

See AP 113D-1002-1

## Chapter 3

### GENERATOR CONTROL SWITCHBOX, TYPE 1B

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#### LEADING PARTICULARS

<i>Type 1B (B.T.H. LKF-B2/3)</i> ... ..	<i>Ref. No. 5CW/4646</i>
<i>Type 1B, No. 2 (B.T.H. LKF-B6/2)</i> ... ..	<i>Ref. No. 5CW/5783</i>
<i>Type 1B, No. 3 (B.T.H. LKF-B8/1)</i> ... ..	<i>Ref. No. 5CW/6006</i>
<i>Overall dimensions—</i>	
<i>Length</i> ... ..	5¼ in.
<i>Width</i> ... ..	4½ in.
<i>Height</i> ... ..	2⅜ in.
<i>Weight</i> ... ..	2¾ lb.

#### Introduction

1. The generator control switchbox, Type 1B, is incorporated in various wide speed range generator systems. The use of appropriate shunt resistors in a particular system enables the switchbox to operate in conjunction with any of the variously rated generators included in the wide speed range.

2. The unit incorporates six relays, four of them polarized, with associated resistors, rectifiers and a capacitor. The switchboxes, Type 1B, No. 2 and 3, represent later stages of modification from the original Type 1B; the main points of difference are as follows:—

- |                                 |  |
|---------------------------------|--|
| Type 1B,<br>No. 2<br>(LKF-B6/2) | Re-wound over-voltage relay (now LAA20—B7).<br>Modification to other polarized relays. |
|                                 | Introduction of rectifier 6 across field tickler relay contacts.                       |
|                                 | Deletion of 2,200 and 4,000-ohm resistors.   |
| Type 1B,<br>No. 3<br>(LKF-B8/1) | Provision of melamine case for polarized relays.                                       |

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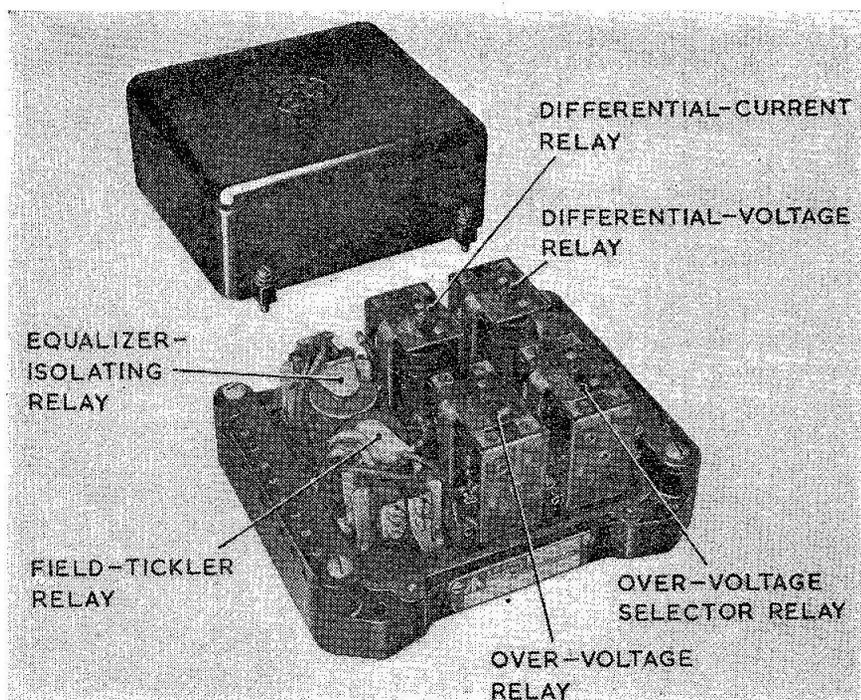


Fig. 1. Control switchbox, Type 1B

### DESCRIPTION

3. The control switchbox (*fig. 1*) consists of a moulded base, a moulded top cover and a base cover plate. Mounted on the base are six relays as listed in Table 1, flanked by a pair of terminal blocks moulded integral with the base. Each terminal block houses nine 4 B.A. terminal screws, the heads of which are protected by a cover strip secured to the block by a pair of screws. Enclosing the relays is the top cover, tapped inserts to the base taking its four securing screws.

4. The remaining components of the unit, comprising resistors, rectifiers, and an electrolytic capacitor, are mounted beneath the base (*fig. 2*). They lie within the skirt of the

base moulding and are protected by the base cover plate which is secured by four screws engaging in tapped inserts in the base.

5. The internal connections of the unit are shown in the circuit diagrams in *fig. 3* and 4. Further information on the relays, Type LA, and Magnetic Devices 595 series, will be found in Sect. 3 of this publication. Reference may be made to A.P.4343, Vol. 1, Sect. 2, Chap. 5 for information on the functioning of the control switchbox in relation to the generator system.

### INSTALLATION

6. The base is provided with four 2 B.A. clearance holes to accept fixing bolts. The unit may be installed in any attitude, but the mounting must be of an anti-vibration type.

7. Care must be taken to locate the unit in a position free from direct splashing, condensation, and possible leakage of any liquid. It must not be situated in the vicinity of stray magnetic fields. A clearance of approximately 1 ft. should be allowed between the unit and the generator main cables or the main circuit breaker.

8. The control switchbox should be connected into the generator circuit according to the instructions in the relevant Aircraft Handbook. Particular care must be taken to ensure that a good connection is obtained between the leads and terminals No. 11, 13, 15 and 16 on the control switchbox.

TABLE 1  
List of relays

	Type 1B (LKF-B2/3)	Type 1B, No. 2 (LKF-B6/2)	Type 1B, No. 3 (LKF-B8/1)
Differential voltage relay (polarized)	LAK-B1/2	LAK-B1/3	LAK-B1/4
Differential current relay (polarized)	LAD10-B1/2	LAD10-B1/3	LAD10-B1/4
Over-voltage relay (polarized)	LAA20-B3/2	LAA20-B7/1	LAA20-B7/2
Over-voltage selector relay (polarized)	LAA20-B4/2	LAA20-B4/3	LAA20-B4/4 or LAA20-B8/1
Equalizer isolating relay	595/3079	595/3079	595/3079
Field tickler relay	595/3681	595/3681	595/3681

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