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INSTALLATION MANUAL

DSS-660R ALARM CONTROL PANEL & DCU-660 SYSTEM CONTROL STATION

UNDERWRITERS LABORATORIES INC.
LISTED

CONTROL UNIT
FIRE SIGNALING SERVICE
LISTING
STATE FIRE MARSHAL
SERVICE

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INTRODUCTION

The DSS-660R Burglar and Fire Alarm Security System is a microprocessor based Alarm Control Panel (ACP) which offers sophisticated alarm control, detection, and reporting functions at a competitive price. The panel is controlled through the use of one or more remotely mounted DCU-660 System Control Stations (SCS). The panel, which is housed in a rugged steel cabinet, contains no user indicators or switches so its installation location can be chosen to make the hook-up wiring most convenient. The DSS-660R Alarm Control Panel (ACP) contains 8 individually programmable zones of protection (detection loops) as well as a 9th supervised fire detection zone. All zones use a 4.7K ohm End- Of-Line (MODEL EOL 4700) resistor for supervision. The 8 programmable zones can be configured to function as any one of 8 different types of detection circuits, whereas the 9th zone is dedicated for fire protection use.

The DSS-660R (ACP) also contains an integral 14 channel, multi-format digital communicator that is compatible with most major brand receivers. However, the communicator is particularly designed to emulate the standard Radionics format. The desired system configuration, optional features and other operating characteristics of both the ACP and the digital communicator are field programmable into a single PROM using the DTI Security DPP-8000 PROM Programmer. (Communications portion of the system has not been investigated by U.L.) The DSS-660R ACP also has a built-in alarm siren driver and 12 VDC bell output for local alarm sounding purposes, as well as all of the other optional features normally required in a modern state-of-the-art security system.

The DCU-660 System Control Station (SCS) is a surface mounted decorative remote control unit consisting of a 12 button keypad, 3 Emergency Dispatch keys, 7 indicator lights, and an internal audio annunciator (beeper). This remote control provides all of the required input/output functions used in the daily operation of the system.

IMPORTANT

PLEASE READ AND FULLY UNDERSTAND THE DSS-660/DCU-660 "USERS" MANUAL WITH THE DSS-660R ADDENDUM BEFORE PROCEEDING TO READ THIS MANUAL OR ATTEMPTING TO INSTALL THE SYSTEM. THE "USER'S" MANUAL DESCRIBES THE NUMEROUS FEATURES, FUNCTIONS AND OTHER USER INTERFACE REQUIREMENTS OF THE SYSTEM IN GREAT DETAIL, SO THIS INFORMATION WILL NOT BE REPEATED HERE IN THIS INSTALLATION MANUAL.

MECHANICAL INSTALLATION:

Many features have been designed into the DSS-660R ACP and DCU-660 SCS to enable quick and simple system installation and troubleshooting. The ACP contains no user switches or indicators thus enabling the installer to select the mounting location most convenient for wiring. The decorative SCS may be installed in a variety of locations to offer the most convenience to the user.

Alarm Control Panel (ACP)

The ACP should be mounted in a convenient, dry location near a power outlet. We recommend the ACP not be mounted in an attic or any other similar location likely to contain excess heat. The ACP is typically mounted on a wall using screws, Toggle or Molly bolts through the holes provided in the rear of the cabinet. Using the metal housing as a mounting template, mark and drill the two top mounting screw holes. Screw the top screws partially in and hang the housing on the screws in order to mark the exact location for the lower mounting screw holes.

Wiring from the external accessories is brought into the metal cabinet through one or more of the entry holes or knockouts provided To avoid possible confusion, we suggest that the different wires be labeled and their polarity indicated. This is not only helpful during installation, but also at a later date if any troubleshooting is required.

The terminal strips on the ACP are easily removable as is the main printed circuit board. In order to prevent possible accidental damage to the printed circuit board, we suggest that the board be removed only if repairs are necessary. When removing or working with the main printed circuit board, care should be taken to first discharge any static build-up by touching the metal housing before handling the board. Handle the printed circuit board by touching ONLY the edges of the board, heat sink or terminal strips. A 1/8 inch blade screwdriver is required to make the terminal connections. The 2 terminal strips attached to the PCB may be removed with the system wiring left connected by grasping each end and gently lifting them towards you, being careful not to twist the connectors or bend the PCB connector posts.

Battery leads are already attached to the printed circuit board and have quick-connect slide connectors for attachment to the battery.

The PROM which contains the Master Code, system features for the ACP, SCS, Digital Communicator and all other programming information, must be installed into its socket on the ACP after making certain there is no power going to the system. Ensure that Pin 1 is placed in the proper position as indicated on the PCB protective cover.

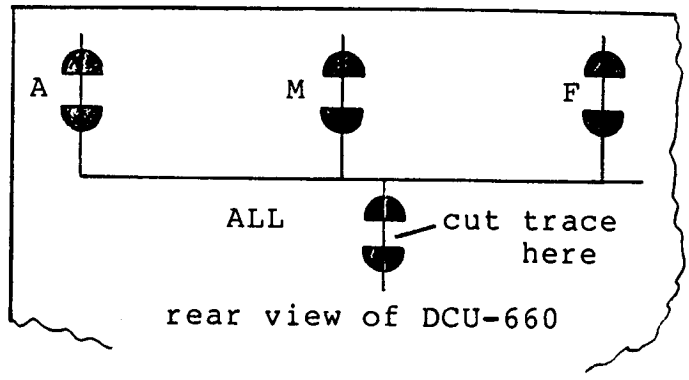
System Control Station (SCS)

The aesthetic appearance of the SCS enables it to be located in a variety of locations. This will allow the user maximum convenience in using the many features of the system and to encourage regular testing. The SCS is typically surface mounted at a convenient location with the backplate serving as a mounting template. Remove the backplate by undoing the screw at the bottom and rotating the back up. Place the backplate against the wall making sure it

level and then gently tap the break-away center punches with a hammer. The small indentations left in the wall indicate the exact place for drilling the mo ting holes. Use only the mounting holes provided. The SCS backplate is al designed to be mounted on a single ganged outlet box if desired. The wires are fed through the square hole provided. After fastening the backplate to the wall and connecting the wires, clip the top of the SCS faceplate over the backplate and rotate it down securing it with the 6-32 screw provided.

One or more of the Emergency Dispatch pushbuttons on the SCS may be disabled by cutting the traces on the printed circuit board as follows:

A = Assault (Reports same as Loop 8)
M = Medical (Reports same as Loop 7)
F = Fire (Reports same as Fire Loop)
All = All three pushbuttons



The SCS requires only a simple four wire connection to the ACP. Use ordinary conductor telephone cable for the SCS. Up to 4 SCS units may be connected with cable lengths up to a maximum distance of 300 ft. Any SCS cables longer h 50 ft. should be "homerun" back to the ACP.

Digital Communicator Connection

Arrange for the telephone company to install a RJ31X or 32X jack near the ACP. Obtain a standard telephone extension cable terminated at one end with a modular plug and bare wire at the other (not a hand set extension). Connect the bare wires to the RJ31X mating plug as shown in the table below:

Cable	6 Position Plug on DSS-660R ACP	8 Position Plug RJ31X Mating	
Black	2	1	R1 (House Phones)
no connection		2	
no connection		3	
Red	3	4	R (ring line in)
Green	4	5	T (tip line in)
no connection		6	
no connection		7	
Yellow	5	8	T1 (House Phones)

An alternate cable (P/N DRJ31X) can be ordered to connect the DSS-660R t RJ31X or RJ32X jack. This cable has a normally closed pair of tamper wir included which can be used to trip an alarm if the cable is cut or unplugge from the RXJ31X jack.

is cable is built as shown below:

Cable	6 Position Plug on DSS-660R ACP	8 Position Plug RJ31X Mating	
Blue	2	1	Rl (House Phones)
Yellow	no connection	2	Tamper (NC)
no connection		3	
Green	3	4	R (ring line in)
Red	4	5	T (tip line in)
no connection		6	
Black	no connection	7	Tamper (NC)
White	5	8	Tl (House Phones)

SYSTEM DESCRIPTION AND OPERATION

The built-in versatility of the DSS-660R Security System allows the product to be configured for most any imaginable installation requirement. Whether it be for the simpler installation where the operating and zoning versatility and complexity is not required, or for the larger and more demanding applications where a sophisticated user can effectively utilize its many features, the DSS-660R can be configured to be the best Burglar and Fire Alarm system available for use in today's demanding market.

S-660R Alarm Control Panel (ACP)

The ACP contains 8 different independently programmable zones of protection (detection loops), plus a dedicated supervised fire circuit. All zones are supervised with end of line resistors. The status of these zones, including alarm memory, etc. are displayed on the corresponding light display on the SCS (provided the PROM has not been programmed for a "simple keypad" disable; model S simplified version). Each of these 8 zones can be programmed into the 74S287 PROM at installation to function as any one of the following 8 different types of detection circuits:

24 Hour Auxiliary:

A 24 hour supervised detection loop which causes no local alarm sound, and which can be used to report to the AMC for flood, freezer ,tamper switches or silent Assault alarms, etc.

24 Hour Local Alarm:

A 24 hour Zone which will NOT report to the AMC. If this type of loop is "closed" (shorted), the DCU-660 annunciator will sound a beep tone every 15 seconds, (like trouble) until the user enters a (*), (Master Code), (0) on the keypad. Notice that the Master Code is needed to silence this alarm. The "normally- open" detectors on this loop, therefore, can be used to protect

quor or gun cabinets from the user's children or servants, etc. It is also useful for indicating low battery or supervisory failures with the new supervised RF systems. If the "normally-closed" detectors on this local alarm loop are "opened", the local siren or bell alarm will sound for 2 seconds to warn of children in or near the pool, medicine cabinet, or similar dangerous circumstances.

24 Hour Medical:

A 24 hour Medical Emergency loop. Shorting or opening this type of loop will act the same as pressing the Medical dispatch key on the DCU-660. If the Medical alarm is programmed for a local audible indicaton, the SCS annunciator will sound 1/2 second on and 1/2 second off until the alarm has been reported to the AMC at which time it will slow down to 2 seconds on and 2 seconds off. The Medical alarm will not timeout and can be turned off by entering a valid Disarm code. The Medical alarm can be programmed to be silent, if desired. If this loop remains violated when the system is Disarmed, it will go into a "trouble" condition. The Trouble LED will turn on and the 15 second beep tones will start. If trouble is enabled for reporting, a trouble report will be sent to the AMC.

24 Hour Burglary:

A 24 Hour protection zone that will trip an instant burglar alarm whenever it is shorted or opened, regardless of whether the system is Armed or Disarmed. This type of loop is intended for use with Emergency Exit doors, tamper switches, or safe alarms,etc. It can be disabled only if it is one of the Standard Bypass zones. This loop will cause a trouble signal to occur if it is still violated when the User Disarms the panel. The Trouble LED will turn on and the 15 second beep tones will start. If trouble is enabled for reporting, a trouble report will be sent to the AMC.

24 Hour Assault:

A 24 hour Assault/Panic/Police Emergency loop. Shorting or opening this type of loop will sound the same as pressing the Assault dispatch key on the DCU-660. If Assault is programmed for an audible alarm, it will sound a continuous bell or whooping siren (the same sound as a burglary alarm). The alarm timeout will be the same as the burglary timeout (1-15 minutes). This loop will go into trouble if it is still violated when the user Disarms the panel. The Trouble LED will turn on and the 15 second beep tones will start. If trouble is enabled for reporting, a trouble report will be sent to the AMC.

"Exit/Entry" Burglary:

A standard delayed supervised detection loop used for Exit/Entry doors and other interior protection where a delayed alarm is required. The exit and entry times are independently PROM programmable from 0 to 120 seconds, although any UL installation should not exceed 45 seconds. The Armed light will blink during the exit time. During the entry time, the DCU-660 annunciator will sound continuously to warn the user of the "pre-alarm" condition. The entry delay time can be temporarily set to "zero" time (instant alarm) by the user by entering; (#), (5) on the keypad within 5 seconds after Arming the ACP.

"Instant" Burglary:

A standard instant supervised detection loop used for all protection requiring an instant alarm. Shorting or opening this type of loop while the DSS-660R is Armed will result in an instant burglar alarm. The local alarm sound is a ntinuous bell or whooping siren. The alarm duration time of 1-15 minutes is programmed into the PROM at installation.

"Nomad" Burglary:

A supervised instant detection loop which is disabled during the exit and entry times. This type of loop is normally used for interior trap protection, since the user can violate detectors on this loop during the exit and entry times without causing an alarm, but they will act as an instant alarm if an intruder should be detected at any other time with the system Armed.

Fire Detection Loop:

The DSS-660R contains a fully supervised (power and line) fire detection circuit. If this fire loop opens, a trouble indication results. The Trouble LED turns on, the 15 second beep tones will start and, if trouble reporting is enabled, a trouble report will be sent to the AMC. The user can silence the trouble annunciator beep tone for up to 24 hours by entering (#), (8) on the keypad. The Trouble LED will now blink during this "trouble-silence" period. The Trouble LED will extinguish when the loop is again restored.

If the fire loop is shorted by a detector for 5 seconds or longer, it will trip a fire alarm. The fire alarm sound is an interrupted bell or whooping siren sound, which is "on" for 2 seconds and then "off" for 2 seconds. The fire alarm signal will not time out unless the fire timeout option has been programmed into the PROM. The Armed and Ready-to-Arm LEDs will blink for the alarm memory signal until a Disarm code is entered on the keypad.

Entering a disarm code will clear the fire alarm without turning off the fire power. If you have latching fire detectors the loop will go into fire short trouble. No trouble signal will be sent to the AMC. (With many kinds of latching smoke detectors an LED will light on the smoke detector until power is removed from the unit.)

The fire alarm can be silenced by entering (#), (8). This will also remove the 12 VDC power output from terminal 17 for a few seconds to reset latching smoke detectors, but it will not clear the blinking Armed and Ready-to-Arm LEDs. If the loop remains closed, the fire circuit will go into the silenced trouble condition with a blinking Trouble LED. Clear the blinking Armed and Ready-to-Arm LEDs by entering a Disarm code.

If a loop trips an alarm and remains violated when the system is disarmed then the trouble LED and beeper will turn on though no trouble report will be sent.

Zoning:

As described in the User's manual, the DSS-660R protection loops can be easily zoned in and out of the security system to provide for maximum versatility and convenience. Any or all of the Zones 1 through 8 can be programmed as Standard Bypass zones in the PROM. These zones can be zoned in or out as a

oup while the ACP is Disarmed by entering (#) (6) on the keypad. When these ones are bypassed, the Bypass LED on the SCS will be ON. The user can also bypass 24 hour loops if they are included in this group during initial p ramming, so care must be taken to include only the desired zones.

The Exit/Entry, Instant and Nomad Burglary loops can individually be zoned in and out of the system while the ACP is disarmed. First display the status of the zones by entering (#), (1) and then "enable" or "disable" the zone by pressing the corresponding key. The LED will be off if that zone is bypassed (or in trouble). When you return to the Operating and Display mode by pressing (#), (0), the Bypass LED will blink if any combination of zones is bypassed other than the Standard Bypass zones.

Any combination of zones 1-8 can be enabled for trouble reporting. If there are any trouble reports enabled, then the fire trouble reporting (open on fire loop) will be enabled.

Any combination of zones 1-8 can be enabled for restore reporting. The restore report is sent 7 seconds after the loop is restored. If there are any restore reports enabled, then the fire restore report will be enabled.

Alert Zones:

As described in the User's Manual, the DSS-660R can be configured to be in a "User Alert" mode on Zones 1 through 4. This mode allows the user to audibly monitor the status of these zones without Arming the system and causing alarms. During initial installation and programming, ensure that the loops most applicable to this feature are assigned as zones 1 through 4. (Space protection devices are typically assigned to Zones 5-8.)

Alarm Panel Options:

The 4 digit Master Code, the Exit/Entry times and Alarm Duration are all programmed into the PROM at installation, and can only be changed by the installer reprogramming the PROM.

The Master Code is used to program Secondary codes 1 to 5 and Secondary code 7. Additionally, the Master Code is used to program the Disarm-Duress code 6 as well as to enable and disable the Quick Arm feature, and to clear the Alarm Memory indicators. The Master Code also Arms and Disarms the system as does any other valid code. Any combination of Burglary, Assault, and Medical alarms can be programmed into the PROM as a "silent" local alarm, with only the digital communicator reporting the alarm to the AMC.

The ACP can be programmed to power-up either in the "Armed" or "Disarmed" state, after a total power loss.

The DCU-660 System Control Station:

The user performs all the daily operation, programming, alarm memory and testing functions through the SCS. The seven indicator lights and the SCS internal annunciator provide the user with visual and audible indication of the status of the system. For further information on user operating and programming features, please refer to the "User's Manual".

DIGITAL COMMUNICATOR (DIALER)

The DSS-660R contains an integral 14 channel digital communicator. This dialer can report its data to receivers at two different phone numbers. Each phone number can be up to 14 digits long and 5 second pauses can be inserted to the phone numbers if necessary for PBX's etc. The DSS-660R uses the "pulse" dialing technique to ensure compatability with all telephone exchanges.

Do not program the phone number of a police or fire station unless assigned specifically by that police/fire station and signal transmission has been checked for compatability.

The communicator can report the same or a different 3 or 4 digit account code to each receiver. A HEX number can be used both in the account code or the reporting codes.

Enter the reporting codes for loops 1-8. These are the "zone" codes reported to the Radionics receivers. Because the Radionics 8012 reports only 8 zones and the DSS-660R has 12 zone reporting, the 12 zones must be converted to 8 zone outputs. The 3 dispatch keys report as follows:

Fire Dispatch	- Same as Fire Loop
Assault Dispatch and Duress Code	- Same as Loop 8
Medical Dispatch	- Same as Loop 7

If you are planning to use Medical or Assault it is recommended you assign them to Loops 7 & 8 respectively.

Each of the following items has its own reporting code programmed into the 'S287 PROM at installation:

Fire - A Fire Alarm report is sent by pressing the Fire Dispatch key on the DCU-660 or by shorting the Fire loop.

Assault - An Assault Alarm report is sent by pressing the Assault Dispatch key on the DCU-660 or by violating Loop 8 programmed for Assault. The Dispatch key and the Duress Code report the same as Loop 8.

Burglary - A Burglary Loop reports loops which caused the alarm condition.

Medical - A Medical Alarm report is sent by pressing the Medical Dispatch key or by violating the Medical loop 7 . The Dispatch key reports the same as Loop 7.

Closing - If the system is Armed, a closing report can be sent. Extended reporting will give the code number which was used to Arm the system, i.e.: 1-5 and 7 for Secondary Codes 1-5 and Secondary code 7. A 6 represents the Duress Disarm Code. (No Duress Alarm will be sent on system arming with code 6). An 8 represents the Master Code and a 9 represents the Quick Arm (0). For a Radionics receiver, program a C for the closing code.

If the panel is armed with a zone bypassed that is not a member of the standard bypass zones, then that zone will be treated as a trouble zone for reporting purposes as long as the panel is armed. If that zone is enabled for trouble and restore reporting, then it will report as a trouble zone at arming and as a restoral zone 7 seconds after disarming.

ening - When the system is Disarmed, an opening code can be sent. The extended reporting codes are the same as for closing, except that Quick Arm is not possible and if the system is disarmed with code 6 then the system will send a loop 8 alarm. For a Radionics receiver, Program a B for the opening code.

Low Battery/Test - If low battery is enabled for reporting then a trouble will be reported with this code when the battery voltage drops below approximately 11 v. A restoral will be reported when the battery voltage is restored. If #,7 (phone test) is entered at the DCU-660, a battery restoral will be sent if the battery is good and a trouble on low battery will be sent if the battery is low. If 24 hr reporting is enabled the 24 hr test will send the same signals as above. For a Radionics receiver, program this channel as a 0.

Trouble - This is the trouble report code. If trouble reports are enabled, an open on the fire loop will report this code. Also any of the loops enabled for trouble reporting will report trouble if the system is powered up with them violated. For Radionics receivers, program this channel as an F. The extended reporting code is the alarm reporting code for the loop in trouble.

Restore - This is the restore report code. If the restore reports are enabled, then restoring the fire loop will report a restore. Any of loops 1-8 which are enabled for restore reporting will report a restoral when they are restored after tripping an alarm. For a Radionics receiver program this channel as an E. The extended reporting code is the alarm reporting code for the loop which has been restored.

Each of the above items can be programmed into the PROM to report to: either, both, or neither of the programmed phone numbers. If an item is programmed to report to both phone numbers, it will alternate between them until it reports successfully to both, or it attempts to dial each number 8 times.

Each phone number can be enabled/disabled separately for extended data reporting. An extended data report is a second report sent after the kiss-off tone has been received acknowledging the normal alarm report. The alarm code is sent 3 (or 4) times in place of the 3 (or 4) digit account code followed by the extended data code in place of the report code. For example, if the account code was 2E5, and the opening code was a B, then disarming the panel with the master code would send the following sequence:

```
Dial
       handshake tone
2E5 B    normal opening report
2E5 B    second time for comparison
       kiss-off tone                          Radionics receiver prints:
BBB 8    extended data for master code        ACCT 2E5 OPENING  ZONE 8
BBB 8    second time for comparison
       kiss-off tone
Hang Up
```

Each phone number can be separately programmed for multiple reports. multiple reports are enabled, the DSS-660R can transmit several reports on single phone call.

e PROM can be programmed so that each phone number will receive the data transmission in either the Ademco/Silent Knight slow speed format, or the Franklin high speed format. The slow format uses 1900 Hz tones at 10 pps with handshake and kiss-off tones of 1400 Hz. The fast format uses 1800 Hz tones at 20 pps with handshake and kiss-off tones of 2300 Hz.

If a cancel code is programmed then it will be sent (if enabled) whenever the system is disarmed after an alarm. No opening code will be sent. If the panel is disarmed with the duress code (aux code 6) then the duress code (loop 8 code) will be sent rather than a cancel or opening code. For a Radionics receiver, program the cancel code to D if you want cancel reporting.

The DSS-660R can also be programmed for Abort. If Abort is programmed, Disarming the panel will clear all current reports. If the DSS-660R is in the middle of a report, it will hang up. An abort can be followed by a opening, cancel or duress report.

The DSS-660R PROM can also be programmed to delay the start of the communicator dialing sequence for up to 25 seconds after the alarm is tripped in the ACP.

LINE SEIZURE

All extension phones at the premise will be disconnected by a double pole, double throw relay in order to prevent the communicator from being blocked by tgoing calls or a phone left off the hook. To ensure a disconnect in the event an outgoing call was in process, the ACP executes a short hang-up and then attempts transmission.

DIAL TONE DETECTION

In order to minimize response time, the ACP senses the initial local (PBX) or external (telephone compay) dial tone. If the communicator detects a dial tone, the ACP dials using the PROM selected numbers. If a dial tone is not detected within 5 seconds, the system will dial assuming that a good connection has been made and that the dial tone is weak.

Additional delays may be programmed in the PROM. The ACP dials up two telephone numbers up to 14 digits long.

THE DPP-8000 PROM PROGRAMMER

DESCRIPTION

The DTI Security DPP-8000 PROM programmer is designed for fast, easy and reliable programming of the National Semiconductor 74S287 PROM utilized in the DSS-660R Alarm Control Panel (ACP). The LED display gives an instant step by step display of the programmed format. The format can be reviewed to eliminate possible programming errors. All functions and features of both the ACP and the integral digital communicator can be programmed locally by the installer without the need of a factory programmed Master PROM. Each PROM can be programmed individually or partially copied from a Dealer developed Master PROM. The information to be programmed is entered via the keyboard; following the step-by-step prompts that will be displayed.

PREPARING TO USE THE PROGRAMMER

Plug the programmer into any 110 VAC outlet. A UL listed, 12 VAC 1/2 Amp, Class 2 transformer is provided. LED Display: "74S287 PRG V8" This display indicates the model DPP-8000 version programmer. Insert a new or preprogrammed National Semiconductor 74S287 PROM into the programmer socket. Check to ensure pin 1 of the PROM is in the correct postion.

The PROM is a Programmable Read Only Memory (PROM) chip and once programmed, retains memory even during power loss. The system information contained in the PROM is programmable in its entirety only once. To prevent accidental programming errors, we encourage you to check the LED display for each option entered prior to pushing the Program buttons. Should a mistake be detected at this point, it is easily corrected by pushing the Error button and entering the correct information.
Press the "Start" button. LED Display: "PRODUCT"
The DPP-8000 PROM Programmer is capable of programming the features and functions for several of our products. Enter one of the following numbers in order to choose the desired programming format. (For the DSS-660R, enter 6.)

1 - DSS-300 Alarm Control Panel
2 - DPD-311 Digital Communicator
3 - Future product
4 - Duplication Function for DSS-660, DSS-660R, and DSS-550
5 - Future Product
6 - DSS-660, DSS-660R and DSS-550 Alarm Control Panel

NOTE:
When programming the PROM, you must depress the 2 Program buttons simultaneously. First depress the top button and while holding the button down, depress the lower program button. Depression of the lower Program button first may result in the programmer READING the PROM instead of programming the desired information. Use the programming sheet enclosed with the product or the PROM to record your selections for future reference.

Several programming features are affected by "leading 0 suppression" on LED display. This means that the programmer will recognize 0 as a leadi digit to be programmed and the LED display will show 0 when entered; however when the PROM is read after programming is completed, the 0 will not appear in he LED display. The 0 will still be recorded in the PROM as part of the code or a particular feature. The features affected by "leading 0 suppression" are as follows:

Zone Types
Standard Bypass
Trouble Zones (Special Disarm)
Phone 1 Enable
Phone 2 Enable

READING THE PROM

To read a preprogrammed PROM, follow the same procedures as for programming the PROM, except press only the lower Program key and the information contained in the PROM will alternately be displayed for you on the LED display with the associated prompt display. For example, the screen will display "ZONE TYPES" for approximately 1 second, then display the sequence of zone types selected (e.g.27755146) for approximately a second. The display will continue to alternate until the lower "Program" key is pressed again. Each depression of the lower Program key will step to the next entry. When "ALL DONE" is displayed, you have completed reading the PROM.

PROGRAMMING THE PROM

The DSS-660R PROM Programming Worksheet (sample provided in this manual) is signed to be completed as you read through the following programmable atures. This worksheet, when completed, will provide you with a handy record of the installation features and should be retained in a secure place.

PROGRAMMABLE FEATURES

To start the pogramming for a DSS-660R, press 6 and the LED display will show: "ZONE TYPES".

ZONE (LOOP) TYPES are individually selectable from eight different types as shown below. Select the type of detection you require and enter the corresponding number in the space next to the zone number.

0 = 24 HR. AUXILIARY, silent, 24 hour alarm, reports Auxiliary code to the AMC. Cannot be zoned out from the keyboard unless part of the Standard Bypass Zones.

1 = 24 HR. LOCAL ALARM; (does not report to the AMC). When used with a N.O. contact, a violation will trip a latched annunciator beeping, which must be disabled with the Master Code. If used with a N.C, contact, a violation will trip a two second siren or bell alarm. Note: The N.C. local loop alarm will not operate under low or no battery conditions. The N.O. local loop alarm will operate under low battery conditions. The local loop cannot be zoned out from the keyboard unless it is part of the Standard Bypass Zones.

2 =24 HR. MEDICAL, audible or silent; Use this zone for additional remote medical switches. The Medical Dispatch button on the DCU-660 keypad reports ... e loop 7. Cannot be zoned out from the keyboard unless part of the S...ndard Bypass Zones.

3 = 24 HR. INSTANT BURGLARY, 24 hour instant audible or silent alarm. Cannot be zoned out from the keyboard unless a part of the Standard bypass zones.

4 = 24 HR. ASSAULT, 24 Hour instant; audible or silent alarm. Use this zone for additional emergency switches. The Emergency Dispatch button on the DCU-660 keypad reports the same code as zone 8 reports.

5 = EXIT/ENTRY BURGLARY, audible or silent alarm, delayed for 0 to 120 seconds for exiting or entering. If violated, with the ACP Armed and after the entry delay time, it trips a burglary code.

6 = INSTANT BURGLARY, audible or silent alarm, trips an instant burglary alarm if violated when the ACP is Armed.

7 = NOMAD BURGLARY, audible or silent alarm, disabled during entry and exit times, otherwise trips an instant burglary alarm if violated when the ACP is Armed.

E X A M P L E

T... following is an example of how a typical installation might be configured and the corresponding zone types entered into the PROM.

	Zone #	Zone Type		
	8	4	(24 HR. ASSAULT)	
	7	7	(NOMAD BURGLARY)	(when medical key on the keypad is disabled)
	6	7	(NOMAD BURGLARY)	
	5	5	(EXIT/ENTRY BURGLARY)	
ALERT ZONES	4	5	(EXIT/ENTRY BURGLARY)	
	3	6	(INSTANT BURGLARY)	
	2	3	(24 HR. BURGLARY)	
	1	1	Do not use if panel programmed to report fire as 1 or use this loop for local alarms only	

Enter your selection starting with the top to the bottom (enter zone 8 fir with the topmost number as the first digit to the left on the programme display. (This feature requires an entry of 8 digits.) Press both programming buttons simultaneously to burn the PROM and index to the next ature. (In the example, the numbers entered would be: 47755631). Also record your selection on the PROM programming worksheet.

*Step -3
-STANDARD BYPASS ZONES are the zones that will automatically be removed (shunted) from the system when the Standard Bypass (Home) Mode is selected by the user. Screen displays: "STND BYPASS". These zones are determined by programming a two digit code into the programmer. Determine the proper two digit code by completing the Standard Bypass section on the programming worksheet. Circle the individual values for each zone desired to be included in the Standard Bypass Zones. Add the 2 columns to obtain 2 totals. Using the Hex Conversion Chart, determine the Hex figure for each total. Enter this 2 digit code on the programmer and press both program buttons simultaneously to index to the next feature.

*Step -4
TROUBLE ZONES (Special Disarm is shown on the display. When using the DSS-660R this section refers to the Trouble zones) - are the zones (1-8) that will report trouble if they are violated when the system is powered up or if they have been individually bypassed (bypass LED is blinking) at arming. These zones are determined by programming a two digit code selected by completing the Trouble Report section on the PROM pogramming worksheet. Circle the individual values for each zone desired to be included in the Trouble Report Zones. Add the 2 columns to obtain 2 totals. Using the Hex Conversion Chart, determine the Hex figure for each total. Enter this 2 digit code on the PROM programmer and press both program buttons simultaneously to index to the next feature.

*Step -5
-MASTER CODE-is a four digit code used to program system features and to Arm/Disarm the system. Screen displays "MASTER CODE". Repeating digits are allowable. Select from numbers 0-9. Example: 1590 (Four digits must be entered on the programmer). Press both program buttons simultaneously to index to the next feature.

*Step -6
-EXIT TIME-is the time the user is given to exit the premise via the designated exit/ entry doors once the system has been Armed. Screen displays "EXIT TIME". Select from 0-120 seconds. Example: 45 seconds. (UL allows 45 seconds maximum.) Enter your selection into the programmer and press both program buttons simultaneously to index to the next feature.

tep -7
-ENTRY TIME- is the time the User is given to Disarm an already Armed system, once an entry has been made via an exit/entry door, in order to prevent a ivation of an intrusion alarm. Screen displays: " ENTRY TIME". Select f n 0-120 seconds. (UL allows 45 seconds maximum.) Example: 45 seconds. Enter your selection into the programmer and press both program buttons simultaneously to index to the next feature.

*Step -8
-ALARM DURATION TIME-is the amount of time a local Burglary and Assault alarm will sound prior to automatically shutting off. Screen displays: "ALARM TIME". Select from 1-15 minutes in one minute increments. Example: 5 minutes. (UL requires 4 minutes minimum.) Enter your selection into the programmer and press both program buttons simultaneously to index to the next feature. Fire timeout may be programmed into the PROM by entering a number of 8 or higher into the phone enable section of the program.

*Step -9
-FIRST PHONE NUMBER-is the telephone number of the first AMC receiver. Screen displays "1 PHONE NO". Entering a "C" after a digit will give a 5 second pause at that point in the number. (A pause may be required to exit certain phone exchanges.) The maximum digits are 14, including "C". Example: 1C 800 987 6543. Enter your selection into the programmer and press both program buttons simultaneously to index to the next feature.

*Step -10
-SECOND PHONE NUMBER-is the telephone number of the second AMC receiver (if used). Screen displays "2 PHONE NO". Entering a "C" after a digit will give a five second pause at that point in the number. (A pause may be required to e certain phone exchanges). The maximum digits are 14, including "C". Example: 1C 800 987 6543. Enter your selection into the programmer and press both program buttons simultaneously to index to the next feature.

*Step -11
-FIRST ACCOUNT CODE-is the customer account code reported to the first AMC receiver. Screen displays: "1 ACCOUNT CODE". The code can be either three or four digits. Example: 123 or 1234. Enter your selection into the programmer and press both program buttons simultaneously to index to the next feature.

*Step -12
-SECOND ACCOUNT CODE-is the customer account code reported to the second AMC receiver (if used). Screen displays "2 ACCOUNT CODE". The code can be either three or four digits. (Note: the account codes can be the "same" or "different" to either receiver.) Example 123 or 1234. Enter your selection into the programmer and press both program buttons simultaneously to index to the next feature.

*Step -13
-FIRST OPTIONS is used to select any or all of the following 3 features:
A. EXTENDED REPORTING FORMAT which reports alarms as follows: ABC(D) (X) XXX(X) Z (Where ABC(D) is the three or four digit account code, X is the supervisory code, and Z is the assigned reporting code for the violated zone or the Arm/Disarm code. X must be B, C, D, E or F for extended data reporting. Screen displays: "1 OPTIONS".

B. POWER UP ARM will cause the system to power up in the Armed mode after restoration of power from a complete power outage. Under these circumstances, the system will Arm even if the system was disarmed prior to the total power failure.

C. 24 HOUR REPORTING will automatically send a test code to the AMC 24 hours after the last system report.

The above features are assigned a value as follows:

No Extended Reporting on Phone 2	=	8
No Extended Reporting on Phone 1	=	4
Power Up Armed	=	2
24 Hour Reporting	=	1

Circle the desired First Option features on the PROM programming worksheet. Add the values chosen.

Example: If you desire Extended Reporting on the second phone number only and Power Up Armed but not 24 Hr. Reporting, you would add 4 and 2 to make 6 and enter the total for 1 Options.

After entering this total into the programmer, press both the program buttons simultaneously to index to the next feature.

*Step -14
-SECOND OPTIONS is used to select any or all of the following 4 features:

A. ABORT- which will cancel any alarm transmission to the Alarm Monitoring Center (AMC) if the system is Disarmed prior to the beginning of the dial out sequence.

B. SILENT ASSAULT-will suppress the local audible alarm during an Assault alarm, but will still send a report to the AMC.

C. SILENT BURGLARY-will suppress the local audible alarm during a Burglar alarm, but the burglar alarm report will still be sent to the AMC.

D. SILENT MEDICAL-will suppress the local annunciator "beep" from the keypad during a Medical alarm. A Medical alarm report will still be sent to the AMC.
The Second Options features are assigned a value as follows:

Abort = 8
Silent Assault = 4
Silent Burglary = 2
Silent Medical = 1

Screen displays: "2 OPTIONS". Circle the desired Second Option features on the programming worksheet. Add the values to obtain the Second Options totals. Enter the total on the worksheet and into the programmer. Press both programming buttons simultaneously to index to the next feature.

ample: If you desire to Abort alarm transmission with a Disarm code, have a ilent assault, and audible burglary and medical alarms, you would add the 8 and 4 to get 12 and enter this total for 2 Options.

After entering this total into the PROM programmer, press both program buttons simultaneously to index to the next feature.

*Step -15
-THIRD OPTIONS is used to select either or both of the following 2 features:
A. MULTIPLE REPORTING FORMAT-which will allow multiple alarms to be reported on one dial connection to the AMC.

B. FAST FORMAT - to report ALARMS at 20 pps instead of 10 pps.

The Third Options Features are assigned a value as follows:

Multiple Reporting Phone 2	= 8
Multiple Reporting Phone 1	= 4
Fast Format Phone 2	= 2
Fast Format Phone 1	= 1

creen displays: "3 OPTIONS". Circle the desired Third Option features on he programming worksheet. Add the values to obtain the total.

xample: If multiple reporting with slow format to the first phone number and ast format with no multiple reporting to the second phone number is desired, ou would add the 4 and 2 to get 6 and enter this total for 3 Options.

fter entering this total into the PROM programmer, press both programming uttons simultaneously to index to the next feature.

Step -16
CHANNEL REPORTING CODE SELECTION-allows you to individually assign the igits: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, B, C, D, E, or F as the following alarm eporting codes. Screen displays "CHANNEL CODES". These codes are reported o the AMC in the alarm priority from 1-14 as listed below. Enter your esired channel reporting code selection on the PROM programming worksheet.

PROM PROGRAMMING WORKSHEET

		EXAMPLE	
1.	LOOP 1	__1_	(loop is not connected when using fire if fire uses 1 as a reporting code)
2.	LOOP 2	__2_	
3.	LOOP 3	__3_	
4.	LOOP 4	__4_	
5.	LOOP 5	__5_	
6.	LOOP 6	__6_	
7.	LOOP 7 (Medical)	__7_	(medical report when dispatch key is pressed)
8.	LOOP 8 (Assualt, Duress)	__8_	(assault report when dispatch key is depressed)
	FIRE LOOP	__1_	(fire reports as a 1)Loop 1 was not connected to allow fire to report as code 1. If reporting code 5 was selected for fire then loop 5 would not be used.
10.	LOW BATTERY/TEST	__0_	
11.	TROUBLE	__F_	
12.	RESTORE	__E_	
13.	CLOSING	__C_	
14.	OPENING	__B_	

PORTANT

If you do not wish the code to be reported, simply enter an unused report digit as a "dummy" code and select not to report that channel. The most common dummy report code is "F".

ALL 14 ITEMS MUST BE PROGRAMMED. IF A PARTICULAR ITEM IS NOT REQUIRED TO REPORT, DO NOT PROGRAM IT IN ENABLE SECTIONS.

In the above example, the number entered into the programmer would be: 1234567810FECB. Enter your numbers starting from the top to the bottom, with the topmost number as the first digit to the left on the programmer display. Remember- all 14 codes must be entered, so if necessary enter a "dummy" code for any channels not being reported. Press both programming buttons simultaneously to index to the next feature. Loops 1, 7, & 8 may be programmed as local non AMC reporting loops, as Zone Type 1 (24 Hour Local Alarm).

Step 17

CANCEL REPORTING CODE-is typically a digit not previously selected above as a channel report code. Screen displays, "CANCEL CODE". Enter your selection on the worksheet and program this code into the programmer. Only 1 digit may be entered in this feature. Often the cancel code is programmed to be the same as the test code. Press both program buttons simultaneously to index to the next feature. If Cancel Reporting is not desired, press the lower program button to pass this feature by. Program a D for a Radionics receiver.

Step -18

FIRE PHONE ENABLE-allows you to select which alarm types will be reported to the first AMC receiver. It is also used to select the fire timeout option which makes the fire alarm sound turn off after the 1-15 minutes the same as the burglary and assault alarms rather than running continuously Screen displays "1 PHONE ENABLE". The First and Second Phone Enable features are assigned a value as follows:

Simple Keypad=8** (Model S Version)							
Fire timeout	=8*	Restore	= 8	Loop 8	= 8	Loop 4	= 8
Cancel	=4	Trouble	= 4	Loop 7	= 4	Loop 3	= 4
Opening	=2	Low Battery	= 2	Loop 6	= 2	Loop 2	= 2
Closing	=1	Fire Loop	= 1	Loop 5	= 1	Loop 1	= 1
TOTAL	( )	TOTAL	( )	TOTAL	( )	TOTAL	( )

*Fire timeout option applies only to the FIRST PHONE ENABLE.
**Simple keypad option applies only to the SECOND PHONE ENABLE.

Use Chart No. 18 on the programming worksheet to select the proper 4 digit code to enter into the programmer. Circle the feature desired in each column and add the 4 individual column totals. Using the Hex Conversion chart, determine the corresponding hex number to be entered into the Phone No. 1 Enable Total. Enter this Phone No. 1 Enable Total into the programmer. Press both program buttons simultaneously to index to the next feature.

Example: If Fire, Trouble, Loop 8, Loop 4, and Loop 2 were desired to re
to the first phone number, you would program 58A. Since no features
in the first column were required, a 0 should be entered into the programm
Due to the "leading 0 suppression" discussed earlier in this manual, the
will be displayed at the time of programming and will be recorded onto th
PROM. However, it will not be displayed when the PROM is read.

Step -19
-SECOND PHONE ENABLE-allows you to select which alarm types will be reported to the 2nd AMC receiver and whether the simplified keypad (Model S) option will be enable. If selected, the Model S version disables Mode #1, Mode #2 and Mode #3 from the user DCU-660 keypad. The information normally available in Mode #1, 2 or 3 will only display for .1 second in the DCU-660. The information can be recognized by an installer. However, it will be inconspicuous to a user. Screen displays "2 PHONE ENABLE". Follow the same procedures as for First Phone Enable features. Use Chart No. 19 on the programming worksheet to select the proper 4 digit code to enter into the programmer. Press both program buttons simultaneously to index to the next feature.

*Step -20
RESTORE ZONES (AC Delay) - Allows you to select which zones will report restoral to the AMC. Screen displays, "AC DELAY". Use the table shown on the programming sheet to form the RESTORE ZONE TOTAL. Enter this number into the programmer. Press both program buttons simultaneously to index to the next feature. The DPP-8000 program was established for the regular version of the DSS-660 ACP where selective restore repots by zone was not a feature.

*Step -21
-DIALER DELAY-will allow the dial out sequence to be delayed from 0 to 25.0 seconds. Selecting a delay time will delay all channel reporting. Enter the time in tenths of seconds. Example: to delay 10 seconds, enter 100; to delay seconds, enter 150; to delay 12 seconds, enter 120. Screen displays, "DIALER DELAY". Note your selection on the programming worksheet and enter into the programmer. Press both program buttons simultaneously to index to the next feature.

*Step -22 ALL DONE
The screen should now display "ALL DONE". Read the PROM to verify the programming is correct. For installation of the PROM in the ACP, please refer to the section on Mechanical Installation.

CHECKSUM FEATURE

The DPP-8000 contains a unique feature to enable the installer to quickly identify a PROM to a particular installation and to determine if a PROM is blank or has been preprogrammed. After you have completed the programming sequence and received the "ALL DONE" display, press "C" and Start. The display will alternate between "CHECKSUM" and a checksum code. This checksum code is based upon the individual features selected for each installation and should be recorded for use as a quick reference. To determine if a PROM is blank, simply press "C" and start. An alternating blank display with "CHECKSUM" indicates that the PROM is blank. If the PROM has been programmed, the display will alternate between "CHECKSUM" and the checksum code. If the code differs from the previously logged code, the PROM has been reprogrammed.

PROM DUPLICATION

The DPP-8000 also contains a PROM duplicating feature which enables the installer to store and quickly program the features commonly used on all installations. This feature allows the installer to program as many as 13 items with a single keyboard entry. The items which may be duplicated are:

ZONE TYPES	2 OPTIONS
EXIT TIME	3 OPTIONS
ENTRY TIME	CHANNEL CODES
ALARM TIME	CANCEL CODE
1 PHONE NO.	1 PHONE ENABLE
2 PHONE NO.	2 PHONE ENABLE
1 OPTIONS	

*Step -1
Preparing the Master Duplicating PROM

Program a Master PROM with the desired features to be duplicated. Individual features not common to all PROMS may be skipped by pressing the lower program button only. Read the PROM to verify the programming is correct.

*Step -2
Store Master PROM Data in Programmer

Insert the master PROM in the socket. Press Start, "D" to store the information to be duplicated into the programmer memory. The display will flash between "COPY" and the checksum number. Record this checksum number for future reference.

*Step -3
Duplicate Programming Data into PROMS

After completing the prior step of storing the Master PROM data in the programmer, now insert a blank PROM into the socket. Press the Start key. The display will read "PRODUCT". Press the 4 key. The display should flash between "DUPLICATE" and the same checksum number recorded previously. If the programmer fails to duplicate the information onto the PROM, the display will read, "ERROR". In this event, the PROM inserted probably was either bad or previously used.

Should the display read "EMPTY" after pressing Start, 4, repeat the process for storing the Programming Data as described above.

*Step -4
Programming Remaining Prom Features

Once the duplicate PROM has been programmed with the Master PROM information, you can press Start, 6 to now individually program the balance of the installation features into the PROM(s).

ELECTRICAL CONNECTIONS

TERMINAL	FUNCTION	DESCRIPTION
1 (-)	GROUND (Common)	This is a "Common" point for the ACP. This terminal may be used for connecting an earth ground to the ACP.
2 & 3	16 VAC, 40 VA 60 Hz, UL Class 2 Transformer	Connect the 16 VAC input terminals to a U.L. Class 2 transformer, rated at 40 VA minimum. (e.g. Basler No. BE-19135.) Use 18 gauge wire with a maximum length of 50 ft. Never plug the transformer into a receptacle controlled by a switch.
4 & 5 (+) (-)	Motor Driven Bell Output 12 VDC, 1 Amp max.	Connect the motor driven alarm bells and strobe lights to these terminals. Use 18 gauge wire with a maximum length of 50 feet. (e.g. Amseco no. MSB-10B-12G)
The Alarm Output terminals (bell & siren) are current limited to 1.5 Amps total.		
5 & 6	Speaker Output	Connect a maximum of two 8 ohm, 15 Watt speakers in parallel to these terminals. (e.g. Atlas Sound No. AP-15U). Use 18 gauge wire with a maximum length of 50 feet. (No external siren driver is necessary.)
7 & 8 (+) (-) & 19 (+)	Auxiliary Power: 12 VDC	These terminals provide 12 VDC, at 500 mA max. for auxiliary equipment (space protectors, etc) connected to the ACP. The negative power can connect to any common terminal.
9 & 13 (+) (+)	Keyboard Power	These terminals provide power to the SCS and should be connected to the RED wire on the SCS.
10 & 14	Keyboard Clock	These terminals provide the clock signal for the SCS and should be connected to the GREEN wire on the SCS. Up to 4 SCS may be connected in parallel with cable lengths up to 300 ft., using ordinary 4 conductor telephone cable. Homerun any SCS cables in excess of 50 feet. IMPORTANT NOTE: Do not run the SCS or any detection loop wires alongside (within 4 inches) of the bell, 16 VAC or 110 VAC lines.
11 & 15	Keyboard Data	These terminals provide the data signal for the SCS and should be connected to the YELLOW wire on the SCS.
12 & 16 (-) (-)	Common	These terminals are the "Common" points for the SCS and should be connected to the BLACK wire on the SCS.

17 (+)	Fire Power Output	This terminal supplies 12 VDC at 150 mA max. to smoke detectors connected to the fire loop. The fire power output is current limited at 150 mA and is momentarily turned off when a System Test is performed; (#), (8), and each time the system is Armed.
18 & 22	Fire Loop	Connect UL listed smoke detectors (e.g. ESL No. 440 CT, 440 CST) or thermostats in parallel with an 4.7K ohm EOL resistor (for UL systems use DTI part # EOL-4700) to these terminals. An "open" in this loop will cause the SCS to beep every 15 seconds to indicate a trouble condition. A 1/2 second closure across this loop will cause a fire alarm.
20	Status	This terminal is an "Armed" status output. It is an open collector transistor output that pulls to ground in the Armed state.

Zones 1 - 8 may be programmed to be anyone of the following 8 zone detection types: 24 Hr. Auxiliary, 24 Hr. Local, 24 Hr. Medical, 24 Hr. Burglary, 24 Hr. Assault, Exit/Entry Burglary, Instant Burglary and Nomad Burglary. This zone type selection is stored in the NS 74S287 PROM at installation. The normal loop response time is 200 milliseconds. Maximum loop resistance should be less than 300 ohms (not including EOL resistors.) All unused loops (including fire) must be terminated with a 4.7K ohm EOL resistor. (For UL systems use DTI part # EOL-4700.) Zone 7 incorporates an optional pulse stretch circuit.

21 & 22	Zone 1	This is the loop input for Zone 1 and is an "Alert" Zone. Requires a 4.7K ohm EOL resistor. (For UL systems use DTI part # EOL-4700.)
23 & 22	Zone 2	This is the loop input for Zone 2 and is an "Alert" Zone. Requires a 4.7K ohm EOL resistor. (For UL systems use DTI part # EOL-4700.)
24 & 25	Zone 3	This is the loop input for Zone 3 and is an "Alert" Zone. Requires a 4.7K ohm EOL resistor. (For UL systems use DTI part # EOL-4700.)
26 & 25	Zone 4	This is the loop input for Zone 4 and is an "Alert" Zone. Requires a 4.7K ohm EOL resistor. (For UL systems use DTI part # EOL-4700.)

27 & 28	Zone 5	This is the loop input for Zone 5. Requires a 4.7K EOL resistor.(For UL systems use DTI part # EOL-4700.)
29 & 28	Zone 6	This is the loop input for Zone 6. Requires a 4.7K ohm EOL resistor.(For UL systems use DTI part # EOL-4700.)
30 & 31	Zone 7	This is the loop input for Zone 7. Requires a 4.7K ohm EOL resistor. Zone 7 has a Pulse Stretch Circuit to allow direct use of window/shock sensors on this zone. To use the Stretch Circuit, cut the yellow jumper on the underside of the PCB near terminal No. 30. A N.O. contact when closed for a minimum of 7 milliseconds will be detected. Do not use N.C. contacts with the pulse stretch circuit enabled. (For UL systems use DTI part # EOL-4700.) (UL has not investigated the pulse stretch circuitry.)
32 & 31	Zone 8	This is the loop input for Zone 8 and requires a 4.7K ohm EOL resistor. The DCU-660 uses an annunciator buzzer rather than a light display to show the status of this zone. This zone is typically assigned as a non-shuntable circuit. (For UL systems use DTI part # EOL-4700.)
BATTERY		The battery standby time is a function of the auxiliary power load. A 6 AH battery with no external auxiliary power load and 1 SCS should provide approximately 12 hours standby time. (e.g. Yuasa No. MP6-12 or Powersonic PS-1260) (UL has tested a fully loaded system and found it to provide a minimum of four hours standby.)

MPTOM:

No LEDs or annunciator tones on the SCS.

CHECK:

Check the wiring. Check to ensure that there is 12 VDC between the Red and Black wires connected to the SCS. Ensure that you have power applied to the ACP. If there is 16 VAC applied to the AC inputs, there should be 13.7 V at the Battery leads.

SYMPTOM:

The Ready-to-Arm LED will not light.

CHECK:

Enter (#), (1) to display the current state of the zones. A violated zone will cause its LED to blink. A good zone will have approximately 6-7 DC at its terminals. Anything below 3 V is a shorted loop and anything above 10V is an open loop. Ensure that the EOL resistor is 4.7K ohms.

SYMPTOM:

Low or no Auxiliary Power Output

CHECK:

Remove all loads, one by one. The Auxiliary power output is current limited to 500 mA. If excessive loads are applied, the voltage will drop to keep the current below 500 mA.

SYMPTOM:

The light bulb on the back of the DSS-660R printed circuit board is lit.

CHECK:

The battery is connected backwards or the battery leads may be shorted. The light may glow dimly for a few minutes when a dead battery is being charged.

SYMPTOM:

The AC Power LED does not blink at Arming.

CHECK:

The battery may be bad or disconnected. Enter (#),(3). The green LED will be on to display low battery alarm memory.

SYMPTOM:

The alarm does not sound for 2 seconds when (#),(8) is entered.

CHECK:

If the siren sounds for only a short whoop, the battery is probably bad. Failure of the AC Power LED to blink when the (#),(8) is pressed indicates a low battery. To confirm a battery problem, enter (#),(3) and the green LED will light. If there is a trouble condition, the alarm will not sound. Check the Trouble LED. If there is no trouble and the battery voltage is good, check the alarm fuse, the wiring and the alarm sounding device.

SYMPTOM:

Transmit LED blinks.

CHECK:

The communicator has failed to transmit to the AMC. The blinking LED is cleared at Arming so the failure must have happened since the last Arming. Check the wiring. The two center wires in the phone cord go to the phone line and the outer wires go to the house phones. Do a test dial and check the phone number.

SYMPTOM:

The Transmit LED does not turn on in an alarm condition.

CHECK:

The alarm is not being reported to the AMC. Check the programming sheet to see if it is enabled for reporting.

SYMPTOM:

AC Power LED blinks constantly.

CHECK:

The ACP is operating on standby Battery power. Check the AC Power outlet, 16 VAC transformer and all power wiring.

SYMPTOM:

The Battery will not charge.

CHECK:

Remove the Battery and briefly short the battery leads together. The light bulb on the bottom of the board should light. If there is auxiliary power but the lamp does not light, the board has a problem. If the lamp lights, check that the voltage across the battery leads is 13.5-13.9 V. If the voltage is normal, the battery is probably bad. If the voltage is too low, check that your AC input is 14-20 VAC.

SYMPTOM:

When the alarm is on, you can hear a faint siren sound from the printed circuit board even when no speaker is attached to the siren terminals.

CHECK:

This is normal, as a capacitor on the PCB may be resonating at the siren frequency.

SYMPTOM:

The auxiliary power drops to 9V during the System Test and at Arming for a few seconds when no battery is attached.

CHECK:

This is normal.

SYMPTOM:

The siren alarm output works while the bell alarm output doesn't, or vice versa.

CHECK:

Disconnect the wires to the siren and the bell. Check the voltages during an alarm. The bell output should be about +12 VDC while the siren output should be about 4-6 VAC. If the voltages are normal, check the wiring and the speaker/bell. Make sure you don't connect an external siren driver to the siren terminals. The siren driver is built into the ACP. You need only to connect a speaker.

SYMPTOM:

The Trouble LED is on.

CHECK:

Disarm the ACP. If the Bypass LED is on, enter (#),(6) to enable all of the Zones. Enter (#),(1). If any of the Zones 1-7 are in trouble, its corresponding LED will be off. If Zone 8 is in trouble, the SCS annunciator will be on. Any 24 hour loop which is violated when the ACP is Disarmed will go into trouble until the loop is restored. Any loop which is violated when the ACP is powered up will go into trouble until it is restored. If all the LEDs are on and the audibles are off, the fire loop is in trouble. The voltage on any loop should be about 6-7 V. Less than 3-5 V is a short and greater than 7.5-9.5 is an open.

IMPORTANT NOTE:

The DSS-660R incorporates many features to ensure that the microprocessor does not get confused. These include hardware and software tests for the correct operation of the ACP. In the unlikely event the Alarm Control Panel is acting in a peculiar manner, you can momentarily press the reset switch located above the terminals on the printed circuit board to reset the microprocessor.

FIRE DETECTOR INSTALLATION AND PLACEMENT

CAUTION

arly warning fire detection is best achieved by the installation of fire etection equipment in all rooms and areas of the household as follows:

A smoke detector installed in each separate sleeping area, (the vicinity of, but outside of the bedrooms), and heat or smoke detectors in living rooms, dining rooms, kitchens, hallways, attics, furnace rooms, closets, utility and storage rooms, basements and attached garages.

Since most household fires occur at night when everyone is asleep, the most important location is just outside of the bedrooms. 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 one unit.

UL listed energy limited cable must be used in a UL fire system. A listed internal sounding device is required for California State Fire Marshal listed systems. This equipment should be installed in accordance with the National Fire Protection Association's Standard 74. For additional information write: NFPA, Battery March Park, Quincy, MA 02210

NOTICE

Part 68 regulations require us to notify installers (and customers) of the -660R in writing, as follows:

1. The DSS-660R may not be used on party lines or with coin telephones. Connections to party lines may be made through telco-supplied protective devices. Consult the telephone company sales representative.

2. The installer (or customer) must notify the telephone company of the intent to install this device and give the FCC Registration Number and the Equivalence Number as specified on the equipment label. The installer (or customer) must also request the telephone company to install a (USOC) RJ31X or RJ32X connector.

3. Rights of telephone company: Under certain circumstances the telephone company may temporarily discontinue service, and the telephone company may make changes in facilities and services which may affect the operation of the user's equipment; however, the user shall be given adequate notice in writing to allow the user to maintain uninterrupted service.

4. In case of difficulties, the user must first disconnect the alarm device from the telephone line jack. If the difficulty with the phone service still persists, the telephone company should be notified that they have a problem which requires correction. If the problem disappears when the unit is disconnected, the fault is in the alarm system. In this case, the user may not attempt to make any repairs, but must return the device to an authorized dealer or the factory for repairs.

5. FCC regulations also require installers to notify their customers, in writing, that the above rules apply.

DTI SECURITY LIMITED 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 the original purchaser. Defective units shall be returned by the buyer at his own expense to the installing dealer who will forward the equipment to us for inspection and/or repair. During this warranty period, DTI Security, will, at our option, repair or replace the unit without charge, provided that after our inspection, it is the opinion of DTI Security that the unit has not been subjected to electrical or physical misuse.

In no event shall DTI Security be liable for any loss or damage, consequential or otherwise, arising out of the use by buyer or failure of the product to operate, beyond the cost of the repair of the product. DTI Security makes no warranty of fitness or merchantability of the product. The installation of the product is the sole responsibility of the installing company, and DTI Security shall in no way be held responsible for such installation or use of the product, or for any other acts by the installer.

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.

SPECIFICATIONS

OPERATING VOLTAGE:	16 VAC, 40 VA, Class 2 Plug In Transformer
STANDBY POWER:	12 VDC, 6 Ampere Hour Gel-Cell Battery (Optional) (e.g. Powersonic No. PS-1260, Yuasa NP6-12)
FUSE:	Siren output, 3 amp
ALARM OUTPUTS:	+12 VDC Bell Output, Integral Siren Driver (3 different sounds)
DIGITAL COMMUNICATOR:	14 Channel with Line Seize Relay

- Loop 1
- Loop 2
- Loop 3
- Loop 4
- Loop 5
- Loop 6
- Loop 7
- Loop 8
- Fire Loop
- Low Bat/test/24 hr
- Trouble
- Restore
- Closings
- Openings
- Cancel

Extended Reporting of Restore and Trouble Zones and Codes Used for Arming and Disarming the System

TRANSMISSION FORMAT:	Slow Speed (Ademco/Silent Knight) 10 pps Fast (Franklin) 20 pps Radionics Standard Format 20 pps
REGISTRATION NO.:	A96919-13438-AL-R
RINGER EQUIVALENCE NO:	0.0 A
ALARM TIME OUT:	1-15 Minutes, Programmable at Time of Installation Fire alarm can be programmed for timeout or continueous
DETECTION CIRCUITS:	8 Individually Assignable Zones Plus a Fire Zone
ZONE SPECIFICATIONS:	Supervised, 3 mA Maximum Zone Current, RFI and Transient Suppression Built In. EOL Resistors are 4.7K ohms
LOOP RESPONSE:	200 Milliseconds (Loop 7 is jumper selectable for 5 milliseconds for N.O. contacts)
EXIT/ENTRY TIMES:	Independently Programmable from 0 to 120 Seconds in 1 Second Intervals. Programmed at Installation Time
ARM/DISARM OPERATION:	Armed and Disarmed by a Four Digit Code (Master, Secondary or Duress Disarm). Can be Armed Using Quick Arm.

ALARM/ANNUNCIATOR:	Built In to System Control Station
AUXILIARY POWER:	12 VDC, 500 mA maximum (current limited)
SYSTEM TEST:	Operated Through Use of System Control Station
ENCLOSURES:	Alarm Control Panel: (ACP)-18 Gauge Metal Can System Control Station: (SCS)-High Impact ABS Plastic
OPERATING TEMPERATURE:	20 degrees F to 120 degrees F
DIMENSIONS:	DSS-660R (ACP)- 9"W x 15"L x 3"D DCU-660 (SCS) - 6"W x 4.5"L x 1"D
COLOR:	Fog
INDICATORS:	Armed LED, Ready-To-Arm LED, AC Power LED, Trouble LED, Bypass LED, Alert/Instant LED, Transmit LED
EMERGENCY PUSHBUTTONS:	Fire, Medical & Assault

P/N 102-000664
A/W #70-1074
REV. C

DSS-660R PCB LABEL

CAUTION: HEAT SINK SCREWS MUST BE SECURELY TIGHTENED TO METAL CONTROL BOX

CAUTION:

This panel is to be serviced only by qualified technicians. Handle the printed circuit board by touching ONLY the edges of the board, heat sink or terminal strip. The technician should discharge any static build-up by touching the DSS-660 metal control box before handling the board. When installed, the circuit is effectively protected from normally expected transients induced by lightning, power surges, static etc.

"Connection of the fire alarm signal to a fire alarm headquarters or a central station shall be permitted only with approval of the local authority having jurisdiction. The burglar alarm signal shall not be connected to a police emergency number. The receiving unit to which this equipment transmits signals has not been evaluated by UL"

COMMUNICATOR CONNECTION
TYPE AMP RJ11-C MODULAR CONNECTOR

RED, GREEN } INCOMING PHONE LINE
SEE INSTALLATION MANUAL
YELLOW, BLACK } ON PREMISE PHONES

F.C.C. I.D. # A96919-13438-AL-R

RINGER EQUIVALENCE 0.0A

COMPLIES WITH FCC RULES PART 68

ALARM OUTPUT
FUSE: 3 AMP

"WARNING-For continued protection against the risk of fire, replace only with the same type and rating of fuse."

PROGRAM PROM 1

INSERT PROM AS SHOWN
USE ONLY NAT'L SEMI
PART #74S287

PRESS FOR RESET — CAUTION: MICROPROCESSOR RESET FOR USE BY AUTHORIZED PERSONNEL ONLY

COMPLIES WITH FCC RULES PART 15 SUBPART J CLASS B

FOR DETAILED HOOK-UP INFORMATION CONSULT CHART ON INSIDE COVER

1 GROUND/COMMON	2 16 VAC POWER	3 TRANSFORMER	4 BELL OUTPUT	5 COMMON	6 SPEAKER OUTPUT	7 AUXILIARY POWER	8 COMMON	9 KEYBOARD PWR.	10 KEYBOARD CLOCK	11 KEYBOARD DATA	12 COMMON	13 KEYBOARD PWR.	14 KEYBOARD CLOCK	15 KEYBOARD DATA	16 COMMON	17 FIRE POWER	18 FIRE LOOP	19 AUXILIARY POWER	20 STATUS OUTPUT	21 ZONE 1	22 COMMON	23 ZONE 2	24 ZONE 3	25 COMMON	26 ZONE 4	27 ZONE 5	28 COMMON	29 ZONE 6	30 ZONE 7	31 COMMON	32 ZONE 8
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32

CUT YELLOW JUMPER WHEN USING GLASS BREAK DETECTORS ON ZONE 7

DTI Security
MODEL NO: DSS-660
P/N 189-000052