

SECTION 1

POWER SUPPLIER PS1/1

1.1 Introduction

The PS1/1 unit is capable of delivering 50 milliamperes stabilised at 6.4 volts and 100 milliamperes at a nominal 10 volts. Additional to these d.c. supplies is an a.c. output rated at 6 volts, 50 milliamperes. The supplier was designed particularly for use as an integral part of the Picture Synchroniser equipments UNI/522 and UNI/528.

1.2 Circuit Description (Fig. 1.1)

The circuit diagram in Fig. 1.1 shows a conventional series-stabilised unit, with an unstabilised output intended primarily for relay operation. To reduce the value of r.m.s. current drawn from T1, a choke-input filter is used in conjunction with bridge rectifier MR1-MR4. The unsmoothed voltage from this rectifier is applied to diode MR9 which, by peak-rectifying action, produces a 17-volt (5 milliamperes) supply for the error-amplifier transistor TR2. The T1 winding connected as an a.c. output is means of obtaining a 6-volt, 50-c/s reference voltage for the applications mentioned under 1.1.

1.3 Test Procedure

The required test apparatus comprises:

Avometer Model 8.

Tektronix oscilloscope, type 533A.

A Variac, or alternatively an auto-transformer (10 watts) with 200-, 240- and 260-volt tappings.

Two 120-ohm (1.5-watts) resistors.

A 15-way Painton socket with mains lead.

(a) Initial and D.C. Tests

1. Connect the mains supply, at 240 volts, to pins 1 and 2 of the supplier and check that the

indicator lamp (ILP1) lights.

2. Measure the d.c. voltages across capacitors C1, C2 and C3. They should fall within limits given on the first line of the accompanying table.
3. Disconnect the mains input. Connect one 120-ohm resistor between pins 11 and 14, and the other between pins 11 and 15.
4. Restore the mains input and repeat the measurements as in item 2, with the input voltage adjusted to 200 volts, 240 volts and 260 volts. The figures obtained should be within limits set out in the last three lines of the table.

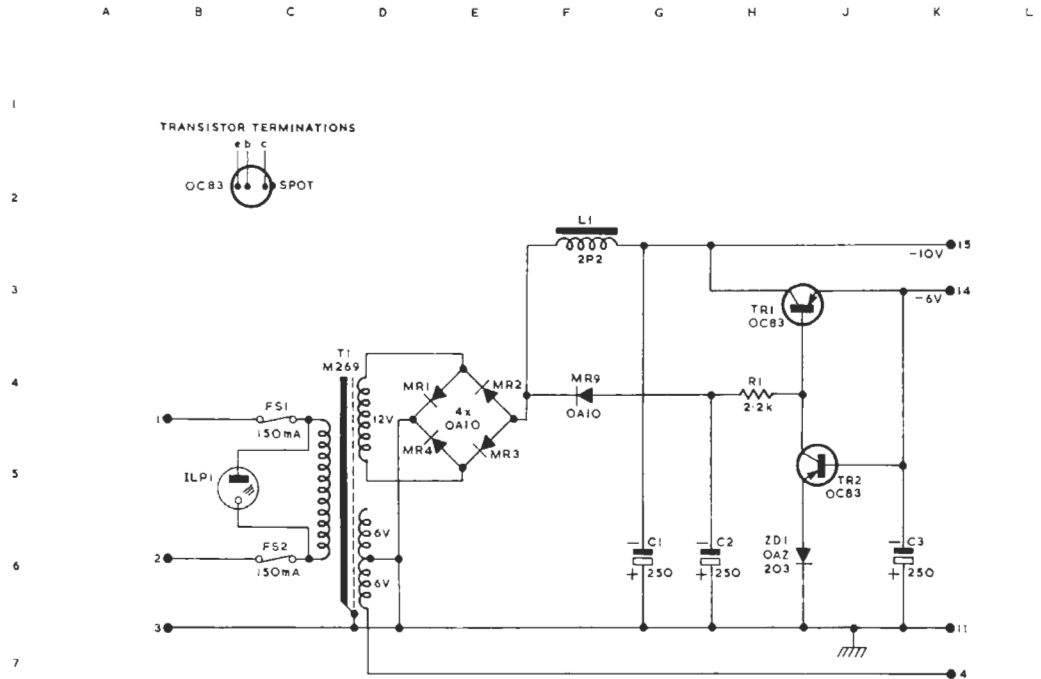
Input Volts	Condition	*Volts across:		
		C1	C2	C3
240	Unloaded	17—19	17—19	6.2—6.8
200	} Specified test loading	7.5—9.5	13—15	} As above ± 0.1 volt
240		9—11	16—18	
260		10—12	17—20	

*Measured with Avometer Model 8

5. Use the oscilloscope to measure the ripple voltage at pin 15. This should not exceed 15 mV p-p.
6. With the oscilloscope, measure the ripple voltage at pin 14. This should not exceed 3 mV p-p.
7. Measure the voltage at pin 4, which should lie within the limits 6.4 to 7.0 volts r.m.s.

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COMP	LOC	TYPE	TOLERANCE PER CENT
C1	G6	U.C.C. SC616/6LS 25V	
C2	H6	U.C.C. SC616/6LS 25V	
C3	K6	U.C.C. SC616/6LS 25V	
ILP1	B5	NEOFLEX ZGL230LST/RED M.E.S. NEON	
L1	F2	2P2	
R1	M4	ERIE 9 0.25W	10
T1	D5	M269	

POWER SUPPLIER PSI/1: CIRCUIT