



**DATASHEET**

**Made with the First Responder in Mind**



- Early warning of high voltage AC
- Safe and simple to use
- Exceptionally sensitive. Patented circuits give outstanding range.
- Affordable, sturdy, reliable
- Portable, battery-powered
- A must for the first responder

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## Introduction

The Hot Stick USA AC provides warning of exposed high voltage AC from a safe distance. The AC Hot Stick will give early audible and visual warning of the presence of AC voltages without the need to contact the surface which carries the dangerous AC potential. The AC Hot Stick will beep and an LED will flash with an increasing rate as the unit is brought closer to the source.

The tool has found many applications especially with first responders, fire, police and ambulances responding to vehicular accidents; with search and rescue operations in urban and rural settings as well as with cleanup crews working on downed trees after wind and ice storms. But also industrial user and anybody else who may unknowingly be exposed to the dangers of electrical shock or electrocution will appreciate the AC Hot Stick.

While the instrument will not be able to "see" the AC voltage if grounded metal shields or conductors surround the source fully and prevent the signal from emanating, floating grounds or incomplete shielding will be noticed quickly.

Its simple-to-use, built-in self tests, sturdy construction and small improvements made over time based on our customer comments have made the AC Hot Stick a safety tool, recognized and respected by its many users.



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## Description

The AC Hot Stick consists of a high sensitivity AC amplifier for the frequency range below 100 Hz. The special logarithmic amplifier is capable of receiving AC signals over a very wide amplitude range. Such signals, emanating from an unshielded, voltage-carrying surface, can be made audible and visible as a warning.

The warning signals (*beeps and LED flashes*) will increase when the signal increases as the AC Hot Stick approaches the source. This makes it possible to locate the source quickly. In the presence of high tension wires the sensitivity can be reduced by selecting the Low sensitivity or the Front Focused mode. The sensing section of the AC Hot Stick is located in the red striped area. When used in the High or the Low sensitivity mode the unit will respond to signals from all sides (*is omni-directional*). When the Front Focused mode is selected the unit responds only to signals received from the front of the AC Hot Stick. This reduces the sensitivity and concentrates pickup into a small frontal area. This permits pinpointing of the source and distinguishing between adjacent wires.

The detector will not respond to DC voltages from car batteries or from the third rail in light rail transit vehicles operating on DC. The unit features a complete self-test circuit: Immediately after turn-on, a built-in low frequency oscillator will operate for about 3 seconds simulating power line signals. This provides a separate test signal to the input. Rapid beeping indicates proper operation of the set.

A low voltage watchdog circuit monitors the built-in batteries. It will make the unit beep continuously and prevent its use in case of weak batteries. The set does not require warm-up and is operational about 10 seconds after turn-on. In normal use with intermittent operation, a set of standard AA alkaline batteries will typically provide one year of service. If left on continuously the batteries will run down in about 300 hours. In order to assure operation and to prevent battery leakage, the batteries should be changed annually.

After unscrewing the lanyard the batteries are accessible. Battery change should be done only in a safe atmosphere. The electronics circuitry is mounted on a printed circuit board housed in a sturdy, fully insulating plastic pipe. The set is splash-water proof. It has been designed to be intrinsically safe for operation in potentially explosive atmospheres. Hermetically sealed switches and quality components are providing reliable operation and long life even in severe environments.

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# HOT STICK

USA, INC.

## Applications

### Urban Search & Rescue:

Detection of unknown sources of unshielded and potentially hazardous AC voltages. Verification of proper power disconnect.

### Fire:

Identification of nearby high voltages and dangers from electrical wires during size-up, and after fires, during overhaul and investigations.

### Vehicular Extrication:

Quick check of site and vehicle for potential exposure to AC voltage. Verification and monitoring of power disconnect.

### Confined Space Rescue:

To verify power shut-off and proper lockout at the entry site and of machinery and equipment posing hazard through accidental activation.

### Hazmat:

Avoid dangers of electrical shock or explosion caused by electrical shorts/arcs.

### Disaster Operations:

After earthquakes, wind and ice storms or floods to identify energized wires on roads or structural parts in collapsed buildings and flooded sites. Quick check of extent of power outage.

### Power Restoration:

Warning of energized wires hidden by fallen trees or caused by back-feeding from motor generators.

### Industrial:

During plant modification or industrial rescue to prove power disconnect, identify alternate sources or ungrounded machinery.

### Trench Rescue:

Locate potential sources of electrical shock during rescue operations.

### Law Enforcement:

Detect presence of AC voltage, avoid electrical hazards at accident scenes or during search, prisoner detention, and surveillance.



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