VTM-1 Timer Module

VTM-1 INSTRUCTION MANUAL AND APPLICATION NOTES

1. INTRODUCTION

The Digital Security Controls VTM-1 is a versitile timer module with adjustable exit, entry and recycle or reset times. The module operates from 6 to 12 VDC supply. The outputs are N/O, N/C 3 amp relay contacts and voltage output for arming light, prealarm and circuit status. The module may also be used as a pulser module. Because of the wide range of adjustment in timing cycles the VTM-1 is suitable for a wide range of timing applications. Some of the possibilities are: economical control panel, bell pulser, foil supervision, alarm verifier, exit/entry delay timer, and timer for door strikes.

2. POWER SUPPLY

The module may be enerigized by 6 to 12 VDC at the "+DC-" terminals. The input is protected against reverse polarity but the module will not operate unless proper polarity is observed. The current draw is from 20 ma to 150 ma depending on the voltage applied, whether the module is in normal or alarm state and the current draw from the "P.A." and "ST." outputs. The current from the "P.A." and "ST." outputs is current limited to 18 ma at 6 VDC and 36 ma at 12 VDC. When 12 VDC is used, cut the yellow jumper on the module to maintain proper voltage to the relay coil.

3. CRT (CIRCUIT) TERMINALS

With CRT. terminals shorted together (maximum loop resistance 1500 OHMS) timing or alarm loop is in non-alarm state. With CRT. in non-alarm state status indicator should be off. Also, positive voltage at "ST." terminal should not be present. Normally open contacts may be used to set the alarm or circuit loop into alarm by shorting the "CRT." terminals together and connecting the normally open sensor contact between the first arming terminal and the second "CRT" terminal.

4. "ARM" TERMINALS

The timing sequence is started by shorting the two arming terminals together (maximum 10 OHM loop resistance at 6 VDC and 30 OHM at 12 VDC). When arming terminals have been shorted, arming LED comes on indicating timing circuit is armed. Facility for remote arming light may be made by connecting LED in series with 680 OHM resistor between NEGATIVE DC terminal and second arming terminal.

5. EXIT DELAY

The exit delay is adjustable from 0 - 75 seconds by turning the EXIT pot clockwise for maximum time. If circuit is in non-alarm state, timing sequence will not advance past exit time delay when circuit is armed. Also, if circuit is opened and closed before exit time delay period has ended, timing sequence will not advance past the exit delay.

6. ENTRY DELAY

Entry Delay period is adjustable from 0 - 75 seconds by turning the "entry" pot clockwise. Opening the circuit any time after the exit time period has expired will set the timing sequence into the prealarm phase. In this phase, the prealarm LED comes on and a positive voltage appears at the "P.A." terminal. When the entry time period has expired, the relay contacts will operate whether or not the circuit has been restored during the entry delay time period.

7. LATCH JUMPER

By cutting the orange latch jumper, the alarm sequence will reset any time during or after the prealarm sequence by restoring the alarm circuit.

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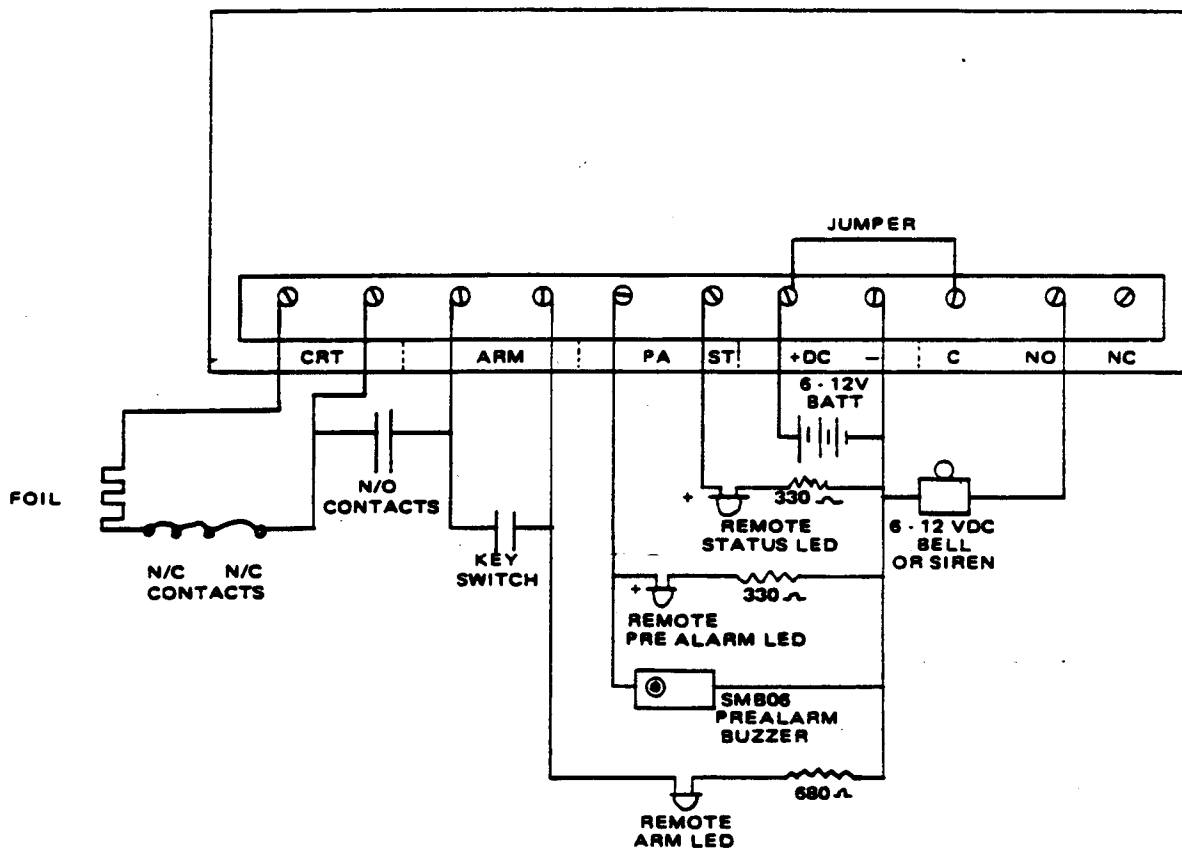
8. RECYCLE OR RESET TIME CYCLE

When the relay contacts have operated, the recycle time sequence is started. The recycle delay is adjustable from zero to 3 minutes by adjusting the recycle pot clockwise. An additional 12 minutes reset or recycle delay time is obtained by cutting the green jumper. If the circuit has been restored during the recycle or prealarm period, the relay contacts will reset at the end of the recycle delay period. The timing sequence will be stopped at the geginning of the entry delay period. If the "crt" had not restored, the contacts would reset momentarily (depending on entry delay setting) and then operate again for another recycle delay period. Recycling will occur until the circuit has been restored. If it is required that no reset occur, cut the wire lead or one end of the 10K OHM resistor (Brown, Black, Orange bands) located directly above the 16 pin timing chip. With this resistor open circuited, no reset or recycle will occur until arming circuit is opened.
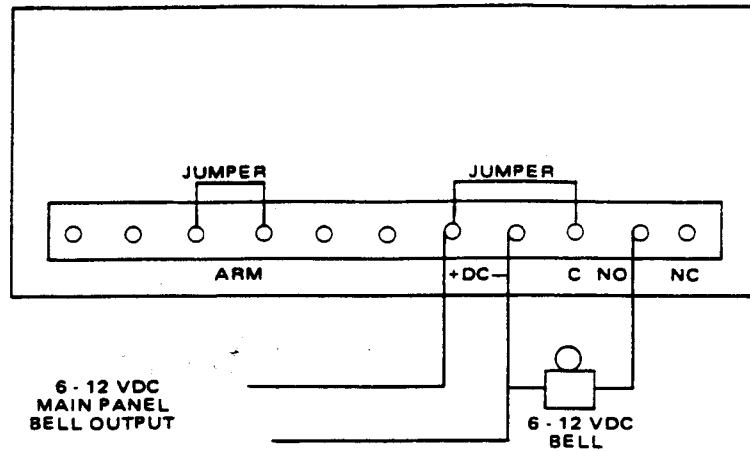
9. FAIL SAFE MODE

For application where a "fail safe" operation is required, white loop is cut and the end furtherest from 16 pin chip reconnected to blue wire for fail safe operating mode. Do not connect the lead to white end of jumper closest to 16 pin timing chip to do so will short output of timing chip and permanently damage module. With module in fail safe mode relay is normally operated. Thus in non-alarm state, relay contacts are reversed and N/O contact becomes N/C and N/C contact becomes N/O. With the module operating this way, a change in relay contact positions occurs not only in an alarm condition but on loss of DC power to the board or failure of any of a number of components on the board.
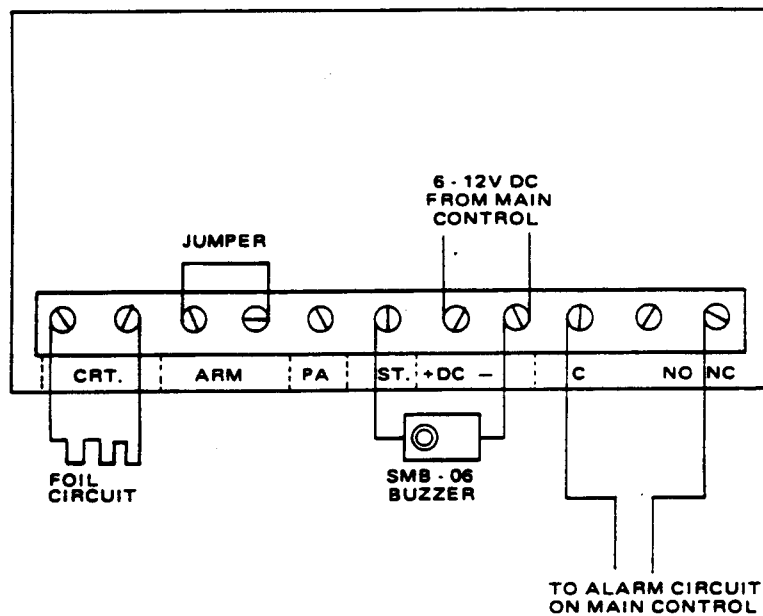
10. APPLICATIONS

Control Panel

Bell Pulser


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        JUMPER              JUMPER
  o   o   o   o   o   o   o   o   o   o   o
          ARM              +DC—   C  NO    NC
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6 - 12 VDC
MAIN PANEL
BELL OUTPUT

6 - 12 VDC
BELL

Reduce EXIT delay to zero. Adjust entry and recycle pots until desired pulse rate is obtained.

Foil Supervision & Alarm Verifier


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              JUMPER            6 - 12V DC
                               FROM MAIN
                               CONTROL

  ⊘  ⊘  ⊘  ⊖  ⊘  ⊘  ⊘  ⊘  ⊘  ⊘  ⊘
    CRT.   ARM   PA  ST. +DC —     C    NO NC
```

FOIL
CIRCUIT

SMB - 06
BUZZER

TO ALARM CIRCUIT
ON MAIN CONTROL

Alarm verifier is obtained by cutting orange latch loop and setting entry adjust for 5 - 10 seconds. If foil resets within this time period, contacts will not open to main control.