

TWIN 100-kHz POWER AMPLIFIER AM1/31

### Introduction

The AM1/31 amplifier accepts a 100-kHz sinewave input at a level of about 10 volts and provides two outputs for feeding either erase or bias current to tape recorder heads of suitable inductance.

The unit was originally designed as part of the RD4/4 Stereo Magnetic Tape Recorder. In this installation, two AM1/31 units are used, parallel fed with the output from a single oscillator Type OS2/37.

Each AM1/31 comprises a pair of tuned amplifiers designated the 'A' and 'B' circuits. These are fed from a common input through a resistance network containing three potential dividers each giving independent level control. One control is exclusively used to pre-set the signal level applied to the 'A' circuit; either of the other controls is selected by an integrally-mounted relay to fed an input signal to the 'B' circuit. Thus, the 'B' output level depends on separate pre-set adjustment and can therefore be changed by energising the relay from an external source. This facility allows the choice of alternative recording bias levels for different tape speeds, normally 15 and 7½ inches per second.

### Mechanical Details

The AM1/31 is constructed on a standard ISEP printed wiring board with a 25-way edge connector having coding pin positions 3, 9 and 15, which plugs into an ISEP nest. The level controls are of the multi-turn type and are mounted on the board front edge for easy access.

The unit requires a d.c. supply of +24 volts and a separate 24-volt feed for energising the relay as required.

### General Specification

Input level at 100 kHz $\pm$ 10 Hz	10 $\pm$ 0.3 volts
Input impedance with all level controls at max.	about 5 kilohms
Output currents at 100 kHz to normal loads	
Erase current (normally from 'A' circuit)	150 mA
Bias current (normally from 'B' circuit)	5 mA

### Normal loads

Erase head	Bogan PL115 (1.8 mH) or Branch and Appleby PEF-1.6-270 (1.6 mH)
Record head	Bogan PAH222 (7 mH) or Branch and Appleby P2-7-108 (7 mH)

### D.C. supply

Voltage	+24 volts
Current with 100-kHz signals specified	'A' circuit: 75 mA 'B' circuit: 15 mA

### Circuit Details

Fig. 1 is an annotated circuit diagram of the AM1/31 showing essential functions. Only the 'A' circuit is given in full. The 'B' circuit is identical, and is shown in skeleton form as an aid to explanation.

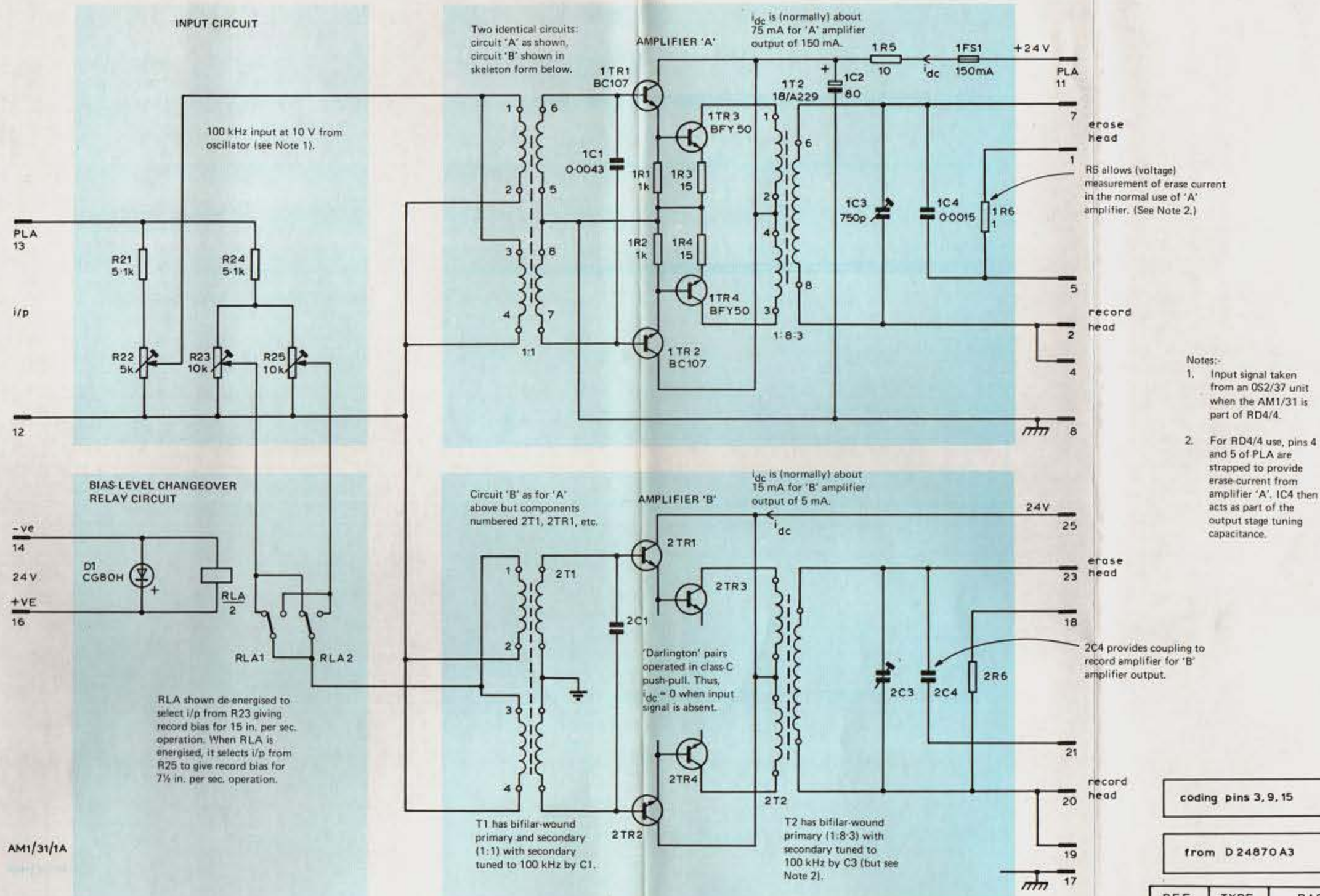
### Maintenance

#### D.C. Conditions

Because the AM1/31 amplifiers are operated in Class C, the d.c. supply current is virtually zero under no-output conditions. The values of supply current for normal loads are shown in Fig. 1 and in the specification.

#### A.C. Conditions

Details of a.c. tests on the AM1/31 are given in the appropriate Instruction for the parent equipment, e.g., the RD4/4.



- Notes:-
1. Input signal taken from an OS2/37 unit when the AM1/31 is part of RD4/4.
  2. For RD4/4 use, pins 4 and 5 of PLA are strapped to provide erase-current from amplifier 'A'. IC4 then acts as part of the output stage tuning capacitance.

coding pins 3, 9, 15

from D 24870 A3

REF	TYPE	BASE
1TR 1, 2	BC 107	
1TR 3, 4	BFY 50	

view on leads

Fig-1. Circuit of AM1/31