

## POWER SUPPLIER PS2/68

### Introduction

This power supplier accepts a.c. mains and delivers a stabilised supply of up to 1.5 amperes d.c. at 50 volts. The output is interrupted if the maximum rated current is exceeded.

The unit is assembled on a Chassis Type CH1/12B with index-peg positions 20 and 37. The wiring is in conventional form.

### General Specification

<i>Power supply</i>	a.c. mains
<i>Output-supply potential</i>	50 V
<i>Output current</i>	
Maximum continuous	1.5 A d.c.
Maximum intermittent	2.0 A d.c.

### Circuit Description

The circuit diagram of the unit is given in Fig. 1. The basic circuit is conventional.

The control potential applied to the thyristor CR1 is adjustable by means of RV1 to exceed a critical value when the current in R4, R5, RV1 exceeds the maximum rated output of the unit; CR1 then conducts heavily, short-circuits the base of TR1 to the negative side of the supply and thereby reduces the output-supply potential of the unit virtually to zero.

D5 protects TR1, TR2 against back-e.m.f.s which might be developed in an inductive load by a cessation of the output-supply current.

RV1 is a pre-set control on the rear panel of the chassis. Lamps LP1 and LP2 are red (labelled *Mains*) and white (labelled *50 V*) respectively; both are on the front panel of the unit.

### Operational Note

When the thyristor-protection arrangement operates (as indicated by the extinction of LP2 but not LP1) S1 must be thrown to *Off* and not restored to *On* until after a lapse of at least ten seconds. In addition, of course, the cause of the tripping must be discovered and removed.

### Maintenance

#### Test apparatus required

- Avometer, Model 8
- 100-watt resistors: 33 ohms, 22 ohms.

#### Test Procedure

1. Turn RV1 to approximately mid-setting.
2. Apply a.c. mains to the unit and check that both pilot lamps glow.
3. Measure the output potential of the unit; it should be between 49 and 54 volts.
4. Measure the potential across C1 and if necessary vary the tapping points on the

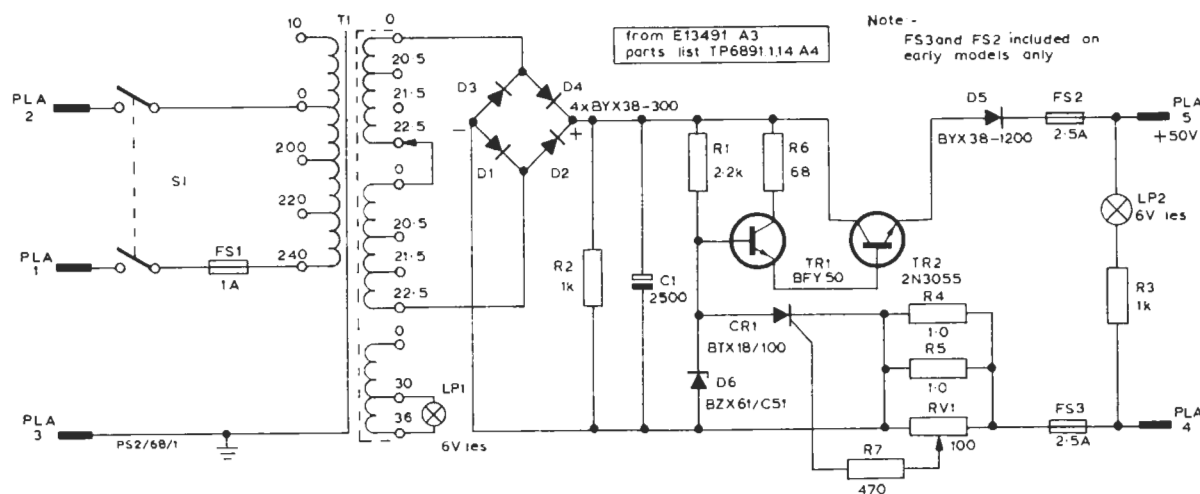


Fig. 1 Circuit of the PS2/68

- secondary windings of T1 to adjust this potential to between 62 and 64 volts.
5. Load the unit with 33 ohms, corresponding to an output current of 1.5A, and allow 20 minutes to elapse in order that the unit may attain a stable temperature.
  6. Repeat 3; the output potential should now be between 47 and 51 volts.
  7. Remove the 33-ohm load and connect one of 22 ohms, corresponding to an output current of 2.3 A.
  8. Turn RV1 slowly clockwise until the output supply is interrupted.
  9. Throw S1 to *Off*, remove the load, and allow at least ten seconds to elapse.
  10. Throw S1 to *On* and check that the full output potential is again present.
  11. Lock the spindle of RV1 by applying a small quantity of varnish.

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