DTI Security
A DIVISION OF DATURA INTERNATIONAL INC
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# PRODUCT DATA
# DSS-451/452
# BURGLAR/FIRE ALARM CONTROL PANEL

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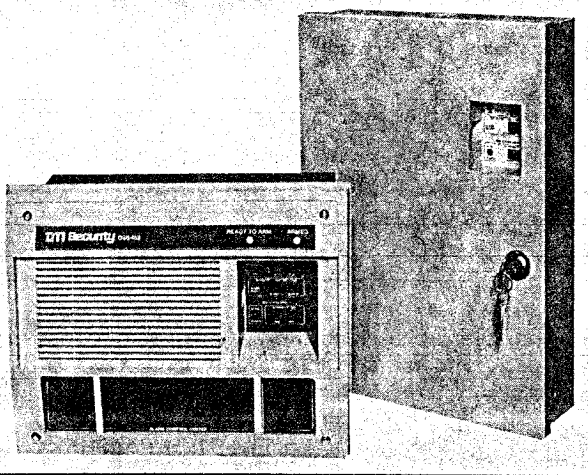
CONTROL UNIT
FIRE SIGNALING SERVICE
DTI Security 1034 Kiel Ct. Sunnyvale, CA 94086
LISTING STATE OF CALIFORNIA STATE FIRE MARSHAL SERVICE
Listing No. 7165-806:106



The DSS-451/452 Control Panels combine modern technology with DTI's proven reliability. Features necessary for most installations are built into the DSS-451/452. This makes the panel easy to install, reduces system cost, and yet allows the panel to be powerful enough for nearly all residential or commercial applications. For added versatility, this panel is available in either a heavy metal, lockable housing for surface mounting (DSS-451), or with an attractive faceplate for flush mounting in residential areas (DSS-452).

## Features

- Seven (7) Independent Alarm Detection Circuits:
  - —Instant Loop (Supervised)
  - —Exit/Entry Loop (separately adjustable delay, Supervised)
  - —Switched Zone Loop with Supervised Switch & Indicator
  - —24-Hour Local Panic Loop
  - —24-Hour Silent Panic Loop
  - —Commercial Day/Night Loop
  - —Fire Loop (Supervised)
- Programmable Alarm Output: 12 VDC or Built-in Siren Driver
- Zone Indicator and Zone Bypass Switch
- Fused Circuit Protection
- Built-in Recharging Circuit
- Individual Alarm Time-out and Reset for Each Detection Circuit
- Fail-safe Arming with Audible "Loop-Reminder" if a Loop is violated
- Three (3) Separate Communicator Outputs: BURGLARY, PANIC and FIRE.
- Multiple Key Station Operation
- Remote Indicator Outputs
- Entrance Delay Prealarm Output
- Audible Day/Night Trouble Indicator
- Alarm/Battery/Fire Test Switch
- "Installer Quick-Test" Programming
- "Instant/Delay" Switch for Exit/Entry and Switched Zone Loops
- "Alarm Memory"
- Three (3) Different Alarm Sounds with Bell or Siren: BURGLARY, PANIC and FIRE

## Specifications

**Operating Voltage:** 12 VAC from Class II, 40 VA plug-in transformer

**Standby Power:** 12 Volts DC, rechargeable battery

**Alarm Output:** Local: Bell or Siren Driver, 12 Volts, 2 Amps max; Communicator: 12 Volts, 100mA max.

**Alarm Time-Out and Reset:** Programmable switches for 4, 6 or 10 minutes or continuous; (5 seconds for "Installer Quick-Test")

**Detection Circuits:**
- —Instant (Supervised, 4.7K Ohm EOL resistor)
- —Exit/Entry Delay (Supervised, 4.7K EOL resistor)
- —Switched Zone (Exit/Entry Delay) (Normally Open)
- — 24-Hour Local Panic (Normally Open)
- — 24-Hour Silent Panic (Normally Open)
- — Commercial Day/Night Loop (Normally Closed)
- —Fire Loop (Supervised, 4.7K Ohm EOL resistor)

**Exit/Entry Time Delay:** Switch programmable for 15, 30 or 45 seconds; 5 seconds for "Installer Quick-Test"

**Prealarm Output:** 12 Volts DC, 50mA maximum

**Remote Indicator Outputs:** "Ready To Arm" and "System Armed," 12 Volts DC, 60mA each maximum

**Communicator Output Delay:** 20 seconds

**Controls & Indicators:**
- —AC Power Indicator LED
- —System "Armed" Indicator LED; (blinks for alarm memory)
- —"Ready To Arm" Indicator LED
- —Zone Indicator LED
- —Supervised Zone Switch
- — Alarm/Battery/Fire Test Switch
- — Buzzer Output: • Prealarm • Fire Loop Trouble • Loop Reminder • Day/Night Loop Trouble

**Temperature:** 32°F (0°C) to 120°F (49°C)

## Programmable Options

**Alarm Time-Out:** 4, 6, or 10 minutes or continuous

**Installer Quick-Test:** Sets all timings to five (5) seconds

**Bell or Siren Alarm Output:** Converts Siren Output to 12 VDC for Bell operation

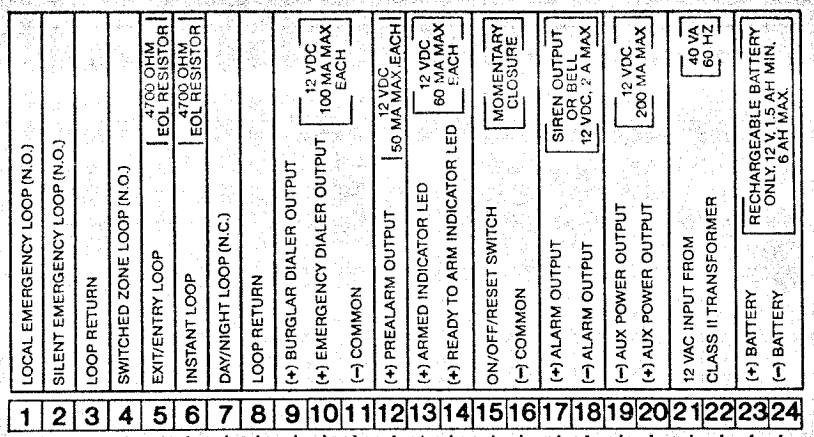
**Entry Delay:** 15, 30 or 45 seconds

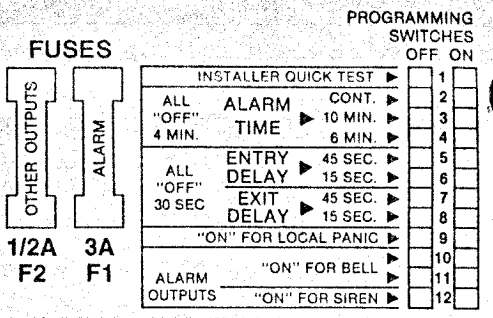
**Exit Delay:** 15, 30 or 45 seconds

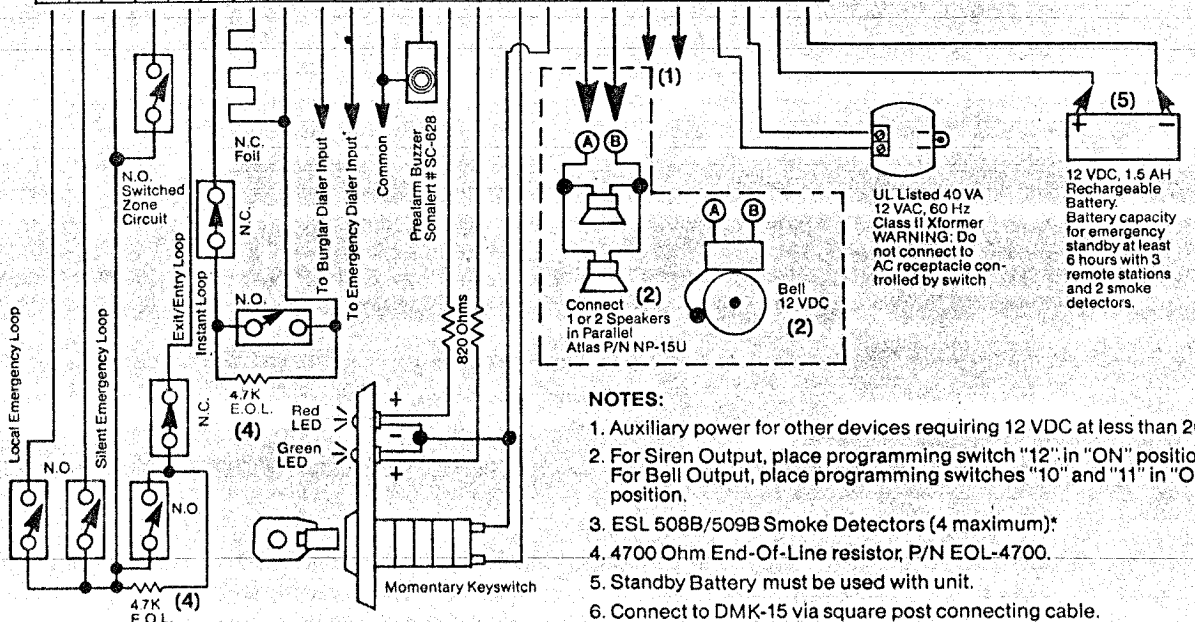
## Accessories

- **RPA-12:** Prealarm Warning Buzzer (12 VDC)
- **RGC-12:** 1.5 Amp/hour Rechargeable Battery, 12 Volt
- **RPT-14:** 12 Volt, 40 VA Class II Transformer
- **DCU-12:** Digital Key Station
- **DCU-15:** Programmable Digital Remote Control Station consisting of Micromaster™ (DMK-15) and Remote (DKB-15)

# DSS-451/452 Hook-Up Diagrams



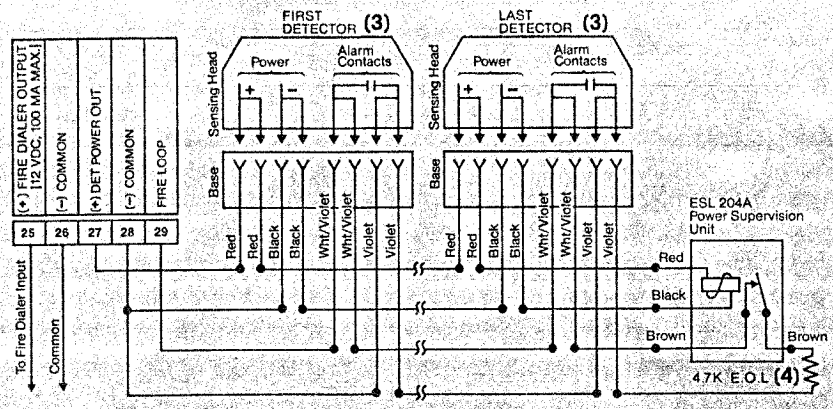




**NOTES:**

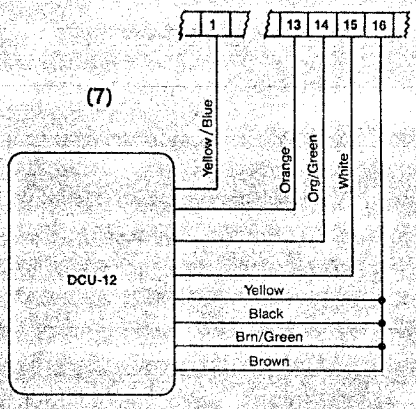
1. Auxiliary power for other devices requiring 12 VDC at less than 200mA.
2. For Siren Output, place programming switch "12" in "ON" position. For Bell Output, place programming switches "10" and "11" in "ON" position.
3. ESL 508B/509B Smoke Detectors (4 maximum)*
4. 4700 Ohm End-Of-Line resistor, P/N EOL-4700.
5. Standby Battery must be used with unit.
6. Connect to DMK-15 via square post connecting cable.
7. Connection to DCU-12 Digital Remote.

*509B includes built-in 135° heat sensor.

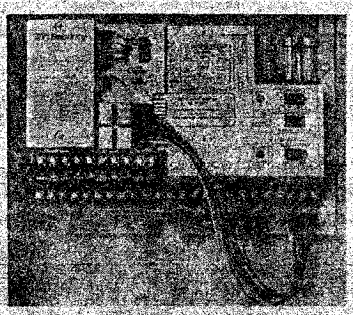
## DSS-450 Smoke Detector Hook-Up Diagram



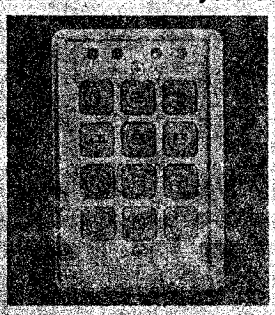

## DCU-12 Remote Keyboard




## DMK-15 Remote Control Station (6)



## DKB-15 Remote Keyboard



**Ordering Information:**

**Order:** DSS-451 Local Burglar Alarm Control Panel. Control Panel is packaged in 18 gauge metal housing with door key and mounting hardware.

**Order:** DSS-452 Local Burglar Alarm Control Panel. Control Panel is available in flush mounted, simulated wood grain panel.

NOTE: The DSS 451/452 Control Panel does not include a battery or transformer.

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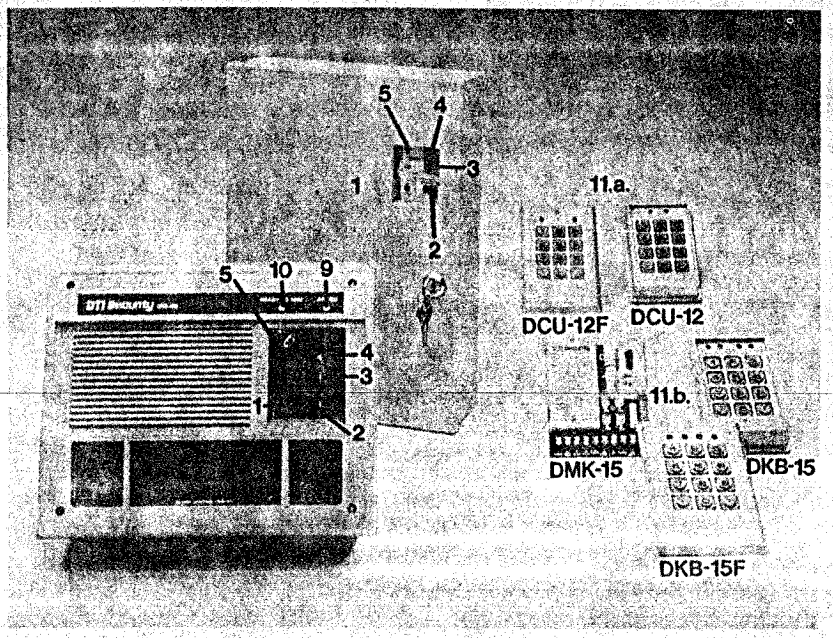
# DSS-451/DSS-452 BURGLAR & FIRE ALARM CONTROL PANEL

# OPERATION AND INSTALLATION MANUAL

Manual No. 70-0465

## DSS-451/DSS-452 INDICATORS & CONTROLS




1. **POWER INDICATOR**
   Visible when A.C. Power is present. Blinks on D.C.
2. **TEST SWITCH**
   When activated, A.C. power is removed and the alarm device is powered by the standby battery. Also used as the smoke detector power reset switch.
3. **INSTANT/DELAY SLIDE SWITCH**
   In the instant position, the control will provide an instant alarm on intrusion of any loop. In the delay position, the E/E and switched zone loops will be delayed corresponding to the pre-set exit and entry timing.
4. **SUPERVISED ZONE SLIDE SWITCH**
   Used to add or delete zoned interior protective devices. The zone can only be deleted when the control is disarmed.
5. **ZONE INDICATOR**
   The indicator is visible WHEN THE ZONE IS ADDED AND SAFE.
6. **TIMING ADJUSTMENTS**
   Programming switches are provided for alarm time, entry delay, exit delay, and installer quick test.
7. **SIREN/BELL SWITCHES**
   Set the appropriate switch/switches for siren or bell output.
8. **SYSTEM FUSES**
   The alarm fuse is 3A. The fuse for "other outputs" is 1/2A.
9. **"SYSTEM ARMED" INDICATOR**
   The LED is visible when system is armed.
10. **"READY TO ARM" INDICATOR**
    The LED is visible when the burglary loops are in a safe condition (LOOP STATUS).
11. **OPTIONAL ACCESSORIES** (Shown for Reference Only):
    a. DCU-12 and DCU-12F Digital Remote Control Station.
    b. DCU-15 Multi-Station Digital Remote Control consisting of the DMK-15 MicroMaster™ and the DKB-15 or DKB-15F Digital Remote.

## GENERAL INFORMATION

The DSS-450, in a single instrument, provides Burglary, Fire, and Panic protection with a test switch, ON/OFF control, supervision, annunciation, secondary loop protection, automatic cut-off and reset, selectable zone shunting, and rechargeable standby power.

The DSS-451 Burglar and Fire Alarm Control Panel is a versatile control instrument housed in a rugged steel cabinet designed for use in most commercial applications.

The DSS-452 is a decorative flush mount version of the same control instrument, and is designed for in-the-wall mounting in residential installations or other applications requiring a pleasing appearance. The printed circuit board control is identical for both models.

## OPERATING INSTRUCTIONS

### How to Turn the Control Panel Sensor Loops "On"

- Check to see that the "READY TO ARM" indicator is LIT. This shows that all sensors are in a safe condition and the system is ready to be "ARMED". If the "READY TO ARM" LED IS NOT LIT, a protected portion of the premises is in an unsafe condition. This must first be corrected since the DSS-450 Control Panel incorporates a false alarm prevention feature, which will not allow the system to be "ARMED" while in an unsafe condition. If an attempt is made, the Loop Reminder/Pre-alarm Buzzer will sound for two seconds, alerting the user that the system did not "ARM" because of this unsafe condition, and the "ARMED" LED will not be visible. (A pre-alarm buzzer must be added to the panel for this feature to operate).
- "ARM" the Control Panel from either a momentary key station or a digital remote station and verify that the "ARMED" indicator is LIT. This shows that the system is now "ARMED".

### How to Turn the Control Panel Loops "OFF" and Reset a Burglar or Panic Alarm

- To turn the control panel sensor loops "OFF" or "RESET" an alarm, enter valid code on digital remote keypad* and verify that the "ARMED" indicator is NOT LIT. This shows that all sensor loops are "OFF". In order to easily distinguish between a burglary or panic alarm condition, a burglary alarm will be a continuous oscillating siren when utilizing a speaker. The emergency (Panic) signal is also an oscillating siren but is intermittent in order that the two signals be distinguished.

  When using a bell, the burglary and emergency (Panic) signal will be a pulsed ringing.

### How to Use the Exit/Entry Time Delay Feature

- To enable the user to turn the sensor loops "ON" or "OFF" from within the protected premises, programmable time delay periods are provided which delay the detection circuitry by a sufficient amount of time to allow the user to exit or enter through specified loop doors without causing an alarm.

### To Leave

- After turning the sensor loops "ON", exit from the premises through a specified delayed loop within the pre-set time period to avoid setting off the alarm.

### To Enter

- When re-entering the premises, the user as well as the intruder will be detected immediately. However, the user can prevent the alarm from sounding by "DISARMING" the system before the entry time delay period has expired.
- As an optional feature, the dealer can install a "pre-alarm" warning buzzer that will sound during the "entry" delay period to remind the user to "DISARM" the system before the delay period has expired.

NOTE: The duration of the "Exit" and "Entry" delays are independently preset to a convenient time period during installation of the system.

### How to Use the "Instant" Alarm Feature

- To eliminate the "Exit/Entry" time delay period, before turning the sensor loops "ON", move the "Instant/Delay" slide switch to the "Instant" position. If the system is now armed, any violation of the delayed detection sensors will now initiate an immediate alarm. This feature does not operate with the "Quick Test" switch set to "On".

### How to Use the Switchable Zone Feature

- To enable the user to add or delete a specific portion of his detection circuit as required, a supervised zone switch is provided on the Control Panel.
- To add the zone to the protection circuit, move the slide switch to the left. The zone indicator will be lit, showing that the zone is now included in the protection circuit. THIS INDICATOR WILL GO OUT IF THIS ZONE IS VIOLATED.
- To delete the zone, move the faceplate slide switch to the right. The zone indicator will go "OFF".
- This zone is also controlled by the Instant/Delay switch, and has the same delay times as the Exit/Entry loop when in the delay mode.

  NOTE: As an added security feature, the slide switch is supervised. Any attempt to remove the zone while the system is "ARMED" will initiate an immediate alarm.

### How to Use the "Panic" Feature

- As an optional feature, the security system may be installed with one or more remote panic switches which can be used to manually initiate an alarm at any time regardless of whether the system is "ARMED" or "DISARMED".
- To sound the alarm in any emergency situation, depress the PANIC SWITCH installed with the system.
- If the alarm has been sounded, it can be "RESET" by entering a correct code on the digital remote.* All alarms except a Fire Alarm will automatically shut off after the pre-set time delay.
- Panic may be installed as a silent or local alarm.

### How to Use the Fire Alarm Feature

- If a fire alarm has been installed as part of the DSS-450 Security System, its detection circuitry will be continually active and cannot be shut off. When using a siren speaker, the fire alarm of the DSS-450 is a steady, high-pitched, uninterrupted alarm and is different from both the burglary and panic alarms. When using a bell, the fire alarm signal will be a constant ringing. To reset a fire alarm, first clear the smoke/heat detector by blowing briskly into the detection chamber, or allow a heat sensor (if used) to cool sufficiently to cause its contacts to open, then momentarily push the "ALARM/BATT TEST" slide switch to the left. The alarm will reset when the slide switch is released. Supervision of the fire detection circuitry is maintained at all times and a trouble buzzer (optional, required for fire installations) will sound should there be a fault in the fire system wiring. If this should occur, immediately contact your service representative to correct the problem.

## SYSTEM TEST PROCEDURES

### Instant Detection Circuits

"ARM" the system from the key station. Open and then close a protected door or window connected to the instant detection circuit. The alarm should immediately sound. Reset the alarm by "DISARMING" the system at the digital remote.*

### Panic Alarm (Optional)

Depress a panic (emergency) switch (if connected to "local" input). The alarm should sound instantly. Reset the alarm by "DISARMING" the system via the digital remote.*

*(or momentarily turn key switch to the right if used.)

### Delayed Detection Circuits

"ARM" the system at the digital remote.* Immediately open and then close an exit door. Wait approximately two minutes to make certain the alarm does not sound. Open the door again (when the Pre-alarm Warning Buzzer is used, it will sound as soon as this door is opened for the second time) and wait until the pre-set entry time delay period has passed. The alarm should now sound. Reset the alarm by "DISARMING" the system at the digital remote.*

### Alarm and Battery Test

To test the alarm device, internal fire circuitry, and the stand-by battery, move the TEST switch located on the Control Panel to the left for several seconds. The alarm device should sound (a steady tone) for as long as the switch is held to the left. The AC power indicator will flash on and off during the test indicating that the system is being powered by the battery. If the alarm does not sound, or if the AC power light is off, even though house voltage is available, contact your local DTI Security dealer immediately. This alarm test should be conducted once a week to make sure the system is operating properly.

NOTE:
This TEST slide switch is also used as the smoke detector power reset switch for the fire circuit. If the FIRE communicator output is used, be sure not to hold the TEST switch to the left for more than 15 seconds to avoid triggering the communicator.

### Secondary Loop Protection (Installer Test)

As an additional protection feature, the DSS-450 allows limited secondary protection of the premises even if part of the system is compromised. For example, if a window on the instant loop has been opened causing an alarm and left open, this instant loop is out of the system until the window is again closed. At any time after the alarm caused by the open window times out, a new alarm will be triggered if the EXIT/ENTRY door is opened. These two loops are independent of one another even though they have the same delay periods; if one of the loops is violated, the remaining loop is still active.

To test this secondary protection, set the "QUICK TEST" switch on the programming panel to the "ON" position. Now "ARM" the system, open an instant loop sensor and leave it open. The alarm will sound immediately and will shut off automatically in 5 seconds. Now open a delayed loop door and leave it open. The pre-alarm warning buzzer should sound immediately for 5 seconds and then go into alarm. The alarm will shut off in 5 seconds. Now step on a floor mat connected to the switched zone loop. The system should again go into pre-alarm for 5 seconds, then go into alarm for 5 seconds.

## MECHANICAL INSTALLATION

### Mounting the DSS-451

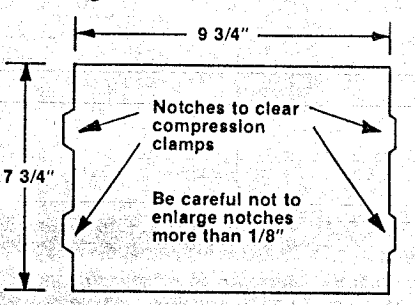
The DSS-451 is typically surface mounted to a wall using screws or toggle bolts through the 4 holes in the rear of the cabinet. Wiring from the external accessories is brought into the cabinet through one or more of the 7/8" knockouts provided. The panel should be mounted in a location easily accessible to the user to simplify and encourage testing and use of the zoning features provided in the system.

### Mounting the DSS-452

The DSS-452 is typically flush mounted in a wall at a location within the premises which allows the user maximum convenience in using the many features of the security system. The aesthetically pleasing appearance of the plastic faceplate allows it to be mounted in a variety of locations and yet blend with most residential decors. To install the DSS-452 perform the following steps:

1. Select the wall locations for mounting the DSS-452 rear housing. Since the rear housing extends approximately 3½" into the wall, be sure that studs or wall thickness will not obstruct the rear housing before cutting a hole in the wall board. To determine proper hole size to be cut into the wall, use rear housing as a template and carefully draw an outline of the rear housing on the wall. Be careful not to cut mounting hole more than 1/16 inch over size. Notches for compression clips should be cut after the main hole is complete. See Figure A.

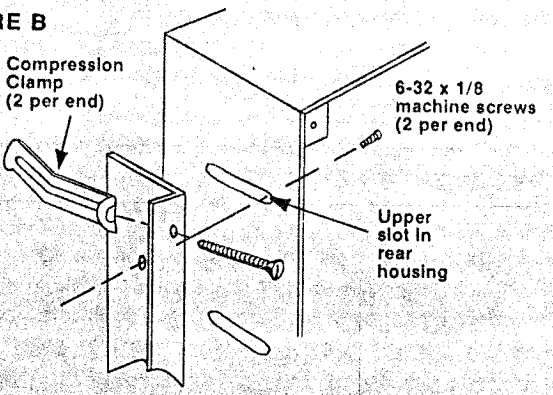
FIGURE A




2. Select which knockouts will be used for wiring entry, and if a tamper switch is to be used, install it before mounting rear housing. Assemble mounting flanges to rear housing using the four 6-32 x 1/8 Phillip Head machine screws and attach the compression clips to the mounting flanges as shown.

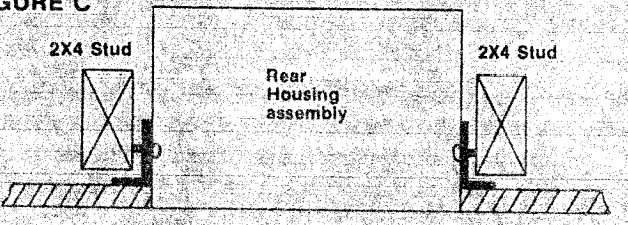
   Adjust mounting flanges so that they are even with the front of the rear housing and tighten the four 6-32 x 1/8 screws. Route system wiring through the knockouts, then slide completed rear housing assembly into wall and tighten compression clips until unit becomes securely attached to the wall.

FIGURE B




3. For "Pre-wire" type installation, where the housing is mounted before the wall board is put up, attach the mounting flanges as in Figure B above, but do not use the compression clips. Position the flanges so that when the wall board is put into place, the front of the housing is even with the front surface of the wall board. Nails or screws are used to secure the assembly to the stud frame of the building as in Figure C.

FIGURE C




*(or momentarily turn the key switch to the right.)

4. Before remounting the DSS-452 Control Unit PCB in the rear housing, route all wiring. To avoid possible confusion, we suggest that the different wires be labeled and their polarity be indicated. This is not only helpful during installation, but also at a later date if any troubleshooting is required.
5. If a momentary key switch is to be mounted on the plastic faceplate cover, cut out the "D" hole from the lower right FRONT SIDE of the woodgrain.

   If other zone or panic switch accessories are used, the holes in the woodgrain inserts can be cut out with a sharp hobby knife.
6. Connect the pigtail leads of the LED indicators, key switch, pre-alarm, and any other accessories associated with the flush mount cover to the control unit terminal strip. If a Sonalert* (*trademark of the Mallory Corp.) is used as a pre-alarm, it can be mounted to the flush mount cover by inserting it into the collar on the rear of the plastic cover.
7. After completing the electrical hookup and testing of the system, attach the faceplate cover using the four #6 self tap screws provided, being careful not to over-tighten these screws. If a tamper switch is used, make sure that the plunger is depressed by the tab on the flush mount cover.

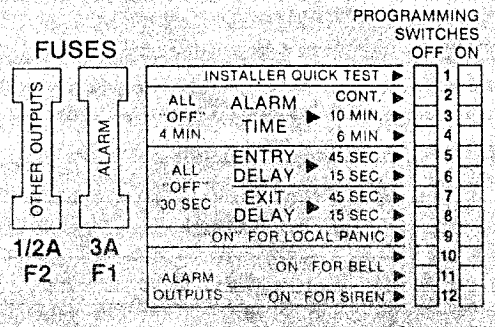
## SYSTEM PROGRAMMING

The DSS-450 Control Panel has been designed to allow the installer to quickly and easily set up the operating parameters of the installation via the system Programming Panel located above the switches and indicators. The system parameters are set by placing the appropriate programming switches in the "ON" position.

### Programming Examples

- To set Exit Delay to 45 seconds, turn on switch 7 & turn off switch 8.
- To set Entry Delay to 30 seconds, turn switches 5 & 6 off.
- To set Alarm time to 10 minutes, turn on switch 3 & turn off switches 2 & 4.
- To set all adjustable timings in the control to 5 seconds for "Installer Quick-Test", turn on switch 1. To reprogram other timings, the "Quick-Test" switch must be turned off.

**FIGURE D: DSS-450 PROGRAMMING PANEL**




### Bell or Siren Driver Output

Use the appropriate switches for either siren or bell output. For siren output, turn on switch 12. For bell output, turn on switches 10 & 11. **CAUTION: BELL AND SIREN SWITCHES CANNOT BE ON SIMULTANEOUSLY.**

### Control Panel Fuses

The DSS-450 is provided with two fuses. The 3A fuse protects the alarm output and the 1/2A fuse protects the other outputs such as: the communicator, remote armed and loop LED outputs. DO NOT replace fuses with fuses of different size or rating.

## TESTING AND CHECKOUT

1. Check for proper connection of the sensor loops.
2. Check polarity of the remote indicator outputs, pre-alarm output and alarm output.
3. Apply AC power. If the panel is in the "ARMED" position, reset at key station.
4. Check for proper operation of the control panel (See Operation Section). Note that all LEDs will light momentarily whenever the system is armed or disarmed. This feature is provided as an LED test.
5. After insuring proper operation of the control on AC power, connect the standby battery (be sure to observe polarity).
6. Unplug AC transformer to perform operational check on standby power. Note that the "Power" indicator will flash. This indicates that the control is only being powered by the standby battery. It will only flash as long as the battery has enough voltage for the control panel to operate.
7. After insuring proper operation of the control on standby power, plug the AC transformer back in.

## TROUBLESHOOTING GUIDE

1. **SYMPTOM**
   Control will not arm ("ARMED" LED will not light).

   **TEST**
   - Momentarily apply jumper from terminal 15 to terminal 16. The "ARMED" LED should light.
   - If LED lights, check for faulty key switch or wiring from the key switch.
   - If LED does not light, check to insure the Sensor Loops are safe ("READY TO ARM" LED on).

2. **SYMPTOM**
   "READY TO ARM" LED will not light.

   **TEST**
   - Check for proper connection of Sensor Loops. 4.7K EOL resistors are required on E/E and instant loops.
   - Check to see that the Day/Night loop (if unused) is jumpered on panel.
   - Check loop resistance—maximum 100 ohms (closed loops) 5K ohms (supervised loops).

3. **SYMPTOM**
   No alarm Output

   **TEST**
   - Check "Alarm Output" fuse. Check connection to bell or siren.

4. **SYMPTOM**
   No prealarm, no LED indication (except POWER)

   **TEST**
   - Check "Other Outputs" fuse

   NOTE: If either of the above fuses are blown, be sure to replace with same size fuse. DO NOT REPLACE WITH FUSE OF GREATER CAPACITY UNDER ANY CIRCUMSTANCES. Alarm Fuse: 3 Amp.—Other Output Fuse: 1/2 Amp.

   DO NOT USE SLOW BLOW FUSES

# ELECTRICAL CONNECTIONS

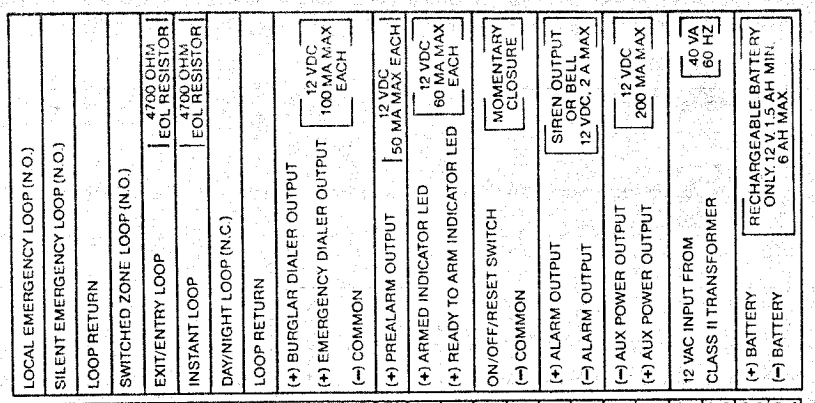
| Terminal | Function | Description |
|---|---|---|
| 1 & 3 | **Local Emergency Loop** (N.O.) | A momentary closure of any switch connected to terminals 1 & 3 will cause BOTH the Emergency Communicator output to operate and the local alarm sound. Communicator outputs are delayed by 20 seconds following alarm initiation.<br><br>This circuit can also be used to connect tamper switches protecting the control panel or other auxiliary equipment. |
| 2 & 3 | **Silent Emergency Loop** (N.O.) | A momentary closure of any switch connected to terminals 2 & 3 will cause only the Emergency Communicator output to operate. If used in the system, the DMK-15 panic relay is permanently connected to the silent panic on the 450. To trip a local panic from the DMK-15, programming switch #9 must be placed in the "ON" position. Communicator outputs are delayed by 20 seconds following alarm initiation.<br><br>Connect any number of momentary normally open (N.O.) switches in parallel with either of these loops for the 24 hour Emergency circuit. The system need NOT be armed for these loops to operate. |
| 3 & 4 | **Switched Zone Loop** (N.O.) | Connect any number of normally open (N.O.) contacts in parallel to terminals 3 & 4. This sensor loop is typically used for interior protective devices which are added or deleted from the protective circuit by the Zone Switch located on the control panel.<br><br>This is an independent loop but has the same exit/entry time delays as the delayed loop.<br><br>The slide switch is supervised so that if an attempt is made to delete these sensors while the system is "ARMED", an immediate alarm will sound. The red LED located to the left of the slide switch will be lit when this zoned sensor loop is added to the protective circuits, **and will go out whenever this loop is violated.** NO LOOP RESISTOR REQUIRED. |
| 3, 8 | **Loop Return** | These terminals are the returns for the protective loops. The terminals marked "Loop Return" may be used interchangeably. |
| 5 & 8 | **Exit/Entry Loop** (Supervised) | Connect any number of normally closed (N.C.) contacts in series with terminals 5 & 8 and/or any number of N.O. contacts directly across terminals 5 & 8. An open or short in the loop of a duration longer than 250 ms will cause an alarm if the control is armed. The duration of the exit/entry time delay periods can be independently set from 15 to 45 seconds on the programming panel to meet the requirements of the particular installation. Requires 4.7K OHM EOL resistor. (Refer to Figure E, page 9.) |
| 6 & 8 | **Instant Loop** (Supervised) | Connect any number of normally closed (N.C.) contacts in series with terminals 6 & 8 and/or any number of N.O. contacts directly across terminals 6 & 8. An open or short in the loop of a duration longer than 250 ms will cause an immediate alarm if the control is armed. Requires 4.7K OHM EOL resistor. (Refer to figure E, page 9.) |

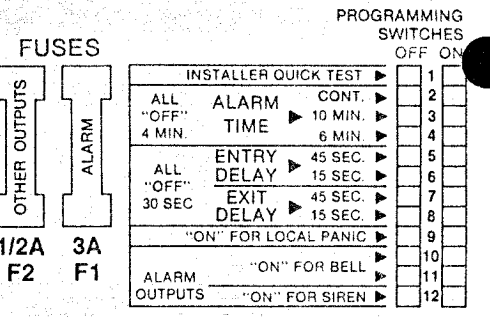
| Terminal | Function | Description |
|---|---|---|
| 7 & 8 | **Day/Night Loop** (N.C.) | Connect any number of N.C. contacts or foil in series with terminals 7 & 8. With the control panel disarmed, the day/night will provide an intermittent signal to the pre-alarm output if the loop is bad (one short beep every 15 seconds). It will also ignore the loop when an attempt is made to arm the control panel with the loop violated. If the day/night loop is good and the control is then armed, the loop will respond like a normal instant loop.<br><br>NOTE: N.C. loops must be shorted to loop return even if they are not used in the system. |
| 11, 16, 19, 24, 26, 28 | **Common (-)** | These terminals are the "Common" points for the control panel. Any of the terminals marked with a (-) except terminal #18 on the control panel hookup diagram can be used interchangeably as a "Common". DO NOT CONNECT ANY LOOP TO A COMMON. |
| 9 & 11 (+) (-) | **Burglary Dialer Output** 12 VDC Fuse Protected,. 100 mA max. | Connect this output to the proper input of a digital communicator or tape dialer for remote annunciation of the "Burglar" alarm. This output is a voltage source providing a maximum current of 100 mA max. It is delayed for twenty seconds after the local alarm sounds. It will not operate if the control is in "quick-test" mode. |
| 10 & 11 (+) (-) | **Emergency Dialer Output** 12 VDC Fuse Protected 100 mA max. | Connect this output to the proper input of a digital communicator or tape dialer for remote annunciation of the "emergency" alarm. This output is a voltage source providing a maximum current of 100 mA. It is delayed for twenty seconds after alarm initiation. |
| 12 & 11 (+) (-) | **Pre-alarm Output** 12 VDC Fuse Protected; 50 mA max. (Also used for Loop Reminder, Fire Trouble, Day/Night Loop Trouble) | Connect a DTI Security Pre-alarm (part #RPA-12), a Sonalert, or any other similar 12 VDC electronic buzzer drawing a total of 50 mA maximum current. This output will sound during the "Entry" time delay period to alert the user to "DISARM" the control panel before an alarm occurs. This output also provides the loop reminder feature, which will sound the buzzer for two (2) seconds if an attempt is made to "ARM" the control panel with a loop violated. This buzzer will sound continuously to indicate trouble if the fire circuit is opened, and it will pulse at 15 second intervals if the day/night loop is opened while the panel is "DISARMED." |
| 13 & 11 (+) (-) | **"Armed" Indicator LED Output** 12 VDC Fuse Protected, 60 mA max. | Connect up to three (3) LED's, with the proper current limiting resistor (820 OHMS) installed, for remote indication of the "Armed" status of the control panel. This indicator will be lit when the control is armed. Maximum current draw is 60 mA. A flashing condition indicates that an alarm condition has occurred, and will flash until reset by the key switch. The LED will not flash if the alarm was sounded by the "Panic" circuit. |
| 14 & 11 (+) (-) | **"Ready to Arm" LED Output** 12 VDC Fuse Protected, 60 mA max. | Connect up to three (3) LEDs, with the proper current limiting resistor (820 OHMS) installed, for remote indication of the status of the sensor loops. The indicator will be lit if all sensor loops are safe. Maximum current draw is 60 mA. |
| 15 & 16 (+) (-) | **ON/OFF/RESET** Switch | Connect 1 or more digital remotes* in parallel to these terminals. A momentary short across these terminals will "ARM" or "DISARM" the system or "RESET" an alarm. |

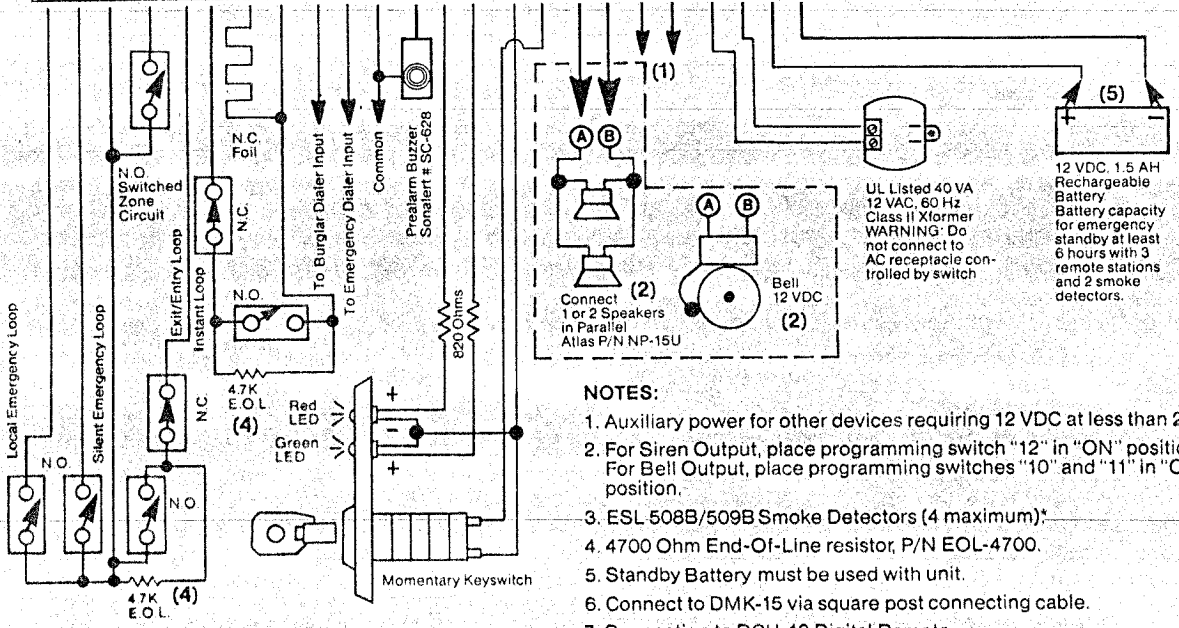
*(or momentary key switches)

| Terminal | Function | Description |
|---|---|---|
| 17 & 18<br>(+) (-) | **Alarm Output**<br>Rated at 2 Amps<br>Fuse Protected,<br>3 Amps max. | To use as a Siren output, connect a maximum of two (2) 8-OHM 15 watt speakers in parallel. No external siren driver is necessary. Alternatively, a maximum of two 12 VDC bells may be connected in parallel. Set the appropriate switch (switches) to select either a bell output or siren output.<br><br>There are 3 different alarm outputs. When utilizing a speaker, the burglary alarm signal will be a continuous oscillating siren; the emergency (panic) signal is also oscillating but is intermittent, and the fire signal is a steady uninterrupted, high-pitched alarm.<br><br>When utilizing a bell, the burglary alarm and emergency (panic) signal will be a pulsed ringing; and the fire alarm signal will be a constant ringing.<br><br>NOTE: Use 18 gauge wire (or larger for very long runs) to minimize voltage loss to the sounding device. |
| 19 & 20<br>(-) (+) | **Auxiliary Power Output**<br>12 VDC, Fuse .<br>Protected,<br>200 mA max. | These terminals provide 12 VDC, at 200 mA max. for auxiliary equipment connected to the control panel. |
| 21 & 22 | **12 VAC Input** | Connect the 12 VAC input terminals to a Class II transformer, rated at 40 VA minimum. Use 18 gauge wire (or larger for very long runs).<br><br>Do not connect the AC power or standby battery to the control panel until all other connections are completed and checked for accuracy. |
| 23 & 24<br>(+) (-) | **Standby Battery** | Connect a 12 volt, 1.5 Amp hour capacity gell-cell rechargeable battery to these terminals. Do not use a dry cell battery with this control panel.<br><br>**CAUTION: Observe polarity when connecting the battery to avoid severe damage to the control panel.**<br><br>The standby battery should be the last connection made and only after all other connections are made and checked for accuracy and proper operation on AC power. If a short should be present in the system wiring causing a severe battery overload to occur, damage to both the battery and control panel may result. |
| 25 & 26 | **Fire Dialer Output**<br>12 VDC Fuse<br>Protected, 100 mA max. | Connect this output to the proper input of a digital communicator or tape dialer for remote annunciation of the "FIRE" alarm. This output is a voltage source providing a maximum current of 100 mA. It is delayed for 15 seconds after the local alarm sounds. |
| 27 | **Detector Power Output**<br>12 VDC fused,<br>100 mA max. | This output provides 12 VDC at 100 mA used for supplying power to smoke detectors connected to the fire circuit.<br><br>A Power Supervision Module is required in order for the pre-alarm buzzer to alert the user to a power interruption of the smoke detector. The pre-alarm buzzer will sound continuously when power to the smoke detector is lost. Refer to Smoke Detector Wiring Diagram on page 8. The total milliamp draw of all units in this circuit must not exceed 200 mA (Average detector will draw 50 mA in an alarm condition which would allow a maximum of four smoke detectors.). |
| 28 & 29<br>(-) (+) | **Fire Loop**<br>(Supervised) | Connect smoke detectors or thermostats with normally open (N.O.) alarm contacts in parallel with a 4.7K OHM EOL resistor to these terminals. A closure of these contacts will sound the fire alarm and trigger the fire communicator output immediately. An open in the fire circuit will sound the pre-alarm to indicate trouble with the fire alarm circuit. |

# DSS-451/452 Hook-Up Diagrams



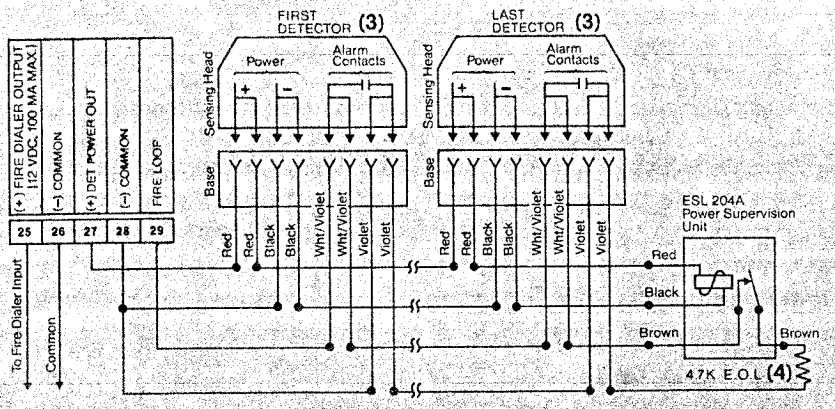




**NOTES:**

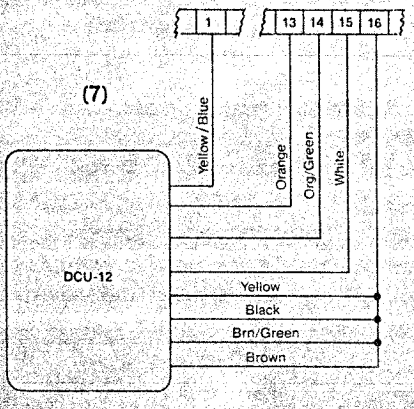
1. Auxiliary power for other devices requiring 12 VDC at less than 200mA
2. For Siren Output, place programming switch "12" in "ON" position. For Bell Output, place programming switches "10" and "11" in "ON" position.
3. ESL 508B/509B Smoke Detectors (4 maximum)*
4. 4700 Ohm End-Of-Line resistor, P/N EOL-4700.
5. Standby Battery must be used with unit.
6. Connect to DMK-15 via square post connecting cable.
7. Connection to DCU-12 Digital Remote.

*509B includes built-in 135° heat sensor.

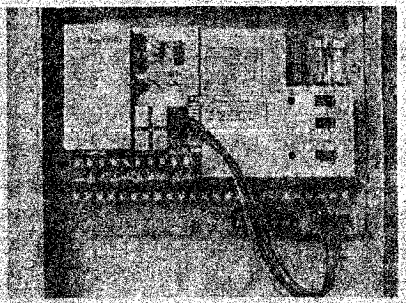
## DSS-450 Smoke Detector Hook-Up Diagram



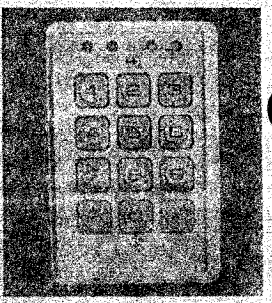

## DCU-12 Remote Keyboard




## DMK-15 Remote Control Station (6)



## DKB-15 Remote Keyboard



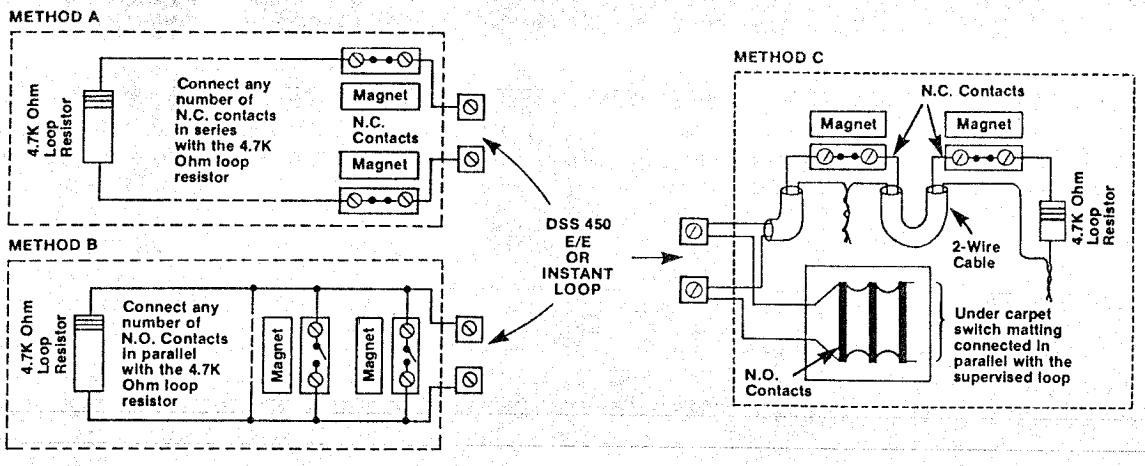
**Ordering Information:**

**Order:** DSS-451 Local Burglar Alarm Control Panel. Control Panel is packaged in 18 gauge metal housing with door key and mounting hardware.

**Order:** DSS-452 Local Burglar Alarm Control Panel. Control Panel is available in flush mounted, simulated wood grain panel.

NOTE: The DSS 451/452 Control Panel does not include a battery or transformer.

**FIGURE E. TYPICAL SENSOR LOOP HOOK-UP METHODS**
**(For both Instant & Exit/Entry loops)**



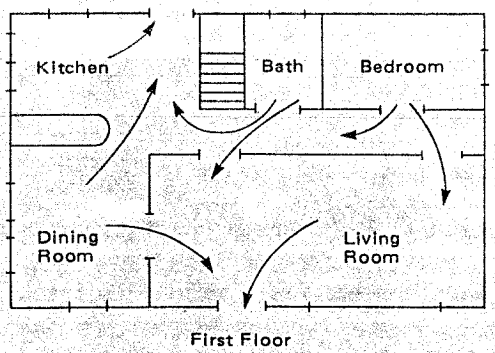

## EMERGENCY EVACUATION PLAN

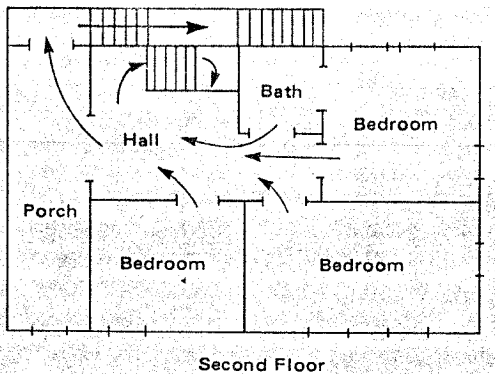
An emergency evacuation plan should be established for an actual fire alarm condition. For example, the following steps are recommended by the National Fire Protection Association and can be used as a guide in establishing this plan for homes. Similar plans may be made for commercial establishments.

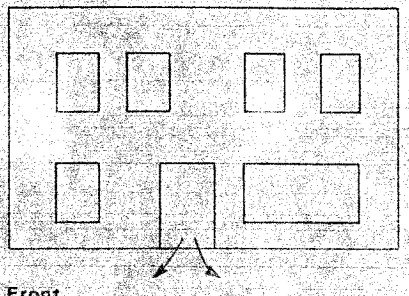
1. Draw up a floor plan of your home. Show windows, doors, stairs, and rooftops that can be used for escape. Indicate each family member's escape routes. Always keep these routes free from obstruction.
2. Determine two means of escape from each bedroom. One will be the door leading to the normal exit from the house. The other may be a window that opens easily. An escape ladder may have to be located near the window if there is a long drop to the ground below.
3. Set a meeting place outdoors for a head count of family members.
4. Practice escape procedures. Sleep with the bedroom door closed. It will increase your escape time. If you suspect fire, test the door. If it is hot, don't open it—the hall is already too hot to enter. If you think it's safe, brace your shoulder against the door and open it cautiously. Be ready to slam the door if smoke or heat rush in. Practice escaping to the outdoors and meeting at an assigned spot. Call the fire department from a neighbor's phone.

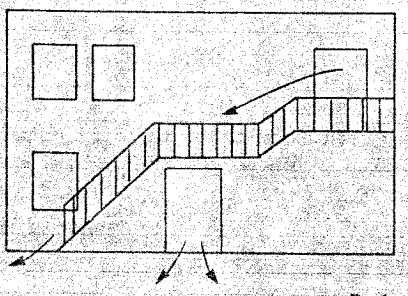
NOTE: After the installation of your alarm system has been completed, notify your local Fire and Police Departments to give them your name and address for their records.

FIGURE F.



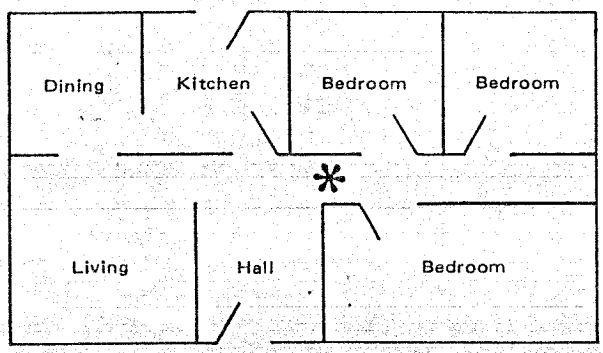



## DETECTOR INSTALLATION & PLACEMENT

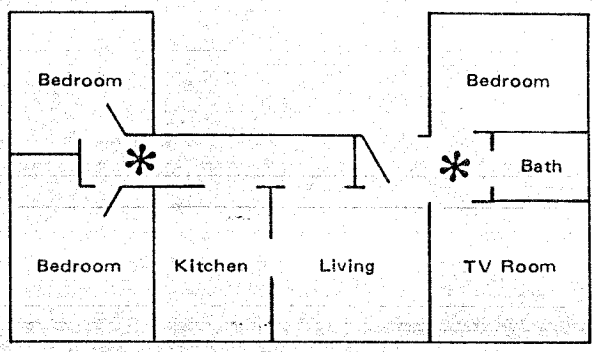
Since most fires in a home occur at night when everyone is asleep, the ideal location for a minimum of one smoke detector is between the bedroom area and the rest of the house. If the bedrooms are spread out or if they are located in different sections of the house, one smoke detector should be placed near each of these sleeping areas.

In multi-level houses, one smoke detector may be sufficient to protect an entire floor. Since smoke rises, a stairwell in a home tends to become a natural "chimney" for smoke rising from one level to the next. Therefore, by locating a smoke detector near the top of the stairs leading to a main sleeping area, all bedrooms can be successfully protected using a minimum of units.

**FIGURE G.**




Best Residential Detector Location Placement Between Bedrooms and Rest of House




NOTE: Place Detector Near All Sleeping Areas

## DTI SECURITY WARRANTY

DTI Security instruments are warranted to be free from defects in material and workmanship for a period of 12 months from date of shipment to original purchaser. Defective units returned by the buyer at his own expense during this period will, at the seller's option, be repaired or replaced without charge provided that, after inspection, it is the seller's opinion that the unit has not been subject to electrical or physical misuse.

In no event shall the seller be liable for any loss or damage, consequential or otherwise, arising out of the use by buyer or failure of the product to operate. This warranty is exclusive and given in lieu of all other warranties, expressed or implied, and is void if the equipment has been visibly damaged by accident, misuse, or if the unit has been modified by anyone other than DTI Security.

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