

Chapter 64

PILOT'S CONTROL UNIT, TYPE A.W.E. 149

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LEADING PARTICULARS

Pilot's control units,

Type A.W.E. 149/3 (Pre Mod E/289)	...	...	...	Ref. No. 5CZ/5963
Type A.W.E. 149/4 (Post Mod E/289)	...	...	...	Ref. No. 5CZ/7285
Voltage	...	...	...	28V d.c.
Ambient temperature range	...	...	...	-40 deg. C. to +70 deg. C.
Overall dimensions				
Length	...	...	...	3.50 in.
Body dia.	...	...	...	1.23 in.
Weight (max.)	...	...	...	2.50 oz.

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Introduction

1. The pilot's control units, Type A.W.E. 149, (formerly T.D.D. 149), are designed to control the power supply to the aircraft instrument lamp dimming system in conjunction with the control box, Type A.W.E. 143/6, (formerly T.D.D. 143/6), which is described in A.P.4343E, Vol. 1, Book 1, Sect. 8, Chap. 1.

DESCRIPTION

2. The units consist of two ganged potentiometers having a common spindle, plus a suitable cable clamp and 6-way terminal block. Each potentiometer is fed from 28V d.c., and the variable outputs are fed to the two control windings in the associated control box. The design of the control units is such that a fault in one circuit will not prevent the functioning of the other circuit.

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Fig. 1. General view of pilot's control unit, Type A.W.E. 149

3. The Type 149/4 differs from Type 149/3 by the introduction of Mod. E/289, which removes the internal link between terminals 3 and 6 of the two potentiometers.

INSTALLATION

4. The unit is suitable for mounting on panels up to 0.125 in. thick, and is secured by means of a 0.375 in. diameter bush washer and locknut.

SERVICING

5. No dismantling is possible and servicing is limited to checking for security of mounting, security of connections and freedom from damage.

Testing

6. The units may be tested in accordance with the Standard Serviceability Test, Appendix A to this chapter.

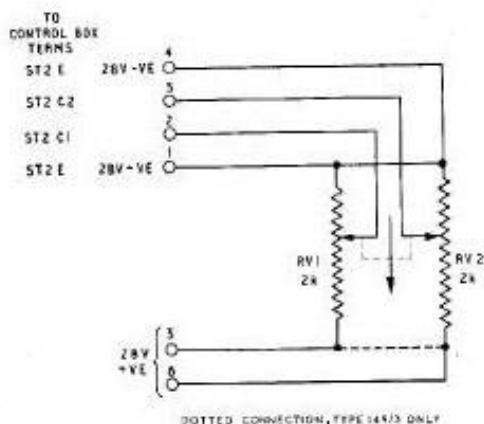


Fig. 2. Circuit diagram

Appendix A

STANDARD SERVICEABILITY TEST for PILOT'S CONTROL UNITS, TYPE A.W.E. 149

Introduction

1. The following tests may be applied to ascertain the serviceability of the pilot's control units, or prior to their installation in an aircraft.

TEST EQUIPMENT

2. The following test equipment or suitable equivalents will be required:—

- (1) One testmeter, Type 12889, Ref. No. 5QP/17447
- (2) 28V d.c. supply.

TEST PROCEDURE

Differential voltage test

Type 149/3

3. Connect a testmeter, Type 12889, across the two slider arm terminals 2 and 5. Connect a 28V d.c. supply across terminals 1 and 3 (+ve). Rotate the spindle slowly and check that the differential voltage does not exceed $\pm 1V$ through the full electrical range of the spindle rotation.

Type 149/4

4. Link terminals 3 and 6 and repeat the test as in para. 3.

Resistance test

5. To measure the end resistances, with the spindle fully clockwise, measure between terminals 2 and 3 and between terminals 5 and 6, using a testmeter type 12889. With the spindle fully anti-clockwise, measure between terminals 1 and 2 and between terminals 4 and 5. In each test the value should not exceed 20 ohms.

Type 149/3

6. Test between terminals 1 and 3, and between terminals 4 and 6. The overall resistance of each section should be 1000 ± 100 ohms.

Type 149/4

7. Test between terminals 1 and 3, and between terminals 4 and 6. The overall resistance of each section should be 2000 ± 200 ohms.

Insulation resistance test

8. Using a 250V insulation resistance tester, measure the insulation resistance between each terminal and the common spindle. In each test the insulation resistance should be not less than 5 megohms.

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