Chapter 87

RELAYS, G.E.C., K3000 TYPES

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LEADING PARTICULARS

Type	Stores Ref.	Overall dimensions (in.)	Weight (oz.)
W68M 1061 D/2	5CW/5202	$4 \times 1\frac{1}{8} \times 2\frac{3}{16}$	10
W68R 0061 D/2	Z530250	$4 \times 1\frac{1}{8} \times 2\frac{3}{16}$	10
W68R 2123 B	5CW/5531	$4 \times 1\frac{1}{8} \times 2\frac{7}{16}$	10
W71R 0361 D	Z530160	$4 \times 1\frac{1}{8} \times 2\frac{3}{16}$	10
W71T 2002 B	Z530289	$4 \times 1\frac{1}{8} \times 2\frac{7}{16}$	10
W71T 2007 B	Z530108	$4 \times 1\frac{1}{8} \times 2\frac{7}{16}$	10
W71T 2123 B	5CW/5201	$4 \times 1\frac{1}{8} \times 2\frac{7}{16}$	10

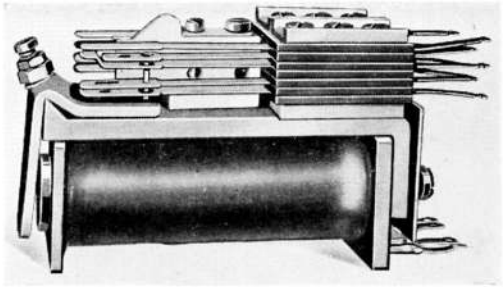

Fig. 1. Typical K3000 relay for low-voltage applications

Introduction

1. The relays covered in this chapter are all post-office Type K3000 relays, some for low-voltage and some for high-voltage applications, and indicated in Table 2. Those which are shown in Table 1 as slugged at the armature end have a slow operating characteristic.

DESCRIPTION

2. A typical relay for low-voltage applications is illustrated in fig. 1. It is an unsealed unit, incorporating a single-wound coil, a knife-edge pivoted armature, and a spring-set in two banks fitted with twin silver contacts. The coil and spring-set insulation are suitable for 100-volt working, and the contact rating and contact arrangement are indicated in Table 2.

3. Details of the various operating characteristics of the relays are given in Table 1. It will be seen that certain of the relays have a copper slug incorporated at the front or armature end of the coil. This has the effect of delaying the operating and release times of the relay, due to the setting-up in the slug of a magnetic field in opposition to that of the coil.

4. In fig. 2 is illustrated a typical relay for high-voltage applications. It is essentially of similar construction to the low-voltage types, but the coil and spring-set insulation are suitable for 250-volt working, and the spring-set is fitted with heavy-duty elkonite contacts.

5. Electrical connection to all types is made by means of tags at the heel or rear end of the relay, the coil being taken out to tags a and e. The relay is mounted by two fixing screws at the heel end.

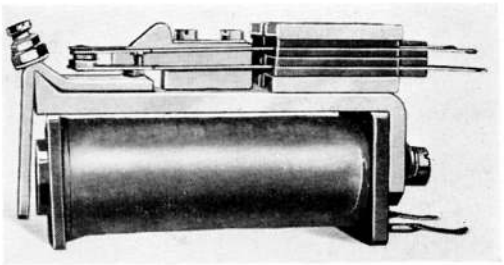

Fig. 2. Typical K3000 relay for high-voltage applications

TABLE 1

Operating characteristics

Type	Operating voltage	Coil resistance at 15·6 deg. C. (ohms ±10 per cent.)	Slug details	Operating lag (if slugged) (mS) Min. at 20V	Max. at 28V	Minimum circuit current (mA)	Saturate current (mA)	Test current (mA)
W68M 1061 D/2	24	200	1½ in. F.E.	35	108	70	110	46
W68R 0061 D/2	24	500	1½ in. F.E.	35	80	36		
W68R 2123 B	48	500	1½ in. F.E.			42	68	30
W71R 0361 D	24	500	—		—	28		
W71T 2002 B	24	1000	—		—	14·5		
W71T 2007 B	24	1000	—		—	14		
W71T 2123 B	48	1000	—		—	20	29	14

F.E. = front end

TABLE 2

Contact details

Type	Contact rating	Contact L.H.	Arrangement R.H.	Type of contacts
W68M 1061 D/2	300 mA at 100V d.c. or a.c.	C	C	Silver
W68R 0061 D/2	300 mA at 100V d.c. or a.c.	C	C	Silver
W68R 2123 B	2·5 amp. at 250V d.c. 5 amp. at 250V a.c.	2M	2M	Heavy-duty elkonite
W71R 0361 D	300 mA at 100V d.c. or a.c.	2C	2C	Silver
W71T 2002 B	2·5 amp. at 250V d.c. 5 amp. at 250V a.c.	M	B	Heavy-duty elkonite
W71T 2007 B	2·5 amp. at 250V d.c. 5 amp. at 250V a.c.	M	M	Heavy-duty elkonite
W71T 2123 B	2·5 amp. at 250V d.c. 5 amp. at 250V a.c.	2M	2M	Heavy-duty elkonite

M = normally open; B = normally closed; C = change-over (break-before-make)

SERVICING

6. Full information on the adjustment of this type of relay is given in A.P.2487, Vol. 1, Sect. 2, Chap. 2, to which reference may be made as required.

7. The minimum circuit current quoted in Table 1 is that current which must normally be available for operation to ensure an adequate factor of safety; the relay should operate when a slightly smaller test current is applied to tags a and e.

F.S./2
P27457 182751/2201 7/57 2375 C & P Gp. 1
C (AL105)