

SECTION 5

STABILISED POWER SUPPLIERS PS2/5 AND PS2/5A

5.1 Introduction

The type-PS2/5A supplier is designed to provide the h.t. and valve-heater supplies for the Variable Resistance Frequency Modulator (V.R.F.M.) Drive Equipment type EP7/2, described in Instruction T.3. The PS2/5 equipment is the superseded version, still in use but out of production since the change of heater-supply arrangements covered by addition of the code suffix. Excepting this modification the two versions are the same, each providing a stabilised output of 260 volts when fed with unstabilised d.c. of 300 volts. The unstabilised input is normally obtained from a PS3/4A supplier; see Section 4 of Part 3.

The single heater-supply output of the PS2/5A is rated for 6.5 volts at 7 amperes, and taken from a transformer tapped for a.c. mains inputs between 200 and 250 volts. The PS2/5 supplier has two 6.3 volt outputs, one at 5 amperes and the other at 1.5 amperes, from a transformer to suit mains voltages in the 190—240 volts range.

These suppliers are constructed on the plug-in chassis type CH1/3.

5.2 Circuit Description

The h.t. stabilising in both versions is based on that of the PS2/2A equipment, dealing with h.t. only. They differ from this type in details, only a few being important enough to mention here as amending information relative to PS2/2A description in this Instruction.

5.2.1 PS2/5A (Fig. 5.1)

Some ways in which the PS2/5A circuit (Fig. 5.1) differs from the PS2/2A circuit is in:

- (a) Operation without an external reference voltage, at -200 volts for the PS2/2A.

- (b) Connection of the V5 trigger electrode to a separate voltage-divider, instead of sharing one with the grids of the cascode amplifier.
- (c) Lower values for two resistors, R32 and R26, associated with V5. These are 10 kilohms and 4.3 kilohms respectively, compared with 15 kilohms and 6.8 kilohms.
- (d) Use of R37 as an h.t. output load; this is an addition with respect to the PS2/2A circuit.

The last three items are modifications intended to make V5 function properly, by triggering for excessive rise of output voltage and not responding to momentary voltage surges which occur when the equipment is switched on.

5.2.2 PS2/5

This supplier has an h.t. stabiliser as in Fig. 5.1, but derives l.t. supplies through a typc-M.256 transformer. This has a slightly different primary-voltage range, already specified, and four secondary windings. Two windings serve the stabiliser-valve heaters by arrangements similar to those of Fig. 5.1. The other two feed externally through the multi-way connector, as follows:

- | | |
|--------------------|---|
| 5-ampere winding | Connected between common pins 4, 16 and 22, and the negative output rail (pins 9 and 12). |
| 1.5-ampere winding | Connected to pins 18 and 24. |

5.3 General Specification

Data applying to both versions of the equipment appear under headings 1.7 to 1.9 in Section 1 of Part 2, giving information about the PS2/2A supplier.

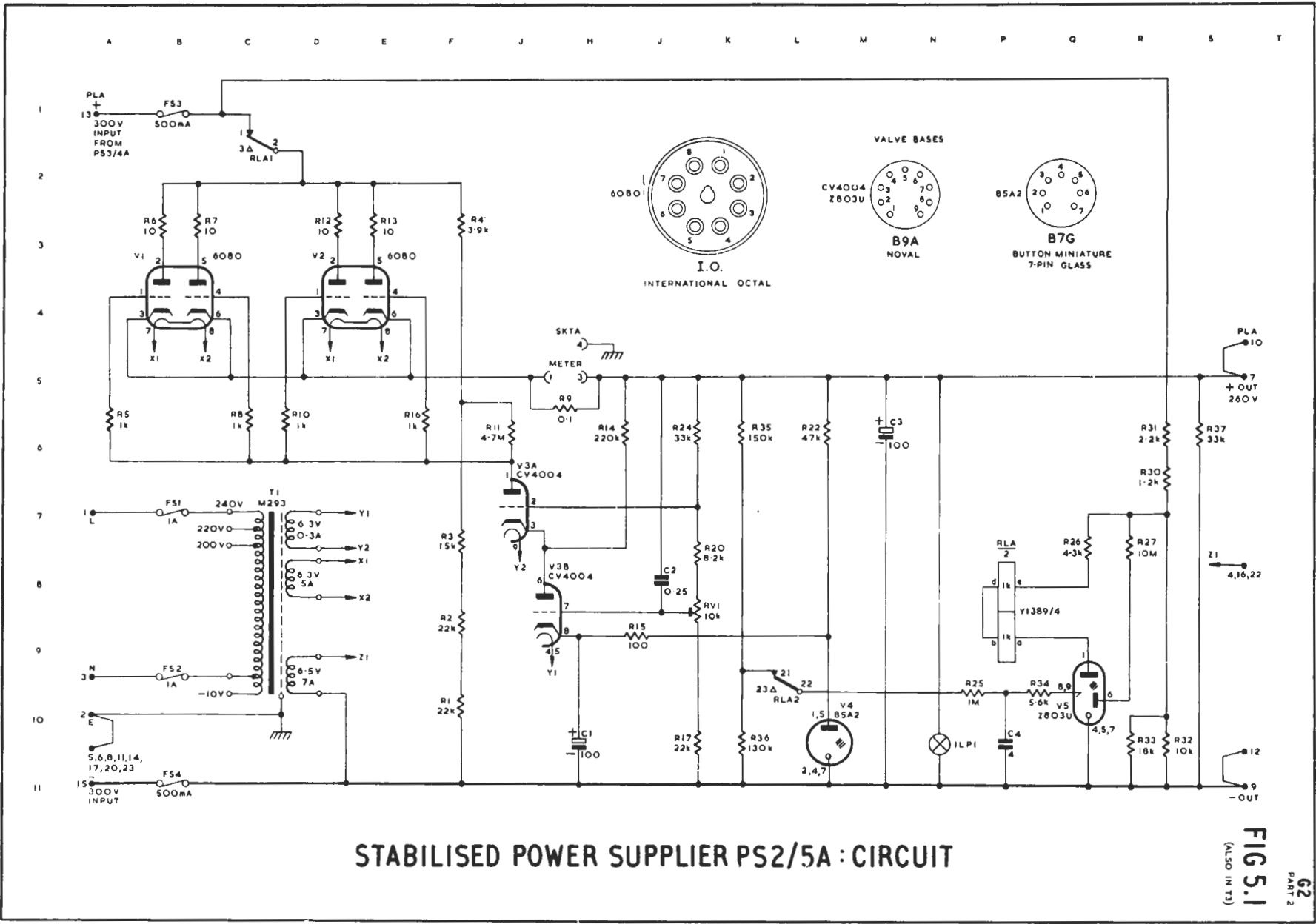
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Instruction G.2
Part 2, Section 5

COMPONENT TABLE: FIG. 5.1

Comp.	Loc.	Type	Tolerance per cent	Comp.	Loc.	Type	Tolerance per cent
C1	H10	Plessey CE874/1		R12	D3	Erie 8	10
C2	J8	Hunts B513K		R13	E3	Erie 8	10
C3	M6	Plessey CE874/1		R14	H6	Erie 9	10
C4	P10	Hunt B553		R15	J9	Erie 9	10
				R16	F6	Erie 9	10
				R17	J10	Erie 108	2
ILP1	N10	Neoflex ZGL/230		R20	J7	Erie 109	2
				R22	L6	Erie 8	10
R1	F10	Erie 8	10	R24	J6	Erie 108	2
R2	F9	Erie 8	10	R25	P9	Erie 9	10
R3	F8	Erie 8	10	R26	Q7	Erie 109	2
R4	F3	Erie 9	10	R27	R7	Erie 9	10
R5	A6	Erie 9	10	R30	R7	Painton P301A	5
R6	B3	Erie 8	10	R31	R6	Painton P301A	5
R7	B3	Erie 8	10	R32	R10	Painton P302A	5
R8	C6	Erie 9	10	R33	R10	Painton P302A	5
R9	H6	Erie 8 2.2 Megohm \pm 10 per cent carry winding of 22 S.W.G. Eureka cotton-covered wire to make a resistance of 0.1 ohm	2	R34	P10	Erie 9	10
R10	D6	Erie 9	10	R35	K6	Erie 108	2
R11	J6	Erie 9	10	R36	K10	Erie 108	2
				R37	S6	Painton P302A	5
				RV1	J8	Morganite LH/WN	20
				TI	C8	M293	

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STABILISED POWER SUPPLIER PS2/5A : CIRCUIT

FIG.5.1
 (ALSO IN 73)