POST OFFICE PREFERRED RELAYS - TYPE 23

CONTENTS

1 GENERAL

1.1 The type 23 relay is a small comb operated general purpose relay. It is much smaller than the 3000 type relay, and may be directly wired in or mounted on a printed circuit board.

1.2 Unlike the 3000 type relay the type 23 relay is manufactured to a performance specification. This means that relays from different manufacturers may differ in physical construction but all conform to the performance specification. Consequently relays of the same code are fully interchangeable regardless of manufacture.

1.3 The basic construction differs from normal PO relay practice. A conventional magnetic circuit is employed but the armature is mounted at the tag end of the relay and operates the spring-sets by means of two lever arms and a lifting comb. This arrangement permits a considerable size reduction over normal relays. Each type 23 relay is fitted with an individual transparent plastic dust cover.

1.4 The type 23 relay is intended to be applied to circuits by selection from a rationalised list as shown in the tables. These tables list all PO type 23 relays coded. Because the range of type 23 relays is limited, a less rigid attitude is taken towards spare contact actions and springs.

If a suitable relay cannot be found, or the circuit adapted to use an existing relay (eg use of series resistance), TD11.1.3 will give consideration to the coding of a new type 23 relay design.

1.5 No piece-parts are supplied and no attempt should be made to adjust type 23 relays. For maintenance purposes they must be replaced as a complete unit. The plastic dust cover may be damaged if any attempt is made to remove it. Manual operation is possible through a small hole in the base of the relay. TI E6 H0056 applies.

1.6 Two physical sizes of 23 type relays are available depending on the contact action of the relay involved. A table of sizes with corresponding actions appears below.

Size A	2C, 2K
Size B	4C, 6M, 6B, 2C + 2K

Actual relay dimensions may be found on drawing CD 2328.

1.7 Two choices of wiring base are available for most, but not all, codes. The tag ended base is similar to 3000 type practice and is intended for wire termination. The printed circuit version has pins intended to mount directly onto printed circuit board. In this case the relay code has the suffix "PW", (see tables).

1.8 A bracket mounting HM (Drawing 71368) is available for mounting up to four wire-in relays of either size A or B in the space of one 3000 type relay. The foot of this bracket mounts on drilling 151 and 152. Mounting details are given in drawing DR 203. Bracket Mounting HQ (Drawing 71521) is also available. This mounts one type 23 relay. The foot of bracket HQ does *not* mount on drilling 151 and 152.

1.9 The type 23 relay will function in any plane but to prevent the ingress of dust it is inadvisable to mount the wire-in type tags uppermost.

1.10 Provision of non rate-book relays should be by local purchase or by contractual procedure from manufacturers holding qualification approval. A current list of PO approved manufacturers may be obtained from THQ/TDD/TD11.1.3

2 COIL DATA

2.1 The type and number of coils available is restricted. They are limited to a single inductive winding only. Special features such as slugs, nickel iron sleeves and cores, and non inductive windings are not available.

2.2 The maximum continuous power which may be dissipated in a coil with maximum supply voltage and minimum coil resistance is 2 Watts.

2.3 The manufacturing coil resistance tolerance is ±10% of nominal, except for the 7600Ω winding which has a tolerance of ±15%.

2.4 For printed wiring relays the coil connection polarity can be chosen to suit wiring layout. With the wire-in type in relay-sets the convention of battery on the right-hand side, when viewed from the rear, is best observed ie earth tag 4, battery tag 1.

3 CURRENT PERFORMANCE Circuit applications are limited to simple on-off functions only. No current figures for hold, release, or non-operate can be quoted. Users should ensure that in circuit, under worst case conditions, the current available to operate the relay is not less than the limit circuit figure quoted.

4 TIMING These relays must not be used in any application where critical timing conditions are required. As a guide the maximum operate and release times will be 10 mS. It must be remembered that the actual operate and release lags can vary within this figure depending on the source of manufacture. Short-circuit or diode release lag will lie in the range 8 to 25 mS depending on the relay design.

5 CONTACT RATING

5.1 The material of the twin dome contacts is an alloy of 40% silver and 60% palladium.

5.2 The maximum rating for these contacts for resistive or quenched inductive loads are as follows:

Current	1.0 amp
Voltage	100 volts
Power	50 watts

5.3 Although these relays are fitted with a plastic cover they are not sealed against atmospheric pollutants. Consequently they are unsuitable for switching low level voltages. For applications involving less than 5 volts, TD11.1.3 should be consulted.

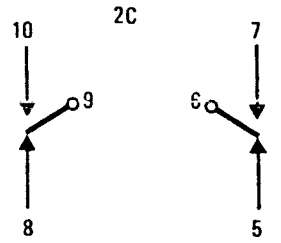
6 FURTHER INFORMATION

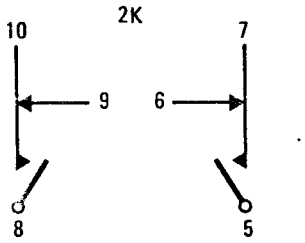
Specification T4551
Maintenance TI E6 H0056
POEE Journal Vol 64, Pt II, July 1971, Page 123
Coil assemblies, Drawing DCO 498
Relay assemblies, Drawing CD 2328 Sheet 1 and 2
Drilling, Drawing DR 203
Bracket mounting HM, 71368
" " HQ, 71521

Figs follow

Contact Action	Minimum operating voltage (volts)	PO CODE		Nominal Coil resistance (Ω)	CURRENT FIGURES (mA)	
		Wire-in code	Printed wiring Code		Limit Circuit	Satn.
2C	4.4	–	23/28PW	58	70	105
2C	5.9	23/25	23/25PW	110	49	74
2C	8.5	23/12	23/12PW	220	36	54
2C	10.0	23/18	23/18PW	325	30	45
2C	14.0	23/9	23/9PW	530	23	35
2C	18.0	23/7	23/7PW	890	18	27
2C	28.0	23/20	23/20PW	2200	12	17
2C	34	23/1	23/1PW	3300	9.4	14
2C	55.0	23/22	23/22PW	7600	6.4	9.7
		–	–			
2K	9.2	–	23/30PW	220	38	54
2K	19.0	23/11	23/11PW	890	19.5	27
2K	37	23/23	23/23PW	3300	10.5	14

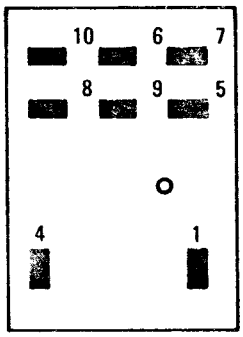
SPRING NUMBERING



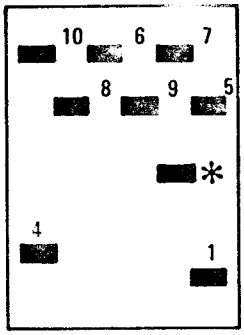


BASE LAYOUTS

WIRE-IN BASE



PRINTED WIRING BASE



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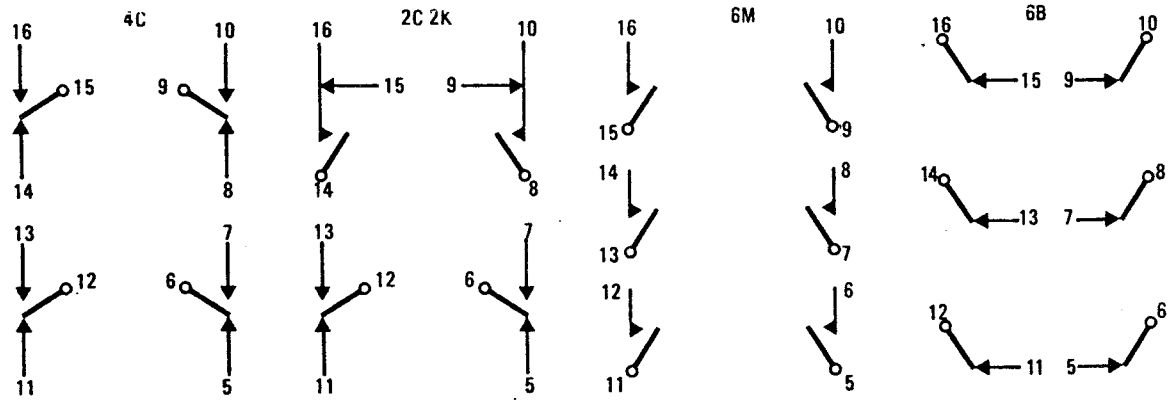
* TAG CONNECTED TO RELAY FRAME

(NOT TO SCALE)

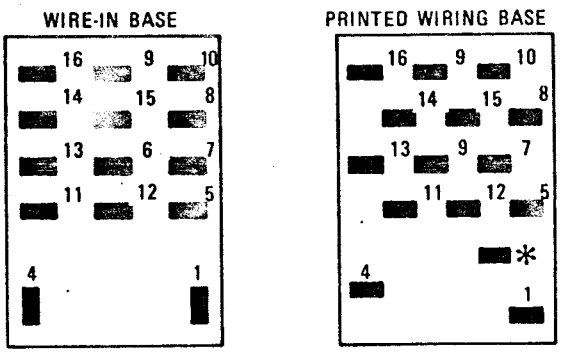
TYPE 23 RELAY DATA SHEET—SIZE A

Contact Action	Minimum operating voltage (volts)	PO CODE		Nominal Coil resistance (Ω)	CURRENT FIGURES (mA)	
		Wire-in Code	Printed wiring code		Limit Circuit	Satn.
4C	10.4	23/19	23/19PW	150	64	81
4C	13.0	–	22/24PW	220	54	68
4C	20.0	23/10	23/10PW	530	34	43
4C	27	23/4	23/4PW	890	27	34
4C	37	23/2	23/2PW	1800	19	23
4C	42.0	23/16	23/16PW	2200	17.5	22
2C 2K	4.6	23/13	–	28	150	185
2C 2K	10.8	23/8	23/8PW	150	66	81
2C 2K	13.2	23/26	23/26PW	220	56	67
2C 2K	38	23/6	23/6PW	1800	19.5	23
2C 2K	44.0	23/21	23/21PW	2200	18	22
6M	9.8	–	23/29PW	150	60	81
6M	12.0	–	23/27PW	220	50	68
6M	19.0	23/17	23/17PW	530	32	43
6M	25	23/5	23/5PW	890	26	34
6M	35	23/3	23/3PW	1800	17.5	23
6M	40.0	23/14	23/14PW	2200	16.5	22
6B	45	23/15	23/15PW	2200	18.5	22

SPRING NUMBERING



BASE LAYOUTS



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* TAG CONNECTED TO RELAY FRAME

(NOT TO SCALE)

TYPE 23 RELAY DATA SHEET – SIZE B