

# Precision Power



PPI ▲ 2350 DM

*Thank you for your selection of Precision Power high performance mobile audio products. In order to achieve the best results and the utmost satisfaction, please read the accompanying manual thoroughly before installation. For further information call your dealer or Precision Power.*

WARNING—Use of this amplifier may cause hearing loss or damage.

WARNING—Use of this amplifier may impair the ability to hear necessary traffic sounds and thus may constitute a traffic hazard. PPI advises use of audio components at low volume levels while driving.

## SPECIFICATIONS

	<b>2350 DM</b>
Continuous Power Output: (Watts Per Channel into 4 Ohms @ 12V, Stereo)	350 W / CH
Continuous Power Output: (Watts into 4 Ohms Bridged @ 12V)	700 W
Continuous Power Output: (Watts Per Channel into 2 Ohm @ 12V, Stereo)	350 W / CH
Shipping Weight:	20 lbs
Dimensions: (H x W x D)	8.5x3.6x24
Power Bandwidth: (± 1dB)	10Hz-50kHz
Total Harmonic Distortion: (Per IHF A-202)	0.02%
Signal to Noise Ratio: (A-Wtd)	102dB
Damping Factor: (100Hz)	> 200
Stereo Separation:	> 72dB
Input Sensitivity:	0.30-2.0V
Input Impedance:	10k Ohms
Output Impedance: (Stereo)	2-4 Ohms
(Bridged)	4-8 Ohms
Supply Voltage:	11 - 16 VDC
Fuse:	60A

## FEATURES

- Adaptive Pulse-width Modulated Power Supply adjusts itself to give optimum performance into a wide range of load impedances
- Bridgeable to 700 watts mono into 4 ohms
- MOSFET Output Stage combines high power output with superior ruggedness over bipolar-transistor amps
- Internal fan ensures adequate cooling
- Class AB output stage eliminates crossover distortion
- Wide open-loop bandwidth and moderate feedback ensure transparent, detailed reproduction
- Fully discrete audio circuitry - no IC "chips" in the signal path
- Audiophile - grade passive components, including metal-film resistors and polypropylene capacitors



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## 12 VOLT PRIMARY POWER CONNECTIONS

To perform properly, the 2350DM needs the best possible connections to + 12 volts and ground. It can draw over 100 amps from the battery at peak output! A heavy-duty 6-gauge power wire harness is supplied with the unit. The amplifier receives power through a plug which connects to a mating plug on the harness. Two power connections must be soldered -DON'T crimp them! You will need a very big (250 -300 watt) soldering iron to heat the connections properly. If you don't have the means to solder them, get professional assistance.

The amplifier receives power through a plug which connects to a mating plug on the power harness. The harness includes a long black ground wire, a long red + 12 volt power wire, and a short red power with a fuseholder attached. Run the long red and black wires from the amplifier to the battery. The black ground wire should connect to the battery negative terminal, not the car chassis. Cut the ground wire to length and strip the insulation back about 1/8 inch. Solder it to the ring terminal provided.

*When working on or near the car's battery, first disconnect the negative post of the battery before working on the positive terminal to prevent shorting the positive terminal to ground. Reconnect the negative terminal only after all positive terminal connections have been made.*

Attach the short red wire to the battery positive post with its ring terminal. Cut the end of the long red wire so it will reach the open end of the fuseholder with a little slack. Strip its insulation back about 3/4 inch. The wire is slightly to large to fit into the hole in the fuseholder - you will need to cut off a few strands of the wire to make it smaller. Slip the heatshrink tubing

# INSTALLATION INSTRUCTIONS

over the end of the wire and solder it to the fuseholder. Shrink the tubing over the connection to insulate it. Install the fuse in the holder and screw its halves together.

## SPEAKER OUTPUT AND TURN-ON CONNECTIONS

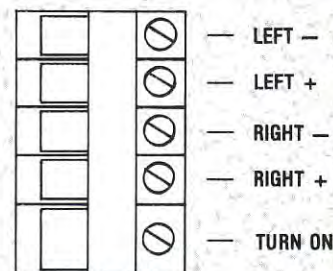
These connections are made at a terminal block on the left end panel of the amplifier. This block has "tunnels" which accept stripped wires from 18 to 12 gauge and tightening screws which clamp the wires in place.

To make the connections, strip wire insulation back 1/2 inch and twist the strands so they make a neat bundle. Using a straight-bladed screwdriver with a 1/8 inch wide tip, loosen all five clamp screws by turning them counter-clockwise. Insert each wire into its "tunnel" and tighten the clamp screws by turning them clockwise. Use plenty of tightening force, and when you are done, pull each wire to make sure it is firmly clamped.

The Remote connection turns on the 2350DM when it gets + 12 volts switched to it, usually provided by the Remote output wire from the radio or source unit.

For speaker connections, use 16 gauge or larger wire. Never connect any speaker output to the car chassis or to another output. The speaker system impedance may be 2 ohms to 4 ohms per channel in stereo (2 channel) operation. Refer to the special bridging instructions for mono operation. The stereo power output will be the same for 4 ohm or 2 ohm loads because the Adaptive Power Supply will automatically adjust to the load.

When first turned on, the amplifier sets up for 4 ohm operation. If it is played loud into a lower impedance, it will shift to low impedance (2 ohm) operation and will stay in this mode until the unit is turned off. A green LED indicator lights to signal this mode.



SPEAKER TERMINAL CONNECTIONS

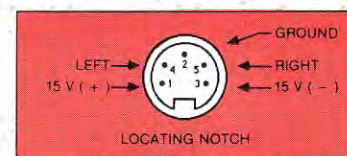
## INPUT CONNECTIONS

Two RCA jacks (left and right channel) and one five-pin female DIN jack provide input for low level (line out) signal connections. Both inputs (RCA and DIN) are paralleled and feature adjustable input sensitivity.

The five-pin DIN connector is intended to connect the amplifier to external Precision Power or compatible accessories requiring phantom ±15V power, such as preamplifiers, equalizers, or electronic crossovers.

*The DIN connector is not directly compatible with Kenwood or Alpine car stereo units.*

(See Figure 2)



DIN CONNECTOR PIN FUNCTIONS

FIGURE 2

## INPUT SENSITIVITY

The slotted shaft accessible on the front of the amplifier labeled GAIN adjusts the input sensitivity from 0.3 volts to 2.0 volts. To adjust the input sensitivity, turn the control fully counter-clockwise to minimum. Adjust the

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radio/head unit volume knob to maximum volume, then turn the gain control on the amplifier clockwise until audible distortion occurs.

## **BRIDGING THE 2350DM FOR MONO**

The 2350DM can be set up as a single-channel amplifier with 700 watts output into 4 ohms. It will not operate bridged into 2 ohms. The amplifier delivers the same power (700 watts) bridged as it does in stereo, with the same efficiency. Bridging makes sense if you need a very big mono amplifier to drive a 4 ohm woofer setup which can handle tremendous power, for example, two 8 ohm drivers in parallel. Be forewarned that few systems will handle it.

To select bridged mode, push in the bridging switch. The green Low Impedance/Bridge Indicator will light. The switch connects the left and Right inputs together; you may connect a mono signal to either one.

In bridged mode the speaker positive connects to the left positive (+) output and the speaker negative connects to the Right negative (-) output. The left negative and right positive outputs are not used.

## **MOUNTING THE 2350DM**

The 2350DM may be mounted in any position. Make sure that the cooling air vents on each end panel are not blocked or restricted. Keep the weight of the unit in mind when selecting mounting screws.

## **CLIP INDICATOR**

If either the left or right channel is driven to maximum power output, the yellow "Clip" indicator will light. It is set to come on at a power level slightly below where distortion starts, and will light even if the clipping is very brief. The Clip indicator warns that you are reaching maximum clean power and will do so before distortion is bad enough to be heard.

The Clip indicator is a useful diagnostic tool; if you hear distortion, watch the indicator. If it flashes often, the problem is that you are running out of power. If it's not flashing, and the distortion shows up at loud volume, you are overdriving speakers. When you get distortion at low volume, and the Clip indicator isn't flashing, the problem is ahead of the amplifier.

## **TROUBLE SHOOTING GUIDE**

If for some reason your system fails to operate properly, please refer to this guide. If you are unable to resolve this problem, consult your dealer or call Precision Power toll free at 1-800-62 POWER for further assistance.

### **• NO SOUND •**

Is the power LED illuminated?

- ✓ Check fuses in power wire. ✓ Be sure Turn-on lead is connected. ✓ Check signal leads.
- ✓ Check gain control. ✓ Check Tuner / Deck volume level. △ Clean contacts on fuse holder.

### **• NO SOUND IN ONE CHANNEL •**

- ✓ Check speaker leads. △ Inspect for short circuit or an open connection. ✓ Check Audio Leads. △ Reverse Left and Right cables to determine if it is occurring before the amp. ✓ Check Mono Bridge and Bi Amp Crossover Switches. △ Depress switches to ensure proper position with respect to the installation.

*If there is a problem with the amplifier, have your dealer inspect the unit.*

### **• AMP TURNING OFF AT LOW VOLUME LEVELS •**

- ✓ Check speakers for damage or short. △ Have your dealer inspect the speakers.

### **• AMP TURNING OFF AT MEDIUM OR HIGH VOLUME LEVELS •**

- ✓ Check speaker load impedance. △ Be sure proper speaker load impedance recommendations are observed. △ *If you use an ohmmeter and AC impedance may not be the same.*

# **LIMITED WARRANTY**

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Precision Power Inc., (PPI) warrants its amplifiers and accessories to be free from defects in materials and workmanship under normal use and service for a period of two years from the date of original purchase. The extent and conditions of PPI's Limited Warranty are as follows:

1. PPI warrants that it will either repair or replace at no charge, any unit which PPI's examination discloses to be defective and under warranty, provided the defect occurs within two years from the date of purchase, and the product is returned immediately to PPI.
2. The date of purchase of a PPI Amplifier and/or Accessory must be established by an original sales receipt which must accompany the article being returned for warranty work.
3. The provisions of this warranty shall not apply to any PPI unit used for a purpose for which it is not designed, which has been repaired or altered in any way, or which has been connected, installed, or adjusted other than in accordance with the instructions furnished in PPI's owner's manual. Nor shall this warranty apply to any part which has been subject to misuse, neglect, or accident.
4. PPI does not authorize any other person to assume any other liability in connection with its products. THIS WARRANTY IS THE ONLY EXPRESS WARRANTY MADE BY PPI APPLICABLE TO ITS PRODUCTS. ANY IMPLIED WARRANTY OR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE APPLICABLE TO PPI'S AMPLIFIERS AND/OR ACCESSORIES IS LIMITED IN DURATION TO THE DURATION OF THIS LIMITED WARRANTY. PPI SHALL NOT BE LIABLE FOR THE INCIDENTAL, CONSEQUENTIAL, OR COMMERCIAL DAMAGES RESULTING FROM THE BREACH OF THIS WRITTEN WARRANTY. Some states or provinces do not allow the exclusion or limitation of incidental or consequential damages or limitations on how long an implied warranty lasts, so the above limitations or exclusions may not apply to you.
5. Your unit will be serviced on an in-warranty basis within the warranty period for the correction of warranted defects. Do not return the article to your dealer. Return the article including your name, telephone number, and return address with the description of the problem to:

Precision Power  
Warranty Department  
4829 South 38th Street  
Phoenix, AZ 85040

**TO RETURN ARTICLES OUT OF WARRANTY.** Return the article, postage prepaid, in the original protective carton. Include in the package a description of the problem and, if desired, a request for an estimate of repair costs. Unless a request for an estimate is included, the unit will be repaired as necessary. Fifty Dollars (\$50.00) (labor), plus parts will be charged for all-product repairs. The repaired unit will be returned to the customer with an itemized statement C.O.D.