Chapter 30

TRANSFORMER-RECTIFIER UNIT, FERRANTI, TYPE RD 7221

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LEADING PARTICULARS

Transformer-rectifier, Type RD 7221 ...	... *Ref. No. 5UB/7417*
Input	200*V*, 3 *phase*, 400 *c/s*
Output	112*V at* 3·4 *amp.*
Overall dimensions (in.)	$8 \times 3\frac{9}{16} \times 3\frac{1}{16}$

Introduction

1. This unit is designed to provide a nominal 112V d.c. output with a mean load of 3·4A from the closely regulated 200V, 3-phase, 400 c/s main supply of the aircraft. With a variation of ± 5V on the input combined with a change of load from 0·3A to 4A, the output voltage will remain within the range 105V to 120V.

DESCRIPTION

2. The main components of the unit are three transformers, six silicon rectifiers, four suppressor capacitors, a terminal block assembly, a 3-pole plug and a 2-pole socket. The components are housed within a rectangular aluminium alloy case, the plug and socket being mounted on one end. The cover is attached by eight 6 B.A. ch. hd.

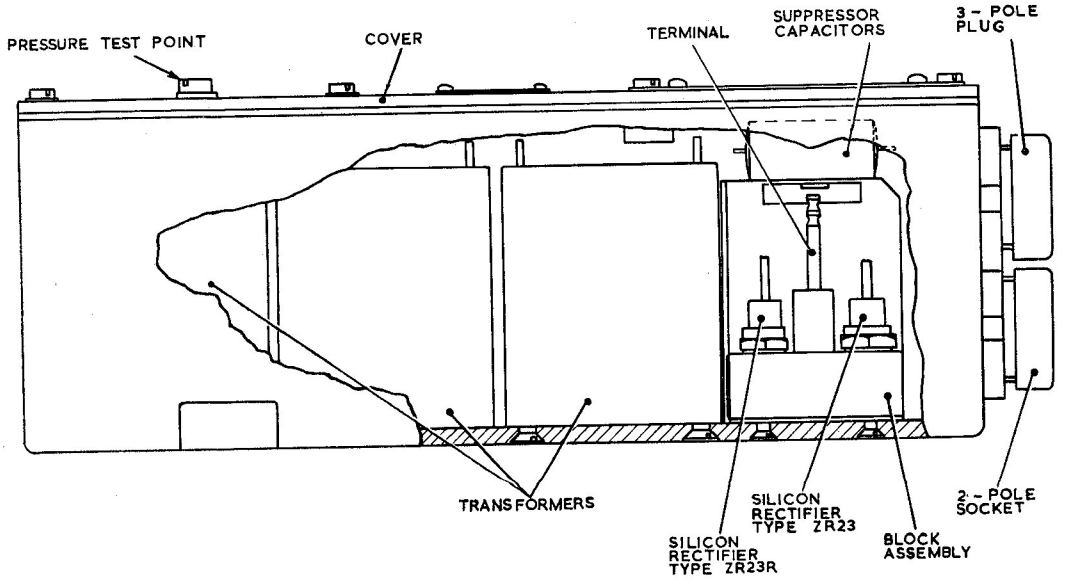

Fig. 1. Transformer-rectifier unit, Type RD 7221

screws each of which has a bond seal, and a rubber gasket between the cover and case seals the unit. A 4 B.A. ch. hd. screw and bond seal are located in the cover as a means of pressure testing the unit.

3. Each of the three single-phase transformers, Type RD7159, is secured to the bottom of the case by four 4 B.A. csk. screws. The terminal block assembly is secured to the bottom of the case by two 6 B.A. csk. screws. The block assembly consists of two aluminium alloy bars, mounted either side of three terminals, on a resin casting. The three silicon rectifiers, Type ZR23, are mounted on one aluminium alloy bar and the three silicon rectifiers, Type ZR23R are fitted on the second bar. The four suppressor capacitors are soldered to a carrier which is situated above the block assembly.

4. Four mounting lugs, each with a 0·201 in. dia. hole on centres 4·38×2·94 in. are provided for fixing the unit. A diagram of connections is shown in fig. 2. The 3-phase a.c. input is taken to the 3-pole plug (*Ref. No.* Z560060) and the d.c. output is taken from the 2-pole socket (*Ref. No.* Z560230).

SERVICING

5. Servicing is normally confined to ensuring that the unit is clean and free from damage. The insulation of the connecting leads should be examined for signs of fraying or deterioration, and all connections should be checked to ensure that they are secure.

6. The unit may be given a functional check to ensure that it conforms with the range of figures given in para. 1.

7. It will not normally be necessary to remove the cover during servicing. If, however, the cover is removed, care should be taken to seal the gasket and all screws which have been loosened with a suitable adhesive such as EC 847 (*Ref. No.* 33C/1534). A pressure test should then be applied by immersing the unit in a tank of water after fitting watertight protective caps to the plug and socket. With a suitable air supply, i.e. clean and free from moisture, connected to the 4 B.A. hole in the cover there should be no leaks when a pressure of 20 lb. per sq. in. is applied for one minute.

Insulation resistance test

8. Using a 500V insulation resistance tester, the insulation resistance should be measured between the output poles connected together, i.e. + and — short circuited, and each input pole in turn. The readings should not be less than 5 megohms.

Note . . .

Do not take an insulation resistance test between the output poles (+ and —) or between any pole and the frame as this voltage would cause damage to the suppressor capacitors.

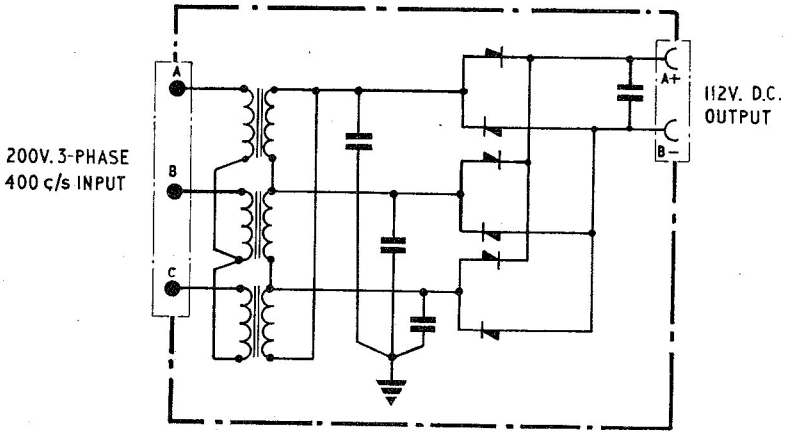

Fig. 2. Diagram of connections

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