

Q44T

Stereo Power Amplifier

- 280 watts per channel at 8 ohms, 450 watts per channel at 4 ohms and 900 watts bridged at 8 ohms at 1 kHz
- 390 watts per channel at 25V, 400 watts per channel at 70.7 volts and 410 watts per channel at 100 V
- 780 watts at 50 V, 800 watts at 140 V and 820 watts at 200 V in bridged mode
- High-performance audio limiters for freedom from clipping
- Rear-mounted dB-scaled gain controls
- Can drive low-impedance and constant-voltage lines simultaneously
- Detachable Phoenix "Euro-style" input and output connectors for easy signal routing and hookup

Description

The Electro-Voice Q44T amplifier is a very high-quality power amplifier designed to elicit excellent performance from any speaker system as well as 25V, 70.7V and 100V lines. Its low distortion and substantial headroom ensure that program material will be accurately amplified.

Each channel of the Q44T delivers more than 230 watts continuous average power into 8 ohms and 350 watts into 4 ohms over a frequency range of 45 – 20,000 Hz. In its transformer-isolated dual mode, it can deliver more than 350-watts into 25, 70.7 or 100-volt lines. In the bridged mode at 1 kHz, the amplifier can deliver more than 900 watts into 8 ohms at less than 1% THD. Both direct and transformer-isolated outputs may be used simultaneously. The well-designed power supply with its large toroidal transformer gives the amplifier impressive headroom and current output.

The Q44T contains 16 high-power output devices with 4,000 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 Q44T in noise-sensitive

applications such as recording studios and houses of worship.

The output devices are mounted to two large, extruded aluminum heat sinks that are 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 sinks without mica insulators to ensure better dissipation of heat.

The Q44T has sophisticated protection circuits that guard it and the load from problems. Protection circuits guard against overload, over-temperature, shorted outputs, radio-frequency interference and dc faults. The output devices are protected against damage from the reverse feeding of electrical energy (back EMF) from the load and are switched on via relays to avoid transients which could damage speakers. There is also a transformer saturation protection circuit that monitors the current demands of the transformer and can activate the limiters when the input signal reaches +20 dBu at any frequency.

The Q44T has built-in limiters to protect speakers from the deleterious effects of am-

plifier clipping. The limiter's action is controlled by very sophisticated input/output comparators which are designed to preserve the sonic integrity of the source.

The Q44T has electronically-balanced XLR-type and removable Phoenix Contact "Euro-style" input connectors in parallel that allow easy, problem-free connections and signal routing. The amplifier 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 independent level control. Optional input transformers may be added to the amplifier to provide for even greater immunity from interference.

The Q44T's Phoenix Contact "Euro-style" removable output connector provide sturdy, reliable connections and allow use of heavy wire for loss-free signal transmission. There are easily identifiable connections for the direct outputs and for the transformer-isolated 25, 70.7 and 100-volt outputs which may be used simultaneously.

To prevent ground loops from occurring, the Q44T is equipped with a ground-lift switch. When the amplifier is operated in a rack with units of different ground potential, the switch

Q44T Stereo Power Amplifier

may be adjusted to eliminate hum.

Separate dB-scaled potentiometers on the rear panel of the Q44T allow easy regulation of gain. There is easily readable nomenclature to ensure easily repeatable control settings.

The Electro-Voice Q44T is an excellent choice for high-quality professional sound system applications which require excellent 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 capable of driving conventional loudspeaker loads and also 25 – 100 volt lines. It shall be capable of operating from a 120/220/240-V, 50/60 Hz ac line. The power amplifier shall meet many worldwide product safety requirements including Underwriter's Laboratories UL-813 standard, Canadian Standards and CE standards.

The power amplifier shall contain a limiter circuit driven by a high-quality input/output comparator to protect the load from damage by amplifier clipping. The amplifier shall contain sensing circuitry to provide protection for the output transistors against over-temperature, excessive output voltage, shorted loads, excessive phase shift and back-EMF current. The load shall be similarly protected against start-up/shutdown transients, low ac line voltage and dc.

Rear-mounted controls shall include detented dB-scaled level potentiometers for each channel, an input routing switch for selecting dual/stereo or parallel mono operation, a switch for selecting dual/stereo or bridged operation and a chassis groundlift switch. Rear-mounted input connectors shall include a 3-pin female XLR-type connector wired in parallel with a removable "Euro-style" connector block for signal routing. The output connector shall be a removable "Euro-style" Phoenix Contact #KGS-MSTB2.5/12 connector.

Front-panel indicators shall include power on, a protection indicator and separate signal present and limiter indicators for each channel. Front-panel controls shall include a power on switch.

The power amplifier shall meet the following performance specifications: rated output power from 20-20,000 Hz at less than 0.2% THD, each channel 230 watts into 8 ohms, 350 watts into 4 ohms as well as 25, 70 or 100-volt lines; In bridged mode at 1 kHz, the amplifier shall deliver 900 watts into 8 ohms, 820 watts into 200 V, 800 watts into 140 V, and 780 watts into 50 V; THD (total harmonic distortion) shall be less than 0.05% at 1 kHz at rated output power at 8 and 4 ohms, 0.1% at 100 volts, 0.2% at 70 volts and 0.3% at 25 volts; transient intermodulation distortion (DIM 30), shall be less than 0.03% at 8 and 4 ohms, 0.1% at 100 volts, 0.3% at 70 volts and 0.5% at 25 volts. Dimensions shall be 132.5 mm (5.25 in) high x 483 mm (19.0 in) width x 385.5 mm (15.7 in) deep. Net weight shall be 20.5 kg (45.2 lb). Color shall be light gray.

The power amplifier shall be the Electro-Voice Q44T.

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 Service or any of its authorized service representatives. **Obtaining Warranty Service:** To obtain warranty service, a customer must deliver the product, prepaid, to Electro-Voice Service 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 Service at 600 Cecil Street, Buchanan, MI 49107 (800/234-6831 or FAX 616/695-4743). **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.

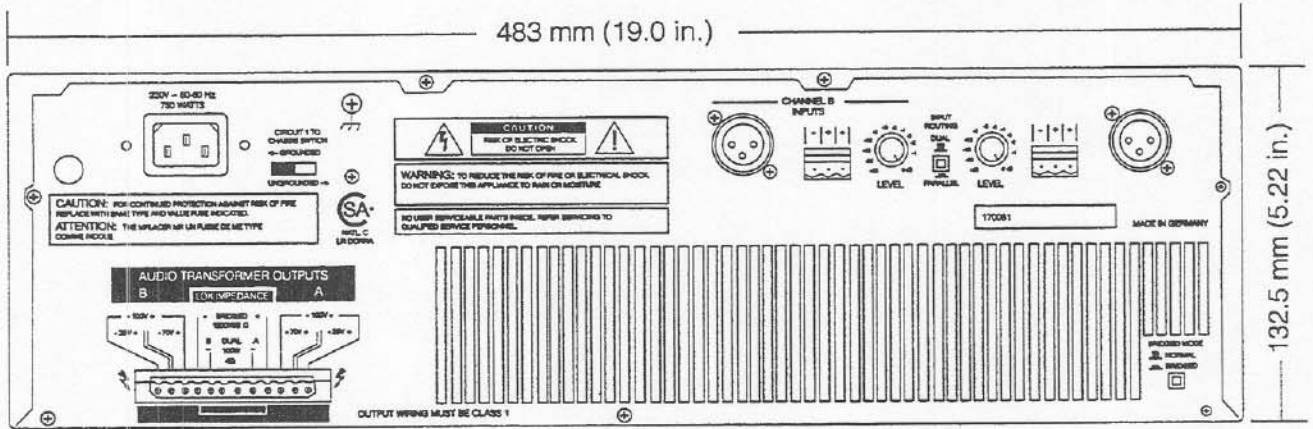
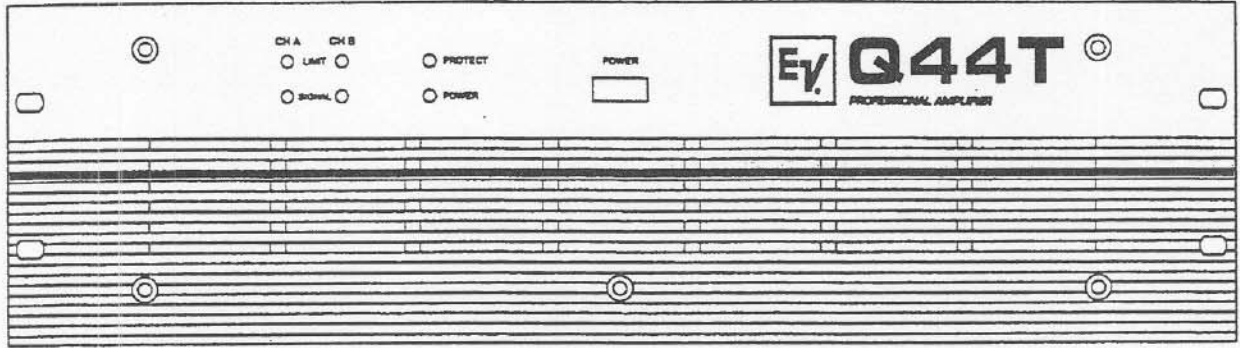
For warranty repair or service information, contact the service repair department at: 616/695-6831 or 800/685-2606.

For technical assistance, contact Technical Support at 800/234-6831 or 616/695-6831, M-F, 8:00 a.m. to 5:00 p.m. Eastern Standard Time.

Specifications subject to change without notice.

Q44T Stereo Power Amplifier

Figure 1—Front and Rear Panels



Q44T Stereo Power Amplifier

Q44T Stereo Power Amplifier

Q44T Stereo Power Amplifier

Specifications

Conditions:

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

Continuous Rated Output Power (45 – 20,000 Hz at less than 0.2% THD, both channels driven per EIA RS-490),

Dual Mode, 4 Ohms:

350 watts

Bridged Mode, 8 Ohms:

560 watts

Dual Mode, 8 Ohms:

300 watts

Transformer-Isolated Outputs, Dual Mode:

350 watts at 25 V, 70 V, or 100V

Transformer-Isolated Outputs,

Bridged Mode:

700 watts at 200 V, 140 V or 50 V

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

Dual Mode, 4 Ohms:

450 watts

Bridged Mode, 8 Ohms:

900 watts

Dual Mode, 8 Ohms:

340 watts

Transformer-Isolated Outputs, Dual Mode:

410 watts at 100 V

400 watts at 70 V

390 watts at 25 V

Transformer-Isolated Outputs,

Bridged Mode:

820 watts at 200 V

800 watts at 140 V

780 watts at 50 V

Maximum RMS Voltage Swing (reference 1 kHz, 1% THD) Direct Outputs:

44 Volts

Transformer-Isolated Outputs:

125 Volts at 100 V

87 Volts at 70 V

31 Volts at 25 V

Power Bandwidth (+0, -3 dB, reference 1 kHz), Any Mode:

45 – 50,000 Hz at direct outputs

45 – 25,000 Hz at transformer-isolated outputs

Frequency Response (+0, -3 dB, reference 1 kHz/1 watt):

45 – 30,000 Hz at direct outputs

45 – 22,000 Hz at transformer-isolated outputs

Voltage Gain (reference 1 kHz),

34 dB at direct outputs

42 dB at 100V

39 dB at 70 V

30 dB at 25 V

Input Sensitivity, 1 kHz, Dual Mode for 500 watts into 4 Ohms:

0 dBu (775 mV)

Maximum Input Level (reference 1 kHz):

+20 dBu (7.75 V)

20 – 20,000 Hz), Balanced:

20,000 ohms

Total Harmonic Distortion (at rated output power, measurement bandwidth 80 kHz, reference 1 kHz):

<0.05% at direct outputs

<0.1% at 100 V

<0.2% at 70 V

<0.3% at 25 V

IMD (SMPTE) (60 Hz/7 kHz, typical, at rated power):

<0.08% at direct outputs

<0.1% at 100 V

<0.3% at 70 V

<0.5% at 25 V

DIM 30 (composite square-sine wave bandwidth-limited to 30,000 Hz):

<0.03% at direct outputs

<0.2% at 100 V

<0.2% at 70 V

<0.2% at 25 V

Slew Rate, Any Mode:

25 V/microsecond

Damping Factor, Any Mode,

(at 100 Hz / 1 kHz):

>300 / >200

Signal to Noise Ratio:

>100 dB

Amplifier Protection:

Audio limiters; over-temperature; dc, excessive hf, excessive back-EMF; in-rush current limiters; shorted loads; peak current limiters

Load Protection:

Start-up/shutdown transients; dc fault; infrasonic and ultrasonic filters; Low ac line voltage; nonlinear signal limiters; transformer saturation protection

Cooling System:

Front-to-rear airflow with two 3-speed fans

Output Topology:

True complementary symmetry with ungrounded collectors (no mica insulators for better heat transfer)

Output Devices,

Total Number: 16 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:

Two calibrated level controls; input routing (Dual/Parallel); chassis ground switch (Grounded/Ungrounded); bridged mode switch (Bridged/Normal)

Front:

Power switch (On/Off)

Front-Panel Indicators:

Two LED's per channel (4 total) for signal present and limiter on, protect indicator and power on

Connections,

Input:

3-pin female XLR-type connectors for each channel in parallel with a removable 3-pin Phoenix Contact "Euro-style" terminal block 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:

Phoenix Contact "Euro-style" terminal block connector #KGS-MSTB 2.5/12 for direct-coupled and transformer-isolated outputs for AWG 12-24 wire

Power:

16-gauge 3-wire IEC standard removable power cable

Operating Voltage:

120, 230, 240-V, 50/60 Hz ac

Power Consumption (both channels operating in dual mode at 1/8 maximum output power at 4 ohms:

690 watts

Dimensions (see Figure 1),

Height:

132.5 mm (5.25 in)

Width:

483 mm (19.0 in)

Depth:

385.5 mm (15.17 in)

Color:

Light gray

Net Weight:

45.2 lb (20.5 kg)

Electro-Voice®

600 Cecil Street, Buchanan, MI 49107

616/695-6831, 616/695-1304 Fax