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Chapter 10

FREQUENCY SENSITIVE UNIT, ROTAX, TYPE F 5301/1

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LEADING PARTICULARS

Frequency sensitive unit, Type F5301/1	Ref. No. 5UC/6553
<i>L.V. input</i>	104 volt a.c.
<i>M.V. input</i>	208 volt a.c.
<i>Frequency (de-icing load)</i>	233.5 c/s
<i>Overall dimensions—</i>	
<i>Length</i>	9.5 in.
<i>Width</i>	4.0 in.
<i>Height</i>	3.10 in. (approx.)
<i>Weight</i>	2 lb. (approx.)

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Introduction

1. The F5301/1 unit is designed to operate with the U3102 transformer rectifier unit, of which it forms a part, to maintain regulation of a 28-volt d.c. supply at alternator speeds and frequencies below 4,670 r.p.m., and 233.5 cycles per second respectively.

2. A rectifier MR16 has been introduced to the F5301 unit, which raises the Rotax code number to F5301/1; the rectifier MR16 is connected between the contacts of relay RL14 and earth, to act as a discharge path and so facilitate arc suppression.

DESCRIPTION

3. The unit (*fig. 1*) comprises the following components interconnected as shown in *fig. 2*, and secured to an aluminium anodized base-plate:—

Two relays RL10 and RL14; four rectifiers MR10, MR11, MR12, and MR16; four capacitors C3, C4, C5 and C6; with one inductance coil L1.

4. Electrical connection to the associated U3102 transformer rectifier unit is via a six pole plug connected to a six pole socket (Rotax N113886) in the F5301/1 unit.

5. The above component parts of the unit are fully insulated from the aluminium base-plate by glass board insulation and bakelite mouldings; cable leads, inter-connecting the associated parts to their respective terminal block connectors, are fed through the panel via rubber grommets.

Operation

6. In order to maintain good regulation of the 28 volt a.c. supply with alternator speeds and frequencies below 4,670 r.p.m. and 233.5 c/s respectively, the a.c. input of the booster transformer (P3102) must be taken at frequencies below 233.5 c/s from a lower voltage than that given by the 208 volt alternator winding.

7. This is effected by transferring the input to the nominal 104 volt winding of the alternator by means of two contactors. These contactors are interlocked, one taking its a.c. input from the alternator 208 volt winding and the other from the alternator 104 volt winding.

8. Both a.c. outputs feed the primary winding of the booster transformer via the transducer a.c. windings. At frequencies below 233.5 c/s, the frequency sensitive unit

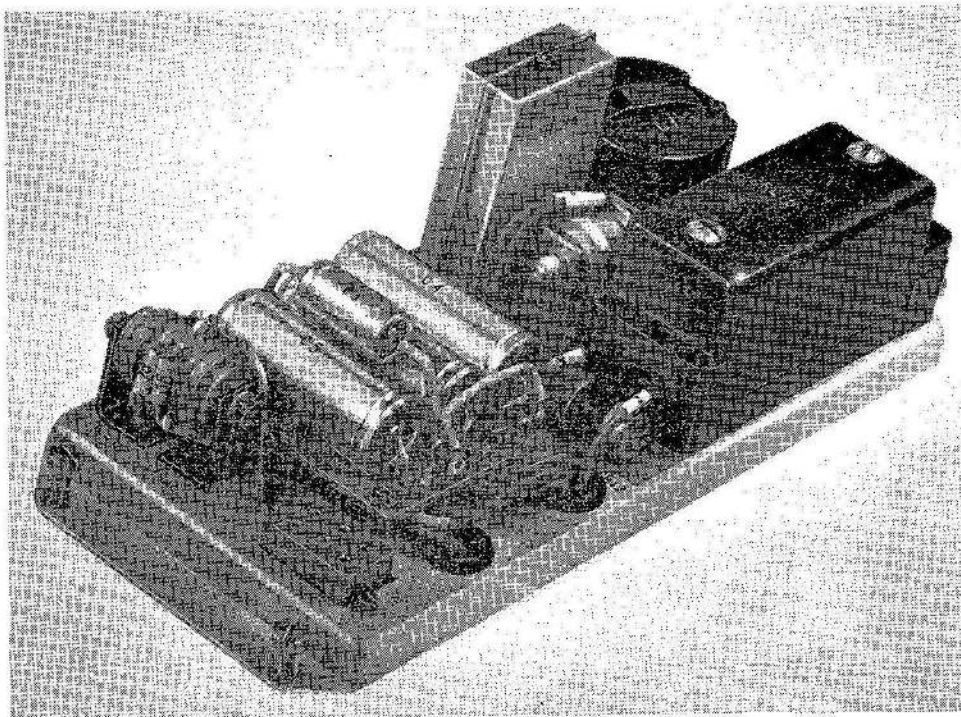


Fig. 1. Frequency sensitive unit, Type F5301/2

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