

Chapter 28

SWITCH, MAGNETIC, TYPE 14A, No. 2 (ROTAX D9211)

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LEADING PARTICULARS

Switch, magnetic, Type 14A, No. 2	Stores Ref. 5CW/4781
Voltage:	
Main contacts	112-volt d.c.
Closing coil	28-volt d.c.
Tripping coil	28-volt d.c.
Current rating	40 amperes
Resistance:	
Closing coil	3.75 ohm.
Tripping coil	36 ohm.
Overall dimensions:	
Length	5.250 in.
Width	4 in.
Height	4.750 in.

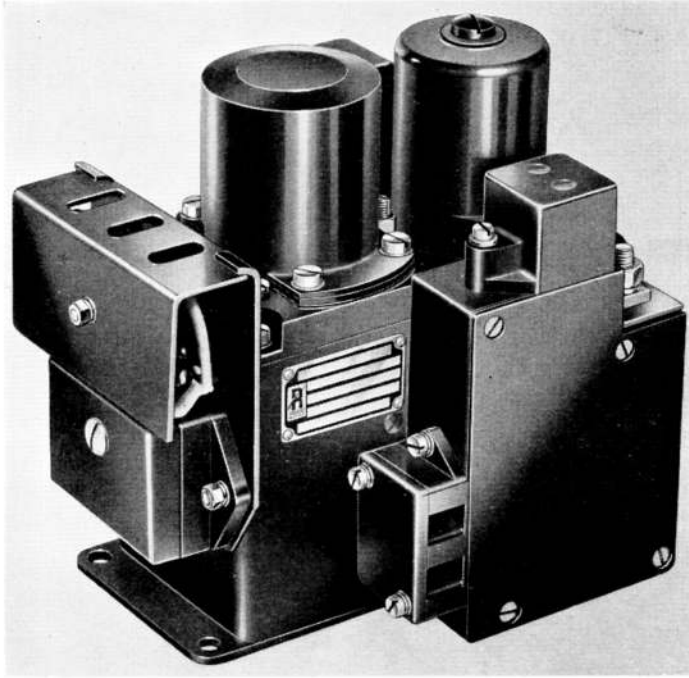


Fig. 1. General view of Type 14A, No. 2 switch

Introduction

1. This switch, in common with others in the D9200 series (*para. 2*), is designed for use as a contactor on aircraft electrical systems where it is desired to make and break a 112 volt circuit using a 28 volt d.c. control circuit.

DESCRIPTION

2. This type 14A, No. 2 magnetic switch (*fig. 1*) is similar in construction to those described in A.P.4343, Vol. 1, Sect. 11, Chap. 16. The units provide two pairs of auxiliary contacts in addition to the main 112 volt contacts. It does not incorporate a bi-metal element, but is fitted with an economy resistance in the closing coil circuit. This resistance is provided by two resistors in parallel connected between terminals 3 and 4 (*fig. 2*).

SERVICING

3. When the units have been correctly installed and operated, they require little attention in service. If a unit operates satisfactorily it may be assumed serviceable for continued use.

4. A visual inspection should be made from time to time to ensure that the units are not damaged physically. Inspect and if there is

any sign of damage, remove the unit and fit a new one in its place. In instances where interlocking (as the result of excessive arcing) has occurred, remedial action should be taken, in accordance with the chapter referred to in *para. 2*, above.

Insulation resistance tests

5. Insulation resistance tests should be applied to the unit, provided that it is accessible and can be isolated from its circuit. Using a 250 volt insulation resistance tester, the insulation resistance should be at least 2 megohm between the following points:—

- (1) Terminal 1 and terminal 2 with the contacts open.
- (2) Terminal 1 and terminal 5 with the contacts closed.
- (3) Terminal 1 and terminal 7 with the contacts closed.
- (4) Terminal 1 and terminal 9 with the contacts closed.
- (5) Terminal 1 and terminal 10 with the contacts closed.
- (6) Terminal 1 and the frame of the unit with the contacts closed.

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6. The insulation resistance between the following points must be at least 1 megohm measured with a 250 volt insulation resistance tester:—

- | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> (1) Terminal 9 and terminal 10 with the contacts closed. (2) Terminal 5 and terminal 6 with the contacts open. (3) Terminal 5 and terminal 7 with the contacts open. (4) Terminal 5 and terminal 8 with the contacts open. | <ul style="list-style-type: none"> (5) Terminal 5 and terminal 9 with the contacts open. (6) Terminal 6 and terminal 7 with the contacts open. (7) Terminal 6 and terminal 8 with the contacts open. (8) Terminal 6 and terminal 9 with the contacts open. (9) Terminal 7 and terminal 8 with the contacts open. (10) Terminal 7 and terminal 9 with the contacts open. |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

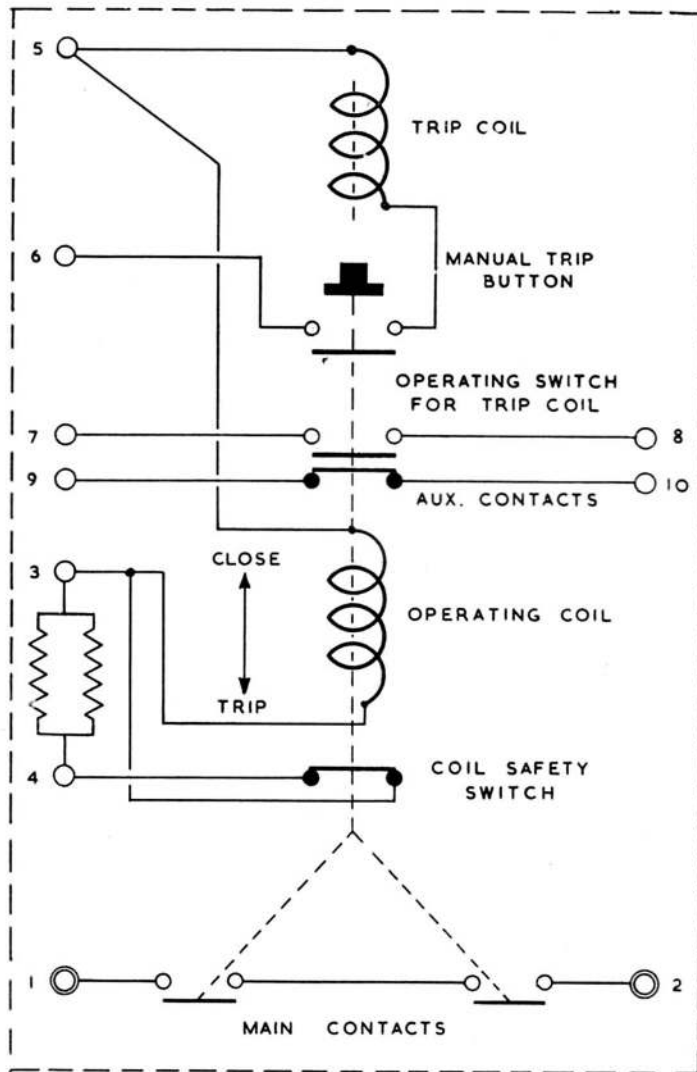


Fig. 2. Diagram of internal connections

- (11) Terminal 8 and terminal 9 with the contacts open.
- (12) The frame of the unit and terminal 6 with the contacts open.
- (13) The frame of the unit and terminal 7 with the contacts open.
- (14) The frame of the unit and terminal 8 with the contacts open.
- (15) The frame of the unit and terminal 9 with the contacts open.

- (16) The frame of the unit and terminal 5 with the contacts open.

Note . . .

The value of resistances quoted in paragraphs 5 and 6 apply to units being tested under normal workshop conditions. Allowance should be made for climatic conditions, in particular, humid climates. Under these conditions, resistance readings may be lower and discretion should be exercised before rejecting units.

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