

USER MANUAL

VHF HIGH BAND
HIGH POWER MOBILE
RF POWER AMPLIFIERS



3370 SAN FERNANDO ROAD, UNIT 206
LOS ANGELES, CALIFORNIA 90065

L-PA3-1FE-H-U/H8

GENERAL SPECIFICATIONS

VHF High Band High Power Mobile RF Amplifier

FREQUENCY RANGE: 150 - 174 MHz

BANDWIDTH: 24 MHz

OUTPUT MODE: FM

MODEL	POWER INPUT	POWER OUTPUT	NOMINAL CURRENT DRAIN	FUSE
PA3-1FE	20-40 W	70-140 W	14 AMPS	30 AMPS

OPERATING TEMPERATURE RANGE: -30° to +60° Celsius

OPERATING VOLTAGE: Minimum 11VDC, Maximum 15VDC as measured at the DC Input connector. Rated voltage is 13.8VDC and all specifications are given at 13.8VDC. Reduced DC voltage will result in a decrease in power output.

NOMINAL CURRENT DRAIN: 14 AMPS. Standby current is less than 3 mA.

EIA DUTY CYCLE: 70 - 140 W OUTPUT 40%

NOTE: Using this amplifier at above the recommended duty cycle, or in repeater service, may cause damage and will void the warranty.

General Specifications

(cont.)

RECEIVER PATH INSERTION LOSS: 1dB maximum (150-174 MHz)

HARMONIC AND SPURIOUS EMISSIONS ATTENUATION:

Models meet or exceed FCC requirements.

CONNECTORS: S0-239 (UHF) on input and output. Cinch 4 pin (male) DC input.

****FUSING:** If an external fuse is required, refer to the table under General Specifications.

NOTE

This amplifier has been tuned to the frequency specified at the time of order. Broader coverage is available, if specified at the time of order.

CAUTION!

Check the amplifier upon receipt for visible damage. if any is noticed, please call **TPL** at (800) HI-POWER for an RMA number (Returned Material Authorization): If purchased through a dealer, or distributor ask them to follow this procedure for best results.

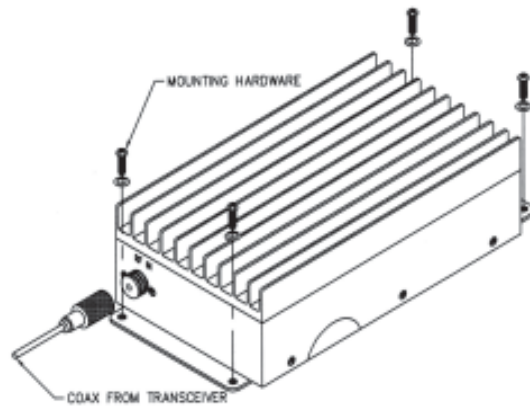
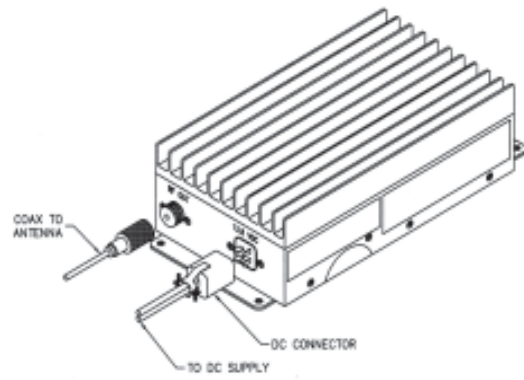
EXPENSIVE COMPONENTS MAY BE DESTROYED IF THE AMPLIFIER IS TURNED ON IN A DAMAGED CONDITION.

TYPE ACCEPTANCE

TPL Communications commercial amplifiers are FCC Type Accepted for use in the Land and Marine mobile/fixed services. The technician installing this amplifier must hold a General Radio Telephone permit and be familiar with the pertinent FCC rules and regulations.

Harmonic and other, spurious, signals from this amplifier are attenuated beyond FCC requirements. The amplifiers will stay within specifications even if de-tuning is necessary to reduce power to station imposed limits .

For further details consult the appropriate publications.



**FIGURE 1
AMPLIFIER INSTALLATION**

INSTALLATION

Amplifier installation is illustrated in Figure 1. Mount the amplifier as close to the antenna as practical. Keep coaxial cable runs short, avoiding sharp bends and pinching. The antenna should be matched to an SWR better than 1.5:1 for best results. Higher SWR will degrade the performance of the amplifier.

Mount the amplifier away from sources of heat, and where air can freely circulate around it. In mobile applications, avoid mounting the amplifier in the engine compartment or near the exhaust pipe system.

In any mobile installation it is important to securely fasten the unit. An improperly mounted piece of equipment is subject to damage as it moves about and can cause serious injuries in an accident. Use bolts through the holes in the amplifier flange to fasten the unit to a secure mounting surface.

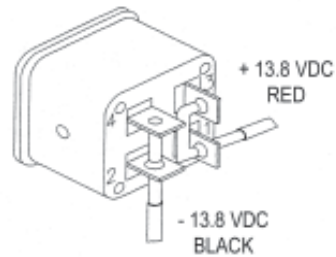
Wire the DC power connector (Cinch 4 pin female), for the amplifier, directly to the battery if possible. Do not use the present vehicle wiring. Use #12 AWG if possible and certainly no lighter than #14 AWG. To avoid a possible fire, or other possible damage, make sure a fuse or circuit breaker is installed at the battery end of the wire. Use the same size as the internal fuse listed in the specifications.

Connect the radio transceiver to the "RF INPUT" terminal and the antenna to the "RF OUTPUT" terminal on the amplifier, with 50 Ohm coaxial cable and UHF connectors. Terminating information for the DC connector is given on the following pages.

This amplifier produces sufficient power to cause significant heating of low quality, or incorrectly selected coaxial cable and fittings. Use high quality cables and fittings to reduce heating and power losses.

FIGURE 2 DC CONNECTOR WIRING

Attach DC input wires in accordance with this diagram. If the wires are too large for the holes, solder them to the sides of the blade.



OPERATING PRECAUTIONS

CAUTION: This amplifier produces RF voltages that can cause painful and dangerous RF burns. Use caution! Connect and disconnect all RF Connections with the DC power and drive power off.

DRIVE POWER: RF power transistors, although quite rugged in most respects, are easily damaged by overdrive. Be careful not to overdrive this amplifier, even momentarily. Higher than rated power drive may destroy transistors and **VOID THE WARRANTY**.

SUPPLY VOLTAGE: The maximum operating voltage is 15 Volts DC. When using an AC power supply, make sure that its output voltage is not adjusted above 15 Volts DC. If it is possible for the voltage to go above 15 Volts DC for any reason, including failure of the power supply, install a "Crowbar" unit. This will prevent damage to the amplifier in the event of excess voltage.

CASE TEMPERATURE: High power can mean high temperatures. Mount the amplifier where air can freely circulate over it and where clothing, blankets, etc, will not accidentally be placed over it. Keep duty cycle below limits.

TERMINATIONS: The Amplifier parameters will degrade if it is operated into anything but a 50 Ohm load. That may mean any, or all of the following: lower power output, increased current drain, higher operating temperature, lower efficiency and reduced lifetime.

WARRANTY

TPL Communications has tested and found this unit to function properly and to operate within the parameters of its stated specifications.

TPL Communications warrants that this product is free from defects in material and workmanship. If found defective within five (5) years from the date of purchase, the factory, at its discretion, will either repair or replace the unit at no cost provided that the unit is delivered by the owner to the factory intact. Warranty does not apply to any product which has been subjected to misuse, neglect, accident, improper installation, or used in violation of instructions furnished by **TPL**, nor does it extend to units which have been repaired or altered outside of our service department, nor where the serial number has been removed, defaced or changed.

SERVICE

For Service on this amplifier, contact:

TPL COMMUNICATIONS

Customer Service Department

(323) 256-3000

(800) HI-POWER

FAX (323) 254-3210

Email: sales@tplcom.com

For information on other **TPL** products,
visit our website at:

www.tplcom.com