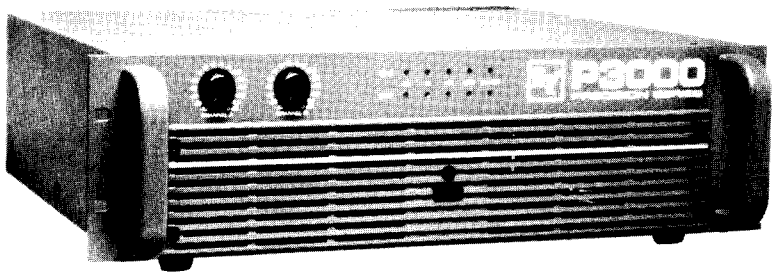
Electro-Voice®

P3000

Precision Series™ Power Amplifier



- **850 watts per channel at 8 ohms, 1,400 watts per channel at 4 ohms, 1,800 watts per channel at 2 ohms**
- **Neutrik Speakon® output connectors allow use of heavy-gauge speaker wire for low-loss connections**
- **Extremely low (<0.01%) dynamic distortion ensures excellent sound quality**
- **Three-year parts-and-labor warranty**

SPECIFICATIONS

Conditions:

1. 0 dBu = 0.775 V rms.
2. Dual-mode ratings are for each channel, both operating, unless noted.
3. 120-volt ac line voltage maintained throughout testing.

Continuous Rated Output Power (20-20,000 Hz at less than 0.1% THD, both channels driven per EIA RS-490),

Dual Mode, 2 Ohms:
1,500 watts

Bridged Mode, 4 Ohms:
3,000 watts

Dual Mode, 4 Ohms:
1,200 watts

Bridged Mode, 8 Ohms:
2,400 watts

Dual Mode, 8 Ohms:
750 watts

Continuous Rated Output Power (1 kHz, 1% THD, both channels driven per EIA RS-490),

Dual Mode, 2 Ohms:
1,800 watts

Bridged Mode, 4 Ohms:
3,600 watts

Dual Mode, 4 Ohms:
1,400 watts

Bridged Mode, 8 Ohms:
2,800 watts

Dual Mode, 8 Ohms:
850 watts

Power Bandwidth (+0/–1 dB, reference 1 kHz), Any Mode, 4 Ohms:
10-30,000 Hz

Frequency Response (+0, –3 dB, reference 1 kHz/1 watt):
<10-30,000 Hz

Voltage Gain, 1 kHz, Any Mode, Constant-Gain Option:[1]
26 dB

Input Sensitivity, 1 kHz, Dual Mode for 800 Watts into 4 Ohms:
0 dBu (775 mV)

Maximum Input Level (reference 1 kHz):
+20 dBu (7.75 V)

Input Impedance (per channel, 20-20,000 Hz), Balanced:
20 kilohms

Phase Response (at rated power, any mode, 10-30,000 Hz):
±22.5 degrees

THD Plus Noise at 1 kHz (at rated power, measurement bandwidth 80 kHz):
<0.01%

IMD (SMPTE) (60 Hz/7 kHz, typical, at rated power; see Figure 2):
<0.01%

DIM 30 (composite square-sine wave band-limited to 30,000 Hz):
<0.01%

DIM 100 (composite square-sine wave band-limited to 100,000 Hz):
<0.01%

Rise Time (10% to 90% at rated power, any mode):
<2.5 microseconds

Slew Rate, Any Mode:
>40 V/microsecond

Damping Factor, Any Mode:
>300

Amplifier Protection:
Excessive output voltage; shorted loads; excessive phase shift; rf interference; overtemperature; excessive back EMF; In-rush current limiter

1. Configured for constant-gain option, all Precision Series™ amplifiers, regardless of power rating, have a maximum voltage gain of 26 dB.

Load Protection:
Start-up/shutdown transients; dc fault; infrasonic signals; low ac line voltage; nonlinear signal limiter

Output Topology:
True complementary symmetry with ungrounded collectors (no mica insulators means better heat transfer)

Output Devices,

Total Number: 48 devices

P_d(max) Rating: 250 watts

I_c (collector current): 16 amps dc

T_j(max): 200 °C (392 °F)

Controls and Switches,

Rear:
Hi-Lo-Cut Filter(On/Off); Bridged Mode switch (Bridged/Normal); Limiter mode (Fast/Slow); Circuit ⊥ To Chassis Switch (Grounded/Ungrounded); Input Routing (Parallel Mono or Dual Stereo)

Front:
Two calibrated input level controls; power switch

Front-Panel Indicators:
Five LED's per channel (10 total) for power on, input signal; output signal; limiter on and protect on

Connections,

Input:
3-pin female XLR-type connectors for each channel in parallel with a 3-pin male XLR-type output connector for easy signal routing; the XLR connectors are wired according to the IEC 268 standard: pin 1 shield, pin 2 positive, pin 3 negative

Output:
Neutrik Speakon® NL4MP for channels A, B and for bridged mode

Power:
12-gauge, 3-wire, permanently attached power cable; no ac plug supplied

P3000 SPECIFICATION GRAPHICS

FIGURE 1 — P3000 Dimensions

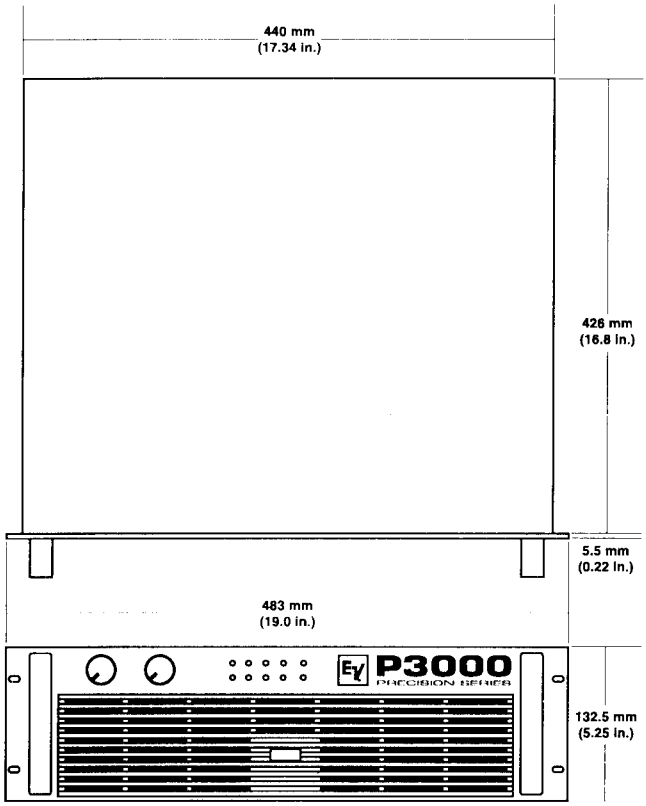


FIGURE 2 — P3000 Intermodulation Distortion (SMPTE 60 Hz/7 kHz) vs. Power

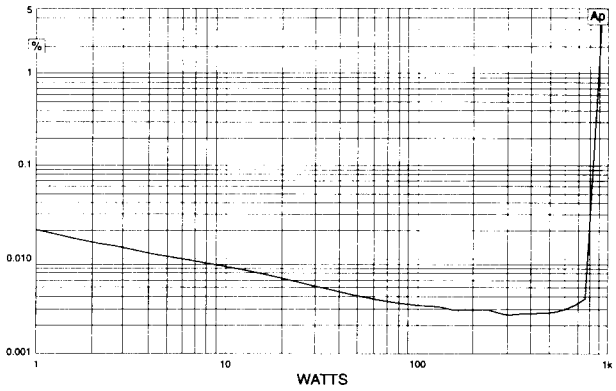
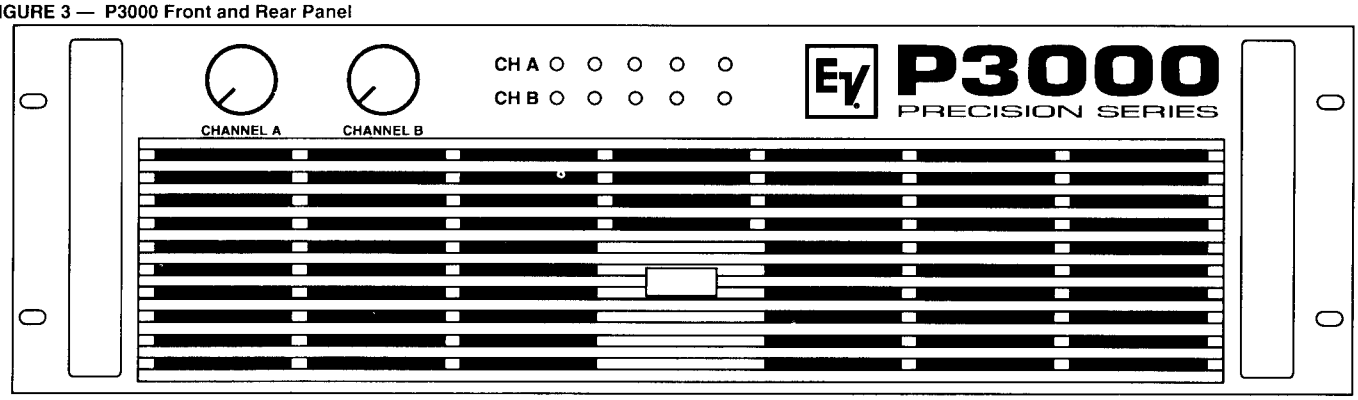
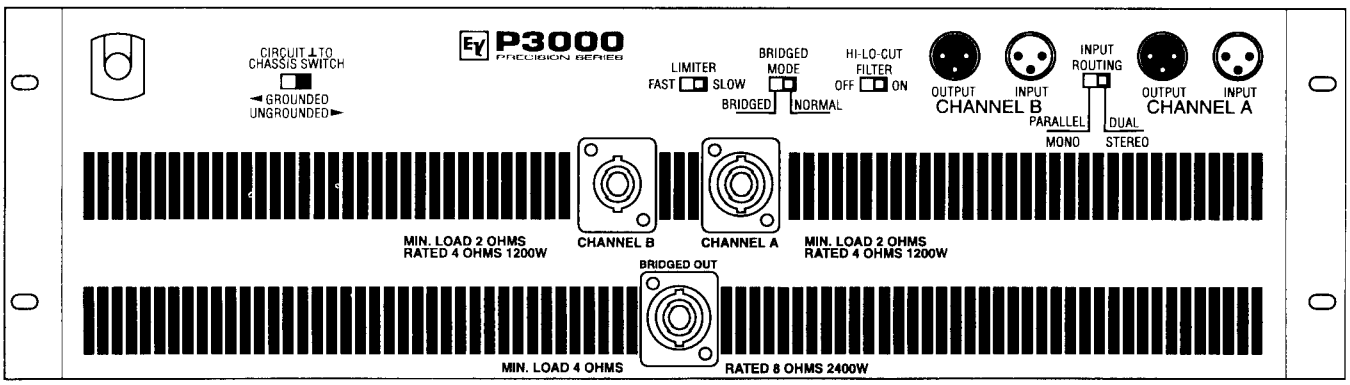


FIGURE 3 — P3000 Front and Rear Panel





Operating Voltage:
120 V, 60 Hz ac
Power Consumption (both channels operating in dual mode, 1/8 power), 4 Ohms:
1,200 VA
Dimensions, (See Figure 1)
Height:
132.5 mm (5.25 in.)
Width:
483 mm (19.0 in.)
Depth:
426 mm (16.8 in.)
Color:
Gray
Net Weight:
28 kg (61.6 lb)
Shipping Weight:
32.7 kg (72 lb)

DESCRIPTION

The Electro-Voice P3000 Linear Precision™ amplifier is a very-high-quality power amplifier designed to elicit maximum performance from any speaker system. Its ultralow distortion and powerful amplifiers ensure that program material will be amplified very accurately.

Each channel of the P3000 delivers more than 750 watts continuous average power into 8 ohms, 1,200 watts into 4 ohms and 1,500 watts into 2 ohms over the full audio frequency range. In the bridge mode, the amplifier can deliver more than 2,800 watts into 8 ohms and 3,600 watts into 4 ohms at less than 1% THD. The power supply, with its large toroidal transformer, gives the amplifier impressive headroom and current output.

The P3000 contains 48 high-power output devices with 12,000 watts of dissipation capability. These devices are protected from overheating by four, three-speed, temperature-sensitive fans. The fans are quiet enough to permit use of the P3000 in noise-sensitive applications such as recording studios and houses of worship.

The output devices are mounted to a massive, extruded-aluminum heat sink that is engineered to minimize thermal gradients and allow the amplifier to operate safely into low-impedance loads. The output devices have a maximum junction temperature of 200 °C (392 °F), so high operational temperatures present no problems. The output devices are mounted directly to the heat sink without mica insulators to ensure better dissipation of heat.

Many electronic circuit innovations exist in the P3000. Among the most novel of these circuits is the Mirrored Frontend Power Supply Bridge™. This design ensures complete symmetry for each bridged amplifier and both signal polarities, and eliminates asymmetrical rise and fall times. The Dual Differential Discrete Topology™ is part of the front end of the amplifier and uses discrete electrical components instead of integrated circuits to help the P3000 achieve its phenomenally low distortion.

The P3000 has sophisticated protection circuits that guard it and the load from problems. Protection circuits guard against overload, overtemperature, shorted outputs, radio-frequency interference and dc faults. The output devices are protected against damage from reverse feeding of electrical energy (back EMF) and are switched on via relays to avoid transients which could damage speakers.

The P3000 has built-in limiters to protect speakers from the deleterious effects of amplifier clipping. The limiter's action is governed by very sophisticated input/output comparators which have acoustically optimized time constants to preserve the integrity of the source. The limiter's time constants are switchable fast/slow, so the limiter may be matched to the application for which the amplifier is being used.

The P3000 has built-in switchable high- and low-cut filters. These filters attenuate infrasonic and ultrahigh-frequency signals, preventing them from being amplified; this allows more effective use of the amplifier's power and adds a measure of load protection. These filters are switchable on/off for use in applications utilizing front-end units (like crossovers or equalizers) which have these filters built-in.

A multifunction display keeps the user informed of the operating status of the amplifier. Separate LED displays for each channel show power on, input signal, output signal, limiter on and protection active.

The P3000 has electronically balanced XLR-type input and output connectors that allow easy, problem-free connections and signal routing. The P3000 has an input routing switch that allows selection of either normal dual-channel operation, or parallel mono operation, which routes an input to both channels but still allows for independent level control. The P3000 also has a constant-gain option which allows the voltage gain to be fixed. This permits different amplifiers to be used in fixed installations without rebalancing, and ensures headroom is not wasted.

The P3000's professional Neutrik Speakon® output connectors provide a sturdy, reliable connection and allow use of heavy wire for loss-free signal transmission. There are separate output connectors for channels A and B, and for the bridge mode. The bridge-mode connector is sealed with a plastic cover to prevent connection errors.

To prevent ground loops from occurring, the P3000 is equipped with a ground-lift switch. When the amplifier is operated in a rack with units of different ground potential, the switch may be adjusted to eliminate hum.

Calibrated, detented potentiometers on the front panel regulate the gain of the P3000. The panel nomenclature shows the amount of attenuation accurately.

The P3000 also has a constant-gain option which, with input level controls full clockwise, provides a 26-dB voltage gain that is identical to that of all Electro-Voice Precision Series™ amplifiers in the constant-gain option, regardless of power rating. This makes it possible to exchange amplifiers of different power ratings without upsetting delivered sound pressure levels or spectral balances.

The Electro-Voice P3000 is the choice for serious, professional amplification applications which require optimum sound quality, speaker protection, and the highest level of construction quality and long-term reliability.

Figure 3 shows P3000 front and rear panels. The block diagram is shown in Figure 4.

ARCHITECTS' AND ENGINEERS' SPECIFICATIONS

The power amplifier shall be a dual-channel model of solid-state design employing high-power output devices in a true-complementary-symmetry output circuit. It shall be capable of operating from a 120/200/220/240-V, 50/60-Hz ac line. The power amplifier shall contain a modern limiter circuit with switchable time constants to protect the load from damage by amplifier clipping.

The amplifier shall contain sensing circuitry to provide protection for the output transistors against overtemperature, excessive output voltage, radio-frequency interference, shorted loads, excessive phase shift and back-EMF current. The load shall be similarly protected against infrasonic signals, start-up/shutdown transients, low ac line voltage and dc.

Rear-mounted panel controls shall include an input routing switch for selecting dual/stereo or parallel mono operation, a switch for turning the infrasonic and ultrasonic filters on or off, a switch for selecting dual/stereo or bridged operation and a switch for selecting fast or slow speed for the built-in limiters. Input connections for each channel shall include a 3-pin female XLR-type connector wired in parallel with a male 3-pin XLR output connector for signal routing. Output connectors shall be Neutrik Speakon® NL4MP's for channels A and B, and for bridged operation.

Front-panel indicators shall include power on, input present, output, limit and protect LED's for each channel. Front-panel controls shall include a power switch and level controls that shall be calibrated, detented potentiometers and have accurate markings. The amplifier shall have a constant-gain option that, with input level controls full clockwise, provides a 26-dB voltage gain that is identical to that of all Electro-Voice Precision Series™ power amplifiers.

The power amplifier shall meet the following performance specifications: maximum input voltage, 7.75 V rms; rated output power from 20-20,000 Hz at less than 0.1% THD, each channel, 750 watts into 8 ohms, 1,200 watts into 4 ohms, 1,500 watts into 2 ohms, 2,400 watts bridged into 8 ohms and 3,000 watts bridged into 4 ohms; hum and noise, at least 100 dB (A-weighted) below rated output power; frequency response, <10-30,000 Hz (+0, −3 dB) at any output power up to rated output power; damping factor, >300 at any frequency up to 1 kHz in any mode with an 8-ohm load; THD (total harmonic distortion), <0.05% at 1 kHz at rated power; transient intermodulation distortion (DIN 30 or DIN 100), <0.01%; crosstalk, <70 dB below rated output power. Dimensions shall be 132.5 mm (5.25 in.) x 483 mm (19.0 in.) x 426 mm 16.8 in.) hwd. Net weight shall be 32.7 kg (72 lb). Color: gray.

The power amplifier shall be the Electro-Voice P3000.

UNIFORM LIMITED WARRANTY

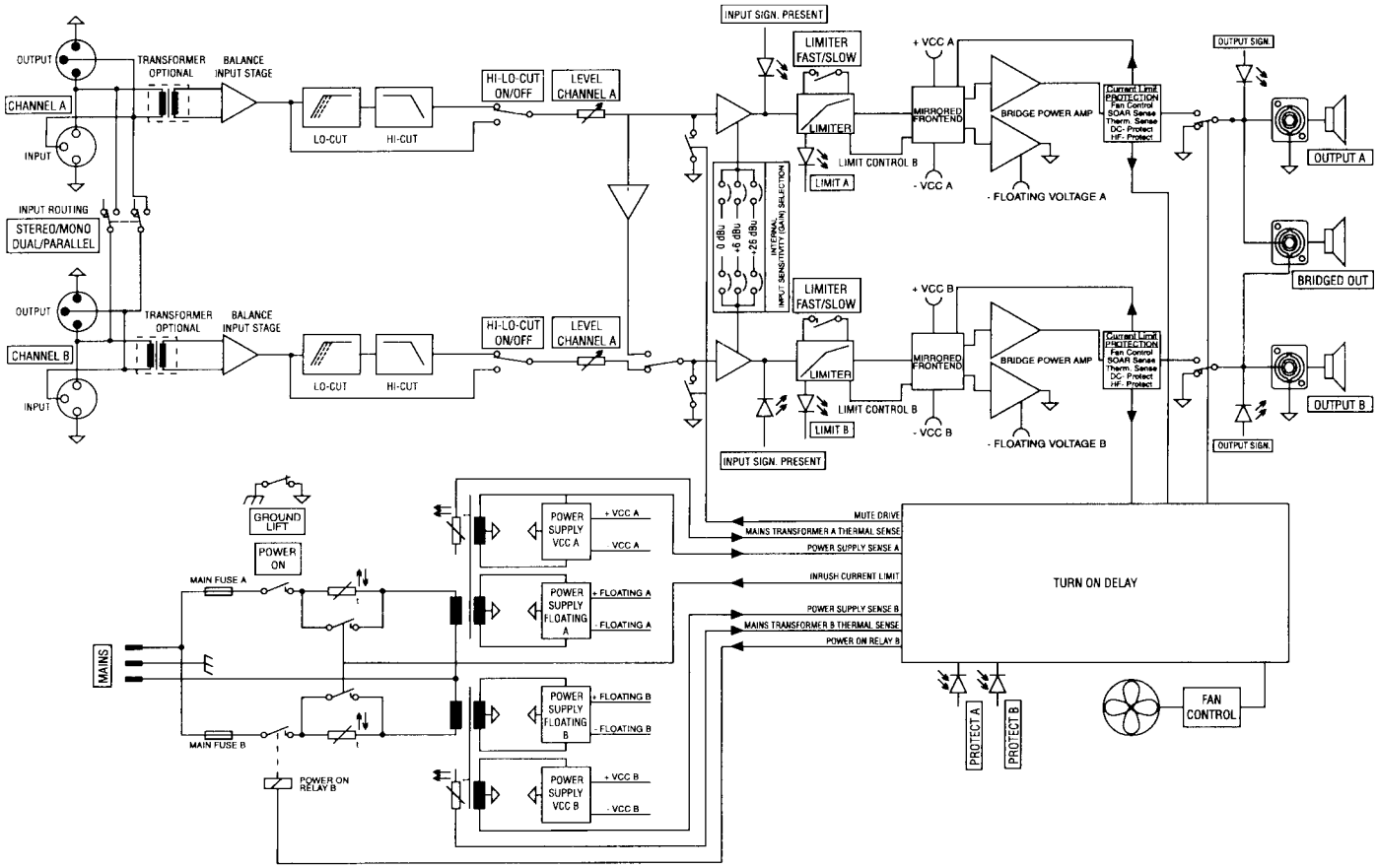
Electro-Voice products are guaranteed against malfunction due to defects in materials or workmanship for a specified period, as noted in the individual product-line statement(s) below, or in the individual product data sheet or owner's manual, beginning with the date of original purchase. If such malfunction occurs during the specified period, the product will be repaired or replaced (at our option) without charge. The product will be returned to the customer prepaid. **Exclusions and Limitations:** The Limited Warranty does not apply to: (a) exterior finish or appearance; (b) certain specific items described in the individual product-line statement(s) below, or in the individual product data sheet or owner's manual; (c) malfunction resulting from use or operation of the product other than as specified in the product data sheet or owner's manual; (d) malfunction resulting from misuse or abuse of the product; or (e) malfunction occurring at any time after repairs have been made to the product by anyone other than Electro-Voice or any of its authorized service representatives. **Obtaining Warranty Service:** To obtain warranty service, a customer must deliver the product, prepaid, to Electro-Voice or any of its authorized service representatives together with proof of purchase of the product in the form of a bill of sale or receipted invoice. A list of authorized service representatives is available from Electro-Voice at 600 Cecil Street, Buchanan, MI 49107 (616/695-6831 or 800/234-6831). **Incidental and Consequential Damages Excluded:** Product repair or replacement and return to the customer are the only remedies provided to the customer. Electro-Voice shall not be liable for any incidental or consequential damages including, without limitation, injury to persons or property or loss of use. Some states do not allow the exclusion or limitation of incidental or consequential damages so the above limitation or exclusion may not apply to you. **Other Rights:** This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Electro-Voice Electronics are guaranteed against malfunction due to defects in materials or workmanship for a period of three (3) years from the date of original purchase. Additional details are included in the Uniform Limited Warranty statement.

Service and repair address for this product: Electro-Voice, Inc., 600 Cecil Street, Buchanan, Michigan 49107 (616/695-6831 or 800/234-6831).

Specifications subject to change without notice.

FIGURE 4 — P3000 Block Diagram

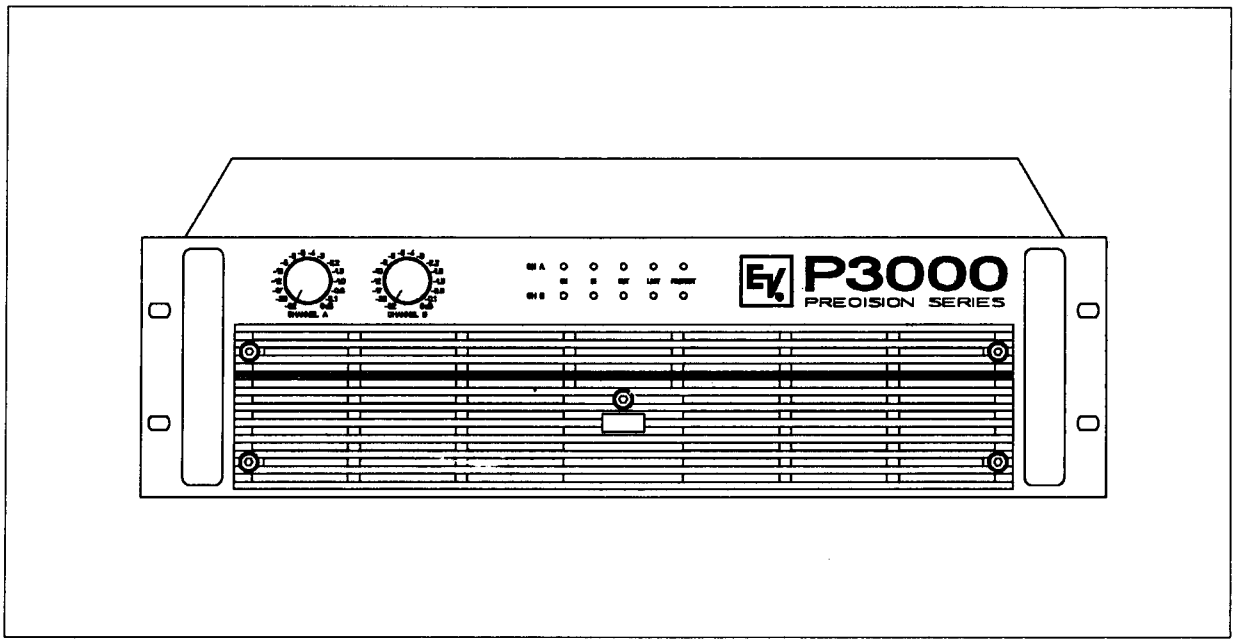


ELECTRO-VOICE a MARK IV company **600 Cecil Street, Buchanan, Michigan 49107**
MANUFACTURING PLANTS AT ■ BUCHANAN, MI ■ NEWPORT, TN ■ SEVIERVILLE, TN ■ OKLAHOMA CITY, OK ■ GANANOQUE, ONT.

Part Number 532489 — 9530

Electro-Voice®

OWNER'S MANUAL



P 3000

PRECISION SERIES

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WARNING

ATTENTION: This unit must be protected from moisture because of the risk of fire and the possibility of electrical shock.

1. Make sure that you have the correct mains voltage. Only operate the unit at the mains voltage marked on the rear panel.
2. Make sure that nothing, especially metal objects, are inserted into the amplifier. This could result in a severe electric shock or malfunction.
3. If the unit is subjected to extreme fluctuations of temperature, e.g. on being transported from outside into a heated room, condensation can form. The unit should not be used until it has reached room temperature.
4. In the event of water or any other fluid being accidentally spilt on the unit, switch the unit off immediately and send it to a qualified service workshop for inspection.
5. Make sure that the unit is always well ventilated and never exposed to direct sunlight.
6. Do not use sprays to clean the unit as they have a detrimental effect on the unit and could ignite suddenly.

DESCRIPTION

Thank you very much for choosing an EV PRECISION SERIES amplifier. We are sure it will give you many years of satisfying performance.

EV power amplifiers of the PRECISION SERIES meet the stringent requirements of tough touring applications. They are protected against over-temperature, overload, shorted outputs, radio frequency interference and DC faults. The power transistors are protected from damage from reverse feeding of electrical energy by means of an additional special protective circuit. For the so-called soft-start, the power outputs are switched on delayed via relays. An inrush current limiter circuit prevents the mains fuses from being blown.

Maximum precision is also guaranteed as regards mechanical construction and finish. The robust steel chassis features remarkable torsion resistance and is specially designed to cope with the tough wear and tear associated with going on tour. Thermal stability is guaranteed by several low noise 3-stage fans which also means that they can be used inside the studio.

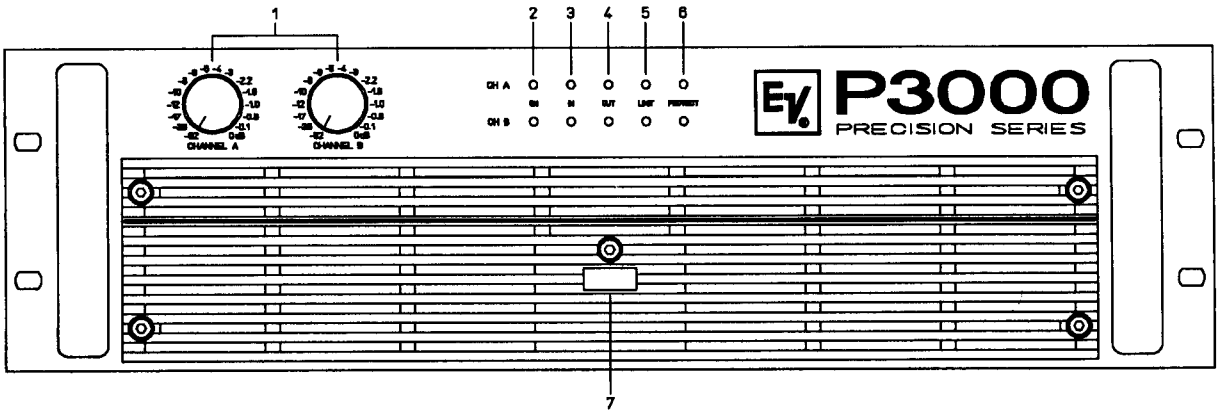
Comparator circuits constantly compare the power amplifiers' input and output signal and control the limiters under non-linear operating conditions. They protect the loudspeakers from overload due to power stage clipping. The PRECISION SERIES power amplifiers feature excellent transmission properties. The power amplifier topology also makes for extremely low distortion rates. Distortion factor (THD), intermodulation distortion (SMPTE-IM) and transient intermodulation distortion (DIM 30 and DIM 100) are so low that they are only detectable with the most sophisticated measuring equipment. Generously dimensioned power supplies with low-leakage toroidal-core transformers provide considerable headroom well above the nominal ratings. V/I foldback limiter circuits were deliberately not included in the PRECISION SERIES power amplifiers to facilitate operation at complex loads up to a phase angle of +/- 90°.

The inputs are electronically balanced on XLR connectors. (Isolation transformers can be retrofitted). Direct Outs in the form of XLR connectors (male), to loop the signal through, are also standard features. The modes DUAL/Stereo or PARALLEL/Mono can be selected via the Input Routing Switch. Furthermore, the PRECISION SERIES power amplifiers can also be operated in "Mono Bridged" mode.

The front panel accommodates the dB-calibrated input Gain controls which are designed as especially precise and safe-to-operate detented potentiometers. The LED display provides information about the power amplifers' operating status. For the two channels, they demonstrate readiness to operate, whether there is a signal at the input or output, when the Limiters have been activated and whether one of the protective features has been triggered. The power outputs Channel A, Channel B and Bridged Out are available on Speakon connectors. The rear side of the unit accommodates the ON/OFF switches for the integrated Hi and Lo cut filters, a groundlift switch which separates the housing from the circuit ground thus helping to prevent hum loops and the operating modes selector to mono bridged operation. They also feature extremely quiet fans with front-to-rear airflow, facilitating operation in large and narrow amplifier racks.

This Owner's Manual is meant to help you familiarize yourself with all the PRECISION SERIES' other features. Please read it through carefully and we guarantee that your new power amplifier of the PRECISION SERIES from EV will give you great pleasure.

FRONT PANEL



1. Level Control

Calibrated detented potentiometers to alter the total gain of the power amplifier. In order to avoid distortion in mixing consoles upstream, these controls should normally be positioned between 0 dB and -6 dB. The calibrated markings show the additional attenuation directly.

2. Power ON indication

This LED lights up when the mains switch is pressed. If it does not light up, the unit is not connected to the mains or the mains fuse has blown.

3. Input indication

This LED lights up if a signal is present at the power amplifier input. The indicator does not light up when the input controls are turned down completely.

4. Output indication

This LED lights up if a signal is present at the power amplifier output. The indicator goes off when the speaker line has shorted or a protective circuit has been activated thus indicating that there is no signal at the speaker output terminals.

5. LIMIT

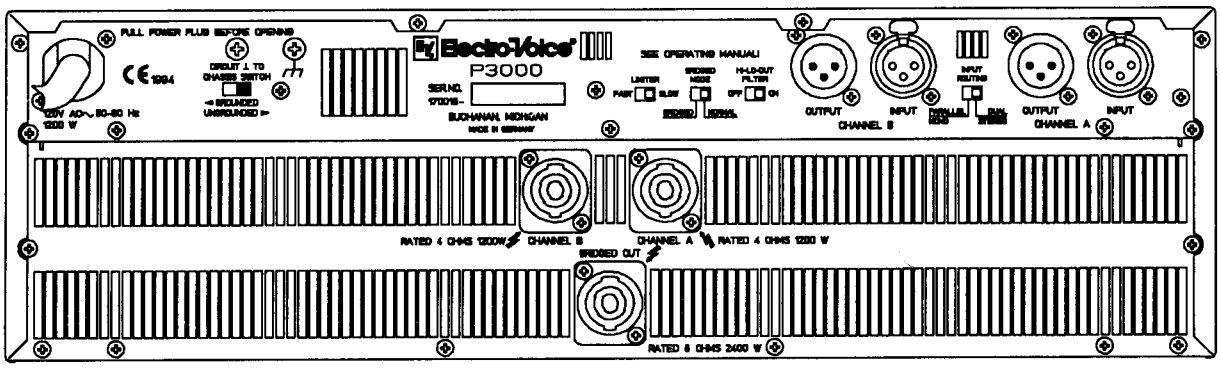
This LED lights up if the limiter has been activated and the power amplifier is being operated at the clip level. If the LED flashes briefly, this is not a cause for concern. If this LED is lit permanently, the volume should be reduced to avoid overload damages to the connected loudspeaker systems.

6. PROTECT

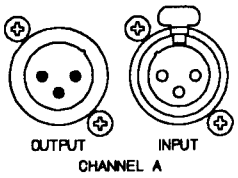
When this LED lights up during operation, one of the protection circuits against over-temperature, overload, shorted outputs, radio frequency interference or DC faults has been triggered. The cause of the error e.g. a shorted loudspeaker line must be remedied. In case of overheating, wait a little until the amplifier switches back to operating mode itself.

7. POWER Switch

The unit is switched on via the power switch. The loudspeaker outputs are switched on via delayed relays so that no startup transients are audible. A current limiter prevents startup peaks on the mains line and prevents the mains fuse from blowing.



REAR SIDE



Power amplifier input connectors

XLR connectors (male) are provided for "Looping" the signal to other power amplifiers. These are wired parallel to the XLR input connectors in each channel.

The inputs of the power amplifier are electronically balanced and wired according to IEC 268. Isolation transformers can be retrofitted in order to avoid hum interference in larger sound reinforcement systems. Please contact your dealer if you have any problems.

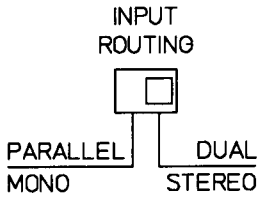
Input wiring XLR

PIN 1: SHIELD
PIN 2: a, +, hot
PIN 3: b, -, cold

The inputs are electronically balanced.

The input sensitivity is set to 0dBu (775 mV) by the factory. Please contact your local dealer if you want to change to 6dBu or 26 dB gain.

INPUT ROUTING



PARALLEL MONO

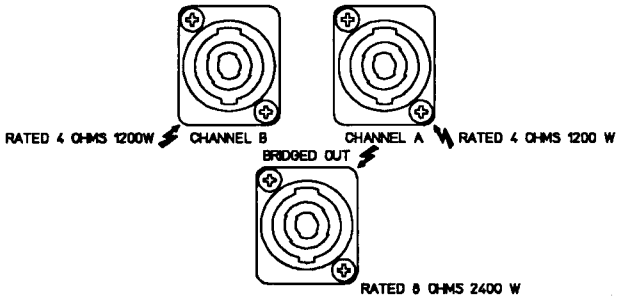
If the mode selector is in position PARALLEL MONO, the input connectors channel A und B are directly wired in parallel, but the volume for channel A or B can be adjusted independently using the input controls A or B.

DUAL STEREO

If the mode selector is in position DUAL STEREO, channel A and B are amplified separately.

Many mixing consoles have XLR connectors in the outputs, but are wired in such a way that they are unbalanced. If a mixer is used with unbalanced outputs, PIN 1 and PIN 3 of the power amplifier's input connectors must be connected by a jumper or PIN 3 must not be connected to the connection cable.

If signals are taken from unbalanced units via PIN 3 (b, -, cold) and PIN 2 (a, +, hot), strange hum interference or high frequency oscillations can occur. These effects can cause power amplifiers or loudspeakers to malfunction.

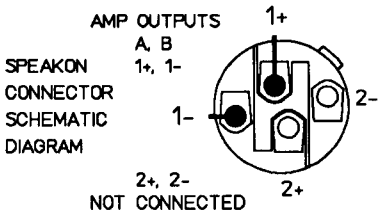


POWER AMPLIFIER OUTPUT CONNECTORS

SPEAKON output connectors are provided for the power amplifier channels A (left) and B (right).

The Bridged Out connector for bridged operation is sealed with a plastic cover to prevent connection errors.

WARNING:
Please make sure not to hook Speakers up to the BRIDGED OUTput in NORMAL mode or damage will result.

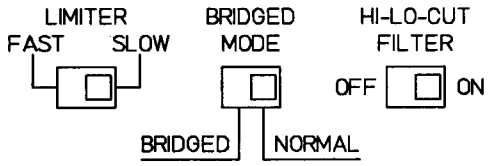


LIMITER

The time constant of the built-in limiter to avoid overdriving is adjustable. Position "SLOW" is the factory preset and this should also be the normal position.

If the power amplifier is used as a MID/HI-frequency amplifier in active multi-way systems, the limiter switch should be set to **"FAST".**

If the power amplifier is used as LOW-frequency amplifier in active multi-way systems, the limiter switch should be set to **"SLOW"**.

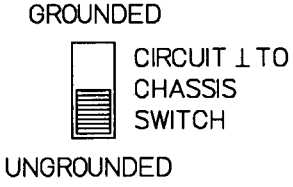


BRIDGED MODE

Slide switch to change from Normal Stereo mode to Bridged mode. In Bridged mode the built-in power amplifiers operate in "push- pull" and the double output voltage from channel A and B appears at the Bridged output connector. The phases of Channel A and B are in opposite and therefore the individual channels must not be used as loudspeaker outputs.

HI-LO-CUT FILTER

This filter attenuates subsonic and high frequency signals so that the power amplifiers are not modulated with these signals. This switch should normally always be in position ON. The OFF position is only for applications where an upstream unit, e.g. a crossover or a equalizer, has integrated HI-Cut and LO-Cut filters.



GROUNDLIFT SWITCH

Hum loops can be avoided with the groundlift switch. If the power amplifier is operated together with other units in one 19" rack, the switch should be in GROUNDED position. If the power amplifier is used with units which have different earthing potentials, the switch should be adjusted to the UNGROUNDED position.

TECHNICAL SPECIFICATIONS at rated output power 8ohms, one channel driven, unless otherwise specified

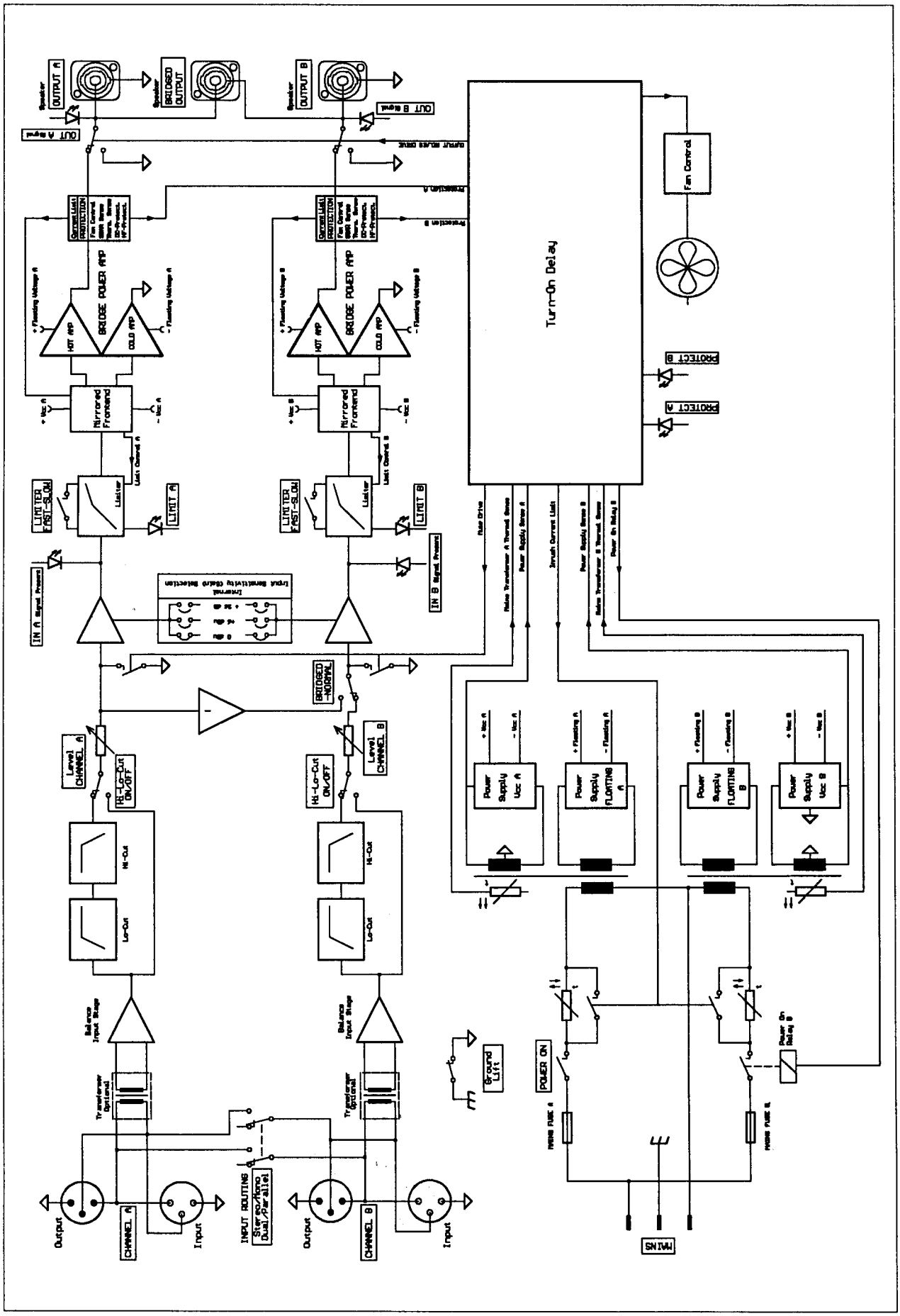
Output Power (20Hz - 20kHz / THD ≤ 0,1%)	**P 3000**
into 8 Ohms	2 x 750 W
into 4 Ohms	2 x 1200 W
into 8 Ohms bridged	1 x 2400 W

Output Power (1kHz / THD = 1,0%)	
into 8 Ohms	2 x 850 W
into 4 Ohms	2 x 1300 W
into 8 Ohms bridged	1 x 2800 W

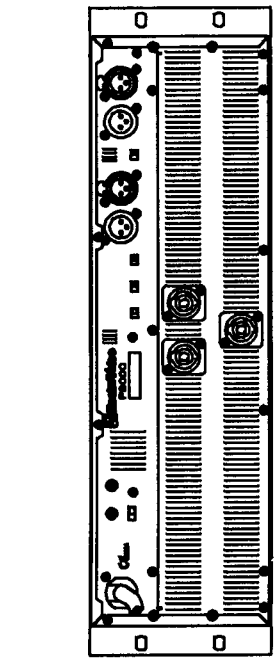
Technical Specification

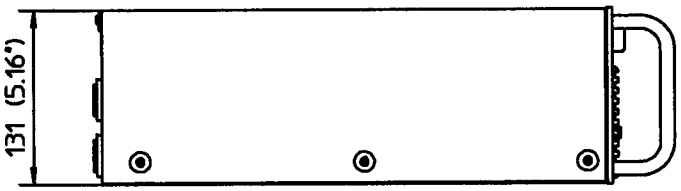
Frequency Response	10 Hz - 30 kHz / -1dB
Max. Output Level before Clipping, reference 1 KHz / THD = 1%	91V / RMS
Voltage Gain reference 1kHz	26 dB (constant gain option)
Input Sensitivity at rated output power reference 1 kHz	0 dBu/0.775 V 6 dBu/1.55 V
Maximum Input Level	21 dBu / 9 V
Input Impedance active balanced	20 kOhm
THD at rated output power MBW = 80 kHz, f = 1kHz	< 0.05%
IMD - SMPTE 60 Hz, 7 kHz, typical	< 0.01%
IMD - SMPTE 60 Hz, 7 kHz, at rated output power	< 0.01%
Signal / Noise Ratio A-weighted, RMS to rated output level, Input sensitivity + 6dBu	> 105 dB
Crosstalk at rated output power reference 1 kHz	< -70 dB
Damping Factor internal, 1kHz	> 300
DIM 30	< 0.01%
DIM 100	< 0.01%
Slew Rate internal	> 40 V / µs
Power Consumption 1/8 rated output power 4 Ohm	1650 VA
Dimensions (WxHxD)	483 x 132.5 x 426 mm 19 x 5.2 x 16.77 (in)
Weight	29 kg (63.9 lbs)
Optional Input Transformer	90176

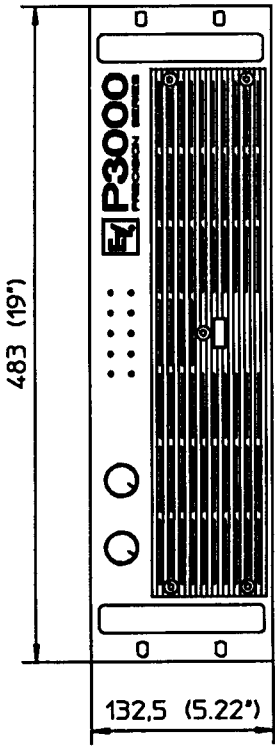
BLOCK DIAGRAM

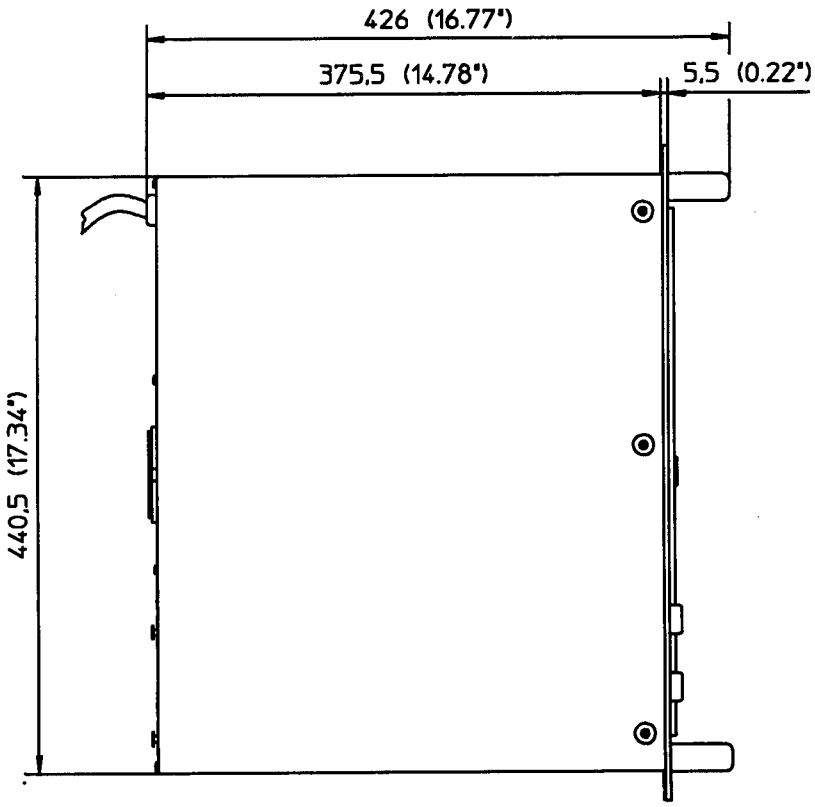


Dimensions in mm (inch)









SERVICE

SPECIFICATIONS: P 3000 complete unit

Standard specifications: IEC 268 part 3, IHF-A

0 dBu = 775 mV (RMS)

A. POWER SUPPLY

1. Type of power supply:	AC
2. Rated power supply voltage:	120 V
3. Rated power supply frequency:	60 Hz
4. Power drawn under rated conditions (1200W/4 ohms)	4100 watts
5. Power drawn under standard test conditions (120W/4 ohms)	1500 watts
6. Power consumption at 1/8 rated output power (150W/4 ohms)	1650 watts
7. Tolerance of power supply voltage variations:	-10%...+10%

B. INPUT CHARACTERISTICS

* Level controls fully clockwise

Input	Rated Input Level (rated source e.m.f)			Rated Output Power	Rated Load Impedance
	select Jumper internal				
	0dBu	+6dBu	26 dB		
CHANNEL A/B	+1dBu (870mV)	+7dBu (1.74V)	14dBu (3.87V)	750 W	8 ohms
CHANNEL A/B	0dBu (775mV)	+6dBu (1.55V)	13dBu (3.46V)	1200W	4 ohms
CHANNEL (Bridged)	0dBu (755mV)	+6dBu (1.55V)	13dBu (3.46V)	2400W	8 ohms

Maximum Input Level +21dBu (9V)

C. OUTPUT CHARACTERISTICS

* Rated output power at THD = < 0.1%, 20 Hz...20 kHz, MBW = 80 kHz
* Maximum Output Power at 1kHz / THD = 1%

OUTPUT POWER

Output socket	Rated Load Impedance	Rated Output Power Dual Mode	Maximum Output Power, Dual Mode	Single Channel Output Power)1	Rated Output Voltage
SPEAKER (A/B)	8 ohms	750 W	850 W	950 W	77.5 V
SPEAKER (A/B)	4 ohms	1200 W	1300 W	1700 W	69.3 V
SPEAKER BRIDGED	8 ohms	2400 W	2600 W	3400 W	138.6 V

)1 measured with "Dynamic Headroom" test signal according IHF-A: 1 kHz tone burst, 20ms ON, 480 ms OFF

D. MAXIMUM OUTPUT VOLTAGE (NO-LOAD)

Output socket	SPEAKER A/B	SPEAKER BRIDGED
Max. output voltage (no-load)	91 V (RMS)	182 V (RMS)

E. STABILIZATION

with rated load impedance, Dual Mode, standard test conditions

	8 ohms	4 ohms
Stabilization	0.325%	0.686%
Stabilization level	0.028 dB	0.059 dB

F. FREQUENCY RESPONSES

Gain frequency response:

* -3 dB drop against level at norm frequency 1 kHz

Input	Output	f(l)	f(u)	Comment
INPUT A/B	SPEAKER A/B	<10Hz	75 kHz	HI-LO-CUT Off
INPUT A/B	SPEAKER A/B	20Hz	35 kHz	HI-LO-CUT On

Distortion-limited effective frequency range (power bandwidth):

* THD = 0.1%, 1/2 rated power into 4 ohms, MBW = 500 kHz

Input	Output	f(l)	f(u)	Comment
INPUT A/B	SPEAKER A/B	<10Hz	48 kHz	HI-LO-CUT Off

G. PHASE-FREQUENCY RESPONSE

+/- 45 degrees (10 Hz-30 kHz, HI/LO-CUT Off)

H. INPUT IMPEDANCE

20 kohms (20 Hz ... 20 kHz)

I. AMPLITUDE NON-LINEARITIES

	Amplitude Non-Linearities	Comment
Rated total harmonic distortion	< 0.05%	MBW = 80 kHz, f = 1 kHz
Total harmonic distortion under standard test conditions	< 0.02%	MBW = 80 kHz, f = 1 kHz
IMD - SMPTE	< 0.01%	60 Hz, 7 kHz
DIM 30	< 0.01%	3.15 kHz, 15 kHz
DIM 100	< 0.01%	3.15 kHz, 15 kHz

J. CROSSTALK

< -70 dB

- at f = 1 kHz

K. DAMPING FACTOR > 300

- internal at f = 1 kHz

L. SLEW RATE > 40 V/µs

- internal

M. NOISE

- R(S) = 50 ohms
- Power amplifier input sensitivity 0dBu
- E(F) = Noise voltage, unweighted with B = 22 Hz ... 22 kHz, RMS (IEC 268-1)
- E(G) = Noise voltage, frequency weighting filter according CCIR-4683, quasi peak-weighted (IEC 268-1)
- E(A) = Noise voltage, dB(A) frequency-weighted, RMS (IEC 268-1)
- S/N ratios ref. to rated output voltage 69.3 V (1200W/4ohms)
- HI/LOW-CUT ON, GND LIFT = GROUNDED
- i.s. = Input Sensitivity

	Noise Output Voltage	S/N-Ratio	Equiv. input noise voltage	Equiv. input noise level	Residual noise output voltage
E(F)	< 615µV	> 101 dB	< 6.9µV	<- 101dBu	< 435µV
E(G)	< 3.65mV	> 85.5 dB	< 41µV	<- 85.5dBu	< 1.55mV
E(A) i.s.=0dBu	< 490µV	> 103 dB	< 5.5µV	<- 103dBu	< 345µV
E(A) i.s.=6dBu	< 245µV	> 109 dB	< 5.5µV	<- 103dBu	< 170µV
E(A) Gain=26dB	< 110µV	> 116 dB	< 5.5µV	<- 103dBu	< 90µV

N. Dimensions

Height : 132.5mm (3 HU)

Width : 483 mm

Depth : 426 mm

O. Weight

29 kg

TEST DATA: P 3000 complete unit

General measuring conditions unless specified otherwise elsewhere:

* Measuring Tolerance: ΔX = 1.5 dB
* Test Frequency: f = 1 kHz
* All Levels referred to: E = 775 mV (0dBu)
* Level controls fully clockwise
* Pin assignment of the XLR-socket: PIN 1 = SHIELD, GROUND
  PIN 2 = + INPUT
  PIN 3 = - INPUT
* Source impedance for feed-in via XLR socket: R(S) = 50 ohms

The pcbs 86211 (MAIN PCB) and 84157 (POWER AMP) are equipped with service connectors.

Pin assignment of service connectors:

84157 CNSERV	Assignment	86211 CNASERV	Assignment	86211 CNBSERV	Assignment
1	Coding	1	limiter A/B OFF	1	n.c.
2	BIAS Hot-Side+	2	Service Limiter A	2	Service Limiter B
3	BIAS Hot-Side-	3	- 15V	3	-15V
4	Hot - Out	4	GND	4	Fan voltage
5	BIAS Cold-Side +	5	+15V	5	Service Fan Switch 1
6	BIAS Cold-Side -	6	Heat sink temp. A/B	6	Service Fan Switch 2
7	GND	7	+U1 Frontend A	7	+U1 Frontend B
8	Floating +	8	-U1 Frontend A	8	-U1 Frontend B
9	Floating -	9	Coding	9	Coding

1. Power supply voltage: E(O) = 120V / 60 Hz

2. Tolerance of power supply voltage variations -10% .... +10%

3. Power consumption:

3.1. without load P(O) = 180 - 260 watts
3.2. Power drawn under rated conditions (1200W/4 ohms) P(O) = 4100 watts
3.3. Power drawn under standard test conditions (120W/4 ohms) P(O) = 1500 watts
3.4. Power consumption at 1/8 rated output power (150W/4 ohms) P(O) = 1650 watts

4. Adjustments:

4.1. ADJUSTMENT OF IDLE CURRENT:

Connect a DC voltmeter to the two test points (see table) and adjust the idle current with the trimmer (on PCB 84157). Perform adjustment for both power amplifier sides A&B.

Adjustment	Test point 1	Test point 2	E(DC)	BIAS Trimmer
BIAS HOT A	CNSERV2	CNSERV3	15mV	VR1
BIAS HOT A	CNSERV5	CNSERV6	15mV	VR2
BIAS HOT B	CNSERV2	CNSERV3	15mV	VR1
BIAS HOT B	CNSERV5	CNSERV6	15mV	VR2

The adjustment of the idle current must be done at room temperature, i.e the unit must be left to cool down for several hours, after it has been in operation.

4.2. FLOATING SYMMETRY

The symmetry of the floating voltage must be checked immediately after the idle current adjustment. The power amplifier is operated without load. Connect DC voltmeters between test point 1, test point 2 or test point 2 and test point 3. The floating voltage must be adjusted symmetrically against ground via the FLOATING trimmers on PCB 86211. The symmetry of the + floating voltage and the - floating voltage against ground is decisive, the absolute value of the voltage is not so important.

Adjustment	Test point 1	Test point 2	Test point 3	E(DC)	Trimmer
FLOATING SYMMETRY A	CNSERV8	CNSERV7	CNSERV9	approx. +/-67 V	VR102
FLOATING SYMMETRY B	CNSERV8	CNSERV7	CNSERV9	approx. +/-67 V	VR202

4.3. VCA - OFFSET:

Open and close service switches S101 or S201 on PCB 86211 rhythmically and adjust with VR101 or VR201 to a minimum offset (with oscilloscope to minimum peak or by ear to minimum noise volume) at the amplifier output.

The function of the service switches can also be executed via the service connectors with a short between CNASERV 2 and CNASERV 3 for the power amplifier A or a short between CNBSERV 2 and CNBSERV 3 for the power amplifier B.

4.4. ADJUSTMENT OF INDICATIONS

* Level control fully clockwise, f = 1 kHz, input sensitivity = 0 dBu

Feed in a signal (E(I) approx. -34 dBu) via Input A or B, until the IN LED lights up. Adjust the corresponding OUT LED to the same brightness via trimmer VR600 or VR601 on PCB 86211.

4.5. FAN ADJUSTMENT

Close service switch S001 on PCB 86211 or insert jumper between CNBSERV 5 and CNBSERV 6. Adjust the voltage at CNBSERV 4 with VR700 to 27.5 V (DC). Open switch or jumper again.

4.6. GAIN SELECTION

The input sensitivity of the power stage can be adjusted via the jumpers J11 ... J13 or J21 ... J23. The ratings for the Input Sensitivity or Gain refer always to fully opened level controls.

CHANNEL A	CHANNEL B	SELECTION
J11	J21	Input Sensitivity 0 dBu
J12	J22	Input Sensitivity +6 dBu
J13	J23	Gain +26 dB

The Input Sensitivity is set to 0 dBu from the factory.

5. Function Test:

5.1. OUTPUT Offset Voltage

DC measurement at the loudspeaker outputs CHANNEL A/B U (DC) $\leq \pm 10$ mV

5.2 LIMITER

5.2.1. Attenuation Test

Drive both channels with 1 kHz until E(O) = 89 V (without load); increase input voltage by 10 dB. The LIMITER LED will light up, the output voltage will only rise by approx. 0.5 dB to 91 V and is slightly clipped. The THD of the limited signal is approx. 1% ... 2%. If the input voltage is increased further up to +21 dBu, the output signal must not clip more.

5.2.2. LIMITER FAST/SLOW Test

* Test both power amplifier channels separately, perform test without load resistors

1) Drive the power amplifier with a burst signal (f = 1 kHz, 1 - 10 cycles, rate = 0.5 sec.) and E(I) = 10 dB higher than nominal input voltage.

2) Monitor the output signal with an oscilloscope and operate the FAST/SLOW switch

* SLOW: after 2 - 3 signal periods the limiter responds to the

strong distortion and regulates it to a small residual distortion (THD = 1% ... 2%)

* FAST: after 1-2 signal periods the limiter has already regulated the strong distortion to a small residual distortion (THD = 1% ... 2%)

The factory preset position is SLOW!

5.3. POWER-ON DELAY

After approx 2 sec. from operating the Power On switch the relays E1 and E3 on pcb 86211 and the relays E1 on the pcbs 84157 (channel A/B) will pick up together.

5.4. FAN CONTROL:

The fans run for approx. 2 seconds after switching the power amplifier on and then stop if the power amplifier is cold. The fans toggle between stage 1 and stage 0 in stand-by mode of the power amplifier (Power On, no signal), depending on the temperature of the heat sinks. If the switch S001 at PCB 86211 is closed, the fans run in stage 3.

The function of the fan control can be tested by connecting a variable resistor (approx. 100 kohms) to CNBSERV 5 and CNBSERV 6. Via CNASERV 6 the heatsink temperature can be monitored during operation.

Fan stage	**E(DC) CNASERV 6**	**E(DC) CNBSERV 4**	**Comment**
Stage 0	<6.5 V	0 V	Fans do not run
Stage 1	6.5 V .... 7.5 V	12.5 V	
Stage 2	7.5 V .... 9 V	19.5 V	
Stage 3	9 V .... 12.5 V	27.5 V	
Protect	> 12.5 V	27.5 V	Power amp switches off

Note: S001 is opened from the factory!

5.5. SOAR PROTECTION CIRCUIT TEST

Drive both channels separately to 69.3 V into 4 ohms . Connect a 0.1ohms resistor parallel; protection circuit responds and always tries to switch on again! The Protect LED flashes at the same rhythm.

5.6. SHORT CIRCUIT - CURRENT LIMITER TEST

Test the two amplifier channels individually

- drive the power amplifier to (E(O) = 89 V) with a burst signal (f = 1 kHz, 1 - 10 cycles, rate: = 1 sec.), without load

- terminate with load resistor 1 ohm

- the short circuit current limiter limits the output voltage over the load resistor symmetrically (monitor with oscilloscope!) to a peak value of approx. 45 V (approx. 45 amps).

5.7. DC VOLTAGE PROTECTION CIRCUIT TEST

* HI/LO CUT OFF

* Limiter in position SLOW

Test the two channels individually:

- drive the power amplifier with a test signal (f = 7 Hz, without load resistor)

- the protection circuit responds at a input voltage of approx. 3 V peak and always tries to switch on again! The Protect LED flashes at the same rhythm.

Repeat test with f = 14 Hz, the power amplifier may not switch off.

5.8. RF PROTECTION CIRCUIT TEST

* Switch HI/LO CUT OFF

* Fan service switch on

* Note: Operate power amplifiers absolute without load resistors.

Switch off limiter via S102 or jumper between CNASERV 1 and CNASERV 3. Feed in burst signal (f = 50 kHz, 40 msec On, 960 msec. Off) with E(I) 7 V rms into always one channel. The protection circuit must respond. The power amplifier always tries to switch on again! The Protect LED flashes at the same rhythm.

Repeat test with f = 30 kHz and Limiter On, the power amplifier may not switch off.

6. Levels CHANNEL A and B

* Level control fully clockwise

* INPUT ROUTING switch into position DUAL/STEREO

* HI-LOW-CUT switch: ON (factory preset)

* BRIDGED MODE: NORMAL

* LIMITER: SLOW (factory preset)

* THD 0.1%

6.1. Rated Levels

Input	E(I)	Test point	E(O)	R(L)	Comment
CH. A/B	0 dBu	SPEAKER A/B	69.3 V	4 ohms	select J11,J21
CH. A/B	+6 dBu	SPEAKER A/B	69.3 V	4 ohms	select J12,J22
CH. A/B	+13 dBu	SPEAKER A/B	69.3 V	4 ohms	select J13,J23
CH. A/B	+1 dBu	SPEAKER A/B	77.5 V	8 ohms	select J11,J21
CH. A/B	-2 dBu	SPEAKER A/B	54.8 V	2 ohms	select J11,J21

6.2. Max. Input Level: E(I) = +21 dBu (9 V rms)

7. INPUT ROUTING Switch

DUAL/STEREO (factory preset!)

- Channels A and B must be driven separately

PARALLEL/MONO

- Channels A and B are switched in parallel at the input; both channels can be driven by one signal source.

8. Level BRIDGED MODE

* Level control fully clockwise
* HI-LOW-CUT switch: ON (factory preset)
* BRIDGED MODE: BRIDGED
* LIMITER: SLOW (factory preset)
* THD 0.1%

Factory preset: NORMAL

BRIDGED: The double output voltage is available at the BRIDGED OUT socket.
The CHANNEL A input socket must be used; the CHANNEL B input socket has no function.

Input	E(I)	Test point	E(O)	R(L)	Comment
CH. A	-2 dBu	BRIDGED OUT	109.5 V	4 ohms	select J11,J21
CH. A	0 dBu	BRIDGED OUT	138.5 V	8 ohms	select J11,J21

9. GROUND LIFT Switch

Factory preset: GROUNDED

Check the correct function of the switch with an ohm-meter:

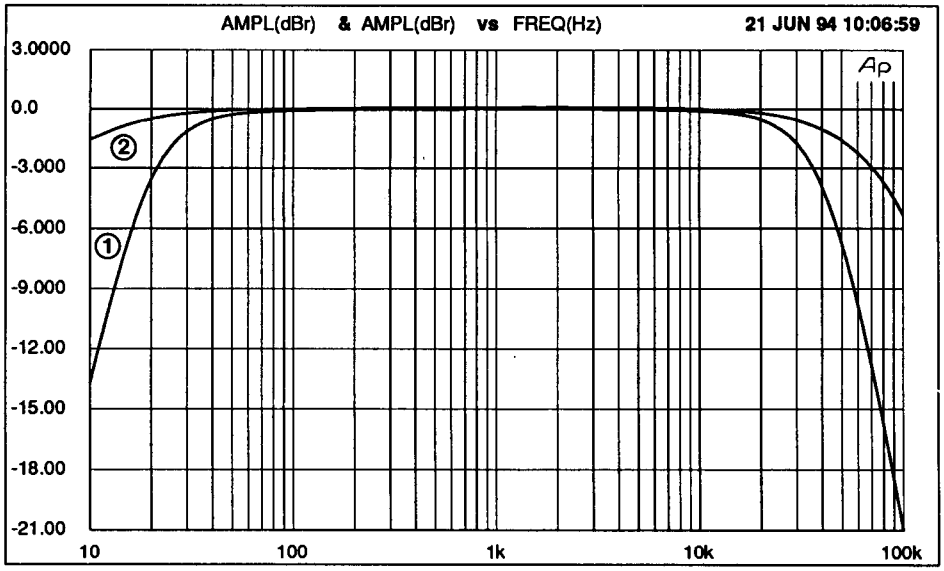
- Circuit ground (at the input or output socket) is connected or disconnected with chassis ground (contact at the earth-terminal screw at the rear or protective-conductor of the mains cable)

10. Amplitude non-linearities

* Input Sensitivity 0 dBu
* Measurements with load resistor 8 ohms
* MBW = 80 kHz
* Power amplifier in factory preset condition (HI/LO Cut On, Limiter Slow)

Measurement	at rated output level E(O) = 77.5 V	at output level under standard test conditions E(O) = 24.5V	Comment
THD+N (f=1kHz)	< 0.005%	< 0.005%	MBW=80kHz
THD+N (f=10kHz)	< 0.02%	< 0.01%	MBW=80kHz
DIM 30	< 0.007%	< 0.005%	3.15kHz, 15kHz
DIM 100	< 0.009%	< 0.005%	3.15kHz, 15kHz
SMPTE	< 0.01%	< 0.01%	60Hz, 7kHz

11. Frequency response



* plot 1: HI/LO CUT On
* plot 2: HI/LO-CUT Off

12. Noise levels

- Input Sensitivity = 0 dBu
- E(F) = Noise voltage, unweighted with B = 22 Hz ... 22 kHz, RMS (IEC 268-1)
- E(G) = Noise voltage, frequency weighting filter according CCIR-4683, quasi peak-weighted (IEC 268-1)
- E(A) = Noise voltage, dB(A) frequency-weighted, RMS (IEC 268-1)
- S/N ratios ref. to rated output voltage 69.3 V (1200W/4ohms)
- HI/LOW-CUT ON, GND LIFT = GROUNDED

	Noise Output Voltage	S/N-Ratio	Equiv. input noise voltage	Equiv. input noise level	Residual noise output voltage
$E_{(F)}$	<-615µV	>101dB	< 6.9µV	<-101 dBu	< 435µV
$E_{(G)}$	< 3.65mV	>85.5dB	< 41µV	<-85.5 dBu	< 1.55mV
$E_{(A)}$	< 490µV	>103dB	< 5.5µV	<-103 dBu	< 345µV

13. Crosstalk < -70 dB

- at f = 1 kHz

14. Damping factor > 300

- internal at f = 1kHz

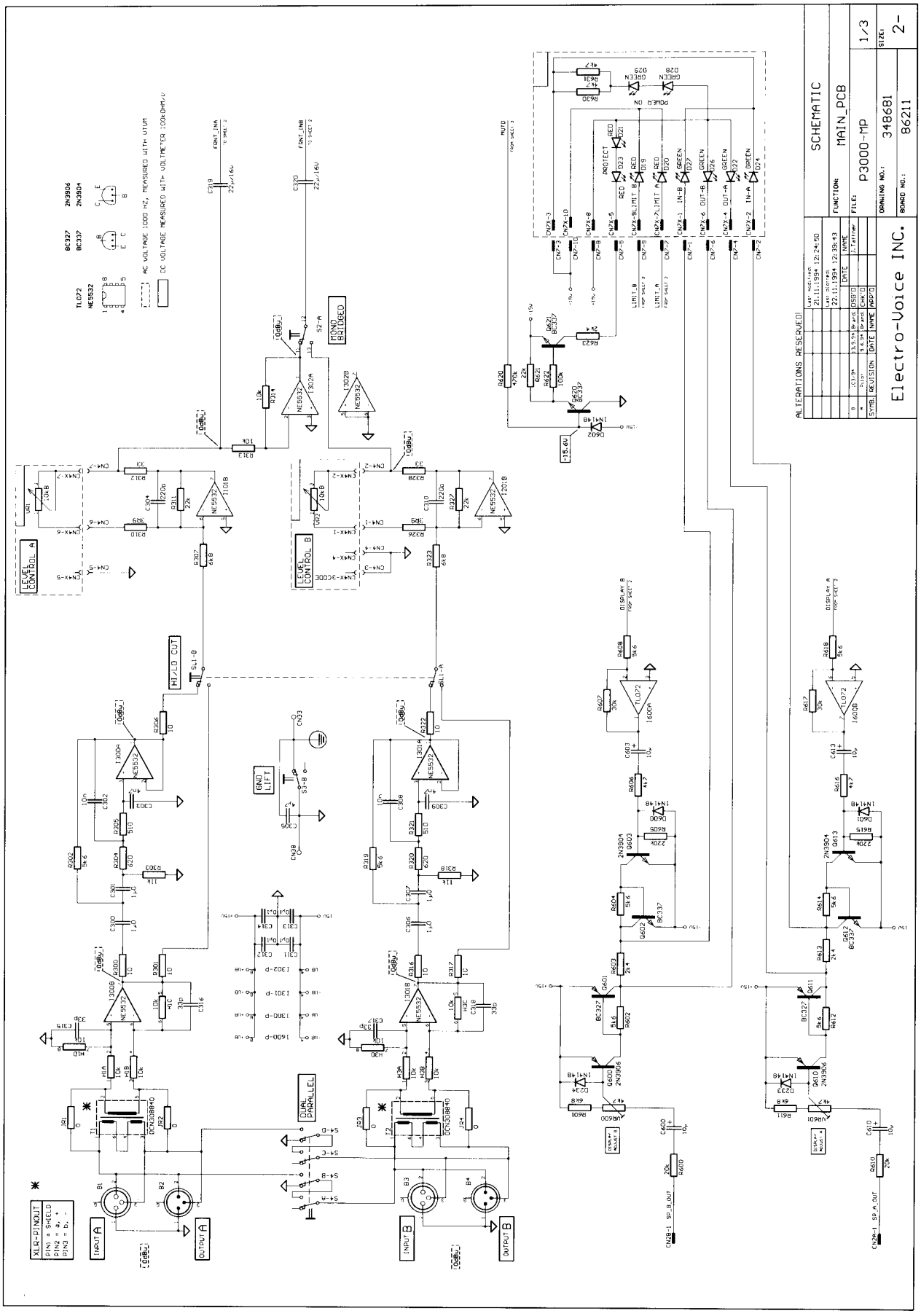
15. Slew rate > 40 V/µs

- internal

16. Factory Preset Condition

* Check settings

Function	Position	Control element	Condition	Setting
Input sensitivity	PCB 86211	Jumper J11/12	plugged	0 dBu
Limiter Off switch	PCB 86211	bow-type switch S102	open	Limiter On
Limiter Service switch	PCB 86211	bow-type switch S101/S2012	open	
Service fan switch	PCB 86211	bow-type switch S001	open	
Input Routing	Rear side	slide switch	Dual/Stereo	Dual Mode
HI/LO CUT filter	Rear side	slide switch	On	Filter On
Bridged Mode	Rear side	slide switch	Normal	Not bridged
Limiter	Rear side	slide switch	Slow	Limiter slow
CIR.GND to CHASSIS	Rear side	slide switch	Grounded	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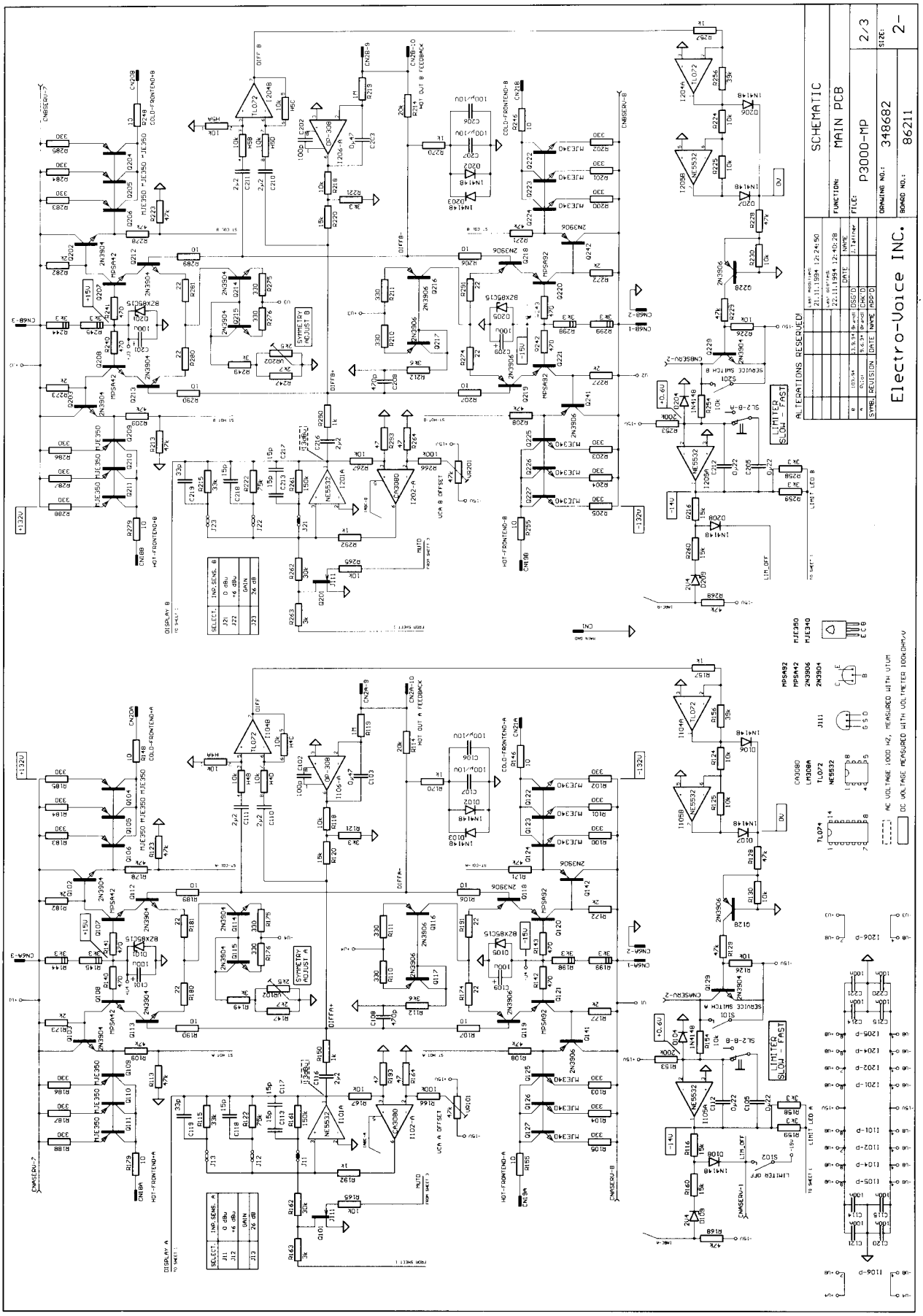
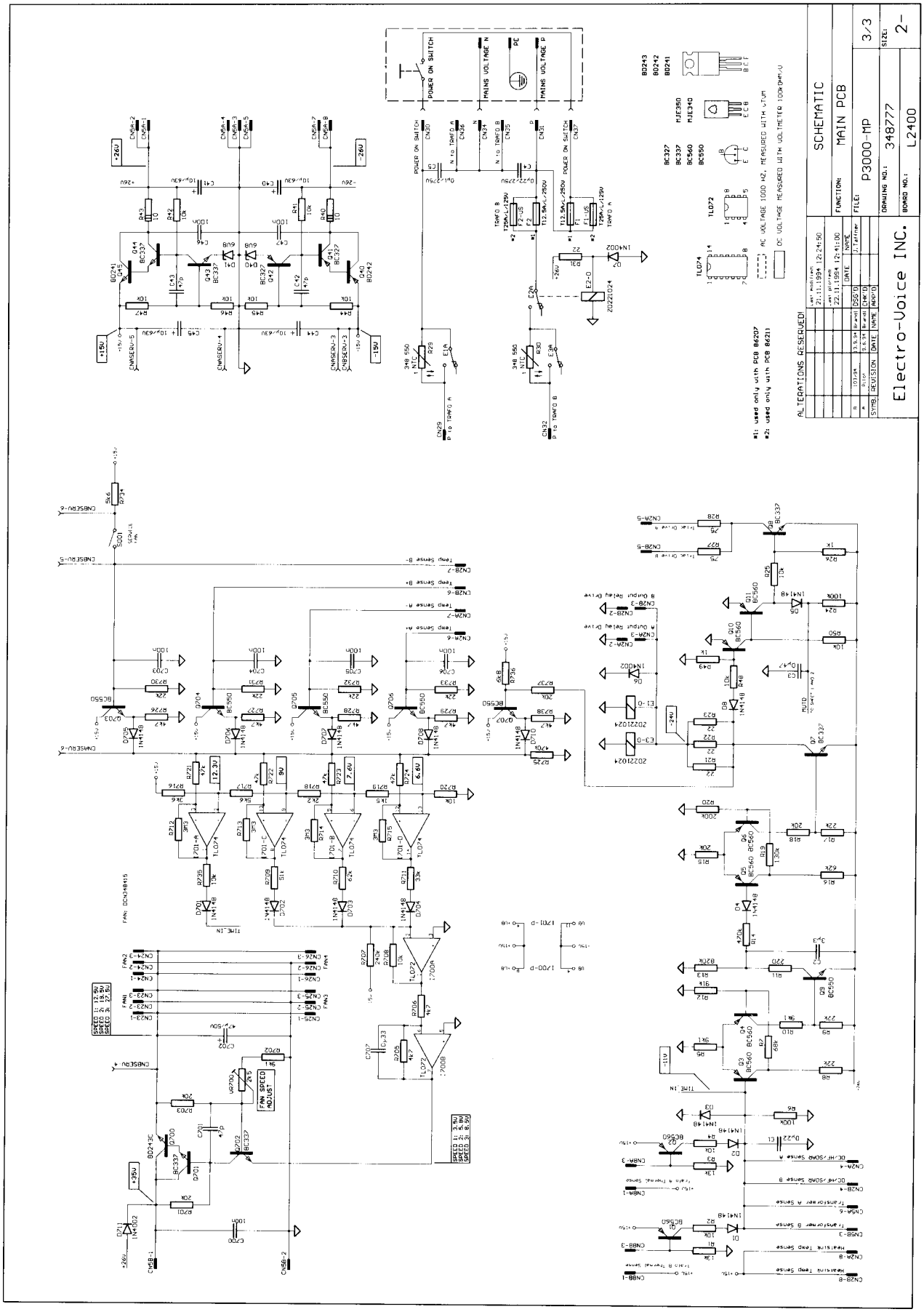
FUNCTION: MAIN_PCB
FILE: P3000-MP
1/3
DRAWING NO.: 348681
BOARD NO.: 86211
SIZE: 2-
Electro-Voice INC.
ALTERATIONS RESERVED!
XLR-PINOUT
PIN1 = SHIELD
PIN2 = 0°
PIN3 = 0°
INPUT A
INPUT B
OUTPUT A
OUTPUT B
LEVEL CONTROL A
LEVEL CONTROL B
HI/LO CUT
GND LIFT
DUAL/PARALLEL
MONO/STEREO
MUTE
DISPLAY A
DISPLAY B
LIMIT A
LIMIT B
PROJECT
BC327
BC337
2N3906
2N3904
TL072
NE5532
DCN308840
AC VOLTAGE :1000 HZ, MEASURED WITH UTUM
DC VOLTAGE MEASURED WITH VOLTMETER :20KOHM/V


SCHEMATIC
MAIN PCB
P3000-MP
2/3
348682
86211
Electro-Voice INC.
ALTERATIONS RESERVED
LIMITER SLOW - FAST
SERVICE SWITCH
SYMMETRY ADJUST
VCA OFFSET
MUTE
LIMIT LED
LIM_OFF
DISPLAY
HOT-FRONTEND
COLD-FRONTEND
DIFF
HOT OUT FEEDBACK
MJE350
MJE340
MPSA92
MPSA42
2N3906
2N3904
CA3080
TL072
LM308A
NE5532
TL074
AC VOLTAGE 1000 HZ, MEASURED WITH UTUM
DC VOLTAGE MEASURED WITH VOLTMETER 100kOHM/V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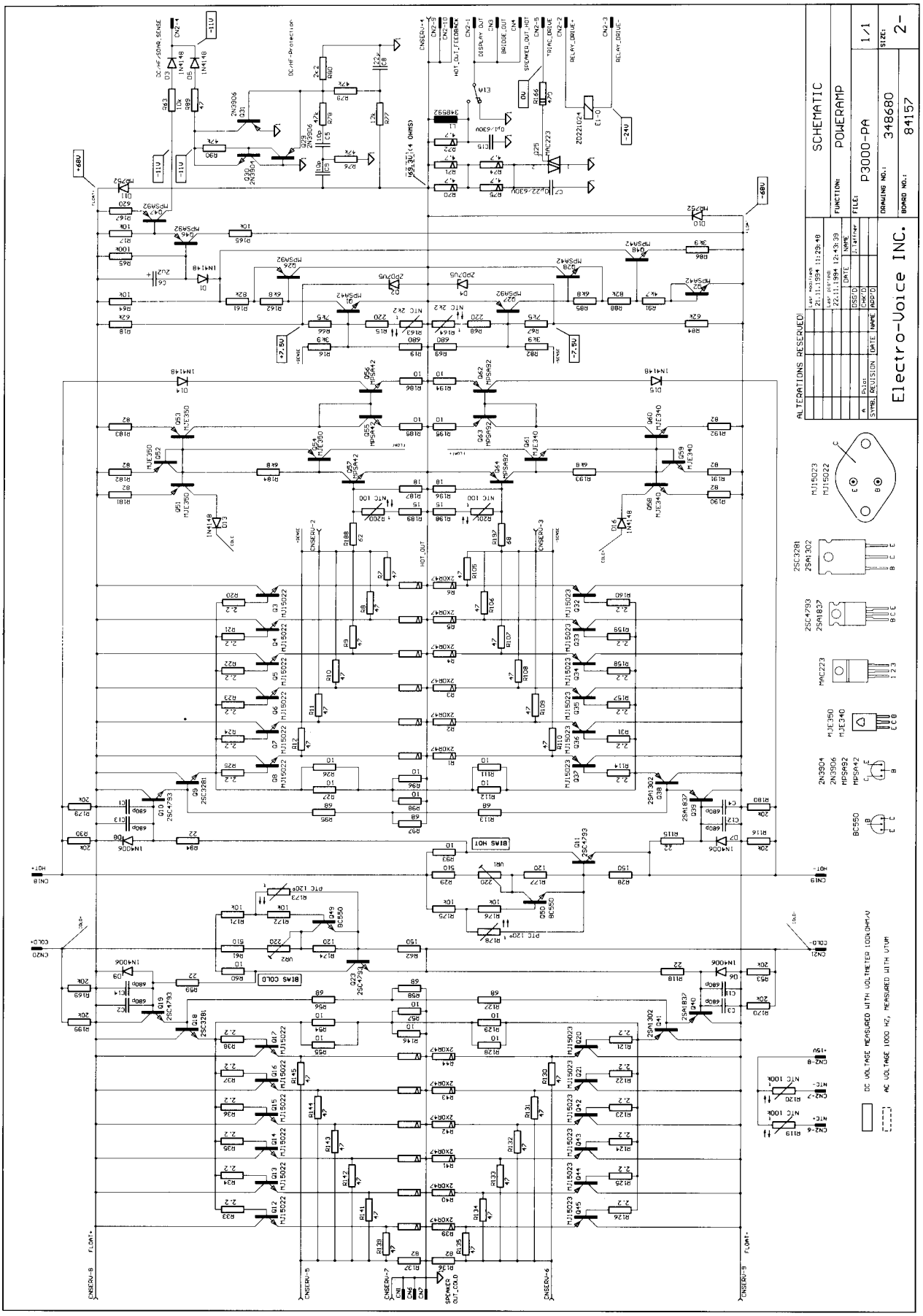
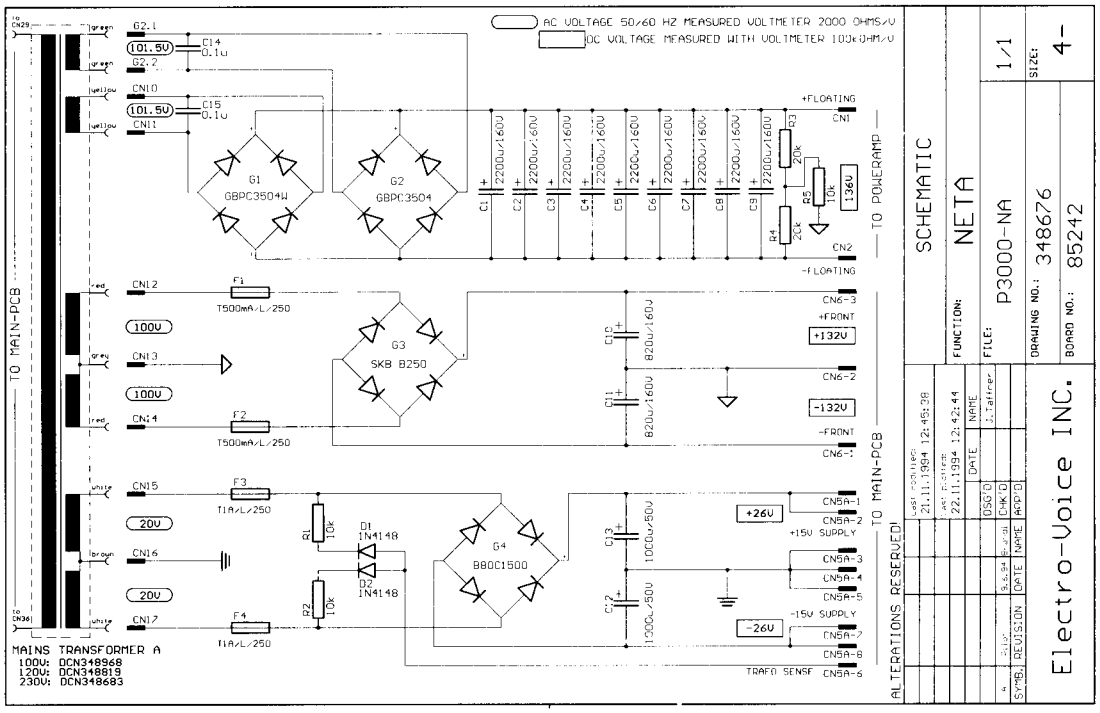
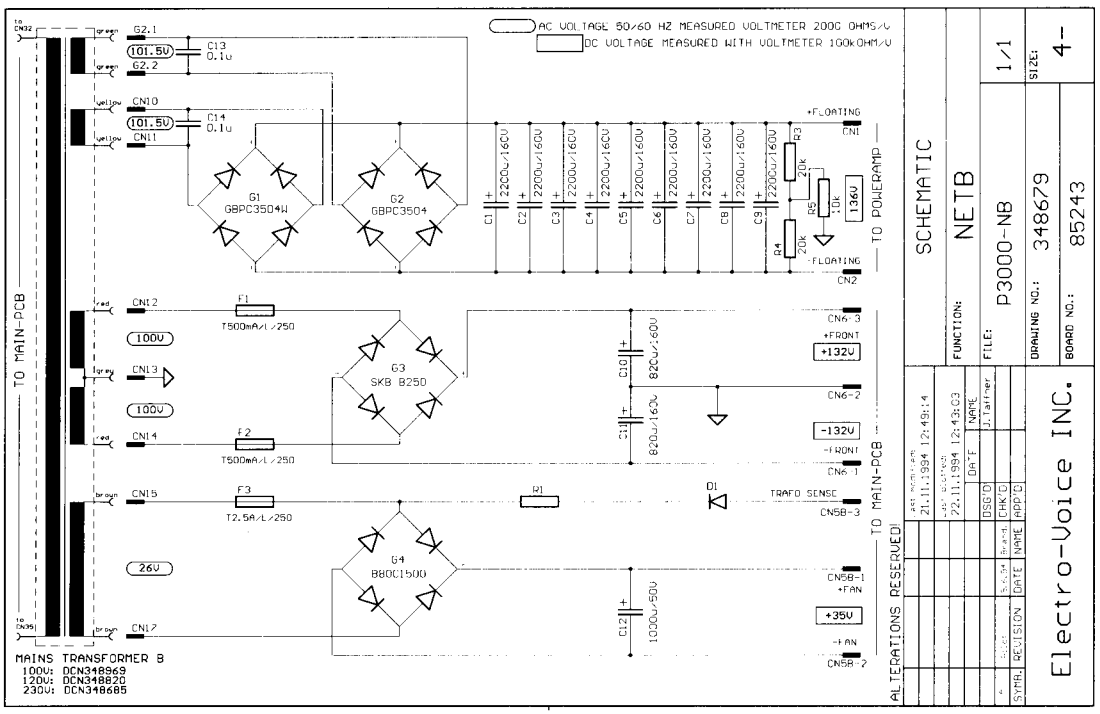
FUNCTION: MAIN PCB
FILE: P3000-MP
3/3
DRAWING NO.: 348777
BOARD NO.: L2400
SIZE: 2-
Electro-Voice INC.
ALTERATIONS RESERVED
POWER ON SWITCH
MAINS VOLTAGE N
MAINS VOLTAGE P
PE
AC VOLTAGE 1000 MΩ, MEASURED WITH 1 V
DC VOLTAGE MEASURED WITH VOLTMETER 100KOHM/V
#1: used only with PCB 86207
#2: used only with PCB 86211
BD243
BD242
BD241
BC327
BC337
BC560
BC550
MJE350
MJE340
TLO72
TLO74


SCHEMATIC
FUNCTION: POWERAMP
FILE: P3000-PA
1/1
DRAWING NO.: 348680
SIZE: 2-
BOARD NO.: 84157
Electro-Voice INC.
ALTERATIONS RESERVED!
DC VOLTAGE MEASURED WITH VOLTMETER 100KOHM/V
AC VOLTAGE 1000 HZ, MEASURED WITH VTVM


AC VOLTAGE 50/60 HZ MEASURED VOLTMETER 2000 OHMS/V
DC VOLTAGE MEASURED WITH VOLTMETER 100kOHM/V
TO MAIN-PCB
TO POWERAMP
TO MAIN-PCB
+FLOATING
-FLOATING
+FRONT
-FRONT
+15V SUPPLY
-15V SUPPLY
TRAFO SENSE
MAINS TRANSFORMER A
100V: DCN348968
120V: DCN348819
230V: DCN348683
SCHEMATIC
FUNCTION: NETA
FILE: P3000-NA
DRAWING NO.: 348676
BOARD NO.: 85242
SIZE: 4-
1/1
ALTERATIONS RESERVED!
Electro-Voice INC.


AC VOLTAGE 50/60 HZ MEASURED VOLTMETER 2000 OHMS/V
DC VOLTAGE MEASURED WITH VOLTMETER 100kOHM/V
TO MAIN-PCB
TO POWERAMP
TO MAIN-PCB
+FLOATING
-FLOATING
+FRONT
-FRONT
TRAFO SENSE
+FAN
-FAN
MAINS TRANSFORMER B
100V: DCN348969
120V: DCN348820
230V: DCN348685
SCHEMATIC
FUNCTION: NETB
FILE: P3000-NB
DRAWING NO.: 348679
BOARD NO.: 85243
SIZE: 4-
1/1
ALTERATIONS RESERVED!
Electro-Voice INC.

Pos. in diagram	description	Part-No.
B0010	speaker socket 4pol.	341343
C0013	capacitor SO 0.10 MF/250V	333014
C0014	capacitor SO 0.10 MF/250V	333014
S0010	power switch	346720
Z0080	rubber foot	335589
00030	power button black	341382
00210	handle 109mm	349520
00510	fan	348415
00005	PCB	841578
CNSER	connector 9pol	306446
C0007	safety component 0,22MF	344934
C0015	safety component	341714
D0001	diode 1N 4148	301254
D0002	break down diode ZPD 7V5	307916
D0003	diode 1N 4148	301254
D0004	break down diode ZPD 7V5	307916
D0005	diode 1N 4148	301254
D0006	diode 1N 4006	305739
D0007	diode 1N 4006	305739
D0008	diode 1N 4006	305739
D0009	diode 1N 4006	305739
D0010	diode MR 752	328769
D0011	diode MR 752	328769
D0012	diode 1N 4002	304360
D0013	diode 1N 4148	301254
D0014	diode 1N 4148	301254
D0015	diode 1N 4148	301254
D0016	diode 1N 4148	301254
E0001	relay ZD 22	348634
L0001	coil	348592
Q0001	trans. MPSA 42	348422
Q0002	trans. MPSA 42	348422
Q0003	trans. MJ 15022	331657
Q0004	trans. MJ 15022	331657
Q0005	trans. MJ 15022	331657
Q0006	trans. MJ 15022	331657
Q0007	trans. MJ 15022	331657
Q0008	trans. MJ 15022	331657
Q0009	trans. 2SC 3281	348305
Q0010	trans. 2SC 4793	348409
Q0011	trans. 2SC 4793	348409
Q0012	trans. MJ 15022	331657
Q0013	trans. MJ 15022	331657
Q0014	trans. MJ 15022	331657
Q0015	trans. MJ 15022	331657
Q0016	trans. MJ 15022	331657
Q0017	trans. MJ 15022	331657
Q0018	trans. 2SC 3281	348305
Q0019	trans. 2SC 4793	348409
Q0020	trans. MJ 15023	331658
Q0021	trans. MJ 15023	331658
Q0023	trans. 2SC 4793	348409
Q0025	triac MAC 223-6	338876
Q0026	trans. MPSA 92	348423
Q0027	trans. MPSA 92	348423
Q0028	trans. MPSA 42	348422
Q0029	trans. 2N 3906	348421
Q0030	trans 2N 3904	335763
Q0031	trans. 2N 3906	348421
Q0032	trans. MJ 15023	331658
Q0033	trans. MJ 15023	331658
Q0034	trans. MJ 15023	331658
Q0035	trans. MJ 15023	331658
Q0036	trans. MJ 15023	331658
Q0037	trans. MJ 15023	331658
Q0038	trans. 2SA 1302	348424
Q0039	trans. 2SA 1837	348408
Q0040	trans. 2SA 1837	348408
Q0041	trans. 2SA 1302	348424
Q0042	trans. MJ 15023	331658
Q0043	trans. MJ 15023	331658
Q0044	trans. MJ 15023	331658
Q0045	trans. MJ 15023	331658
Q0046	trans. MPSA 92	348423
Q0047	trans. MPSA 92	348423
Q0048	trans. MPSA 42	348422
Q0049	trans. BC 550 B	301184
Q0050	trans. BC 550 B	301184
Q0051	trans. MJE 350	338869
Q0052	trans. MJE 350	338869
Q0053	trans. MJE 350	338869
Q0054	trans. MJE 350	338869
Q0055	trans. MPSA 42	348422
Q0056	trans. MPSA 42	348422
Q0057	trans. MPSA 42	348422
Q0058	trans. MJE 340	338868
Q0059	trans. MJE 340	338868
Q0060	trans. MJE 340	338868
Q0061	trans. MJE 340	338868
Q0062	trans. MPSA 92	348423
Q0063	trans. MPSA 92	348423
Q0064	trans. MPSA 92	348423
R0070	wire-wound resistor 4,7ohm	341713
R0071	wire-wound resistor 4,7ohm	341713
R0072	wire-wound resistor 4,7ohm	341713
R0074	wire-wound resistor 4,7ohm	341713
R0075	wire-wound resistor 4,7ohm	341713
00035	shorting plug	306397
00010	PCB	871288
D0019	LED red 3mm	336399
D0020	LED red 3mm	336399
D0021	LED red 3mm	336399
D0022	LED green 3mm	336398
D0023	LED red 3mm	336399

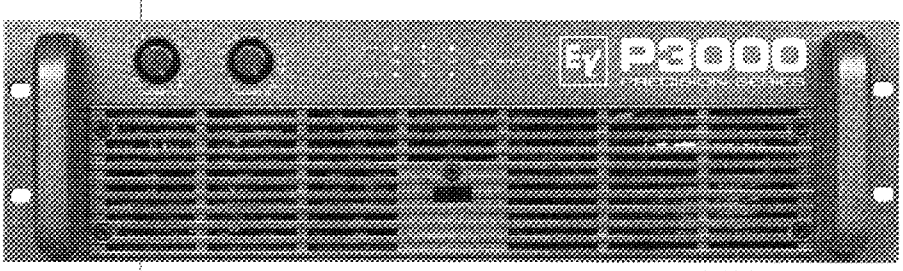
Pos. in diagram	description	Part-No.
D0024	LED green 3mm	336398
D0026	LED green 3mm	336398
D0027	LED green 3mm	336398
D0028	LED green 3mm	336398
D0029	LED green 3mm	336398
VR001	potentiometer 10kohm lin	348430
VR002	potentiometer 10kohm lin	348430
00005	shorting plug	306397
00015	PCB	862118
B0001	socket XLR 3pol.	346791
B0002	connector XLR 3pol.	346792
B0003	socket XLR 3pol.	346791
B0004	connector XLR 3pol.	346792
CNASE	connector 9pol	306446
CNBSE	connector 9pol	306446
C0004	safety component 0,22MF	344934
C0005	safety component	341714
C0702	KO-EL 47MF 50V	343530
C0707	KO-FOL 0.33MF 63V	340244
D0001	diode 1N 4148	301254
D0002	diode 1N 4148	301254
D0003	diode 1N 4148	301254
D0004	diode 1N 4148	301254
D0005	diode 1N 4148	301254
D0006	diode 1N 4002	304360
D0007	diode 1N 4002	304360
D0008	diode 1N 4148	301254
D0040	break down diode ZPD 6V8	304992
D0041	break down diode ZPD 6V8	304992
D0101	diode zener BZX 85C 15V	334321
D0102	diode 1N 4148	301254
D0103	diode 1N 4148	301254
D0104	diode 1N 4148	301254
D0105	diode zener BZX 85C 15V	334321
D0106	diode 1N 4148	301254
D0107	diode 1N 4148	301254
D0108	diode 1N 4148	301254
D0109	diode zener BZX 55C 2V4	329511
D0201	diode zener BZX 85C 15V	334321
D0202	diode 1N 4148	301254
D0203	diode 1N 4148	301254
D0204	diode 1N 4148	301254
D0205	diode zener BZX 85C 15V	334321
D0206	diode 1N 4148	301254
D0207	diode 1N 4148	301254
D0208	diode 1N 4148	301254
D0209	diode zener BZX 55C 2V4	329511
D0233	diode 1N 4148	301254
D0234	diode 1N 4148	301254
D0600	diode 1N 4148	301254
D0601	diode 1N 4148	301254
D0602	diode 1N 4148	301254
D0701	diode 1N 4148	301254
D0702	diode 1N 4148	301254
D0703	diode 1N 4148	301254
D0704	diode 1N 4148	301254
D0705	diode 1N 4148	301254
D0706	diode 1N 4148	301254
D0707	diode 1N 4148	301254
D0708	diode 1N 4148	301254
D0710	diode 1N 4148	301254
D0711	diode 1N 4002	304360
E0001	relay ZD 22	348634
E0002	relay ZD 22	348634
E0003	relay ZD 22	348634
H0001	res.network RKL 8A 103J	343457
H0003	res.network RKL 8A 103J	343457
H0004	res.network RKL 8A 103J	343457
H0005	res.network RKL 8A 103J	343457
I0101	IC NE 5532 N	327197
I0102	IC CA 3080 E	307421
I0104	IC TL 072 CP	331340
I0105	IC NE 5532 N	327197
I0106	IC LM 308 A	338359
I0201	IC NE 5532 N	327197
I0202	IC CA 3080 E	307421
I0204	IC TL 072 CP	331340
I0205	IC NE 5532 N	327197
I0206	IC LM 308 A	338359
I0300	IC NE 5532 N	327197
I0301	IC NE 5532 N	327197
I0302	IC NE 5532 N	327197
I0600	IC TL 072 CP	331340
I0700	IC TL 072 CP	331340
I0701	IC TL 074 CN	332985
Q0001	trans. BC 560 B	306928
Q0002	trans. BC 560 B	306928
Q0003	trans. BC 560 B	306928
Q0004	trans. BC 560 B	306928
Q0005	trans. BC 560 B	306928
Q0006	trans. BC 560 B	306928
Q0007	trans. BC 337-25	307150
Q0008	trans. BC 337-25	307150
Q0009	trans. BC 550 B	301184
Q0010	trans. BC 560 B	306928
Q0011	trans. BC 560 B	306928
Q0040	trans BD 242B	301235
Q0041	trans. BC 327-25	307430
Q0042	trans. BC 327-25	307430
Q0043	trans. BC 337-25	307150
Q0044	trans. BC 337-25	307150
Q0045	trans. BD 241B	301236
Q0101	trans. J 111 A	330264
Q0102	trans 2N 3904	335763
Q0103	trans 2N 3904	335763

Pos. in diagram	description	Part-No.
Q0104	trans. MJE 350	338869
Q0105	trans. MJE 350	338869
Q0106	trans. MJE 350	338869
Q0107	trans. MPSA 42	348422
Q0108	trans. MPSA 42	348422
Q0109	trans. MJE 350	338869
Q0110	trans. MJE 350	338869
Q0111	trans. MJE 350	338869
Q0112	trans 2N 3904	335763
Q0113	trans 2N 3904	335763
Q0114	trans 2N 3904	335763
Q0115	trans 2N 3904	335763
Q0116	trans. 2N 3906	348421
Q0117	trans. 2N 3906	348421
Q0118	trans. 2N 3906	348421
Q0119	trans. 2N 3906	348421
Q0120	trans. MPSA 92	348423
Q0121	trans. MPSA 92	348423
Q0122	trans. MJE 340	338868
Q0123	trans. MJE 340	338868
Q0124	trans. MJE 340	338868
Q0125	trans. MJE 340	338868
Q0126	trans. MJE 340	338868
Q0127	trans. MJE 340	338868
Q0128	trans. 2N 3906	348421
Q0129	trans 2N 3904	335763
Q0141	trans. 2N 3906	348421
Q0142	trans. 2N 3906	348421
Q0201	trans. J 111 A	330264
Q0202	trans 2N 3904	335763
Q0203	trans 2N 3904	335763
Q0204	trans. MJE 350	338869
Q0205	trans. MJE 350	338869
Q0206	trans. MJE 350	338869
Q0207	trans. MPSA 42	348422
Q0208	trans. MPSA 42	348422
Q0209	trans. MJE 350	338869
Q0210	trans. MJE 350	338869
Q0211	trans. MJE 350	338869
Q0212	trans 2N 3904	335763
Q0213	trans 2N 3904	335763
Q0214	trans 2N 3904	335763
Q0215	trans 2N 3904	335763
Q0216	trans. 2N 3906	348421
Q0217	trans. 2N 3906	348421
Q0218	trans. 2N 3906	348421
Q0219	trans. 2N 3906	348421
Q0220	trans. MPSA 92	348423
Q0221	trans. MPSA 92	348423
Q0222	trans. MJE 340	338868
Q0223	trans. MJE 340	338868
Q0224	trans. MJE 340	338868
Q0225	trans. MJE 340	338868
Q0226	trans. MJE 340	338868
Q0227	trans. MJE 340	338868
Q0228	trans. 2N 3906	348421
Q0229	trans 2N 3904	335763
Q0241	trans. 2N 3906	348421
Q0242	trans. 2N 3906	348421
Q0600	trans. 2N 3906	348421
Q0601	trans. BC 327-25	307430
Q0602	trans. BC 337-25	307150
Q0603	trans 2N 3904	335763
Q0610	trans. 2N 3906	348421
Q0611	trans. BC 327-25	307430
Q0612	trans. BC 337-25	307150
Q0613	trans 2N 3904	335763
Q0620	trans. BC 337-25	307150
Q0621	trans. BC 337-25	307150
Q0700	trans. BD 243C	339860
Q0701	trans. BC 337-25	307150
Q0702	trans. BC 337-25	307150
Q0703	trans. BC 550 B	301184
Q0704	trans. BC 550 B	301184
Q0705	trans. BC 550 B	301184
Q0706	trans. BC 550 B	301184
Q0707	trans. BC 550 B	301184
SL001	rotary switch	348583
SL002	rotary switch	348583
S0001	control element on/off	327947
S0002	rotary switch	348583
S0003	sliding switch	338886
S0004	rotary switch	348572
S0101	control element on/off	327947
S0102	control element on/off	327947
S0201	control element on/off	327947
VR101	wire wound resistor 47 kohm	348486
VR102	wire wound resistor 2.5 k	348675
VR201	wire wound resistor 47 kohm	348486
VR202	wire wound resistor 2.5 k	348675
VR600	wire-wound resistor 4.70k	348487
VR601	wire-wound resistor 4.70k	348487
VR700	wire wound resistor 2.5 k	348675
00025	shorting plug	306397
00020	PCB	852428
C0012	KO-EL 1000MF 25V	337597
C0013	KO-EL 1000MF 25V	337597
C0015	safety component	341714
D0001	diode 1N 4148	301254
D0002	diode 1N 4148	301254
G0001	rectifier GBPC-W	348714
G0002	rectifier GBPC 35-04	343270
G0003	rectifier B250 C1000	333719
G0004	rectifier B 80 C1500 M	340791
00010	fuse holder	306838

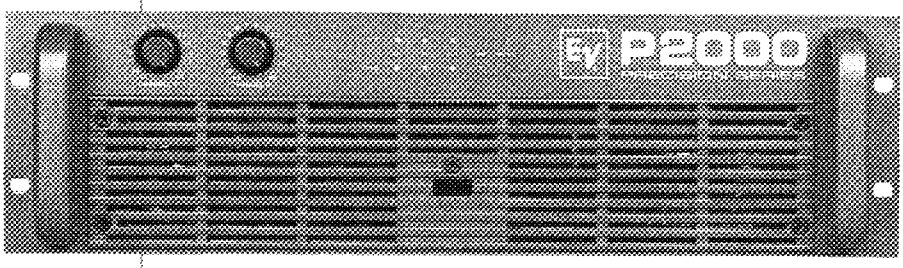
Pos. in diagram	description	Part-No.
00015	fuse holder	306838
00020	fuse holder	306838
00025	fuse holder	306838
00025	PCB	852438
C0012	KO-EL 1000MF 25V	337597
C0014	safety component	341714
G0001	rectifier GBPC-W	348714
G0002	rectifier GBPC 35-04	343270
G0003	rectifier B250 C1000	333719
G0004	rectifier B 80 C1500 M	340791
00010	fuse holder	306838
00015	fuse holder	306838
00020	fuse holder	306838
00030	transformer power US	348819
00035	transformer power US	348820

Pos. in diagram	description	Part-No.

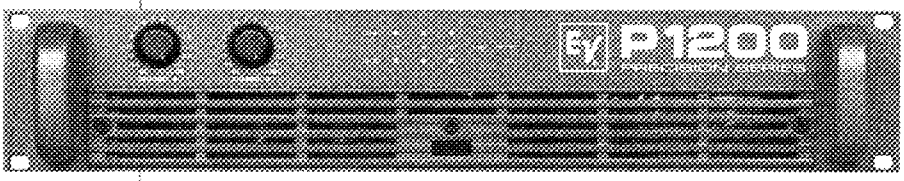
Precision Series™ Power Amplifiers



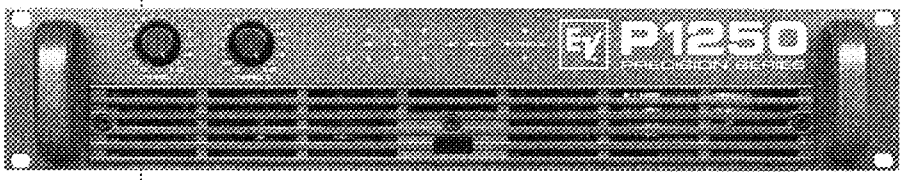
1,400 W into 4 ohms



900 W into 4 ohms



550 W into 4 ohms



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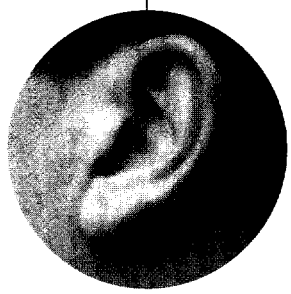

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