

STEREO P.P.M. PANELS PA8/288A AND PA8/288B

See also AM9/8, MF12/4, NE1/8

Introduction

The PA8/288 is an auxiliary panel for use with Type-D sound control equipment. It comprises a double peak-programme meter together with the associated amplifiers and controls. The programme meters indicate either the *A* and *B* signals or the *M* and *S* signals as selected by a key. A third position of the key connects zero-level tone to both meters for checking sensitivity.

The A and B versions of the panel differ in the following particulars:

PA8/288A has a meter with red and green pointers and indicates *A* and *B* signals with the key in the normal position.

PA8/288B has a meter with white and yellow pointers and indicates *M* and *S* signals with the key in the normal position.

The equipment is mounted on a CH1/37B chassis having overall dimensions of 7 by 4½ by 10½ inches (178 by 114 by 267 mm).

General Description

The double programme meter is mounted on the front panel and below it, from left to right, are the following controls:

- A non-locking pushbutton switch to increase the *S* signal by 20 dB.
- A three-position four-pole rotary switch to vary the input to the P.P.M. amplifiers by plus and minus 8 dB.
- Four screwdriver-operated controls for zero and sensitivity adjustments of the P.P.M.
- A three-position lever key to select the input to the P.P.M. The positions of this key are as follows:

Panel	Posn. 1	Posn. 2	Posn. 3
PA8/288A	Tone	<i>A</i> and <i>B</i>	<i>M</i> and <i>S</i>
PA8/288B	Tone	<i>M</i> and <i>S</i>	<i>A</i> and <i>B</i>

The printed boards of the ME12/4 P.P.M. amplifiers together with their output transformers are mounted back-to-back on a mounting plate across the middle of the chassis. On either side of the chassis are sub-assemblies consisting of an amplifier AM9/8 and a matrixing network NE1/8. The two input transformers for the ME12/4 amplifiers are mounted on a bracket at the rear of the chassis. A fuseholder for a 250-mA fuse in the 24-volt negative supply lead for the amplifiers is fitted on the rear panel of the chassis, and the fuseholders on the ME12/4 printed boards are shorted out. Above the meter there is a 6-volt 3-watt festoon lamp fitted to a holder on a hinged panel.

Circuit Description (Fig. 1)

A and *B* stereo inputs are taken to the inputs of the P.P.M. amplifiers via the key KA, and also to the two matrixing networks NE1/8, one of which produces an *M* signal ($A + B$), and the other an *S* signal ($A - B$). The networks are followed by level-raising amplifiers AM9/8 having preset variable gain controls to restore the loss of the matrixing networks. All four signals, as selected by the key KA, are taken to the inputs of the P.P.M. amplifiers. A separate feed of zero-level tone may be connected to the P.P.M. amplifiers, by operating the same key to *Tone*, for lining up the P.P.M. Connections are provided as shown in Fig. 1 for an external meter, and using external components, slugged operation selected by a switch is also possible.

If required, the internal meter can be wired to indicate externally derived *M* and *S* signals in place of

the NE1/8 outputs.

The input impedance of the PA8/288 at each programme input is about 30 kilohms at 1 kHz.

Test Procedure

Apparatus Required

- Tone Source TS/10
- Amplifier Detector ATM/1
- 24-volt d.c. stabilised power supplier
- 12-volt d.c. power supplier
- 2 McMurdo 24-way sockets

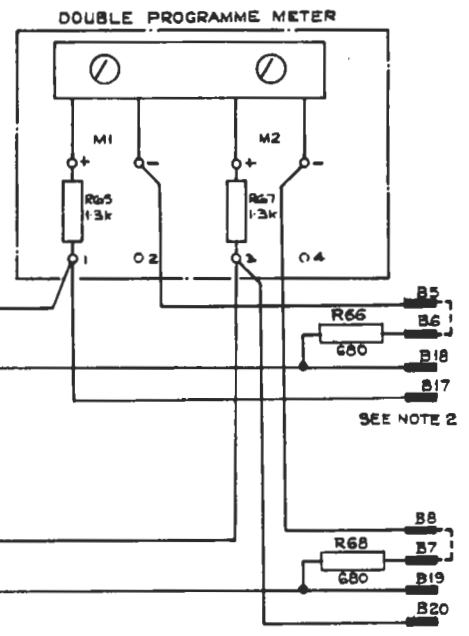
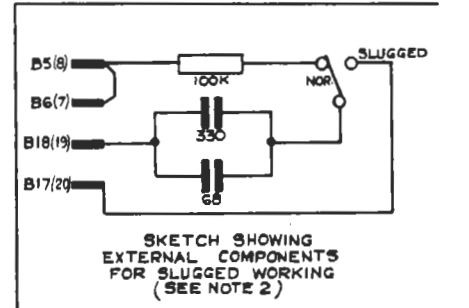
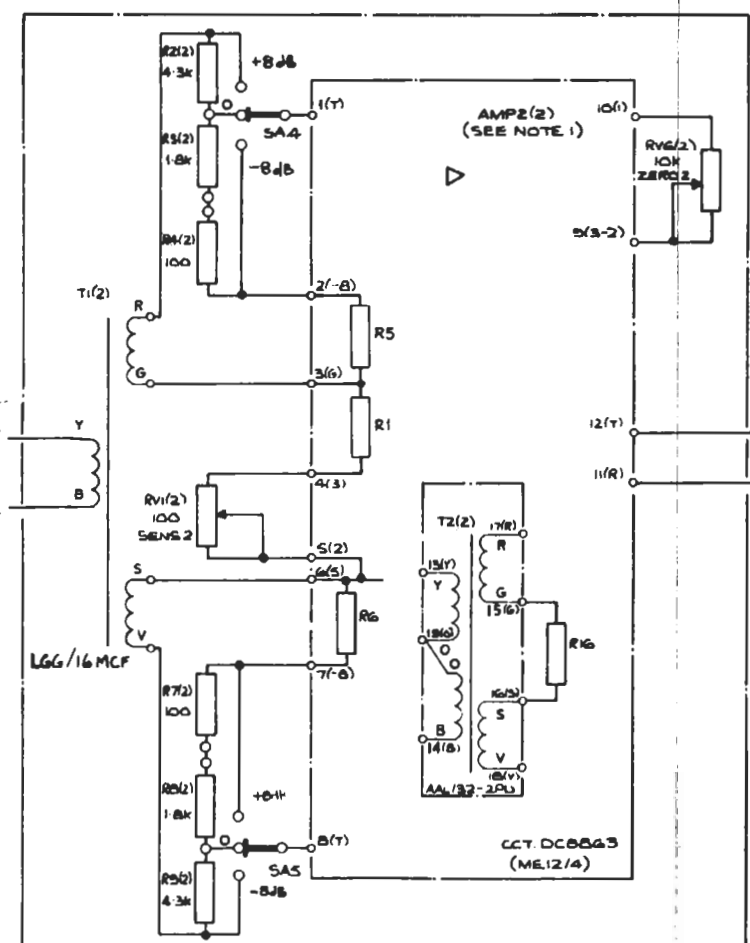
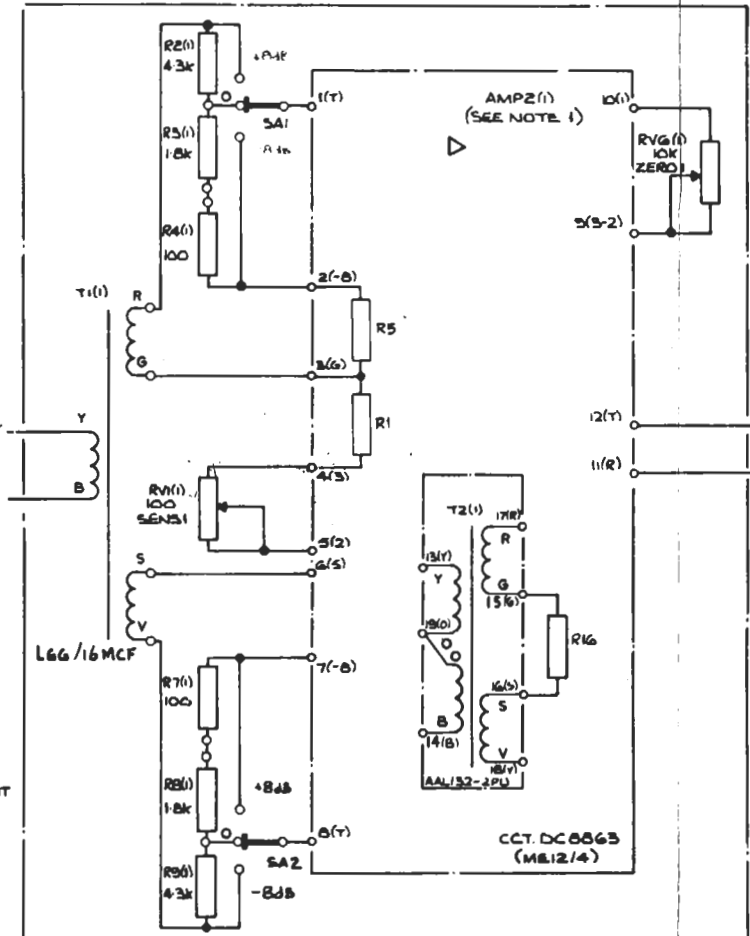
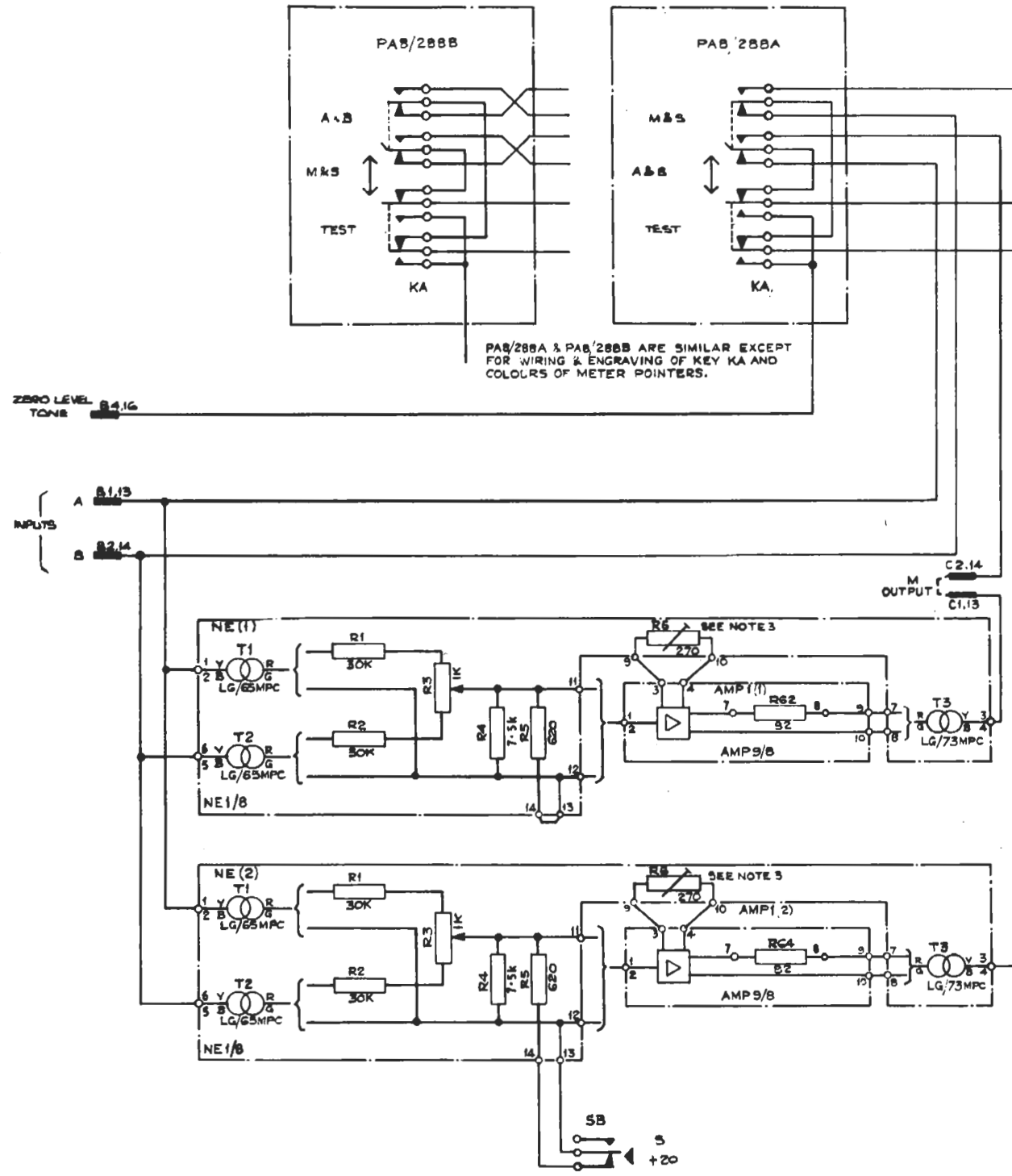
Connections

- Fit the sockets to plugs B and C on the rear of the chassis and strap pins on the sockets as follows:

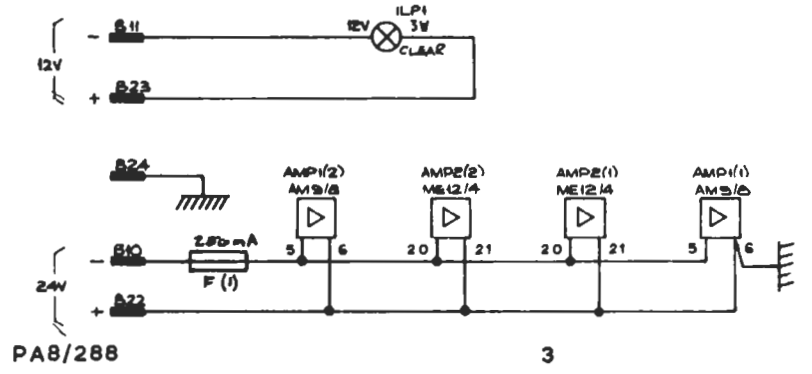
B5 to B6	B7 to B8
C1 to C2	C3 to C4
C13 to C14	C15 to C16
- Connect the 12-volt supply to tags B11, 23 to illuminate the meter scale.
- Connect the 24-volt supply to tags B10 (negative) and B22 (positive).

Tests

- Connect tone at zero level to tags B4, 16 and operate the key to *Tone*. Both meters should read 4.
- Check the adjustments of the P.P.M.s as described in the Instruction for the ME12/4.
- (a) Connect tone at -3 dB to tags B1, 13. The red pointer on the PA8/288A or the white pointer on the PA8/288B should read 3¼. Connect tone also to B2, 14. With the key in the '*A and B*' position both pointers should read 3¼.
(b) Operate the key to '*M and S*'. Adjust R6 on NE1/8 No. 1 until the red or white pointer reads 4 and the green or yellow pointer indicates zero. If the setting of the balance control R3 on NE1/8 No. 2 has been disturbed, reset this by adjusting for minimum output at tags C3, 15.
- Connect tone at a level of -3 dB to tags B1, 13, and in reversed phase to tags B2, 14. With the key in the '*M and S*' position adjust R6 on NE1/8 No. 2 until the green or yellow pointer reads 4 and the red or white pointer indicates zero. If the setting of the balance control R3 on NE1/8 No. 1 has been disturbed, reset this by adjusting for minimum output at tags C1, 13.
- Reduce the input level of the tone by 20 dB. Operate the '*S + 20 dB*' pushbutton and check that the green or yellow pointer again reads 4.



- NOTES
- FOR BOTH AMP2(1) & AMP2(2) THE RESISTORS R1, R5, R6 & R16 ARE PART OF THOSE AMPLIFIERS AND ARE SHOWN FOR REFERENCE ONLY
 - RPM CONNECTIONS:-
 (a) FOR NORMAL USE STRAP AS SHOWN.
 (b) FOR EXTENSION METERS REMOVE STRAPS B5-6 AND B7-8 AND CONNECT METERS ACROSS B5 & B8 AND B8 & B19
 (c) FOR SLUGGED OPERATION CONNECT EXTERNAL COMPONENTS AS SHOWN IN SKETCH ABOVE.
 - R6 - ON NE (1) TO BE ADJUSTED ON TEST SUCH THAT WITH IDENTICAL TONE AT -3 ON A & B INPUTS THE 'M' OUTPUT IS AT ZERO LEVEL.
 R6 - ON NE (2) IS SIMILARLY ADJUSTED BUT WITH THE 'B' INPUT TONE IN REVERSE PHASE TO THE 'A' INPUT.



from D22084 A2
parts list D22085 A4

Fig.1. Circuit of PA8/288A & B