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Chapter 11

PROTECTION UNIT, ROTAX, TYPE F7302

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LEADING PARTICULARS

Protection unit, Type F7302	Ref. No. 5UC/6590
<i>Time delay</i>	5 seconds
<i>Overall dimensions:—</i>	
<i>Length</i>	6.7 in.
<i>Width (including mounting feet)</i>	6.5 in.
<i>Height</i>	2.5 in.
<i>Weight</i>	11 lb. 8 oz.

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Introduction

1. The Type F7302 unit provides protection against the unbalance of the three phases of an a.c. system. The unit operates from a d.c. supply which is derived from the a.c. busbar, through the transformer rectifier unit.

DESCRIPTION

2. The unit incorporates a bridge rectifier circuit, a relay and a thermal delay. The components are mounted in a pressed metal case with the six terminals brought out to a block, fitted to one side panel. The top and two side panels of the case have apertures to provide adequate ventilation and cooling. The four mounting holes are drilled through two metal bars which run beneath the width of the unit and support the base.

Operation

3. The F7302 unit functions on the principle that a rectified a.c. voltage possesses an inherent ripple which is increased if the phases of the a.c. supply become unbalanced. The unit senses this increase in ripple and employs it to operate a relay.

4. Reference should be made to the circuit diagram shown in fig. 3. The rectified a.c. supply is derived from the a.c. busbar, through the transformer rectifier unit, and passes through terminals 1 and 2 of the unit. The capacitor C1 effectively blocks the d.c. but allows the a.c. ripple voltage to pass. This small a.c. is rectified by MR1 and the resultant d.c. fed to the coil of relay RL1. The potentiometers RV1 and RV2 are used to adjust the

voltage level at which the unit operates and should be set as outlined in para. 8. Should the phases of the a.c. on the busbar become unbalanced, the ripple voltage, and consequently the d.c. supply to the coil of RL1, is increased. Relay RL1 operates, connecting a 28 volt d.c. supply from terminal 3 to the heating element of the thermal delay, L1. After five seconds the delay operates, connecting the 28 volt d.c. supply from terminal 3 to the coil of a trip relay in the associated generator. The five seconds delay allows sufficient time for fuses to operate and isolate a faulty unit before the F7302 renders the complete system inoperative.

INSTALLATION

5. The unit should be mounted in a position that ensures the maximum flow of air in the direction of the terminal block. The top and side covers which have apertures should not be closer than one inch to any adjacent surfaces. The unit should be attached by 2 B.A. bolts through the four fixing holes which are 5.875 in. and 3.875 in. apart. The electrical connections should be made through the six terminal lugs which are attached to 6 B.A. bolts.

SERVICING

6. Servicing is normally confined to ensuring that the unit is clean and free from damage. All internal and external nuts and bolts should be checked for tightness. The insulation of the connecting leads should be examined for signs of deterioration and the connections checked to ensure security.

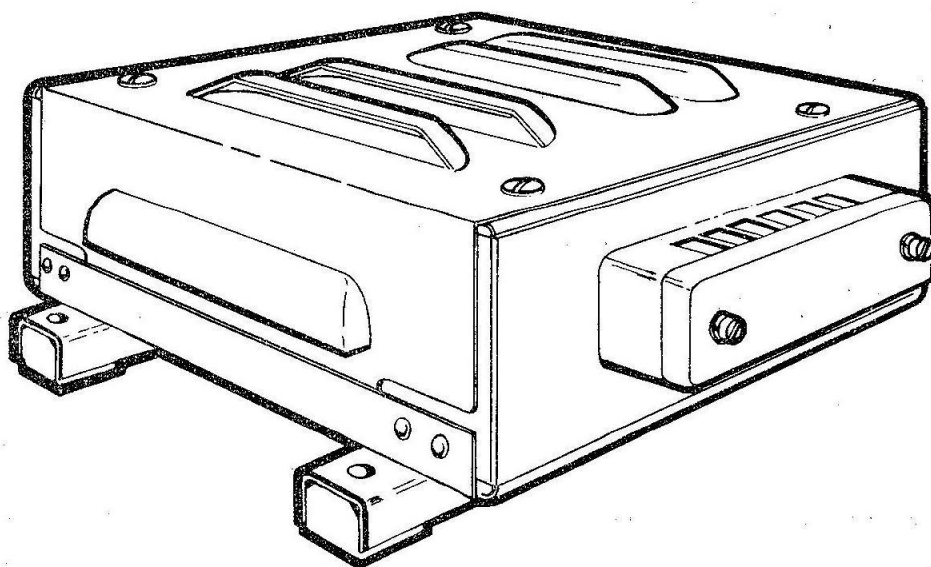


Fig. 1. General view of Type F7302

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