

INSTRUCTIONS

CR2820-1729 DEFINITE-TIME RELAY

The CR2820-1729 definite-time relay provides 2, 4, 6, or 8 contacts with independent time adjustment.

The contacts will carry continuously 15 amperes and make momentarily 30 amperes, but should not be used to interrupt current in excess of the values tabulated below:

Alternating Current		Direct Current	
Amp	Volts	Amp*	Volts
30	110		
20	220	1	125
4	440	0.3	250
3	550	0.1	500

*For time-opening contacts adjusted to open in less than the total time setting, use one half of values tabulated for d-c.

Relays can not be supplied for use on 25-cycle supply voltage.

Mounting

The CR2820-1729 relay must be mounted in a vertical position with the escapement mechanism at the bottom as shown in Fig. 1.

Operation

The relay shown in Fig. 1 has two contacts, (A) normally closed, and (B) normally open. A solenoid (C) has its plunger connected to an escapement mechanism (D). When the solenoid is energized, the mechanism and all contacts connected to it, whether normally open or normally closed, are actuated instantaneously by the solenoid plunger on the up stroke. When the solenoid is de-energized, the escapement mechanism provides time delay action for the contacts. In Fig. 1 the contact (A) has a time delay on closing, and contact (B) has time delay on opening. Other forms are available having various combinations of normally open and normally closed contacts, some forms having time delay after the solenoid is de-energized, and others having the time delay after the solenoid is energized.

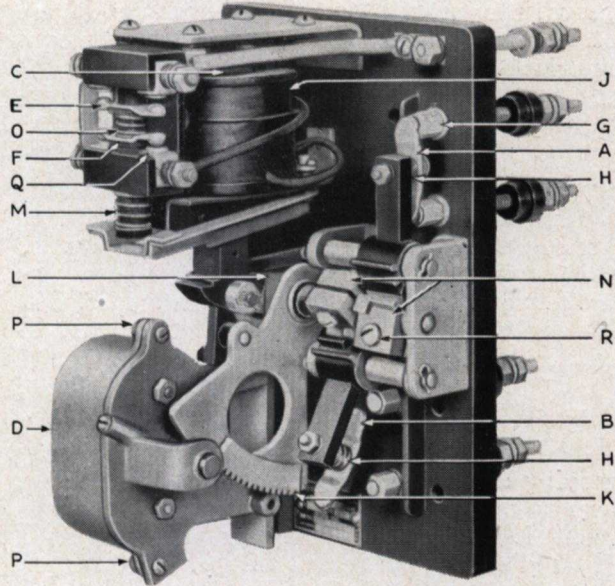


Fig. 1. CR2820-1729A Definite-time Relay

Renewal Parts

Ref Letter Fig. 1	CR2820-1729-	Cat. No.	Description
A, B	All Forms	3667572G1	Movable Contact
G	All Forms	3840413G2	Stationary Contact
H	All Forms	2411917	Contact Spring
L	A, B, C, D	2415130	Clutch Spring
L	E to AK, incl	2415131	Clutch Spring
E, F	A, C, E, G, J, L, P, Q, R, S, T, V, AA, AB, AC, AD, AF, AG, AH	3805658G8	Interlock Movable Contact
Q	A, C, E, G, J, L, P, Q, R, S, T, V, AA, AB, AC, AD, AF, AG, AH	3845725G3	Interlock Stationary Contact
O	Q, S, T, V, AA, AB, AG	2411917	Interlock Contact Spring
O	A, C, E, G, J, L, P, R, AC, AD, AF, AH	2414612	Interlock Contact Spring
M	A, C, E, G, J, L, P, Q, R, S, AB, AC, AD, AF, AH	2413639	Interlock Operating Spring
M	T, V, AA, AG	2238080	Interlock Operating Spring
J	All Forms	Order by Cat. No. on Spool	Coil

The instantaneous interlocks shown at (E) and (F) in Fig. 1 are used on forms of the relay for direct current. The normally open interlock (E)

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may be used to form a holding circuit around the push-button contacts in using push-button control, and normally closed interlock (F) is used to either cut out part of the solenoid-coil turns or to cut out a resistance in series with the solenoid coil to give more pull on closing.

Standard a-c relays do not have the instantaneous interlocks E and F, although special a-c relays may have a normally open instantaneous interlock similar to that shown at E, Fig. 1, for use as a holding interlock with a momentary-contact push button.

Connections

Figs. 2, 3, and 4 show the method of connecting the CR2820-1729A relay for use on control circuits in which a number of contacts are set to operate in definite-time sequence. The interlocks (2) and (3), Fig. 2, should always be connected to the same side of the line.

Adjustment

The total time delay may be regulated by moving the adjusting screw on the escapement arm up or down. In order to change the adjustment, it will first be necessary to remove nuts (P) and cover (D). Setting the screw at the top end of the long slot in the arm gives the shortest time, and setting it at the bottom end of the slot gives the longest time. The time interval between opening or closing of the various contacts is adjusted by changing the position of the

operating gears (N), Fig. 1, first loosening screw (R). Relay forms A, B, C, D, L, M, and Q have a time range of 1 to 7 seconds, and Forms E, F, G, H, J, K, N, P, R, and S have a time range of 1 to 10 seconds.

Disassembling Solenoid

To take out the solenoid coil it is necessary to remove the frame from the supporting bracket and then take out the plunger. This may be done without disconnecting the plunger from the escapement mechanism. Remove the plunger guides and the two spacing springs between the coil and frame, and then the coil will drop out.

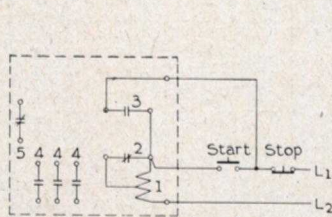
Maintenance

The CR2820-1729 relay should not be oiled as it has had lubricant applied at the factory which is sufficient for its normal life.

The contacts are faced with solid silver and will give long life under normal service within their rating. They should not be dressed with a file but should be renewed in case of excessive wear.

Renewal Parts

When ordering renewal parts, refer to the table beneath Fig. 1; order by Cat. No. For any parts not listed, refer to the nearest sales office of the General Electric Co.; give the complete nameplate rating of the relay, and describe the part in detail.



- 1. Solenoid
- 2. Interlock, Normally Closed
- 3. Interlock, Normally Open
- 4. Contacts, Normally Open, Time Closing
- 5. Contact, Normally Closed, Time Opening

Fig. 2. Typical Connection Diagram for D-c Circuits of 250 Volts or Less (Back View)

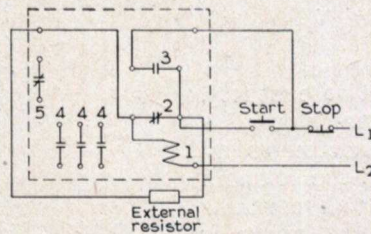


Fig. 3. Typical Connection Diagram for D-c Circuits with Voltages Higher Than 250 Volts

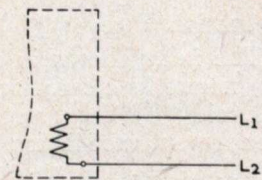


Fig. 4. Coil Connection Diagram for A-c Circuits