TRIMAX TRANSFORMERS

(CLIFF & BUNTING PTY. LTD.)

CHARLES STREET, NORTH COBURG, VICTORIA

MONITORING AMPLIFIER TYPE A/6.
(P.M.G. Type M.12)

SEE SD51373

1.0 : GENERAL.

Application : The Trimax Amplifier Type A46 is a high quality Amplifier of medium power output, which has been designed to drive a wide range monitor speaker. The use of a large amount of negative feedback has resulted in very great reduction in harmonic and inter-modulation distortion, and also in a very low output impedance. The input is suitable for bridging a terminated 600 ohm line.

Physical Description : The unit is designed for standard rack mounting and occupies six rack units (10½"). The overall size is 10½" x 19" x 9".

Specification :

Gain	:	30 ± 2 db.
Power Output	:	(Nominal) 12 Watts. (+41 dbm)
Distortion	:	Less than 4% total at +41 dbm. (12 watts) Less than 2% total at +38 dbm over the (8 watts) frequency range of 50 cycles to 7.5 KC.
Frequency Response	:	± 0.5 db, 20 c/s - 20 KC.
Source Impedance	:	300 ohms.
Input Impedance	:	12,500 ohms.
Load Impedance	:	(Nominal) 17.5 ohms. Note - The Amplifier is supplied for use with loads of 15 - 20 ohms. These do not materially effect the operation of the unit in any way.
Output Impedance	:	Less than 2 ohms.
Noise	:	Total noise present in the output is 100 db below full output.
Cathode Metering	:	Metering jacks are provided for each tube, the jack on the left hand side of the panel being for V1.
Tube Complement	:	V1) V2) 6AU6 V3) V4) KT66 (or EL34) V5 5V4G.

2.0 : OPERATION.

Circuit Details : The circuit is a two stage balanced push-pull Amplifier, incorporating symmetrical feedback from the voice coil winding to the input stage. It is, therefore, essential that the load applied to this Amplifier should not be connected to earth in any way, as either the bias or the circuit balance conditions will be upset. The input circuit is so arranged that the Amplifier will not effect the level in the bridged line by more than 0.1 db. The output Transformer has been specially designed and constructed to eliminate effects of phase-shift over the frequency range specified.

Noise Balance Conditions : In order to achieve the very high signal to noise ratio of more than 100 db, it has been necessary to dynamically balance the Amplifier for minimum noise output. The desired result is achieved by adjusting the 50 ohm potentiometer (R16) for minimum noise output under operating conditions, but with no applied signal. Since the noise at the output terminals is of such a low order, it may be easier to measure the noise on the primary of the output Transformer, i.e. the annode of one of the KT66's. This adjustment is only required when valves are changed.

Maintenance : Careful selection of components and conservative ratings should ensure that very little maintenance will be required with this Amplifier. When replacing condensers, it is essential to see that the outside foil, or negative connection, is replaced in the same sense as previously.

Average Currents and Potentials :

Currents V1) V2) 1.5 mA.

V3) V4) 75 mA. (No signal.)

Potentials (Measured with Avo Model 7, 400 V Range.)

V1 Annode) V2 Annode) 100 V.

V3 Annode) V4 Annode) 345 V

B+ 350 V.

V5 Cathode 385 V.

Average Currents and Potentials Contd.

V3 Cathode)	25 V	No signal.
V4 Cathode)	26 V	+41 dbm.

Power Supply : The power supply incorporated in this unit is designed to operate from 200 to 250 Volts 40 to 60 cycles, which may be selected by means of the "Trimax" tap changing fuse holder. Fuses used are 1A or less.

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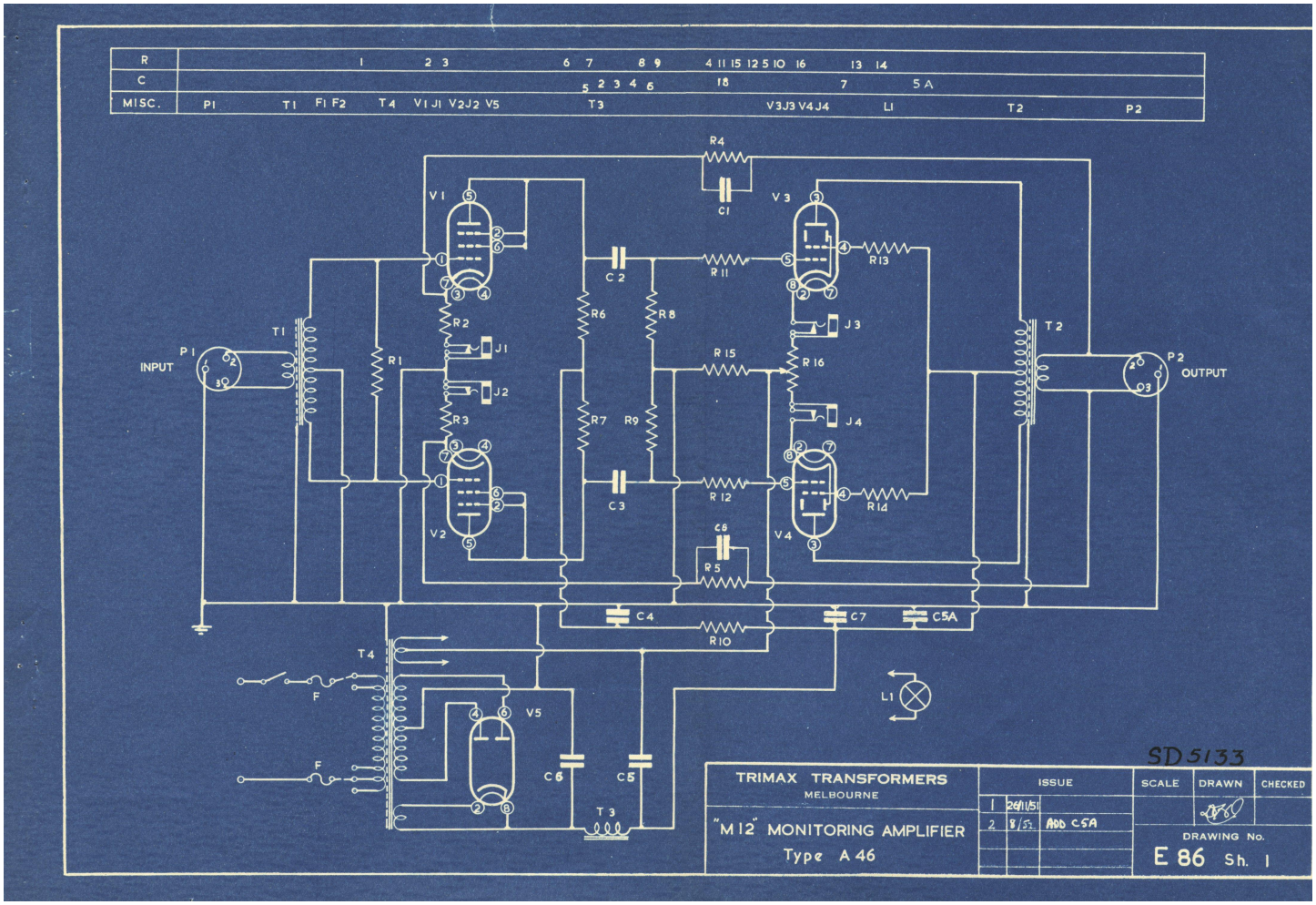
R 1 2 3 6 7 8 9 4 11 15 12 5 10 16 13 14
C 5 2 3 4 6 18 7 5A
MISC. P1 T1 F1 F2 T4 V1 J1 V2 J2 V5 T3 V3 J3 V4 J4 L1 T2 P2
R4
C1
V1
V3
R13
C2
R11
R2
R6
R8
J3
T1
P1
INPUT
R1
J1
R15
R16
T2
P2
OUTPUT
J2
R3
R7
R9
J4
C3
R12
R14
V2
V4
C8
R5
C4
C7
C5A
R10
T4
F
L1
V5
C6
C5
T3
TRIMAX TRANSFORMERS
MELBOURNE
"M12" MONITORING AMPLIFIER
Type A 46
ISSUE
1 26/11/51
2 8/52 ADD C5A
SCALE
DRAWN
CHECKED
DRAWING No.
E 86 Sh. 1
SD 5133