

Chapter 1

RELAYS

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Introduction

1. The range of relays and magnetic switches used in aircraft is extensive, and designs may vary considerably. For this reason, therefore, the substance of this chapter must necessarily be confined to general information only.

2. In many instances, however, a particular relay may be one of a series which are modifications of a basic type. For example, the relay, Type F1706, may be a modification of a basic F1701 design, the series being referred to as the "F1700 series". Under such circumstances, a subsequent chapter in this Section will give details of a general nature as applicable to the F1700 series, while individual relays within the series will be described in Sect. 3 or 4 of A.P.4343C, Vol. 1, Book 2.

3. The Sections in A.P.4343C, Vol. 1, Book 2, are differentiated according to the main circuit controlled. Sect. 3 covers those relays which have contacts for the control of 28-volt d.c. circuits, and an operating coil suitable for 28-volt d.c. operation; in Sect. 4 are those relays which have main contacts for the control of 112-volt d.c. circuits or 208-volt a.c. circuits, and an operating coil suitable for 28-volt or 112-volt d.c. operation; there may also be relays with 28-volt d.c. contacts suitable for 112-volt d.c. operation.

DESCRIPTION

4. Whilst the design of relays may differ considerably, it will be found that essentially the design is such that a solenoid is so

mounted to permit it to attract an armature when the solenoid is energized. The armature will either carry the moving elements of a switch assembly or will be suitably shaped to operate the switch elements. Fig. 1 to 6 show typical examples of simple relays and their associated circuit diagrams.

5. By this means, the control of certain circuits employing heavy currents may be effected from a remote position by a small control switch. The control switch (together with its associated wiring) carries only a small current, allowing the switch to be mounted in the most convenient position for the operator.

6. The switches of the relay unit are connected directly in the cables to the equipment taking heavy current and the unit may be mounted in any position in the heavy cable run. The use of heavy cables to the control point is thereby obviated, thus assisting in keeping the weight of wiring in aircraft to a minimum.

SERVICING

7. Normally, relays require very little attention other than ensuring that the switch contacts are clean and in a serviceable condition. Individual chapters in A.P.4343C, Vol. 1, Book 2, Sect. 3 and 4, will give details of specific requirements and tests for particular relays.

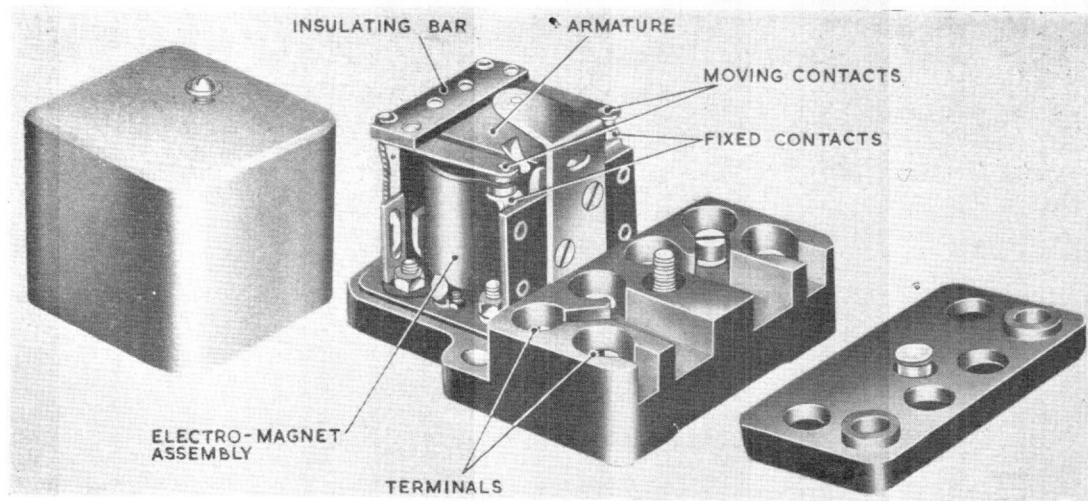


Fig. 1. Relay, type Q, No. 1

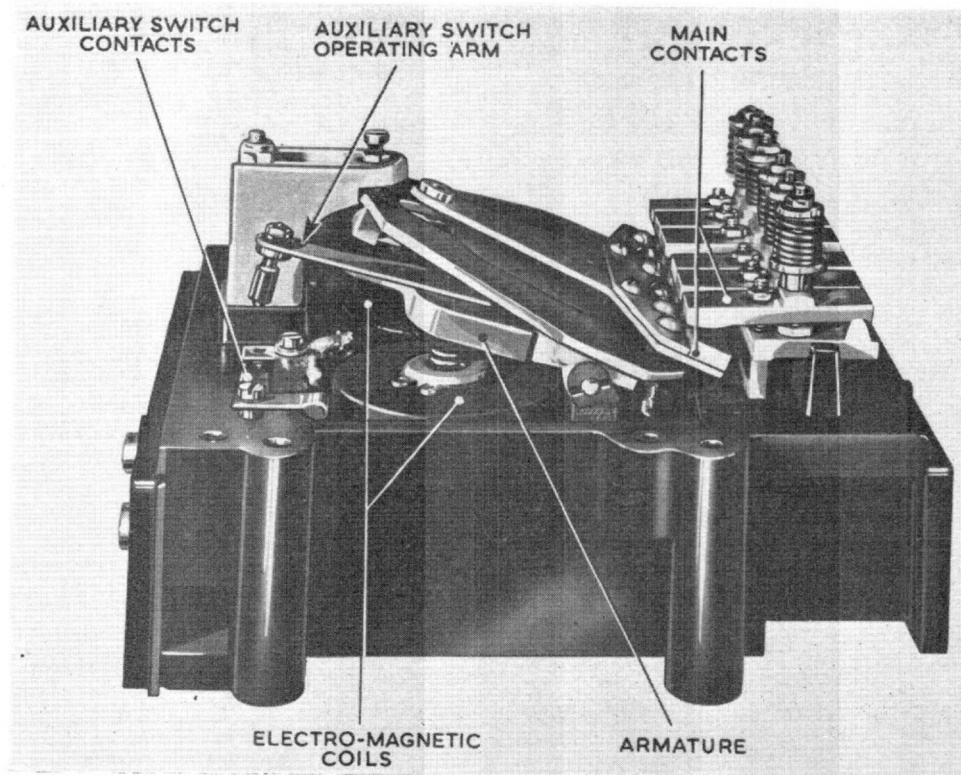


Fig. 2. Relay, Type R

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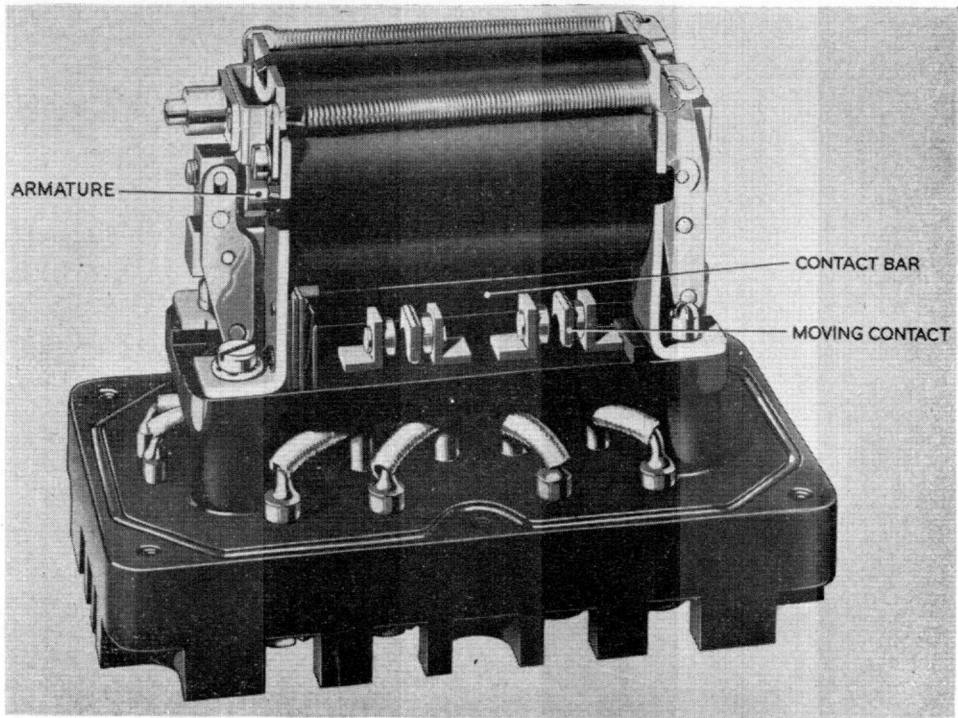


Fig. 3. Relay, Type S2

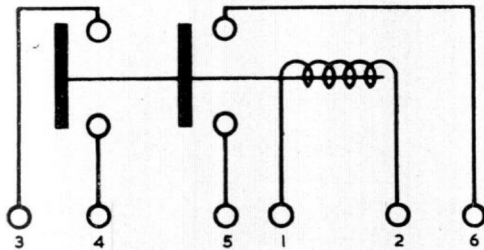


Fig. 4. Circuit of Type Q relay

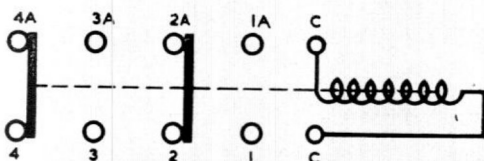


Fig. 5. Circuit of Type S2 relay

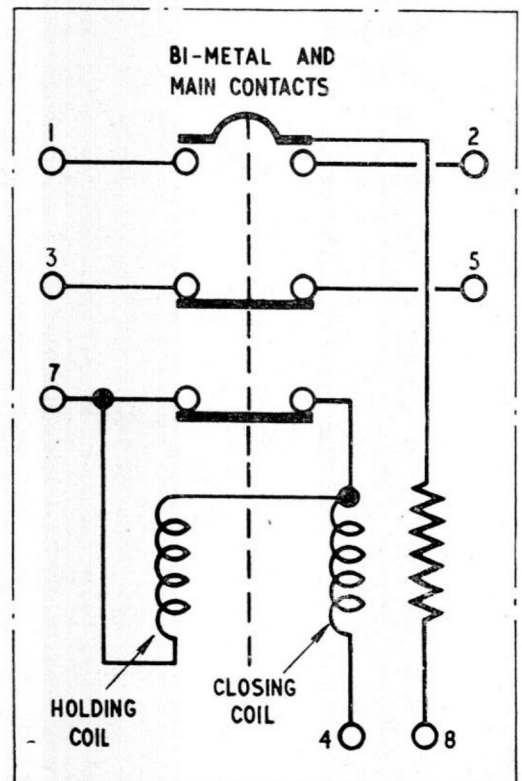


Fig. 6. Circuit of Type R relay

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