

## 250 Watt 70V Paging Power Amplifier



The **PP-250** is a 250 Watt 70V Paging Power Amplifier that can drive up to two hundred fifty (250) 70V speakers and/or paging horns (each speaker set to “1 Watt tap”). The small 1U rack size chassis is possible because the **PP-250** uses new amplifier technology that is 3 times more efficient than old designs competitors use. The high efficiency of the **PP-250** means much less heat dissipation, smaller size, higher reliability, and lower cost.

There are many advantages of using a 70V distributed audio paging system, such as being able to put more speakers on a wire run, having longer speaker wire runs, using smaller gauge wire, and being able to set the volume of each speaker independently.

The **PP-250** Line Input can connect to telephone system paging ports, paging mixers, etc.

### Features

- Powerful 70V amplifier drives up to 250 Watt load
- Line input allows connection to any analog line level output, such as: telephone system paging port, paging mixer, etc.
- Volume control
- Input Level control
- Bass and treble controls
- Power and volume LEDs
- Peak limiter and multiple protection modes

### Applications

- Paging systems requiring 8 to 250 speakers
- Paging from virtually any analog line level paging source
- Installations that can utilize the below advantages of a 70V distributed audio system:
  - Longer wire runs using smaller gauge speaker wire to save costs
  - Many speakers can be connected on the same wire run to save costs
  - Set each speaker’s volume individually using its own power taps

### Specifications

**Power:** 100V to 240V AC, 50 to 60Hz

**Dimensions:** approximately 19” x 1.75” x 6” (483 mm x 44.5 mm x 153 mm)

**Shipping Weight:** lbs ( kg)

**Environmental:** 0°C to 32°C (32°F to 90°F) with 5% to 95% non-condensing humidity

**Paging Output:** Capable of driving 250 Watt load of 70V speakers

**Power Cord:** Dual IEC C7 plugs “Y” Power Cord included

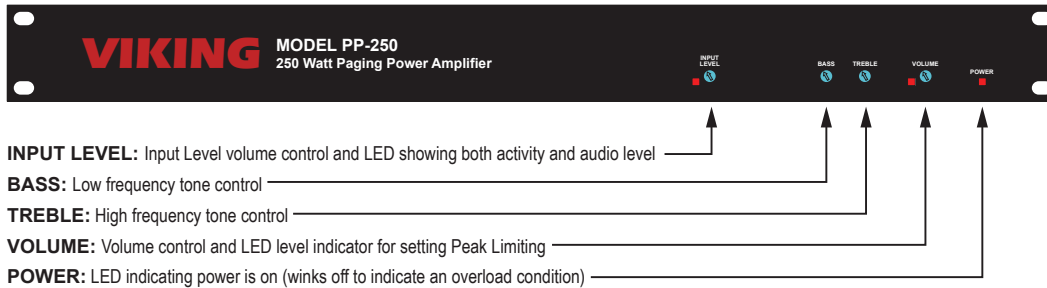
**Connections:** (7) removable cage clamp screw terminals, (2) IEC C8 AC power inlets

**Information: 715-386-8861**  
**www.VikingElectronics.com**

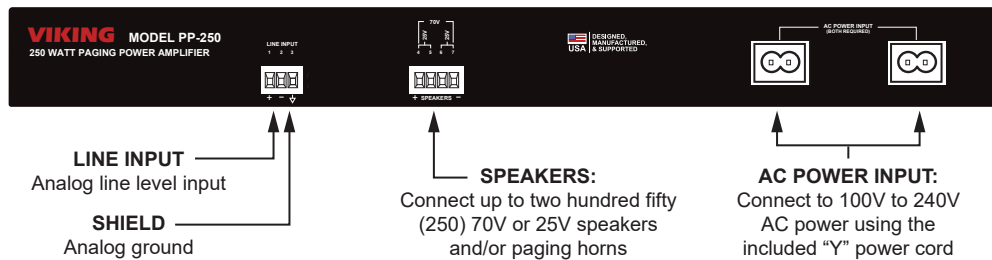
## Features Overview

**⚠ IMPORTANT:** Electronic devices are susceptible to lightning and power station electrical surges. It is recommended that a surge protector be installed to protect against such surges.

### PP-250 Front View



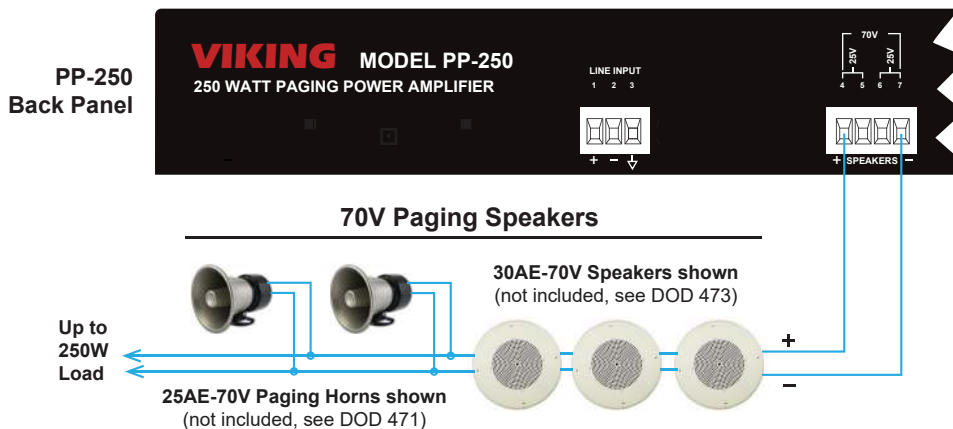
### PP-250 Back View



## Installation

### A. Speakers

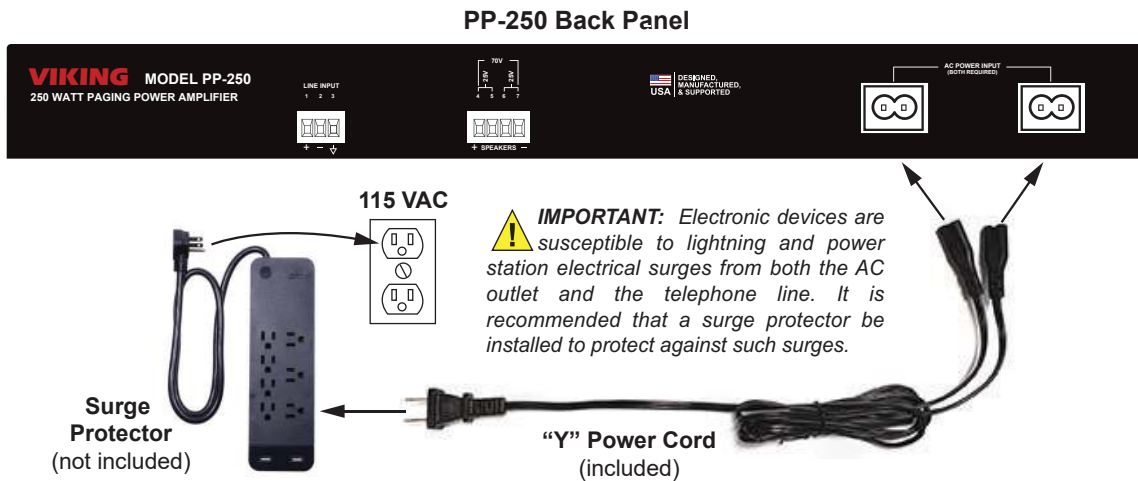
<b>Step 1</b>	Connect 70V speakers across the <b>70V SPEAKERS</b> terminals (pins 4 & 7).
<b>Step 2</b>	If using 25V speakers, connect half of them across the <b>25V SPEAKERS</b> terminals (pins 4 & 5), and the other half across the <b>25V SPEAKERS</b> terminals (pins 6 & 7), so that the power load is balanced between the two outputs.
<b>Step 3</b>	Check the power tap of each speaker connected, and be sure the sum of all the speakers connected does not exceed 250 Watts. For example, if there are 40 speakers, all wired to their 5 Watt taps, the amplifier is driving a 200 Watt load. Since the <b>PP-250</b> is capable of driving a 250 Watt load, additional speakers could be added, or some of the existing speakers could be tapped at a higher wattage setting to play louder. If the total speaker load goes "over budget" (greater than 250 Watt load), remove some speakers, or use lower power taps to get to a 250 Watt load.



**NOTE:** For wire run lengths up to 500 feet, use #18 gauge or larger speaker cables. For wire run lengths up to 1000 feet, use #16 gauge or larger speaker cables. For wire run lengths up to 1500 feet, use #14 gauge or larger speaker cables, etc.

## B. AC Power Input

<b>Step 1</b>	Connect both IEC C7 plugs from the supplied “Y” AC power cord into the two <b>AC POWER INPUTS</b> on the back of the <b>PP-250</b> .
<b>Step 2</b>	Once all other connections are made, power up the <b>PP-250</b> by plugging the AC power plug end of the supplied “Y” AC power cord into a power outlet.



## Operation

### A. Volume Control and Peak Limiter

The front panel **VOLUME** control adjusts the volume coming from the line input. The **PP-250** has an integrated Peak Limiter feature that reduces the audio signal peaks by 4dB. Since audio signals are highly dynamic in nature, this feature allows the average volume level of pages to be 4dB louder than normal before clipping distortion occurs. The **VOLUME** LED blinks on when peak limiting is engaging. If maximum volume levels are desired, turn up the **VOLUME** control until the **VOLUME** LED starts blinking a bit during pages. Then use the 70V speaker taps to adjust the volume of each paging speaker, keeping in mind to NOT go over a total of 250 Watt accumulative load.

### B. Input Level Control

Connect any line level source to the **LINE INPUT** terminals (pins 1 & 2). Adjust the front panel **INPUT LEVEL** trim pot so the **INPUT LEVEL** LED flashes with **LINE INPUT** audio. If the **LINE INPUT** audio is coming from an RCA jack, and hum or buzz is present in the audio, the RCA cable’s shield may need to be grounded on the **PP-250** side. This can be done by connecting the cable’s shield to the **SHIELD** terminal (pin 3).

*Note: A speaker level signal can be connected to the **LINE INPUT** terminals, as long as the front panel **INPUT LEVEL** trim pot is turned down low enough to not overdrive the input.*

### C. Bass and Treble Controls

Front panel **BASS** and **TREBLE** controls are provided to adjust the paging tonality. Since lower frequencies require higher power, turning the bass down can allow increased paging volume levels. Turning up the treble can increase paging intelligibility.

### D. Power LED

The front panel **POWER** LED serves two purposes. It will light steady a few seconds after the unit is powered up showing power is applied. Second, it will momentarily wink showing when the power amplifier is going into current limiting. If current limiting is observed, here is a list of suggested actions:

<b>Step 1</b>	Turn down the input level of the specific input that is pushing it into current limiting.
<b>Step 2</b>	Turn down the <b>VOLUME</b> level.
<b>Step 3</b>	Turn down the <b>BASS</b> level.
<b>Step 4</b>	Reduce the number of speakers connected to the <b>PP-250</b> .
<b>Step 5</b>	Reduce the power tap settings of the connected speakers.

### Cost Effective Paging Horns and Speakers for 70V Paging Systems

In outdoor, factory or warehouse environments, **25AE-70V** paging horns are the best method of producing understandable sound. In these environments the directional design allows the installer to focus the sound cone down aisles and toward work areas.

The **25AE-70V** paging horn provides a built-in step-down transformer for use with 25V or 70V paging systems such as Viking models **PA-30, PA-60, PA-250, PA-250-IP** and **PP-250**. The transformer has a range of 5 separate switch selectable power taps, which can be used to adjust the volume of each speaker. These higher voltage distributed audio paging systems also have the advantage of being able to connect more speakers using lighter gauge wire runs while having less volume lost in wire resistance. This saves wiring costs compared to 8 Ohm systems. etc. For more info, see **DOD 471**.



**Model  
25AE-70V**



**Model 30AE-70V**

In office and restaurant environments, it is best to distribute sound more evenly. Ceiling mounted **30AE-70V** speakers in close proximity offer the best distribution and are cost effective.

The **30AE-70V** ceiling speaker provides a built-in step-down transformer for use with 25V or 70V paging systems such as Viking models **PA-30, PA-60, PA-250, PA-250-IP** and **PP-250**. The transformer has a range of 5 separate power taps, which can be used to adjust the volume of each speaker. These higher voltage distributed audio paging systems also have the advantage of being able to connect more speakers using lighter gauge wire runs while having less volume lost in wire resistance. This saves wiring costs compared to 8 Ohm systems. For more info, see **DOD 473**.

### High Power Weather Resistant Paging Horn for Use with 8 Ohm or 25V / 70V Systems

The **300AE** paging horn provides a built-in step-down transformer for use with 25V or 70V paging systems such as Viking models **PA-30, PA-60, PP-250, PA-250, PA-250-IP**. The transformer has a range of power taps that are selectable with a 6 position rotary switch, so that installers are able to independently adjust the volume of each paging horn. These higher voltage paging systems also have the advantage of being able to connect more speakers using lighter gauge wire runs and still have less volume lost in wire resistance.

The **300AE** weather resistant design allows for use in outdoor, factory, or warehouse environments. Its larger size and greater frequency response provide greater intelligibility of voice pages and is suitable for background music. The directional design allows the installer to focus the sound cone down aisles and toward work areas. The included mounting hardware provides full adjustment of horizontal and vertical positioning. For more info, see **DOD 497**.



**Model  
300AE**

### Tile Bridge for Ceiling Speakers

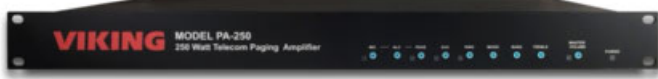


**Model  
SA-TBA**

The **SA-TBA** is a tile bridge designed to mount 8 inch loud speaker and bridges both 2 ft x 2 ft and 2 ft x 4 ft ceiling tiles. It is compatible with the Viking models **SA-1S, 30AE, 35AE,** and **40AE** speakers. The **SA-TBA** tile bridge is constructed of 24 gauge cold rolled steel with an electro galvanized rust-resistant finish. For more info, see **DOD 534**.

## Related Products

### 250 Watt / 70V Telecom Paging Amplifier



#### Model PA-250

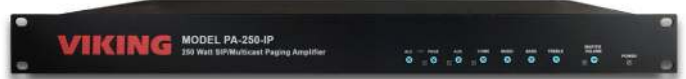
For more info, see [DOD 501](#).

The **PA-250** is a 250 Watt 70V Telecom Paging Amplifier that is capable of driving up to two hundred fifty (250) 70V speakers and/or paging horns (each speaker set to “1 Watt tap”). The small 1U rack size chassis is possible because the **PA-250** uses new amplifier technology that is 3 times more efficient than old designs competitors use. High efficiency means much less heat dissipation, smaller size, higher reliability, and lower cost. The **PA-250** provides more paging power at less cost than competitors.

There are many advantages of using a 70V distributed audio paging system, such as being able to put more speakers on a wire run, having longer speaker wire runs, using smaller gauge wire, and being able to set the volume of each speaker independently.

The **PA-250** connects to any type of analog telecom interface, such as Paging Port, Trunk Input, Analog Station, FXO (Loop Start), and FXS (Ring Trip).

### 250 Watt / 70V SIP / Multicast Paging Amplifier



#### Model PA-250-IP

For more info, see [DOD 501](#).

The Viking model **PA-250-IP** SIP/Multicast Paging Amplifier provides up to 250 Watts of loud paging for SIP based VoIP phone systems (hardware or hosted/cloud based service provider). The **PA-250-IP** can be used for standard SIP endpoint paging or multicast paging.

The **PA-250-IP** can drive up to two hundred fifty (250) 70V speakers and/or paging horns (each speaker set to “1 Watt tap”). The small 1U rack size chassis is possible because the **PA-250-IP** uses new amplifier technology that is 3 times more efficient than old designs competitors use. The high efficiency of the **PA-250-IP** means much less heat dissipation, smaller size, higher reliability, and lower cost.

The unit easily connects with a single CAT5/6 cable from your network switch. The night ring feature is programmable for time of day and day of week to enable loud ringing for after hour incoming calls.

### 15 Watt Paging Amplifier with Background Music and Loud Ringing

The **PA-15** interfaces with virtually any telephone system to provide 15 Watts of paging power - enough to drive fifteen 8-Ohm paging horns or speakers. This small and light weight chassis design is possible by utilizing new amplifier technology that is 300% less inefficient than old designs competitors use. High efficiency means much less heat disipation, smaller size, higher reliability, and lower cost.

The **PA-15** provides 36V talk battery for interfacing with an **FXO** or unused analog line input/trunk port. With the flip of a switch, the unit can connect to a **FXS** or PABX/Centrex station ring trip port or connect to a 600 Ohm paging port. When interfacing with systems that do not provide a paging contact closure, the built-in voice activation (**VOX**) is in control.

For more information on the **PA-15**, see [DOD 486](#).



### 30 Watt Paging Amplifier with Background Music and Loud Ringing

The **PA-30** can directly drive up to thirty (30) 8 Ohm paging speakers or fifty (50) 70V or 25V paging speakers. This small and light weight chassis design is possible by utilizing new amplifier technology that is 300% less inefficient than old designs competitors use. High efficiency means much less heat disipation, smaller size, higher reliability, and lower cost.

The **PA-30** provides loud ringing and paging to electronic key systems, 1A2 Key systems, PABX's as well as No-KSU phones and multi-line phones. The **PA-30** eliminates the installation of multiple bells, relays and paging cards. The unit comes complete with a power supply, and integrated 30 Watt amplifier.

For more information on the **PA-30**, see [DOD 489](#).



### 60 Watt Compact Two Zone Amplifier to Drive 60 Paging Speakers

The **PA-60** can directly drive up to sixty (60) 8 Ohm paging speakers or one hundred (100) 70V or 25V paging speakers. Both channels can be fed the same input so the **PA-60** can be used as a single large amplifier, or each channel can be fed different inputs so the **PA-60** can be used as a two zone amplifier.

Since each input has its own gain adjustment, one zone can be turned up louder for warehouse paging horn speakers, and the other zone can be turned down for office ceiling speakers. Two zones can also be helpful for installations in which one group of speakers is connected to a source that provides background music using the Viking **PI-1A** Paging Interface unit, and the other zone provides only paging.

For more information on the **PA-60**, see [DOD 493](#).



# Warranty

## IF YOU HAVE A PROBLEM WITH A VIKING PRODUCT, CONTACT VIKING TECHNICAL SUPPORT: 715-386-8666

Our Technical Support Department is available for assistance Monday through Friday 8:00am to 5:00pm central time. Before you call, please:

1. Know the model number, the serial number and what software version you have (see serial label).
2. Have the Product Manual in front of you.
3. It is best if you are on site.

## RETURNING PRODUCT FOR REPAIR

The following procedure is for equipment that needs repair:

1. Customer must contact Viking's Technical Support Department at 715-386-8666 to obtain a Return Authorization (RA) number. The customer MUST have a complete description of the problem, with all pertinent information regarding the defect, such as options set, conditions, symptoms, methods to duplicate problem, frequency of failure, etc.
2. Packing: Return equipment in original box or in proper packing so that damage will not occur while in transit. The original product boxes are not designed for shipping - an overpack box is required to prevent damage in transit. Static sensitive equipment such as a circuit board should be in an anti-static bag, sandwiched between foam and individually boxed. All equipment should be wrapped to avoid packing material lodging in or sticking to the equipment. Include ALL parts of the equipment. C.O.D. or freight collect shipments cannot be accepted. Ship cartons prepaid to:  
**VIKING ELECTRONICS  
1531 INDUSTRIAL STREET  
HUDSON, WI 54016**
3. Return shipping address: Be sure to include your return shipping address inside the box. We cannot ship to a PO Box.
4. RA number on carton: In large printing, write the RA number on the outside of each carton being returned.

## RETURNING PRODUCT FOR EXCHANGE

The following procedure is for equipment that has failed out-of-box (within 10 days of purchase):

1. Customer must contact Viking's Technical Support at 715-386-8666 to determine possible causes for the problem. The customer MUST be able to step through recommended tests for diagnosis.
2. If the Technical Support Product Specialist determines that the equipment is defective based on the customer's input and troubleshooting, a Return Authorization (RA) number will be issued. This number is valid for fourteen (14) calendar days from the date of issue.
3. After obtaining the RA number, return the approved equipment to your distributor. Please reference the RA number on the paperwork being shipped back with the unit(s), and also the outside of the shipping box. The original product boxes are not designed for shipping - an overpack box is required to prevent damage in transit. Once your distributor receives the package, they will replace the product over the counter at no charge. The distributor will then return the product to Viking using the same RA number.
4. **The distributor will NOT exchange this product without first obtaining the RA number from you. If you haven't followed the steps listed in 1, 2 and 3, be aware that you will have to pay a restocking charge.**

## TWO YEAR LIMITED WARRANTY

Viking warrants its products to be free from defects in the workmanship or materials, under normal use and service, for a period of two years from the date of purchase from any authorized Viking distributor. If at any time during the warranty period, the product is deemed defective or malfunctions, return the product to Viking Electronics, Inc., 1531 Industrial Street, Hudson, WI., 54016. Customer must contact Viking's Technical Support Department at 715-386-8666 to obtain a Return Authorization (R.A.) number.

This warranty does not cover any damage to the product due to lightning, over voltage, under voltage, accident, misuse, abuse, negligence or any damage caused by use of the product by the purchaser or others. This warranty does not cover non-EWP products that have been exposed to wet or corrosive environments. This warranty does not cover stainless steel surfaces that have not been properly maintained.

**NO OTHER WARRANTIES.** VIKING MAKES NO WARRANTIES RELATING TO ITS PRODUCTS OTHER THAN AS DESCRIBED ABOVE AND DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTIES OR MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.

**EXCLUSION OF CONSEQUENTIAL DAMAGES.** VIKING SHALL NOT, UNDER ANY CIRCUMSTANCES, BE LIABLE TO PURCHASER, OR ANY OTHER PARTY, FOR CONSEQUENTIAL, INCIDENTAL, SPECIAL OR EXEMPLARY DAMAGES ARISING OUT OF OR RELATED TO THE SALE OR USE OF THE PRODUCT SOLD HEREUNDER.

**EXCLUSIVE REMEDY AND LIMITATION OF LIABILITY.** WHETHER IN AN ACTION BASED ON CONTRACT, TORT (INCLUDING NEGLIGENCE OR STRICT LIABILITY) OR ANY OTHER LEGAL THEORY, ANY LIABILITY OF VIKING SHALL BE LIMITED TO REPAIR OR REPLACEMENT OF THE PRODUCT, OR AT VIKING'S OPTION, REFUND OF THE PURCHASE PRICE AS THE EXCLUSIVE REMEDY AND ANY LIABILITY OF VIKING SHALL BE SO LIMITED.

IT IS EXPRESSLY UNDERSTOOD AND AGREED THAT EACH AND EVERY PROVISION OF THIS AGREEMENT WHICH PROVIDES FOR DISCLAIMER OF WARRANTIES, EXCLUSION OF CONSEQUENTIAL DAMAGES, AND EXCLUSIVE REMEDY AND LIMITATION OF LIABILITY, ARE SEVERABLE FROM ANY OTHER PROVISION AND EACH PROVISION IS A SEPARABLE AND INDEPENDENT ELEMENT OF RISK ALLOCATION AND IS INTENDED TO BE ENFORCED AS SUCH.

## FCC REQUIREMENTS

This equipment complies with Part 68 of the FCC rules and the requirements adopted by the ACTA. On the side of this equipment is a label that contains, among other information, a product identifier in the format US:AAAEQ##TXXXX. If requested, this number must be provided to the telephone company.

The REN is used to determine the number of devices that may be connected to a telephone line. Excessive REN's on a 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 a line, as determined by the total REN's, contact the local telephone company. For products approved after July 23, 2001, the REN for this product is part of the product identifier that has the format US:AAAEQ##TXXXX. The digits represented by ## are the REN without a decimal point (e.g., 03 is a REN of 0.3). For earlier products, the REN is separately shown on the label.

The plug used to connect this equipment to the premises wiring and telephone network must comply with the applicable FCC Part 68 rules and requirements adopted by the ACTA. If your home has specially wired alarm equipment connected to the telephone line, ensure the installation of this PP-250 does not disable your alarm equipment. If you have questions about what will disable alarm equipment, consult your telephone company or a qualified installer.

If the PP-250 causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But 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 to maintain uninterrupted service.

If trouble is experienced with the PP-250, for repair or warranty information, please contact:

**Viking Electronics, Inc., 1531 Industrial Street, Hudson, WI 54016 Phone: (715) 386-8666**

If the equipment is causing harm to the telephone network, the telephone company may request that you disconnect the equipment until the problem is resolved.

Connection to Party Line Service is subject to State Tariffs. Contact the state public utility commission, public service commission or corporation commission for information.

**WHEN PROGRAMMING EMERGENCY NUMBERS AND (OR) MAKING TEST CALLS TO EMERGENCY NUMBERS:**

Remain on the line and briefly explain to the dispatcher the reason for the call. Perform such activities in the off-peak hours, such as early morning or late evenings.

It 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 lightning strikes and other electrical surges.

## PART 15 LIMITATIONS

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.

## Product Support: 715-386-8666

Due to the dynamic nature of the product design, the information contained in this document is subject to change without notice. Viking Electronics, and its affiliates and/or subsidiaries assume no responsibility for errors and omissions contained in this information. Revisions of this document or new editions of it may be issued to incorporate such changes.