

Chapter 66

MINIATURE MOVING COIL RELAY, ELLIOTT, TYPE R350B

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LEADING PARTICULARS

Miniature moving coil relay, Type R350B

Contact rating at 50V (max.) 100 mA a.c. or d.c.

Overall dimensions—

Length (excluding leads) ...		1.54 in.
Depth		0.75 in.
Width		0.63 in.

Introduction

1. The relay, Type R350B, is a miniature polarized switch which operates on the moving coil principle.

DESCRIPTION

2. The relay (*fig. 1*) incorporates a permanent magnet and a coil assembly, contained in a non-magnetic body. The coil assembly consists of two separate coils wound in the same direction on a former. A pivot pin at

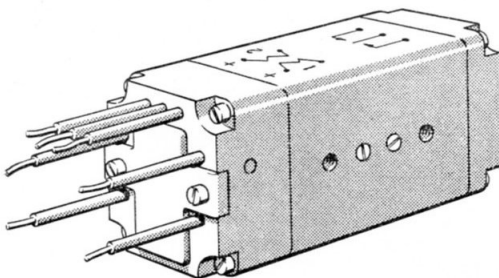


Fig. 1. Miniature moving coil relay, Type R350B

each end of the former locates in bearings carried in a location frame, and allows the coil assembly to pivot around the permanent magnet.

3. Two fixed contacts are housed in a terminal base at the end of the body, and a moving contact is attached to the coil assembly. The moving contact is held between the two fixed contacts when the relay is de-energized, the coil connections acting as springs to return the moving contact to the neutral position.

4. The coil connections are soldered to wires which pass through insulated holes to the terminal base. Leads for external connection to the relay usually measure 6 in. long, and are soldered to the relay terminals. The colour of the leads is as shown in the circuit diagram in *fig. 2*.

OPERATION

5. The circuit diagram (*fig. 2*) shows the connections when the relay is viewed on the

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end carrying the connection leads. When a current of the same polarity as the markings on the diagram is passed through either of the coils, the moving contact 6 will make with the fixed contact 5. If the polarity of the current is reversed, the moving contact will make with the fixed contact 7.

6. Operating currents and resistances depend on whether one or both coils are used. Table 1 lists the operating currents and coil resistances for the different ways of connection.

TABLE 1
Operating characteristics

Coils	Resistance (ohms)	Nominal current (mA)	Minimum current (mA)	Maximum current (mA)
1	350	0.4	0.15	8
2 in series	700	0.2	0.075	8
2 in parallel	175	0.4	0.15	16
2 differential 2×350		0.4 (diff.)	0.15 (diff.)	8

INSTALLATION

7. The relay may be mounted in any suitable position. Two 8 B.A. screwed holes in opposite sides of the body are used for mounting purposes, and it is important that the mounting screws do not enter the body by more than 0.05 in., in order to avoid damaging the relay.

SERVICING

8. The only permissible servicing is a general inspection for freedom from damage and security of connections. No attempt

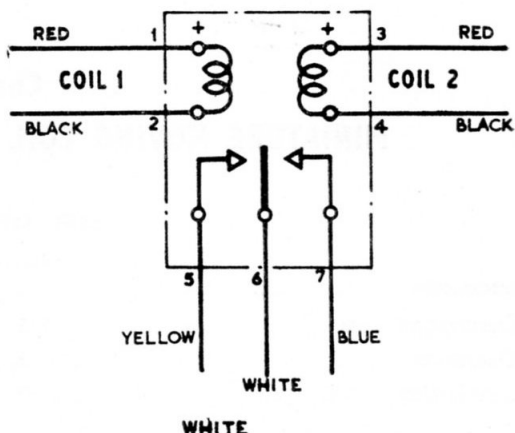


Fig. 2. Circuit diagram

must be made to gain access to the inside, as the switches are carefully adjusted during manufacture and the internal wiring is very delicate. A faulty relay must be renewed.

Insulation resistance

9. The insulation resistance between all the leads connected together and the switch body should be tested with a standard 250-volt insulation resistance tester. The reading should be not less than 20 megohms.

Operation test

10. A test may be made for correct operation of the moving contact by connecting the two coils in series and passing a current of 0.2 mA (max. 50 volts) through them. Reversing the polarity of the supply will check the operation in both directions.