control

INSTRUCTIONS

CAUTION: Before installing in a nuclear application, determine that the product is intended for such use.

CR2810-1740 ac motor driven timing relays

DESCRIPTION

The CR2820-1740 is a synchronous motor-driven relay with a definite time delay in the operation of its contacts after it is energized. It is suitable for use on alternating current only.

The time delay contacts are provided by a precision snap-acting switch having one normally open and one normally closed contact with a common connection. In addition, an instantaneous closing, normally open contact is provided to establish a holding circuit when the relay is energized from momentary contact push button as shown in control schemes 1 and 2 (See Figure 3).

INSTALLATION

The relay should be mounted with the steel base plate in the vertical plane and the terminal board at the bottom. It may be mounted on either a steel or insulated base.

NOTE: Do not oil any part of the relay.

Connections to the terminal board should be made by stripping the wires and inserting them under the saddles. It is not necessary to loop the wires.

A rectangular knockout is provided in the bottom of the molded cover to permit bringing wires in from the front. If back connections are desired, the wires are brought through the two large holes in the bottom of the base plate.

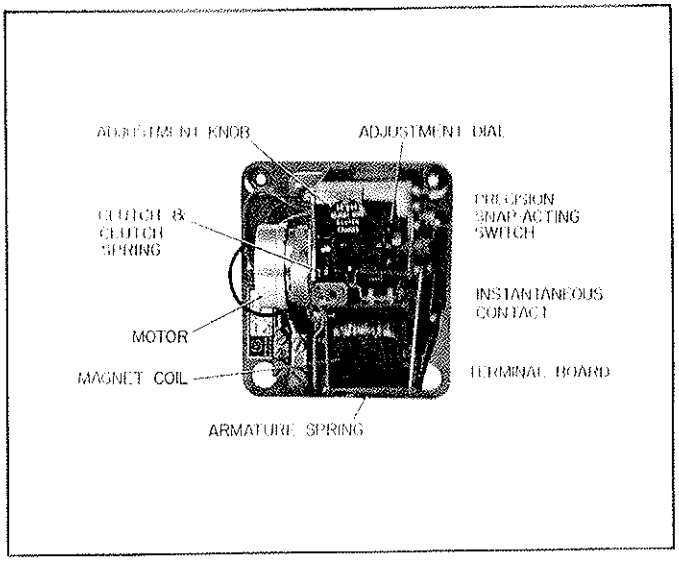


FIGURE 1—CR2820-1740 relay with cover removed.

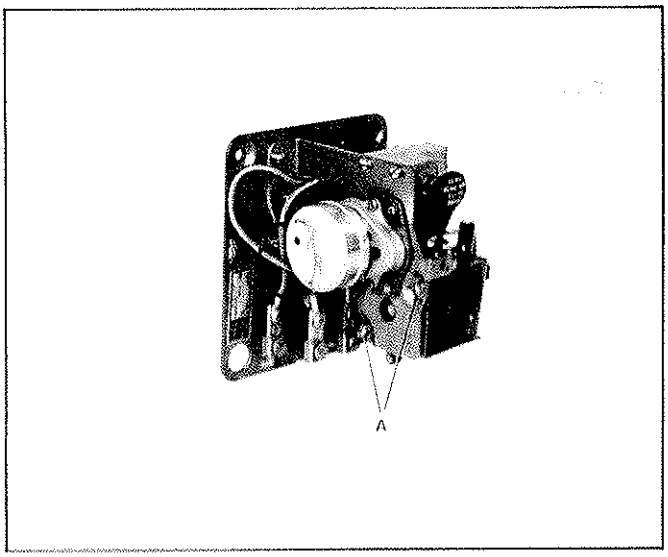


FIGURE 2—Replacing coil on CR2820-1740 relay.

OPERATION

The time setting is continuously adjustable over the range of the relay as stamped on the nameplate. To make the setting, turn the insulated adjustment knob until the adjustment dial indicates the desired time, see Figure 1.

NOTE: Do not adjust knob with clutch engaged.

When the magnet coil is energized, the motor becomes engaged to the adjustment dial through a gear and clutch arrangement. The motor, energized at the same time as the magnet coil, drives the adjustment dial until a projection on the dial actuates the precision snap-acting switch. An auxiliary contact operating with the precision snap-acting switch disconnects the motor from the circuit. During the timing period, the unexpired time is indicated on the adjustment dial. The relay resets within 0.5 second at full scale setting when magnet coil is de-energized.

APPLICATION

The CR2820-1740 relay may be used for any application requiring a definite time delay in the operation of other relays or contactors.

For the control schemes used in several typical applications, refer to Figure 3.

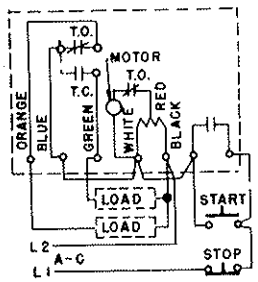
WIRING DIAGRAMS

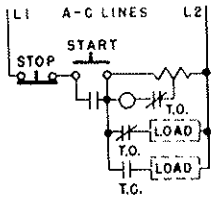
Front View of Relay

ELEMENTARY DIAGRAMS SHOWING SEQUENCE OF OPERATION

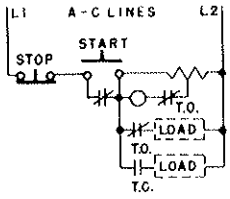
T.O. indicates time opening contact

T.C. indicates time closing.

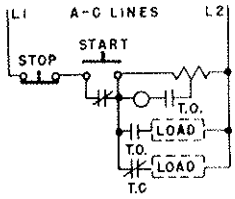




INITIAL CONDITION
Relay will reset to this position on power failure.

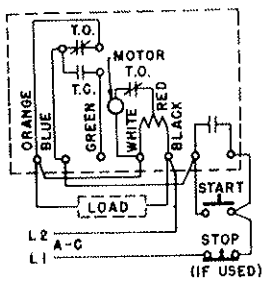


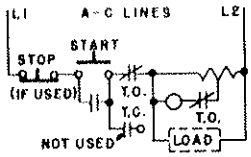
TIMING after pressing START button momentarily.



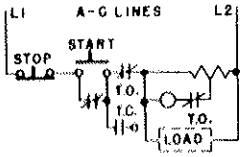
TIMED OUT. Relay remains in this position until reset to initial condition by pressing STOP button momentarily.

Reduced-voltage motor starters or other applications where relay is to remain TIMED-OUT until reset by STOP button.

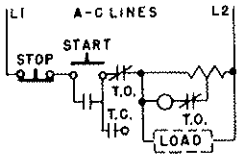




INITIAL CONDITION
Relay will reset to this position on power failure.

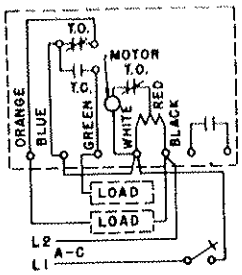


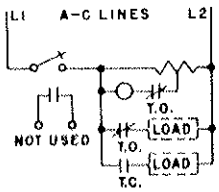
TIMING after pressing START button momentarily load is energized while timing.



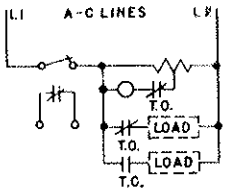
TIMED OUT and reset automatically to initial condition, load is de-energized.

Applications requiring automatic reset after timed out. Time cycle does not repeat until initiated by START button. STOP button may be omitted if not desired for interrupting cycle and resetting to initial condition.

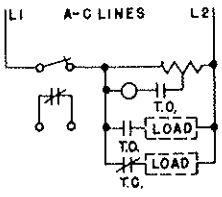




INITIAL CONDITION

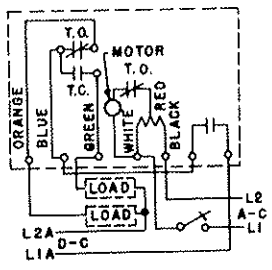


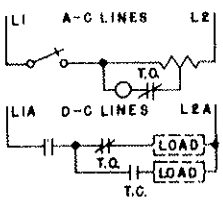
TIMING after closing knife switch or other maintaining contact.



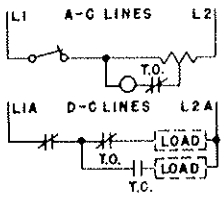
TIMED OUT relay remains in this position until reset to initial condition by opening knife switch.

Miscellaneous applications where control is from knife-switch, float-switch, or other maintaining contact device.

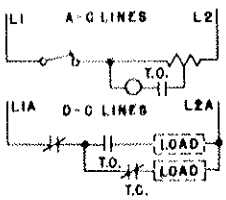




INITIAL CONDITION
Same as above except dc supply for load.



TIMING after closing knife switch or equivalent.



TIMED OUT. Remains in this position until reset to initial condition by opening knife switch.

Applications with ac for timing motor circuit and dc load circuit. May also be used where load circuit is fed from a separate ac source.

FIGURE 3—Typical control schemes

Maximum ratings of the switchette contacts are as follows:

CONTINUOUS CURRENT
(ac or dc) 15 amperes

FORMS A THRU K

AC PILOT DUTY			DC PILOT DUTY		
VOLTS	MAKE AMPS	BREAK AMPS	VOLTS	AMPS DPST	AMPS DPDT
115	40	15	120	2.0	0.5
230	20	10	240	0.5	0.2
460	10	6	—	—	—
575	8	5	600	0.1	0.02

FORMS L THRU T

0 to 15	30	3	120	1.0	0.2
115 to	3450	345	240	0.3	0.1
600	VA	VA	600	0.1	—

MAINTENANCE

To replace the magnet coil, remove screw as shown in Figure 2. The coil and armature may then be removed. When replacing the coil, the color-coded leads should be connected as shown in Figure 3.

To replace the precision snap-acting switch, it is necessary to remove only the two screws holding switch to metal bracket.

Replacement of the motor should not be necessary during the normal life of the relay. In the event replacement is necessary, first remove screws, (A, Figure 2). Both screws that attach the motor to the motor support plate may then be made accessible by swinging the assembly down out of the way.

RENEWAL PARTS

To order renewal parts or to obtain information regarding parts not included below, refer to the nearest General Electric Sales Office.

FORMS A THRU K

NAME	CATALOG NUMBER
Coil	See No. stamped on coil
Contact assembly	55-500051G002
Stationary instantaneous contact	9189484G001
Movable instantaneous contact	9189484G002
Armature spring	2418828P001

FORMS L THRU T

Contact assembly Otherwise same as above	CR115B4

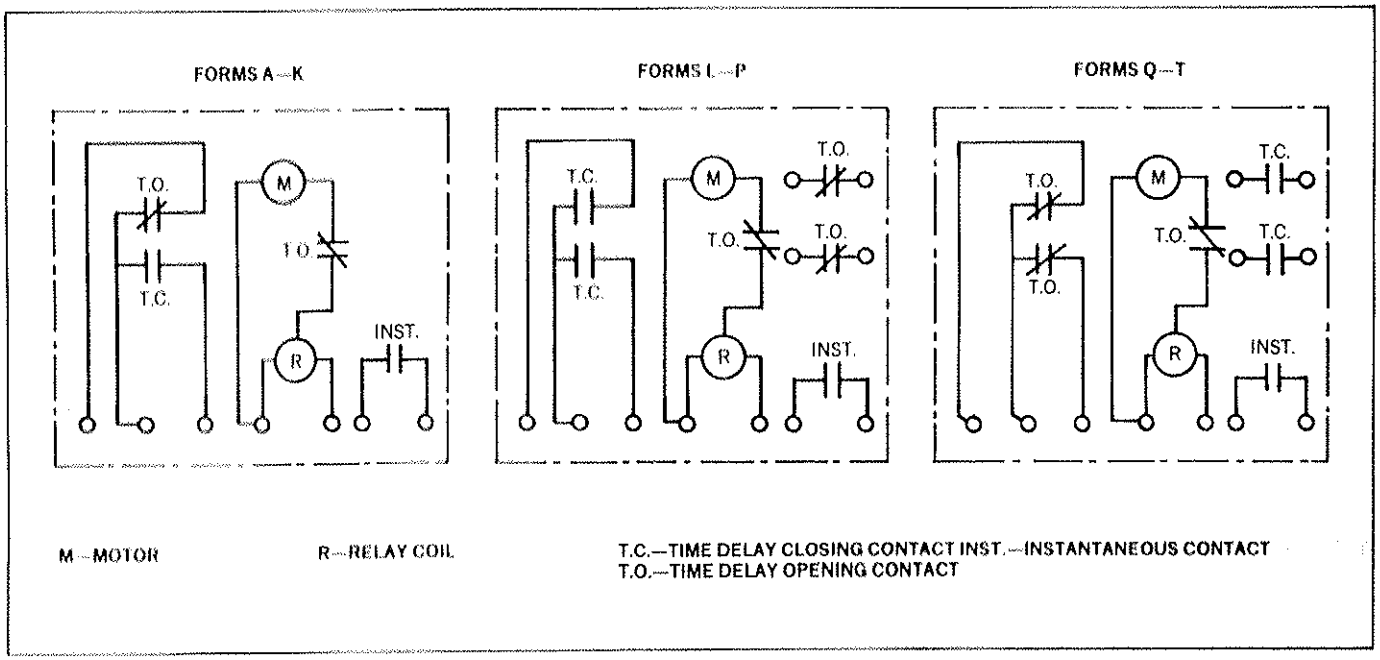


FIGURE 4—Connections

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