Chapter 3

INDICATOR LAMPS, ROTAX, H4200 SERIES

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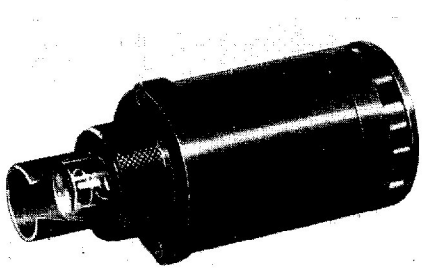

Fig. 1. Type H4201 indicating lamp

Introduction

1. Indicator lamps in the H4200 series are devices used in navigation lamp circuits, where a rapid change of current takes place, to indicate that the circuit is functioning correctly.

DESCRIPTION

2. The unit (*fig.* 1) comprises a neon lamp and terminal block, transformer and lamp-holder assembly housed within a cylindrical body moulding. To aid vision the lamp is screened with a rubber hood, clamped to the body moulding by an internally threaded knurled ring.

3. The external electrical connection is to two 6 B.A. terminals located in the base of the terminal block, to which the transformer primary winding is also connected. The secondary winding is connected to the neon lamp through a screw holder. A terminal cover is secured to the block with a single, centrally located screw.

Operation

4. In operation, use is made of flux change which occurs in the transformer primary winding, caused by an interrupted primary current. This induces energy into the secondary winding to strike the neon lamp and flashing occurs at each make or break of the primary circuit. The primary winding is connected in series with a lamp load of 80W.

INSTALLATION

5. The unit is secured to an instrument panel by two 6 B.A. tapped inserts integral with the face of the body moulding, spaced 1·250 in. apart.

SERVICING

6. A visual examination of the unit should be made to ensure that cracks or signs of other physical damage are not in evidence. The terminal cover should be removed and connections checked to ensure that they are clean, secure and free from corrosion.

7. An operational check should be applied to the equipment of which the unit H4201 forms part, to ensure that the lamp functions correctly.

8. If it becomes necessary to renew component parts, the lamp should be removed by unscrewing the clamp ring, removing the rubber hood and unscrewing the lamp from its holder.

9. To remove the terminal block, transformer and lampholder assembly, remove the cover and unscrew the two 6 B.A. screws securing the assembly to the body moulding. The complete assembly can then be withdrawn from its housing.

Note . . .

Although the unit incorporates a transformer, it is essential that the correct input polarity is observed to ensure clear indication from the lamp.

Testing

10. If the serviceability of the indicator is suspect, it may be tested as laid down in Appendix A.

Appendix A

STANDARD SERVICEABILITY TEST FOR INDICATOR LAMPS, ROTAX, H4200 SERIES

Introduction

1. The following tests may be applied to the indicator before it is put into service, or at any time when its serviceability is suspect.

Test equipment

2. The following test equipment is required.

(1) Bridge megger tester, Type B (*Ref. No.* 5G/1708).

(2) Suitable single-pole switches (2 off).

(3) Suitable 24V, 20W lamps (3 off).

(4) Insulation resistance tester, Type C (*Ref. No.* 5G/152).

Testing

Coil resistance test

3. The resistance of the two windings of the transformer should be as follows:—

Primary winding ... 0·11 ohm (max.)

Secondary winding ... 520—620 ohms.

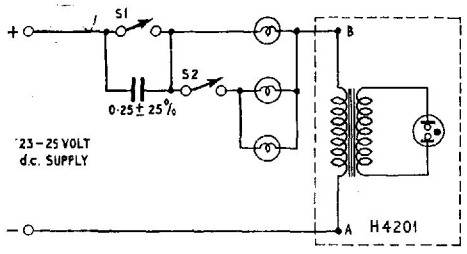

Fig. 1. Typical test circuit diagram

Operational test

4. Connect the indicator through a lamp load comprising three 24V, 20W lamps (*fig.* 1) by closing S2. Switch on the supply and interrupt the primary circuit (either manually or automatically) approximately 40 times per minute with switch S1. Check that the indicator lamp flashes on each make or break of S1. Open S2 and check that the indicator lamp operates correctly with a single lamp load.

Insulation resistance test

5. The insulation resistance, measured with a 250-volt insulation resistance tester between the primary and secondary windings, should not be less than 2 megohms.

Appendix 1

INDICATOR LAMP, ROTAX, TYPE H4201

LEADING PARTICULARS

Indicator lamp, Type H4201

Primary current ... ... 3 *amp. d.c.*

Weight ... ... 4 *oz.*

Incorporating—
Lamp, neon, 200/260*V* ... ... *Ref. No.* 5*L*/9962106

The indicator lamp, Type H4201, is identical to that described and illustrated in the main chapter.

Appendix 2

INDICATOR LAMP, ROTAX, TYPE H4202

LEADING PARTICULARS

Indicator lamp, Type H4202

Primary current ... ... 3 *amp. d.c.*

Weight ... ... 4 *oz.*

Incorporating—

Lamp, neon, 200/260*V* ... ... *Ref. No.* 5*L*/9962106

The indicator lamp, Type H4202, is similar to that described and illustrated in the main chapter. It differs in that provision has been made for the terminals to accommodate AMP type lugs.

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