



**GAI-TRONICS®**  
A HUBBELL COMPANY

# 716-102 and 7165-102 Flush-Mount Subsets

## Confidentiality Notice

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SmartSeries®

Page/Party®

ADVANCE™

SmartVolume™

## General Information

### Product Overview

The Model 716-102 Single Party and Model 7165-102 Multi-Party Flush-Mount Subsets are intended for use in GAI-Tronics Page/Party and SmartSeries systems.

The subset enables paging and party line communication when installed with a remote amplifier and enclosure. The remote subset includes a pressbar handset, a handset cradle, and a five-party rotary selector switch (Model 7165-102 only).

The subset's compact design allows it to be mounted where space is limited. The compact size is made possible by housing most of the support electronics in a separate remote amplifier enclosure.

The subset is designed for flush-mount applications. The integral connectorized cable permits mounting the subset up to eight feet from the amplifier.

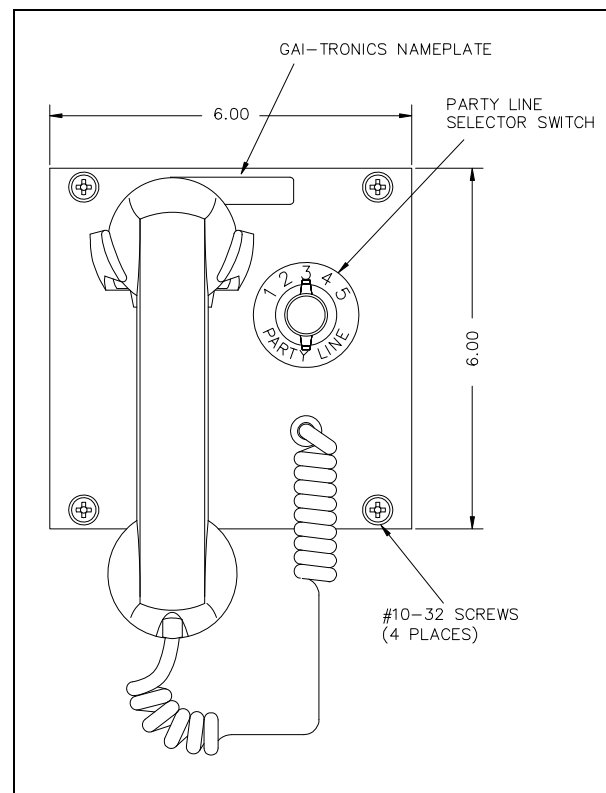


Figure 1. Model 7165-102 Outline Diagram

**⚠ WARNING ⚠** — **Explosion Hazard**

Substitution of components may impair suitability for Class 1, Div. 2 usage.

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## System Requirements and Limitations

The Model 716-102 Single Party and Model 7165-102 Multi-Party Flush-Mount Subsets must be installed with a certified remote subset amplifier and a certified Model 7245 Enclosure for proper operation. Mount the subset in an indoor location within eight feet of the enclosure.

## Features and Functions

The subsets provide the following features and functions when installed with a certified remote amplifier and a Model 7245 Remote Amplifier Enclosure in a Page/Party system:

- paging
- party line communication over one party line (Model 716-102 only)
- selective party line communication over one of up to five party lines (Model 7165-102 only)
- magnetic hookswitch

The subsets provide the following features and functions when installed with a certified Model 723 SmartSeries Remote Subset Amplifier and Model 7245 Remote Amplifier Enclosure, in a SmartSeries ADVANCE system:

- paging
- party line communication over one party line
- selective party line communication over one of up to five party lines (Model 7165-102 only)
- magnetic hookswitch
- page duration limit
- off-hook duration limit
- normal and alarm mode page destinations
- normal and alarm mode page priorities
- normal and alarm mode pre-announcement tones

## External Components

The Model 716-102 and 7165-102 Subsets contain the following subassemblies:

- **Pressbar handset**—is used to perform full-duplex party line communication and one-way paging by depressing the handset pressbar.
- **Party line selector switch**—(Model 7165-102 only) is used to select the desired party line.
- **Magnetic hookswitch/cradle assembly**—provides the subset with on/off-hook control.
- **Subset cable**—is an 8-foot connectorized cable that provides connection of the subset to the Model 7245 Amplifier Enclosure.

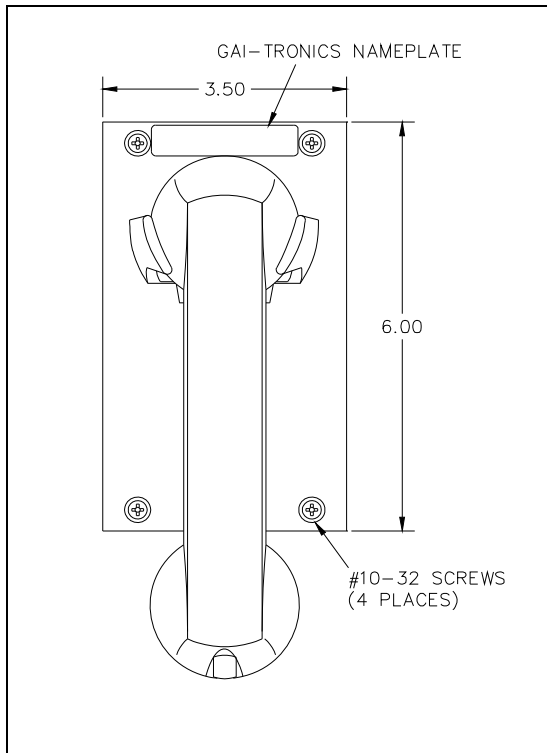


Figure 2. Model 716-102 Outline Diagram

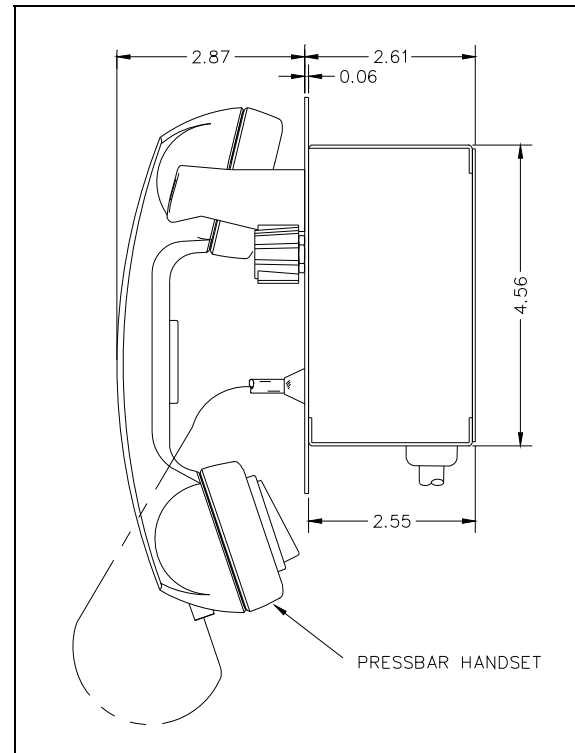


Figure 3. Model 7165-102 Side View

## Internal Components

The Model 716-102 and 7165-102 Subsets contain the subset termination PCBA. This assembly routes the signals of the handset, party-line selector switch, and hookswitch to the subset cable.

## Block Diagram

The handset, hookswitch, party line switch (Model 7165-102 only), and auxiliary input (optional) signals connect to the subset termination PCBA (see [Figure 4](#)). The subset termination PCBA then connects these signals to the appropriate terminals of the subset cable for connection to the amplifier/amplifier enclosure.

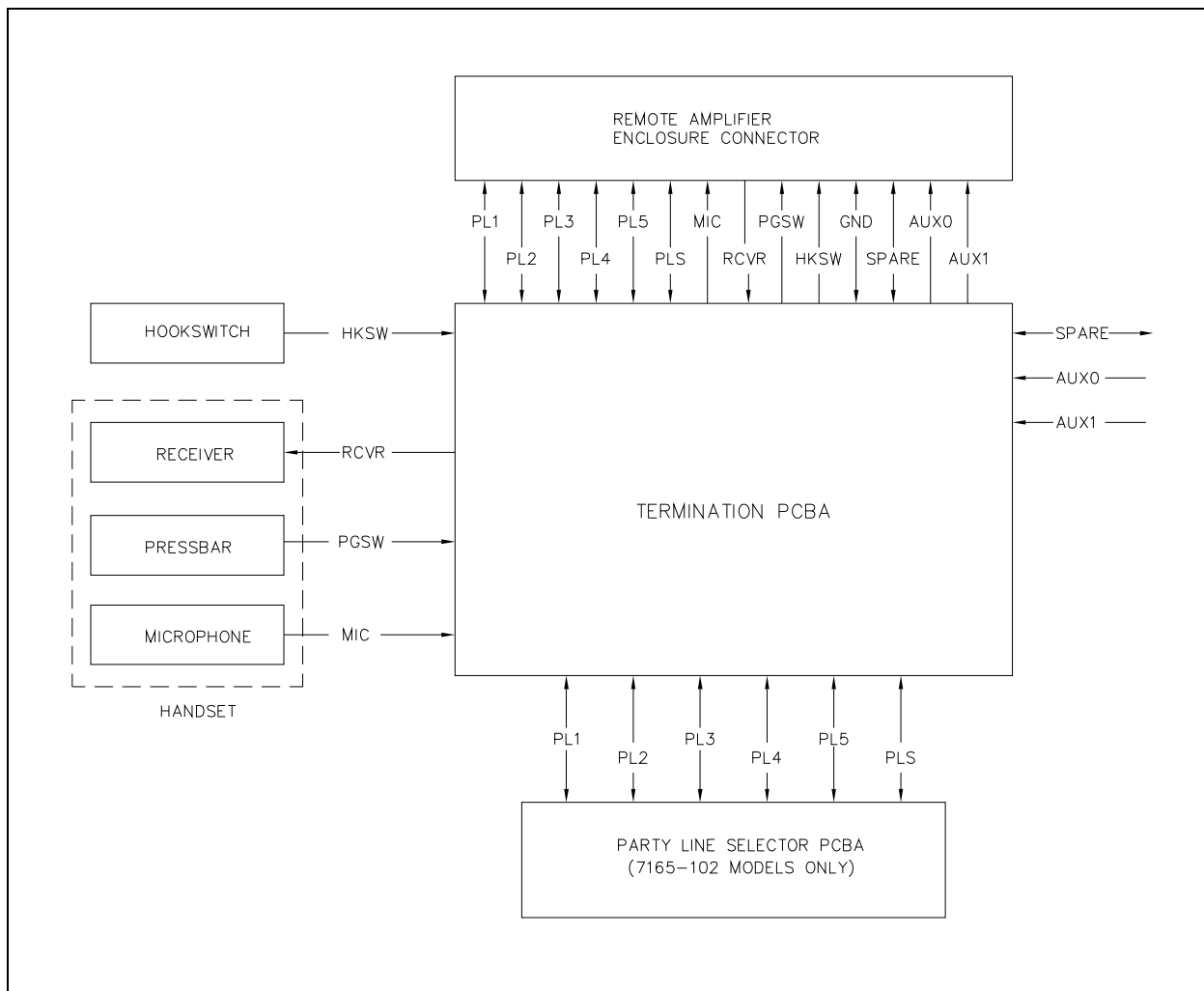


Figure 4. Block Diagram

## Installation

**⚠ WARNING ⚠** —Do not install this equipment in hazardous areas. Such installations may cause a safety hazard and consequent injury or property damage.

1. Drill and tap four holes in the mounting surface for the four No. 10-32 machine screws (included) (see [Figure 5](#) for the Model 7165-102 cutout details, see [Figure 6](#) for the Model 716-102 cutout details).
2. Feed the subset cable into the mounting hole.
3. Secure the subset to the mounting surface using the four No. 10-32 screws.
4. Plug the subset cable into the amplifier enclosure and secure the connector with the connector guard (located on the amplifier enclosure).

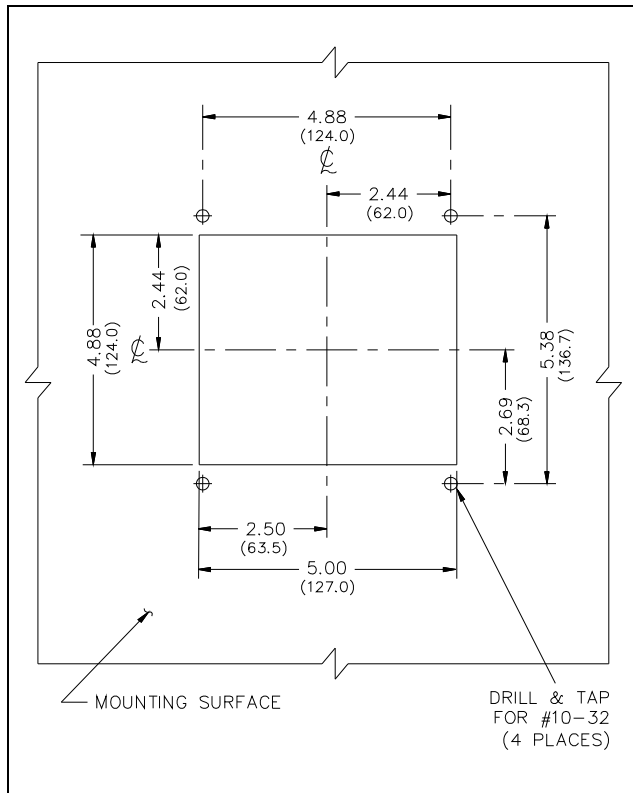


Figure 5. Model 7165-102 Cutout Details

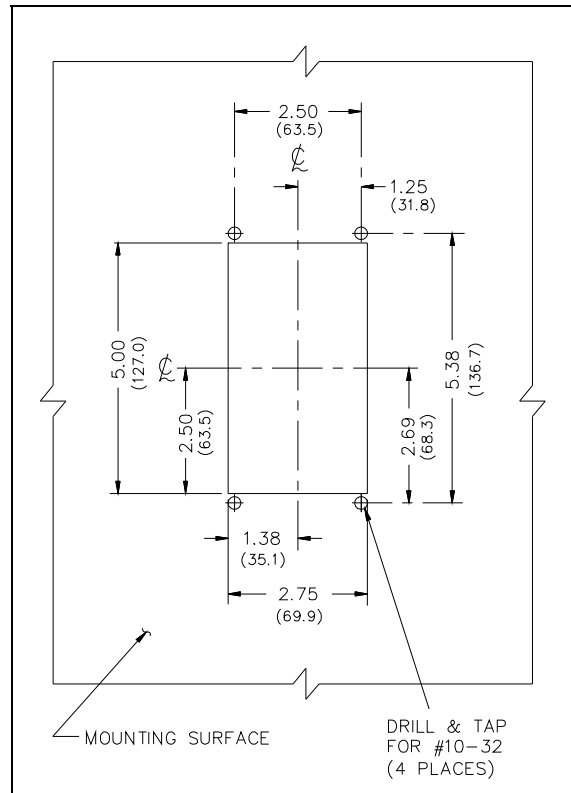


Figure 6. Model 716-102 Cutout Details

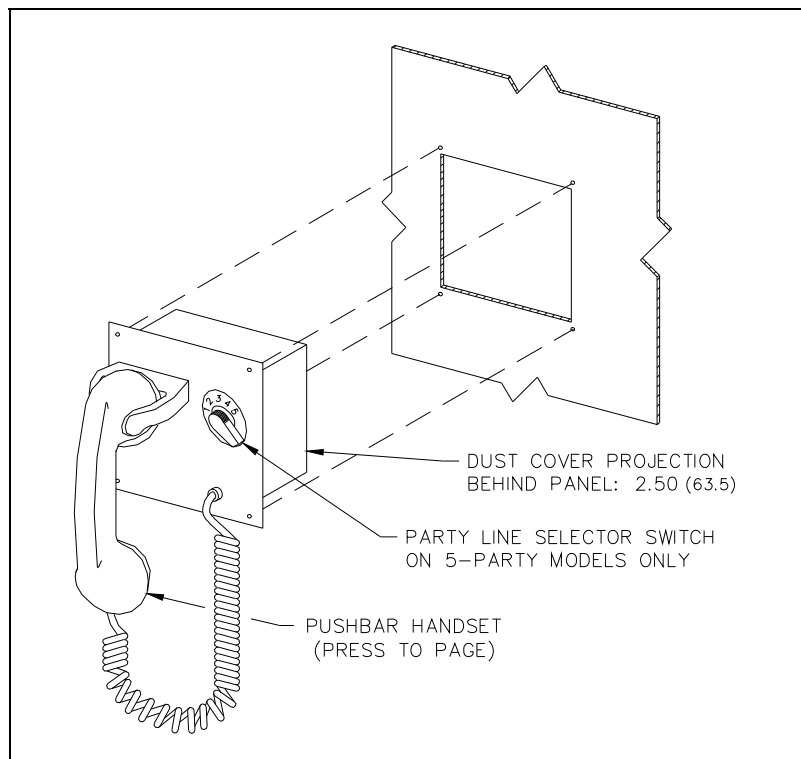


Figure 7. Subset Mounting Details (Model 7165-102 shown)

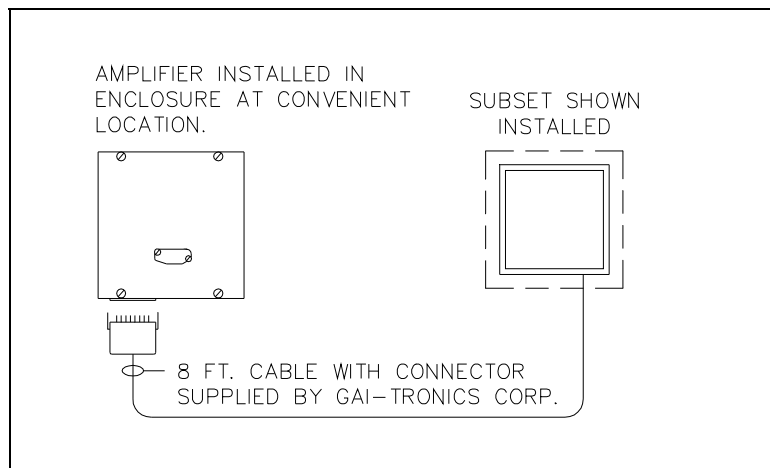


Figure 8. Typical Flush Station Installation

## Operation

GAI-Tronics offers two types of Page/Party systems; single party, with one page line and one party line, and multi-party, with one page line and five party lines, allowing up to five simultaneous full-duplex conversations.

### Single Party Systems

Complete the following steps to make a page announcement:

1. Lift the handset from the cradle.
2. Depress and hold the handset pressbar.
3. Speak directly into the microphone to broadcast a page announcement over the loudspeakers.
4. Release the handset pressbar, and if requested, wait for a response.

The paged individual(s) responds by picking up a station handset.

### Multi-Party Systems

Complete the following steps to make a page announcement:

1. Lift the handset from the cradle.
2. If party line conversation is desired, rotate the selector switch to an unoccupied party line.
3. Depress and hold the handset pressbar.
4. Speak directly into the microphone to broadcast a page announcement over the loudspeakers.
5. Release the handset pressbar, and if requested, wait for a response.

To respond to a page:

1. Pick up a station handset.
2. Turn the selector switch to the requested party line.

Full-duplex party line communication is not broadcast over the system speakers. Other individuals can pick up and join the conversation at any time. Always return the handset to the cradle following a page or a party line conversation.

## Maintenance

The following adjustments affecting the subsets can be made on the remote amplifier. Refer to the applicable remote subset amplifier manual for the adjustment details.

### Audio Transmit Level

The audio transmit level controls the microphone gain.

### Handset Receiver Volume

The handset receiver volume controls the receiver volume level.

### Other Controls

The following additional controls affect system performance; therefore, only qualified GAI-Tronics personnel with the appropriate test equipment should make these adjustments.

**NOTE:** Tampering with these controls may void the warranty.

### AGC (Automatic Gain Control) Threshold (on SmartSeries remote amplifier only)

The control labeled AGC THRESH (on the Handset/FSK/ $\mu$ P PCBA) sets the level that the AGC circuit begins to limit the handset microphone signals.

### Sidetone Volume

Sidetone volume controls the handset sidetone (the portion of the microphone audio that is fed to the handset receiver).

## Replacement Parts

Model No.	Description
10112-201	Handset Assembly with PVC Cord, 6-foot
12502-101	Replacement Receiver
13204-001-00	Receiver Cap, black
12511-011	Transmitter Dynamic Microphone & Cap, black
12512-011	Hookswitch Assembly Replacement Kit
12607-002	Party Line Selector Switch Kit
69200-101	Subset Termination PCBA

## Troubleshooting

The following table lists some hints to aid technicians in troubleshooting:

<b>Problem</b>	<b>Possible Solution</b>
outgoing conversation level requires adjustment	Adjust the microphone gain at the remote amplifier. Replace handset microphone.
incoming conversation level requires adjustment	Adjust the receiver volume control at the remote amplifier. Replace the receiver element in the handset.
sidetone (how the operator hears himself) requires adjustment	Adjust the receiver sidetone at the remote amplifier. Check the wire terminations for proper connections in the line balance assembly.
feedback/distortion (a hum or buzz on the line) occurs during all Page/Party station operation	Adjust the receiver sidetone at the remote amplifier. The line may be improperly terminated. Inspect the system cable for loose connections, shorts, and grounds. Line balance assembly connections are critical.
feedback occurs during paging	Use the muting feature in the amplifier enclosure at the terminal blocks as detailed in the enclosure manual.
crosstalk occurs	One or more system cable pairs may be improperly terminated. Visually inspect the system cable connections for accidental crossing of the cable pairs or grounds.
miscellaneous	A defective handset/speaker amplifier printed circuit board assembly (PCBA) can cause numerous problems. If the station is not functioning properly, it may be worthwhile to replace the handset/speaker amplifier PCBA.



## Specifications

Construction/finish.....	16-gauge cold-rolled steel/gray polyurethane enamel
Handset microphone .....	dynamic, noise-canceling, 10 $\Omega$
Receiver.....	dynamic, 150 $\Omega$ , hearing aid compatible
Cable.....	retractile, 6 ft extended
Material .....	black ABS
External controls .....	handset pressbar for paging; rotary selector switch (Model 7165-102 only)
Mounting.....	flush-mount or similar location; four 0.25 in mounting holes
Temperature range .....	-22 °F to 158 °F (-30 °C to +70 °C)
Connections.....	8 ft cable with connector, hard-wired to subset
Front panel dimensions:	
Single party.....	6.00 H $\times$ 3.5 W in (152.4 $\times$ 88.9 mm)
Multi-party.....	6.00 H $\times$ 6.00 W in (152.4 $\times$ 152.4 mm)
Behind panel .....	2.5 in (63.5 mm)
Cutout dimensions:	
Single party: .....	2.75 W $\times$ 5.00 H $\times$ 2.50 D in (69.9 $\times$ 127.0 $\times$ 63.5 mm)
Multi-party: .....	5.00 W $\times$ 4.88 H $\times$ 2.50 D in (127.0 $\times$ 124.0 $\times$ 63.5 mm)
Shipping weight:	
Single party.....	3.6 lb (1.63 kg)
Multi-party.....	3.9 lb (1.77 kg)

## Approvals

NRTL certified for use in US and Canada.....	Class I, Div. 2, Groups A, B, C, D, when connected to a certified GAI-Tronics Model 7245 Amplifier Enclosure using a certified GAI-Tronics Model 723 Amplifier
Temperature Code.....	T3C (Maximum ambient = 70 °C)

# 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.