

INTERCHANGE CONTROL PANEL PA8/320

Introduction

The PA8/320 is a panel unit consisting mainly of a number of pushbutton switches and indicator lamps, and was designed for controlling the PA17/166 continuity interchange panel associated with each of the Radio continuity suites in Broadcasting House, London^{1,2}. The PA8/320 and PA17/166 belonging to each continuity suite enable the main and STB programme outputs of the continuity, in mono or stereo, to be routed to one or more of six networks. Six Connect and six Release pushbuttons are provided on the PA8/320 for this purpose. Three banks of six indicator lamps confirm whether (i) the main output, (ii) the STB output, and (iii) facilities, have been connected between the continuity and the networks chosen. (If a network is already linked to one continuity, it is automatically prevented from being connected to a second. Full facilities can only be linked between a continuity and one network.)

The unit also includes relay circuits which cause GTS to be introduced in, or excluded from, the continuity output (via a PA8/300). The relays are energised from external circuits³ connected to the PA8/320, and one relay also acts when any Connect or Release button is operated on the PA8/320.

The PA8/320 belongs to the Type-D series of sound control equipment and is constructed on a CH1/37B chassis, 7 inches high and 4.5 inches wide, fitted with two 24-way McMurdo plugs.

Circuit (Fig. 1)

One set of contacts on each of the Connect and Release pushbutton switches is connected via PLA or PLB to the external equipment in which the connecting and releasing functions occur. The second sets of contacts on the pushbutton switches are arranged in a series chain, connected at one end to C1. If any switch is pressed, the second set of contacts on that switch connects C1, through the chain, to R1 in series with the negative 50 volts supply, and C1 charges. When the switch is released, C1 discharges through the coil of relay TST via the chain of switch contacts and D1. This momentarily operates relay TST.

Indicator lamps LP1 to LP18, showing the links established between the continuity and a network, are lit by current from external equipment fed via PLA and PLB. Zener diodes are shunted across some lamps to provide an alternative current path in the event of bulb failure.

Relay TST is energised, not only when a Connect or Release button is operated as described, but also by current from TR1 if PLB13 is connected externally to a zero volts supply point. In the existing system, this takes place twice briefly within the minute after each GTS occurs.

The contacts of relay TST close a circuit between PLB17 and PLB19 if relay TSS is energised, or between PLB18 and PLB19 if relay TSS is not energised. These two conditions have the effect of respectively switching on or off the addition of GTS to the continuity output as a result of interconnections between PLB17, 18 and 19 and the PA8/300 in the continuity equipment. Relay TSS is energised by an external connection between PLB15 and a zero volts point (on the Time Integrator and GTS Control Bay).

Testing

In addition to the more obvious tests which can be made from PLA and PLB, consisting of checking continuity through the switches and illuminating the lamps with a 6-volt supply (or a 50-volt supply through a 1200-ohm resistor), the relay circuits controlling GTS can be tested as follows:

1. Connect a 50-volt d.c. supply to PLA23 (negative) and PLA24 (positive), and connect a buzzer or a meter indicating continuity to PLB18 and PLB19.
2. Operate relay TST by connecting PLB13 to PLB14. Continuity should be obtained between PLB18 and 19.
3. Press each Connect and Release button. Continuity should be obtained briefly as pressure is withdrawn from each button.
4. Transfer the buzzer or meter to PLB17 and PLB19. Operate relay TSS by connecting PLB13 to PLB14. Continuity should be obtained.

References

1. Interchange Control Panel PA8/320. Designs Department Specification No. 3.489(69).
2. Continuity Interchange for Broadcasting House, London. Designs Department Technical Memorandum No. 3.111(71).
3. Time Controlled Units, Broadcasting House, London. Designs Department Technical Memorandum No. 3.50(60).

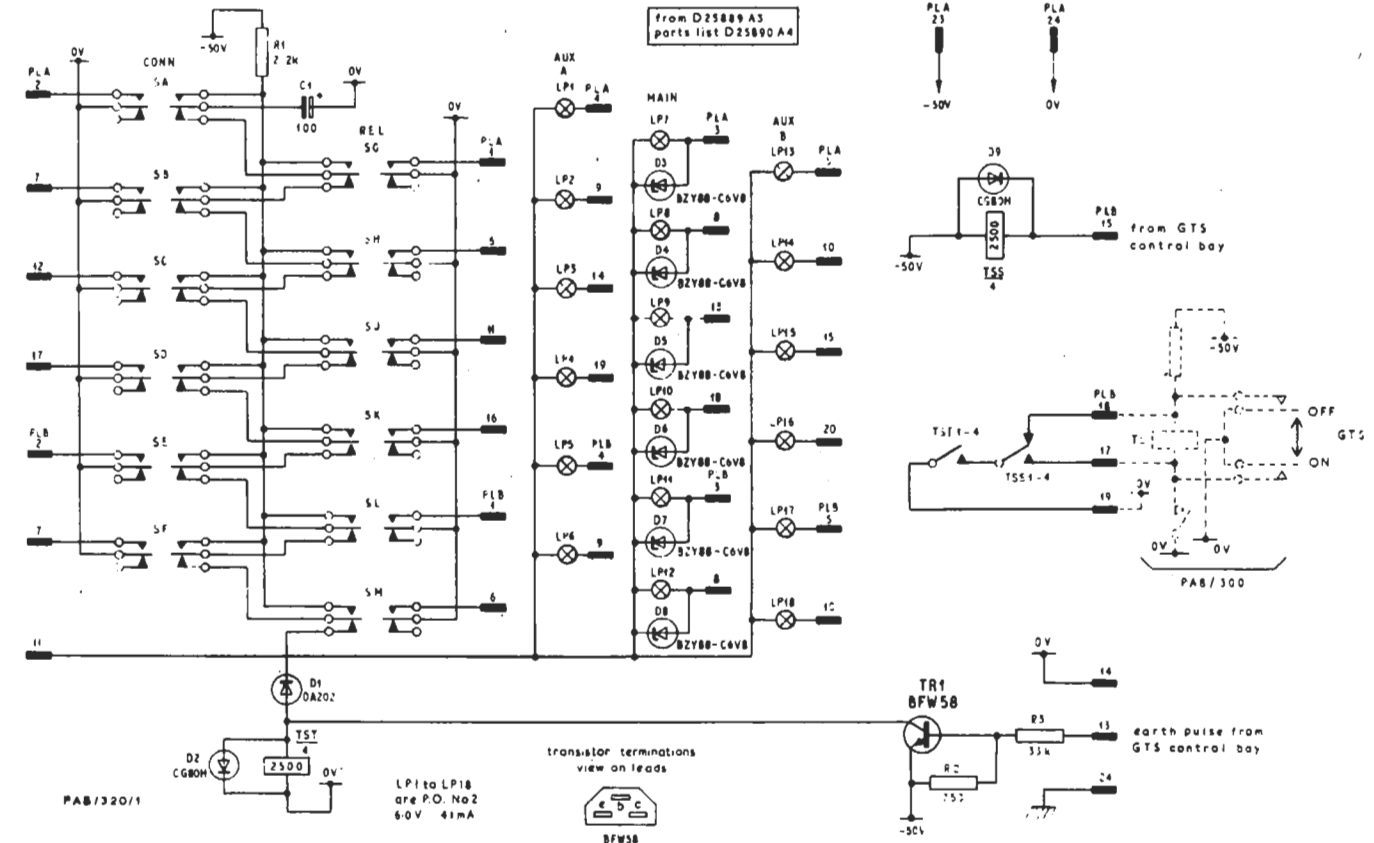


Fig. 1. Circuit of the PA8/320