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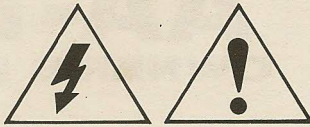
PEROTON

AA-1150
OWNER'S MANUAL

AA-1150

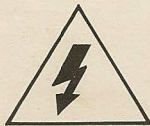
PERFECTOR

WARNING: to reduce the risk of fire or electric shock, do not expose this appliance to rain or moisture.



CAUTION
RISK OF ELECTRIC SHOCK DO NOT OPEN

CAUTION: to reduce the risk of electric shock, do not remove cover (or back); no user-serviceable parts inside. Refer servicing to qualified service personnel.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

CAUTION/ATTENTION: *TO PREVENT ELECTRIC SHOCK DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

*POUR PRÉVENIR LES CHOCS ÉLECTRIQUES NE PAS UTILISER CETTE FICHE POLARISÉE AVEC UN PROLONGATEUR, UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ÊTRE INSÉRÉES À FOND SANS EN LAISSER AUCUNE PARTIE À DÉCOUVERT.

SAFETY INSTRUCTIONS

- ① **Read Instructions-** All the safety and operation instructions should be read before the unit is operated.
- ② **Retain Instructions-** The safety and operating instructions should be retained for future use.
- ③ **Heed Warnings-** All warnings on the unit and in the operating instructions should be adhered to.
- ④ **Follow Instructions-** All operating and use instructions should be followed.
- ⑤ **Water and Moisture-** The unit should not be used near water. For example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, near a swimming pool, etc.
- ⑥ **Ventilation-** The unit should be placed so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be placed on a bed, sofa, rug, or similar surface that may block the vents; or, placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the vents.
- ⑦ **Heat-** The unit should be placed away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.
- ⑧ **Power Sources-** The unit should be connected to a power supply only of the type described in the operating instructions or as marked on the unit.
- ⑨ **Grounding or Polarization-** Precautions should be taken so that the grounding or polarization means of this unit is not defeated.
- ⑩ **Power- Cord Protection-** Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they connect to the appliance.
- ⑪ **Cleaning-** The unit should be cleaned only as recommended by the manufacturer.
- ⑫ **Power Lines-** An outdoor antenna should be located away from power lines.
- ⑬ **Nonuse Periods-** The power cord of the unit should be unplugged from the outlet when left unused for a long period of time.
- ⑭ **Object and Liquid Entry-** Care should be taken so that objects do not fall and liquids are not spilled into the openings in the enclosure.
- ⑮ **Damage Requiring Service-** The unit should be serviced by qualified service personnel when:
 - A) The power-supply cord or the plug has been damaged; or
 - B) Objects have fallen, or liquid has been spilled into the unit; or
 - C) The unit has been exposed to rain; or
 - D) Does not appear to operate normally or exhibits a marked change in performance; or
 - E) Has been dropped, or the enclosure damaged.
- ⑯ **Servicing-** The user should not attempt to service the unit beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

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YOUR NEW PROTON AA-1150 POWER AMPLIFIER FEATURES

DYNAMIC POWER ON DEMAND (tm) (DPD) (tm)

Conventional power amplifiers are designed to produce their full rated power continuously, even though musical peaks and transients last only a moment. The result is excessive bulk, weight, and expense. Dynamic power on demand uses a special power supply and output stage to provide peak power levels of up to 4 times the AA-1150's rated power, for only as long as the music demands it. This allows your AA-1150 to play as loud as an amplifier which is much bigger, heavier and many times as expensive as the AA-1150.

DUAL MONO CONSTRUCTION (DMC)

Two separate power supplies and two discrete power amplifiers (on one

chassis) provide greatly improved stereo separation, imaging and project a sound stage with great depth and definition.

Cross-modulation effects are greatly reduced and the inherently low distortion characteristics and massive headroom of the AA-1150 permit distortion-free listening of the highest quality.

HIGH CURRENT CAPABILITY

The AA-1150 can deliver up to 20 amperes into loads as low as 2 ohms. This permits operation with highly-reactive or wildly-varying speaker loads, without loss of sound quality. Other amplifiers would be sonically compromised, or could not drive such loads at all.

WELCOME TO THE WORLDWIDE FAMILY OF PROTON OWNERS

Your AA-1150 DMC power amplifier was designed for the highest sound quality and reliability. Whether an upgrade to an existing system, or one

of your first hi-fi components, it will provide many years of musical enjoyment.

PACKED INSIDE YOU'LL FIND

The amplifier; a literature package (of which this is one piece). If anything seems to be missing, look

carefully through all the packing material.

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PLEASE SAVE THE SHIPPING CARTON

It was designed to protect the AA-1150 from rough handling. In the unlikely event your power amplifier must be returned to your

retailer, this carton is the best way to ship it. It's also handy should you move.

AND SAVE THE SALES RECEIPT

You'll need it for warranty service or insurance claims. Write the serial number on the receipt, and in the space provided on the inside front

cover of this manual. The serial number is on the amplifier's back panel, above the input jacks.

INSTALLATION

Even if you have no electrical experience, you'll have no trouble installing the AA-1150. We have broken down the procedure into a series of simple instructions. Read the instructions carefully and pay close attention to the diagrams. We've anticipated the confusing points and arranged the steps so you aren't likely to make a mistake. Before starting, please read the safety instructions at the front of this manual; be certain you understand and observe them. Do this now.

Unfamiliar terms are explained in the glossary at the back of this manual.

A note about cabling. Hi-Fi components come with only the minimum number of cables needed to connect them. If you run short (either in quantity or length), your Proton retailer has a selection of high-quality interconnects. He'll help you select the right ones.

Please observe the following warning: NEVER connect or disconnect an audio cable with the power on. There will be a burst of noise that can blow fuses, damage your power amplifier, or destroy your speaker system. When installing equipment or changing connections turn everything off first.

THERE ARE FOUR STEPS IN THE INSTALLATION

1. Find an appropriate location for the power amplifier.
2. Connect the speaker cables.
3. Connect the power amplifier to the preamplifier.
4. Connect the power cord to the wall outlet.

FIND AN APPROPRIATE LOCATION FOR THE POWER AMPLIFIER

Apart from turning it on and off, you will rarely need to touch the AA-1150.

Unless you want to see the meters or DPD display, the amplifier need not be at eye level. It needn't even be near the preamplifier. If the amplifier sits more than 1 metre (2 or 3 feet) from the preamplifier, you'll need cables longer than those supplied with the AP-1000 preamplifier. Cables longer than 2M (6ft) are not recommended.

The AA-1150 is fully solid-state and does not get very hot. (Its special DPD design helps.) Nonetheless, there should be enough clear space around the amplifier to permit a free flow of air

If you decide to "stack" the AA-1150 and your preamp, we recommend you put the AA-1150 on top of the preamp, not underneath.

The AA-1150 has to sit on a rigid surface for proper ventilation. The vent holes on the bottom will be blocked if the amplifier is on something soft and yielding. If the amplifier must sit on a carpet, slip a thin, stiff piece of wood (such as masonite) underneath.

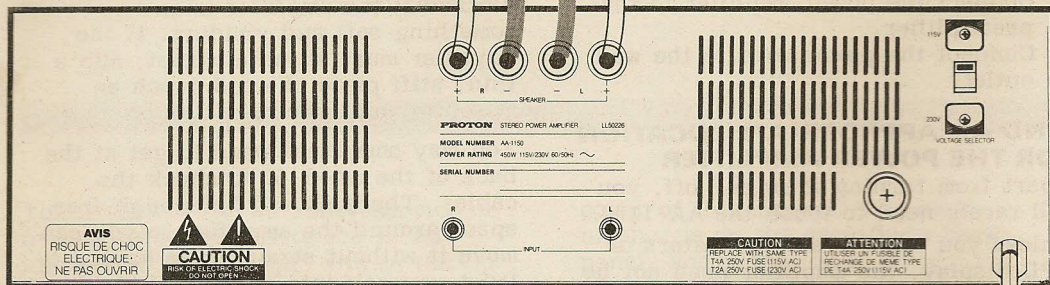
You may sometimes need to get at the back of the AA-1150 to check the cables. There should be enough free space around the amplifier so you can move it without straining or having to twist yourself into an uncomfortable position.

Dust and moisture are enemies of all electronic equipment. If your listening room is dusty, or if you live near salt water, cover your Hi-Fi components when not in use. It is generally not a good idea to operate electronic equipment in damp rooms, unless you are using a dehumidifier.

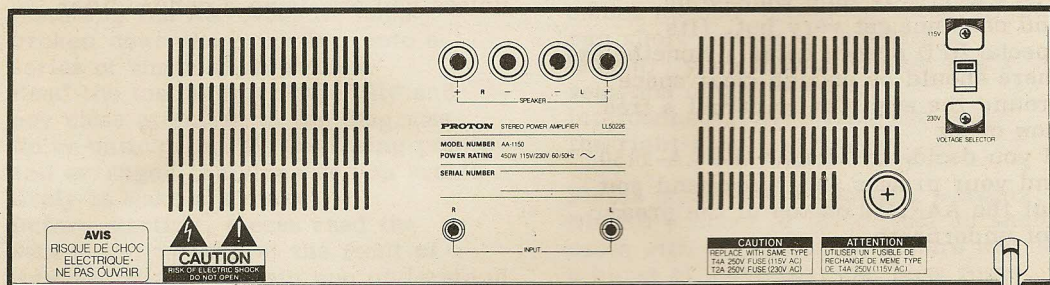
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CONNECT THE SPEAKER CABLES

RIGHT SPEAKER + - - + LEFT SPEAKER

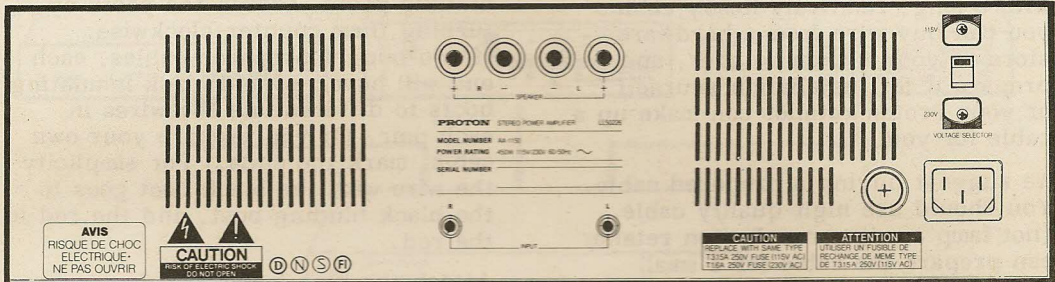


General Model

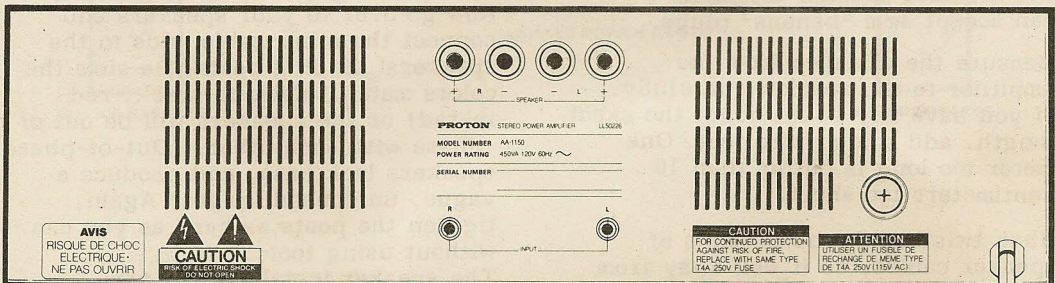


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European Model



U.S.A. and Canadian Model



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WARNING:

(Never) connect the two "hot" outputs (red binding posts) together. The amplifier could be severely damaged.

The AA-1150 connects to your speakers with a long, relatively heavy cable. you can buy wire from a hardware store or your Proton retailer, and prepare it for installation yourself. or your Proton retailer can make up a cable for you.

We suggest buying a prepared cable. You should use high-quality cable. (not lamp cord). your Proton retailer can prepare the cable for a small extra fee.

Most speakers (and the AA-1150) have binding posts to which the cable is attached. We suggest soldering spade lugs to the cables; a bare-wire connection is both inconvenient and unreliable. If your dealer makes up the cable, it will have the necessary lugs already attached. Alternatively, the AA-1150 speaker terminals can accept 4mm "banana" plugs.

Measure the distance from the amplifier to the speakers carefully. If you have any doubt about the exact length. add a few extra feet. One meter too long is better than 10 centimeters too short.

When twisting the bared ends of speaker cables, do it well away from the amplifier... otherwise tiny strands of wire can fall through the ventilation slots!

Once the cables are ready, lay them neatly on the floor and unkink them.

Run the cables from the amplifier to the speakers (but don't connect them). Keep them away from places where one might trip over them.

Now look at the back of the AA-1150. There are two pairs of red and black binding posts. Loosen the posts by turning them counter-clockwise. If you bought prepared cables, each end will have red and black insulating boots to differentiate the wires in each pair. (If you prepare your own cable. mark the ends.) For simplicity the wire with the black boot goes to the black binding post, and the red to the red.

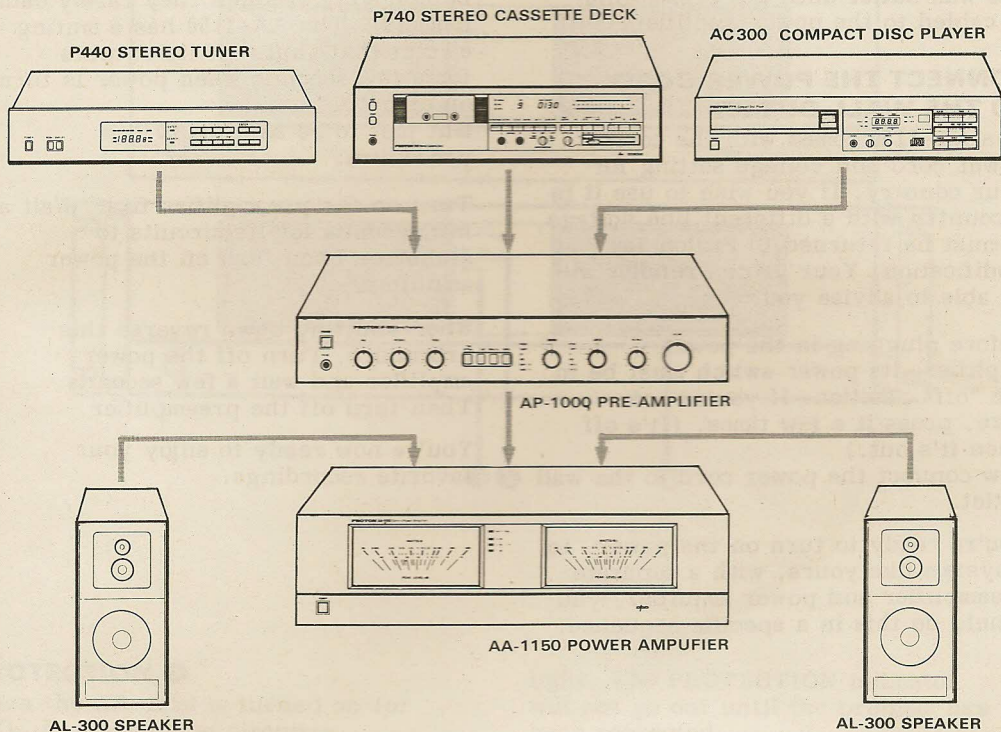
Attach the lugs from the left speaker cable to the LEFT set of binding posts.

Slip each lug under the post with the matching color (there's an opening in the binding post "shoulder" that allows the wire to pass). then firmly tighten the post without using tools. Repeat this process for the right speaker cable.

Now go over to your speakers and connect the other cable ends to the speakers' binding posts. Be sure the colors match (black-to-black, red-to-red) or the speakers will be out of phase with each other. (Out-of-phase speakers lack bass, and produce a vague, unfocused image.) Again, tighten the posts as hard as you can without using tools. The speaker installation is now complete.

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CONNECT THE POWER AMPLIFIER TO THE PREAMPLIFIER



This is the simplest step. Run a pair of cables from the AA-1150's INPUT jacks to your preamplifier's output jacks. If you don't like hearing violins from the right, or video

sond effects that move in the wrong direction, be sure to keep left and right channel connections properly orientated.

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If your preamplifier isn't installed yet, don't perform this step until the preamplifier is in place. Don't connect the power amplifier's power cord to the wall outlet until the preamplifier is cabled to the power amplifier.

CONNECT THE POWER CORD TO THE WALL OUTLET

The AA-1150 comes with the correct power cord and voltage setting for your country. If you wish to use it in a country with a different line voltage, it must be returned to Proton for modification. Your Proton retailer will be able to advise you.

Before plugging in the power amplifier, its power switch must be in the "off" position. If you're not sure, press it a few times. (It's off when it's out.)

Now connect the power cord to the wall outlet.

You're ready to turn on the power. In a system like yours, with a separate preamplifier and power amplifier, you should do this in a specific sequence.

When any preamplifier is turned on or off, it may produce thumps, clicks or other electrical noises. Passed through the power amplifier, they can be annoying (though they rarely cause damage). The AA-1150 has a muting circuit that shuts off its outputs for a few seconds when power is turned on or off.

But just to be safe follow this procedure:

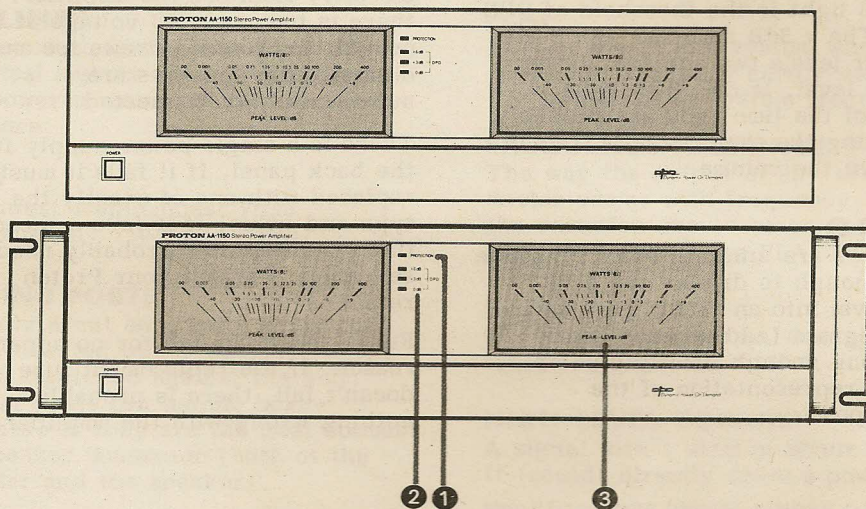
Turn on the preamplifier first. Wait a few seconds for its circuits to stabilize. Then turn on the power amplifier.

When shutting down reverse this procedure. Turn off the power amplifier and wait a few seconds. Then turn off the preamplifier.

You're now ready to enjoy your favorite recordings.

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DISPLAYS



PROTECTION ①

When the AA-1150 is turned on (or off), the protection circuitry disconnects the speakers for a few seconds, to keep electrical surges from reaching the speakers. The PROTECTION light comes on to show that the circuit is working.

If excessive DC voltage appears at the amplifier output, or the load draws too much current the protection circuitry will shut off the speakers and the PROTECTION indicator will

light. The PROTECTION indicator will not go out until the problem has been corrected.

It is normal for PROTECTION to stay lit two minutes (or more) after turning off the amplifier. No malfunction is indicated.

DPD ②

There is no need for a switch to turn DPD on or off. Dynamic power on demand is always ready to produce extra power as it's

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needed. The DPD lights switch on as dynamic power on demand supplies extra power for musical peaks.

The 0 dB light is the threshold of DPD action. The +3dB and +6dB lights are for power levels two and four times the 0 dB level. If the +6dB light is on most of the time, you are probably overdriving the amplifier and should turn down the volume.

METERS ③

The meters are unique. Their response is fast enough to display the peak power level into an 8-ohm load, yet they integrate (add up) the signal over a long enough time to give an accurate representation of the average power.

MAINTENANCE

The speaker cables should be checked occasionally to be sure the connections are tight and clean. Bare wire under the binding post is less reliable than spade lugs. Temperature changes, combined with the wire's natural elasticity, will cause the binding post to loosen, sometimes in as little as a week. Lugs loosen too, though it takes longer. Check the speaker wires (at both the amp and speaker) at least once a month.

Remove dust by wiping with a clean, dry cloth. Liquids should never be sprayed on or near the amplifier. If a stain requires more vigorous

FUSES

The AA-1150 DMC amplifier has no speaker fuses. Special electronic circuitry monitors the amplifier. If there is too much DC voltage at the output, or the load draws too much current, the speakers are automatically disconnected.

There is a single power supply fuse on the back panel. If it fails it must be replaced with one of exactly the same type and value. If it fails a second time, the amplifier probably needs servicing. Contact your Proton retailer.

Fuses sometimes fail for no apparent reason. If the replacement fuse doesn't fail, there is probably nothing wrong with the amplifier.

treatment, spray a small amount of household cleaner (Formula 409, Fantastik) on the cloth. (Never) use solvents (benzene, alcohol, Freon, etc). They may damage the finish or remove the panel markings.

Though the input jacks are gold-plated for reliability, it's still a good idea to clean them (and the cable plugs) once a year. Your Proton retailer can recommend a suitable cleaning product.

There are no user-serviceable parts inside. Please refer all problems to your Proton retailer, or an authorized service station.

GLOSSARY

AMPLIFIER

An electrical device that takes tiny electrical signals and converts them into powerful currents to drive loudspeakers.

BASS

The lowest frequencies; from approximately 150 hertz down.

BINDING POSTS

Basically a nut on a bolt. A wire or lug is inserted under the nut, which is then tightened against the bolt. Binding posts can handle heavy currents, so they are the most common loudspeaker connector (both at the amplifier and the speaker).

BOOST

To make stronger or more powerful.

CROSSOVER

A circuit which splits a signal into two or more frequency bands. It can be passive (such as the coils, resistors, and capacitors found in a speaker), or it can use active electronic circuitry.

CUT

To attenuate or weaken.

EQ

Short for "equalization". broadly, any change in frequency response intended to make the net. over-all response.

FLAT

Descriptive of any system where frequency response hardly varies over the full range of audible frequencies.

FREQUENCY RESPONSE

The way the output of any system or device varies with frequency. Ideally the variation should be as close as possible to zero. See FLAT.

HERTZ

The unit of frequency. One cycle per second. Abbreviated "Hz".

HIGH-LEVEL SOURCE

A signal with a level of about 1 volt. It (could) directly drive a power amplifier, but almost always passes through the preamp for volume control. Tuners, CD players tape recorders and VCRs are all high-level sources.

INPUT

The connector where the signal to be amplified enters the amplifier. By extension, the signal itself.

LOW-LEVEL SOURCE

A signal with a level of about 1 millivolt or less. All magnetic phono pickups and most microphones have outputs in this region. It is not enough to directly drive a power amplifier extra amplification is needed.

MIDRANGE

The range of frequencies where the

AA-1150

human voice and most musical fundamentals are located. From approximately 150 z to 3000 Hz.

MILLIVOLT

one-thousandth of a volt

OUTPUT

The connector where the amplified signal leaves the amplifier. By extension the signal itself.

PHONO SECTION

The preamp section which boosts the weak signal from a magnetic pickup.

POWER

The rate at which energy is expended to do useful work.

POWER AMPLIFIER

The amplifier which gives the audio signal enough "muscle" to set the speaker into motion.

POWER SUPPLY

The part of any electronic device that converts the AC line voltage into the DC voltages the circuits need. Its quality is almost as important as that of the circuitry it powers.

PREAMPLIFIER

An audio system's control center. It selects the desired input, adjust its level and sends/receives signals to/from the tape recorder. Its name is derived from the extra stage of amplification required when magnetic phono pickups became popular.

PROGRAM SOURCE

The hardware that gives you something to listen to. A turntable tape deck, tuner CD player etc.

SUBWOOFER

A specialized woofer, specifically designed for the best reproduction of frequencies below 50 Hz.

TREBLE

The highest frequencies; above approximately 3000 Hz.

TWEETER

The small light speaker that reproduces the high frequencies.

WOOFER

The large massive speaker that reproduces the low frequencies.

VOICE COIL

The wire coil at the base of a loudspeaker driver. Current from the amplifier passes through this coil creating a magnetic field that interacts with the field of a nearby permanent magnet. This interaction moves the diaphragm back and forth. Too much current can burn out the voice coil.

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PERFORMANCE SPECIFICATIONS

Rated Power Output (20Hz-20KHz, 8 Ohms)	50W, Per Channel
Dynamic Power At 8 Ohm/4 Ohm/2 Ohm	
1. I.H.F. Standard 20ms Duration:	280W/450W/600W
2. 100ms Duration:	220W/300W/350W
3. 200ms Duration: (Duty Cycle:500ms)	180W/240W/260W
Dynamic Headroom At 8 Ohm/4 Ohm/2 Ohm:	7dB
T.H.D. At Rated Power:	0.02%
I.M.D. At Rated Power:	0.02%
Clipping Power At 8 Ohm/4 Ohm/2 Ohm:	55W/85W/110W
Damping Factor:	>150
Frequency Response 20-20KHz:	+0.3dB
Power Bandwidth At T.H.D. 0.1%	12-70KHz
Input Resistance/Capacitance:	12K Ohm/220pF
Input Sensitivity:	1V
Channel Crosstalk (1 KHz):	90dB
S/N Ratio (A-Weighted):	115dB
Normal Dimensions WxHxD (Inch):	16.53" x 4.8" x 15.6"
Normal Dimensions WxHxD (MM):	420x122x395 MM
Net Weight:	11.5Kg/25.3Lbs
Shipping Weight:	13.9Kg/30.58Lbs

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