

USER'S MANUAL

**UHF MOBILE
RF POWER AMPLIFIERS**



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

L-PA6-1XX-U/E5

GENERAL SPECIFICATIONS

UHF MOBILE RF POWER AMPLIFIERS

FREQUENCY RANGE: 400-512 MHz

BANDWIDTH: 20 MHz

MODE: FM

| MODEL | POWER INPUT | POWER OUTPUT | NOMINAL CURRENT DRAIN | FUSE** |
|----------|-------------|--------------|-----------------------|---------|
| PA6-1AC | 1-4 W | 10-50 W | 8 AMPS | 15 AMPS |
| PA6-1AC3 | 2-8 W | 10-50 W | 8 AMPS | 15 AMPS |
| PA6-1BC | 8-15 W | 25-50 W | 7 AMPS | 15 AMPS |
| PA6-1AE | 1-3 W | 75-100 W | 20 AMPS | 30 AMPS |
| PA6-1AE3 | 3-6 W | 75-100 W | 20 AMPS | 30 AMPS |
| PA6-1BE | 8-15 W | 75-100 W | 16 AMPS | 25 AMPS |
| PA6-1FE | 15-30 W | 75-100 W | 16 AMPS | 25 AMPS |

* **NOTE:** 100 WATTS MINIMUM OUTPUT AVAILABLE IF SPECIFIED.

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

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

NOMINAL CURRENT DRAIN: See Table above. Standby current is less than 3 mA.

EIA DUTY CYCLE:

- 20 W 80%
- 30 W 60%
- 40 W 50%
- 60 W 40%
- 70 W 40%
- 100 W 30%

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

RECEIVER PATH INSERTION LOSS: *1 dB maximum (400-512 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 see table above on page 1.

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.

FCC CERTIFICATION

TPL Communications commercial amplifiers are FCC certified 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 amplifier will stay within specifications even if de-tuning is necessary to reduce power to station imposed limits.

For further details consult the appropriate publications.

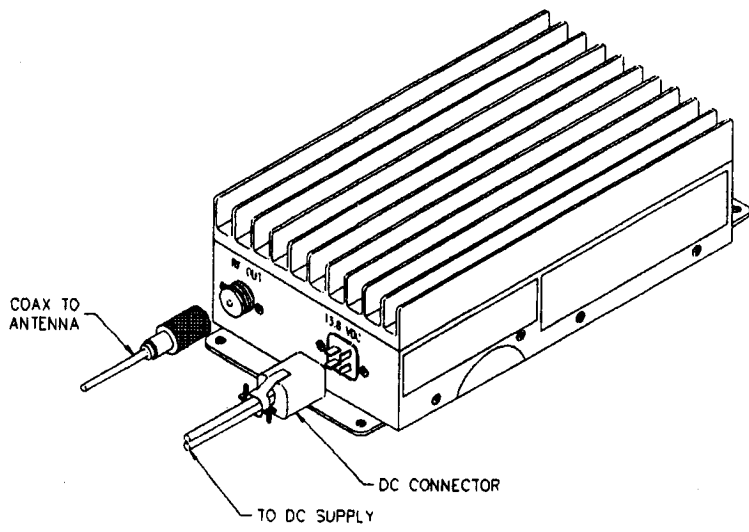
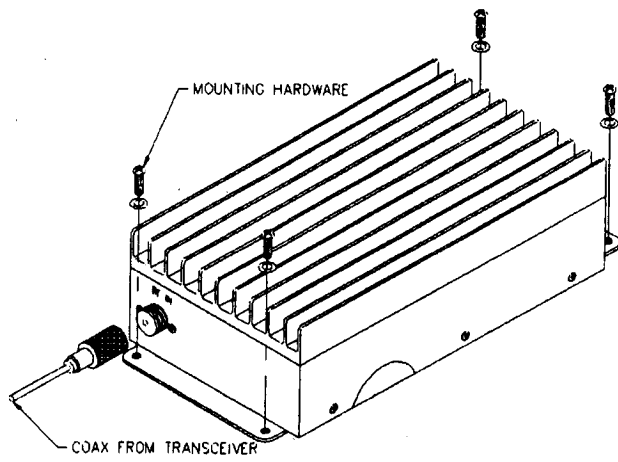


FIGURE 1
AMPLIFIER INSTALLATION

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.

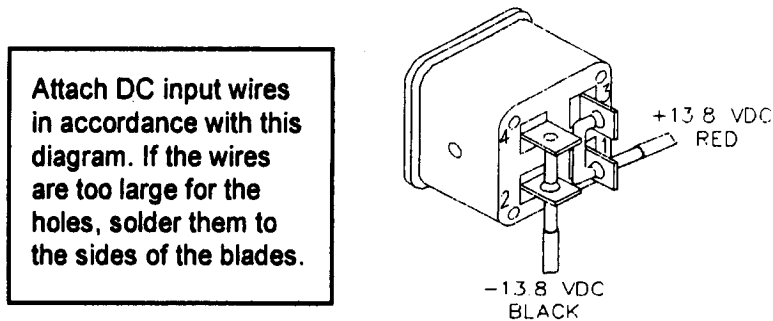
In any mobile installation it is important to securely fasten the unit. An improperly mounted piece of equipment is subject to damage as it moves about and can cause serious injuries in an accident. Use bolts through the holes in the amplifier flange to fasten the unit to a secure mounting surface.

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



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. When using an AC power supply make sure that it is not adjusted above 15 Volts. If it is possible for the voltage to go above 15 Volts for any reason, including failure of the power supply, install a "Crowbar" unit to 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 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 web site at:

www.tplcom.com