

## Chapter 98

## DIMMER SWITCH, FAIREY, TYPE FES 75

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## LEADING PARTICULARS

Dimmer switch, FES 75	...	...	...	Ref. No. 5CW/6535
Nominal operating voltage	...	...	...	28V d.c.
Power dissipated	...	...	...	refer to Fig. 1
Resistors, 3 Watt				
ohms	No. off			Inter Services No.
4.7	(1)	...	...	Z119778
33	(3)	...	...	Z113284
47	(1)	...	...	Z113288
68	(1)	...	...	Z113292
100	(1)	...	...	Z113296
150	(3)	...	...	Z113300
Weight of unit	...	...	...	0.31 lb.

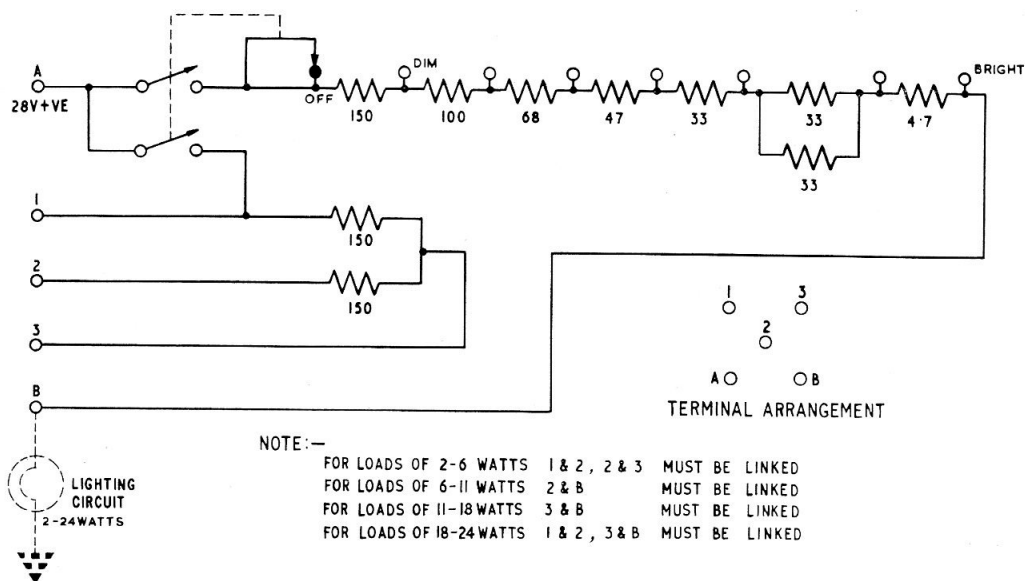


Fig. 1. Circuit diagram

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## Introduction

1. The dimmer switch FES 75 is used to control the intensity of illumination in the cockpit and crew stations of the aircraft.

## DESCRIPTION

2. A two-gang, 9-position switch is wired as shown in figure 1 to provide step control of lighting intensity on four ranges of loads as determined by the positions of the terminal links.

3. When issued for use in aircraft, a switch may be identified by suffix mark numbers and letters, the mark number will indicate the aircraft installation it will be used on, whilst the suffix letter will determine the switch loading as indicated by the arrangement of the links at the terminal block.

4. Referring to figure 2, the suffix mark number is determined by the angular position of the datum hole relative to the "off" position. To select a switch for any particular aircraft it may be necessary to alter the suffix mark number and letter; this is achieved by repositioning the front plate to the mark number required and re-arranging the links at the terminal block to suit the required suffix letter.

5. To reposition the front plate (fig. 2), remove the finger knob, loosen the centre retaining nut and rotate the front plate so that the locating lug of the wafer switch protrudes through the same number reference hole as the mark number required. The mark number, together with their corresponding degrees of angular difference is as follows:—

Suffix Mark No. Angular difference (deg. C)

1	0
2	45
3	90
4	135

6. The suffix letter determines the arrangement of the links at the terminal block and hence the load adjustment required for any particular aircraft as follows:—

Suffix letter	Link positions	Load (Watts)
A	1-2 2-3	2 to 6
B	2-B	6 to 11
C	3-B	11 to 18
D	1-2 3-B	18 to 24

## Electrical connections

7. Referring to figure 3, the resistors, ten in number, are equally spaced radially around a centre spindle which, when rotated by the control knob, connects with the contacts located between each resistor.

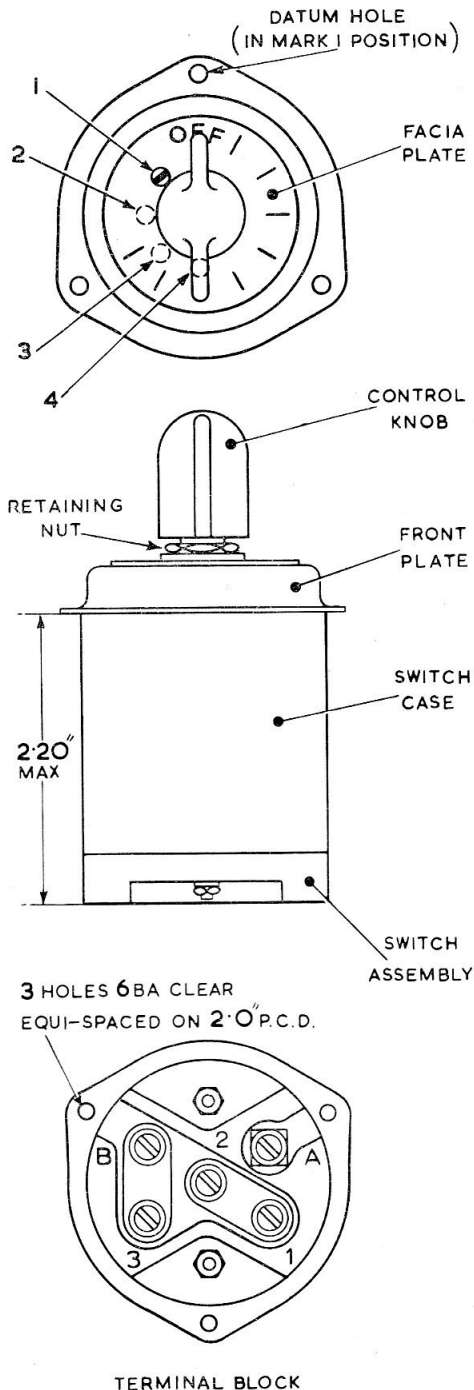


Fig. 2. Plan and elevation views of switch

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8. The internal electrical connections as shown in figure 3 are as follows:—

- (1) D = dummy clip
- (2) S = short clip
- (3) L = long clip
- (4) SD = dummy clip via short clip

The connection marked SD should be soldered on dummy clips and not the short clips. The soldered connections of the resistors must be made towards the centre of the switch.

### INSTALLATION

9. To facilitate the installation of the switch control in various positions, four holes in the facia plate are provided to enable the position of the switch plate to be varied in relation to the control knob to suit different aircraft installations.

10. When issued for use in aircraft, a switch may be identified to indicate both its

installation and the fitting of the terminal block links for any particular aircraft, e.g. Mk. No. followed by the suffix number and letter.

### SERVICING

11. At the periods prescribed in the relevant Servicing Schedule, the switch should be examined for security of electrical connections, mounting fittings, deterioration of cables and signs of corrosion.

### TESTING

12. The switch should be tested for correct operation when controlling its relevant internal lighting circuit.

#### Insulation resistance test

13. Using a 250 V d.c. insulation resistance tester, Type C, or equivalent, measure the insulation resistance between all live parts and the frame; the reading should be not less than 5 megohms.

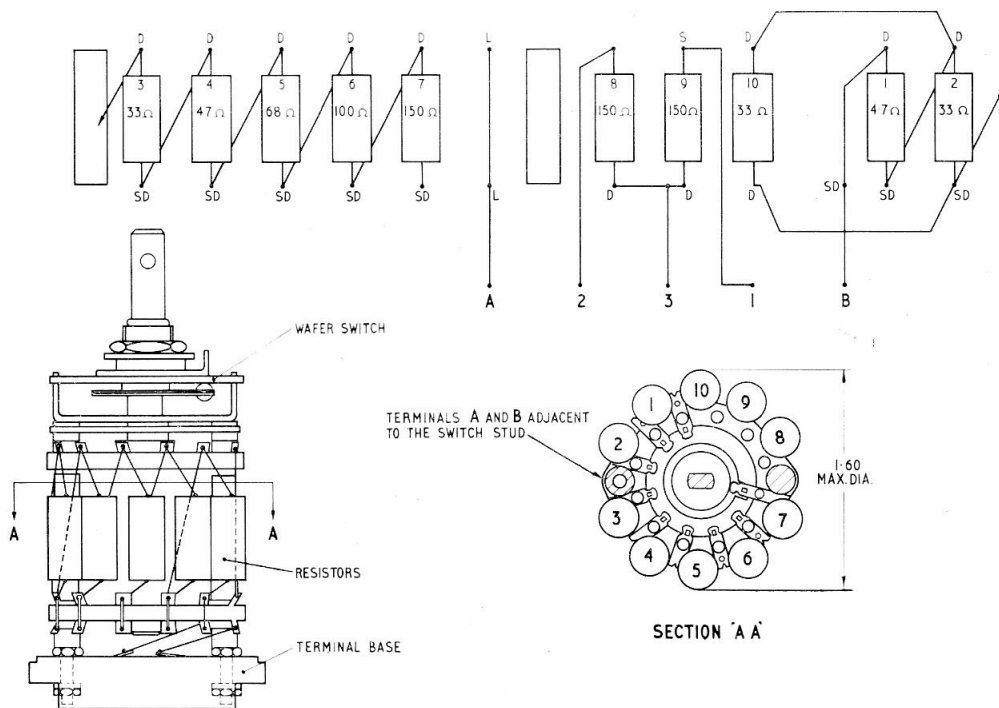


Fig. 3. Internal assembly of switch

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