Chapter 67

MAGNETIC RELAY SWITCH, THORN, TYPE T100B

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LIST OF ILLUSTRATIONS

LEADING PARTICULARS

Magnetic relay switch, Type T100B ...	*Stores Ref. 5CW/5986*
Operating voltage	*28 volts d.c.*
Minimum pull-in voltage	*18 volts d.c.*
Drop-out voltage	*2 volts d.c.*
Current rating at 28 volts d.c.—	
Main contacts	*100 amp.*
Auxiliary contacts	*1 amp.*
Operating current	*0·33 amp.*
Coil resistance at 20 deg. C.	*54 ohms ± 8 per cent*
Ambient temperature range	*—75 deg. C. to +100 deg. C.*
Overall length	*4·68 in.*
Diameter of body	*2·75 in.*
Mounting flange	*3 in. square*
Weight	*2 lb. 13 oz.*

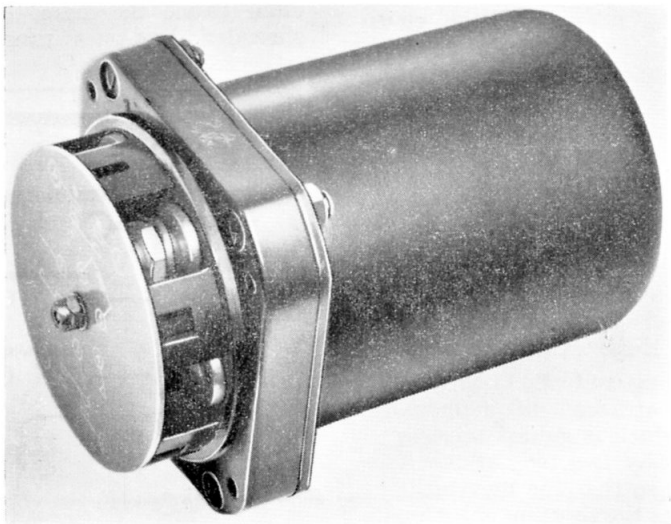

Fig. 1. Magnetic relay switch, Type T100B

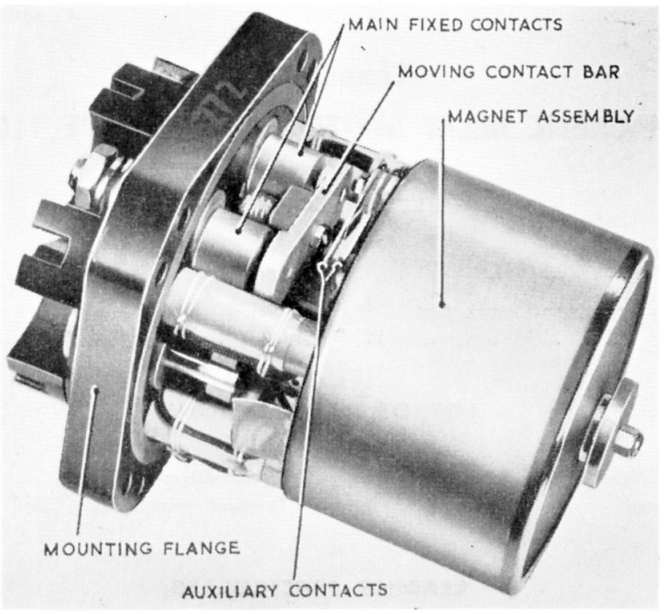

Fig. 2. Relay with cover removed

Introduction

1. The relay, Type T100B (*fig.* 1) is a sealed, double pole, normally-open unit originally designed for use on aircraft in conjunction with actuators.

2. The main contacts can carry up to 100 amp. at 28 volts d.c. continuously. Two pairs of auxiliary contacts are fitted, rated at 1 amp. at 28 volts d.c., which can be used for subsidiary indicator or control switching.

DESCRIPTION

3. A view of the relay with the cover removed is given in fig. 2. The mechanism incorporates three main sub-assemblies, the terminal block and fixed contact assembly, the moving contact assembly, and the magnet assembly. Since the mounting flange is an integral part of the terminal block, all the other assemblies are mounted on it.

4. The magnet assembly is of the solenoid type with a conical faced plunger, and is mounted on the terminal block with four pillars. The fixed and moving contact assemblies occupy the intervening space.

5. The main moving contacts, of the double break type, are attached to a moulded mounting plate, which is guided relative to the fixed contacts by two pins attached to the top moulding, so that the movement of the armature causes the shorting of each pair of fixed contacts. The auxiliary contacts are mounted on the magnet assembly.

6. The case is an aluminium spinning, with a square flange at the open end for fixing on to the terminal block. Sealing between these two parts is achieved by a silicone rubber gasket.

7. Electrical connection is made to four main terminals arranged around the outside of the circular terminal plate. These are $\frac{1}{4}$ in. B.S.F. studs suitable for one Pren 100 lug.

8. Six auxiliary terminals are arranged in a circle inside the main terminals, with the shrouded lead-outs running between the

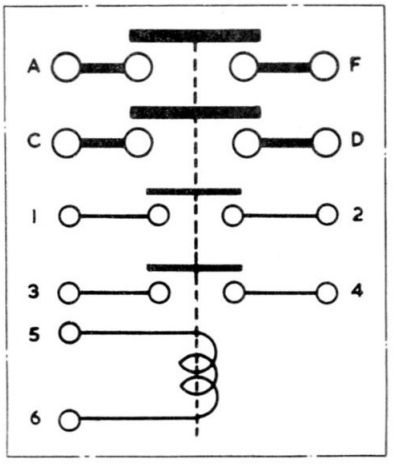

Fig. 3. Circuit diagram

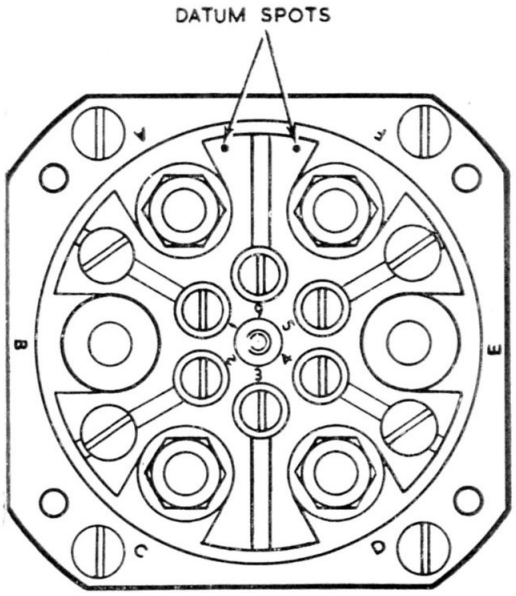

Fig. 4. Terminal arrangement

latter. These are combined 4 B.A. screw and washer terminations, for connection to the coil and the auxiliary contacts.

9. A circuit diagram of the connections is given in fig. 3, and the terminal arrangement is shown in fig. 4. All terminals are shrouded, and the terminal cover carries a diagram of the terminal connections. Correct orientation of the cover is indicated by two white dots on the cover, which must be aligned with corresponding dots on the terminal block.

INSTALLATION

10. The relay may be mounted in any plane in central aircraft regions. It is fixed by means of the mounting flange by four 4 B.A. screws.

SERVICING

11. Since this relay is a sealed unit, the cover should not be removed. The only permissible servicing is a general inspection for freedom from damage and security of connections.

Testing

12. The relay may be tested for correct functioning in accordance with the operating figures given under Leading Particulars.

13. The insulation resistance between all metallic parts not electrically connected should be tested with a standard 250-volt insulation resistance tester, with the relay in operated and released conditions. The reading should not be less than 20 megohms.

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