Chapter 6

MAGNETIC RELAY SWITCH, TYPE Q3

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LIST OF ILLUSTRATIONS

LEADING PARTICULARS

Type Q3	*Stores Ref. 5CW/4102*
Overall length	*2·75 in.*
Overall breadth	*2·25 in.*
Overall depth	*1·69 in.*
Weight	*6 oz.*
Operating voltage	*24 volts*
Continuous rating	*10 amp.*

Introduction

1. The magnetic relay switches, Type Q, are general purpose switches for use on circuits where the load does not exceed 10 amp. The Q3 is a single-pole, make and break switch, and apart from the contact assembly is similar in construction to the other two switches Q1 and Q2, described in Chapter 5 of this section.

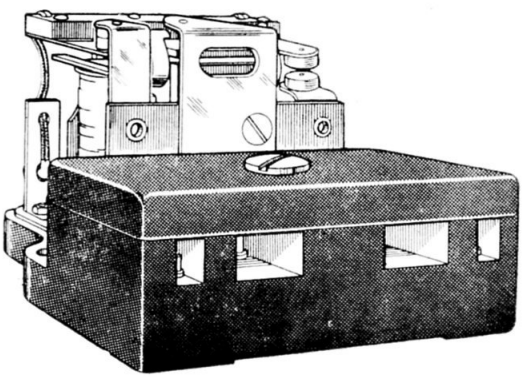

Fig. 1. Magnetic relay switch, Type Q3
(A.L.69, July 56)

DESCRIPTION

2. The relay (*fig.* 1) incorporates an electro-magnet operating two pairs of contacts. One pair of contacts is normally closed and the other normally open, and energizing of

the electro-magnet opens the closed contacts and closes the open ones, as shown in the circuit diagram in fig. 3.

3. The mechanism is mounted on a base plate of moulded insulating material, and the terminal cover is secured by a captive nut. There are six numbered terminals. Terminals 1 and 2 are connected to the coil, while 3 and 4 are connected to the normally-closed contacts, and 5 and 6 to the normally-open contacts.

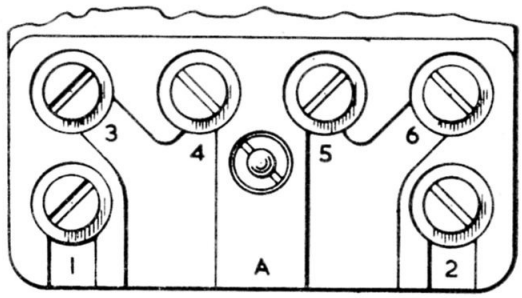

Fig. 2. Terminal positions

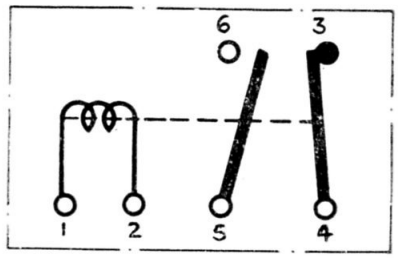

Fig. 3. Circuit diagram

SERVICING

4. The relay should be inspected at regular intervals, laid down in the relevant Servicing Schedule, to ensure that it is undamaged and that it operates correctly. The contacts should be kept clean, and it should be tested periodically for compliance with the test figures given in para. 5.

Testing

5. The following table gives test figures which are applicable to the magnetic relay switch, Type Q3:—

No.	Description	Type Q3
1	Operating voltage limits at 20 deg. C. ± 5 deg. C.	
	Relay should not be closed at	14 volts
	Relay should be fully closed at	17 volts
2	Drop-out voltage at 20 deg. C. ± 5 deg. C. to be not less than	3 volts
3	Voltage drop between terminals 3 and 4, or between terminals 5 and 6, with 10 amp. current flowing, to be not greater than	◄ 150 mV. ►
4	Resistance of coil (cold) between terminals 1 and 2 to be within the limits of	390 ohms ± 5 per cent
5	Insulation resistance between coil and frame, and any separated circuits measured at 250 volts d.c. to be not less than	50 megohms

Weatherproofing

6. These relays are not supplied fully weatherproofed, but the coil cover is sealed to the base with Bakelite varnish. When it becomes necessary to weatherproof completely, proceed as follows:—

(1) Fill the terminal block with P.I.C. No. 2 (Stores Ref. 33C/887), and press down well around the terminal screws and into the cable channels.

(2) Refit the terminal cover, and build up more P.I.C. round the cable entry.

7. If the coil cover should be removed for any reason, it must be resealed with varnish, insulating (Stores Ref. 33B/484), and the cover-securing screw and washer be similarly treated.