



GAI-TRONICS®
A HUBBELL COMPANY

RED ALERT®

Hands-free VoIP Telephone Manual

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Confidentiality Notice

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Product Overview

RED ALERT® Hands-free VoIP Telephones are designed for connection to a 10/100 Mb Ethernet network. These telephones will operate from Power-over-Ethernet (POE) or an external 24 to 48 V dc power source. The VoIP Telephones provide direct point-to-point communications between personnel throughout the facility over the existing LAN and can be utilized for multicast broadcasts. All models are weatherproof rated as 3R (rainproof).

In addition to providing standard telephone operation, RED ALERT® VoIP telephones feature real-time alarm reporting that enables system supervisors to monitor a telephone's activity and address caller needs or maintenance issues immediately. Also, four user-configurable inputs and two outputs have been provided for customer use.

The RED ALERT® VoIP Telephones listed in Table 1 are detailed in this manual:

Table 1. Model Chart

Model	Description
393-700	Surface-Mount VoIP Telephone , weatherproof, yellow engineered plastic enclosure, HELP auto-dial push button, and CALL RECEIVED WHEN LIT LED.
393AL-700	Surface-Mount VoIP Telephone , weatherproof, cast-aluminum enclosure painted safety yellow, HELP auto-dial push button, and CALL RECEIVED WHEN LIT LED.
394AL-702	Surface-Mount VoIP Telephone , weatherproof, cast-aluminum enclosure painted safety yellow, HELP auto-dial push button, CALL (off-hook) button, 12-button Braille keypad, and CALL RECEIVED WHEN LIT LED.
397-700	Flush-Mount VoIP Telephone , weatherproof, brushed stainless steel front panel, HELP auto-dial push button, and CALL RECEIVED WHEN LIT LED.
397-700FS	Flush-Mount Compact VoIP Telephone , weatherproof, brushed stainless steel front panel, HELP auto-dial push button, and CALL RECEIVED WHEN LIT LED. This telephone is functionally identical to Model 397-700.
397-701	Flush-Mount VoIP Telephone , weatherproof, brushed stainless steel front panel, HELP auto-dial push button, ASSISTANCE auto-dial push button, and CALL RECEIVED WHEN LIT LED.
397-701FS	Flush-Mount Compact VoIP Telephone , weatherproof, brushed stainless steel front panel, HELP auto-dial push button, ASSISTANCE auto-dial push button, and CALL RECEIVED WHEN LIT LED. This telephone is functionally identical to Model 397-701.
397-702	Flush-Mount Emergency Telephone , weatherproof, brushed stainless steel front panel, and two CALL auto-dial push buttons.
398-701	Flush-Mount VoIP Telephone , weatherproof, brushed stainless steel front panel, CALL (off-hook) push button, 12-button Braille keypad, and CALL RECEIVED WHEN LIT LED. This telephone is simply a rugged, hands-free telephone, which is not intended for emergency use.
398-701FS	Flush-Mount Compact VoIP Telephone , weatherproof, brushed stainless steel front panel, CALL (off-hook) push button, 12-button Braille keypad, and CALL RECEIVED WHEN LIT LED. This telephone is simply a rugged, hands-free telephone, which is not intended for emergency use. This telephone is functionally identical to Model 398-701.
398-702	Flush-Mount VoIP Telephone , weatherproof, brushed stainless steel front panel, HELP auto-dial push button, CALL (off-hook) button, 12-button Braille keypad, and CALL RECEIVED WHEN LIT LED.

System Requirements and Limitations

The VoIP telephones require Power-over-Ethernet (POE) or a local 24 to 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 network with a Session Initiation Protocol (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.
- Inform children, babysitters, and visitors about your VoIP service and its 911 limitations, if any.
- 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 telephone line, or having a wireless telephone 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[®] 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
- Power-over-Ethernet compatible
- 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

Placing an Auto-dial Emergency Call

Models 393-700, 393AL-700, 394AL-702, 397-700, 397-700FS, 397-701, 397-701FS, and 398-702

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 will light steady in accordance with the Americans with Disabilities Act (ADA) when the call is answered.
3. The call cannot be terminated by the initiator. The call is terminated by any of the following: the receiving caller hangs up, the defined timeout for call duration is exceeded, or the SIP server disconnects the call.

Placing an Auto-dial Non-Emergency Call

Models 397-701, 397-701FS, and 397-702

To place a non-emergency call:

1. Press the ASSISTANCE push button to place an immediate call to a preprogrammed non-emergency number (garage, dorm, etc.).
2. The CALL RECEIVED WHEN LIT LED, will light steady in accordance with the Americans with Disabilities Act (ADA) when the call is answered.
3. The call is terminated by the any of the following: pressing the ASSISTANCE push button again, the receiving caller hangs up, the defined timeout for call duration is exceeded, or the SIP server disconnects the call.

Placing a General Telephone Call

Models 394AL-702, 398-701, 398-701FS, and 398-702

To place a general telephone call:

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

Receiving a Call

When a RED ALERT[®] 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 broadcast override. 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)

NOTE: Use of the TMA maintenance software application permits “system” monitoring and data collection/reporting from a central location.

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 (unsuccessful SIP registration)
- Audio Path Test (speaker/microphone test)

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. A category 5 data line lightning surge protector is recommended for telephones subject to any electrostatic discharge (e.g. lightning).
- Do not install jacks in wet locations unless the jack is specifically designed for wet locations.

Station Placement

To prevent 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 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.

Conduit Installation Details (Surface-Mount Models)

GAI-Tronics recommends installing Ethernet and power lines in conduit to protect against accidental damage and vandalism. To prevent moisture from entering the enclosure, the following is recommended:

- Conduit should enter the enclosure from the bottom.
- Sealed fittings should be installed at all cable entry points.
- Silicone sealant or equivalent should be applied around and inside all conduit entries.

Please refer to the examples below for the recommended conduit installation details.

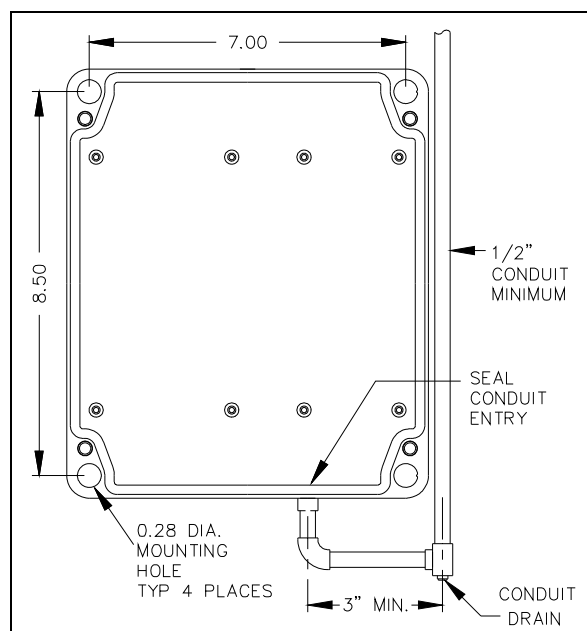


Figure 1. Bottom entry conduit recommended for non-metallic enclosures

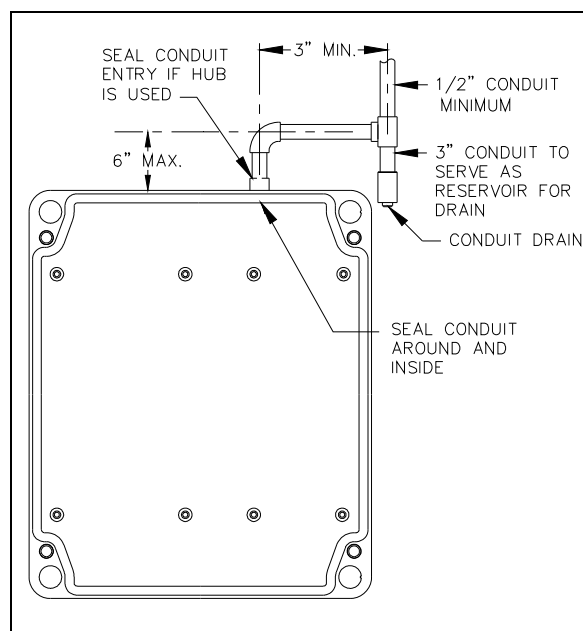


Figure 2. Top entry conduit installation for non-metallic enclosures (NOT recommended)

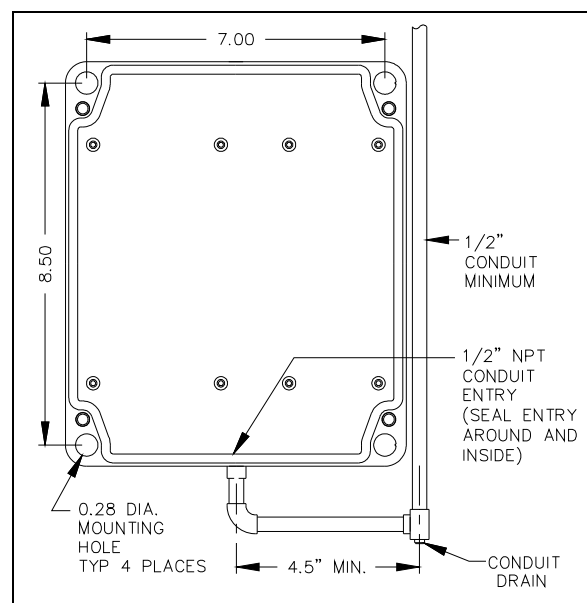


Figure 3. Bottom entry conduit installation details for metallic enclosures

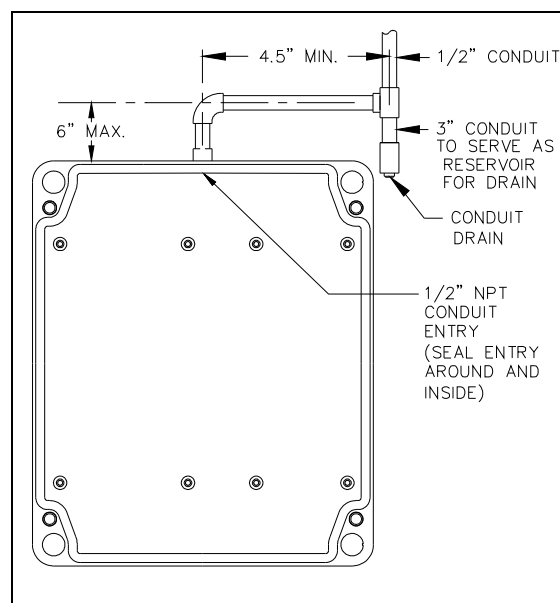


Figure 4. Top entry conduit installation details for metallic enclosures (NOT recommended)

Models 393-700, 393AL-700, and 394AL-702 (Surface Mount Applications)

The mounting and wiring instructions are as follows:

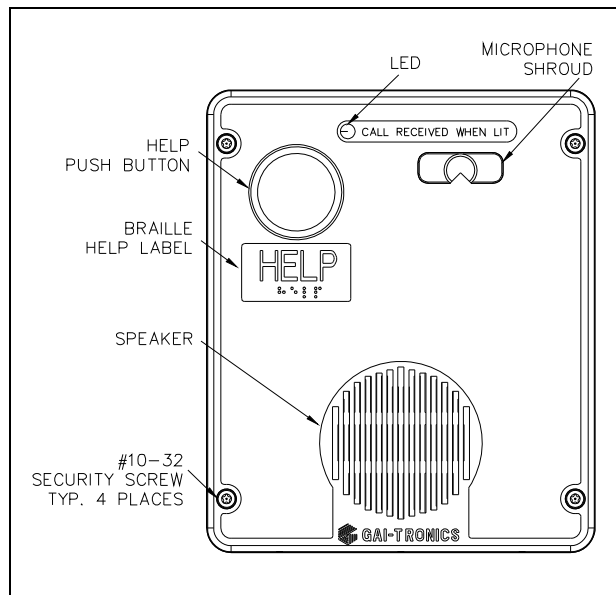


Figure 5. Model 393-700 VoIP Telephone in a Non-metallic Enclosure

1. Remove the four security screws from the front panel.
2. Position the enclosure on the mounting surface. The enclosure provides four 0.28-inch mounting holes in a 7.0 × 8.5-inch hole pattern. Secure the enclosure to its mounting surface with four ¼-inch diameter bolts of the appropriate length for the surface.

NOTES:

1. When using the GAI-Tronics Model 231-001 Pole Mounting Kit, follow the mounting instructions provided in the kit.
 2. When mounting outdoors, installation of a surge suppresser (customer-supplied) on the Ethernet line is recommended.
 3. For Model 393-700 only: Create a conduit access hole using a Greenlee-type punch that is equivalent in size to the conduit diameter. Bottom entry is strongly recommended. Insert a conduit fitting in the access hole.
4. Install conduit as required. Refer to conduit installation details on page 7.
NOTE: Use silicone sealant or equivalent around and inside all conduit entries.
 5. Pull the Ethernet cable through the conduit and install the cable as shown in the “Field Wire Installation” section on page 18.
 6. Connect any desired peripheral devices. Refer to page 22 for connection information.
 7. Perform the initial programming of the telephone. Refer to the “Programming” section on page 23.
 8. Verify operation by calling to and from another telephone. Verify operation of peripheral equipment.
 9. Complete the installation by attaching the front panel assembly to the rear enclosure using the four security screws, 10–12 in-lbs. of torque recommended.

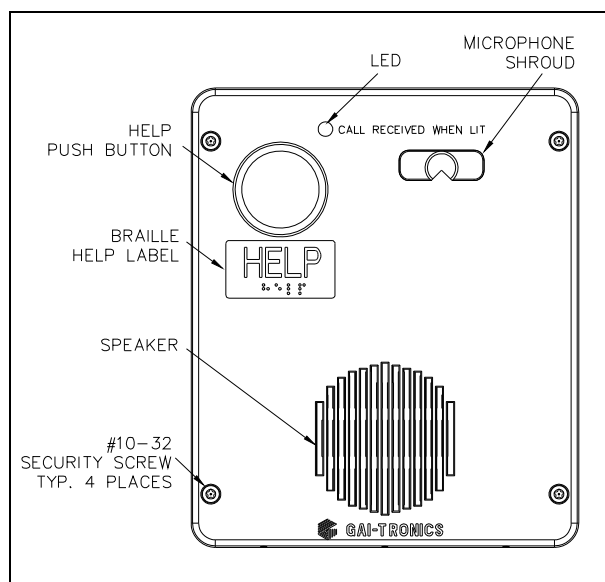


Figure 6. Model 393AL-700

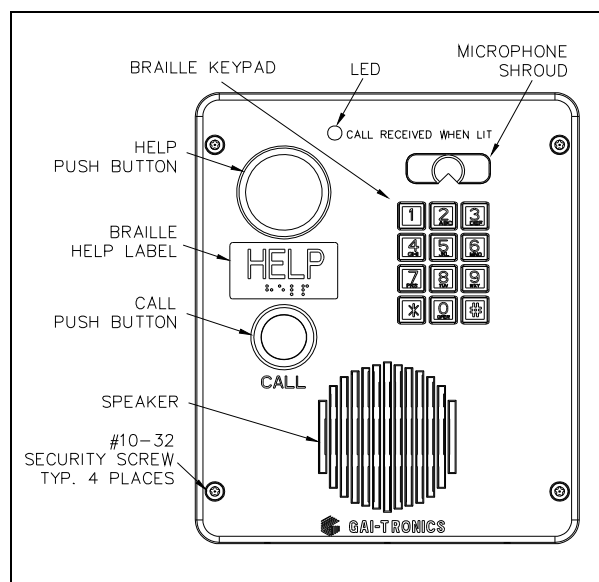


Figure 7. Model 394AL-702

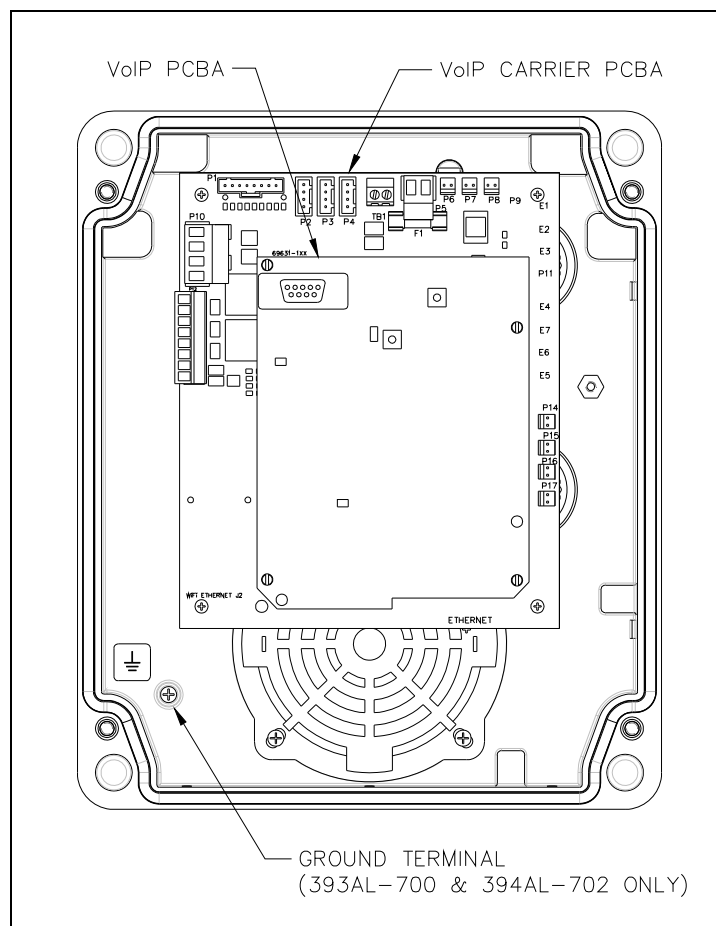


Figure 8. Component Locations for Models 393-700, 393AL-700, and 394AL-702

Models 397-70x and 398-70x (Stanchion/Flush-Mount Applications)

The mounting and wiring instructions are as follows:

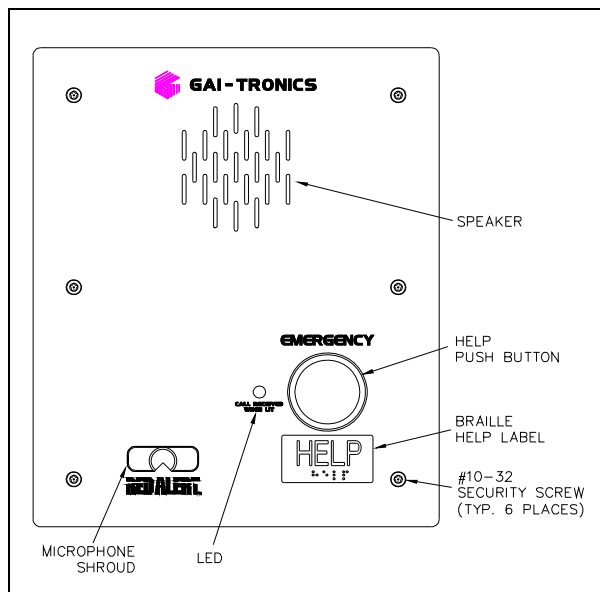


Figure 9. Model 397-700

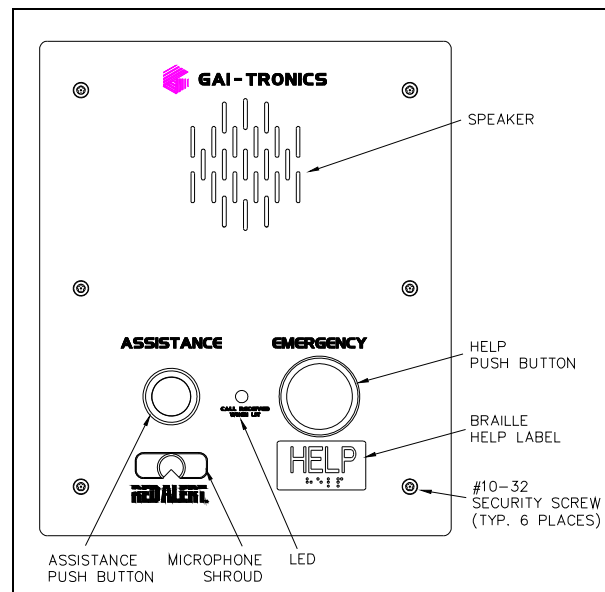


Figure 10. Model 397-701

1. Use the supplied back box to mount the Model 397-700, 397-701, 398-701 and 398-702 VoIP Telephones in flush-mount applications or in a GAI-Tronics Model 234 Series Stanchion. Mount the back box to the structure using the appropriate hardware. Refer to Figure 15 cutout dimensions.

NOTES:

- When installing a RED ALERT® Flush-mount VoIP Telephone in a GAI-Tronics 236-00x Series or 238-001 Surface-Mount Enclosure, the front panel assembly mounts directly to the enclosure (back box is not required.)
 - When mounting outdoors, the installation of a (customer-supplied) surge suppressor on the Ethernet line is recommended, and the power line, if used.
2. Remove a tapered plug from one of the cable entry holes in the back box, and install the cable and cable fitting. See the “Field Wire Installation” section on page 18.
 3. Use silicone sealant or equivalent around and inside all conduit entries.
 4. Connect any desired peripheral devices. Refer to page 22 for connection information.
 5. Perform the initial programming of the telephone. Refer to the “Programming” section beginning on page 23.
 6. Verify operation by calling to and from another telephone. Verify operation of peripheral equipment.
 7. Attach the telephone’s front panel to the mounting flanges of the back box using the six supplied #10-32 security screws and washers, 10–12 in-lbs. of torque recommended.

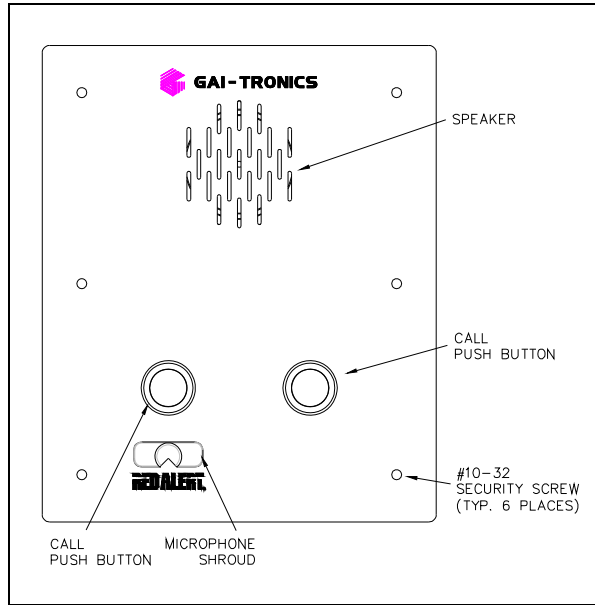


Figure 11. Model 397-702

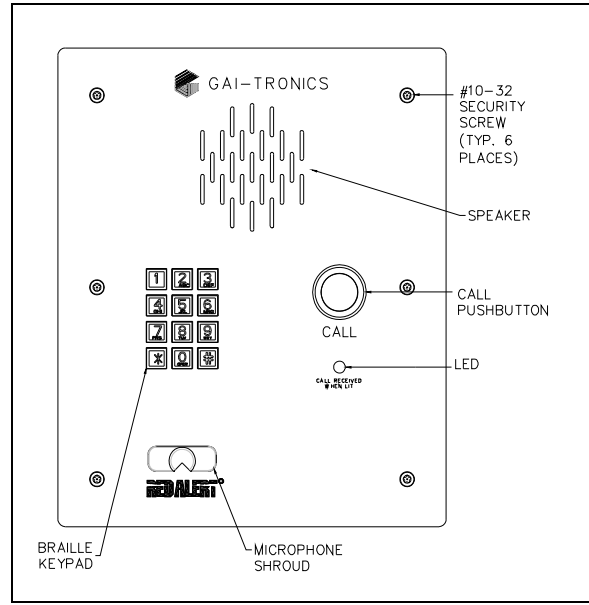


Figure 12. Model 398-701

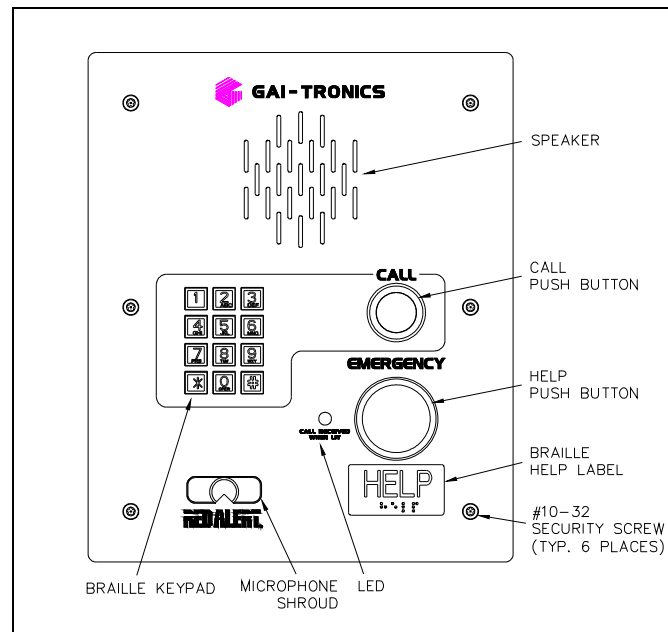


Figure 13. Model 398-702

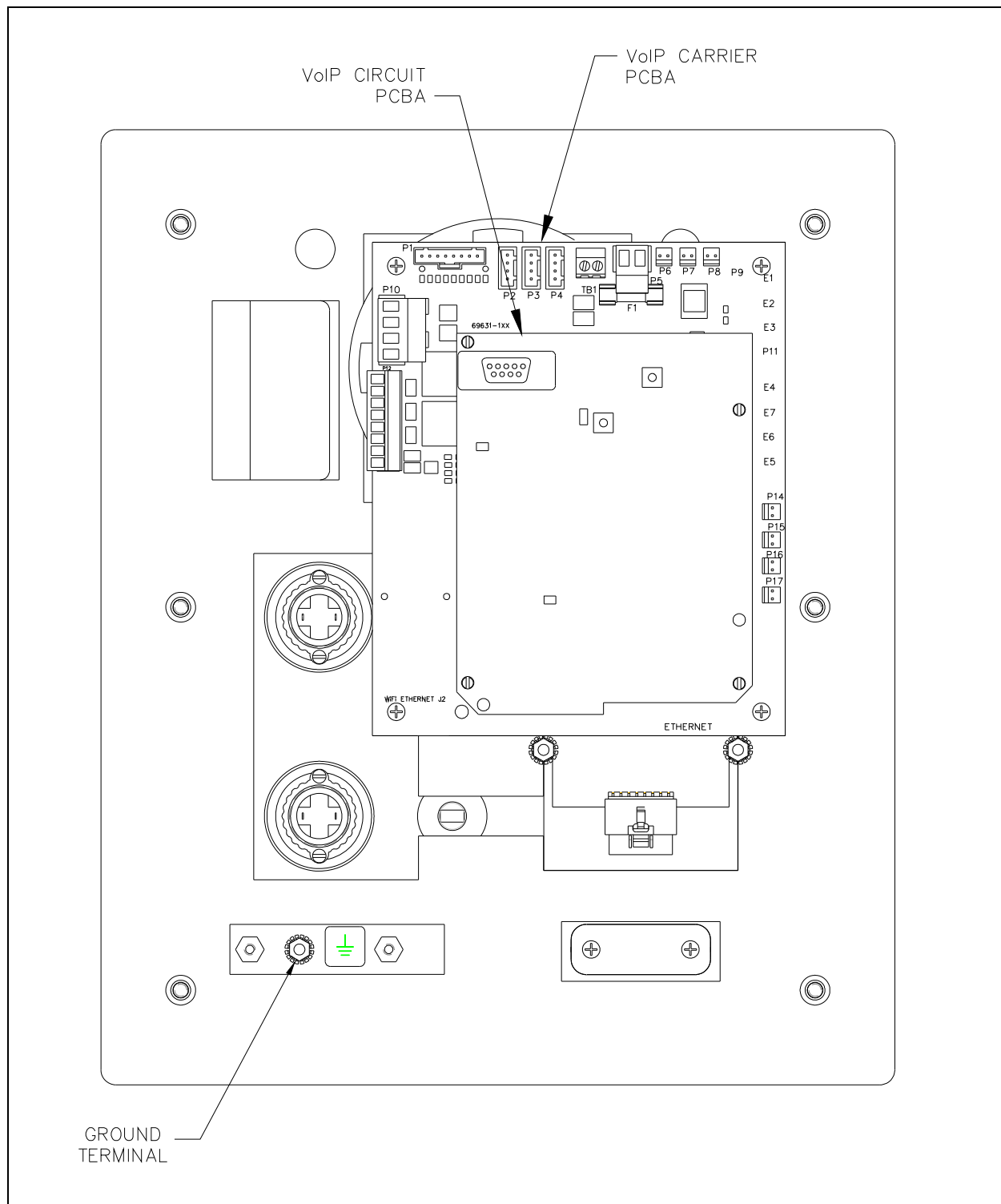


Figure 14. Component Locations for Model 398-70x

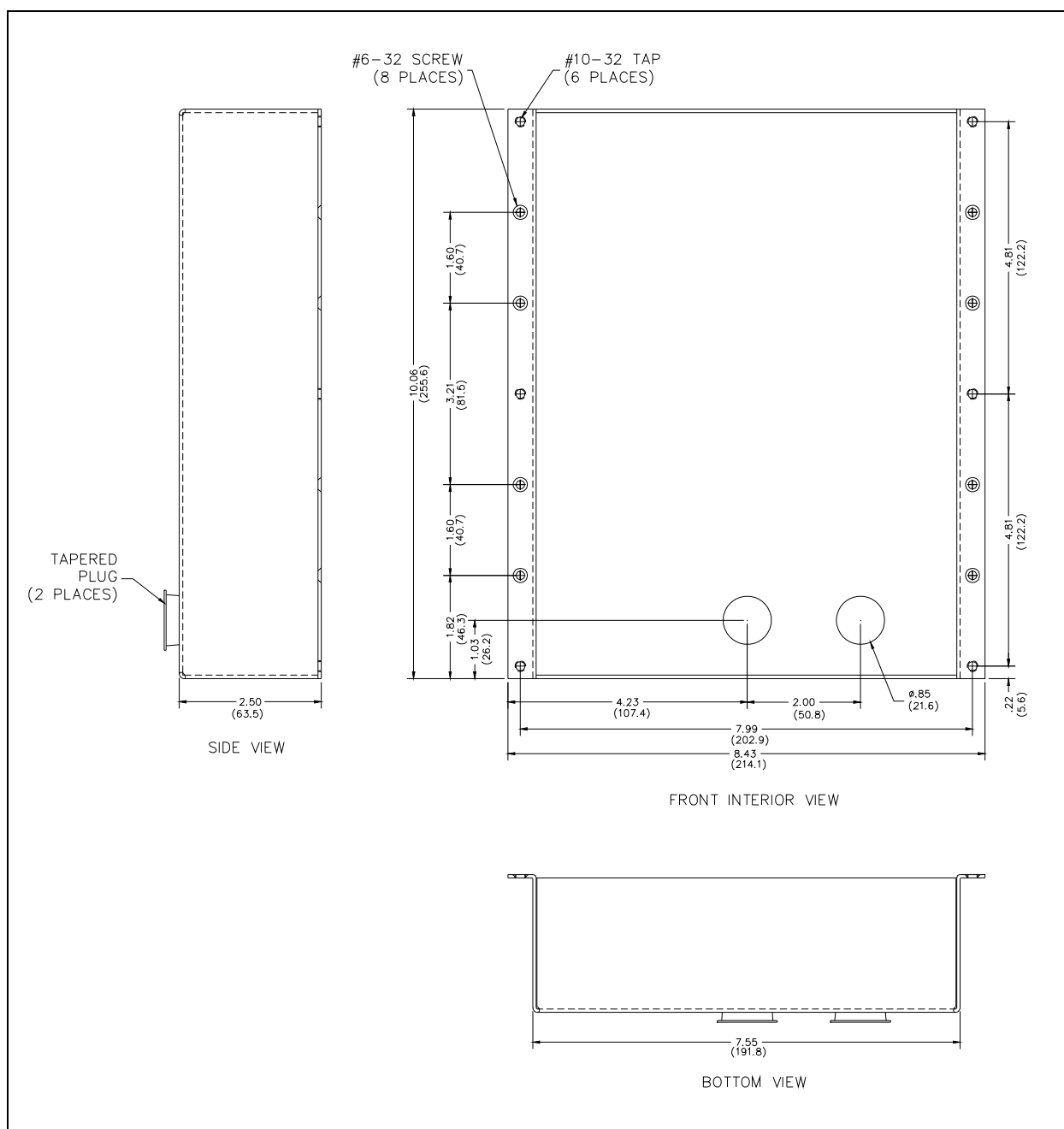


Figure 15. Flush-Mount VoIP Telephone Mounting Details

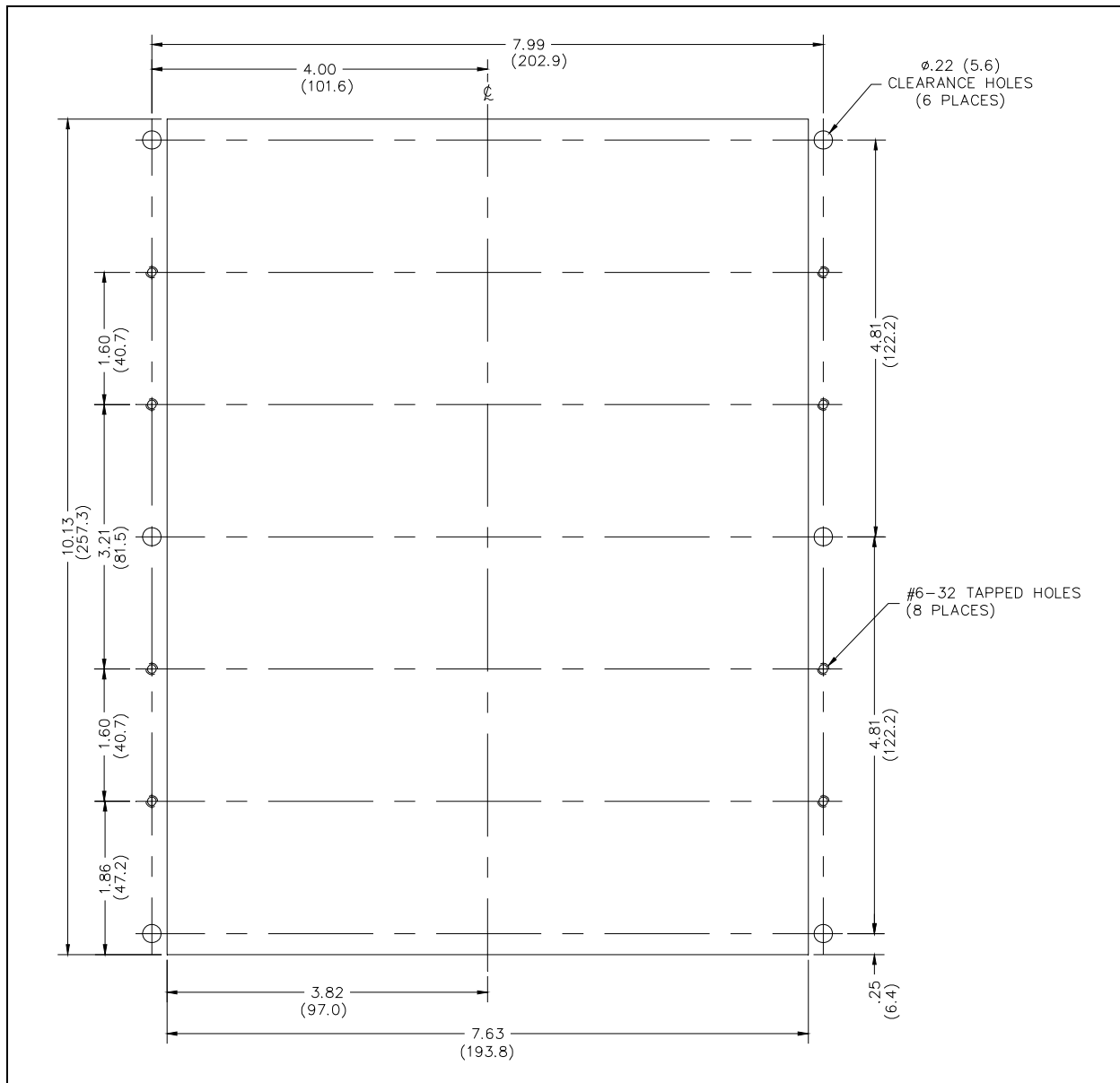


Figure 16. Cutout for Model 397-70x and 398-70x

Models 397-70xFS and 398-701FS (Flush-Mount Applications)

The compact models are designed to be installed in flush mount openings measuring 7.75 H × 5.75 W inches utilizing a six-hole mounting pattern. The mounting and wiring instructions are as follows:

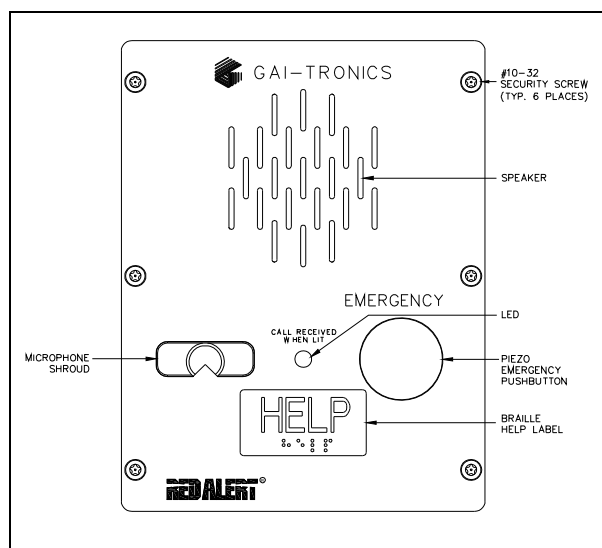


Figure 17. Model 397-700FS

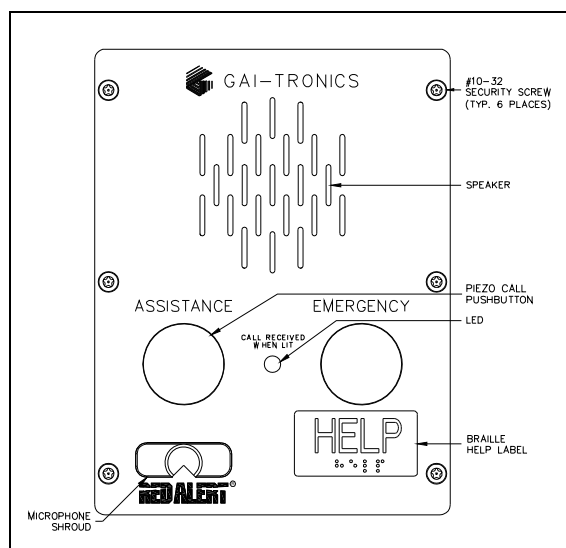


Figure 18. Model 397-701FS

1. Remove the back box from the front cover.

NOTES:

- When mounting outdoors, the installation of a (customer-supplied) Ethernet surge suppressor is recommended. A power line surge suppressor (customer supplied) should also be installed if local power is used.
2. Remove the tapered plug(s) as necessary from cable entry holes and feed all cabling into the back box. See the “Field Wiring” section on Page 18.
 3. Connect all cables per the instructions in the “Field Wiring” section.
 4. Connect any desired peripheral I/O devices, referring to Figure 22, Figure 23, and the instructions on page 20 for connection information.
 5. Re-install the back box.
 6. Perform the initial programming of the telephone. Refer to the “Programming” section beginning on page 23.
 7. Verify operation by calling to and from another telephone. Verify operation of peripheral equipment.
 8. Complete the installation by attaching the front panel assembly to the mounting surface using the security screws, 10 to 12 in-lbs. of torque recommended.

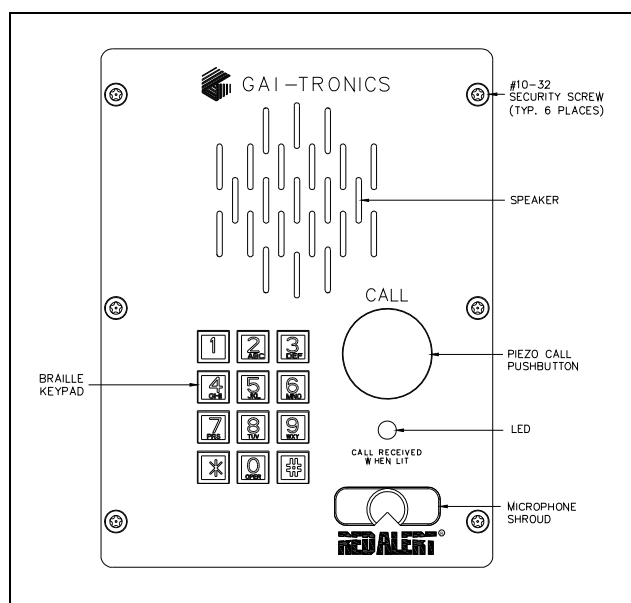


Figure 19. Model 398-701FS

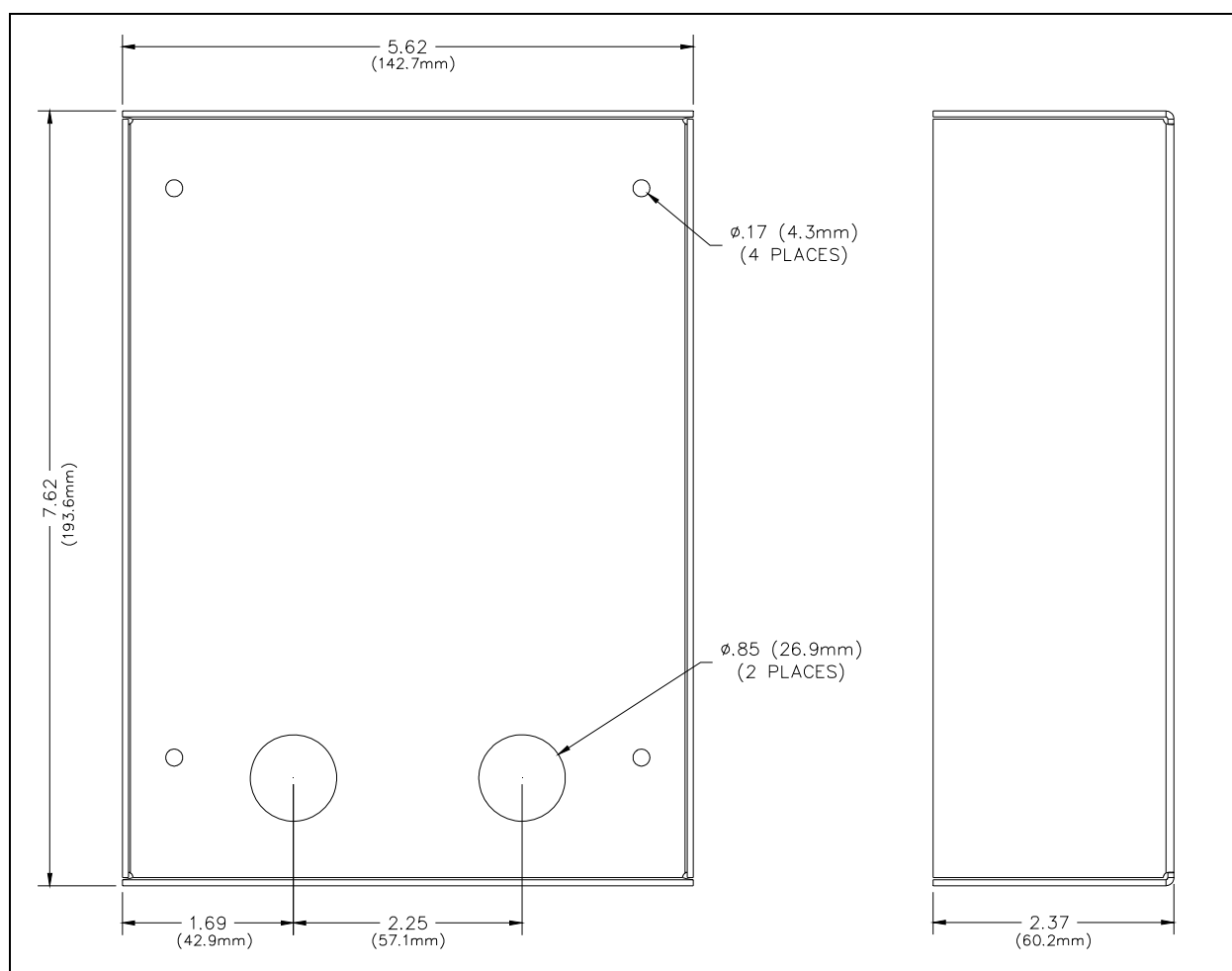


Figure 20. Model 397-700FS, 397-701FS, and 398-701FS Back Box

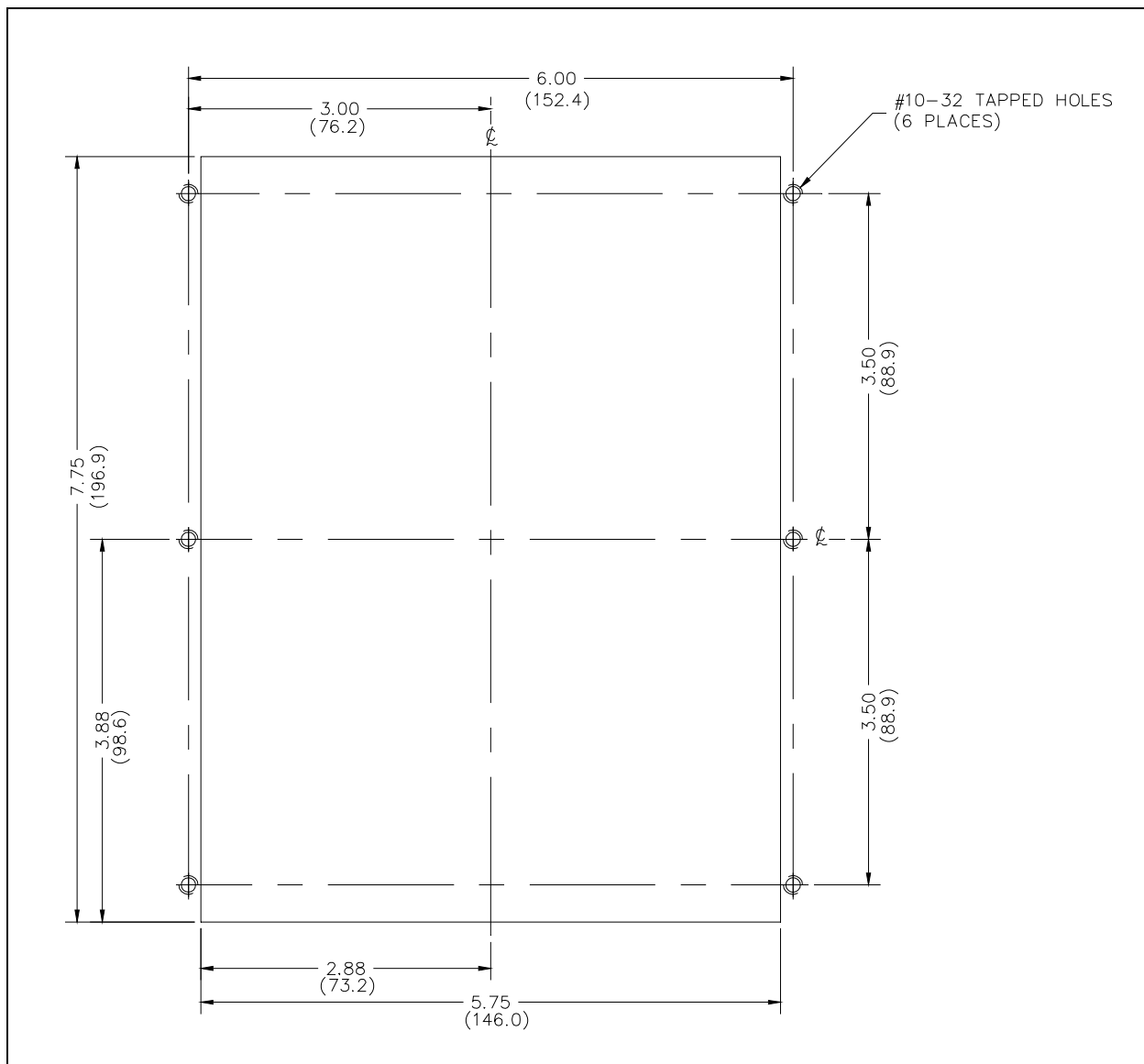


Figure 21. Cutout for Model 397-700FS, 397-701FS, and 398-701FS

Setup

Field Wiring

After all the field wires are pulled through the rear enclosure, install all connections as indicated below. Refer to Figure 22 for wiring details. Refer to Table 5 on page 20 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 (PoE)

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

Local Power

When PoE is not available, a separate, isolated 24 to 48 V dc power supply is required. See the “Replacement and Optional Parts” chart on page 28 for the 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 Figure 22 for wiring and location of P5.

Table 2. Local Power Connection– P5

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

Ground

The enclosure must be connected to earth ground. Install a #6 ring lug on the ground conductor and secure it with the ground terminal located on the rear of the front panel. See Figure 8 and Figure 14.

Network

Connect a category 5 or better cable with an RJ45 connector from the Local Area Network (LAN) to the Ethernet jack located on the VoIP PCBA.

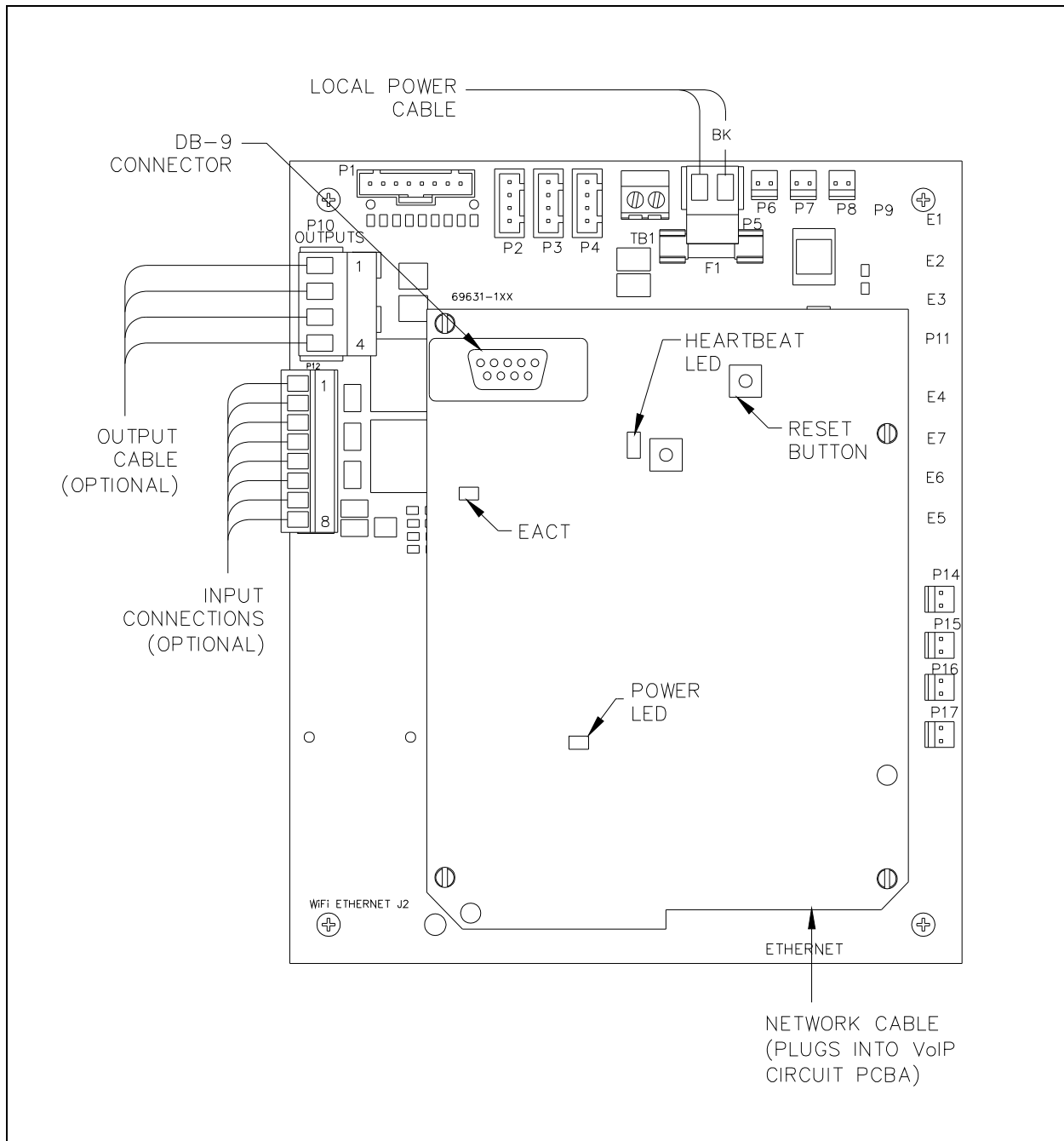


Figure 22. VoIP Telephone PCB Assembly

I/O**Inputs**

Four auxiliary inputs have been provided for customer use. Terminations for these inputs are located on terminal block P12. See Figure 22 for the location of the connector.

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. See Figure 22 for the location of the connector.

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 and Type
Power	Two-conductor, No. 22 AWG is typical
Inputs	Two-conductor, No. 22 AWG is typical
Output contacts	Two-conductor, No. 18 AWG is typical
Antenna	RG58 coaxial cable

VoIP Telephone Input Contacts

Each RED ALERT® VoIP Telephone accepts four 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 22 on page 19 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 RED ALERT® 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 22 on page 19 of this manual and the “Logic Settings” section of GTC Pub. 42004-396, “VoIP Telephone Configuration Guide” for programming instructions for these outputs.

Status Indication

Power

The Power LED located on the VoIP PCBA illuminates when power is applied to the telephone. Refer to Figure 22 on page 19 for location.

Heartbeat

The Heartbeat LED located on the VoIP PCBA will flash once communication over the LAN is established. Refer to Figure 22 on page 19 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 22 on page 19 for location.

GAI-Tronics Strobe Connection

Each RED ALERT® VoIP Hands-free 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, an output is used to operate a GAI-Tronics Model 540-001, 531A, or 530-001 Strobe (sold separately). For connection details, please refer to Figure 23 or the appropriate installation instructions included with each strobe.

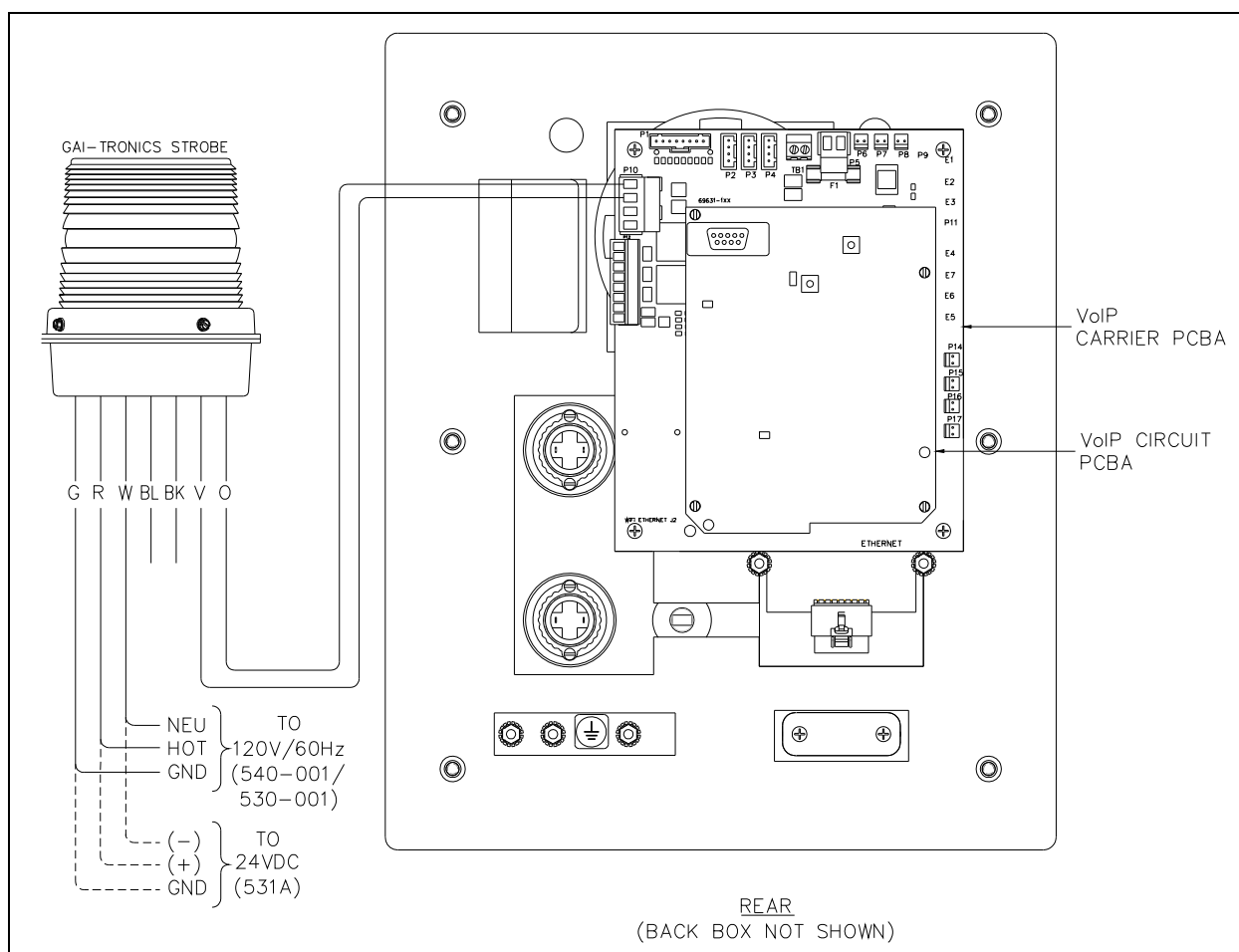


Figure 23. GAI-Tronics Models 540-001, 530-001, 531A Strobe Connection Details

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

Verify the PC is connected to the same network as the VoIP telephone.

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 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 for Models 397-70x, 397-70xFS, 398-70x, and 398-701FS

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 on your Model 397-70x, 397-70xFS, 398-70x, and 398-701FS Telephones.

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, rinse with water, 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® 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 too low, increase the volume level in the telephone's programming configuration.
High volume	If the volume is too 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 telephone 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 requirements24 to 48 V dc, 6 W

Network..... 10/100 BaseT Ethernet RJ45, Category 5 or better UTP
Static IP Provisioning or DHCP STUN client (NAT traversal)

Call control signalingSIP (RFC3261 compliant) loose routing

Configuration Embedded web server

Configuration file download

Direct serial connection

Password protection

Inputs

Keypad (Model 394AL-702 only)3 × 4 matrix

Push buttons Three auto-dial and an off-hook indicator/switch

Configurable inputs (quantity = 4) Internal pull-up 3.3 V dc tolerant

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 PCBAPower, Heartbeat, & EACT LEDs

Audio output 85 dB SPL or greater @ 1.0 m (@ 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

Model 393-700

Enclosure construction Engineered plastic, safety yellow

Dimensions9.50 H × 8.00 W × 4.00 D in (241.3 × 203.2 × 101.6 mm)

Weight4.0 lb (1.8 kg)

Models 393AL-700 and 394AL-702

Enclosure construction Cast aluminum painted safety yellow

Braille keypad (Model 394AL-702 only)Chrome-plated zinc

Dimensions9.50 H × 8.00 W × 4.00 D in (241.3 × 203.2 × 101.6 mm)

Weight

Model 393AL-7007.8 lb (3.5 kg)

Model 394AL-7028.5 lb (3.8 kg)

Models 397-700, 397-701, 397-702, 398-701 and 398-702**Construction**

Panel	14-gauge, type 304 brushed stainless steel
Back box.....	16-gauge cold-rolled steel with black polyurethane finish
Braille keypad (Model 398-702 only).....	Chrome-plated zinc

Dimensions

Front panel.....	12.00 H × 10.00 W in (304.8 × 254.0 mm)
Back box (overall)	10.06 H × 8.43 W × 2.50 D in (255.5 × 214.1 × 63.5 mm)
Cutout for mounting back box	10.13 H × 7.63 W in (257.3 × 193.8 mm)

Weight

Model 397-700	6.5 lb (2.9 kg)
Model 397-701	6.5 lb (2.9 kg)
Model 397-702	7.0 lb (3.2 kg)
Model 398-701	7.2 lb (3.3 kg)
Model 398-702	7.2 lb (3.3 kg)

Models 397-700FS, 397-701FS, and 398-701FS**Construction**

Panel	14-gauge, type 304 brushed stainless steel
Back box.....	16-gauge cold-rolled steel with black polyurethane finish
Key Pad (Model 398-701FS only)	Chrome-plated zinc

Dimensions

Front panel.....	8.5 H × 6.5 W in (215 × 165.1 mm)
Back box (overall)	7.62 H × 5.62 W × 2.37 D in (193.6 × 142.7 × 60.2 mm)
Cutout for flush mounting	7.75 H × 5.75 W in (196.9 × 146.1 mm)

Weight	5 lb (2.3 kg)
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Approval Standards

Compliance to Standard	FCC CRF 47 Part 15
Safety of Information Technology Equipment	UL/CSA 60950
Enclosure for Electrical Equipment	Type 3R

Replacement and Optional Parts

Part No.	Description	393-700	393AL-700	394AL-702	397-700	397-700FS	397-701	397-701FS	397-702	398-701	398-701FS	398-702
233-001	Model 233-001 Security Screwdriver	■	■	■	■	■	■	■	■	■	■	■
12565-702	VoIP Carrier PCBA Replacement Kit	■	■	■	■	■	■	■	■	■	■	■
51035-005A	PCBA, Keypad, metallic									■		■
51035-019	PCBA, Keypad Assembly with Connector			■							■	
12542-002	Security Screws (Torx T-25), ½ inch, Pack of 15				■	■	■	■	■	■	■	■
12516-003	Security Screws (Torx T-25), 1-1/8 inches, Pack of 10	■	■	■								
12520-009	Push Button Replacement Kit (Help or Emergency)	■	■	■	■		■					■
12520-010	Push Button Replacement Kit (Call or Assistance)			■			■		■	■		■
12520-011 [†]	Piezo Button, Red (HELP)					■		■				
12520-012 [†]	Piezo Button, Black (CALL, ASSISTANCE)							■			■	
12521-004	Microphone Replacement Kit	■	■	■	■	■	■	■	■	■	■	■
12522-007	Piezo Speaker Replacement Kit	■	■	■	■	■	■	■	■	■	■	■
21245-003	Terminal Block Connector, 2-Position (External power)	■	■	■	■	■	■	■	■	■	■	■
21245-002	Terminal Block Connector, 4-Position (Outputs)	■	■	■	■	■	■	■	■	■	■	■
62317-208	8-Point Connector (Inputs)	■	■	■	■	■	■	■	■	■	■	■

Warranty

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

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.