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SIGNALING



**MODEL USI-2430**

**HEAT ALARM**

**120 VAC WITH**

**9V BATTERY BACKUP**

**USI ELECTRIC, INC.**

# OWNER'S MANUAL

PLEASE READ AND SAVE!

Installer: Please leave this manual with the product.

## WHAT YOU SHOULD KNOW ABOUT HEAT ALARMS

### **WARNING**

Heat alarms are not life safety devices and are not designed to detect smoke or fire. They are intended to detect temperatures of 135°F or more and to provide an additional source of information that is supplemental to smoke alarms to increase the probability that an early warning will be provided to increase chances of life and property safety.

### FEATURES

- This heat alarm is powered by 120 VAC and a 9 Volt battery backup source. AC/DC heat alarms offer added protection in the event of a power failure or a drained battery.
- This alarm may be interconnected with a total of not more than 24 interconnected devices, i.e., as many as 12 other USI ELECTRIC or UNIVERSAL model smoke alarms or combination smoke and carbon monoxide (CO) or smoke and carbon monoxide / natural gas alarms; 5 other initiating alarms which may be a combination of USI ELECTRIC or UNIVERSAL CO Alarms and Heat Alarms; and six other non-initiating devices such as USI ELECTRIC Relay Modules
- This heat alarm will not attach to the mounting ring if a battery is not in the battery chamber.
- This heat alarm will sound a short beep about once a minute if the battery is weak or improperly connected.
- The green LED indicates that the heat alarm is receiving AC power and is working under normal operation.
- A loud 85 decibels at 10 feet alarm horn will sound to alert you of an emergency.
- The test button checks heat alarm operation.

### SPECIFICATIONS

| Model Number                           | USI-2430  |
|--|---|
| Electrical Rating                      | 120 VAC, 60 Hz, 50 mA maximum, 9 Volt battery backup  |
| Interconnect                           | 24 units maximum  |
| Interconnect with                      | Up to 5 USI heat alarms or CO alarms and up to 12 USI smoke alarms and 6 other non-initiating devices (Relay Modules) |
| UL Temperature Rating                  | 135°F (57°C) fixed temperature  |
| UL Maximum Ambient Temperature at Unit | 100°F (38°C)  |
| Operating Temperature                  | -10°F to 158°F (-23°C to 70°C)  |
| UL Recommended Coverage                | 2500 square feet (see Note A:)  |
| UL Recommended Spacing                 | 50 feet   |
| Maximum Distance from Wall             | 25 feet (see Note B:)   |

NOTE A: Maximum alarm coverage has been determined by UL to provide detection time equal to sprinkler devices spaced at 10 foot intervals (100 square foot area) on a smooth ceiling 15 ft. x 8 in. high. Higher ceilings can adversely affect detection time. In some instances, earlier detection may be obtained by reducing the spacing between detectors. See the latest edition of NFPA 72, National Fire Alarm Code.

NOTE B: Maximum distance is from any wall partition or ceiling projection extending down more than 12 in.

## IMPORTANT SAFETY INFORMATION

PLEASE READ AND SAVE THESE INSTRUCTIONS

### **WARNING**

This heat alarm requires constant 120 Volt AC power *AND* a working 9 Volt battery to operate properly. This heat alarm *WILL NOT* work if AC power is not connected or has failed or has been interrupted for any reason *AND* the batteries removed, drained or improperly connected. *DO NOT* use any other kind of battery except as specified in this manual. *DO NOT* connect this heat alarm to any other type of smoke alarm or heat alarm or auxiliary device, except those listed in this manual.

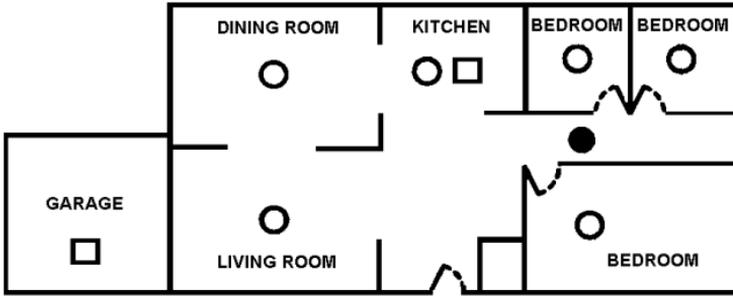
- This heat alarm should be installed only by a licensed, qualified electrician. Observe and follow all local and national electrical building codes for installation.
- Heat alarms should be interconnected with smoke alarms in order to provide early warning of heat, smoke or fire. In addition, smoke alarms should be installed in every bedroom and on every level of the home.
- Heat alarms interconnected with smoke alarms may not alert every household member every time. The alarm horn of the heat alarm and smoke alarm is loud in order to alert individuals of a potential danger. However, there may be limiting circumstances where a household member may not hear the alarm (i.e. outdoor or indoor noise, sound sleepers, drug or alcohol use, the hearing impaired, etc.). If you suspect that your heat alarm or smoke alarm may not alert a household member, install and maintain specialty smoke alarms. Household members must hear the alarm's warning sound and quickly respond to it to reduce the risk of damage, injury or death that may result from fire. This heat alarm cannot be interconnected with specialty smoke alarms unless specified in this manual.
- Heat alarms should be used to provide an added source of information and supplement smoke alarm installation. Some fires are slow, smoldering, low heat-producing or are in a different room than the heat alarm, or the heat from the fire may bypass the alarm. This heat alarm will not always detect this type of fire.
- The push-to-test button accurately tests all heat alarm functions. For temperatures that are below minus 10°F, use a handheld hair dryer and blow hot air (one foot away) into the heat alarm to test. *DO NOT* use any other test method. Test heat alarm weekly to ensure proper operation.
- This heat alarm is designed to be used inside a single family household only. In multi-family buildings, each individual living unit should have its own heat alarm. Do not install in non-residential buildings or places which house many people like hotels, motels, dormitories, hospitals, nursing homes or group homes of any kind. This heat alarm is not a substitute for a complete alarm system.
- Interconnected heat alarms and smoke alarms offer maximum protection. The National Fire Protection Agency (NFPA) recommends interconnecting heat alarms and smoke alarms so that when one unit senses heat, smoke or fire and sounds its alarm, all others will sound as well. Do not interconnect heat alarms or smoke alarms from one individual family living unit to another. Do not connect this heat alarm to any other type of alarm (except those stated in this manual) or auxiliary device.
- This heat alarm can only sound its alarm when it detects temperatures of 135°F (57°C) or greater. Heat alarms do not sense smoke, fire or gas. In some fires, hazardous levels of toxic chemicals and smoke can build up before a heat alarm will operate. Temperatures may not reach 135° F (57°C) to activate the heat alarm quickly enough to ensure safe escape.
- Heat alarms have limitations. This heat alarm is not foolproof and is not warranted to protect lives or property. Heat alarms are not a substitute for insurance. Homeowners and renters should insure their lives and property. In addition, it is possible for the heat alarm to fail at any time.

### **HEAT ALARM PLACEMENT**

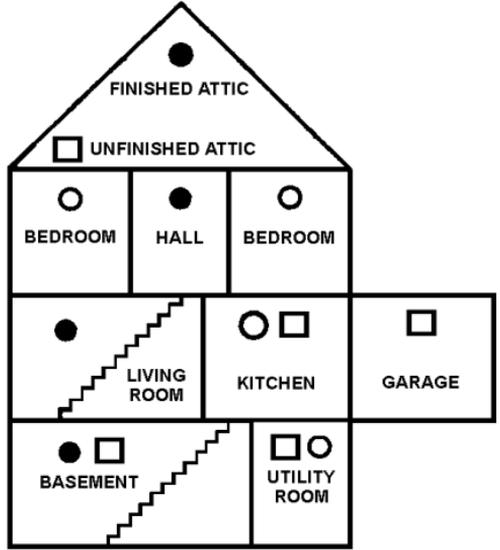
Heat alarms give an audible warning when the temperature at the alarm reaches 135°F (57°C) or greater. Heat alarms are ideal for kitchens, garages, basements, boiler rooms, attics and other areas where there are normally high levels of fumes, smoke or dust which are also areas where smoke alarms should not be installed due to risk of false nuisance alarms.

**EXISTING HOMES**

**SINGLE STORY RESIDENCE / APARTMENT / MOBILE HOME**



**TWO STORY RESIDENCE**

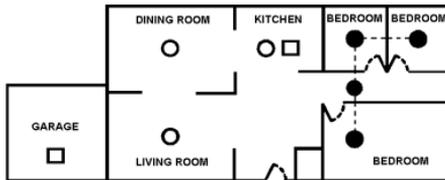


**KEY:**

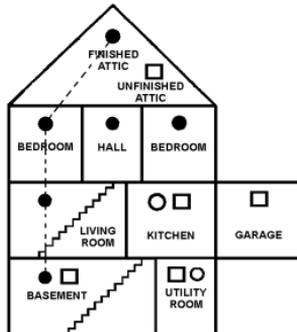
- NFPA minimum REQUIRED smoke alarm locations
- NFPA recommended additional smoke alarm locations
- Recommended heat alarm locations

**NEW CONSTRUCTION HOMES**

**SINGLE STORY RESIDENCE / APARTMENT / MOBILE HOME**

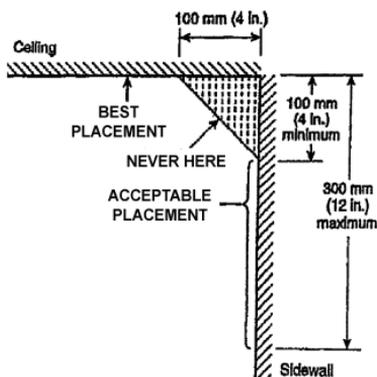


**TWO STORY RESIDENCE**



**KEY:**

- NFPA minimum REQUIRED smoke alarm locations
- NFPA recommended additional smoke alarm locations
- Recommended heat alarm locations



## **HEAT ALARM LOCATIONS**

Install a heat alarm as close to the center of the ceiling as possible. If the center is not practical, mount the heat alarm no closer than 4 inches from a wall or corner.

If the ceiling is not practical or the mounting surface becomes considerably warmer or cooler than the room, such as a poorly insulated ceiling, below an unfinished attic or an exterior wall (if local codes allow), install the heat alarm on inside walls with the top of the alarm between 4 and 12 inches from the ceiling/wall intersections.

Install heat alarms on peaked cathedral or gabled ceilings 3 feet from the highest point (measured horizontally).

In rooms with open joists or beams, all ceiling mounted heat alarms should be located on the bottom of such joists or beams and not up in joist channels.

Heat alarms installed on an open-joisted ceiling shall have their smooth ceiling spacing reduced to no more than half of the listed spacing when measured at right angles to a solid joist.

### **DO NOT INSTALL HEAT ALARMS**

- In areas with high humidity, like bathrooms/shower rooms or areas near dishwashers or washing machines. Install at least 10 feet (3m) away from these areas if possible.
- Near air returns or heating and cooling supply vents, fans, decorative objects, window molding, etc. that may prevent heat from entering the unit thus interrupting its alarms.
- In an area where temperature may fall below  $-10^{\circ}\text{F}$  ( $-23^{\circ}\text{C}$ ) or rise above  $100^{\circ}\text{F}$  ( $38^{\circ}\text{C}$ ).
- Near fluorescent lights. Electrical "noise" and flickering may affect the alarm's operation.

### **MOBILE HOME INSTALLATION**

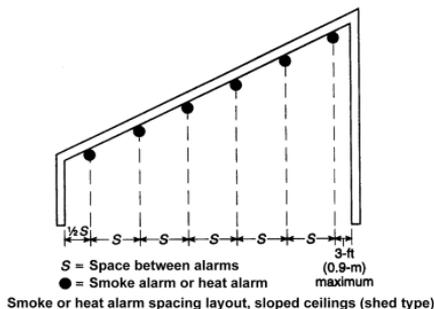
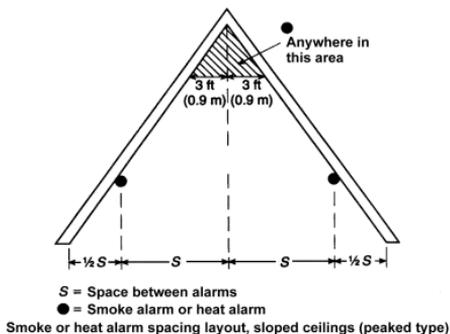
For mobile homes built after 1978, install heat alarms as directed above. For mobile homes built before 1978, install heat alarms on inside wall between 4 and 12 inches from the ceiling. Older mobile homes have little or no insulation in the ceiling which may affect the heat alarm's ability to detect heat properly. This is especially important if the ceiling is unusually hot or cold.

### Existing Homes:

The NFPA requires a smoke alarm on every level and outside each sleeping area in existing construction. An existing household with one level and one sleeping area is required to have one smoke alarm.

### New Construction Homes:

The NFPA requires AC-powered, interconnected smoke alarms to be installed inside each bedroom, outside each bedroom area, and on every level of the home. They also require a minimum of two AC-powered, interconnected smoke alarms in any new construction home.



Alarms shall first be spaced and located within 3 ft. (0.9m) of the peak or high side of the ceiling, measured horizontally. The number and spacing of additional alarms, if any, shall be based on the horizontal projection of the ceiling.



## INSTALLATION

**Installation of this unit must conform to the electrical codes in your area; Article 760 of the National Electrical Code, 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.**

**This unit must be powered by a 24-hour, 120V AC 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.**

**IMPORTANT: Do not subject this alarm to megger, high voltage or high-pot tests. Remove the heat alarm(s) before high-potting tests occur on the circuit or system. (Ref. Section 550-17 National Electric Code, 2002 Edition).**



## 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.**

**TAMPER LOCKING PIN:** To make your heat alarm somewhat tamper resistant, a locking pin has been provided. Using this pin will deter children and others from removing the alarm from the mounting ring. To use the pin, insert it into the hole in the side of the alarm after it has been installed on the mounting ring. Note that the tamper pin will have to be removed in order to change the battery, which can be done easily with a pair of long nose pliers. Using the long nose pliers, pull the pin out of the hole. It is now possible to remove the heat alarm from the mounting ring.

1. Turn the heat alarm counterclockwise to remove it from the mounting ring. NOTE: The heat alarm is sealed and the cover is not removable. Your heat alarm is also equipped with a safety device which prevents mounting unless a battery is installed. If your heat alarm will not lock onto the mounting ring, check to make sure a battery is installed.

2. Wiring Instructions:

- a. The appropriate power supply is 120 Volt single phase power supplied from a non-switchable circuit NOT protected by a ground fault circuit interrupter.
- b. Turn off main power to the circuit before wiring the heat alarm.
- c. There are three pigtail leads (black, white and yellow) coming from the AC QUICK CONNECTOR. The proper wire connection is as follows:

**WIRES FROM QUICK CONNECTOR**

BLACK  
WHITE  
YELLOW

**CONNECT TO**

"HOT" side of AC line  
"NEUTRAL" side of AC line  
Interconnect wires of other units

**CAUTION!**

*For units that are used as single heat alarms, do not connect the yellow wire to anything. Insulate this wire (tape it) in place to make certain the yellow wire cannot contact any metal parts.*

***INTERCONNECTION & COMPATIBILITY: Interconnected alarms can provide earlier warning of fire than stand-alone alarms, especially if a fire starts in a remote area of the dwelling. When alarms are interconnected, all alarms will sound when one alarm first goes into alarm. This alarm may be interconnected with a total of not more than 24 interconnected devices, i.e., as many as 11 other USI ELECTRIC or UNIVERSAL model smoke alarms or combination smoke and carbon monoxide (CO) or smoke and carbon monoxide / natural gas alarms; 6 other initiating alarms which may be a combination of USI ELECTRIC or UNIVERSAL CO Alarms and Heat Alarms; and six other non-initiating devices such as USI ELECTRIC Relay Modules.***

***This alarm can be interconnected with the following models: 2995, 5304, MI100, MI106, MDS211, MDS201, 2985, 5303, MI200, MI210, MDS101, MDS107, 3885, 3895, MP118, MP117, 3303, 3304, MP202, MP212, MDSCN111, MDSCN103, MICN109, MICN102, MCN105, MCN108, SS-785, SS-790, SS-795, SS-2795, SS-2790, SS-2785, SS-2895, HD-130, USI-1103, USI-1203, USI-1204, USI-1208 (Part #USI-1209), USI-1213, USI-2430, USI-3204, USI-5204, USI-5208, USI-5213, USI-7385, USI-7390, USI-7485, USI-7490, CD-9385, CD-9390, CD-9485, CD-9490, CD-9795, USI-7795 AND USI-960, RM-100 Relay.***

***When any one of these interconnected models goes into alarm, it will trigger the corresponding alarm within the interconnected system with respect to their sensing capabilities. Natural gas detection is only present in models MDSCN111, MSDCN103, MICN109, MICN102, MCN108 and MCN105; therefore, a natural gas alarm will NOT trigger the alarm of non-natural gas sensing models within an interconnected system.***

***Interconnected CO alarms or CO alarm circuit of combination smoke and CO and Natural Gas alarms will only respond if a CO alarm / event initiates the alarm. All other alarms remain silent.***

**Interconnected combination Natural Gas Alarms will only respond if a natural gas event initiated the alarm. All other alarms remain silent.**

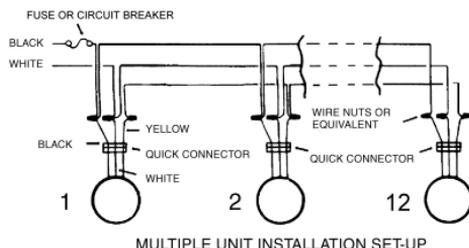
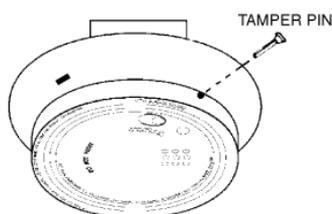
**Interconnected smoke alarms, heat alarms and relay modules will only respond if a smoke alarm / event or heat alarm / event initiates the alarm. All CO and Natural Gas alarms remain silent.**

**Note that alarms without battery backup will not respond during an AC power failure.**

**NOTE: Relay Modules/USI-960 will not respond if a CO or Natural Gas alarm / event initiates the alarm.**

**The yellow wire is used only for multiple station operation with USI Models only. Connecting this yellow wire to any other circuits may result in damage. When heat alarms are interconnected, all units must be powered from a single AC branch circuit. If local codes do not permit be sure the neutral wire is common to both phases. The maximum wire run distance between the first and last heat alarm in an interconnected system is 1,000 feet. NOTE: Use standard household wire (18 gauge or larger, rated at least 300V, as required by local codes) available at all electrical supply/hardware stores.**

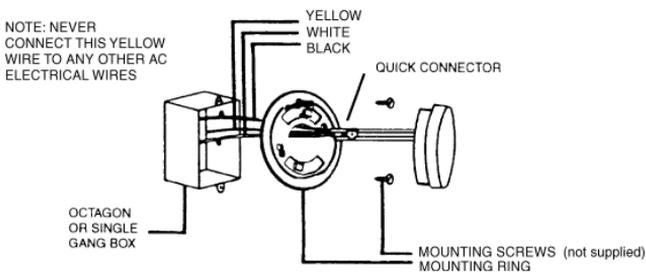
The wiring to be used shall be in accordance with the provisions of Articles 210 and 300.3(B) of the National Electrical Code, ANSI/NFPA 70. In addition, the resistance of the interconnecting wiring shall be a maximum of 10 Ohms.



### **CAUTION!**

**Early warning fire 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 of, but outside of, the bedrooms) and heat or smoke alarms in living rooms, dining rooms, kitchens, hallways, attics, furnace rooms, closets, utility storage rooms, basements and attached garages. Test the heat or smoke alarm weekly to assure proper operation.**

3. Attach the mounting ring to the electrical junction box.
4. To activate 9 volt battery and heat alarm, pull and remove the thin colored plastic tab at battery door hinge. Discard plastic tab.
5. Plug the AC QUICK CONNECTORS together. Push and turn the heat alarm clockwise onto the mounting ring.
6. See "TAMPER LOCKING PIN."
7. Turn on AC power and check the LED's for proper operation. The green LED lights to indicate AC power. The red LED will flash every 40-60 seconds to indicate proper operation.



## OPERATION, TESTING & MAINTENANCE

**OPERATION:** The heat alarm is operating once the power is connected and turned on (the battery must also be installed). When air temperature at or above 135°F (57°C) is sensed, the unit sounds a loud alarm which continues until the air temperature drops below 135°F.

This alarm incorporates the internationally recognized horn signal for evacuation. During alarm mode, the horn produces three short beeps followed by a two second pause and then repeats.

**STANDBY CONDITION:** The red LED flashes once every 40-60 seconds to indicate the unit is properly functioning.

**LOCAL ALARM CONDITION:** The red LED flashes rapidly and the unit emits a loud, pulsating alarm sound.

**REMOTE ALARM CONDITION:** The red LED is off and the unit emits a loud, pulsating alarm.

**GREEN LED:** The green LED is on whenever AC power is turned on.

**TESTING:** Test by pushing the test button on the heat alarm cover until the alarm sounds, then release. The alarm sounds if all electronic circuitry, horn and battery are working. If no alarm sounds, the unit may have a defective battery or other failure.

### **⚠️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).*

### **⚠️WARNING!**

#### **BACKUP BATTERY REPLACEMENT**

*Disconnect AC power before changing battery. Shock hazard exists if AC power is miswired.*

The heat alarm uses a 9 Volt battery. The battery should last for at least one year under normal operating conditions. The heat alarm has a low battery indicator, an audible "beep." It will operate at 30-40 second intervals for a minimum of 7 days. When this indication occurs, replace the battery with an Alkaline type (Eveready Energizer #522, Duracell #MN1604), Carbon-Zinc type (Gold Peak #1604S, Eveready #216), or Lithium type (ULTRALIFE U9VL-J).

Push and lift the battery door latch and remove the battery from the battery door. While observing polarity, push the replacement battery into the battery door until it is held securely in place. Carefully close and latch the battery door.

#### **REPAIRS AND SERVICES**

If the heat alarm is defective in any way, do not tamper with the unit. Return the unit for servicing. (See warranty for instructions or in-warranty returns.) There will be a service charge for repairing out of warranty units.

## DEVELOP AND PRACTICE A PLAN OF ESCAPE

### BASICS OF ESCAPE PLAN

- o Make a floor plan indicating all doors and windows and at least two escape routes from each room. Second story windows may need a rope or chain ladder.
- o Have a family meeting and discuss your escape plan, showing everyone what to do in case of fire.
- o Determine a place outside your home where all of you can meet if a fire occurs.
- o Familiarize everyone with the sound of the heat alarm and train them to leave your home when they hear the sound.
- o Identify children's bedrooms with red stickers placed in the upper left corner of the windows. They are available from your local fire department.
- o Practice a fire drill at least every six months. Practice allows you to test your plan before an emergency. You may not be able to reach your children. It is important they know what to do!

### WHAT TO DO WHEN THE ALARM SOUNDS

- o Leave immediately by your plan of escape. Every second counts, so don't waste time getting dressed or picking up valuables.
- o In leaving, don't open any inside door without first feeling its surface. If hot, or if you see smoke seeping through cracks, **don't open that door!** Instead, use your alternate exit. If inside door is cool, place your shoulder against it, open it slightly and be ready to slam it shut if heat and smoke rush in.
- o Stay close to the floor if air is smoky. Breathe shallowly through a cloth, wet if possible.
- o Once outside, go to your selected meeting place and make sure everyone is there.
- o Call the fire department from your neighbor's home – **not from yours!**
- o Don't return to your home until fire officials say that it is all right to do so.

### NATIONAL FIRE PROTECTION ASSOCIATION REQUIRED PROTECTION

For your information, the National Fire Protection Association's Standard 72, reads as follows:

"11.5.1 One- and Two-Family Dwelling Units. 11.5.1.1 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. Exception: Smoke alarms shall not be required in sleeping rooms in existing one- and two-family dwelling units. (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.

"A.11.8.3 Are More Smoke Detectors Desirable? The required number of smoke detectors might not provide reliable early warning protection for those areas separated by a door from the areas protected by the required smoke detectors. For this reason, it is recommended that the householder consider the use of additional smoke detectors 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 detectors. The installation of smoke detectors in kitchens, attics (finished or unfinished), or garages is not normally recommended, as these locations occasionally experience conditions that can result in improper operation."

The equipment should be installed using wiring methods in accordance with the National Fire Protection Association's Standard 72, Chapter 11. (National Fire Protection Association, Batterymarch Park, Quincy, MA 02269).

**THIS PRODUCT MEETS ALL THE REQUIREMENTS OF  
UL STANDARDS FOR SAFETY, UL217 AND UL539.**

**PRODUCT FIVE-YEAR LIMITED WARRANTY**  
**MODEL USI-2430**

**USI ELECTRIC, INC. / UNIVERSAL SECURITY INSTRUMENTS, INC. ("USI") warrants your product to be free from defects in material and workmanship for a period of five (5) years from the date of purchase.** This warranty shall not apply to any batteries used in the product or to any damage which may be caused by such batteries. This warranty applies only to the original consumer purchaser and only to products used in normal residential use and service. If this product is found to be defective, USI's only obligation, and your exclusive remedy, is the repair or replacement of the product, at USI's discretion, provided that the product has not been damaged through misuse, abuse, accident, modifications, alteration, neglect or mishandling. This Warranty shall not apply to any product which is found to have been improperly installed, set-up, or used in any way not in accordance with the instructions supplied with the product.

**ALARM RETURNS**

For replacement of this alarm under the terms of this Warranty, contact Customer Service at 1-800-390-4321, Ext. 238, for current postage and handling fees. **USI DOES NOT WARRANT AND SPECIFICALLY DISCLAIMS ANY WARRANTY, WHETHER EXPRESS OR IMPLIED, OF FITNESS FOR A PARTICULAR PURPOSE, OTHER THAN THE WARRANTY CONTAINED HEREIN. NO IMPLIED WARRANTY ON THIS PRODUCT, CREATED BY STATE LAW, SHALL EXTEND BEYOND THE TERM OF THIS WARRANTY UNLESS SUCH LAW OTHERWISE PROVIDES. USI SPECIFICALLY DISCLAIMS ANY LIABILITY AND SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL LOSS OR DAMAGE, INCLUDING, BUT NOT LIMITED TO, DAMAGES TO ANY EQUIPMENT WITH WHICH THIS PRODUCT IS USED.** Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you. No agent, representative, dealer, or employee of the company has the authority to increase or alter the obligations or terms of this Warranty. This Warranty gives you specific legal rights and you may also have other rights which vary from state to state. This Warranty is only valid for merchandise purchased from outlets in the United States and Canada. This warranty expires upon product end-of-service life signal.

**LITHIUM BATTERY LIMITED WARRANTY**

The Ultralife battery model U9VL-J is warranted by Ultralife Corporation in this alarm ONLY and are not warranted in any other device. Submit your warranty claim through the Ultralife website [www.ultralifecorp.com](http://www.ultralifecorp.com) or call 800-332-5000.

Visit Us on the Web! [www.UsiElectric.com](http://www.UsiElectric.com)



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