Alert 150-AC™

150 Watt, 4 Horn Siren & PA

Hardware Manual

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⚠️ **<u>Warning</u>** ⚠️

If incorrectly used, this equipment can cause severe injury. Those who use and maintain the equipment should be trained in its proper use, warned of its dangers, and should read the manuals before attempting to set up, operate, adjust or service the equipment. Keep this manual for future reference.

Important Safety Information

<u>Installation & Service Precautions</u>

⚡ **• Electrocution, severe personal injury and damage to equipment can occur during installation or servicing this equipment. All electrical work should be performed by, or under the supervision of an experienced electrician and in accordance with all applicable electrical, fire, building and safety codes.**

•This equipment can start at any time from local controls, automatic timers, radio remote, commands from a computer and many other sources. Attached equipment can cause personal injury when they engage. Whenever working in or around the equipment you must assume it could activate at any moment, and take appropriate precautions to protect yourself and others. You should completely disable the equipment before working on or in close proximity to any part of it.

•You must test the system and equipment to insure it is operating correctly after the installation, as well as after any work has been performed.

<u>System Operation</u>

•Training is necessary to ensure those responsible can correctly control the system. It is also necessary that everyone understand the purpose of the equipment and the protective actions they need to take when the system is activated.

•You must carefully read and completely understand all the information about the system including its abilities and its limitations.

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Alert 150-AC

Table of Contents

Specifications

General Specifications

Electronics Enclosure

Width:	381mm (15 inches)
Depth:	228.6mm (9 inches)
Height:	406.4mm (16 inches)
Weight:	8.164 kg (18 lbs)

Input Power

Voltage	90 to 250 Vac
Current	4 Amps maximum
Wire Capacity	12 Awg to 22 Awg

Output

Voltage	70 Vrms
Power	150 Watts
Wire Capacity	12 Awg to 22 Awg

Remote Inputs

Headers:	2 pos., 2.5mm
Mating Connector:	2 pos. spring clamp
	26-20 AWG
	P/N 6000-0052-002
Input Voltage:	**None, DRY CONTACT ONLY**

Fuses

Amplifier Fuse:	20 A Mini
Control Fuses:	3 A Mini

Optional Microphone

Genave P/N	G-8032-0000-004

Suggested wire type between controls and head:
12 AWG, UL CL3, Direct Burial rated and UV stable

Example:
Belden Brilliance 1311A 12 AWG 2C
https://catalog.belden.com/techdata/EN/1311A_techdata.pdf

Overview

How it Works

The Alert 150-AC is a stand-alone AC powered siren & PA.

It can be controlled several ways:
1) By pressing one of the 8 user interface switches.
2) By activating it remotely with a dry-contact closure connected to one of the 8 inputs.
3) By adding an LR-900 long range wireless controller for remote activation.
4) By connecting an RXC-3000 for UHF/VHF DTMF and 2 Tone activation.
5) By recording a message with the optional microphone and instantly playing it.

The central component of the Alert 150-AC is the MP3 Node. The node plays MP3 files or generates special effect sounds upon activation of one of the 8 inputs. When activated, the MP3 Node powers up the 150 Watt amplifier and plays the associated MP3 file for the activated input. Upon completion of the MP3 file, the Alert 150-AC powers down the amplifier and prepares for the next input closure.

The output of the amplifier is sent through an impedance matching transformer which converts the 8 Ohm output of the amplifier to an industry standard 70 Volt output.

The output of the matching transformer is connected with two wires to a set of 4 high power speakers. The speakers are connected in a Series-Parallel configuration to limit individual speaker power and thus promote speaker longevity.
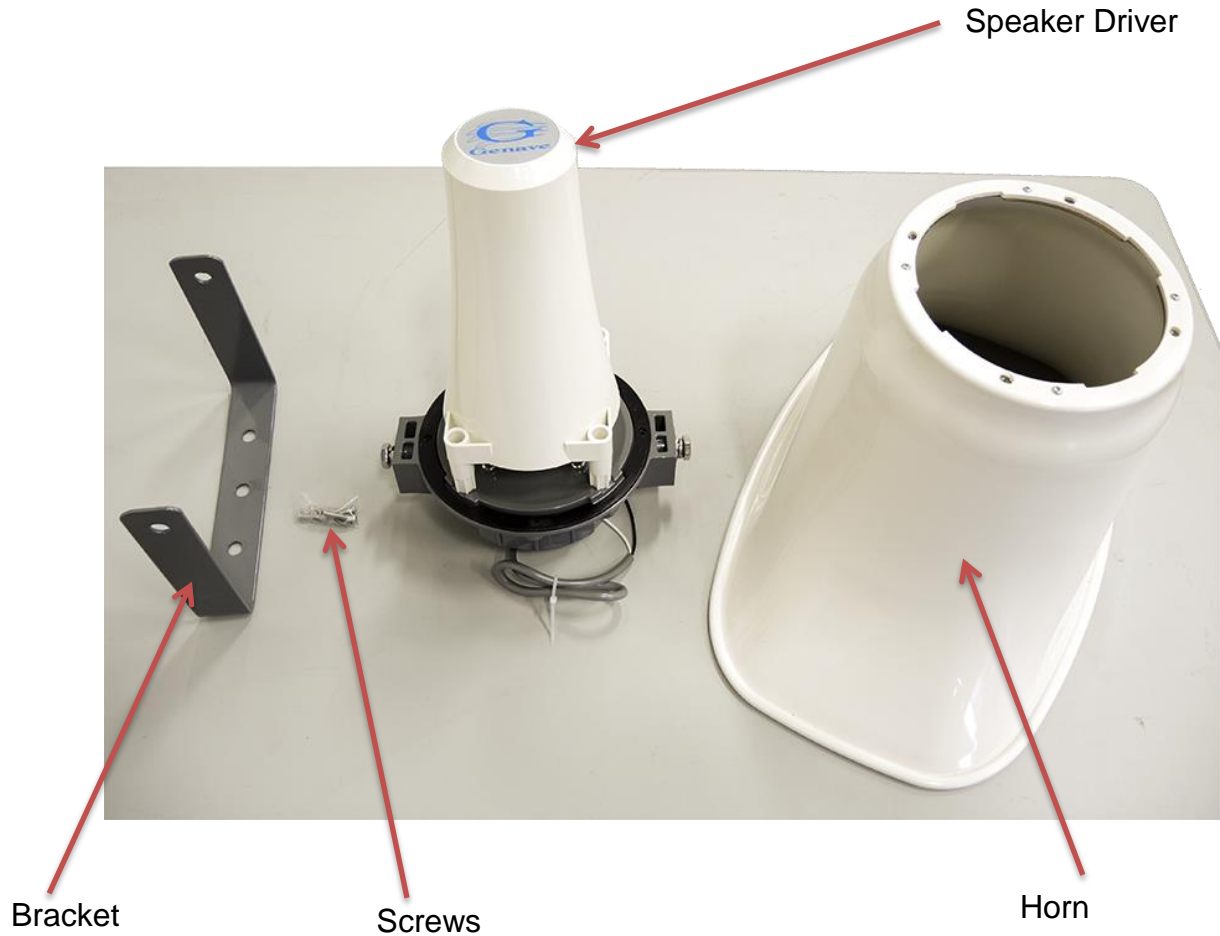
All power consumed by the Alert 150-AC is provided by a robust 320 watt AC/DC power supply. The power supply can accept any commercial voltage between 90 and 250 VAC.

What's Inside the Electronics Enclosure

Antenna for Optional LR-900 Node

User Control Board

Amplifier

MP3 Node

Optional LR-900 Node

System On/OFF Switch

Power Control Board

Optional Microphone

Output Transformer

Assembling the Speakers

Speaker Driver

Bracket   Screws   Horn

Step 1

Insert the Speaker Driver into the horn as shown in the picture.

Step 2

Install all 4 screws with washers attached, into the 4 holes in the speaker driver as shown in the picture.

Step 3

Tighten the 4 screws securely so that the speaker driver and horn are permanently affixed.

Step 4

Remove the two bolts for the bracket

Step 5

Attach the bracket with the two bolts


Step 6

Tighten the bracket bolts.

Mounting the Head

Mounting directly on a pipe

The center hole of the Alert 150-AC hub is matched the outside diameter of a 2-1/2" steel or aluminum pipe Schedule 40 or greater with a threaded end. Do NOT use plastic pipe. Do not exceed 10 feet of un-guyed pipe to support the head.
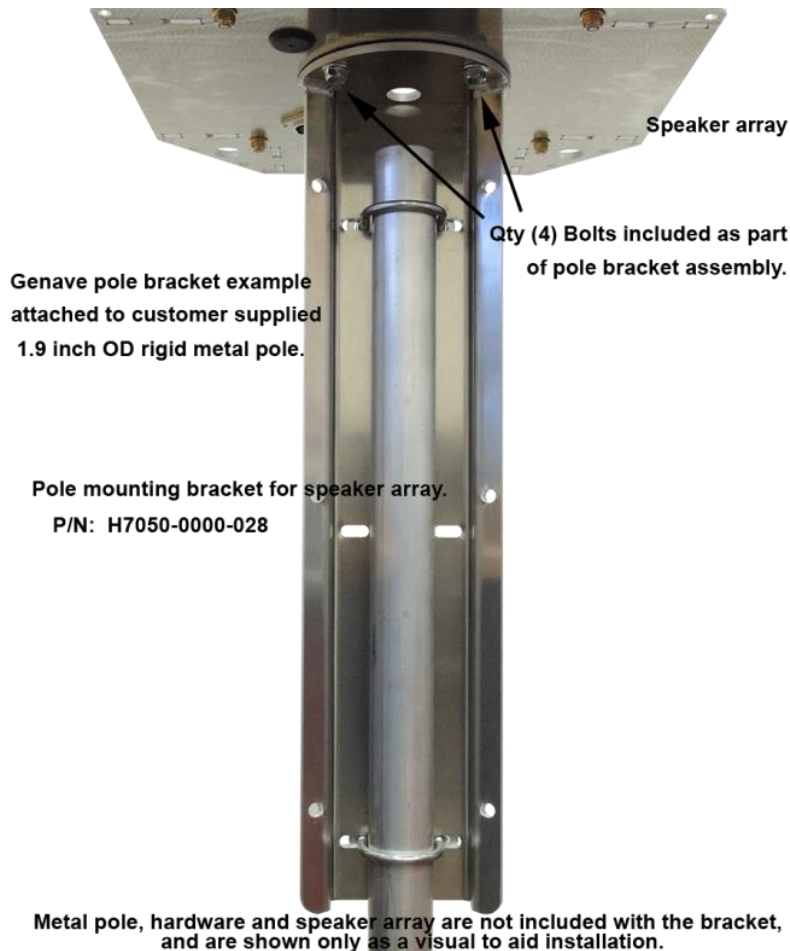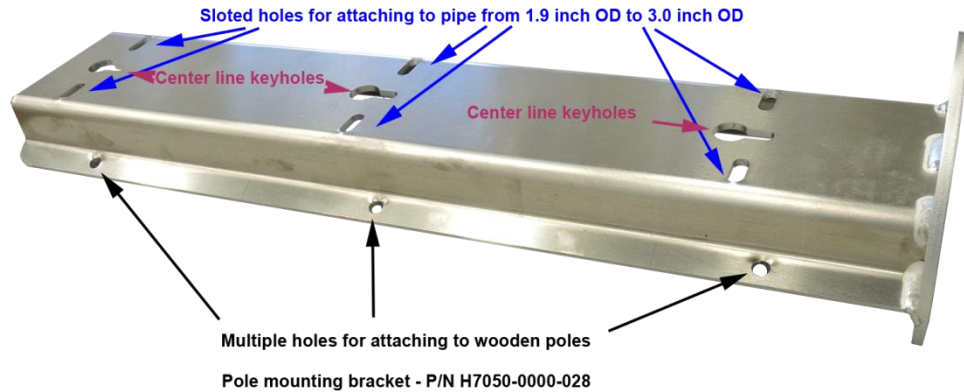
Use locknuts above and below the hub plate on the pipe to secure the hub to the pipe. Make sure to tighten the locknuts as tight as possible to prevent the head from turning on the pipe. An alternative is to use a Bonding Locknut which has a setscrew. The setscrew will keep the hub from turning.

Bonding Locknut

*note: Pipe and Locknuts are not
       included with Alert 150-AC order.
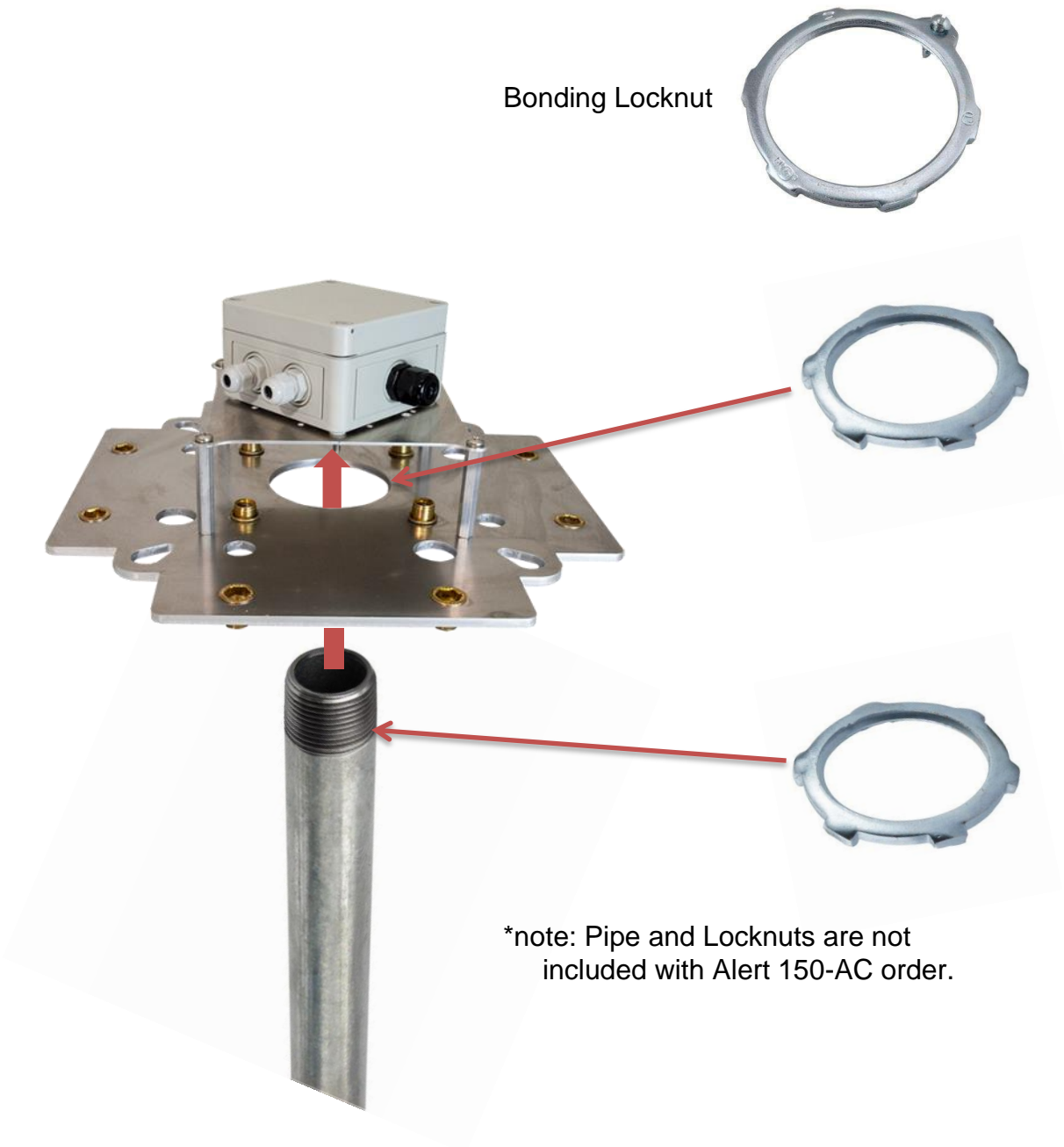
Mounting to a pipe, pole or parapet with H7050-0000-028

When mounting the head to a wood pole, a parapet or a pipe that either has an outside diameter than 2-1/2", or is not threaded it is best to use the H7050-0000-028 mount. The images below show which holes are used with each mounting type.

Sloted holes for attaching to pipe from 1.9 inch OD to 3.0 inch OD

Center line keyholes

Center line keyholes

Multiple holes for attaching to wooden poles

Pole mounting bracket - P/N H7050-0000-028

Speaker array

Qty (4) Bolts included as part of pole bracket assembly.

Genave pole bracket example attached to customer supplied 1.9 inch OD rigid metal pole.

Pole mounting bracket for speaker array.
P/N: H7050-0000-028

Metal pole, hardware and speaker array are not included with the bracket, and are shown only as a visual to aid installation.

Suspending the head from a ceiling

The head assembly can be suspended from a suitable industrial ceiling. Use the 4 suspension openings to secure 4 chains to the hub which then are connected to the ceiling.

Suspension Openings
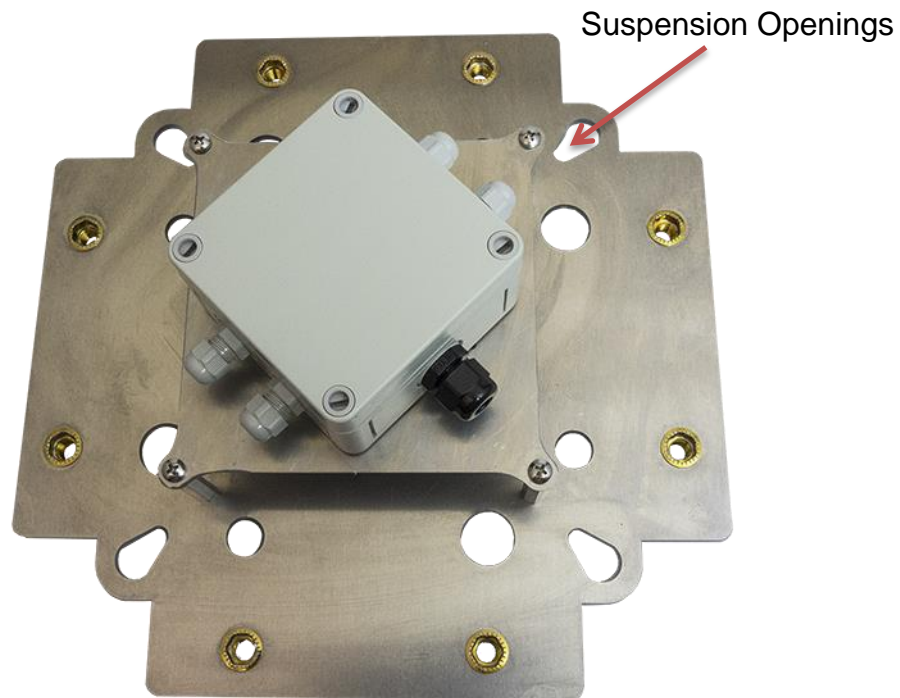
Mounting Horns to the hub assembly

The speakers can be mounted above or below the hub plate. The normal configuration is to have the speakers below the plate. To attach the speakers, hang the speaker by its bracket on the hub plate while installing two 3/8" x 1 inch flange bolts. Tighten the bolts to a minimum of 30ft lbs.

Mounting the control cabinet with flanges

The Control cabinet has 13/16" Unistrut channels attached to the back. Your Alert 150-AC comes with two flanges used when mounting the electronics cabinet to a wall, wood pole, or large diameter pipe (Use Band-It metal banding for large pipe).
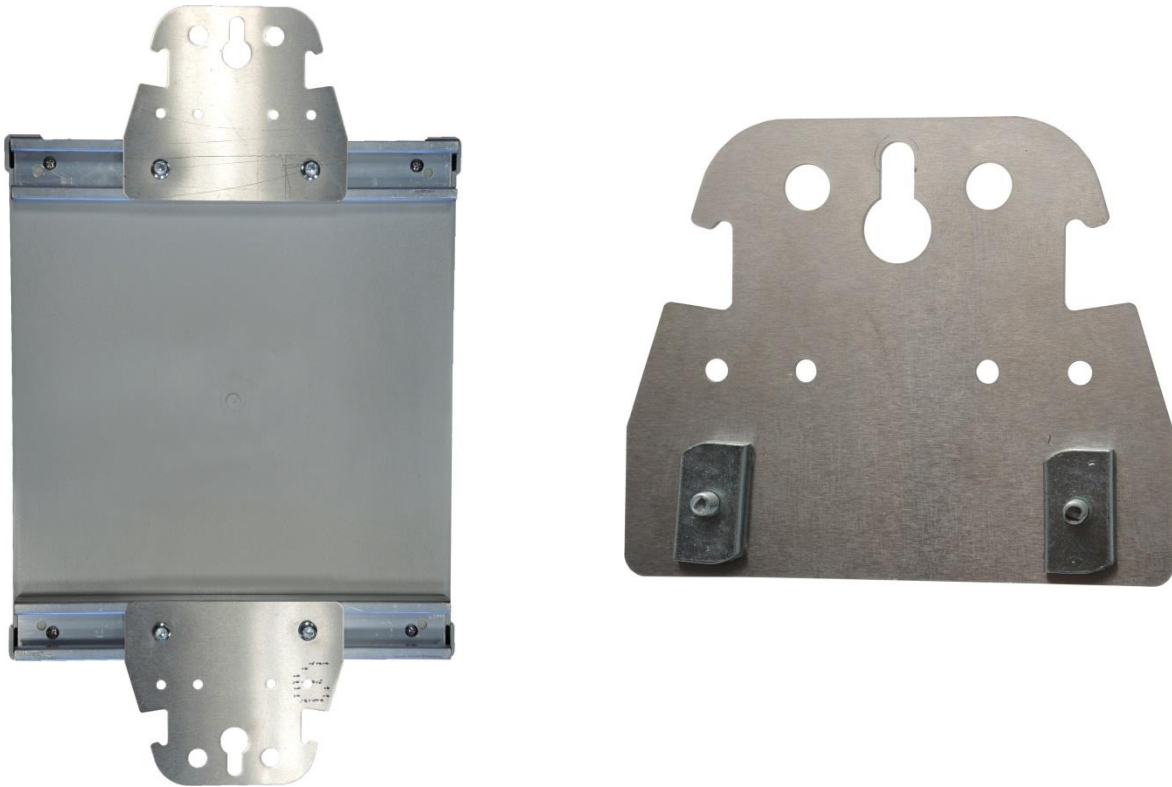

Mounting the electronics cabinet to pipe

When mounting the electronics cabinet to a smaller diameter pipe, use Strut Mount Routing Clamps to secure the enclosure to the pipe.

Connections & Wiring

Important Note:
Drill holes for cable on the bottom of the enclosure **ONLY**. Never drill any holes in the sides or top of the cabinet. The cabinet is water tight and will hold any water that enters which will cause damage to the components.


Microphone Connection

Remote Activation Inputs

AC power input

Speaker Output

Earth Ground
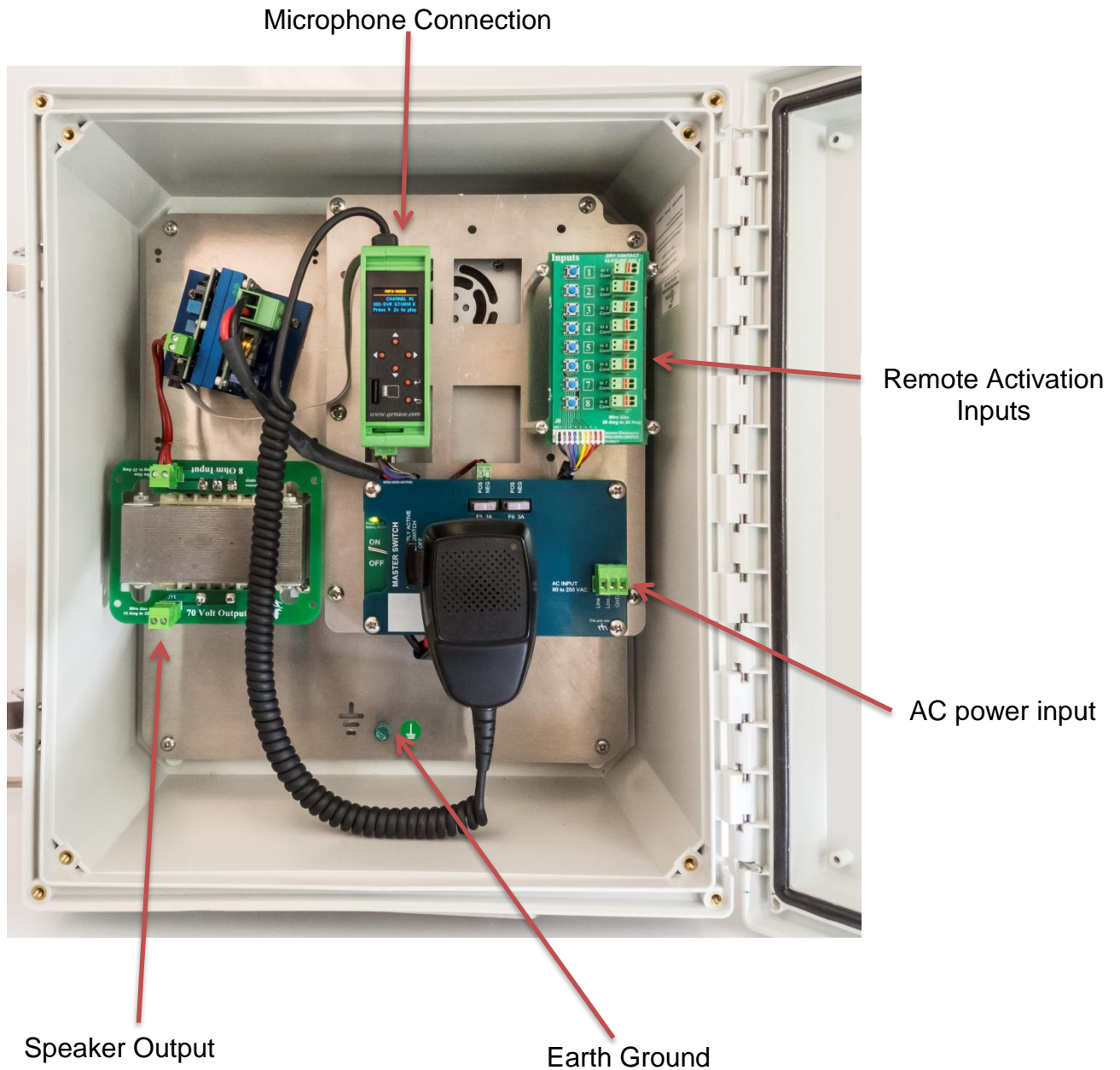
AC Input

The AC input directly feeds the main AC to DC power supply inside the cabinet. It is up to the electrician to supply a properly fused AC circuit to feed the Alert 150-AC. The unit can accept 90 VAC to 250 VAC 50/60 Hz.

Connect to AC supply ground

Connect to AC supply
90 to 250 VAC
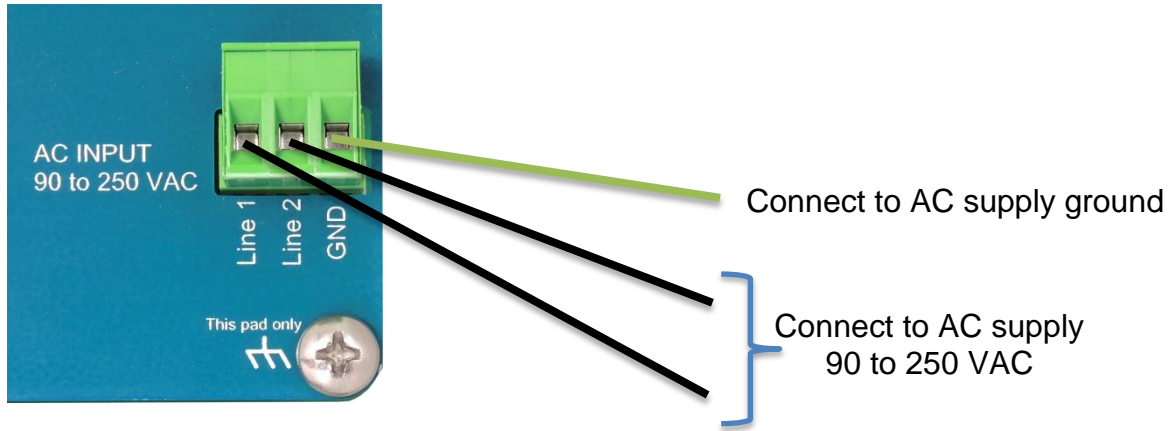
Transformer Output

The output of the transformer is connected with two wires to the siren head. The transformer also has the ability to drive a 70 volt speaker system directly. The maximum wattage from the system is 150 watts. The transformer isolates the amplifier from unwanted voltage spikes and ground loops in case of a wiring failure.
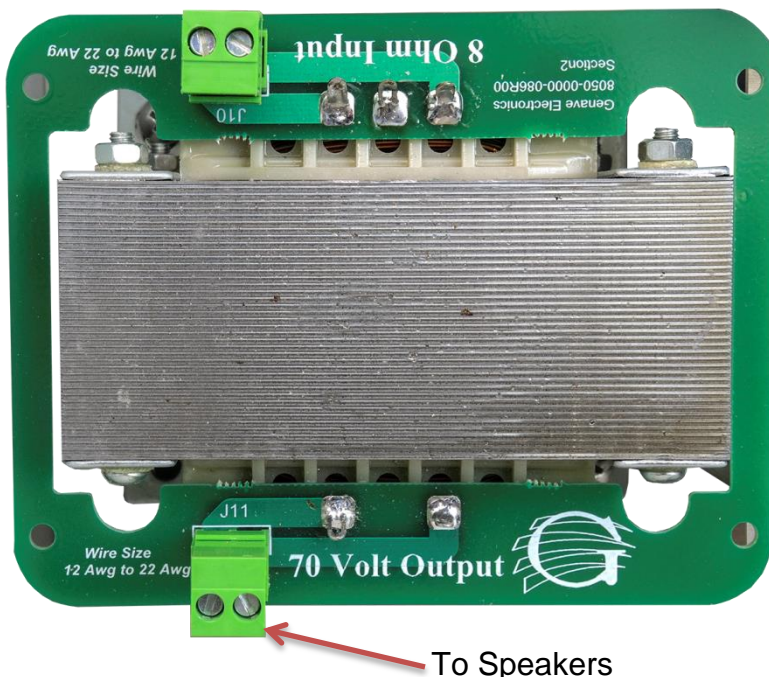
To Speakers

Connecting the speakers in the head

The speakers are connected in a series/parallel configuration. The reasoning for this is to limit the maximum amount of power supplied to each speaker which increases longevity.

Additionally, if one speaker becomes damaged and opens up, the remaining speaker is saved from excessive power overload.
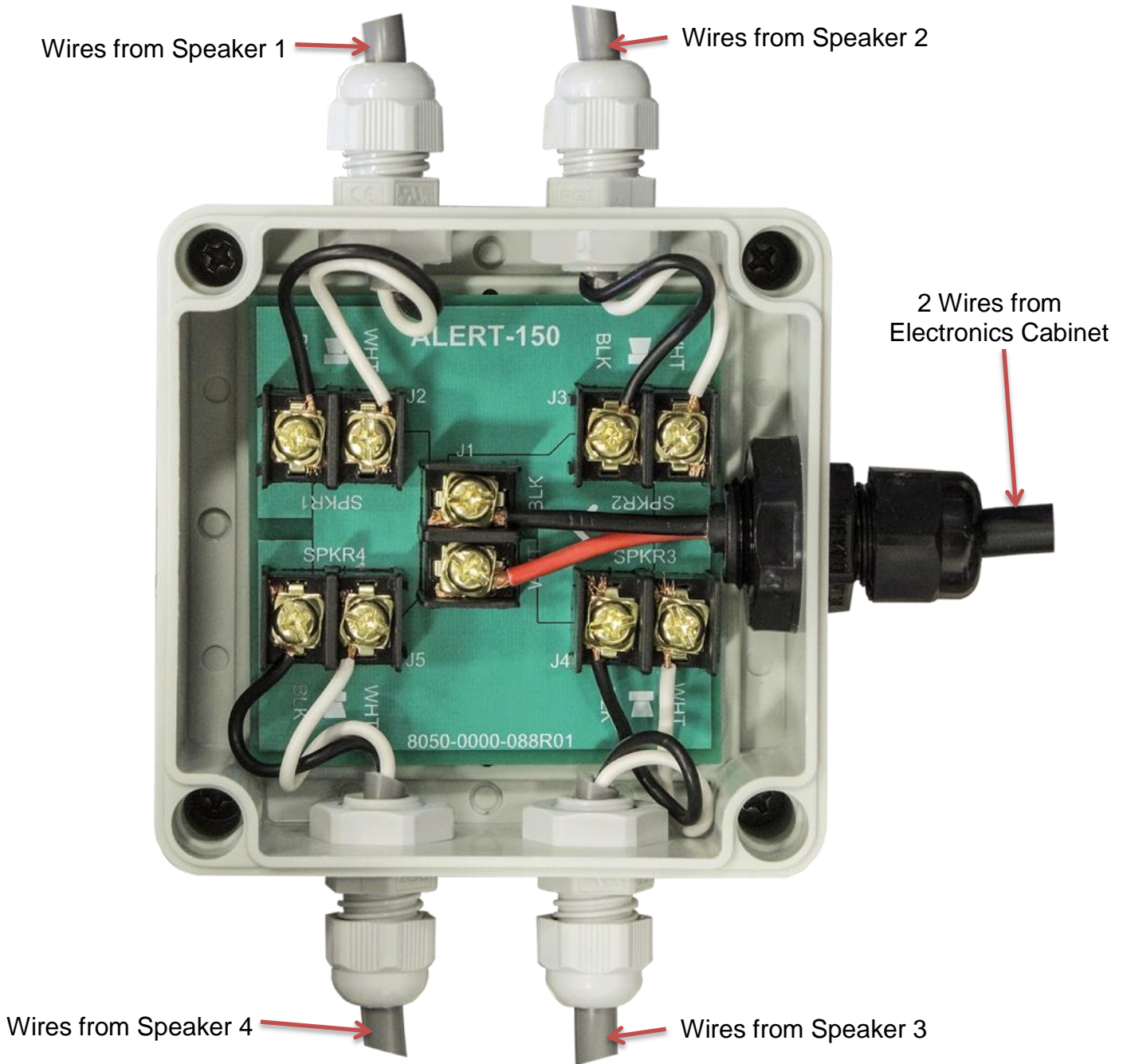
Remote Dry Contact Inputs

The remote inputs act exactly like pressing one of the switches. When connecting to other equipment, use only dry contacts (relays, mosfets or transistors) Never apply any voltage to the inputs. Keep the wires short and twist the wires to minimize induced voltage spikes.


Wires to MP3 Input Header
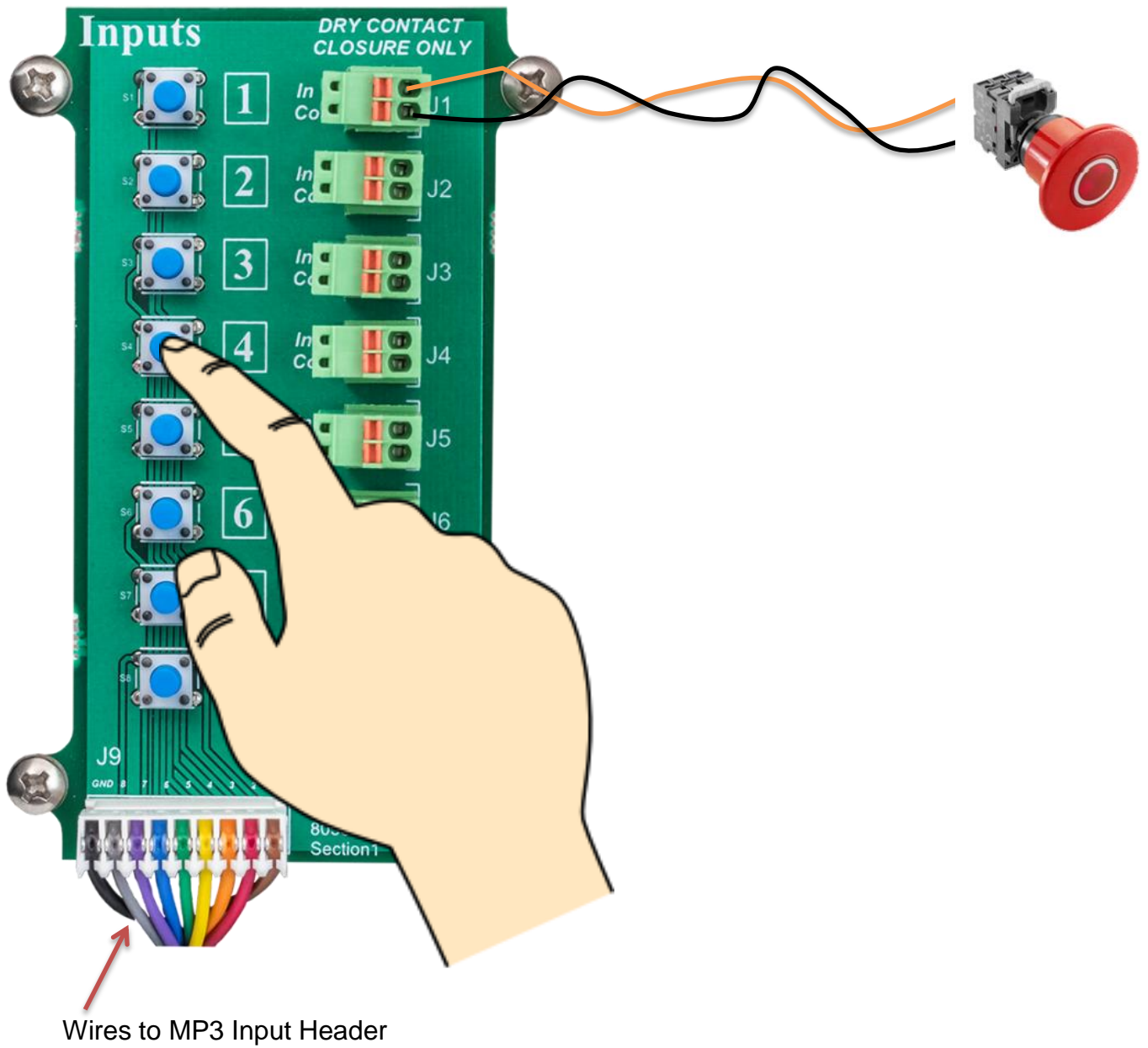
LR-900 Connections

When connecting to an LR-900, the user interface switches are moved to the input of the LR-900 and the output of the LR-900 is connected to the input of the MP3 Node.

Power control PCB

The Control PCB has an ON/OFF switch which allows you to turn off the siren, however the power supply is not turned off by the switch, only the DC output from the power supply is interrupted by the switch. The schematic below shows the basic function of the PCB. U2 is a low voltage cut out in case the power supply becomes overloaded or too hot and folds back.
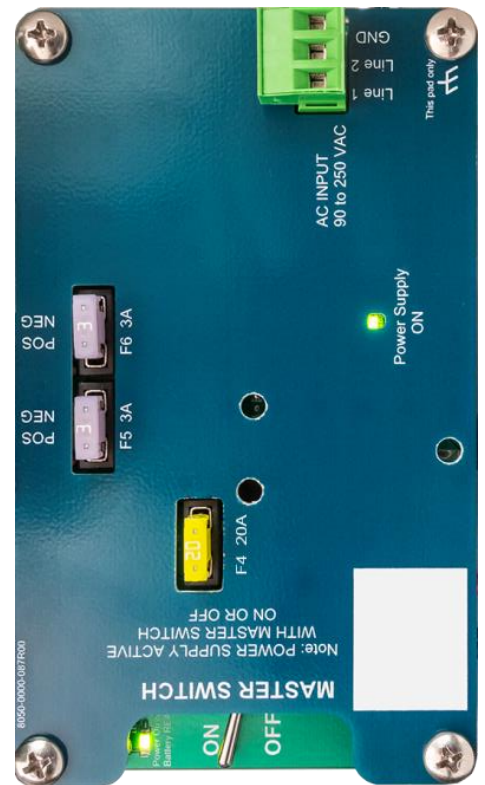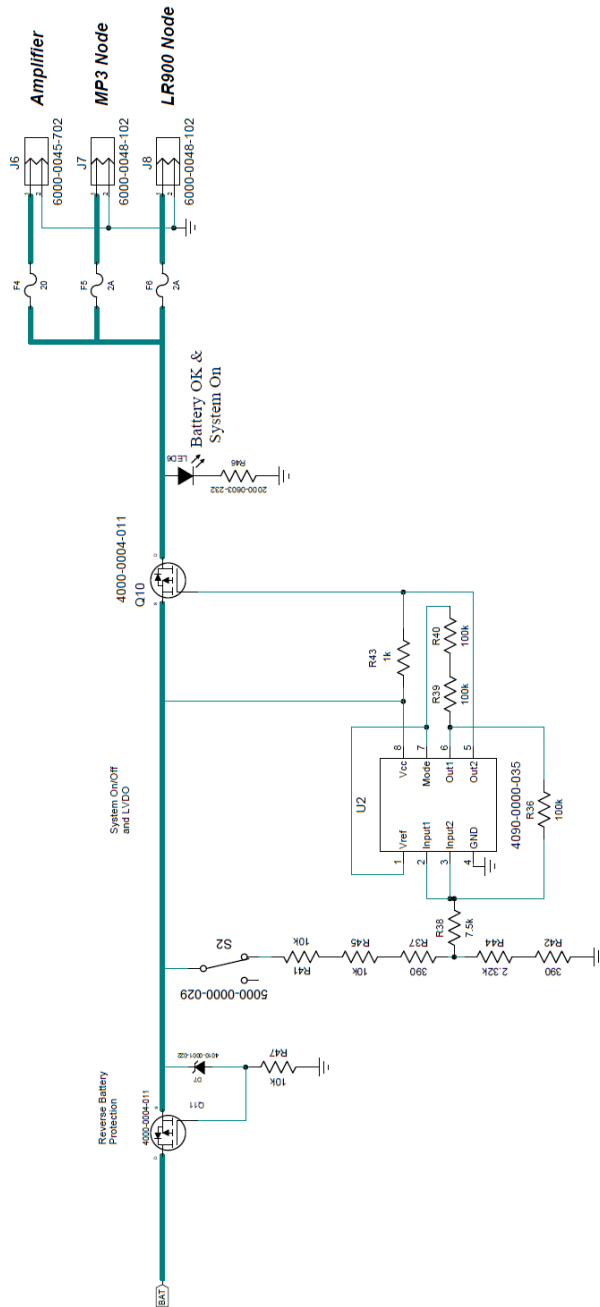
How to use the Alert 150-AC

About the MP3 Node

The MP3 Node is the heart of the Alert 150-AC. Once the system has been wired and voltage applied, a simple press of one of the 8 input switches will activate the system. The maximum volume of the siren can be adjusted by making changes to the Global Volume Setting of the MP3 Node.

For information about the MP3 Node, please see Genave tech publication **9000-0000-127**. That document will describe how to program the MP3 Node and make changes to its settings.

About the LR-900 Node

The LR-900 will allow you to control the Alert 150-AC wirelessly from great distances depending on the configuration. Generally, the LR-900 is used to activate sirens within a distance of ¼ to ½ miles away. Additionally, LR-900 units repeat signals from the activation point which allows whole systems to be activated with very low signal strength and to reach sirens out of signal range of the activation point.

For more about the LR-900 Node, please see Genave tech publication **9000-0000-126**.

Microphone

The Alert 150-AC can be equipped with an optional microphone. This microphone turns the Alert 150 into a Public Address system. The microphone is not active at the same time as the speakers so that there is no feedback in the system. Instead, the microphone acts as a store-and-forward recording device. When the microphone's button is pressed, the MP3 Node begins recording audio from the microphone to the micro SD memory card. When the button is released, the MP3 Node plays the message. The message can be automatically repeated several times depending on the configuration of the MP3 Node.

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