



GAI-TRONICS®  
A HUBBELL COMPANY

# RED ALERT®

## Hands-free VoIP Retro-Fit Telephones

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### Confidentiality Notice

This manual is provided solely as an installation, operation, and maintenance guide and contains sensitive business and technical information that is confidential and proprietary to GAI-Tronics. GAI-Tronics retains all intellectual property and other rights in or to the information contained herein, and such information may only be used in connection with the operation of your GAI-Tronics product or system. This manual may not be disclosed in any form, in whole or in part, directly or indirectly, to any third party.

### Product Overview

RED ALERT® VoIP Retro-Fit Telephones are designed for connection to a 10/100 baseT Ethernet. These telephones will operate from Power-over-Ethernet or an external power source. The VoIP Telephones provide direct point-to-point communications between personnel throughout the facility over the existing LAN. The appropriate RED ALERT® retrofit models are designed to replace Code Blue, Ramtel, or Talk-A-Phone telephones utilizing a six-hole mounting pattern.

The following RED ALERT® VoIP Retro-Fit Telephones are detailed in this manual:

Table 1. Model Chart

Model	Description
<b>397-700CB</b>	<b>Code Blue Flush-Mount Hands-free VoIP Telephone</b> , weatherproof brushed stainless steel front panel, HELP autodial push button, and CALL RECEIVED WHEN LIT LED.
<b>397-700TP</b>	<b>Talk-A-Phone Flush-Mount Hands-free VoIP Telephone</b> , weatherproof brushed stainless steel front panel, HELP autodial push button, and CALL RECEIVED WHEN LIT LED.
<b>397-700RT</b>	<b>Ramtel Flush-Mount Hands-free VoIP Telephone</b> , weatherproof brushed stainless steel front panel, HELP autodial push button, and CALL RECEIVED WHEN LIT LED.
<b>398-702CB</b>	<b>Code Blue Flush-Mount VoIP Telephone</b> , weatherproof brushed stainless steel front panel, HELP autodial push button, CALL (off-hook) button, 12-button Braille keypad, and CALL RECEIVED WHEN LIT LED.
<b>398-702TP</b>	<b>Talk-A-Phone Flush-Mount VoIP Telephone</b> , weatherproof brushed stainless steel front panel, HELP autodial push button, CALL (off-hook) button, 12-button Braille keypad, and CALL RECEIVED WHEN LIT LED.

Model	Description
<b>398-702RT</b>	<b>Ramtel Flush-Mount VoIP Telephone</b> , weatherproof brushed stainless steel front panel, HELP autodial push button, CALL (off-hook) button, 12-button Braille keypad, and CALL RECEIVED WHEN LIT LED.

Code Blue is a registered trademark of Code Blue Corporation.

Talk-A-Phone is a registered trademark of Talk-A-Phone Co.

Ramtel is a registered trademark of Ramtel Corporation.

## System Requirements and Limitations

The VoIP Telephones require Power-over-Ethernet or a local 24–48 V dc power source for operation. Two VoIP telephones can be connected in a peer-to-peer configuration without the need for a LAN. However, a 10/100 BaseT Ethernet with SIP server is required for systems containing three or more VoIP Telephones. Conferences are limited by the customer's LAN media capabilities and the services available at each end point.

In addition to direct point-to-point dialing (peer-to-peer), directly or via a SIP server, each telephone is capable of receiving a Multicast broadcast. Multicast allows a single audio stream to be sent to multiple end points simultaneously, to achieve multi-point paging or Public Address functionality over IP. Multicast requires the use of a SIP server that specifically supports Multicast functionality and each telephone must be configured (enabled) to receive Multicast packets.

## Tips for VoIP Subscribers

If you have or are thinking of subscribing to an interconnected VoIP service, you should:

- Provide your accurate physical address to your interconnected VoIP service provider to ensure that emergency services can quickly be dispatched to your location.
- Be familiar with your VoIP service provider's procedures for updating your address, and promptly update address information in the event of a change.
- Have a clear understanding of any limitations of your 911 service.
- If your power is out or your internet connection is down, be aware that your VoIP service may not work. Consider installing a backup power supply, maintaining a traditional phone line, or having a wireless phone as a backup.
- If you have questions about interconnected VoIP and 911 or about VoIP in general, see <http://www.fcc.gov/cgb/consumerfacts/voip.html>.

## Features and Functions

The RED ALERT<sup>®</sup> voice-over-internet protocol (VoIP) hands-free telephones include the following features:

- SIP compatible (RFC3261)
- Automatic call divert (memory list)
- Weather and vandal resistant
- Real-time alarm reporting via email, syslog, or TMA software
- Configurable via web page, serial link or download
- Four auxiliary inputs, two volt-free contact outputs
- Multicast capability, up to eight addresses
- ADA Compliant

## Operation

### Autodial Emergency Call

All Models

To place an emergency call:

1. Press the **HELP** push button to place an immediate call to a preprogrammed emergency number, typically a security office or 911.
2. The **CALL RECEIVED WHEN LIT LED**, in accordance with the American with Disabilities Act (ADA), will light steady when the call is answered.
3. The call cannot be terminated by the initiator. The call is terminated by the following: the receiving caller, or the defined timeout of the call duration, or the SIP server.

### Placing a Telephone Call using Keypad

Models 398-702CB, 398-702RT, and 398-702TP

To place a general telephone call using the keypad:

1. Press the **CALL** push button.
2. Wait for the dial tone.
3. Use the keypad to dial the desired number.
4. **CALL RECEIVED WHEN LIT LED**, in accordance with the American with Disabilities Act (ADA), will light steady when the call is answered.
5. The call is terminated by the following: pressing the **CALL** push button, or the receiving caller, or the defined timeout of the call duration, or the SIP server.

### Receiving a Call

When a RED ALERT<sup>®</sup> VoIP Emergency Telephone is called, the unit automatically goes off-hook (auto-answer) and a conversation can take place.

## Multicast Broadcast

When making a Multicast call, the SIP server will send a paging request to a specific IP address and expect multiple telephones to accept and play the subsequent audio. GAI-Tronics VoIP telephones can be programmed for up to eight Multicast addresses to permit the receipt of Multicast broadcasts from different sources or to enable zoning of broadcasts. Each Multicast address can be assigned a priority (via programming) to define which can override which. A telephone with Multicast enabled can still make and receive normal calls (peer-to-peer or SIP server). Normal calls can be assigned a priority level, defining whether calls can override Multicasts or vice versa.

## Monitoring and Reporting

Each telephone can recognize and generate several hardware and configuration fault condition alarms. These alarms can be signaled to a remote site using three methods:

- Syslog output over TCP
- SMTP mail message
- Telephone Management Application (TMA) software (purchased separately)

Available alarms are:

- Handset integrity loop (if applicable)
- Configuration error
- Cold reset (power cycle)
- Warm reset (internal command)
- Keypad error (if applicable)
- Key hook (off hook status, if applicable)
- Register fail
- Audio Path Test (speaker/microphone test)

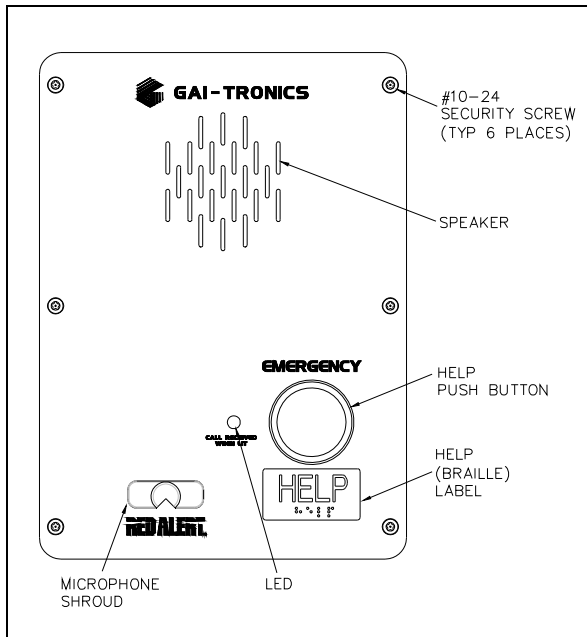


Figure 1. Model 397-700CB

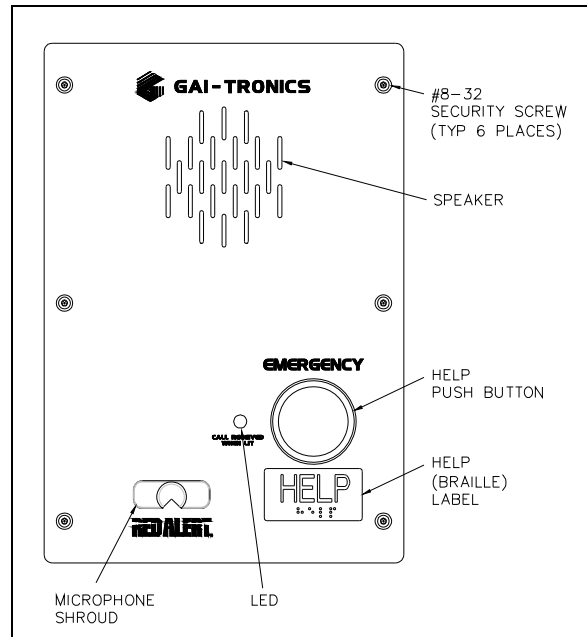


Figure 2. Model 397-700RT

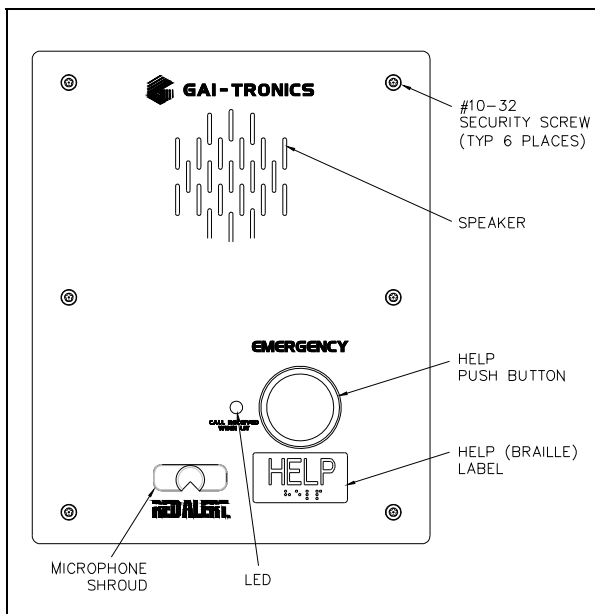


Figure 3. Model 397-700TP

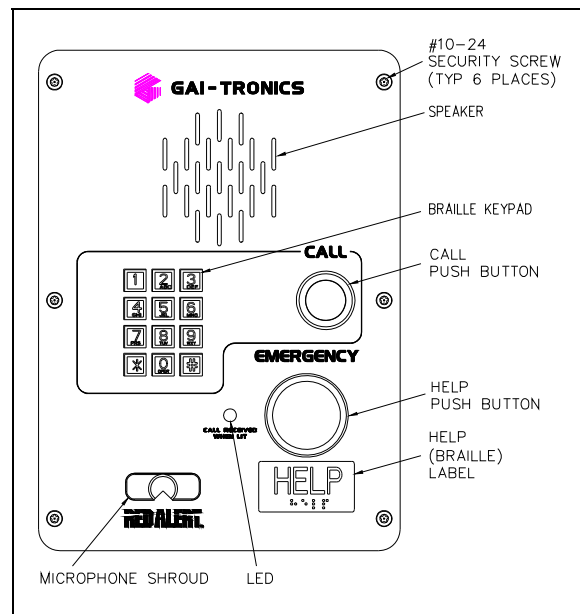


Figure 4. Model 398-702CB



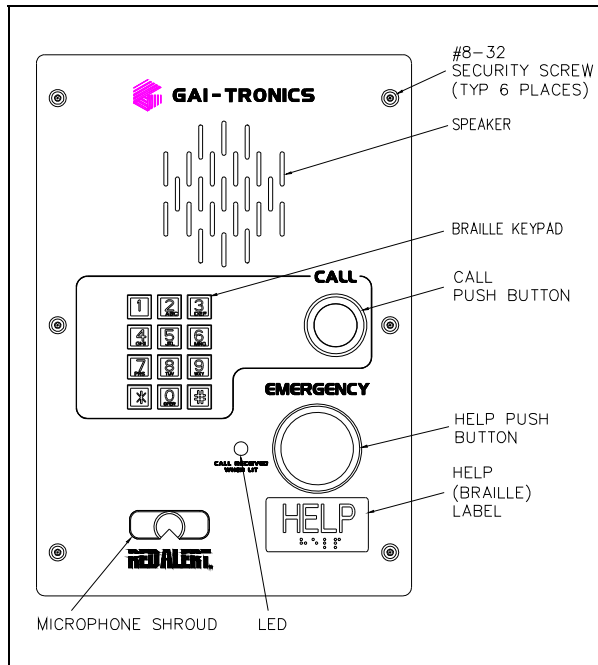


Figure 5. Model 398-702RT

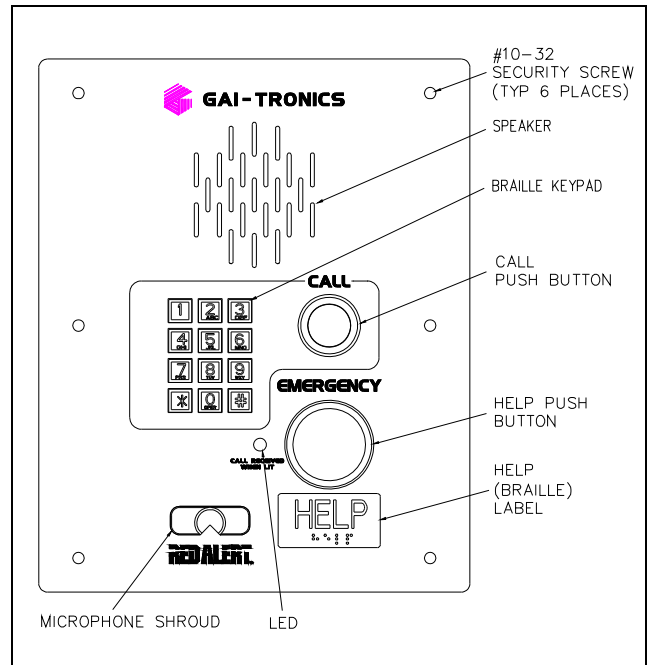




Figure 6. Model 398-702TP

# Installation

## General Information

 **WARNING**  **This product can contain hazardous voltages. Always remove power to this station and any associated equipment before beginning any installation.**

 **CAUTION**  **Do not install this equipment in areas other than those indicated on the approval listing in the “Specifications” section of this manual. Such installation may cause a safety hazard and consequent injury or property damage.**

Install equipment without modification and according to all applicable local and national electrical codes. Consult the National Electrical Code (NFPA 70), Canadian Standards Association (CSA 22.1), and local codes for specific requirements regarding your installation. Class 2 circuit wiring must be performed in accordance with NEC 725.55.

**NOTE:** This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Depending upon the wiring and features used on this device, additional precautions may be necessary not to cause harmful interference. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

## Safety Guidelines

When installing any GAI-Tronics equipment, please adhere to the following guidelines to ensure the safety of all personnel:

- Do not install wiring during a lightning storm.
- **Electrostatic Discharge (ESD) Protection:** Your VoIP telephone may have an earth ground terminal provision. If so, ensure that it is connected to ground in accordance with all local safety regulations and the National Electrical Code (NEC). Grounding has to be ensured for safe and stable communications. Do not use long and coiled ground wires. Trim ground wires to the required length. Use a star configuration whenever possible. Please note proper grounding does not eliminate the need for lightning protection for the telephone or the telephone system.
- Do not install jacks in wet locations unless the jack is specifically designed for wet locations.

## Station Placement

To prevent audio feedback problems in the system, volume settings, and station placement must be taken into consideration. Unpleasant feedback problems can be reduced by:

- Pointing the telephone away from other telephones located nearby
- Reducing speaker volume levels

## Security Hardware

All of the telephones described in this manual are vandal resistant. The front panel for each telephone covered in this manual is attached to its enclosure with security screws. A GAI-Tronics Model 233-001 Security Screwdriver or Torx T-25 security head tip (sold separately) is required for installing the telephone.

## Removal and Replacement Installation (All Models)

The appropriate RED ALERT<sup>®</sup> retrofit models are designed to replace Code Blue, Ramtel, or Talk-A-Phone telephones utilizing a six-hole mounting pattern, as follows:

1. Remove the existing telephone.
2. Remove the retro-fit telephone's back box from its front cover. Retain the hardware for re-installation.
3. Remove the plug from the opening being used on the back box and feed the Ethernet line and peripheral device wiring through the cable entry hole.
4. The connecting line should be equipped with an RJ45 modular connector. Plug the connector into the mating network connector on the VoIP PCBA mounted to the Carrier PCBA. Refer to Figure 9.
5. Connect any required peripheral devices. Refer to Figure 9 and Figure 10.
6. Re-attach the back box to its front panel.
7. Allow the telephone a minimum of 35 seconds to initialize.
8. Using the "Setup" section of this manual, perform the initial programming. Refer to the "Programming" section on page 19.
9. Verify operation by calling to and from another phone. Verify operation of peripheral equipment.
10. Complete the installation by attaching the RED ALERT<sup>®</sup> Retro-fit VoIP Telephone in place of the removed telephone using the security screws provided, 10–12 in-lbs. of torque recommended.

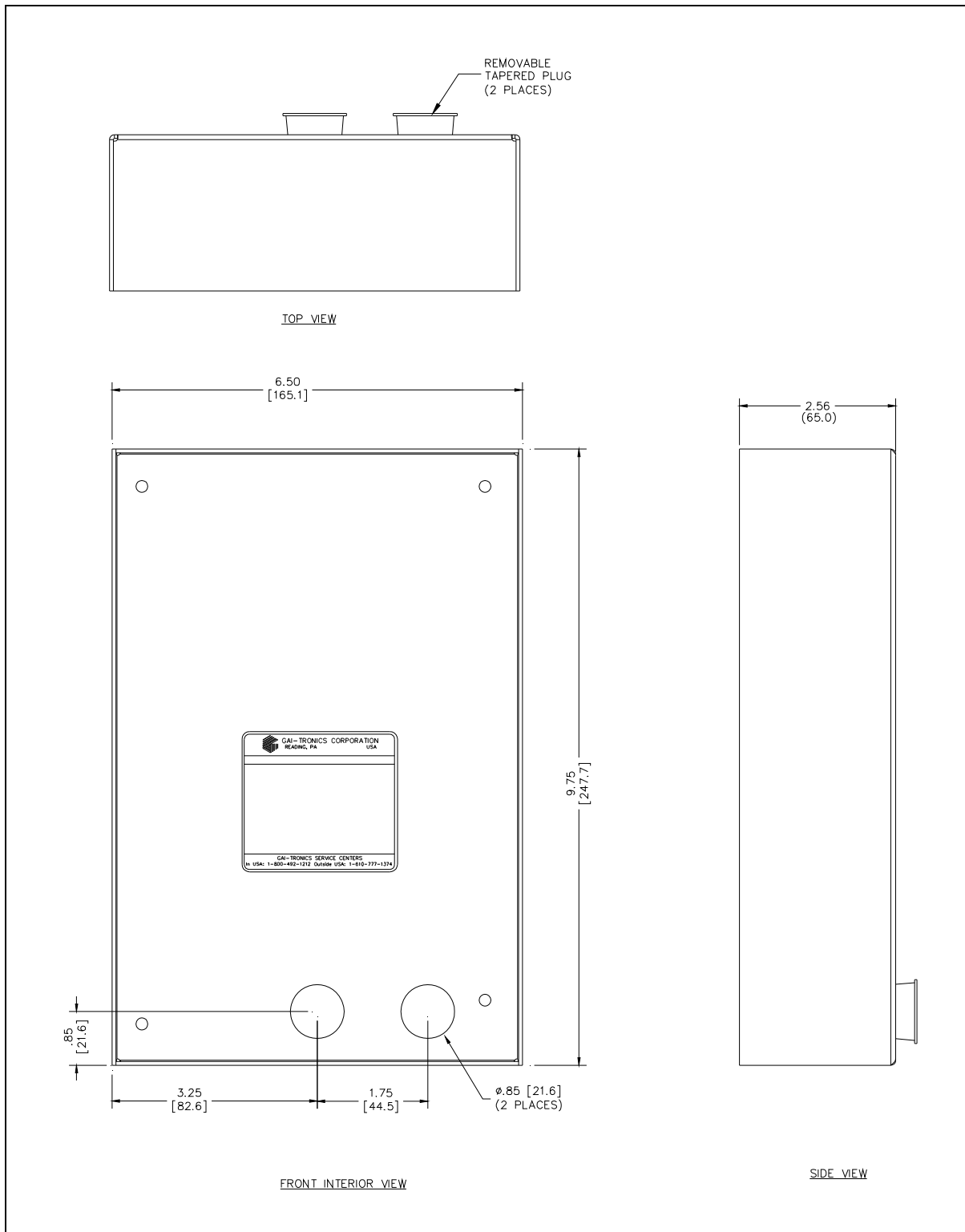


Figure 7. Back Box for Ramtel (RT) and Code Blue (CB)

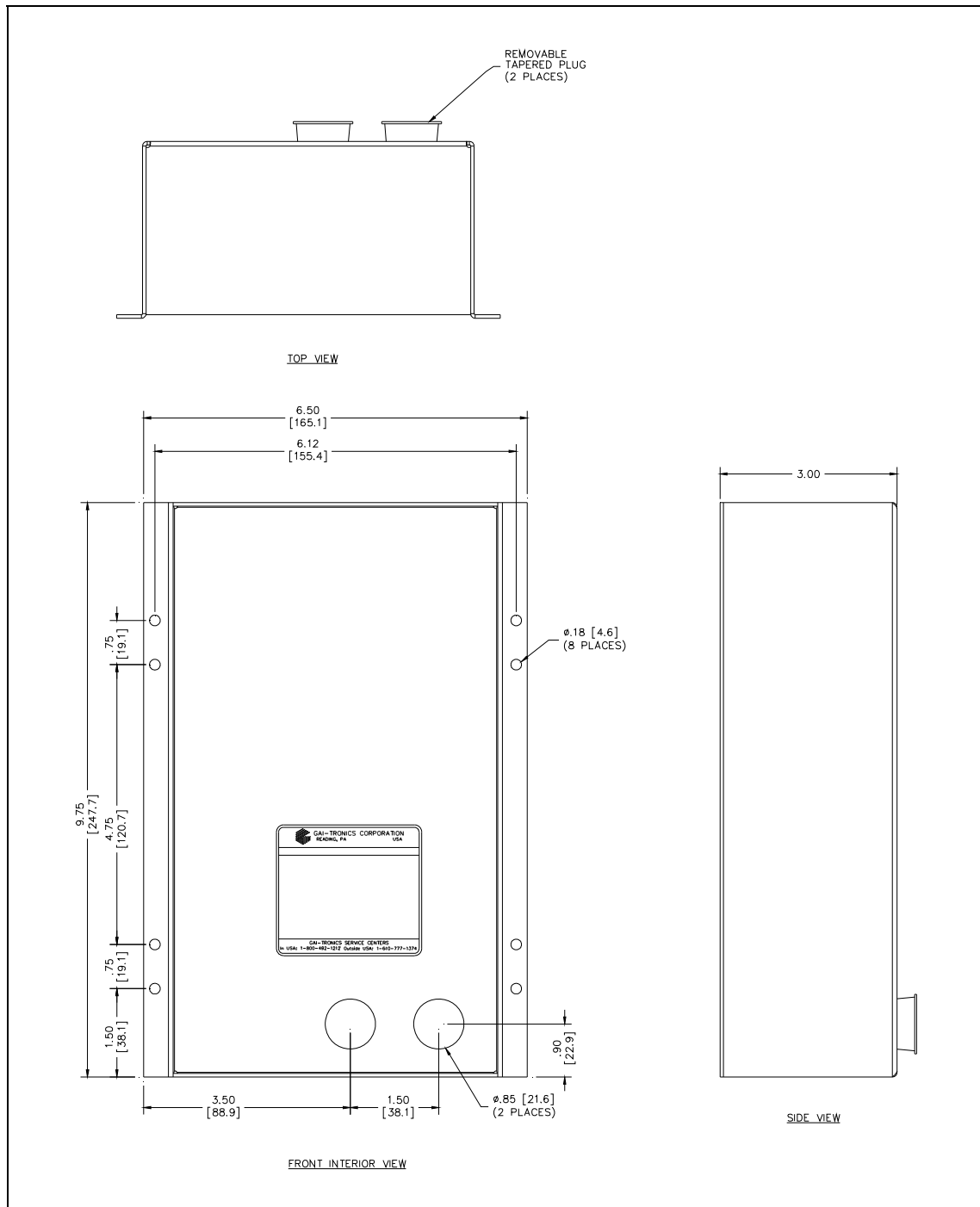


Figure 8. Back Box for Talk-A-Phone (TP)

# Setup

## Field Wire Installation

After all the field wires are pulled through the rear enclosure, install all connections as indicated below. Refer to Figure 9 for wiring details. Refer to Table 5 on page 17 for the recommended conductor sizes.

**NOTE:** Consult the National Electrical Code (NFPA 70), Canadian Standards Association (CSA 22.1), and local codes for the specific requirements regarding your installation. Install all equipment without modification and according to the local and national codes. Class 2 circuit wiring must be performed in accordance with NEC 725.55.

### Power

#### Power-Over-Ethernet

Connect power to the system as indicated in your PoE equipment manual.

#### Local Power

When PoE is not available, a separate, isolated 24–48 V dc power supply is required. See the “Replacement and Optional Parts” chart on page 23 for recommended optional plug-in power supply (required only if PoE is not available.) A removable terminal block P5 has been provided for connection of local power to the telephone. Connect the positive conductor to the (+) terminal and the negative conductor to the (–) terminal of P5. See Table 2 for wiring and Figure 9 for the location of P5.

Table 2. Power – P5

Pin	Label	Description
1	(+)	Positive
2	(–)	Negative

### Ground

The enclosure of each phone must be connected to earth ground. Install a #6 ring lug on the ground conductor prior to connection to the ground screw located on the rear of the front panel.

Network Cable

Connect a Cat5 or Cat5e UTP cable with an RJ45 connector between the Local Area Network (LAN) and the VoIP PCBA.

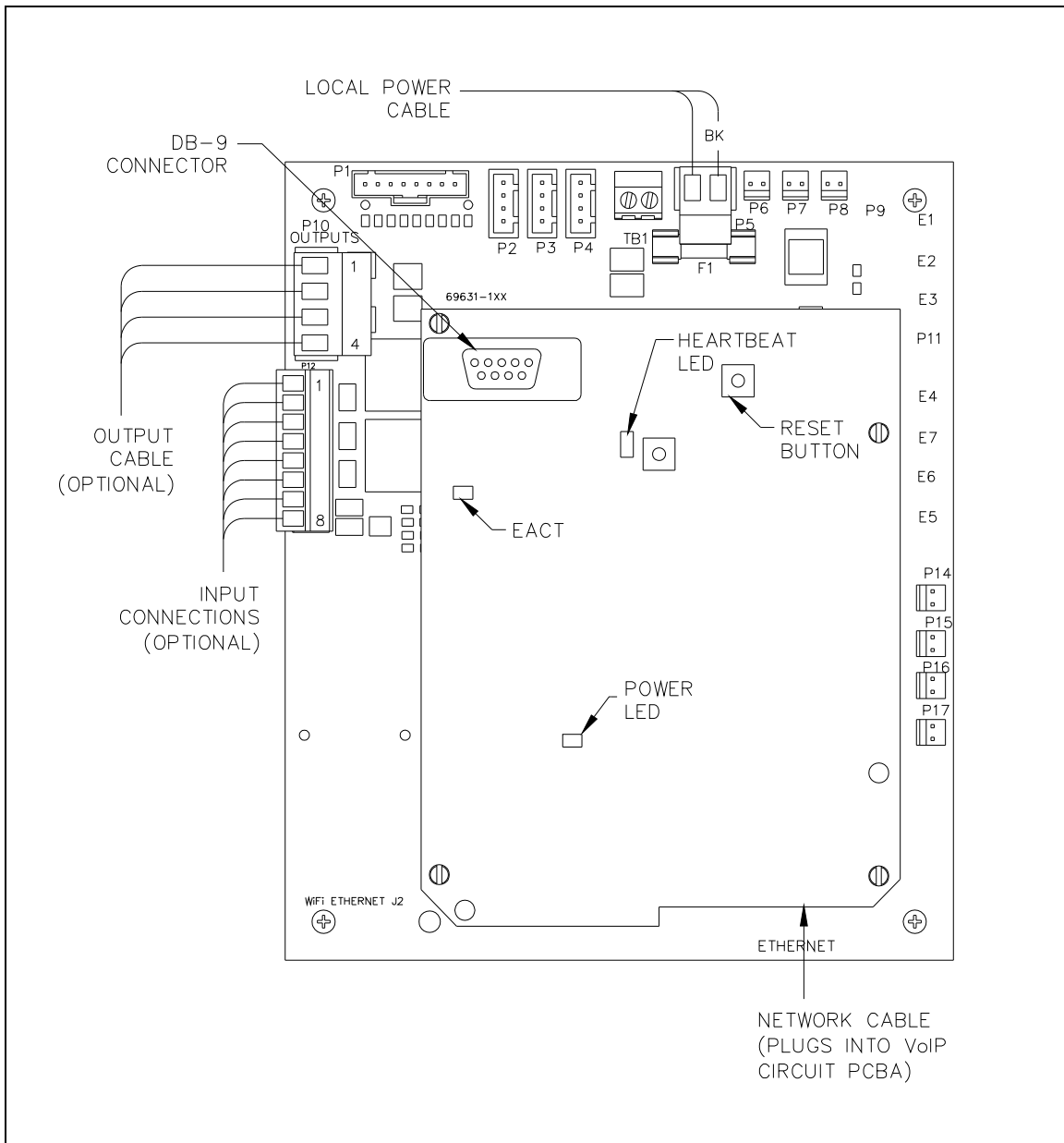


Figure 9. VoIP Telephone PCB Assembly

I/O

**Inputs**

Four auxiliary inputs have been provided for customer use. Terminations for these inputs are provided on terminal block P12.

Table 3. Auxiliary Inputs – P12

Pin	Label	Function
1	IN4	Input 4
2	COM	Common
3	IN3	Input 3
4	COM	Common
5	IN2	Input 2
6	COM	Common
7	IN1	Input 1
8	COM	Common

**Outputs**

Two outputs have been provided for customer use. Terminations for these outputs are provided on connector P10.

Table 4. Output Contacts – P10

Pin	Label	Description
1	C1	Common Output 1
2	NO1	Normally Open Output 1
3	C2	Common Output 2
4	NO2	Normally Open Output 2



Recommended Cabling

Table 5. Recommended Cabling

Cable Use	Size
LAN	Cat5 or Cat5e UTP cable with an RJ45 connector
Power	Two-conductor, No. 22 AWG is typical
Inputs	Two-conductor, No. 22 AWG is typical
Output contacts	Two or three-conductor, No. 18 AWG is typical

### VoIP Telephone Input Contacts

Each VoIP Telephone accepts four volt-free inputs. Refer to the “Specifications” section of this manual for the input ratings.

The function of each input is configurable. Inputs can be configured for one of the following modes: On, Off, or On/Off. The signals can also be inverted between active high (INVERT) or active low (NORMAL). Activation of these inputs can be configured to update a SYSLOG or generate an email. Please refer to Figure 9 on page 15 of this manual and the “Logic Settings” section of GTC Pub. 42004-396, “VoIP Telephone Configuration Guide” for programming instructions for these inputs.

### VoIP Telephone Output Contacts

Each VoIP Telephone contains two volt-free output contacts. Refer to the “Specifications” section of this manual for the output ratings. Both outputs are single-pole, single-throw contacts.

The function of each output is configurable. Outputs can be configured for one of the following modes: On, Off, Pulse, Mute, Ring, Call, Connect, Hook, In Use, Ring Cadence, Ring Out, Page, Registered, or Emergency. In some modes, the duration of the activation or on/off times can also be set. Please refer to Figure 9 on page 15 of this manual and the “Logic Settings” section of GTC Pub. 42004-396, “VoIP Telephone Configuration Guide” for programming instructions for these outputs.

## Strobe Connection

Each RED ALERT® VoIP Telephone includes two solid state relays, as previously noted. Contact 1 allows peripheral equipment, such as beacons, video cameras, and alarm generators, to be activated when the HELP push button is pressed. The relay can remain energized for the duration of the emergency call.

In most applications, this output is used to operate a GAI-Tronics Model 530-001/531A Strobe (sold separately). For connection details, please refer to Figure 10 or the Model 530-001/531A installation instructions included with the strobe (GTC Pub. 42004-395).

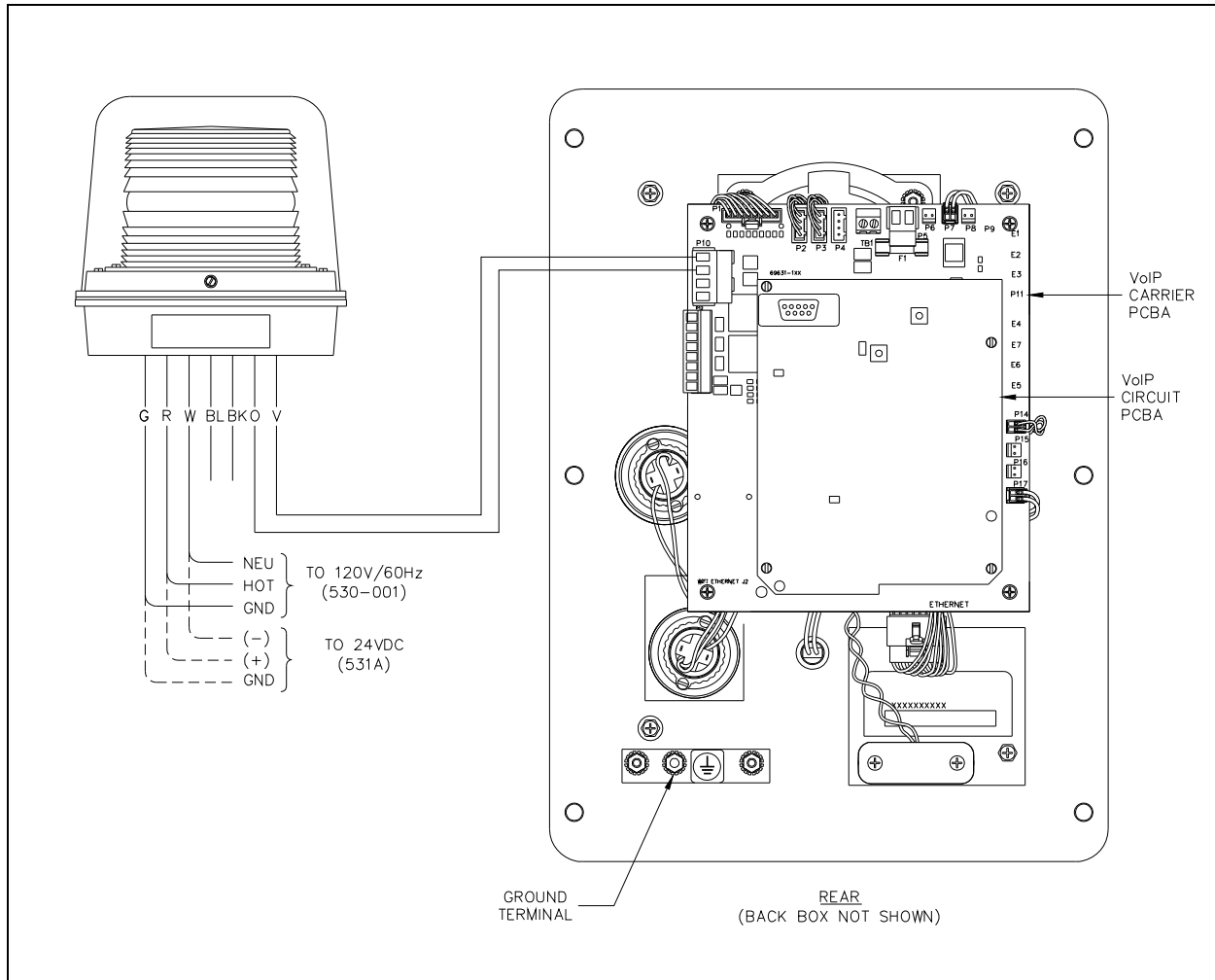


Figure 10. GAI-Tronics Models 530-001 and 531A Strobe Connection Details

## Status Indication

### Power

The Power LED located on the VoIP PCBA illuminates when power is applied to the telephone. Refer to Figure 9 on page 15 for location.

### Heartbeat

The Heartbeat LED located on the VoIP PCBA will flash once communication over the LAN is established. Refer to Figure 9 on page 15 for location.

### EACT

The EACT LED located on the VoIP PCBA will turn ON when VoIP PCBA is connected to an Ethernet device and flash when data is being transmitted. Refer to Figure 9 on page 15 for location.

## Programming

The installer should ensure that the network is configured to allow VoIP communications (using the SIP protocol) between the desired locations before attempting to configure the GAI-Tronics VoIP Telephones.

The general sequence for set up of the VoIP telephone is as follows:

### VoIP PCBA Setup

The easiest way to get started is to make a network connection to the unit and log on via a web browser. The unit is initially set with a static IP address:

**IP address     192.168.1.2**

A user name and password will be requested. The initial factory settings are:

User Name    **user**

Password     **password**

Changing the user name and password is recommended. This security measure helps to prevent unauthorized changes to the VoIP Telephone Interface's configuration.

### VoIP PCBA Initial Network Configuration

Each VoIP PCBA must be set up for the network prior to installation. Assign a local ID, domain, proxy, and registrar.

Assign a host name     The host name provides identification of the different VoIP PCBAs on the network.

Test                     Verify that calls can be made successfully.

Maintain                Monitor alarms. Set up auto-updates.

**Refer to Pub. 42004-481 for detailed programming instructions for these VoIP devices.**

## Maintenance

 **WARNING**  **This product can contain hazardous voltages. Always remove power to this station prior to servicing.**

### General Information

1. Inspect and replace frayed or cracked wiring.
2. Secure/replace loose wires and terminal lugs.
3. Remove corrosion from terminals.
4. Inspect fuse F1 on the VoIP Carrier PCBA.

### Preventive Maintenance

Stainless steel does require maintenance to prevent corrosion from occurring. Different installation locations may require more regular maintenance than others, depending on the environment and exposure to airborne contaminants. The following maintenance steps should be performed on a regular basis or when corrosion is first noticed.

#### Cleaning

For general cleaning, wipe surface with a cleanser or cleanser and water mixture. Any cleanser that is safe for glass is usually safe for stainless steel. Wipe dry.

If corrosion or rusting is noticed, remove with a non-abrasive commercial cleanser and water. Rub stained areas in the same direction as the existing grain. Stubborn stains may be removed with a paste made from magnesium oxide, ammonia, and water. Wipe clean with water rinse and dry.

#### Prevention

Automotive wax provides the best results in preventing corrosion on stainless steel. Simply apply wax, let dry to a haze, and buff to a shine with a clean dry cloth. This application should protect the telephone surface for many months as it will allow natural re-formation of the chromium oxide layer.

DO NOT use steel wool, sandpaper, mineral acids, bleaches, or chlorine cleansers on the stainless steel.

### Service

If your RED ALERT<sup>®</sup> VoIP Telephone requires depot service, contact your Regional Service Center for a return authorization number (RA#). Equipment should be shipped prepaid to GAI-Tronics with a return authorization number and a purchase order number. If the equipment is under warranty, repairs will be made without charge. Please include a written explanation of all defects to assist our technicians in their troubleshooting efforts.

Call 800-492-1212 inside the USA or 610-777-1374 outside the USA for help identifying the Regional Service Center closest to you.

## Troubleshooting

Table 6. Troubleshooting

Problem	Possible Solution
Low volume	If the volume is low, increase the volume level in the telephone's programming configuration.
High volume	If the volume is high, decrease the volume level in the telephone's programming configuration.
Front panel push buttons are not operational	Verify the push buttons are properly configured.
Inputs not operational	Check the input connections. Verify the inputs are properly configured.
Outputs not operational	Check the output connections. Verify the outputs are properly configured.
Cannot make or receive calls	Check the connection of the LAN cable. Verify that power is applied to the unit. Verify the LAN parameters have been configured properly. Verify the phone has been set up on the network.
No power indication	Check the power connections. If using PoE, check the operation of the PoE equipment.

# Specifications

## Power

Network power..... Power-over-Ethernet, 802.3af compliant (via RJ45)  
 Local power requirements..... 24–48 V dc, 6 watts

**Network**..... 10/100 BaseT Ethernet RJ45, Cat5 or Cat5e UTP  
 Static IP provisioning or DHCP STUN client (NAT traversal)

Call control signaling..... SIP (RFC3261 compliant) loose routing  
 Configuration..... Embedded web server  
 Configuration file download  
 Direct serial connection  
 Password protection

## Inputs

Keypad\* ..... 3 × 4 matrix  
 Push buttons\* ..... HELP and CALL push buttons  
 Configurable inputs (quantity = 4)..... Internal pull-up 3.3 V dc tolerant  
 \*Not available on all models

## Outputs

Output 1 ..... 8 A @ 30 V ac/dc (resistive load)  
 Output 2 ..... 8 A @ 30 V ac/dc (resistive load)

## Indicators

External ..... Off-hook indicator light  
 Internal on VoIP PCBA ..... Power, Heartbeat, & EACT LEDs  
 Audio output ..... 85 dB SPL or greater @ 1.0 meters (@ 1 kHz)

## Mechanical

Temperature range  
 Operating..... –4° F to +131° F (–20° C to +55° C)  
 Storage..... –40° F to 158° F (–40° C to +70° C)

Relative humidity..... Up to 95%, non-condensing  
 PCBA (printed circuit board assembly)..... Conformal coated

## Construction

Panel ..... 14-gauge, type 304 brushed stainless steel  
 Back box..... 16-gauge cold-rolled steel with black polyurethane finish

## Dimensions

### Model 397-700TP

Panel..... 11.75 H × 9.50 W inches (298.4 × 241.3 mm)  
 Back box (depth from mounting surface) ..... 3.00 inches (76.2 mm)  
 Weight..... 6.0 lbs. (2.7 kg)

### Model 397-700RT

Panel..... 11.88 H × 8.25 W inches (301.6 × 209.6 mm)  
 Back box (depth from mounting surface) ..... 2.48 inches (63.0 mm)  
 Weight..... 6.0 lbs. (2.7 kg)

**Model 397-700CB**

Panel..... 11.75 H × 8.50 W inches (298.4 × 215.9 mm)  
 Back box (depth from mounting surface) ..... 2.48 inches (63.0 mm)  
 Weight..... 6.0 lbs. (2.7 kg)

**Model 398-702TP**

Panel..... 11.75 H × 9.50 W inches (298.4 × 241.3 mm)  
 Back box (depth from mounting surface) ..... 3.00 inches (76.2 mm)  
 Weight..... 7.0 lbs. (3.2kg)

**Model 398-702RT**

Panel..... 11.88 H × 8.25 W inches (301.6 × 209.6 mm)  
 Back box (depth from mounting surface) ..... 2.56 inches (65.0 mm)  
 Weight..... 7.0 lbs. (3.2 kg)

**Model 398-702CB**

Panel..... 11.75 H × 8.50 W inches (298.4 × 215.9 mm)  
 Back box (depth from mounting surface) ..... 2.56 inches (65.0 mm)  
 Weight..... 7.0 lbs. (3.2 kg)

Approval Standards

Compliance to Standard .....FCC CRF 47 Part 15  
 Enclosure for Electrical Equipment .....3R

Replacement and Optional Parts

Part No.	Description
233-001	Model 233-001 Security Screwdriver
12565-702	VoIP Circuit PCBA Replacement Kit
12542-002	Security Screws (Torx T-25), ½-inch, Pack of 15
12520-009	Push Button Replacement Kit (Emergency)
12521-004	Microphone Replacement Kit
12522-007	Piezo Speaker Replacement Kit
21245-002	Four-Point Connector
21245-003	Terminal Block Connector, Two-Position (External power)
62317-208	Eight-Point Connector (Inputs)
40419-011	Optional Plug-in Power Supply, 120/240 V ac input, 24 V dc output

# Warranty

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Equipment. GAI-Tronics warrants for a period of one (1) year from the date of shipment, that any GAI-Tronics equipment supplied hereunder shall be free of defects in material and workmanship, shall comply with the then-current product specifications and product literature, and if applicable, shall be fit for the purpose specified in the agreed-upon quotation or proposal document. If (a) Seller's goods prove to be defective in workmanship and/or material under normal and proper usage, or unfit for the purpose specified and agreed upon, and (b) Buyer's claim is made within the warranty period set forth above, Buyer may return such goods to GAI-Tronics' nearest depot repair facility, freight prepaid, at which time they will be repaired or replaced, at Seller's option, without charge to Buyer. Repair or replacement shall be Buyer's sole and exclusive remedy. The warranty period on any repaired or replacement equipment shall be the greater of the ninety (90) day repair warranty or one (1) year from the date the original equipment was shipped. In no event shall GAI-Tronics warranty obligations with respect to equipment exceed 100% of the total cost of the equipment supplied hereunder. Buyer may also be entitled to the manufacturer's warranty on any third-party goods supplied by GAI-Tronics hereunder. The applicability of any such third-party warranty will be determined by GAI-Tronics.

Services. Any services GAI-Tronics provides hereunder, whether directly or through subcontractors, shall be performed in accordance with the standard of care with which such services are normally provided in the industry. If the services fail to meet the applicable industry standard, GAI-Tronics will re-perform such services at no cost to buyer to correct said deficiency to Company's satisfaction provided any and all issues are identified prior to the demobilization of the Contractor's personnel from the work site. Re-performance of services shall be Buyer's sole and exclusive remedy, and in no event shall GAI-Tronics warranty obligations with respect to services exceed 100% of the total cost of the services provided hereunder.

Warranty Periods. Every claim by Buyer alleging a defect in the goods and/or services provided hereunder shall be deemed waived unless such claim is made in writing within the applicable warranty periods as set forth above. Provided, however, that if the defect complained of is latent and not discoverable within the above warranty periods, every claim arising on account of such latent defect shall be deemed waived unless it is made in writing within a reasonable time after such latent defect is or should have been discovered by Buyer.

Limitations / Exclusions. The warranties herein shall not apply to, and GAI-Tronics shall not be responsible for, any damage to the goods or failure of the services supplied hereunder, to the extent caused by Buyer's neglect, failure to follow operational and maintenance procedures provided with the equipment, or the use of technicians not specifically authorized by GAI-Tronics to maintain or service the equipment. **THE WARRANTIES AND REMEDIES CONTAINED HEREIN ARE IN LIEU OF AND EXCLUDE ALL OTHER WARRANTIES AND REMEDIES, WHETHER EXPRESS OR IMPLIED BY OPERATION OF LAW OR OTHERWISE, INCLUDING ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.**

## Return Policy

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If the equipment requires service, contact your Regional Service Center for a return authorization number (RA#). Equipment should be shipped prepaid to GAI-Tronics with a return authorization number and a purchase order number. If the equipment is under warranty, repairs or a replacement will be made in accordance with the warranty policy set forth above. Please include a written explanation of all defects to assist our technicians in their troubleshooting efforts.

Call 800-492-1212 (inside the USA) or 610-777-1374 (outside the USA) for help identifying the Regional Service Center closest to you.