

DESCRIPTION AND MAINTENANCE INSTRUCTIONS

PROPER APPLICATION OF B-4 AND B-8 TYPE RELAY SWITCHES

(This EO replaces Interim Publication)

1 The type B-4 and B-4A relay switches are designed to provide a means of remotely controlling the opening and closing of the battery circuit and are intended for use in only continuous duty circuits. The contacts of the B-4 and B-4A relay switches close on 18.0 volts direct current and open at 7.0 volts +0, -5.5 volts direct current. The B-4 relay switch is capable of making 800 amperes and breaking 200 amperes at 24.0 volts direct current at the rate of one second "ON" and 4 seconds "OFF" for 50 operations and is capable of making and breaking 200 amperes for 50,000 operations. The B-4A relay is capable of making 1200 amperes and breaking 200 amperes at 29.0 volts direct current for 50,000 operations at a rate of 0.25 seconds "ON" and 1.25 seconds "OFF" and is capable of making and breaking 2000 amperes at 29.0 volts instantaneously for 50 operations. The weight of the B-4 relay is 2.35 pounds and the maximum weight of the B-4A relay is 1.25 pounds. The mounting brackets of the B-4 and B-4A relays are identical. (See figure 1.)

2 The type B-8 and B-8A relays are de-

signed to provide a means of remotely controlling the opening and closing of intermittent duty circuits such as starters, propeller feathering, hydraulic pump, and all retracting motors. The main contacts of the B-8 and B-8A relays close at a maximum of 7.5 volts direct current and open at 3.0 volts +0; -2.5 volts direct current. The main contacts of the B-8 relay are capable of making 1000 amperes and breaking 250 amperes at 18.0 volts on make and 4.0 volts direct current on break for 50,000 operations at a rate of 2 seconds "ON" and 5 seconds "OFF" without welding of contacts. The B-8A relay is capable of making 1200 amperes and breaking 200 amperes at 29.0 volts on make and 5.0 volts direct current on break for 50,000 operations at a rate of 0.25 seconds "ON" and 1.25 seconds "OFF" and is also capable of making and breaking 2000 amperes instantaneously for 50 operations. The weight of the B-8 relay is 2.35 pounds and the maximum weight of the B-8A relay is 1.25 pounds. The

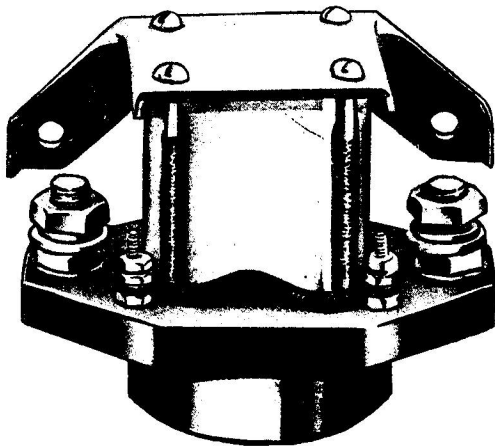


Figure 1 B-4 Relay Switch

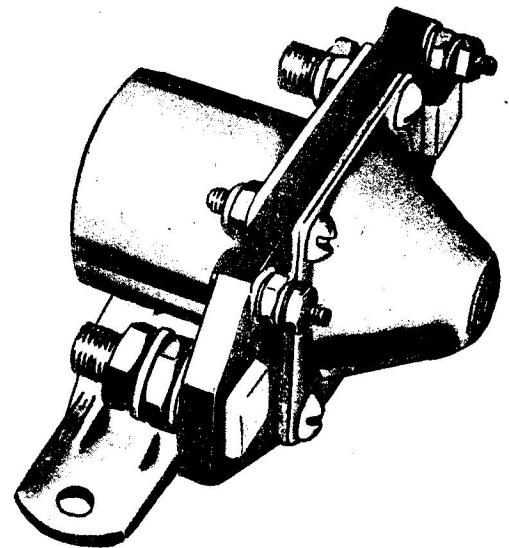


Figure 2 B-8 Relay Switch

mounting brackets of the B-8 and B-8A relays are identical. (See figure 2.)

3 Satisfactory operation of these relay switches cannot be maintained if they are incorrectly used or improperly serviced. To reduce maintenance time, service personnel will remove relay switches that are incorrectly used and install the proper relay switch. (Reference paragraph 6.)

4 Failure of the relay switches may result if an attempt is made to check the electrical equipment when the batteries are not charged at least to a specific gravity of 1.275. If the power requirements of the equipment being checked should be high, the battery potential may drop below the value required to keep the relay closed. The circuit will then be opened and immediately the potential rises and the relay again closes the circuit. This cycle of operation is completed at a rapid rate and will continue until the load is removed or the operating switch is turned to the "OFF" position. THE ARCING WHICH OCCURS DURING THIS RAPID RATE OF OPERATION WILL CAUSE THE RELAY TO FAIL IN A SHORT PERIOD OF TIME.

5 Aircraft being delivered have the B-4 or B-4A and B-8 or B-8A relay switches installed. The B-4 or B-4A relay switch is installed in the battery circuit and in any other circuit which remains energized for extended

period of time. The B-8 or B-8A relay switch is installed where intermittent operation occurs; that is, starter, landing gear, flap, propeller feathering, bomb bay doors, hydraulic pump, etc, motor circuits.

6 Any misapplication of relay switches from paragraph 5 will be corrected by removing the improperly installed relay and making the proper installation.

ALL 24 VOLT AIRCRAFT

CONTINUOUS DUTY CIRCUITS

1st Choice - B-4A Relay Switch
2nd Choice - B-4 Relay Switch

INTERMITTENT DUTY CIRCUITS

1st Choice - B-8A Relay Switch
2nd Choice - B-8 Relay Switch

NOTE

Interchangeability of B-4 and B-8 type relays is not permitted. Any misapplication will be corrected as outlined in paragraphs 1 and 2.

ISSUED ON AUTHORITY OF THE CHIEF OF THE AIR STAFF

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