Chapter 76

ROTARY SWITCH, SANGAMO WESTON, TYPE S18

LIST OF CONTENTS

LIST OF ILLUSTRATIONS

LEADING PARTICULARS

Rotary switch, Type S18

2-way and off	*Ref. No. 5CW/1163*
4-way and off	*Ref. No. 5CW/6172*
6-way and off	*Ref. No. 5CW/2569*

Introduction

1. The rotary switch, Type S18, is used primarily for selective switching in thermocouple or resistance bulb circuits. It may be 2-way, 4-way, or 6-way, as listed in Leading Particulars.

DESCRIPTION

2. A general view of the 4-way switch is shown in fig. 1. The contact studs are made of brass with solid silver caps, and the brush arms are silver-plated phosphor-bronze. The total resistance of the switch is between 0·005 and 0·010 ohms.

INSTALLATION

3. When used in resistance bulb circuits, connections should be as shown in fig. 2 for a 6-way switch; when a 2-way or a 4-way switch is used, the connections not applicable will be omitted. All circuit connections should be made from flexible copper cable, and the resistance between indicator and resistance bulb must not exceed 0·4 ohm or 1 ohm balanced circuit when a three-wire system is employed.

4. When used in thermocouple circuits, connections should be as shown in fig. **3**. Copper leads may be used between the switch and indicator when the instrument and switch are mounted next to one another and are

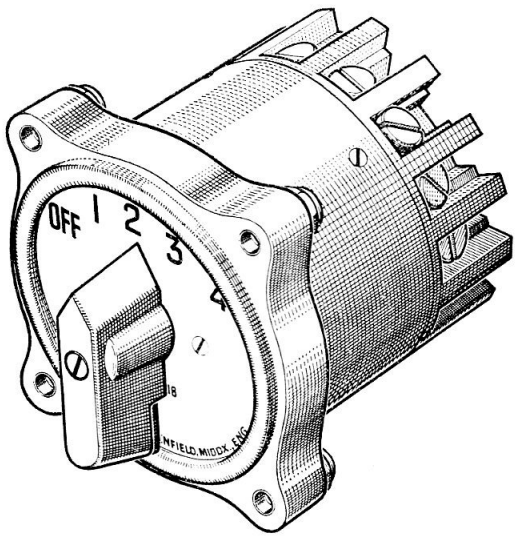
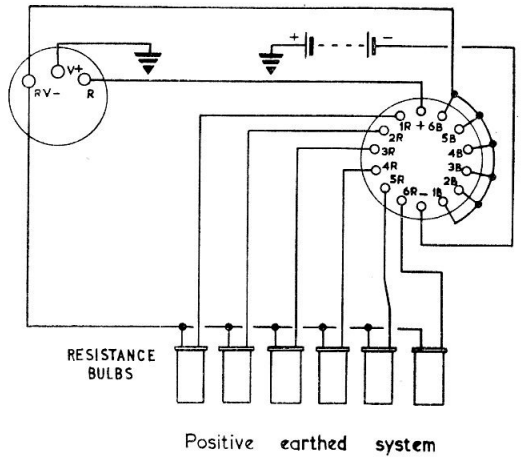
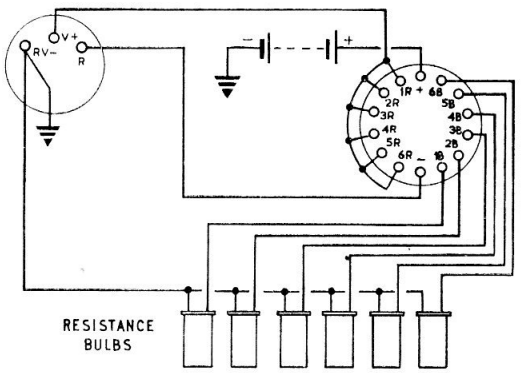


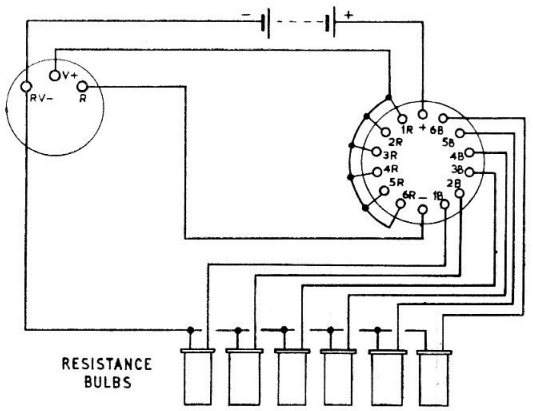
Fig. 1. Rotary switch, Type S18



Positive earthed system



Negative earthed system



Unearthed system

Fig. 2. Connections for use with resistance bulbs

subject to the same temperature conditions; when the switch and instrument are mounted remote from one another or the temperature conditions differ, compensating leads must be used.

SERVICING

5. As well as a general inspection for freedom from damage and security of connections, the following tests may be made.

Millivolt drop test

6. It is recommended that the millivolt drop across the contacts be measured as follows, with 1 amp. flowing:—

(1) Connect a heavy copper link between positive and negative terminals of the switch.

(2) Connect millivoltmeter leads to the sides of the opposing pair of terminals 1-1.

(3) Rotate to position 1, connect test current leads to the base of the same pair of terminals and adjust the current so that 1 amp. is flowing.

(4) Record the millivolt drop and repeat the test for the remainder of the switch positions. The millivolt drop on any test must not exceed 10 millivolts.

Insulation resistance test

7. Measure the resistance between all terminals in turn, using a 250-volt insulation resistance tester, then between the terminals and the positive and negative terminals, and lastly between the positive and negative terminals and the switch spindle. The resistance must not be less than 20 megohms in any test.

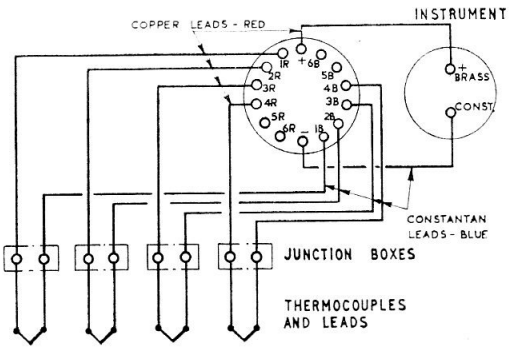


Fig. 3. Connections for use with thermocouples

P29524 372112/2918 9/59 1750 C & P Gp 375