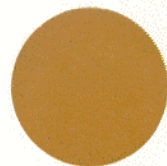


QUAD

PROFESSIONAL POWER AMPLIFIERS



QUAD
50 E



A single channel amplifier designed for Broadcast, Recording and other applications in the Audio Industry.

The input is 0.5Vrms unbalanced via a pre-set gain control, with provision for 600Ω line bridging by means of an internal plug-in transformer, available as an optional extra. The output is isolated and provides up to 50W continuous power into almost any impedance from 4Ω to 200Ω. (See Fig. 1.)

The multiple output windings of the Quad 50 terminate in a multiple output socket on the amplifier. Choice of matching is obtained by various connections in the output plug which is part of the installation itself. Quad 50 amplifiers may, therefore, be moved from one application to another without adjustment. With the exception of output impedance, the performance of the amplifier is identical with any output configuration.

The amplifier is virtually proof against misuse and no harm can be caused by such factors as gross overload ; continuous operating on short circuits ; heavy reactive loading ; inadequate ventilation, etc. If misuse is such as to cause excessive heating, the maximum power will reduce as necessary, restoring automatically when more normal conditions prevail.

The standard of quality is of the highest order and with any complex input, distortion falling within the useful part of the audio range will not exceed a small fraction of one percent. Overloading with any load will not significantly affect long time constants, ensuring immediate recovery and minimum distortion resulting from such overload.



POWER INTO LOAD:

See Curves.

Maximum power transfer at 5·5, 12·5, 22, 50 and 200 Ω

POWER RESPONSE:

—1 dB at 30 Hz and 20 kHz ref to maximum output
(see Fig. 1).

DISTORTION:

40 Hz < 0·35%
1 kHz < 0·1%
10 kHz < 1·0% } any level up to maximum output
(see Fig. 1).

**OUTPUT SOURCE
IMPEDANCE:**

0·5 Ω in series with 25 μ H for 5·5 Ω connection.
Others in direct proportion.

HUM & NOISE:

Better than 80 dB referred to full output.

FREQUENCY RESPONSE:

Unbalanced input :
—1 dB 30 Hz and 20 kHz ref : 1 kHz.
600 Ω bridging :
—2 dB 30 Hz and 20 kHz ref : 1 kHz.

INPUT LEVEL:

0·5V for full output, balanced or unbalanced
Preset adjustment for higher levels.

INPUT IMPEDANCE:

Unbalanced :
14–50 K Ω depending on preset gain.
600 Ω bridging :
< 14 K Ω in parallel with 50 H.

STABILITY:

Unconditionally stable with any load.

POWER INPUT:

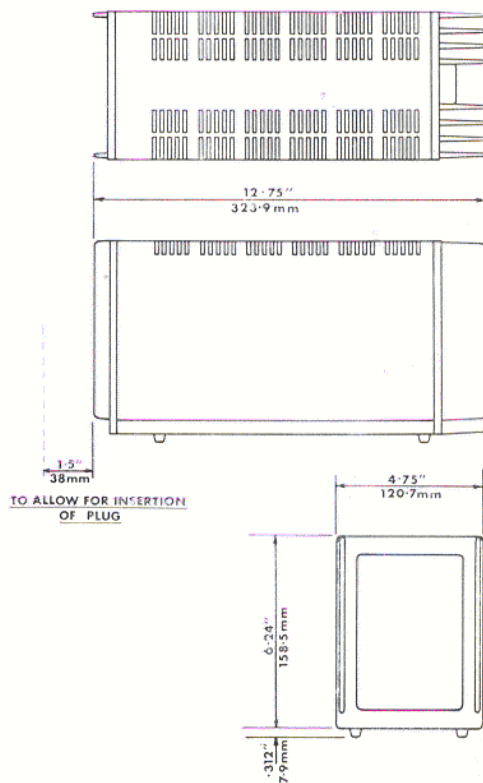
110 · 120 · 220 · 240V 50–60 Hz.
24–150 watts depending on signal level.

WEIGHT:

24 lb (10·9 Kg).
25 lb (11·3 Kg) with 600 Ω bridging transformer.

DIMENSIONS:

Width : 4 $\frac{3}{4}$ " (120 mm).
Height : 6 $\frac{1}{4}$ " (159 mm).
Depth : 12 $\frac{3}{4}$ " (324 mm) plus 1 $\frac{1}{2}$ " (38 mm) for
connectors.



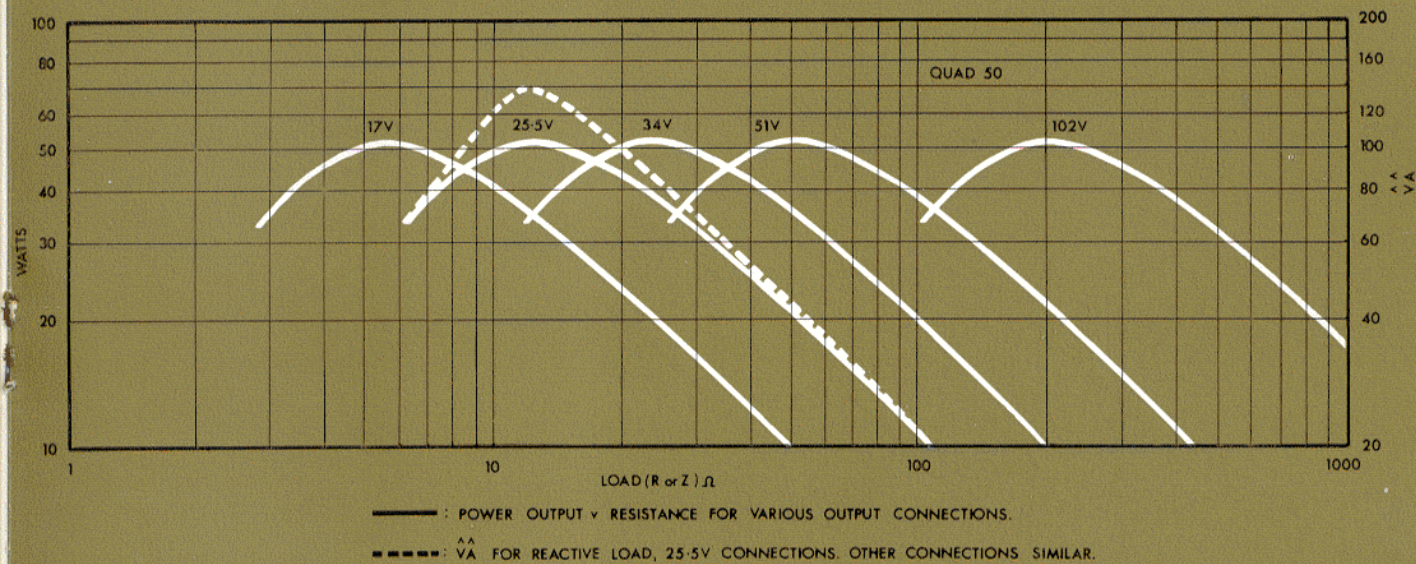
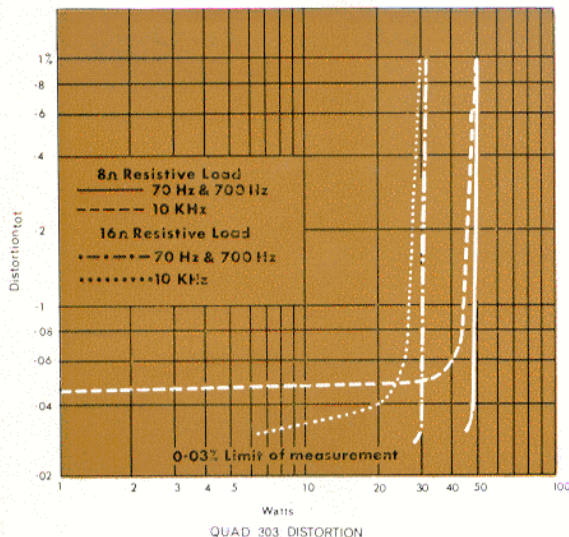


Fig. 1.

Fig. 2.



The figures and curves refer to measurements on either channel, with or without the other channel operating.

POWER OUTPUT & DISTORTION:

(with unrestricted bandwidth)
 70 Hz < 0.03% } any level up to
 700 Hz < 0.03% } 28W 16Ω load
 10 kHz < 0.1% } 45W 8Ω load

FREQUENCY RESPONSE:

—1 dB (ref: 1 kHz) at 30 Hz and 35 kHz into 8Ω
 —1 dB (ref: 1 kHz) at 20 Hz and 35 kHz into 16Ω

OUTPUT SOURCE IMPEDANCE:

0.3Ω in series with 2000μF and 6μH.

INPUT LEVEL:

0.5Vrms for 30 watts into 16Ω

INPUT IMPEDANCE:

22KΩ in parallel with 60 pF.

HUM AND NOISE:

—100 dB below full output

INTERCHANNEL CROSSTALK:

30—10,000 Hz better than 60 dB.
 Input load 1 KΩ.

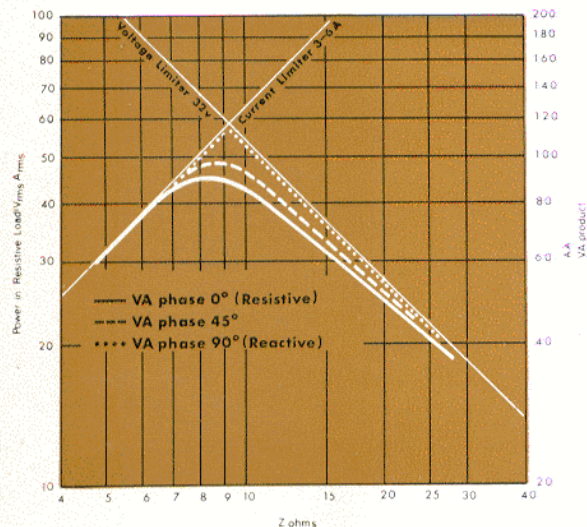
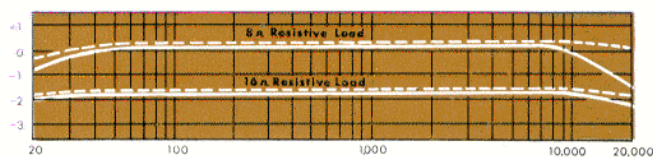


Fig. 3.



--- Less than 1% D_{tot} at any frequency
 — Less than 0.1% D_{tot} at any frequency
 Odb - 45 Watts

QUAD 303 POWER FREQUENCY CURVE

STABILITY:

unconditionally stable with any load

POWER INPUT:

100—125 or 200—250V 50—60 Hz.
 40—200 watts depending on signal level.

WEIGHT:

18 lb (8.2 Kg).

DIMENSIONS:

Width 4 3/4" (120 mm).
 Height 6 1/8" (159 mm).
 Depth 12 3/4" (324 mm) (plus 1 1/4" (38 mm) for connectors).

OTHER APPLICATIONS:

The amplifier may be used for any purposes into load impedances greater than 8Ω. Below 8Ω applications should be restricted to music and speech reproduction or intermittent sine-wave duty.

A two channel power amplifier primarily designed for high quality domestic installations. It is ideally suitable for driving loudspeakers in the 4—16 Ω range and will provide an output of up to 45 watts per channel depending upon the load impedance. (Fig. 3.) The input required for full output is 0.5Vrms unbalanced.

Transistor triples are employed in an original circuit to provide a completely symmetrical output stage, quiescent current independent of junction temperature and symmetrical current and voltage limiting. Harmonic and intermodulation distortion products in the audio range are so low that they are difficult to measure in meaningful terms. Measurements with unrestricted bandwidths are shown in Figs. 2 and 4.

The amplifier is unconditionally stable and may be used with any load. For special applications requiring continuous power into low (less than 8 Ω) or reactive loads such as driving synchronous motors, etc., the maximum power or duty cycle may be limited by the ability of the heat sink to dissipate the heat generated. (Maximum heat sink temperature=70°C.)

The two channels may be used together or independently but the two outputs should not be paralleled without incorporating some form of current sharing network.

