GAI-TRONICS® CORPORATION
A HUBBELL COMPANY

Model 351-001 and 226-002 Div. 2 Industrial Telephones

Confidentiality Notice

General Information

GAI-Tronics Div. 2 Industrial Telephones are designed for applications where standard telephones could cause a hazardous condition. These industrial-strength telephones are ideally suited for conditions that are too harsh for a standard telephone. The telephones operate the same as a standard telephone—simply lift the handset and dial the desired telephone number. The telephones are fully line-powered and do not require internal batteries.

Installation Guidelines

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

- NEVER install telephone wiring during a lightning storm.
- **Install a UL Listed lightning arrestor** on any phone installed where the phone or phone cable is at risk of being exposed to lightning strikes. The lightning arrestor must be installed as close to the phone as possible to maximize the protection. The lightning arrestor must not be installed within the enclosure supplied with the phone.
- NEVER install telephone jacks in wet locations unless the jack is specifically designed for wet locations.
- NEVER touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
- USE CAUTION when installing or modifying telephone lines.
- Install UL Listed telephone line suppressor (customer-supplied) on the telephone line.
- Use silicone sealant or equivalent around and inside all conduit entries

GAI-Tronics recommends the following precautionary steps to protect the unit during installation:

1. To ensure that the unit is vandal-resistant, run the subscriber line inside conduit.

2. Use the conduit entry located on the bottom of the enclosure to prevent any condensation forming inside the conduit from dripping into the unit. Additionally, using the bottom conduit entry makes water less likely to enter the unit at the conduit connection points.

3. Use Teflon™ pipe joint tape or a thread sealing compound around the conduit threads to seal threaded connections and prevent water from entering into the unit at the conduit location.

4. Apply a small amount of silicone sealant inside and around the end of the conduit pipe that is inside the unit. The sealant helps to prevent any condensation formed inside the conduit from dripping into the unit. This is especially important when using the conduit entry located on the top of the enclosure. (Manufacturers of silicon sealant include: Dow Corning, Duron, General Electric, and DuPont.)

5. Sealed fittings should be installed at all cable entry points to prevent liquids from entering the unit.

User Instructions (USA)

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. 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.

This equipment complies with Part 68 of the FCC rules. Located on the equipment is a label that contains, among other information, the FCC registration number and ringer equivalence number (REN). If requested, this information must be provided to the telephone company. The REN is used to determine the quantity of devices which may be connected to the telephone line. Excessive REN's on the telephone line may result in the devices not ringing in response to an incoming call. In most, but not all areas, the sum of the REN's should not exceed five (5.0). To be certain of the number of devices that may be connected to the line, as determine by the total REN's contact the telephone company to determine the maximum REN for the calling area. This equipment cannot be used on the telephone company-provided coin service. Connection to Party Line Service is subject to State Tariffs. If this equipment causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. If advance notice isn't practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary. The telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice in order for you to make the necessary modifications in order to maintain uninterrupted service.

If trouble is experienced with this equipment, please contact:

GAI-Tronics Corporation
P.O. Box 1060
Reading, PA 19607-1060 USA
800-492-1212 or 610-777-1374

If the trouble is causing harm to the telephone network, the telephone company may request you to remove the equipment from the network until the problem is resolved. This equipment uses the following USOC jacks: RJ11CIt is recommended that the customer install an ac surge arrester in the ac outlet to which this device is connected. This is to avoid damaging the equipment caused by local lightening strikes and other electrical surges. This equipment is Hearing-Aid Compatible (HAC). The telephone Consumer Protection Act of 1991 makes it unlawful for any person to use a computer or other electronic device, including fax machines, to send any message unless such message clearly contains in a margin at the top or bottom of each transmitted page or on the first page of the transmission, the date and time it is sent and an identification of the business or other entity, or other individual sending the message and the telephone number of the sending machine or such business, other entity, or individual. (The telephone number provided may not be a 900 number or any other number for which charges exceed local or long-distance transmission charges.)

User Instructions (Canada) CP-01, Issue 8, Part I: Section 14.1

NOTICE: The Industry Canada label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational and safety requirements as prescribed in the appropriate Terminal Equipment Technical Requirements document (s). The Department does not guarantee the equipment will operate to the user's satisfaction. Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations. Repairs to certified equipment should be coordinated by a representative designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment. Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

⚠ CAUTION ⚠

Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

CP-01, Issue 8, Part I: Section 14.2

NOTICE: The **Ringer Equivalence Number** (REN) assigned to each terminal device provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Numbers of all the devices does not exceed 5.

Installation

Model 226-002

1. Use a GAI-Tronics Model 233 Screwdriver to loosen the eight tamper-resistant front panel screws.

2. Remove the front panel assembly to expose the eight mounting holes. These holes accept 3/8-inch diameter bolts. The length of these bolts depends on the mounting surface.

   - *For wider and retrofit hole patterns from the Northern Telecom Model NE-2525Q Series,* use the 7.875 × 4.00-inch hole pattern. Four hole plugs are supplied for the unused holes.

     When using the Model 232 Pole Mounting Kit, use the 5.25 × 4.00-inch hole pattern. This kit includes four 3/8-16 × 1-inch shoulder bolts with Teflon™ seal washers. For additional support in wood poles, use 3/8-inch or 1/2-inch lug bolts with washers (not included).

   - *For wall-mount applications,* use Model 232 Pole Mounting Kit and 3/8 inch or 1/2 inch lug bolts with washers. (Note: Lug bolts with washers are not included in the kit).

3. A 1/2-NPT conduit entrance is provided at both the top and the bottom of the unit. An Allen drive plug is supplied for the unused entry.

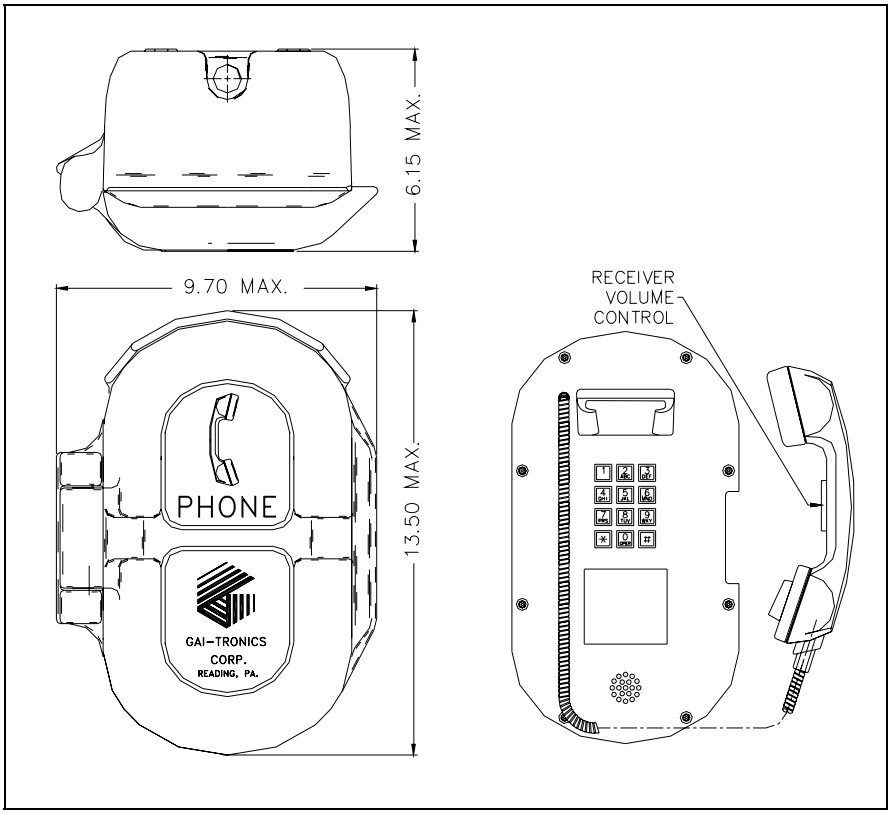

Figure 1. Model 226-002 Outline Drawing

4. Connect the free end of the modular telephone cord to the incoming subscriber line using the appropriate mating connector.

5. Replace the front panel assembly and tighten the eight front panel screws.

6. Check the telephone operation by calling to and from another telephone.

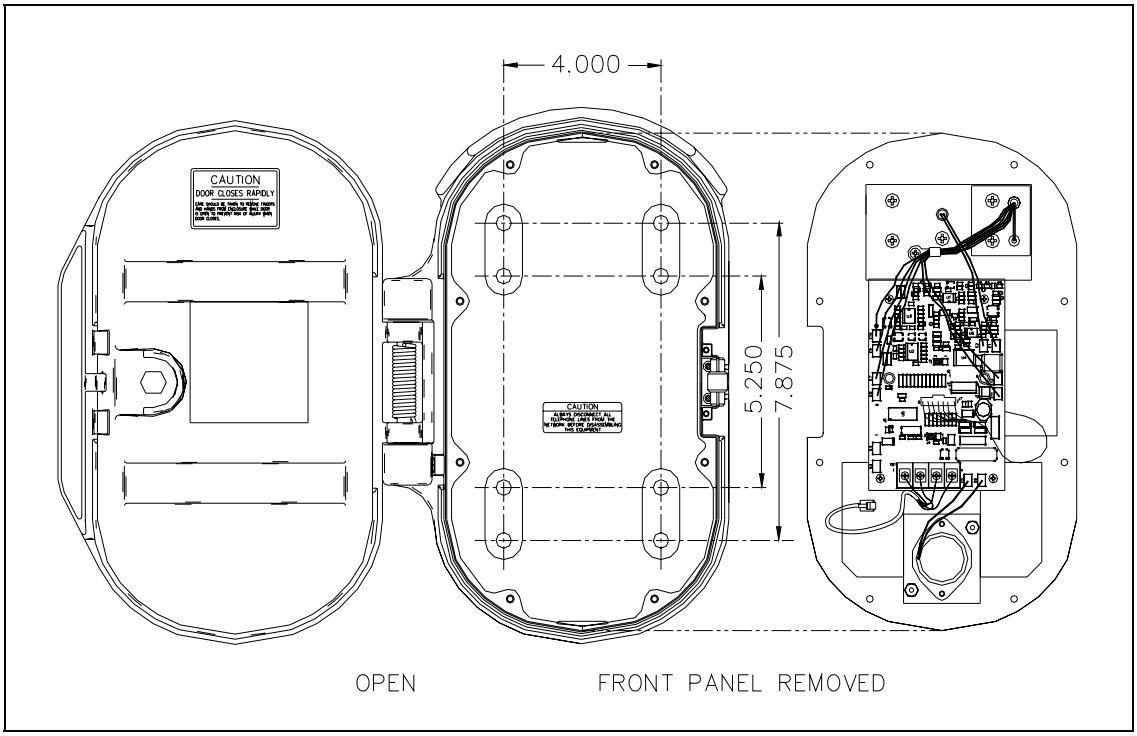

Figure 2. Model 226-002 Mounting Details

Model 351-001

1. Open the front door of the enclosure. Locate the four outermost screws.

2. Remove the four screws, and carefully pull the enclosure apart until encountering a slight resistance on the left side.

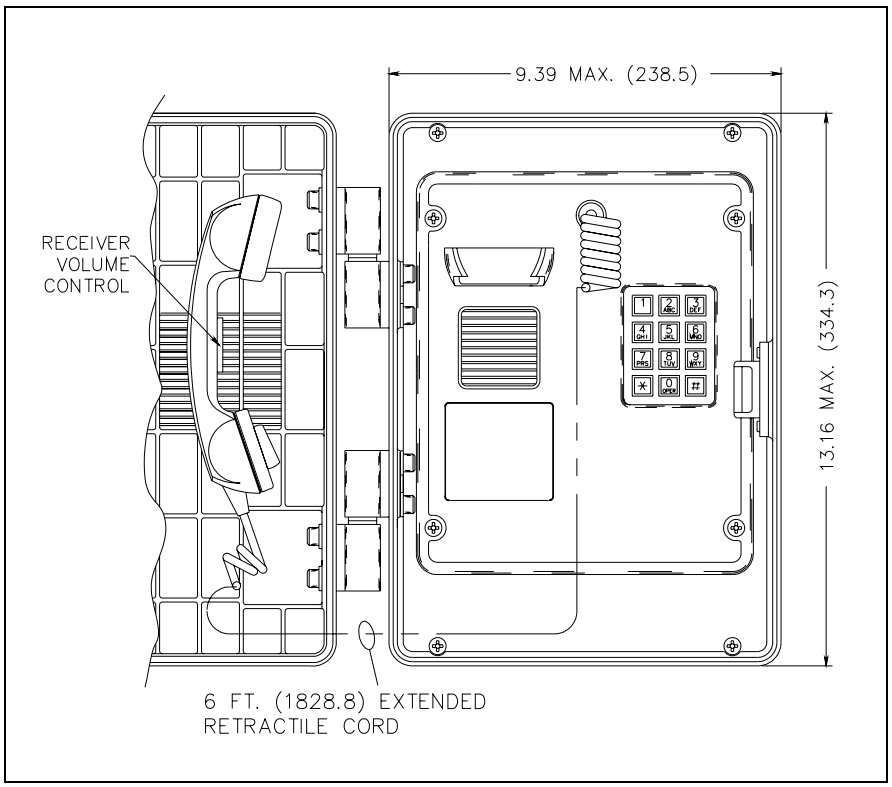

Figure 3. Model 351-001 Outline Drawing

3. Open the front half of the enclosure to the left until the length of modular telephone cord inside the enclosure can be disconnected from the printed circuit board terminal strip. See Figure 4.

4. Pull on the left side of the enclosure until the hinge plugs pull loose to separate the front half from the rear half. Set the front half of the enclosure aside.

5. Mount the enclosure on the wall using four 1/4-20 machine screws with nuts and washers or #14 wood screws of appropriate length, depending on the mounting surface.

6. Reconnect the modular telephone cord to the PCBA terminal strip. See Figure 4.

7. Close the front half of the enclosure, and secure it by replacing the four outermost screws.

8. Connect the free end of the modular telephone cord to the incoming subscriber line using a USOC RJ11C jack. Check the telephone by calling to and from another telephone.

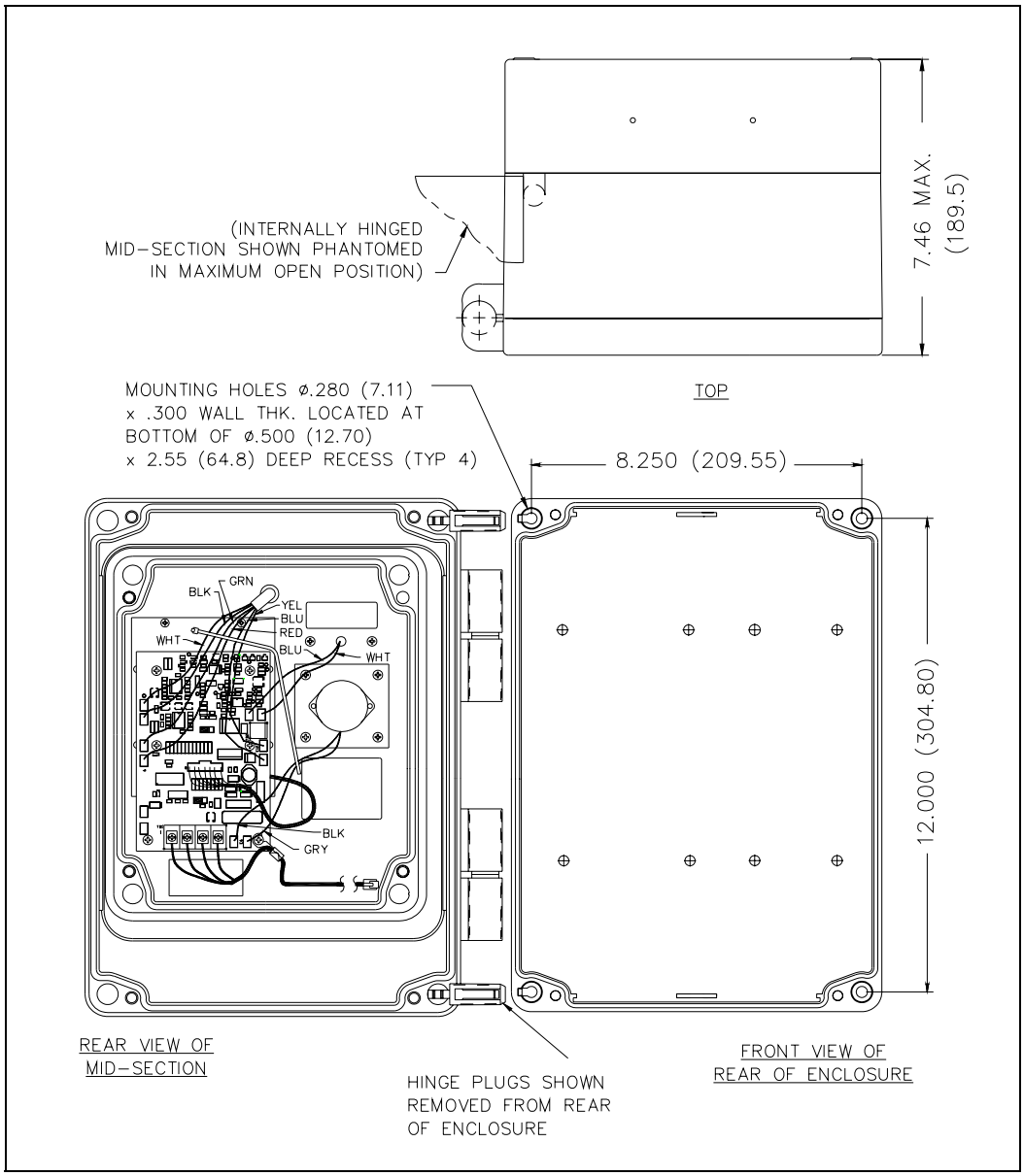

Figure 4. Model 351-001 Mounting Detail

Operation

1. Lift the handset to place a call.

2. The handset receiver volume control, which is located on the handset, can be adjusted to the desired level by pressing the handset pressbar.

   NOTE: Pressing the handset pressbar increases the volume in 3 dB increments. The volume starts at 0 dB and increases to a maximum of 18 dB. Pressing the pressbar a seventh time returns the volume to 0 dB.

3. Dial the desired number. After completion of the call, place the handset on-hook.

Volume Control Jumper Setting

The handset receiver volume control is factory-set to default to its original setting (0 dB) when the telephone is hung up. To save the volume control setting, jumper **J4**, which is factory-set at positions **2** and **3**, must be moved to positions **1** and **2**.

Specifications

Electrical (Typical)

Frequency response ..... 300 to 3,000 Hz
Inter-digit pause ..... 100 ms
Minimum loop current ..... 20 mA
Operation ..... Loop start
Signaling tone (DTMF) ..... 100 ms tone duration
Supervisory dc current ..... Minimum 20 mA dc; maximum .60 mA dc
Supervisory dc voltage ..... 24 V dc to 60 V dc (not polarity sensitive)
Network interface ..... Loop start
Minimum loop center ..... 20 mA
Network signaling ..... DTMF

Environmental

Operating Temperature ..... -40º F to +140º F (-40º C to +60º C)
Humidity ..... 90% non-condensing

FCC Information

FCC Registration Number ..... US: ADGTE10A-46048HAC
Ringer Equivalence Number (REN) 1.0A/1.3B
Network Connection (USOC) RJ11

Meets hearing aid compatibility magnetic field intensity and volume control technical standards per FCC Sections 68.316 and 68.317.

IC Information (Canada)

IC Certification Number 82211754
Ringer Equivalence Number (REN) 1.0A/1.3B
Connecting Method CA11A

Model 226-002 - Mechanical

Enclosure ..... Thick-walled cast aluminum
Finish ..... Gray polyurethane enamel
Handset/Cord ..... "G" style with armored cord and volume switch
Dial Pad, Braille ..... Chrome-plated zinc
Front Panel ..... 0.125-inch brushed anodized aluminum
Hook-switch ..... Chrome-plated zinc, stationary switching mechanism

Model 351-001 - Mechanical

Enclosure ..... High-impact, glass-reinforced polyester
Handset Cord ..... "G" style handset/Hytrel® 6-foot extended length (standard) and volume switch
Connections ..... 6.5-foot (1.98 m) modular line cord
Dimensions, Outside ..... 9.4 W × 13.2 H × 7.4 D inches (239 × 344 × 188 mm)
Mounting ..... Four 0.280-inch diameter holes
Weight ..... 8.2 lbs. (3.72 kg)

Model 351-001 Hazardous Area Approvals

Class I, Division 2, Groups A, B, C, D ..... UL 1604/ CSA - C22.2 No. 157
Class II, Division 2, Groups F and G. Class III ..... UL 1604/ CSA - C22.2 No. 157
Safety of Information Technology Equipment .....UL 60950 & CAN/CSA-C22.2 NO. 60950-00
Enclosures for Electrical Equipment.....UL 50 TYPE 3R/NEMA 3R

Model 226-002 Hazardous Area Approvals

Class I, Division 2, Groups A, B, C, D ..... UL 1604/ CSA - C22.2 No. 157
Class II, Division 2, Groups F and G. Class III ..... UL 1604/ CSA - C22.2 No. 157
Safety of Information Technology Equipment .....UL 60950 & CAN/CSA-C22.2 NO. 60950-00
Enclosures for Electrical Equipment .....UL 50 TYPE 3R/NEMA 3R

Model 226-002 Replacement Parts & Accessories

Part Number	Description
12512-002	Hookswitch/Cradle Kit
10117-001	Handset assembly, 15-inch armored cord
51035-005	Replacement keypad, Braille
61504-048	Keypad cable assembly
13707-004	Replacement ringer
28299-007	Tamperproof screws
69147-104	PCBA Replacement Kit
Accessories	
233	Tamper-resistant screwdriver
232	Pole Mounting Kit

Model 351-001 Replacement Parts

Part Number	Description
10111-104	Handset assembly
51035-005	Replacement keypad
61504-048	Keypad cable assembly
12512-001	Proximity-detecting hookswitch assembly
12513-003	Interior hinge plugs
69147-104	PCBA Replacement Kit
Accessories	
230	Pole Mounting Kit