

- Keep doors and windows closed, unless you need to escape through them.

- Meet at your planned meeting place outside your home, and do a head count to make sure everyone got out safely.

- Call the Fire Department as soon as possible from outside. Give your address, then your name.

- Never go back inside a burning building for any reason.

Contact your Fire Department for more ideas on making your home safer, and on creating your own family escape plan.

If Your Smoke Alarm
Needs Service

⚠ CAUTION!

Always discharge the branch circuit before servicing an AC or AC/DC smoke alarm. First, turn off the AC power at the circuit breaker or fuse box. Next, remove the battery from smoke alarms with battery back-up. Finally, press and hold the test button for 5-10 seconds to discharge the branch circuit.

If this unit is not working properly, there are a few simple things you should check before returning or replacing the unit.

- Make sure it is clean as described in "Regular Maintenance." A build-up of dirt, dust or grease can affect the units performance.

- Make sure the unit is installed in a proper location. If you experience frequent unwanted alarms, try relocating it. See "Where To Install Smoke Alarms" for details.

- Make sure it is receiving AC power from the household current. Check that the back-up battery is fresh and still providing back-up protection.

If the unit is still not operating properly, and it is still under warranty, send it, shipping prepaid to: BRK Brands, Inc., Attn: Consumer Affairs, 3920 Enterprise Court, Aurora, IL 60504-8132. Enclose a note in the package describing what's wrong with the unit. See warranty information at the end of this manual.

⚠ CAUTION!

Do not try to fix the unit yourself—this will void your warranty!

Troubleshooting

⚠ DANGER!

ELECTRICAL SHOCK HAZARD. Always TURN OFF POWER before checking connections or disconnecting any smoke alarm!

Problem...	You should...
Smoke alarm sounds when no smoke is visible.	• Clean the smoke alarm. (See "Regular Maintenance.") • Check the location of the alarm. (See "Where To Install Smoke Alarms.") • Check if you accidentally pushed the test button.
You experience frequent unwanted alarms (like in response to cooking smoke).	• Check the location of the smoke alarm. The smoke alarm may be too close to a kitchen, cooking appliance, or steamy bathroom. (See "Where To Install Smoke Alarms.")
Smoke alarm chirps intermittently.	• Check all AC connections for proper installation. (See "How to Install This Smoke Alarm" and "Weekly Testing"). • Check that the battery is installed correctly and is working properly. (See "How to Install This Smoke Alarm" and "Weekly Testing.") • Check the location of the alarm.(See "Where To Install Smoke Alarms.") • Clean the smoke alarm. (See "Regular Maintenance.") • You may have accidentally pressed the Silence button.
Alarm horn doesn't sound during testing. Interconnected units do not alarm during testing.	• Check that the batteries are installed correctly and are working properly. (See "How to Install This Smoke Alarm" and "Weekly Testing.") • Check all AC connections for proper installation. (See "How to Install This Smoke Alarm" and "Weekly Testing"). • You may have accidentally pressed the Silence button.
During installation the alarm "chirps" once a minute	• You may have accidentally pressed the Silence button. The smoke alarm should return to normal operation after 15 minutes. If the chirping persists, try installing a new 9V battery.

If you still have questions after reading this manual, please call Consumer Affairs, Monday-Friday, 7:30 am-5pm (Central Time): 1-800-323-9005.

Special Compliance Considerations

⚠ WARNING!

This unit alone is not a suitable substitute for complete fire detection systems in places housing many people—like apartment buildings, condominiums, hotels, motels, dormitories, hospitals, long-term health care facilities, nursing homes, day care facilities, or group homes of any kind—even if they were once single-family homes. It is not a suitable substitute for complete fire detection systems in warehouses, industrial facilities, commercial buildings, and special-purpose non-residential buildings which require special fire detection and alarm systems. Depending on the building codes in your area, this unit may be used to provide additional protection in these facilities.

The following information applies to all four types of buildings listed below:

In new construction, most building codes require the use of AC or AC/DC powered smoke alarms only. AC, AC/DC, or DC powered smoke alarms can be used in existing construction as specified by local building codes. Refer to NFPA 101 (Life Safety Code) or NFPA 72 (National Fire Alarm Code), local building codes, or consult your Fire Department for detailed fire protection requirements in buildings not defined as "households."

Single-Family Residence:
Single family dwelling, townhouse.

Multi-Family or Mixed Occupant Residence:
Apartment building, condominium. This type of unit is suitable for use in individual apartments or condos, provided a primary fire detection system already exists to meet fire detection requirements in common areas like lobbies, hallways, or porches. Using this type of unit in common areas may not provide sufficient warning to all residents or meet local fire protection ordinances/regulations.

Institutions:
Hospitals, day care facilities, long-term health care facilities. This type of unit is suitable for use in individual patient sleeping/resident rooms, provided a primary fire detection system already exists to meet fire detection requirements in common areas like lobbies, hallways, or porches. Using this type of unit in common areas may not provide sufficient warning to all residents or meet local fire protection ordinances/regulations.

Hotels/Motels:
Also boarding houses and dormitories. This type of unit is suitable for use inside individual sleeping/resident rooms, provided a primary fire detection system already exists to meet fire detection requirements in common areas like lobbies, hallways, or porches. Using this type of unit in common areas may not provide sufficient warning to all residents or meet local fire protection ordinances/regulations.

Limitations Of Smoke Alarms

Smoke alarms have played a key role in reducing deaths resulting from home fires worldwide. However, like any warning device, smoke alarms can only work if they are properly located, installed, and maintained, and if smoke reaches them. They are not foolproof.

Smoke alarms cannot work without power. Battery operated units cannot work if the batteries are missing, disconnected or dead, if the wrong type of batteries are used, or if the batteries are not installed correctly. AC units cannot work if the AC power is cut off for any reason (open fuse or circuit breaker, failure along a power line or at a power station, electrical fire that burns the electrical wires, etc.). If you are concerned about the limitations of battery or AC power, install both types of units.

Smoke alarms cannot detect fires if the smoke does not reach them. Smoke from fires in chimneys or walls, on roofs, or on the other side of closed doors may not reach the sensing chamber and set off the alarm. That is why one unit should be installed inside each bedroom or sleeping area—especially if bedroom or sleeping area doors are closed at night—and in the hallway between them.

Smoke alarms may not detect fire on another floor or area of the dwelling. For example, a stand-alone unit on the second floor may not detect smoke from a basement fire until the fire spreads. This may not give you enough time to escape safely. That is why recommended minimum protection is at least one unit in every sleeping area, and every bedroom on every level of your dwelling. Even with a unit on every floor, stand-alone units may not provide as much protection as interconnected units, especially if the fire starts in a remote area. Some safety experts recommend installing interconnected AC powered units with battery back-up (see "Other Features Of Smoke Alarms") or professional fire detection systems, so if one unit senses smoke, all units alarm. Interconnected units may provide earlier warning than stand-alone units since all units alarm when one detects smoke.

Smoke alarms may not be heard. Though the alarm horn in this unit meets or exceeds current UL standards, it may not be heard if: 1) the unit is located outside a closed or partially closed door, 2) residents recently consumed alcohol or drugs, 3) the alarm is drowned out by noise from stereo, TV, traffic, air conditioner or other appliances, 4) residents are hearing impaired or sound sleepers.

Special purpose units, like those with visual and audible alarms, should be installed for hearing impaired residents.

Smoke alarms may not have time to alarm before the fire itself causes damage, injury, or death, since smoke from some fires may not reach the unit immediately. Examples of this include persons smoking in bed, children playing with matches, or fires caused by violent explosions resulting from escaping gas.

Smoke alarms are not foolproof. Like any electronic device, smoke alarms are made of components that can wear out or fail at any time. You must test the unit weekly to ensure your continued protection. Smoke alarms cannot prevent or extinguish fires. They are not a substitute for property or life insurance.

Smoke alarms have a limited life. The unit should be replaced immediately if it is not operating properly. You should always replace a smoke alarm after 10 years from date of manufacture. See back of smoke alarm for manufacture date.

21

10-YEAR LIMITED WARRANTY

Coverage: BRK Brands, Inc. warrants its enclosed smoke alarm to be free from defects in materials and workmanship under normal use for a period of ten years from the date of purchase. During the first year after the date of purchase, BRK Brands, Inc. will replace any defective smoke alarm without charge. During the next nine years, BRK Brands, Inc. will replace any defective smoke alarm at a charge to you not to exceed BRK Brands, Inc.'s cost. This is your exclusive warranty.

This warranty is valid for the original retail purchaser from the date of initial retail purchase and is not transferable. Keep the original sales receipt. Proof of purchase is required to obtain warranty performance. Dealers, service centers, or retail stores selling this product do not have the right to alter, modify or any way change the terms and conditions of this warranty. In new construction, if your smoke alarms were installed by a contractor, this warranty is valid for the homeowner at the time of installation from the date of original installation and is not transferable.

This warranty does not cover normal wear of parts or damage resulting from any of the following: negligent use or misuse of the product, use on improper voltage, current or battery, use contrary to the operating instructions, disassembly, repair or alteration by anyone other than BRK Brands, Inc. Further, the warranty does not cover acts of God, such as fire, flood, hurricanes and tornadoes.

BRK Brands, Inc. shall not be liable for any incidental or consequential damages caused by the breach of any express or implied warranty. Except to the extent prohibited by applicable law, any implied warranty of merchantability or fitness for a particular purpose is limited in duration for 10 years. Some states, provinces, or jurisdictions do not allow the exclusion or limitation of incidental or consequential damages or limitations on how long an implied warranty lasts, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights that vary from state to state, or province to province.

Service: Units under warranty and in need of repair should be returned, shipping prepaid, to BRK Brands, Inc., Attn.: Consumer Affairs, 3920 Enterprise Court, Aurora, IL 60504-8132.

Warranty: BRK Brands, Inc. makes no warranty, express or implied, written or oral, including that of merchantability or fitness for any particular purpose, with respect to the battery.