



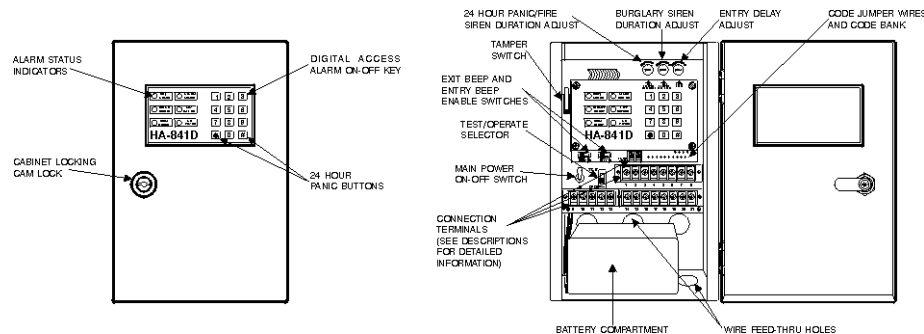
ALARM CONTROL PANEL HA-841D

FOR COMMERCIAL AND RESIDENTIAL SECURITY SYSTEMS

OPERATING INSTRUCTIONS

INTRODUCTION

HA-841D is a complete alarm control panel designed for commercial and residential security systems with the latest electronic control technology. It has the highest level of quality and reliability. The exceptional specification incorporates many features that are only available in the advanced professional systems. HA-841D accepts active and passive sensors/detectors to form a versatile protection system. A digital access key which is equipped on the panel offers 5040 combinations of 4-digit code for alarm ON-OFF control, and 2 fixed buttons for panic. The digital key which eliminates the need for mechanical lock switch and keys is easily to program and conveniently to use but virtually impossible to beat.



NOTES FOR INSTALLING TECHNICIAN

The HA-841D panel is extremely reliable. If an apparent fault exists use the fault check list at the end of these instructions. Failing that recheck all your wiring.

INTERNAL CONTROLS

- Main Power Switch:**
Switches all power to panel.
- Test/Oper. Switch:**
This switch allows the installer to test the panel without setting of the main sirens or relays. In the test position the siren is replaced by the internal buzzer which beeps **2 seconds on 1/4 second off** during the alarm period. This switch should be set to the **"OPER"** position for the siren and relays to operate normally.
- Siren Duration/Fire:**
This sets the length of time the siren will sound, before resetting, when triggered by the 24 hr instant circuit adjustable from 30 sec to 10 min.
- Siren Duration/Burglary:**
This sets the length of time the siren will sound, before resetting, when triggered by the N/C Instant or N/C or N/O delay circuits adjustable from 30 sec to 10 min.
Note: If both Fire and Burglary circuit are triggered at the same time the siren will alternate between a steady tone and a warbling tone at 5 sec intervals.
- Entry Delay:**
This sets the entry time of the delay circuit from 0.5 secondary to 90 sec.
- Digital Access Alarm ON/OFF Key:**
Arms and disarms the N.C. INSTANT, N.C. DELAY and N.O. DELAY burglary protection circuits. It does not govern the 24 hour N.O. INSTANT and the 24 hour N.C. INSTANT circuits.
- 24 Hour Panic Buttons:**
The "*" and "#" buttons are assigned for panic buttons purpose; push both "*" and "#" buttons simultaneously to activate the panic circuit. The panic circuit is in standby 24 hours a day even the alarm is not armed.

- Exit Beep And Entry Beep Enable Switches:**
Put slide switches to the right side to enable the exit beep and entry beep.
- Tamper Switch:**
The tamper switch is N.C. when cabinet door is closed. It protects the panel from tampering, with the key switch on.
- Code Jumper Wires And Code Bank:**
A, B, C and D are code jumper wires which represent the 1st digit, 2nd digit, 3rd digit and the 4th digit of the 4 sequential numbers respectively for alarm ON/OFF. The code bank consists of 10 number pins for the jumper wires selection, they are in the order of 1, 4, 7, 2, 5, 8, 0, 3, 6 and 9.

LED INDICATIONS

- Exit/Armed (GREEN):**
This LED indicates the status of the alarm. When the key switch is turned on the exit period begins (60 sec) and this LED will flash, when the exit period ends the LED will light steadily. If either the Instant or Delay circuits operate (RED) then the Exit/Armed LED will go out. The function of this LED is duplicated on terminal 4 so that remote indication can be used.
- Instant Circuit (RED):**
This LED will light whenever either of the instant circuits (24 hr or N/C) are operated, with the key switch on.
- Delay Circuit (RED):**
This LED will light whenever either of the delayed circuits (N/O or N/C) is operated, with the key switch on.
- Alarm Memory (GREEN):**
This LED will come on when the alarm is tripped and remain on until the main power switch is turned off or the key switch is turned off-on-off. This gives an indication that the alarm has tripped whilst absent.
- Low Battery (GREEN):**
This LED will flash once every 2 sec when the battery voltage drops below 11.5 Volts.
- AC Power (AMBER):**
This LED indicates that power is supplied to the panel (main power switch on) it should be on at all times. If the main power switch is on and this LED is out then power is supplied from the back up battery.

INTERNAL WARNING TONES

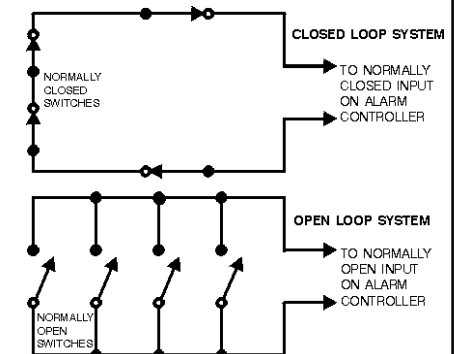
- Exit Delay Period-----Short "BEEP" at 1/2 second interval. ("BEEP" sound ENABLE/DISABLE selectable)
- Entry Delay Period-----2-second "BEEP" at 1/4 second interval. ("BEEP" sound ENABLE/DISABLE selectable)
- Low Battery Indication-----Short "BEEP" at 2 seconds interval.
- Alarm Test Mode-----2-second "BEEP" at 1/4 second interval.
- Remote Key Switch Wiring Broken---2-second "BEEP" at 1/4 second interval. (Short 20-21 to stop)
- Horn Speaker Wiring Broken-----2-second "BEEP" at 1/4 second interval. (1K resistor across 11-12 to stop)

'NORMALLY OPEN' AND 'NORMALLY CLOSED' SENSORS

In all alarm systems, you will find the terms 'normally open' (or NO) and 'normally closed' (or NC). These terms refer to the types of sensors used.

All types of sensors can be thought of as switches that is, they are either closed and open when detecting an intrusion, or vice versa. Most alarm control units have separate inputs for NO & NC sensors.

A sensor's type is determined by its state in the 'armed' condition - that is, when the alarm is set. Some sensors (such as reed switches) are normally open when away from their actuating magnet - but because the magnet is close up to the reed switch and the reed is closed in the 'armed' state, the reed switch is regarded as a 'normally closed' sensor.



Terminal 1 & 2 --24hrInstantCircuit

This circuit is monitored 24 hrs and is unaffected by the alarm key switch. This is a normally open circuit. It can be used for fire and smoke detectors, panic switches and tamper circuits.

Note: with all switches and sensors in the normal reset condition the two terminals must be open circuit, i.e. no connection between 1 & 2.

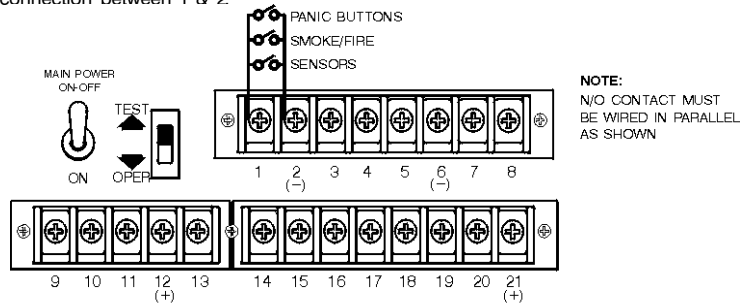


FIG.1 24 HR INSTANT TRIGGER CIRCUIT

Terminal 2 & 3 -- Instant Trigger Normally Closed Circuit

This circuit is controlled by the Alarm on/off key switch, any area that requires protection that has no time delay between sensing and the siren sounding should be connected here - Motion sensors, window switches, window foil tapes etc. can be connected here. The contacts of these sensors must be short circuit when in the normal reset condition. The contacts must be arranged in a series loop (see figure 2).

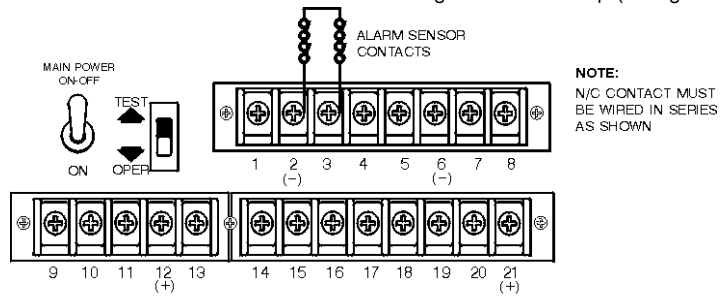


FIG.2 ALARM N/C INSTANT CIRCUIT

Terminal 4 -- Alarm Status Indication

This point allows the connection of a low current light emitting diode (LED) which has the same function as the Exit/Alarm LED. It can be used on external key switches to provide an Indication of the alarm condition. The cathode terminal (normally indicated by a small flat on the plastic body adjacent to the lead, or the shorter lead of the LED is the cathode) is connected in series with a 1K ohm resistor to terminal 4, and the other lead is connected to the +ve (positive) power (terminal 21). The 1K ohm resistor must be connected to the LED, otherwise the LED will be damaged. If the LED does not work reverse the connections and try again. LEDs are available from electronic supply stores e.g. Tandy, Dick Smith.

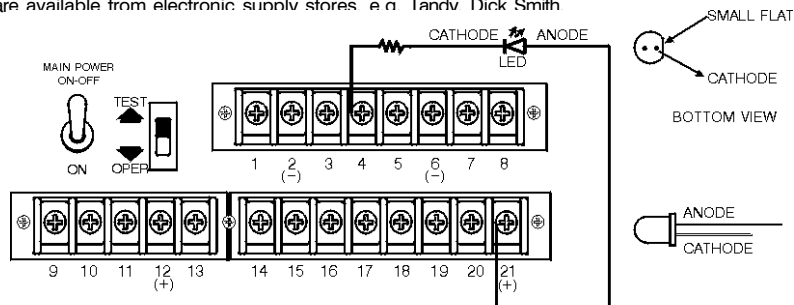


FIG.3 REMOTE ALARM STATUS INDICATOR

Terminal 5 & 6 -- Delayed Trigger N/C Circuit

This circuit is controlled by the alarm on/off key switch, any area that requires a delay between the alarm being tripped and the siren sounding may be connected here. These contacts should be normally closed, i.e. Terminals 5 & 6 must be shorted in the normal condition. The delay time is adjustable from 0.5 sec to 90 sec by adjusting the control marked 'entry delay'.

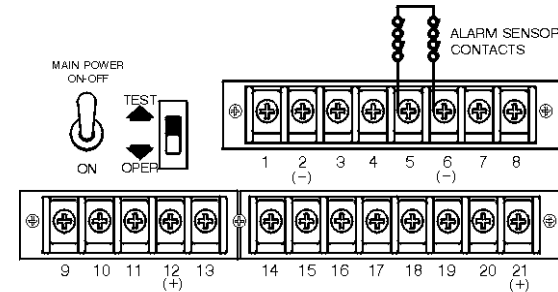


FIG.4 ALARM N/C DELAYED CIRCUIT

Terminal 6 & 7 -- Delayed Trigger N/O Circuit

This circuit has the same function as 5 & 6 but is a N/O circuit, i.e. the contact must be open when the alarm is in the normal condition. Ideal for pressure mats.

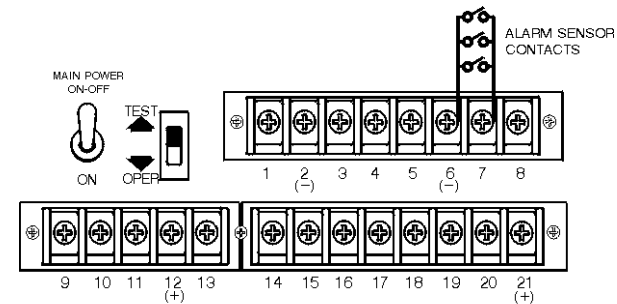


FIG.5 ALARM N/O DELAYED CIRCUIT

Terminal 9 & 10 -- Battery Charging Link

These terminals should be linked to connect the battery charging circuit to a rechargeable battery (highly recommend to use rechargeable battery).

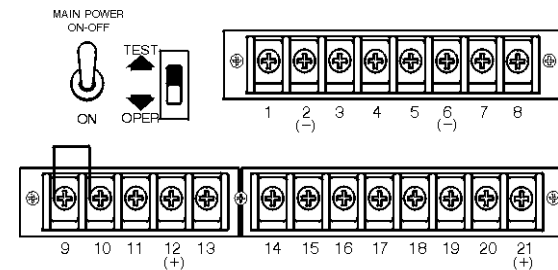


FIG.6 CONNECTION FOR RECHARGEABLE BATTERY

NOTE:
LINK 9 & 10 for
RECHARGEABLE BATTERY
DO NOT CONNECT WHEN
USING DRY CELL
BATTERIES

Terminal 11 & 12 – Siren Speaker Output

These terminals provide a high level siren signal to drive up to 2 (max) 8 ohm horn speakers. Shorting these terminals or using more the 2 speakers will result in serious internal damage. The control panel has an internal alarm to sense if the speaker wires are cut, therefore if a speaker is not connected the 1K ohm resistor installed across the terminals should be left in place. If a speaker is connected remove this resistor.

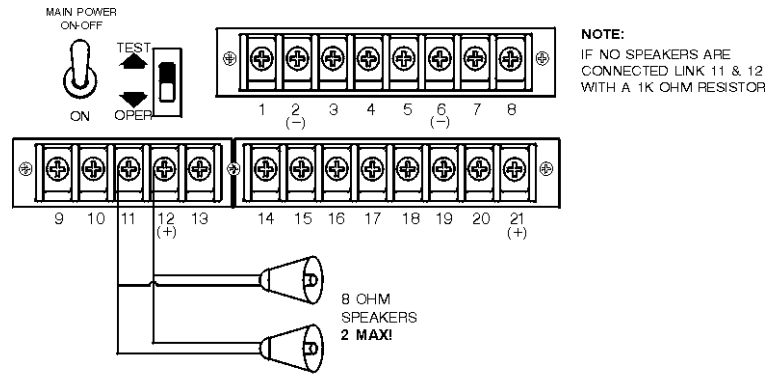


FIG.7 SIREN SPEAKER CONNECTION

Terminal 13 & 14 – Timed Relay Contact

This is a single contact that goes short circuit when the alarm sounds and releases when the alarm resets it can be used to switch strobes and self contained sirens etc. Power is taken from Terminal 10 and switched through the relay contact.

Note:

A max of 1 Amp is available at Terminal 10. If more current is needed an external supply is required max current is 3 Amps. (See Figure 9)

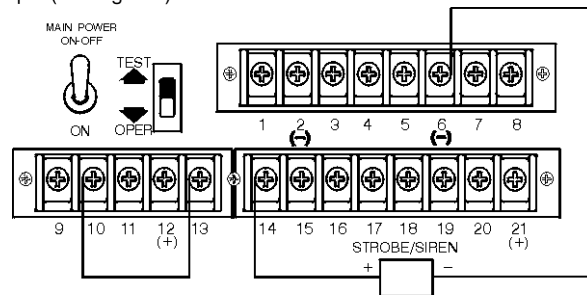


FIG.8 TIMED RELAY CONNECTION

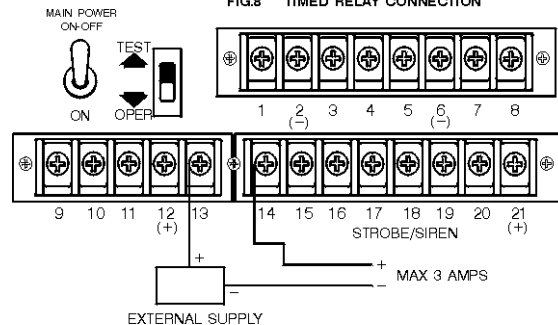


FIG.9 RELAY CONNECTION FOR HIGHER CURRENT/VOLTAGE

Terminal 15 & 16 – Latching Relay Contact

These contacts operate at the same time as the timed relay contact, however, the contacts remain operated until the power is turned off or the alarm key switch is turned off, on, off again (same as the Alarm Memory LED). It can be used for external indication that the alarm has been triggered (alarm memory). Once again the max current for the contact is 3 Amps. Power is connected in the same way as terminals 13 and 14.

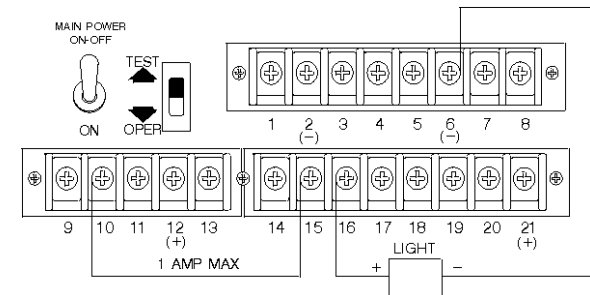


FIG.10 LATCHED RELAY CONNECTION - REMOTE ALARM MEMORY INDICATION

Terminal 17 & 18 – Power Input to Panel

If you have an 16V AC panel the polarity of these terminals does not matter. Simply connect the two wires from the plug pack to these terminals. If you have a 12V DC panel then the power **must be connected using the correct polarity terminal 17 is positive(+), terminal 18 is negative(-)***.

If you are unsure which type of panel you have then feel under the main circuit board in the area behind the terminals. If a small auxiliary circuit board approx. 50mm x 25mm is found then you have an 16V AC panel.

Note: DC input voltage must be 13.8V (or 14V) to ensure correct charging of the battery.

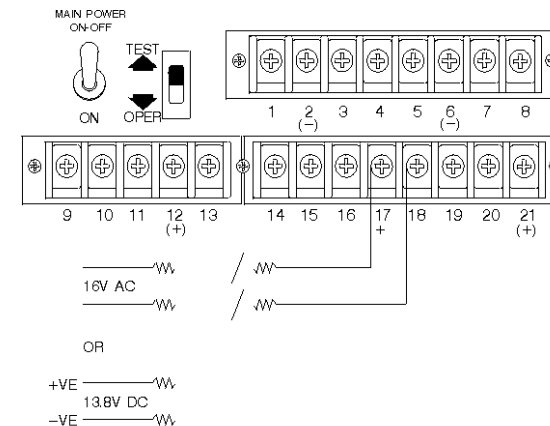


FIG.11 POWER INPUT CONNECTION AC OR DC

Terminal 19 -- Switch Power Out

This terminal provides a 12V DC output up to 0.5 Amps that is switched by the Alarm on/off key switch. It can be used for power to ultrasonic or microwave motion detectors etc. It is not recommended to connect Infrared detectors to switched power. For stable reliable operation PIR detectors should be connected to permanent 12V power (terminal 21).

For PIR detectors, connection should be as follows:

Positive (+) of PIR to (Terminal 21) and Negative (-) to (Terminal 6).

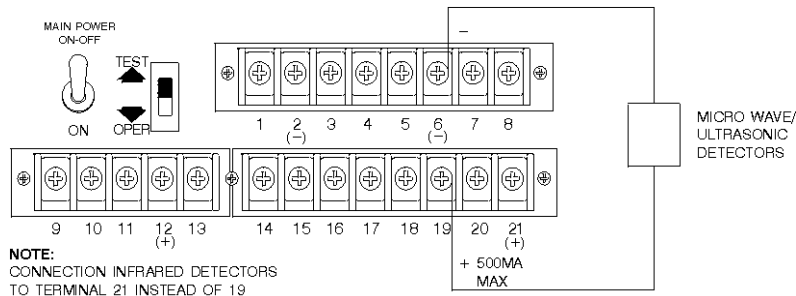


FIG.12 SWITCHED 12V POWER CONNECTION

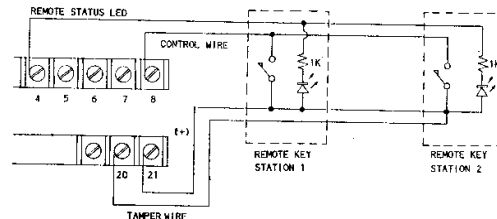
Terminal 20, 21 and 8

These are the terminals for connecting. ON-OFF key switch/switches (or digital keypad/keypads) at remote location/locations with tamper-proof. Terminals 21 and 8 are the control terminals of ON-OFF function of the panel, terminal 20 is for connecting a sensing wire running along with the ON-OFF wires from the panel to the key switch/switches. In the case of these wires are cut, the internal buzzer will be triggered immediately. However, the above sabotage cannot stop the normal operation of the panel.

NOTE: Terminals 20 and 21 must be connected with jumper wire if remote key switch is not used.

If more than one remote key switches are required for the alarm system, they may be connected in parallel. Here is an example of connecting two remote key switches to the control panel.

NOTE: The remote key switches are N.O. momentary type.



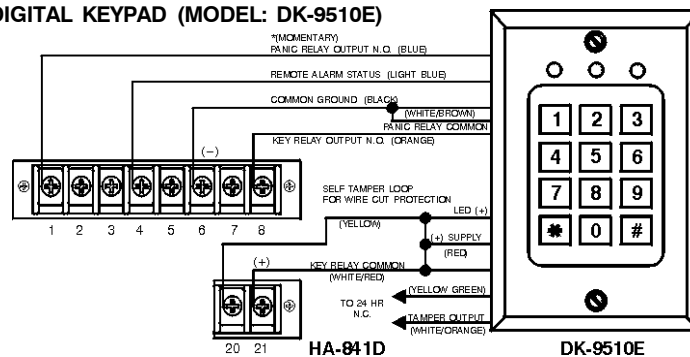
24 HR N.C. (ON UPPER PCB)

Instant protection terminals for 24 hour normally closed protection switches. Any number of N.C. Switches may be connected in "SERIES" to them.

Connect these terminals with jumper wire when they are not used.

REMOTE ON-OFF BY DIGITAL KEYPAD (MODEL: DK-9510E)

DK-9510E is a self-contained dual-output security keypad designed for electric door strike and security control applications. It employs EEPROM, the data that stored are nonvolatile in case of power failure. Over 100 million combinations are possible for the user code and the master code.



PROGRAMMING OF THE DIGITAL KEYPAD

Please refer to DK-9510E manual for details.

FAULT CHECKLIST

FAULT

BEEPER KEEPS SOUNDING

POSSIBLE CAUSE

- Check speakers connected
- If no speakers, 1K ohm resistor must be across Terminals 11 & 12
- Terminals 20 & 21 not linked
- Low battery voltage
- Test/Oper switch in Test position
- Beeper sounds during exit period

INSTANT LIGHT PERMANENTLY ON

- Terminals 1 & 2 shorted (should be open)
- Terminals 2 & 3 open circuit (Terminals 2 & 3 must be shorted when alarm is in untriggered state)

DELAY LIGHT PERMANENTLY ON

- Terminals 5 & 6 open circuit. These must be shorted when alarm is in untriggered state.

LOW BATTERY INDICATION

- Terminals 6 & 7 short (should be open)
- Terminals 9 & 10 not linked, must be linked to charge battery

NOTE: If using dry cell batteries do not link Terminals 9 & 10 (recommend using rechargeable battery)

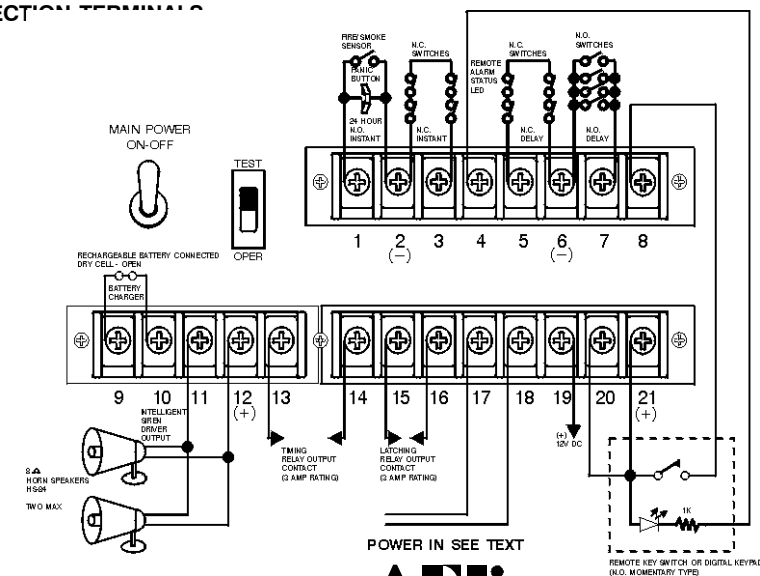
SIREN WILL NOT SOUND

- Test/Oper switch in test position
- Broken wiring
- Forgotten to remove 1K ohm resistor

INSTANT/DELAY CIRCUITS WON'T OPERATE

- Key switch not turned on
- Incorrect wiring, i.e. N/O switch wired in series or N/C wired in parallel

CONNECTION TERMINALS



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