EV DYNACORD®

P 1050

Processed Precision™ Power Amplifier

- Built-in processor ensures optimum sound quality and amplifier/speaker matching
- 370 watts per channel at 8 ohms, 550 watts per channel at 4 ohms, 650 watts per channel at 2 ohms
- Compact, two-rack-space chassis
- Neutrik Speakon® output connectors allow use of heavy-gauge speaker wire for low-loss connections
- 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:
600 watts
Bridged Mode, 4 Ohms:
1,200 watts
Dual Mode, 4 Ohms:
500 watts
Bridged Mode, 8 Ohms:
1,000 watts
Dual Mode, 8 Ohms:
350 watts

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

Dual Mode, 2 Ohms:
650 watts
Bridged Mode, 4 Ohms:
1,300 watts
Dual Mode, 4 Ohms:
550 watts
Bridged Mode, 8 Ohms:
740 watts
Dual Mode, 8 Ohms:
370 watts

Power Bandwidth (+0/–1 dB, reference 1 kHz),

Dual Mode, 4 Ohms:
20-20,000 Hz
Bridged Mode, 8 Ohms:
20-20,000 Hz
Dual Mode, 8 Ohms:
20-20,000 Hz

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

Voltage Gain, 1 kHz, Input Level Controls Full Clockwise, Constant-Gain Option:[1]
26 dB

Input Sensitivity, 1 kHz, Dual Mode for 550 Watts into 4 Ohms:
0 dBu (775 mV)

Maximum Input Level, 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%

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

Slew Rate, Any Mode:
>20 V/microsecond

Damping Factor, Any Mode:
>300

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

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

1. Configured for constant-gain option, all L and P series amplifiers, regardless of power rating, have a maximum voltage gain of 26 dB.

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

Output Devices,
Total Number: 20 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 (see Figure 3):
Limiter time constant (fast/slow); Processor control (processor on/off); B6 or normal enclosure alignment); Low-pass notch pole frequency selection (55 Hz, 45 Hz, 35 Hz); Mode switch (bridged/normal); Lo/Hi Cut filters on/off; Input routing (parallel mono or dual stereo); Circuit (ground/ ungrounded) to chassis
Front (see Figure 3):
Two calibrated input level controls; power switch

Front-Panel Indicators:
Six LED's per channel (12 total) for power on, input signal; output signal; limiter on; protection on and processor 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:
14-gauge, 3-wire, permanently attached power cable

P 1050 SPECIFICATION GRAPHICS

FIGURE 1 — P 1050 Dimensions

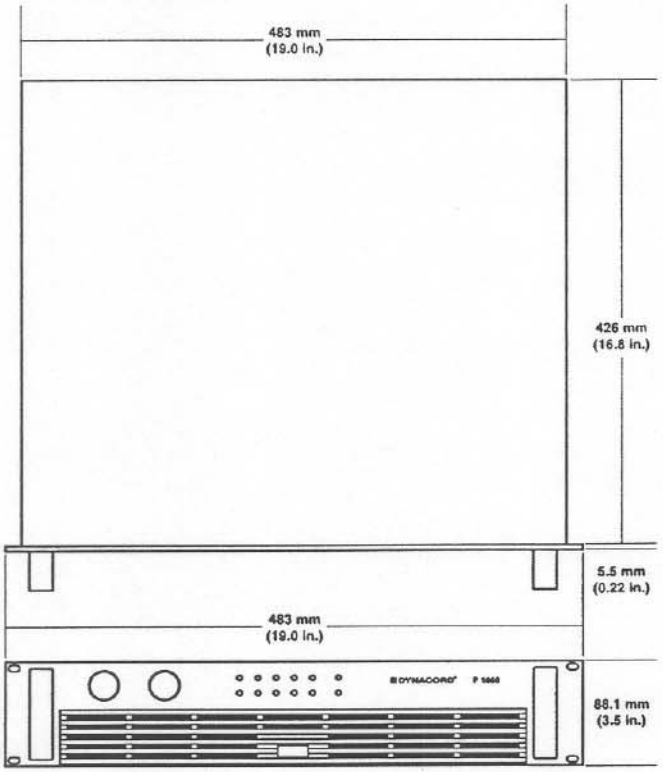


FIGURE 2 — P 1050 Intermodulation Distortion
(SMPTE 60 Hz/7,000 Hz) vs. Power

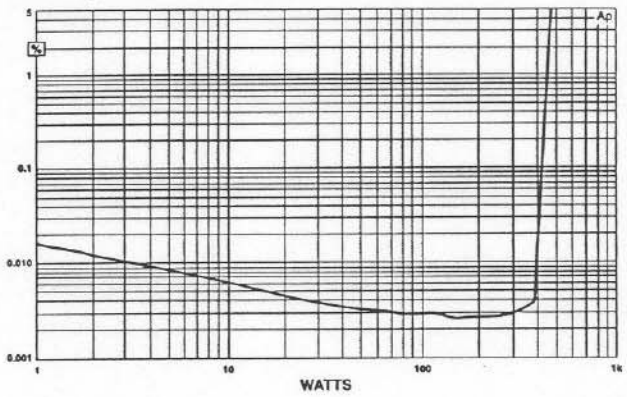
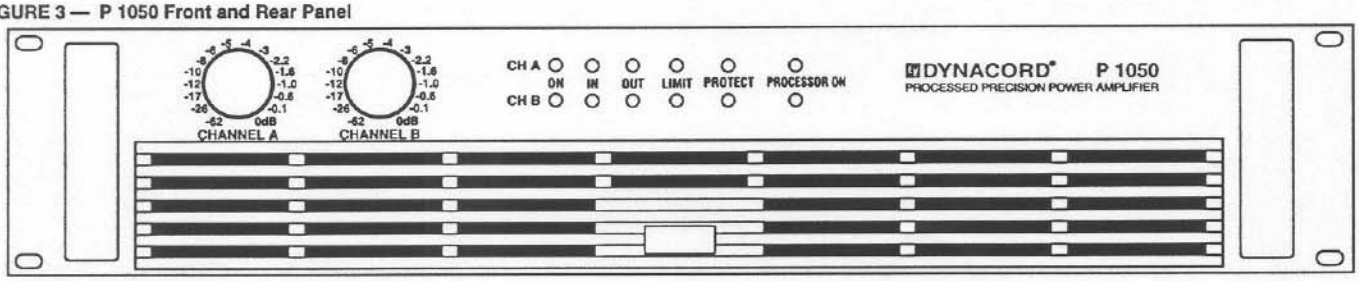
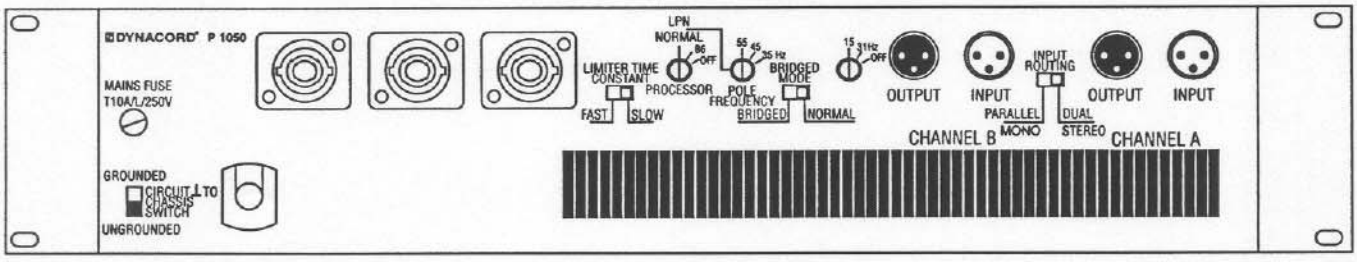


FIGURE 3 — P 1050 Front and Rear Panel





Operating Voltage:
120 watts, 60 Hz ac
Power Consumption (both channels operating in dual mode, 1/8 power), 4 Ohms:
550 VA
Dimensions, (see Figure 1)
Height:
88.1 mm (3.5 in.)
Width:
483 mm (19.0 in.)
Depth:
426 mm (16.8 in.)
Color:
Dark gray
Net Weight:
17.0 kg (37.5 lb)
Shipping Weight:
17.8 kg (39.3 lb)

DESCRIPTION

The EV/Dynacord P 1050 Processed Precision™ amplifier is a very-high-quality power amplifier designed to elicit maximum performance and sound quality from any speaker system. Its ultralow distortion, powerful amplifiers and unique processor section ensure that any speaker system will sound its very best.

Each channel of the P 1050 delivers more than 350 watts continuous average power into 8 ohms, 500 watts into 4 ohms and 600 watts into 2 ohms over the full audio frequency range. In the bridge mode, the amplifier can deliver more than 740 watts into 8 ohms and 1,300 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 P 1050 contains 20 high-power output devices with 5,000 watts of dissipation capability. These devices are protected from overheating by two, three-speed, temperature-sensitive fans. The fans are quiet enough to permit use of the P 1050 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 P 1050. Among the most novel of these circuits is the Dual Differential Discrete Topology™. This circuit is part of the front end of the amplifier, uses discrete electrical components instead of integrated circuits, and is fully symmetrical for both polarities.

The built-in processor utilizes EV/Dynacord's patented Dynamic Signal Processing™ circuitry along with unprecedented speaker matching and protection. The Dynamic Signal Processing™ circuitry ensures that transient response and phase distorion in the speaker is minimized, resulting in dynamically powerful bass and clear, three-dimensional highs. With the controls of the processor, you can select the enclosure tuning (12 or 24 dB per octave) as well as adjust the "notch" frequency which closely corresponds to the 3-dB-down point of the enclosure (55 Hz, 45 Hz or 35 Hz). The processor also has circuits that help prevent severe amplifier clipping and can limit peak power fed to the loudspeaker if high power levels are maintained for a long time.

The P 1050 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 P 1050 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 P 1050 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 present, output signal, limiter on, protection active and processor on.

The P 1050 has electronically balanced XLR-type input and output connectors that allow easy, problem-free connections and signal routing. The P 1050 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 P 1050 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 EV/Dynacord L and P 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 P 1050's output connectors are professional Neutrik Speakon® connectors which 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 P 1050 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 P 1050. The panel nomenclature shows the amount of attenuation accurately.

The EV/Dynacord P 1050 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.

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 and excessive phase shift. The load shall be similarly protected against infrasonic signals, start-up/shutdown transients, low ac line voltage and dc.

The power amplifier shall contain processing circuitry that will ameliorize the phase and transient response problems of the loudspeaker. The built-in processor shall be capable of being adjusted for the enclosure type and low-frequency characteristics of the connected speaker.

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, and a switch for selecting fast or slow speed for the built-in limiters. The processor controls shall include a switch for turning the processor off and selecting the enclosure type (12 dB or 24 dB alignment) and three selectable frequencies for B6 (24 dB) alignment of 55 Hz, 45 Hz and 35 Hz.

Front-panel indicators shall include power on, input present, output, limit, protect and processor on 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 EV/Dynacord L and P 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, >350 watts into 8 ohms, >500 watts into 4 ohms, >600 watts into 2 ohms, >1,000 watts bridged into 8 ohms and >1,300 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/–1 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 88.1 mm (3.5 in.) x 483 mm (19.0 in.) x 426 mm 16.8 in.) hwd. Net weight shall be 17 kg (37.5 lb). Color: dark gray.

The power amplifier shall be the EV/Dynacord P 1050.

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 and EV/Dynacord 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 — P 1050 Block Diagram