IMPORTANT: Silent Knight products should be tested every month (under no circumstances less than every three months) to insure complete and proper operation and proper input and output connections.

LIMITED WARRANTY

Silent Knight Security Systems warrants that the products of its manufacture shall be free from defects in materials or workmanship for one year from the date of invoice if such goods have been properly installed, are subject to normal proper use, and have not been modified in any manner whatsoever. Upon return of the defective product to the nearest Silent Knight dealer, Silent Knight will, at its sole discretion, either repair or replace, at no cost to the customer, such goods as may be of defective material or workmanship. Customers outside the United States are to return products to their distributor for repair.

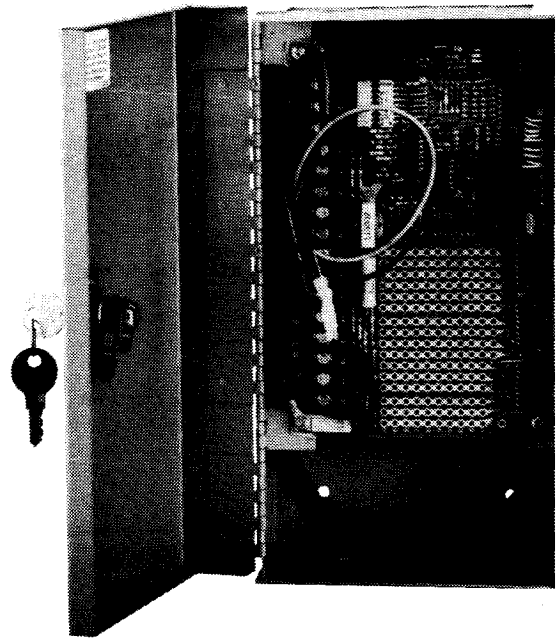
SILENT KNIGHT SECURITY SYSTEMS SHALL NOT UNDER ANY CIRCUMSTANCES BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING FROM LOSS OF PROPERTY OR OTHER DAMAGE OR LOSSES OWING TO THE FAILURE OF SILENT KNIGHT SECURITY SYSTEMS PRODUCTS BEYOND THE COST OF REPAIR OR REPLACEMENT OF ANY DEFECTIVE PRODUCTS.

SILENT KNIGHT SECURITY SYSTEMS MAKES NO WARRANTY OF FITNESS OR MERCHANTABILITY AND NO OTHER WARRANTY, ORAL OR WRITTEN, EXPRESS OR IMPLIED, BEYOND THE ONE YEAR WARRANTY EXPRESSLY SPECIFIED HEREIN.

MODEL 1450

5-CHANNEL DIGITAL DIALER

(For Silent Knight, Ademco, DCI, Franklin, & Sescoa Receivers)



INSTALLATION MANUAL

SILENT KNIGHT
SECURITY SYSTEMS

1700 FREEWAY BLVD. NORTH
MINNEAPOLIS, MN 55430
TELEPHONE 612/566/0510

DIVISION OF WAYCROSSE, INC.

150106 3/88

DESCRIPTION

The Model 1450 is a 5 channel Digital Dialer designed for application with any alarm system; it can be employed as a "slave" or add-on to a local alarm, or as a self contained silent alarm.

Features of the Model 1450 include:

1) Full "Memory" reporting on all channels; all channnels which are in alarm will be reported.
2) Built-in A.C. power supply and battery charger.
3) "Restore-to-Normal" reporting.
4) Optional "Restore-to-Normal" on momentary inputs (Channels 1, 2, 3, and 4).
5) Optional momentary and/or continuous inputs.
6) Normally-closed and/or normally-open inputs to channels 1 and 3.
7) Normally-closed or normally-open inputs to channels 4 and 5. (Channel 2 is NO only).
8) Separate "Test" input.
9) Battery test.
10) Self initiating "Low Battery" reporting.
11) Supervised Channel 2. (Reports same alarm code as "Low Battery")
12) Built-in "Line Seizure" relay.
13) "Anti-jam."
14) Opening and closing reporting.
15) Auto and manual reset.
16) 13 digit dialing
17) Compatible with Ademco, Sescoa, DCI, Franklin and most other receivers.
18) High Speed (FSK) Format Option.

OPERATION

1. **Before connecting this device the telephone company must be notified and provided with the following information:**

   a. **Manufacturer (Silent Knight)**
   b. **Model number - 1450**
   c. **F.C.C. registration number - AC 698R-67314-AL-R**
   d. **Ringer equivalence - 0.0B**
   e. **Type of jack (to be installed by the telephone company) RJ31X**

   NOTE: The telephone company must also be notified if this device is permanently disconnected!

2. **This device may not be directly connected to coin telephone or party line services.**

3. **The telephone company under certain circumstances may temporarily discontinue services and/or make changes in its facilities and services which may affect the operation of this device; however, the telephone company is required to give adequate notice in writing of such changes or interruptions.**

4. **This device cannot be adjusted or repaired in the field; in case of trouble with the device notify the installing company or return to:**

   Silent Knight Security Systems
   1700 Freeway Blvd. No.
   Minneapolis, Minnesota 55430

REPORTING SEQUENCE

A. Transmission Format

1) Once activated the Model 1450 will seize the telephone line and begin listening for dial tone.
2) If dial tone is detected it will commence dialing the programmed number.
3) When the Receiver answers, it will send an "Acknowledge" tone to the 1450 which tells the 1450 to send its data. (If the 1450 does not reach the "Receiver" for whatever reason, it will hang-up and try again. This will happen a total of 12 times).
4) The alarm data (3 digit location number and single alarm digit) is transmitted.
5) When the Receiver has decoded two (2) complete and identical alarm transmissions from the 1450 it will send a "message correct" (Kiss-off) tone to the 1450.
6) If more than one channel input is active after the 1450 receives the "Kiss-off", it will report the next alarm message. This will continue until all alarms are reported.
7) The final Kiss-off will cause the 1450 to hang-up. (The memory reports in ascending order Channel 1 - 9).

B. Low Battery

The Model 1450 has a low battery detector which will cause the dialer to activate and report low battery (Code 8) when the battery voltage reaches 5.6 volts D.C.

SELECTION OF OPTIONS

There are 9 jumper options labeled 1 thru 9 that are either left in or cut out depending on the modes of operation you desire. These options are described in the following paragraphs and tables.

A. INPUT SELECTION

Channels 1,2,3,4 of the Model 1450 can be programmed for Momentary (Latching) or Continuous (Non-Latching) activation. Channel 5 of the Model 1450 is Continuous (Non-Latching) only.

Input selection is as follows:

Momentary Activation Channels 1,2,3,4

[Jumper 2 Out]

Continuous Activation Channels 1,2,3,4

[Jumper 2 In]

Jumper 2 is the primary determining factor as to whether the channels will accept momentary or continuous inputs. However, with Jumper 2 IN you have the option of independently selecting momentary inputs for Channels 1,2,3, and 4 via jumper options 6,7,8, and 9. A table for the options is shown below.

	INPUT				
CHANNELS	CONTINUOUS			MOMENTARY	
1	Jumper 6			Jumper 6	
2	" 7			" 7	
3	" 8	IN		" 8	OUT
4	" 9			" 9	

NOTE: If "Restore-to-Normal" is selected (J1 cut) and you cut any of the Jumpers 6 thru 9 the 1450 will report first the alarm code for that channel and if the channel was activated by a momentary input, the 1450 will re-dial and report a "Restored" code (7).

"Restore-to-Normal"

The "Restore-to-Normal" reporting option (Code 7) is selected by Jumper 1, as follows:

No Restore-to-Normal	Jumper 1 In
Restore-to-Normal	Jumper 1 Out

Channels 1,2,3, and 4 can be programmed to report Restore-to-Normal on a momentary or a continuous input. In order to report restore on a momentary input, Jumper 6 thru 9 must be cut for the appropriate channel.
Channel 5 will only report Restore-to-Normal on a continuous input.

Restore-to-Normal on a continuous input will be transmitted only if the initiating alarm is removed after the Model 1450 has received the "Kiss-Off" signal from the receiver and no other channels are in an alarm state.

Opening Closing Reporting (Jumper 5)

If you cut Jumper 5, the Model 1450 can be used to report Opening and Closing by applying a continuous closure to Channel 4's input for a Closing report and removing the closure for an Opening report.
Closings will be reported as a (Code 4) for Silent Knight formats or a code (6) for Sescoa formats.
Opening will be reported as a Code (9).

D. Data Transmission Format

The Model 1450 is Wire Jumper programmable for use with several types of Receivers. The transmission format options are shown below.

Silent Knight, Ademco Format (Standard Format)

Jumper 3 IN
Jumper 4 In

Sescoa, DCI, Franklin Format

Jumper 3 Out
Jumper 4 In

Silent Knight (New FSK Format)

Jumper 3 In
Jumper 4 Out

INPUT CONNECTIONS

A.C. - Connect 12 VAC transformer to terminals 1 & 2

Battery - Connect 6 Volt battery to battery cables.
CAUTION Red to (+) plus. Black to (-) minus

Ch. 1 - Channel 1 will operate with normally-closed (N.C.) and/or normally-open (N.O.) contacts. As shown in Figure 1.

NOTE: If N.C. contacts are NOT used a jumper must be connected across terminals 3 & 4

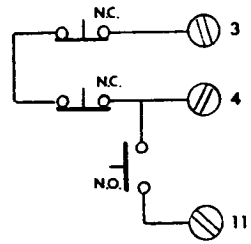


Figure 1.

Channel 1 may also be activated by a voltage connect as shown in figure 2.

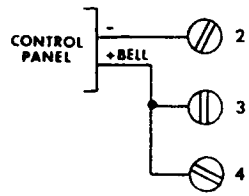


Figure 2.

Channel 1 will be reported as an alarm code (1) for Silent Knight format or a code (3) for Sescoa format.

Ch. 2 - Channel 2 will operate with (N.O.) contacts only. Connect as shown in Figure 3.

NOTE: The Channel 2 input is supervised. A 15K resistor must be connected across the last sensor in the (N.O.) loop. If Channel 2 is not used connect the resistor across terminals 6 & 11.

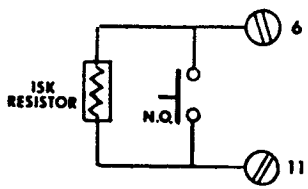


Figure 3.

Channel 2 will be reported as an alarm code (2) for Silent Knight format or code (1) for Sescoa format. Loss of supervisory on Channel 2 will be reported as an alarm code (8).

Ch. 3 - Channel 3 will operate with (N.C.) and/or (N.O.) contacts as shown in Figure 4.

NOTE: If N.C. contacts are not used a Jumper must be connected across terminals 9 & 10.

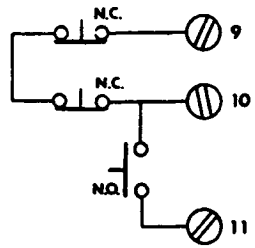


Fig. 4

Channel 3 may also be activated by a voltage. Connect as shown in Figure 5.

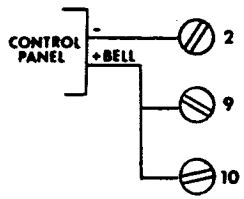


Fig. 5

Channel 3 will be reported as an alarm code (3) for Silent Knight format or code (2) for Sescoa format.

Ch. 4 - Channel 4 will operate with (N.C.) or (N.O.) contacts but not both. Connect as shown in Figure 6.

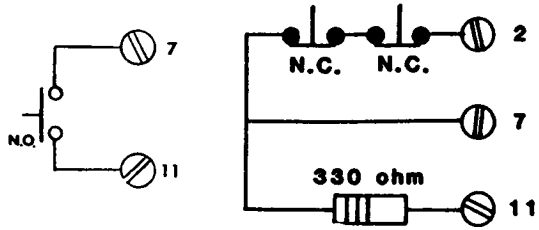


Figure 6

Channel 4 may also be activated by a voltage. Connect as shown in Figure 7.

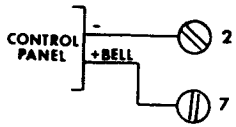


Figure 7

Channel 4 will be reported as an alarm code (4) for Silent Knight format or code (6) for Sescoa format.

Ch. 5 - Channel 5 will operate with (N.C.) or (N.O.) contacts but not both. Connect as shown in Figure 8

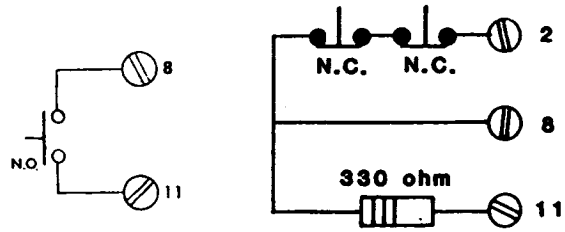


Figure 8

Channel 5 may also be activated by a voltage. Connect as shown in Figure 9.

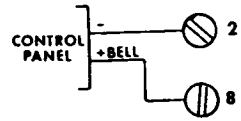


Figure 9

Channel 5 will be reported as an alarm code (5) for both Silent Knight and Sescoa format.

Test - The "Test" input will operate with a "Momentary" N.O. switch. Connect as shown in Figure 10.

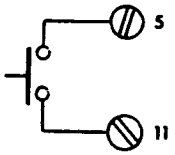


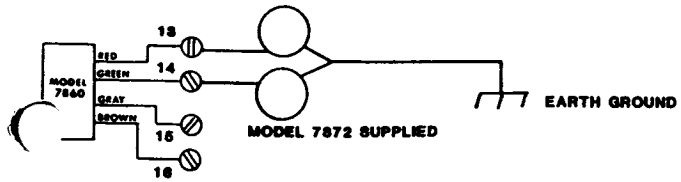
Figure 10

Test will be reported as an alarm code (9).

NOTE: When the "Test input is active (switched closed) the (A.C.) is automatically turned off. If the battery is low the 1450 will report low battery (code 8). If the battery is dead or not connected the 1450 will not dial or seize the line.

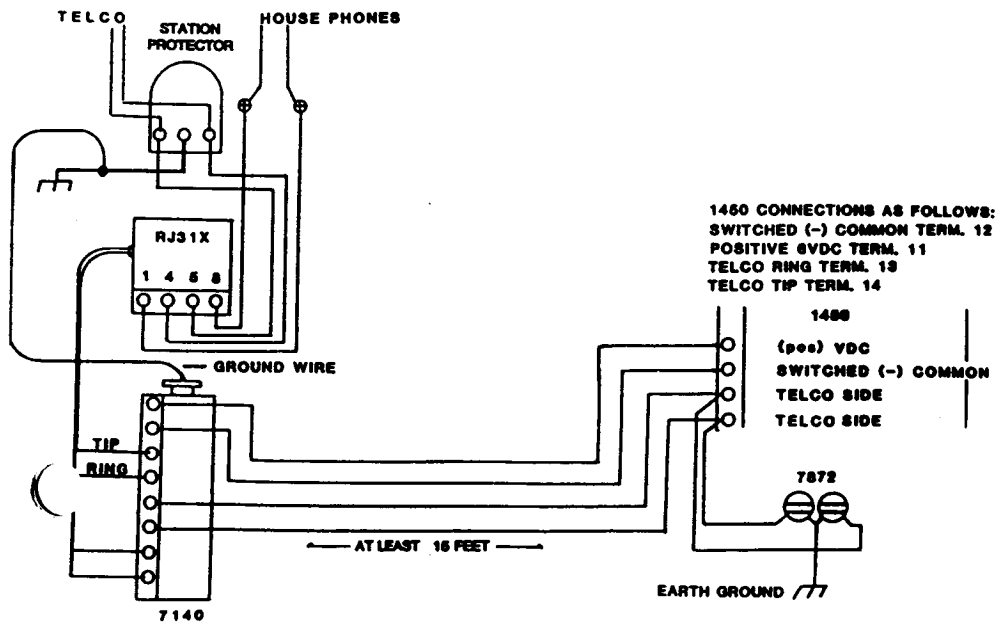
Telephone Line Connection

The 1450 has a built-in line seizure relay which will disconnect both sides of the house phone telephone lines. Connect as shown in either of the figures below.



Lightning and transient protection to the communicator may be enhanced by installing a model 7140 protector/seizure module. In those areas where lightning damage to telephone equipment such as digital communicators is likely to occur, it is advisable to install a model 7140.

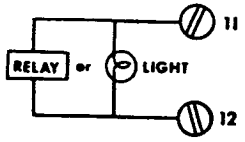
If the telephone company does not or will not install gas tube station protectors it is most important that both the model 7140 and 7872 suppression device be used.



OUTPUTS

"Reporting" Light Output

The 'reporting' light output provides a (-) minus potential whenever the 1450 is in the reporting (active) state. This output may be used to turn on a light or activate a relay. Connect as shown in Figure 12.



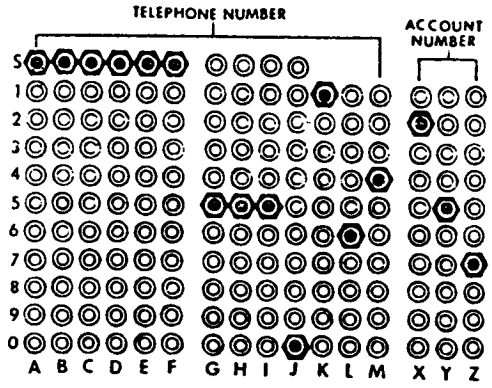
(D.C. current available at terminal 12 is 50 MA.)

Figure 12

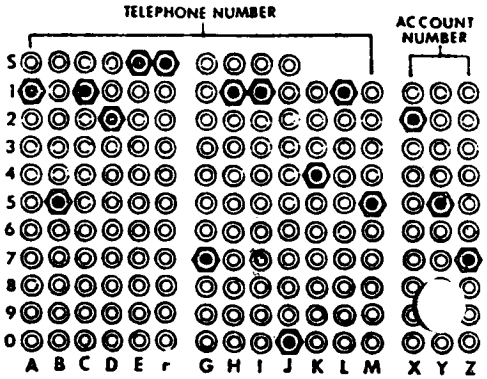
DIALER PROGRAMMING

Dialing - The 1450 will dial as few as 3 digits or as many as 13, depending on how the matrix is programmed. See examples in Figure 13.

NOTE: If more than 7 digits are used the digits must start with the "A" row of the matrix. The appropriate number of "skips" left in the "S" position and the remaining digits programmed normally.

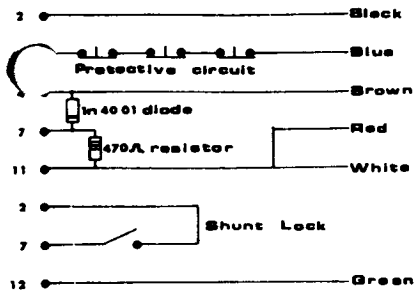


EXAMPLE: 555-0164 Acct.# 257

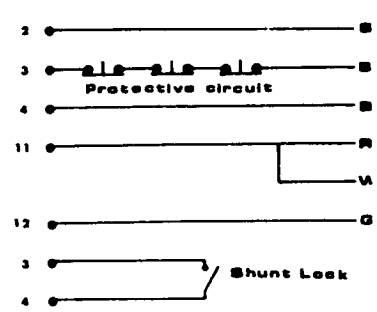


EXAMPLE: 1-512-711-0415
Acct. # 257

*7230 to 1450 for opening/closing



*7230 to 1450 shunt lock only



TERMINAL STRIP SUMMARY

TERMINAL	
1 -	12 VAC
2 -	12 VAC (DC COMMON)
3 -	CH. 1 OUT
4 -	CH. 1 IN
5 -	TEST
6 -	CH. 2
7 -	CH. 4
8 -	CH. 5
9 -	CH. 3 IN
10 -	CH. 3 OUT.
11 -	+7 VDC
12 -	REPORTING
13 -	TELCO. RING
14 -	TELCO. TIP
15 -	PHONE RING
16 -	PHONE TIP

*NOTE: Only one 7230 may be connected to each 1450.

MODEL 7891 TRANSIENT SUPPRESSOR

The Silent Knight Model 7891 Transient Suppressor is designed to clamp to electrical ground, all the high voltage spikes coming from the A.C. input that may be harmful to the control panel.

It is very important that this device be used, and installed correctly.

The two terminal spade lugs with the clamping diode should be attached to the transformer secondary coil. The common terminal spade lug with one end of each diode connected to it, should be installed in such a manner that it will have a good connection to electrical ground, using the screw that holds the receptical cover in place. When using this method of installation, it should be confirmed that the outlet cover screw is indeed electrical ground. To confirm this, use a volt meter to measure the voltage between one side of the outlet and the mounting screw. When you find a potential difference between the screw and one side of the outlet, then measure the voltage between one side of the outlet and the other. The voltage should be the same as the voltage read between the mounting screw and the hot side of the outlet.