INSTALLATION MANUAL

ECURITY
NICATIONS
rd Security Systems Ltd.

DV8000

Software Version 1.0

**DVACS is a registered trade mark of Electro Arts Limited and covers a wide variety of products.*
Full DVACS compatability applies only when the Sur-Gard equipment is connected to the RS-232 port of a DVACS F1F2-List 3 (or a DVACS F1F2-List 1) subset which is connected to a DVACS HUB-324 (or DVACS HUB-308) card.

This manual is for use with the DV8000 Software Version 1.0

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INTRODUCTION

The DV8000 is a flexible and versatile security system designed to meet the most demanding security requirements. The heart of the system is the DV8000 Main Control Panel, which is connected to other system elements using common 4-conductor unshielded station wire. The main panel processes signal information and communicates with the monitoring station. The main panel features 8 zones and 1 Auxiliary Input. Any of the 8 zones may be programmed as 1 of 15 different burglary types. The panel also allows the creation of up to four separate partitions.

The system is programmed and operated using the DV8000 KP LED Keypad or the keypad installed on the control panel cabinet. Up to four keypads may be used on the system.

The DV8000 has 3 Programmable Outputs with over 30 available programming options. For a permanent record of events on the system, the DV8000 can send output to a serial printer.

System Overview

EEPROM Memory

- Non-volatile EEPROM memory retains programming even if both AC and Battery power are removed.

Arm / Disarm Codes and Reporting

- 16-user Arm and Disarm Reporting
- Split Arming in 4 Groups
- Zones and Users's Access Codes have programmable Group Assignment

Operation

- All Zones programmable as 1 of 15 types
- 8 Zones: 1 normally closed high zone; 7 programmable end-of-line resistor normally-closed or normally open zones
- 1 Fire Input: Class A
- 3 Dedicated Keypad Zones: Fire, Panic, Emergency
- 1 Programmable Auxiliary Input
- All Alarm and Restoral codes are individually programmable
- Built-in Low Battery Disconnect
- Fuse Protection
- 3 Programmable Outputs with choice of over 30 programmable options

  PGM1: Switched to negative through current limiting resistor

  PGM2: Switched to negative through current limiting resistor

  PGM3: Commercial rating: 12V positive, 25 mA
  Residential rating: 11.6 to 12.5V positive, 25mA
- Auxiliary Power Output - up to 530 mA
- Bell: 12V 1.0A
- 100-event Buffer with "Printer Dump" feature
- Attractively styled LED Keypads
- Keypad features backlit keys and LED display with 4 system status lights: "Ready", "Armed", "Bypass" and "Power"
- Panel supports Keypad and Keyswitch operation
  NOTE: The Keyswitch is intended for supplemental use only and does not replace a keypad.

Keypad Programmable

- The DV8000 includes a default program so it is operational straight from the box with a minimum of programming. The control panel is completely programmable from the Keypad.

Increased Security

- Separate Installer Code
- Installer Code cannot operate panel or program Access Codes

Supervision

- Low battery detection
- AC failure detection
- Supervised fuse protection
- Microprocessor “watchdog” circuit
- Communication line fault trouble signal
- Supervised bell output
- Supervised ground fault

Panel Outputs

- Auxiliary Power Supply: 12V at 0.5A (VAUX terminals)
- Bell/siren Output: 12V 1A fused at 2A
- Programmable Output 1: Switch to negative; sinks 76 mA
- Programmable Output 2: Switch to negative; sinks 76 mA
- Programmable Output 3: 12 V at 25 mA

Panel Inputs

- AC in: 16.5V 37 VA
- 8 Burglary Zones: programmable End-of-Line Resistor zones; 5.6K ¼W resistors; normally closed or normally open
- 1 Class A Fire Zone
- Accessory Power (VAUX+): 13.8V, 530 mA max.
- Battery Charge Voltage: 13.8 V
- Battery Charge Current: 300 mA

Static / Lightning Protection

The DV8000 has been carefully designed and tested to provide reliable protection against static and lightning induced transients. The special “Zap-Trac” circuit board design catches high voltage transients right at the wiring terminals, and protection devices are placed in all critical areas to further reduce damaging voltages.

“Watchdog” Monitor Circuit

Even when all precautions are taken to prevent voltage surges from damaging the control panel, it is still possible to cause temporary disruption to the operation of the microprocessor, causing it to lose track of the program sequence. The DV8000 is equipped with an external “Watchdog Timer” circuit, which continually checks on the microprocessor’s program execution.

AC Failure and Low Battery Disconnect

When AC power is lost for an extended period of time, the battery will become fully discharged. The DV8000 will disconnect the battery when its voltage falls below 9.2V to prevent irreversible damage to the battery. When AC power is restored, the panel will automatically reconnect the battery to the charging circuit.

RS-232 / 10mA Loop DVACS Option

Either an RS-232 connection or 10mA loop may be used as the interface between the DV8000 and the F1/F2 subset. The interface option is selected by setting the jumpers “LK1”, “LK2”, “LK3”, “LK4” and “LK5” on the DV8000 Control Panel.

To use the RS-232 option, all jumpers must be set to the “V” position.

To use the 10mA loop option, all jumpers must be set to the “C” position.

Refer to the Hook-Up Diagram in this manual for the location of the jumpers on the DV8000 Control Panel.

It is important that all jumpers be set in the same position. If the jumpers are improperly configured, damage to the F1/F2 subset or the DV8000 may occur.

INSTALLATION

Bench Testing

The DV8000 contains a factory default program; additional programming may be performed using the Keypad. The factory default program will be suitable for most applications.

If end-of-line resistor zones are used, connect a 5.6K resistor from each zone terminal to the closest COM terminal. Ensure that zone terminals 1 through 7 are connected with a resistor to a COM terminal, and that zone terminal 8 is shorted. Unless all zone loops are properly terminated, the “Ready” light will not come ON and the panel will not arm.

Connect the red, black, yellow and green Keypad wires to the RED, BLK, YEL and GRN terminals on the control panel.

For a complete test of the DV8000, including the transmission of data to a monitoring station, complete the DVACS terminal connections to the panel and program the identification number.

For testing purposes, connect a small buzzer to the BELL+ and BELL- terminals to indicate when the panel is in alarm.

Connect a ULC-listed 16.5VAC, 37VA transformer to the AC terminals. Before plugging in the transformer, be sure the circuit board is not resting on a metal surface which may cause a short.

NOTE: The DV8000 will not power up if the AC is off and the battery voltage is below 11V.

When the transformer is plugged in, the Keypad should light up and the buzzer connected to the BELL terminals may sound for a few seconds. The “Armed” light may be ON or OFF when the panel is powered up; the last armed/disarmed condition is stored in the panel’s memory so the panel will always power up in its last armed or disarmed state. If the “Armed” light is ON, enter the Master Code (default Master Code = [1234]) to disarm the panel. If the Keypad is not active, check for the presence of AC power at the AC terminals. Also, check the Keypad connections and the panel fuses.

If zones 1 through 7 are properly connected with End-of-Line Resistors and zone 8 is shorted, the Keypad “Ready” light will come ON.

Refer to the Getting Started section of this manual. Enter a sample program into the panel to become familiar with the programming commands.

Mounting the Panel

Select a dry location as close as possible to an unswitched AC source and the F1/F2 subset (modem) connection. Remove the printed circuit board, mounting hardware and Keypad from the cardboard retainer inside the cabinet. Before attaching the cabinet to the wall, press the five white nylon circuit board mounting studs and the ground connection screw into the cabinet from the back.

Pull all cables into the cabinet and prepare them for connection before mounting the circuit board. When the wiring has been prepared, press the circuit board down onto the mounting studs. Secure the cabinet door with 3/8" #6 sheet metal screws such as Sur-Gard part number HWPT638R.

Terminal Connections

Do not connect transformer or battery until all other wiring has been connected.

Wiring Precautions

To avoid induced noise (transfer of electrical energy from one wire to another), keep input wiring isolated from high current and power wiring. Induced noise can interfere with telephone communication or even cause false alarms. Separate the wiring into the following groups:

- High current input/output: AC power and bell wiring
- Low current input/output: Zone loop and annunciator wiring
- Audio input/output: Telephone wiring

Wires from the three different groups should not be pulled through the same conduit. If they must be run together, do so for as short a distance as possible, or use shielded cable. Connect the shield to circuit ground at the control panel. Note that high and low voltage cables must be routed separately.

To avoid the potential for noise induction, wiring within the control panel cabinet should be routed around the perimeter of the cabinet. Wiring should not cross over the printed circuit board, as this could induce noise in the microelectronics, or the wiring could pick up radio frequency noise from the high speed circuits.

High frequency noise, such as that produced by the coil and contacts of a bell, can be reduced by running the wire through ferrite shield beads, or by wrapping it around a ferrite bead.

NOTE: For commercial fire installations, all wiring must be within the range of 14 to 18 AWG.

Ground Connection

Connect a ground cable from the cabinet ground connection to the Earth Ground Terminal on the panel. Connect the cabinet ground to a grounding rod by the shortest and most direct route possible.

Keypad Connections

For Keypad wiring instructions, refer to the DV8000 Wiring Diagram at the end of this manual.

Connect the red, black, green and yellow keypad leads to the RED, BLK, GRN and YEL Keypad terminals on the control panel using four conductor (quad) telephone wire. Up to four Keypads may be connected to the DV8000; wire additional Keypads in parallel to the RED, BLK, YEL GRN Keypad terminals on the panel. Note that the Keypad's power is supplied through the auxiliary fuse.

Power Terminals: AC

Use a 16.5 VAC transformer rated to 37VA to supply AC power to the DV8000. The transformer should be connected to an unswitched outlet. If AC failure occurs, it will be displayed as a trouble condition on the Keypad; refer to Keypad Commands [✻][0][2] Displaying Trouble Conditions. An AC Failure Trouble can also be transmitted to the monitoring station depending on the Trouble Type programmed in Mode 20 Address [232].

Auxiliary Power Terminal: VAUX and GND

The auxiliary power supply can be used to power motion detectors and other devices requiring 12VDC. A maximum of 0.5A is available from the VAUX (positive) and GND (negative) terminals when the DV8000 is used with one Keypad. For each additional Keypad, the auxiliary supply rating must be reduced by 36mA. The auxiliary supply is fuse protected at 1 amp. A failure of the auxiliary fuse will generate a trouble transmission.

Bell / Siren Terminals: BELL+ and BELL-

The BELL terminals are used to power bells or other audible warning devices requiring a steady output voltage on alarm. The bell output is fuse protected at 2 amps. When connecting sirens or speakers with a siren driver already built-in, be sure to observe the correct polarity. Connect the positive lead to the BELL+ terminal and the negative lead to the BELL- terminal. If the control panel's built-in siren driver is used, output at the BELL terminals will be non-polarized.

Note that the alarm output is pulsed (2 seconds on, 2 seconds off) when an alarm is created by the Fire Zone or by pressing the Keypad's dedicated fire key.

If no siren or bell is used, connect a 1000 ohm 1/2 watt resistor between the BELL+ and BELL- terminals.

Programmable Output Terminals: PGM OUT 1 and PGM OUT 2

The operation of the PGM OUT 1 Terminal is determined by the value programmed in Mode 22 Address [035]. The operation of the PGM OUT 2 Terminal is determined by the value programmed in Mode 22 Address [036]. Refer to Appendix B Quick Reference Guide for a description of the programmable options for the PGM outputs.

PGM OUT 1 and PGM OUT 2 are transistor switched to ground through a 150 ohm current limiting resistor. A relay, buzzer or other DC-operated device may be connected between the VAUX terminal and the PGM OUT 1 or PGM OUT 2 terminals on the main board.

Programmable Output Terminal: PGM OUT 3

The Switched Auxiliary Supply can be switched on or off momentarily from the Keypad; refer to Mode 04 and Mode 05 in the Instruction Manual. The operation of the Switched Auxiliary Supply is determined by the value programmed at Mode 22 Address [037]. Refer to the Quick Reference Guide for a description of the programmable options.

The PGM OUT3 terminal is positive and the GND terminal is negative. The Switched Auxiliary Supply is electronically current limited to 25mA, and will not cause a fuse to open if switched to negative.

KEY Input Terminal: AUXIN and Key Arming

The AUXIN input is a standard normally-open zone. An alarm on this input is created when the resistance of the loop goes higher (an open circuit) or lower (a short circuit) than normal. Refer to the Programming Worksheets, Mode 20 Addresses [429] for programming the alarm code for this input.

The Auxiliary input is intended to be used as a burglary zone or key switch input only. The AUXIN terminal can be used as a momentary or maintained keyswitch arming and disarming input.

FIRE Zone Input Terminals

The FIRE zone is a Class A1 Fire Zone. On alarm (fire loop shorted), the activation delay will begin to count down. After the delay has expired, the bell output will pulse and the alarm will be transmitted to the monitoring station. The delay for an alarm on this loop is programmed in Mode 22 at Addresses [025], [026] and [028]. If the zone goes open, a trouble alarm will be generated.

Ground Fault

A short circuit (100µA) between earth ground and system ground will cause a trouble condition. The Ground Fault Trouble Reporting Code is programmed in Mode 20 Address [444].

Zone Connections

Zones 1 through 7 can be independently defined as normally closed, normally open or end-of-line resistor zones. Zone 8 is always a normally closed zone.

For normally closed zones, a zone will go into alarm when a resistance of 2800Ω or greater is detected. Zone 8 will go into alarm when a resistance of 1000Ω or greater is detected.

For normally open zones, a zone will go into alarm when a 8400Ω resistance or less is detected.

For end-of-line resistor zones, a zone will go into alarm when the zone's resistance drops below 2800Ω (a short circuit). A zone will generate a trouble condition when the zone's resistance rises above 8400Ω (an open circuit).

Zone Supervision using Zone 8

Zone 8 may be used as a 24-hour Zone to supervise all other zones; refer to the wiring diagram below for wiring instructions.

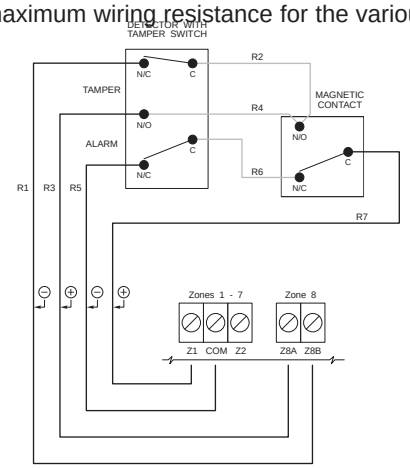
The chart below provides the maximum wiring resistance for the various loops described above:

Zone 8	*Zones 1 through 7*
R1 + R2 = 500Ω maximum	R5 + R6 = 500Ω maximum
R3 + R4 = 500Ω maximum	R7 = 500Ω maximum

Bell Supervision using Zone 8

Zone 8 may be used to supervise a Grade A Bell as shown below:

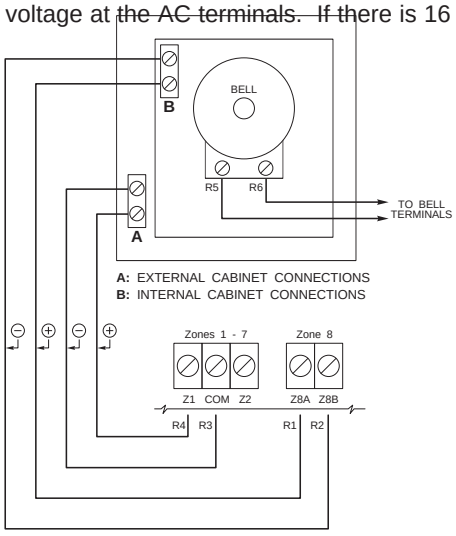
The chart below provides the maximum wiring resistance for the various loops described above:



Zone 8	*Zones 1 through 7*	*Bell*
R3 = R4 = 500Ω maximum	R1 = R2 = 500Ω maximum	R5 + R6 = 2Ω

Power-Up Procedure

Connect the transformer and wait approximately 5 seconds. Enter a few Keypad commands and activate a zone to be sure that the panel and Keypad are responding to inputs. If the Keypad does not respond and no LED indicators come on, check for AC voltage at the AC terminals. If there is 16 VAC present, check that the Keypad



wiring is correct, and also check the Keypad/Auxiliary Supply fuse. If the fuse is open, check for a short between the Keypad's red and black leads before replacing the fuse.

Installing the Battery

If the Keypad responds normally when AC power is applied, connect the battery with the red lead to the positive battery post and black lead to the negative battery post. Use the chart below to determine the required battery size to achieve a 24-hour stand-by time. Note that the VAUX Load is the current drawn by detectors and other devices; do not include Keypads in the VAUX Load figure.

Testing the System

Contact the monitoring station to request a transmission test. Arm the panel, wait for the Exit Delay to expire, and then trip a detector on an instant circuit. Wait for the communication to complete, disarm panel, and check with the monitoring station to confirm the transmission.

Battery Amp-hour Calculation Chart

VAUX Load	Number of Keypads	Battery Size in Amp-hours
0mA	1	4
	2	6.5
	3	6.5
	4	6.5
50mA	1	6.5
	2	6.5
	3	9.5
	4	9.5
100mA	1	6.5
	2	9.5
	3	9.5
	4	9.5
150mA	1	9.5
	2	9.5
	3	9.5
	4	15
200mA	1	9.5
	2	9.5
	3	15
	4	15
250mA	1	15
	2	15
	3	15
	4	15

Check the Keypad's display. If it indicates a trouble condition, follow the directions on the display to determine if there is a system trouble. Trouble conditions are described in the Instruction Manual in Modes 02 and 09.

After testing, program the Exit Delay, Entry Delay and Bell/Siren Cut-off times to the desired values. Also, activate any other features that are to be used.

Instructing the End User

Describe the system and its operation to an authorised user. Be sure to describe arming and disarming, all enabled Keypad functions, bell or siren signals and the location of all protected areas. Assist the user in working through examples of each type of command enabled on their system.

Provide users with the Instruction Manual and explain the importance of reading the manual and becoming familiar with all aspects of system operation. Demonstrate how to test the system, and inform the user of their responsibility to test the system on a regular basis.

It is also important that the end user be aware of the causes of false alarms, as most false alarms are due to a user's unfamiliarity with their system. The user should be made aware that false alarms are a nuisance, and that repetitive false alarms may lead the local authorities to stop responding to alarms from their system.

GUIDELINES FOR LOCATING SMOKE DETECTORS

Experience has shown that all hostile fires in family living units generate smoke to a greater or lesser extent. Experiments using typical fires in family living units indicate that detectable quantities of smoke precede detectable

levels of heat in most cases. For these reasons, smoke detectors should be installed outside of each sleeping area and on each additional story of the family unit.

The following information is for general guidance only and it is recommended that the smoke detector manufacturer's literature be used for detailed installation instructions.

It is recommended that additional smoke detectors beyond those required be installed for increased protection. The added areas include: basement, bedrooms, dining rooms, furnace room, utility room and hallways not protected by the required detectors.

Figure 1: A smoke detector should be located between the sleeping area and the rest of the family unit.

Figure 2: In the family living units with more than one sleeping area, a smoke detector should be located to protect each sleeping area.

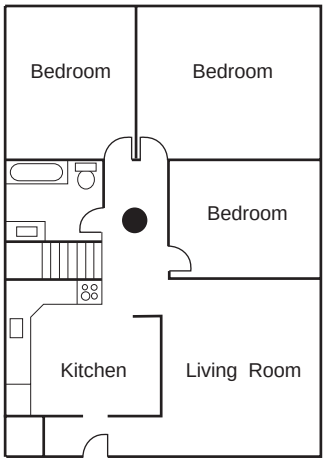


Figure 3: A smoke detector should be located on each story of the living unit.

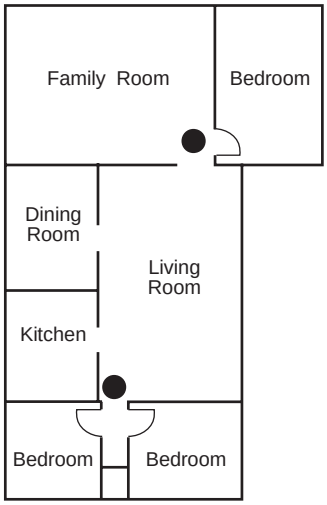
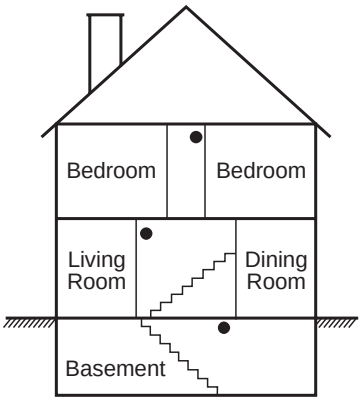
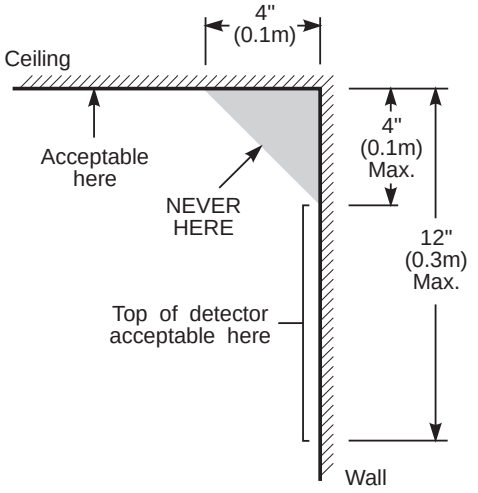


Figure 4: Smoke detector mounting and “dead” air space. The smoke from a fire generally rises to the ceiling, spreads out across the ceiling surface and begins to bank down from the ceiling. The corner where the ceiling and wall meet is an air space into which the smoke may have difficulty penetrating. In most fires, this “dead” air space measures about 4 in. (0.1m) along the ceiling from the corner and about 4 in. (0.1m) down the wall as shown in Figure 4. Detectors should not be placed in the dead air space.





NOTE: Measurements shown are to the closest edge of the detector.

SERIAL PRINTER CONNECTION

The DV8000 is capable of sending data to a local printer.

Programmable Output 1 is used as the serial output and the “Printer Ready” (PTR) terminal is used

as the busy signal (DTR) input. A signal ground must also be connected between the printer and the control panel. Note that the printer must be capable of serial communication.

The DV8000 should work with most serial printers that have at least 1 kilobyte of buffer memory. Testing has shown that the Star DP8340-M Serial Printer will function properly at 2400 baud with as much as 457m (1500 feet) of 4-conductor AWG 22 telephone cable between the printer and the control panel. However, it is recommended that the length of the wiring between the printer and the control panel be kept as short as possible. It is also recommended that a data transfer rate of 2400 baud or higher be used as greater communication speed allows multiple alarm reports to be printed out quickly.

Compatible Printers

Printer	Notes
Star DP8340-M	Set DIP switches for 2400 baud Switches 1, 5, 6 and 7 ON; switches 2, 3, 4 and 8 OFF
Citizen iDP3530	
Citizen 200GX	
Citizen iDP560rsl	
Epson LX810	Requires Epson 8146 Serial Card

Configuring the Printer

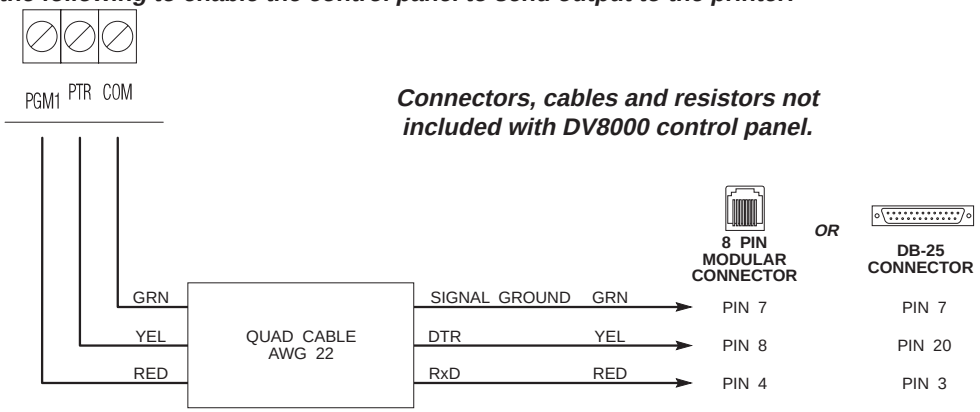
Follow the manufacturer’s instructions for configuring the printer and set the following:

- Serial interface
- Baud rate
- Parity = None
- Character Length = 8 bits
- Auto Linefeed = Off
- Character Set = American / Canadian

Connecting the Printer

Programming the Control Panel For Use with a Printer

Program the following to enable the control panel to send output to the printer:



Mode 22 Address [035] Programmable Output 1: program as [22]

Program the desired data transfer rate.

Mode 22 Address [033]: program as [01] for 300 baud
program as [02] for 600 baud
program as [03] for 1200 baud
program as [04] for 2400 baud (default setting)
program as [05] for 4800 baud

KEYPAD FUNCTIONS

Introduction

The keypad provides complete control of the DV8000 control panel. The keypad displays alarm and system status information with an LED display. Four LED indicators are used to indicate at a glance that the system has AC power, is either armed or ready to be armed, and that zones are bypassed.

The Keypad's large easy-to-use keys are backlit for visibility in dim light, and a built-in sounder "beeps" as each key is pressed. Three dedicated keys are provided to generate a fire, auxiliary or panic alarm with the touch of a single button.

The Keypad is normally in a "Arm/Disarm mode", where it is ready to accept an Access Code to arm or disarm the system. In this mode, the display indicates the opening and closing of zones. The "Ready" light will come ON when all zones are closed.

The system can be directed to perform functions such as Zone Bypassing, Displaying Trouble Conditions, Displaying Alarm Memory, and so on by entering one of the [✻] commands described in the Instruction Manual. Refer to Keypad [✻] Commands for information on the functions available. Pressing the [#] key or not making any key entry for 2 minutes returns Keypad to the "Arm/Disarm" mode.

Master Code

A default Master Code of [1234] is programmed at the factory, and should be changed when the control panel is installed. The Master Code is used for arming and disarming the control panel, programming up to 15 additional Access Codes using the [✻][03] command, and for entering other user functions. The Master Code and Access Codes are stored in the panel's EEPROM memory, and are retained even after complete AC and battery failure.

Installer's Programming Code

A default Installer's Programming Code of [8000] is programmed at the factory. The code is used with various programming commands to allow the installer to gain access to the system for control panel programming. The Installer's Programming Code may be changed by the Installer.

Keypad [✻] Commands

To enter a mode:

- Press [✻]
- Enter the Mode Number
- If required, enter the Master Code or an Access Code

Mode 01: Bypass Zones; may be programmed to require the Master Code or an Access Code to bypass

Mode 02: Trouble display. If a Trouble Condition exists, it will be indicated as described below:

TROUBLE GROUP 1

Trouble Light will FLASH
Zone Light will be ON

Light	*Trouble Condition*
1	Zone 1 Trouble
2	Zone 2 Trouble
3	Zone 3 Trouble
4	Zone 4 Trouble
5	Zone 5 Trouble
6	Zone 6 Trouble
7	Zone 7 Trouble
8	Not Used

- Press [9] to display the next Trouble Condition Group.

TROUBLE GROUP 2

Trouble Light will FLASH
Zone Light will FLASH

Light	*Trouble Condition*
1	AC Power Failure
2	Low Battery
3	Fire Zone Trouble
4	Bell/Siren Trouble
5	Auxiliary Fuse Open
6	Communication Trouble
7	Ground Fault
8	Reset Clock

- Press [9] to display the next Trouble Condition Group.

TROUBLE GROUP 3

Trouble Light will be ON
Zone Light will FLASH

Light	*Trouble Condition*
1	Auxiliary Alarm
2	Not Used
3	Schedule 1: Fail to Arm
4	Schedule 2: Fail to Arm
5	Schedule 3: Fail to Arm
6	Printer Not Ready
7	EEPROM Trouble
8	Communications Disconnected

- Press [#] to return to the Arm/Disarm Mode.

Mode 03: Edit Access Codes;

Master Code must be entered to edit Access Codes

Mode 04: Reset Type 2 Zones and activate Programmable Output 3 for 2 seconds

Mode 05: Utility Output 1 to 3: used to activate an external device

Mode 06: Multiple functions, adjustments, and testing:

- **01** Set The Time (HH:MM)
- **02** Set The Date (DD/MM)
- **03** Set The Day of The Week
- **04** Quick-Arm Select
- **06** Activate Bell for 3 Seconds
- **07** Activate All Programmable Outputs for 3 Seconds
- **08** Activate Buzzer for 3 Seconds
- **10** Auto-Arm Time of Day for Schedule 1
- **12** Auto-Arm Time of Day for Schedule 2
- **14** Auto-Arm Time of Day for Schedule 3
- **16** Day Assignment for Schedule 1
- **17** Day Assignment for Schedule 2
- **18** Day Assignment for Schedule 3
- **20** Auto-Arm Schedule 1 ON/OFF
- **22** Auto-Arm Schedule 2 ON/OFF
- **24** Auto-Arm Schedule 3 ON/OFF

Mode 07: Set “door chime” zones; Keypad will beep each time a zone is opened or closed

Mode 08: Zone Alarms Memory Display

Mode 09: Trouble Alarms Memory Display

Mode 10: Keypad Panic Alarms Memory Display

Mode 11: Send user message

Mode 12: Display last user who armed/disarmed Group A

Mode 13: Display last user who armed/disarmed Group B

Mode 14: Display last user who armed/disarmed Group C

Mode 15: Display last user who armed/disarmed Group D

Mode 16: Print Event Buffer

Mode 17: Check for identical Access Codes

Mode 18: ***For Future Use***

Mode 19: ***For Future Use***

Mode 20: Installer Programming Mode 20

Mode 21: Installer Programming Mode 21

Mode 22: Installer Programming Mode 22

Mode 23: Installer Programming Mode 23

Mode 25: Test Mode / Tamper Restore

Mode 26: Clear Event Buffer

Mode 27: Print Installer’s Programming

Mode 29: Transmission of Installer Messages

Mode 30: Installer Default Programming Mode

Mode 99: Language Select

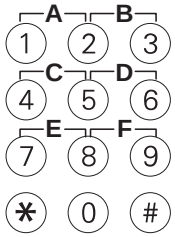
Refer to the Instruction Manual for descriptions of all Keypad user functions.

PROGRAMMING SECTIONS

Entering Hexadecimal Numbers

Some Installer Programming Sections require that hexadecimal (base 16) numbers be entered. To enter the hex numbers A through F, two keys on the Keypad are pressed at the same time, as described below:

For hex number...	Press...
A	1 and 2 keys simultaneously
B	2 and 3 keys simultaneously
C	4 and 5 keys simultaneously
D	5 and 6 keys simultaneously
E	7 and 8 keys simultaneously
F	8 and 9 keys simultaneously



Programming the Panel

Install the control panel and make the wiring connections as described in the Installation section of this manual. Apply power to the panel and program the system as described in the Programming Section of this panel. When programming is complete, test the system to ensure that all programmed functions work properly.

Programming and the Memory Security Jumper

If the Memory Security Feature is enabled (Mode 22 Address [003], Light 4), the pins marked “LK6” must be shorted using a plug-in jumper. If the pins are not shorted, the control panel will not allow any Installer Programming to be performed. Note that the jumper must be removed after Installer Programming is complete.

Restoring The Factory Default Program

In the event that the Installer's Code is erased through an error in programming, it is possible to restore the panel's factory default program.

1 Remove all power from control panel

2 Using a jumper, short the pins marked "LK6"

3 Apply power to the control panel

4 The "Program", "Ready", "Armed" and "Bypass" lights will flash.

- Enter a number on the Keypad, the press the the [✻] Key. This selects the item or group of items that will be restored to the factory default program. Enter a number from the list below:

Press...	Items to Restore to Default	Indicated by...
0	All data	Zone Lights 1 through 8
1	Master Code only	Zone Light 1
2	Access Codes only	Zone Light 2
3	***For Future Use***	Zone Light 3
4	***For Future Use***	Zone Light 4
5	All Reporting Data	Zone Light 5
6	***For Future Use***	Zone Light 6
7	Group Data (Zones and Access Code assignments)	Zone Light 7
8	Zone Types	Zone Light 8
9	All items in Options 5 through 8	Zone Lights 5 through 8

  After a number from 0 to 9 is pressed, press [✻] to enter the selection.

- The "Memory" light will flash after the [✻] Key is pressed. When the "Memory" light stops flashing, the selected items have been restored to their factory settings. Select another programming function or press [#] to exit.

WARNING: If Mode 22 Address 004 Light 2 has been selected, the default Installer's Code will not be restored by the method described above. This feature is designed to prevent an unauthorised person from restoring the factory default programming and then using the default Installer's Code to reprogram the panel. Contact your Sur-Gard distributor for more information.

NOTE: The factory default program may also be restored by entering Mode 30.

Entering Installer Programming Modes

1 Press the [✻] key

2 The "Program" light will flash.

3 Enter two digits to access the desired mode. For example, press [2][0] to enter Mode 20.

4 The "Ready" light will flash and the "Program" light will be steadily illuminated.

5 Enter the Installer's Code

6 The "Memory" light will flash and the "Program" and "Ready" lights will be steadily illuminated. This indicates that the DV8000 is now waiting for an Address to be entered.

7 Enter three digits to access the desired address. For example, press [0][2][0] to enter Address [020]. The "Memory" light will be steadily illuminated and the Zone Lights will indicate the data presently programmed at the Address.

Keypad Editing Commands

Several keypad commands are available when editing the Installer's Programming:

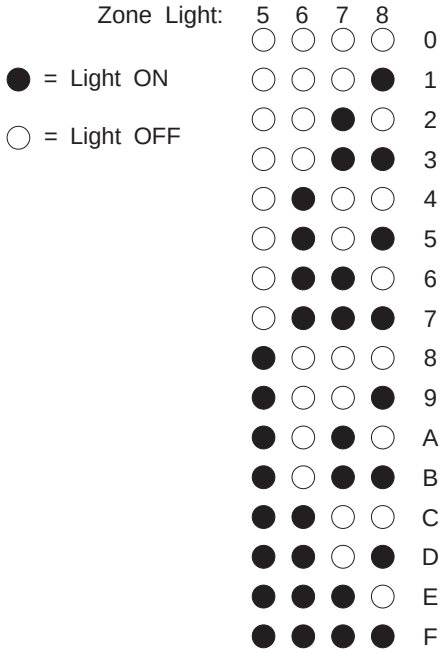
Function	*Press...*
Advance to next Address	[✻]
Return to previous Address	[✻] and [#] together
Go to a new Address	[#] then enter the Address Number
Exit Programming Mode	[#] then [#] again
Scroll one digit right	[0] and [#] together
Scroll one digit left	[✻] and [0] together

Addresses Containing Hexadecimal Data

Zone Lights 5 to 8 are used to indicate the data presently programmed at the Address. One digit is shown at a time, beginning with the first digit. To review all digits, use the "[0] and [#]" and the "[✻] and [0]" commands to scroll right and left.

Data Representation

The hexadecimal numbers 0 through F are represented on the Zone Lights in a binary format, as shown below:



For example, if only Zone Light 8 is ON, the digit represented is "1". If zone Light 7 is ON, the digit represented is "2".

"Light ON / Light OFF" Addresses

Some Addresses allow options and functions to be enabled or disabled by turning Zone Lights ON and OFF. When an Address of this type is entered, Zone Lights 1 to 8 will indicate which options have been enabled or disabled.

Generally, when a Zone Light is ON, that feature is enabled; when a Zone Light is OFF, that feature is disabled. To turn a feature on or off, enter a number from 1 to 8. If the feature was ***disabled*** when the number was entered, it will be ***enabled*** and the Zone Light will come ON. If the feature was ***enabled*** when the number is entered, it will be ***disabled*** and the Zone Light will be turned OFF.

To turn all of the lights **ON**, press [4] and [6] together.

To turn all of the lights **OFF**, press [7] and [9] together.

8 After an Address is entered, the following operations can be performed:

Change Address Data

The data displayed at the Address may be changed by keying in the new data. After programming the new data, the Keypad will automatically advance to the next Address. Note that the Keypad will not automatically advance from "Light ON / Light OFF" Addresses.

Save Changes and Advance to Next Address

Save any programming changes entered and advance to the next Address by pressing the [✻] key.

Display Any Address

Move to any Address by pressing [#] Key. The "Memory" light will flash when the [#] Key is pressed; enter the 3-digit number of the desired Address.

NOTE: When the Keypad is waiting for an Address to be entered (the "Memory" light will be flashing), press the [✻] Key to enter a new Installer's Mode.

For example, to move from Mode 20 to Mode 21, press the [#] Key to make the "Memory" light flash. With the "Memory" light flashing, press the [✻] Key, then press [2][1] to enter Mode 21. Note that the Installer's Code does not need to be entered to move between Installer Modes.

PROGRAMMABLE OUTPUT TYPES

The operation of the output terminal PGM OUT may be programmed. Enter the number of the desired function in Mode 22 Addresses [035] through [037].

01 Kiss-off Signal
When programmed as [01], the output will be activated for 3 seconds following the confirmation (kissoff) signal indicating that messages transmitted from the control panel have been received at the monitoring station.

02 DVACS Communication Problem
If the system is unsuccessful in communicating with the monitoring station, a Fail to Communicate (Line Cut) trouble will be generated. If a later attempt to communicate is successful, the trouble condition will be cleared.

03 Courtesy Light
This output option is designed to be used with a light that comes on when the Entry or Exit Delay is activated. For example, a light in the hallway leading to the Keypad would come on when the entry door is opened. When the Entry Delay begins, the output will be activated for approximately 2 minutes. The output will remain active even if the Entry Delay expires or an alarm is generated.

04 Follow Bell / Siren
When programmed as [04], the output is activated whenever the BELL output is activated.

05 Follow Group A Armed / Disarmed Status
When programmed as [05], the output will be “on” whenever Group A is armed, and the output will be “off” whenever Group A is disarmed.

06 Follow Group B Armed / Disarmed Status
When programmed as [06], the output will be “on” whenever Group B is armed, and the output will be “off” whenever Group B is disarmed.

07 Follow Group C Armed / Disarmed Status
When programmed as [07], the output will be “on” whenever Group C is armed, and the output will be “off” whenever Group C is disarmed.

08 Follow Group D Armed / Disarmed Status
When programmed as [08], the output will be “on” whenever Group D is armed, and the output will be “off” whenever Group D is disarmed.

09 Follow Group A Ready Status
When programmed as [09], the output will be “on” whenever Group A is disarmed and in the “ready” state; the output will be “off” whenever Group A is armed or otherwise not in the “ready” state. The output will be pulsed during the Exit Delay Time for Group A.

10 Follow Group B Ready Status
When programmed as [10], the output will be “on” whenever Group B is disarmed and in the “ready” state; the output will be “off” whenever Group B is armed or otherwise not in the “ready” state. The output will be pulsed during the Exit Delay Time for Group B.

11 Follow Group C Ready Status
When programmed as [11], the output will be “on” whenever Group C is disarmed and in the “ready” state; the output will be “off” whenever Group C is armed or otherwise not in the “ready” state. The output will be pulsed during the Exit Delay Time for Group C.

12 Follow Group D Ready Status
When programmed as [12], the output will be “on” whenever Group D is disarmed and in the “ready” state; the output will be “off” whenever Group D is armed or otherwise not in the “ready” state. The output will be pulsed during the Exit Delay Time for Group D.

13 Utility Output (Mode 04 or 05) No Code
When programmed as [13], the output will be activated when Mode 04 or Mode 05 is entered; an Access Code will not be required to activate the output. Refer to the Instruction Manual for more information.

14 Utility Output (Mode 04 or 05) Any Code
When programmed as [14], the output will be activated when Mode 04 or Mode 05 is entered and any valid Access Code is keyed in. Refer to the Instruction Manual for more information.

15 Utility Output (Mode 04 or 05) Keypad Control
When programmed as [15], the output will be activated when the [4] and [5] keys are pressed simultaneously. Refer to the Instruction Manual for more information.

16 Utility Output (Mode 04 or 05), Group A Code
When programmed as [16], the output will be activated when Mode 04 or Mode 05 is entered and any valid Access Code assigned to Group A is keyed in.

17 Utility Output (Mode 04 or 05), Group B Code
When programmed as [17], the output will be activated when Mode 04 or Mode 05 is entered and any valid Access Code assigned to Group B is keyed in.

18 Utility Output (Mode 04 or 05), Group C Code
When programmed as [18], the output will be activated when Mode 04 or Mode 05 is entered and any valid Access Code assigned to Group C is keyed in.

19 Utility Output (Mode 04 or 05), Group D Code
When programmed as [19], the output will be activated when Mode 04 or Mode 05 is entered and any valid Access Code assigned to Group D is keyed in.

20 Follow Chime
When programmed as [20], the output will be activated after any zone set as a “door chime” in Mode 07 is opened.

21 Follow Buzzer
When programmed as [21], the output will be activated whenever the Keypad buzzer sounds.

22 Serial Printer Output
When programmed as [22], a serial printer may be connected to Programmable Output 1. Refer to the Serial Printer Connection section of this manual.

23 *For Future Use*

24 Strobe Output
When programmed as [24], the output will be activated whenever the bell is activated, and will remain activated until a valid code is entered.

25 30-Minute Strobe Output
When programmed as [25], the output will be activated whenever the bell is activated, and will remain activated for 30 minutes or until a valid code is entered.

26 Bell/Siren Output for Group A
When programmed as [26], the output will be activated when the BELL output is activated during a Group A alarm.

27 Bell /Siren Output for Group B
When programmed as [27], the output will be activated when the BELL output is activated during a Group B alarm.

28 Bell /Siren Output for Group C
When programmed as [28], the output will be activated when the BELL output is activated during a Group C alarm.

29 Bell /Siren Output for Group D
When programmed as [29], the output will be activated when the BELL output is activated during a Group D alarm.

30 Follow Auto-Arm Buzzer
When programmed as [30], the output will be activated when the Auto-Arm buzzer sounds.

31 Follow Away Status
When programmed as [31], the output will be activated when any group is armed and in Away status.

32 Follow Trouble Status
When programmed as [32], the output will be activated when the “Trouble” light comes ON.

33 Follow Low Battery Status
When programmed as [33], the output will be activated when the battery voltage falls below 11.3V under load.

34 Follow Fire Status
When programmed as [34], the output will be activated when any Fire Zone is in alarm.

35 Follow AC Status
When programmed as [35], the output will be activated when an AC power failure occurs.

Remote Control of Programmable Outputs, Bell Output and Keypad Sounder

Note: All the Programmable Outputs, the Bell and the Keypad Sounder can be controlled by the central station. Each can be activated by the following commands:

Command	*Action*
Ax	Turn ON
Bx	Turn OFF
Cx	Pulse Once for 1 Second
Dx	Flash (continued pulsing; does not apply to the Bell output)

A command from the central station always has priority over the normal programmed function. The only exception applies when Programmable Output 1 is programmed for use with a printer.

For remote controlled operation, the central station accesses the outputs as control pointed according to the following:

Control Point (x)	*Output*
1	Programmable Output 1
2	Programmable Output 2
3	Keypad Sounder
4	Bell
5	Programmable Output 3

PROGRAMMING MODE 20

RS-232 / 10mA Loop DVACS Option

Either an RS-232 connection or 10mA loop may be used as the interface between the DV8000 and the F1/F2 subset. The interface option is selected by setting the jumpers “LK1”, “LK2”, “LK3”, “LK4” and “LK5” on the DV8000 Control Panel.

To use the RS-232 option, all jumpers must be set to the “V” position.

To use the 10mA loop option, all jumpers must be set to the “C” position.

Refer to the Hook-Up Diagram in this manual for the location of the jumpers on the DV8000 Control Panel.

It is important that all jumpers be set in the same position. If the jumpers are improperly configured, damage to the F1/F2 subset or the DV8000 may occur.

[000] - [019] For Future Use

[020] Panel Identification Code

Address [020] contains the control panel identification code. Enter a 2-digit number in this Address.

[021] All Call Select

All Call Options

The “All Call” function allows control panels to transmit alarms to the central station immediately without having to wait to be polled. An “All Call” command is transmitted from the central station after every eighth control panel is polled. If a control panel is in alarm when it receives that “All Call” command, it can transmit the alarm if it has been programmed to respond to the command.

All Call Programming Recommendations

- The control panel should be programmed to respond to one “All Call” command only
- Response to All Call 1 and All Call 2 should be evenly divided amongst all systems polled by the central station
- Two systems connected to the same modem (F1/F2 subset) should each have a different All Call response selected
- With Automatic All Call Selection, both odd and even identification codes should be programmed
- No Response on All Call should be selected for installations with lower security requirements
- When more than two systems are connected to the same modem, the third and any additional systems should be programmed for No Response on All Call

In Address [021], enter a 1-digit code from the options below:

0 No Response on All Call

1 Response on All Call 1 Only

2 Response on All Call 2 Only

3 Response on All Call 1 and 2

4 Automatic All Call Selection. Odd identification codes will respond to All Call 1; even identification codes will respond to All Call 2

Note: Enter a digit from 0 to 4 only. Entering a number greater that 4 will select Option 4.

[022] All Call Answer

The security system may transmit both alarms and restorals on the All Call command. However, it is preferable to program the system to transmit the alarms only, and then to wait to be polled before transmitting the restoral codes.

Enter 0 or 1 for one of the options shown below:

0 All Call Answer on Alarm and Restoral

1 All Call Answer on Alarm Only

[023] - [100] For Future Use

[101] - [115] Zone Definitions

Program a 1-digit Zone Definition at each address from [101] through [115]. Refer to the Zone Definitions section of this manual for information on the available zone types.

Note: Addresses [109] through [115] are used for Trouble Conditions on Zones 1 through 7 when end-of-line resistor zones are used. ***Do not assign Zone Types 5, 6, A or E to these zones.***

Zone Definitions

Each zone can be programmed with 1 of 15 different definitions. To assign a definition to a zone or other alarm, enter a value from the list below at the desired Address.

Data	Zone Definition
0	24-Hour Silent
1	24-Hour Audible
2	24-Hour Pulsed Bell (Fire)
3	Day Loop (silent day, audible night)
4	Day Loop and Buzzer
5	Delay 1
6	Delay / Instant
7	Instant
8	Buzzer Only (no report)
9	No Alarm
A	Delay 2
B	Probation (No alarm, but event is recorded in memory; option is functional only when panel is armed)
C	10-second Buzzer (with report)
D	24-hour Tamper Loop
E	Delay / Instant (Home and Away)

Zone Type 0: 24-Hour Silent

This type of zone will be active even when the control panel is disarmed. When a 24-Hour Silent zone is tripped, it will be reported to the monitoring station and the event will be stored in memory. However, the alarm will be silent: the bell/siren will not sound, and no alarm indication will appear on the Keypad. If the zone is left open, the "Ready" light will be OFF.

Zone Type 1: 24-Hour Audible

This type of zone will be active even when the control panel is disarmed. When a 24-Hour Audible zone is tripped, it will be reported to the monitoring station and the event will be stored in memory. Also, the bell/siren will sound and the alarm will be indicated on the Keypad.

If the zone is left open, a Zone Light will be ON to indicate the open zone and the "Ready" light will be OFF.

Zone Type 2: 24-Hour Pulsed Bell (Fire)

This type of zone functions in the same manner as the 24-Hour Audible type, but the bell/siren will sound in an on-off pulsed mode. The BELL output alternate between being ON for 2 seconds, and then OFF for 2 seconds until the Bell Timeout elapses or the alarm is restored. All Type 2 Zones are ***latching*** zones. Type 2 Zones must be restored by entering Mode 04. Note that Type 2 Zones may not be bypassed.

Zone Type 3: Day Loop (Silent Day/Audible Night)

"Day" refers to the time the control panel is disarmed, and "night" refers to the time the control panel is armed. This type of zone functions in the same manner as the 24-Hour Audible zone. However, the BELL output will only be activated if the system is armed.

Zone Type 4: Day Loop and Buzzer

This type of zone functions in a manner similar to the Day Loop zone. When an alarm is generated, the Keypad sounder will emit a constant tone until the alarm is acknowledged. To silence the Keypad, enter Mode 2, 8, 9 or 10.

Zone Type 5: Delay 1

Zones defined as Delay 1 types will provide an Exit/Entry Delay of up to 99 seconds to allow the user to arm the system and leave the premises, or enter the premises and disarm the system. The Exit Delay and Entry Delay are programmed at Mode 22 Addresses [021] and [023].

If the zone is still open when the Exit or Entry Delay expires, an alarm will be generated and the bell/siren will sound. Also, refer to Mode 20 Address [732] Alarm-on-Exit Code for more information on alarms and delay zones. Note that the abort or delayed transmission feature does not apply for this zone type.

Zone Type 6: Delay/Instant
This zone definition is designed for use with motion detectors in the exit/entry path. If a Delay 1 or Delay 2 zone is activated and an Exit or Entry Delay is in progress, all Delay/Instant zones will also feature the same delay time.

For example, a door contact on the exit/entry door could be programmed as a Delay 1 or Delay 2 zone, and the motion detector in a hallway leading to the Keypad could be programmed as a Delay/Instant zone. When the door is opened, the Entrance Delay begins; when the motion detector is activated, the Entrance Delay is initiated on the Delay/Instant zone to allow time to reach the Keypad.

If Delay/Instant zone is activated without there being an Exit or Entry Delay in progress, an alarm will be generated instantly and the bell/siren will sound.

Zone Type 7: Instant
This zone definition is designed for use on door and window contacts. Activating this zone will instantly generate an alarm whenever the system is armed, even during the Exit/Entry Delay periods. When activated, the bell/siren will sound.

Zone Type 8: Buzzer Only
This zone type will cause the Keypad sounder to “beep” continuously until the alarm is restored. The bell/siren will not sound, and the event is not reported to the monitoring station but will be stored in alarm event memory.

Zone Type 9: No Alarm
Use this zone definition for zones which are not used or for zones that are to be permanently bypassed. When an unused zone is programmed with this definition, note that a resistor need not be connected between the unused zone terminal and a COM terminal.

Zone Type A: Delay 2
Functions in the same manner as a Delay 1 zone, but may be assigned a different Entry Delay time. The Entry Delay time for Delay 2 zones is programmed in Mode 22 Address [022].

Zone Type B: Probation
This zone definition is used primarily for system testing; Probation alarms do not sound the bell or siren, and are not reported to the monitoring station. When activated while the panel is disarmed, an alarm will be indicated on the Keypad but the event will not be recorded in alarm memory; only when activated while the panel is armed will the event will be recorded in alarm memory. If a Probation zone is left open while the system is disarmed, the condition will be indicated on the Keypad.

Zone Type C: 10-Second Buzzer with Report
Like a 24-Hour zone, this type of zone is active whether the panel is armed or disarmed. When tripped, the bell/siren will not sound but the Keypad sounder will produce a short “beep” every 10 seconds. The alarm will also be reported to the monitoring station and the event will be recorded in alarm memory.

Zone Type D: 24-Hour Tamper Zone
This zone definition is similar in operation to a 24-Hour Audible zone. 24-Hour Tamper Zones are active whether or not the panel is armed or disarmed. When tripped, the alarm cannot be reset by the user; the Installer’s Code is required to reset the alarm. For more information, refer to Mode 25 Test Mode and Tamper Restore.

Zone Type E: Delay/Instant (Home and Away)
This zone type is similar to the Type 6 Delay/Instant zone. If a Delay 1 or Delay 2 Zone is not opened during the Exit Delay, all Type E zones will be automatically bypassed. This feature is designed to allow the user to automatically bypass all interior zones when they wish to arm the system and remain on the premises (“home” status).

If a Delay 1 or Delay 2 zone is opened during the Exit Delay, all Type E zones will function in the same manner as Type 6 zones (“away” status).

NOTE: Home-Away zones should not be shared between Groups. For example, if Zone 6 is assigned to both Groups A and B, it should not be defined as a Home-Away zone.

[116] - [228] For Future Use

[229] - [269] Trouble Definitions

Program a 1-digit Trouble Definition at each address from [229] through [269]. ***Do not assign type 5, 6, A or E to the Trouble Definitions.*** The Trouble Definitions are programmed at the addresses listed here:

Address	Restore Code
[229]	Auxiliary Zone Alarm
[230]	Printer Failure
[231]	Fire Trouble
[232]	AC Failure
[233]	Auxiliary Power Fuse
[234]	Siren Cut
[235]	Low Battery
[236]	Fire Alarm
[237]	DVAC Line Fault
[238]	***For Future Use***
[239]	EEPROM Failure
[240]	Fail to Arm Schedule 1
[241]	Fail to Arm Schedule 2
[242]	Fail to Arm Schedule 3
[243]	***For Future Use***
[244]	Ground Fault
[245] - [265]	***For Future Use***
[266]	Fire Key Alarm
[267]	Panic Key Alarm
[268]	Auxiliary Key Alarm
[269]	Invalid Code

[270] - [300] For Future Use

[301] - [315] Alarm and Restoral Codes for Zones 1 to 8 and Trouble Zones 1 to 7

Program a 2-digit Alarm Code at each address from [301] through [315].

[316] - [428] For Future Use

[429] - [444] Trouble Alarm and Restoral Reporting Codes

Program a 2-digit Trouble Alarm Reporting Code at each address from [429] through [444]. The reporting codes for each Trouble Condition are programmed at the addresses as shown below:

Address	Trouble Condition
[429]	Auxiliary Zone Alarm
[430]	Printer Failure
[431]	Fire Trouble
[432]	AC Failure
[433]	Auxiliary Power Fuse
[434]	Siren Cut
[435]	Low Battery
[436]	Fire Alarm
[437]	DVAC Line Fault
[438]	***For Future Use***
[439]	EEPROM Failure
[440]	Fail to Arm on Schedule 1
[441]	Fail to Arm on Schedule 2
[442]	Fail to Arm on Schedule 3
[443]	***For Future Use***
[444]	Ground Fault

[445] - [465] For Future Use

[466] - [469] Keypad Alarm Reporting Codes

Program a 2-digit Keypad Alarm Reporting Code at each address from [466] through [469]. The reporting codes for each Keypad Alarm are programmed at the addresses listed here:

Address	Keypad Alarm
[466]	Fire Key Alarm This code will be transmitted when the Fire Key is pressed.
[467]	Panic Key Alarm This code will be transmitted when the Panic Key is pressed.
[468]	Medical Key Alarm This code will be transmitted when the Medical Key is pressed.
[469]	Invalid Code This code will be transmitted after 5 consecutive attempts to enter an incorrect Access Code are made

[470] - [715] For Future Use

About Function Bytes

Function Bytes are 2-digit hexadecimal codes used when communicating with the central station. Function Bytes are used to have the central station receiver print or display various messages. Refer to Appendix C: 4/2 Format with Sur-Gard Schedule 3A for a list of the messages that will be printed or displayed with each 2-digit hexadecimal code.

[716] User Messages Function Byte

Mode 11 is used to “transmit” up to 16 different messages to the central station. User Messages are pre-defined at the central station; the system transmits a code to the central station to have the desired message printed or displayed at the receiver. The User Message Function Byte determines which printer message will be used when user messages are “transmitted”.

The default setting is “1E”; the message printed at the central station will be:

Optn3 AlmZnA0 (A7) for User Messages 1 through 8

Optn3 RstZnA0 (A7) for User Messages 9 through 16

To change the User Message Function Byte, enter a 2-digit hexadecimal code in this Address. Refer to Appendix C: 4/2 Format with Sur-Gard Schedule 3A for a list of the messages that will be printed or displayed with each 2-digit hexadecimal code.

[717] User Number for Messages Function Byte

When Mode 11 is used to “transmit” a user message to the central station, the user will be identified by access code. The User Number for Messages Function Byte determines which printer message will be used when the user number is identified.

The default setting is “10”; the message printed at the central station will be:

Inst AlmZn30 (3F) for user numbers 1 through 16

To change the User Number for Messages Function Byte, enter a 2-digit hexadecimal code in this Address. Refer to Appendix C: 4/2 Format with Sur-Gard Schedule 3A for a list of the messages that will be printed or displayed with each 2-digit hexadecimal code.

[718] - [723] For Future Use

[724] Installer Messages Function Byte

Up to 16 messages can be displayed at the monitoring station to indicate that the Installer is on the premises or that service is being performed. The Installer Messages are displayed by entering Mode 29; when Mode 29 is entered and a message is selected, the system transmits a reporting code to the monitoring station.

The function byte determines the message to be printed at the monitoring station. The default setting is "1F"; the message printed at the central station will be:

Optn3 AlmZnA8 (AF) for Installer Messages 1 through 8

Optn3 RstZnA8 (AF) for Installer Messages 9 through 16

To change the Installer Messages Function Byte, enter a 2-digit hexadecimal code in this Address. Refer to Appendix C: 4/2 Format with Sur-Gard Schedule 3A for a list of the messages that will be printed or displayed with each 2-digit hexadecimal code.

[725] - [731] For Future Use

[732] Alarm on Exit Code

The Alarm on Exit Code will be transmitted if a zone is in alarm or in a trouble condition during the Exit Delay time. The Alarm on Exit Code only be transmitted to report zone alarm or zone trouble conditions; the code will not be transmitted for other trouble conditions.

[733] For Future Use

[734] Test Mode Function Byte

When Mode 25 is used to test the system, the system will report that testing is underway to the central station. The Test Mode Function Byte determines which printer message will be used when testing is reported.

The default setting is "6C"; the message printed at the central station will be:

Alm Zn E0 for "testing started" indication

Rst Zn E0 for "testing finished" indication

To change the Test Mode Function Byte, enter a 2-digit hexadecimal code in this Address. Refer to Appendix C: 4/2 Format with Sur-Gard Schedule 3A for a list of the messages that will be printed or displayed with each 2-digit hexadecimal code.

[735] Number of Zones Not Tested Function Byte

When testing using Mode 25 is completed, the system will report how many zones were not tested. The Number of Zones Not Tested Function Byte determines which printer message will be used when the number of untested zones is reported.

The default setting is "00"; the message printed at the central station will be:

Burg1 RstZnXX where XX represents the number of untested zones

To change the Number of Zones Not Tested Function Byte, enter a 2-digit hexadecimal code in this Address. Refer to Appendix C: 4/2 Format with Sur-Gard Schedule 3A for a list of the messages that will be printed or displayed with each 2-digit hexadecimal code.

[736] - [743] For Future Use

[744] Cancel Alarm Code

The Cancel Alarm Code is transmitted when the user cancels an alarm using the [✻][7] Cancel Alarm function. When an alarm is cancelled, the 2-digit Alarm Cancel Code is transmitted, followed by the user code to indicate which user cancelled the alarm.

[745] - [800] For Future Use

[801] No Restoral Reports for Zones 1 - 8

Alarm restoral reports can be disabled for each individual zone. When this Address is entered, the Zone Lights will indicate which zones will generate alarm restoral reports:

- if a Zone Light is ON, no alarm restoral report will be generated
- if a Zone Light is OFF, an alarm restoral report will be generated

To turn Zone Lights ON or OFF, press the number key for the desired zone.

[802] No Restoral Reports for Troubles on Zones 1 - 7

Zone trouble restoral reports can be disabled for each individual zone. When this Address is entered, the Zone Lights will indicate which zones will generate trouble restoral reports:

- if a Zone Light is ON, no trouble restoral report will be generated
- if a Zone Light is OFF, a trouble restoral report will be generated

To turn Zone Lights ON or OFF, press the number key for the desired zone.

[803] No Restoral Reports for Miscellaneous Alarms 1

Restoral reports for the events described below can be disabled. When this Address is entered, the Zone Lights will indicate which events will generate trouble restoral reports:

- if a Zone Light is ON, no restoral report will be generated
- if a Zone Light is OFF, a restoral report will be generated

Zone Light	***Event***
1	Auxiliary Alarm
2	Printer Failure
3	Fire Trouble
4	Auxiliary Power Fuse
5	Ground Fault
6	Siren Cut
7	For Future Use
8	Fire Alarm

To turn Zone Lights ON or OFF, press the number key for the desired zone.

[804] No Restoral Reports for Miscellaneous Alarms 2

Restoral reports for the events described below can be disabled. When this Address is entered, the Zone Lights will indicate which events will generate trouble restoral reports:

- if a Zone Light is ON, no restoral report will be generated
- if a Zone Light is OFF, a restoral report will be generated

Zone Light	***Event***
1	For Future Use
2	DVAC Failure
3	AC Failure
4	Low Battery
5	For Future Use
6	For Future Use
7	For Future Use
8	For Future Use

To turn Zone Lights ON or OFF, press the number key for the desired zone.

PROGRAMMING MODE 21

[001] - [008] Group Zone Assignments

[001] Group A Zone Assignment

[002] For Future Use

[003] Group B Zone Assignment

[004] For Future Use

[005] Group C Zone Assignment

[006] For Future Use

[007] Group D Zone Assignment

[008] For Future Use

When an Address is entered, the 8 zone lights on the keypad will be used to indicate which zones have been assigned to which Groups.

- When a zone light is OFF, that zone has not been assigned to the group
- When a zone light is ON, that zone has been assigned to the group

For example, enter Address [001]. With the factory default program in place, zone lights 1 through 8 will be ON, indicating that zones 1 through 8 have been assigned to Group A.

To select a zone, press the number key corresponding to the desired zone light. For example, in Address [001], press 1 to select zone 1, 2 to select zone 2, and so on. When in other Addresses, refer to the Programming Worksheets to determine which zone lights represent which zones.

Pressing a number key to select a zone will either turn the desired zone light ON or OFF:

- If the zone light is ON, pressing the key will shut the light OFF
- If the zone light is OFF, pressing the number key will turn the light ON

Note: When using end-of-line resistor zones, trouble zones will be assigned to the same group as their respective alarm zones.

[009] - [010] Group A Access Code Assignment

When an Address is entered, zone lights 1 to 8 on the keypad will be used to indicate which Access Codes have been assigned to the group.

- When a zone light is OFF, that Access Code has not been assigned to the group
- When a zone light is ON, that Access Code has been assigned to the group

For example, enter Address [009]. With the factory default program in place, zone lights 1 through 8 will be ON, indicating that Access Codes 1 to 8 have been assigned to Group A.

To select an Access Code, press the number key corresponding to the desired zone light. For example, in Address [009], press 1 to select Access Code 1, 2 to select Access Code 2, and so on.

Pressing a number key to select an Access Code will either turn the desired zone light ON or OFF:

- If the zone light is ON, pressing the key will shut the light OFF
- If the zone light is OFF, pressing the number key will turn the light ON

[011] - [016] For Future Use

[017] Group A Special Access Code Assignment

User Numbers 65 through 70 are used to assign the Auto-Arming, Quick-Arming, Keyswitch Arming and Central Station Arming functions to Group A. For these functions to be operational for Group A, they must be selected in this section.

Refer to the Programming Worksheets for information on which Code is used for which feature. To enable these features for a Group, turn the desired Zone Light ON by pressing the corresponding number key. If a feature is assigned to the Group, its Zone Light will be ON; if a feature is not assigned, its Zone Light will be OFF.

When these events occur, they will be reported to the central station by User Numbers 65 through 70.

[018] - [024] For Future Use

[025] - [026] Group B Access Code Assignment

Refer to Addresses [009] - [010] for information on selecting Access Codes.

[027] - [032] For Future Use

[033] Group B Special Access Code Assignment

This address is used to assign the Auto-Arming, Quick-Arming, Keyswitch Arming and Central Station Arming functions to Group B. Refer to Address [017] for programming instructions.

[034] - [040] For Future Use

[041] - [042] Group C Access Code Assignment

Refer to Addresses [009] - [010] for information on selecting Access Codes.

[043] - [048] For Future Use

[049] Group C Special Access Code Assignment

This address is used to assign the Auto-Arming, Quick-Arming, Keyswitch Arming and Central Station Arming functions to Group C. Refer to Address [017] for programming instructions.

[050] - [056] For Future Use

[057] - [058] Group D Access Code Assignment

Refer to Addresses [009] - [010] for information on selecting Access Codes.

[059] - [064] For Future Use

[065] Group D Special Access Code Assignment

This address is used to assign the Auto-Arming, Quick-Arming, Keyswitch Arming and Central Station Arming functions to Group D. Refer to Address [017] for programming instructions.

[066] - [079] For Future Use

[080] Bypass Inhibit

This feature prevents selected zones from being bypassed using the Mode 01 bypass command. When an Address is entered, the 8 zone lights on the keypad will be used to indicate which zones are able to be bypassed:

- When a zone light is OFF, that zone may be bypassed
- When a zone light is ON, that zone may not be bypassed

For example, enter Address [080]. With the factory default program in place, zone lights 1 through 8 will be OFF, indicating that zones 1 through 8 may be bypassed.

To select a zone, press the number key corresponding to the desired zone. For example, press 1 to select zone 1, 2 to select zone 2, and so on. When in other Addresses, refer to the Programming Worksheets to determine which zone lights represent which zones.

Pressing a number key to select a zone will either turn the desired zone light ON or OFF:

- If the zone light is ON, pressing the key will shut the light OFF
- If the zone light is OFF, pressing the number key will turn the light ON

All zones programmed as Type 2 are automatically selected so that they cannot be bypassed.

[081] For Future Use

[082] - [083] Zone Transmission Delay Select

Zones may be programmed to delay transmission of alarms, allowing the user the opportunity to cancel alarms by entering an Access Code. Zones that are to have a Transmission Delay are selected in Addresses [082] and [083] by turning Zone Lights ON or OFF. If a Zone Light is ON, that zone will have the Transmission Delay programmed in Mode 22 Address [027].

The user may use the [✻][7] Cancel Alarm Command to cancel a delayed transmission.

PROGRAMMING MODE 22

[001] - [008] System Options

When an Address is entered, the 8 zone lights on the keypad will be used to indicate which System Options have been enabled.

- When a zone light is OFF, that Option is disabled
- When a zone light is ON, that Option is enabled

To enable an option, press the number key corresponding to the desired zone light. For example, in Address [001], press 1 to enable Option 1 Open/Close Report; press 2 to enable Option 2 Close Confirmation, and so on. When in other Addresses, refer to the Programming Worksheets to determine which zone lights represent which System Options. For example, in Address [002], zone lights 1 through 8 represent Options 9 through 16.

Pressing a number key to select an Option will either turn the desired zone light ON or OFF:

- If the zone light is ON, pressing the key will shut the light OFF
- If the zone light is OFF, pressing the number key will turn the light ON

Address 001: System Options

Light

1 Open/Close Reporting Select
When “on”, openings and closings are reported to the monitoring station when arming and disarming the panel.

2 Close Confirmation (Ring-Back)
When “on”, the Exit Delay will only begin when a kissoff from the monitoring station is received. The Keypad will beep when the kissoff signal is received, and the “Ready” light will flash to indicate that the Exit Delay is in progress. For this option to function, Option 1 Open/Close Report must be turned on.

3 Force Arming Select
When “on”, the system may be armed even when zones are open. However, all armed zones must be closed at the end of the Exit Delay or alarms will be generated.

4 Reserved

5 Quick-Arm Select
When “on”, the system may be armed without an Access Code by pressing the [7] and [8] keys simultaneously.

6 Alarm Memory Indication
When “on”, the Keypad will beep when an alarm is in memory. The Keypad will beep until the alarm is acknowledged by entering one of the Memory Display Modes (Modes 08, 09 or 10).

7 Siren Driver Enabled
When selected, the Bell output will be modulated to drive a speaker or siren.

8 Bell Squawk Enabled
When “on”, the bell/siren will sound one short burst when a Group is armed, and two short bursts when a Group is disarmed.

Address 002: System Options

Light

1 Access Code Required for Bypassing
When “on”, the Master Code or an Access Code must be entered to bypass zones.

2 Immediate Bypass Report
When “on”, a report is immediately sent to the central station when a zone is bypassed or when zone bypasses are cleared.

3 Bypass Report on Exit
When “on”, a bypass report is transmitted to the monitoring station when the panel is armed.

4 Common Bypass Report
When “on”, the system will transmit only one code when all zones are bypassed or when all bypasses are cleared. Note that the report will not be sent if only a few zone bypasses are cleared; all zone bypasses have to be cleared before the report will be sent to the central station. When this option is turned off, the system will transmit an individual bypass/clear bypass report for each zone.

5 Bypassed Zone Display on Exit
When "on", the Keypad will display all zones that are bypassed when the system is armed.

6 Quick-Exit
When enabled, entering [✻][0] when the system is fully armed will allow the user 2 minutes to exit the premises through any delay zone without altering the status of the system. After [✻][0] is entered, only one delay zone may be activated. Any additional activity on any other armed zone will cause an alarm to be generated.

7 No Arming on AC Failure and Low Battery
When "on", the system cannot be armed when the battery is low and AC power is not present.

***8* Reserved**

Address 003: System Options

Light

1 Master Code Not Changeable
When "on", the user is unable to edit the First Master Code.

2 Only Master Code Able to Send User Messages
When "on", the Master Code will be required to send messages to the monitoring station. When this option is "off", an Arm/Disarm/Bypass Access Code may also be used to send user messages.

3 Immediate Restore
When "on", restoral codes for all zones are transmitted to the monitoring station immediately after the loop returns to normal, even if the bell/siren is active. When this option is selected, it is suggested that the All Call Answer on Alarm and Restore option in Mode 20 Address [022] also be selected.

4 Memory Security Switch
When "on", the installer must short the pins marked "LK6" together in order to enter the Installer Programming Modes.

5 Keyswitch Arming/Disarming
When "on", a normally-open momentary-contact keyswitch may be used to arm and disarm the system. The keyswitch must be wired to the AUXIN and COM terminals. Note that the end-of-line resistor must not be removed.

6 Maintained Keyswitch Arming/Disarming
When "on", a normally-open maintained keyswitch may be used to arm and disarm the system. Light 5 Keyswitch Arming/Disarming must be enabled, and the keyswitch must be connected to the AUXIN and COM terminals. Note that the end-of-line resistor must not be removed.

Note that the Keyswitch is intended for supplemental use only, and does not replace a keypad.

***7* Reserved**

***8* Reserved**

Address 004: System Options

Light

1 Programmable Output 3 Normally High
When "on", Programmable Output 3 will be normally high. Entering User Mode 04 or 05 will momentarily turn Programmable Output 3 off. This feature can be used, for example, to reset smoke detectors.

2 Installer Code Programmable / Installer Lockout
When "on", the Installer Code will not be reset when the system's programming is restored to the factory default settings.

When "off", the Installer Code will be reset to the factory default of [8000] when the system's programming is restored to the factory default settings.

WARNING: If the installer code is forgotten and this option is "ON", it will be impossible to retrieve the installer code.

3 Keypad Lockout
When "on", the Keypad will refuse to accept any Access Codes after 5 consecutive invalid codes are entered. The Keypad will remain locked out for 7 minutes. If any code is keyed in during the lockout period, the lockout timer will be reset and the Keypad will remain locked out for another 7 minutes. Only after the lockout time has expired may a valid Access Code be entered to disarm the system.

4 **Reserved**

5 **Reserved**

6 **Reserved**

7 **Reserved**

8 ***Immediate AC Failure Report***
When selected, the control panel will transmit an AC Failure Report immediately upon AC failure. Normally, there is a 7 hour delay before an AC failure is reported.

Address 005: System Options

Light

1 **Reserved**

2 **Reserved**

3 **Reserved**

4 **Reserved**

5 **Reserved**

6 ***Master User Allowed to Assign Groups to Access Codes***
When “on”, a master user may assign groups to Access Codes using Mode 03.

7 **Reserved**

8 ***Forced Arming on Delay and Delay/Instant Zones Only***
When “on”, the Delay or Delay/Instant zones may be left open while attempting to arm the system. However, these zones must be closed before the end of the Exit Delay if the Groups to which they are assigned are armed. If a Delay zone remains open after the Exit Delay expires, the Entry Delay for the affected Groups will commence and an alarm will sound at the end of the Entry Delay if one of the affected Groups is not disarmed.

If a Delay/Instant zone (Type 6 or E) is left open and all of the Groups to which it is assigned are armed, an alarm will be generated immediately.

Address 006: System Options

Light

1 **Reserved**

2 **Reserved**

3 **Reserved**

4 ***Arming By Central Station***
When “on”, the central station may arm the system remotely.

5 ***Disarming By Central Station***
When “on”, the central station may disarm the system remotely.

6 ***Force Auto-Arm and/or Arming by Central Station***
When “on”, the system will bypass all opened zones, regardless of the zone type, when an Exit Delay generated by the Auto-Arming or Arming by Central Station functions begins.

7 **Reserved**

8 **Reserved**

Address 007: System Options

Light

1 **Reserved**

2 ***Auto Clear Bypass on Entry***
When “on”, all zone bypasses will be automatically cleared when the system is disarmed.

3 ***All Closed Report***
When “on”, the system will report a closing only when all Groups are armed. If any of the Groups are not armed, the closing code will not be sent. If all Groups are armed, the opening code will be sent when one of the Groups is disarmed. This function will only operate when Open / Close Reporting is selected in Mode 22 Address [001].

4 Opening Report on Alarm
This function will only operate when Open/Close Report in Mode 22 Address [001] is not selected.

When “on”, the system will send an opening report if an alarm occurred during the armed period.

***5* Reserved**

6 Auto-Arm Squawk
When “on”, the bell/siren will sound a short tone every 10 seconds during the Auto-Arm Exit Delay.

7 Open/Close Report by Group
This function will only operate when Open/Close Report is selected in Mode 22 Address [001].

When “on”, the system will report both Group and User information when reporting opening and closing events. When “off”, the system will only report User information when reporting opening and closing events. This option need not be selected when the system uses only one Group.

This option does not affect the reports printed on a local printer. When reports are printed on a local printer, Group information will always be printed in the system has more than one Group.

***8* Reserved**

Address 008: System Options
Light

1 Calculate Bypass Report Code
When “on”, the bypass reporting code for a zone is based on the zone’s alarm reporting code programmed in Mode 20 Addresses [301] through [308]. When “on”, bypass reports will be printed at the central station as:

---- BypZnXX where XX is the zone’s alarm code

When “off”, the bypass reporting code for a zone is taken from the codes programmed in Mode 23 Addresses [401] through [408]. When “off”, bypass reports will be printed at the central station as:

Optn1 AlmZnXX where XX is the bypass code programmed in Mode 23

Note that trouble zones have the same bypass feature as their alarm zones; trouble zones cannot be individually bypassed.

***2* Reserved**
***3* Reserved**
***4* Reserved**
***5* Reserved**
***6* Reserved**
***7* Reserved**
***8* Reserved**

[009] - [020] For Future Use

[021] - [023] Entrance and Exit Delays

Program Entrace Delay 1, Entrance Delay 2 and the Exit Delay in addresses [021] through [023]. Times are programmed in seconds; valid entries are from 01 to 99 seconds.

[024] - [029] System Times

Program a 2-digit time in each Address from [024] through [029]. For times that require a time of day, enter the time in the 24-hour format.

Address	Description
[024]	Siren/Bell Duration (minutes)
[025]	Fire Zone Activation Delay (seconds)
[026]	Fire Zone Restore Delay (seconds)
[027]	Zone Transmission Delay (seconds)
[028]	Fire Zone Transmission Delay (seconds)
[029]	Auto-Arm Delay (×10 seconds; valid entries are in the range of 01 to 25)

[030] - [032] For Future Use

[033] Printer Set-up

A serial printer can be connected to Programmable Output 1 only. The data transfer rate can be set at 300, 600, 1200, 2400 or 4800 baud.

Program as:	***for baud rate of:***
01	300
02	600
03	1200
04	2400 (default)
05	4800

NOTE: After changing the Printer Set-up, exit the programming mode and remove all power from the system. After all power has been removed from the system, restore power to the system following the Power-up Procedure instructions in the Installation section of this manual.

[034] For Future Use

[035] - [037] Programmable Output Types

Program a 2-digit Output Type in each Address from [035] through [037].

[038] - [062] For Future Use

[063] Language Selection for Printer

This Address is used to select the language in which all messages are printed to the printer.

01 1st Language (English)
02 2nd Language (French)

[064] For Future Use

[065] Maximum Alarm Reports per Zone per Armed Period

The number of alarms a zone can generate within an armed period can be limited. This feature is designed to prevent repetitive alarm transmissions to the monitoring station from a zone that may have a mechanical or electrical problem, or from zones that are repetitively tripped inadvertently.

The zones can be limited to 1 to 14 alarms per armed period, or the zones can be allowed to generate an unlimited number of alarms. Program Address [065] with a hex number from 01 to 0E to allow 1 to 14 alarms per armed period, or program Address [065] with 0F to allow for an unlimited number of alarms per armed period.

The counter for the number of alarms is reset when the control panel is armed or disarmed.

NOTE: Whenever the value at Address [065] is changed, the control panel must be armed and then disarmed in order for the changes to be accepted by the system.

PROGRAMMING MODE 23

[001] Installer's Code

It is strongly recommended that the factory programmed Installer's Code be reprogrammed when the control panel is installed. The default Installer's Code is [8000].

WARNING: Do not enter [0000].

NOTE: It is suggested that the Installer's Code be programmed with alphanumeric characters (letters A to F) to ensure that an Access Code could not inadvertently duplicate the Installer's Code. The Installer's Code should be different from any other Access Code on the system.

[002] - [050] For Future Use

[051] - [057] Zone Configuration for Zones 1 - 7

Zones 1 through 7 can be configured as one of three options:

Option	***Configuration***
0	Normally Closed Zones
1	Normally Open Zones
2	End-of-Line Resistor Zones

- As each Address is entered, enter [0], [1] or [2]. The default setting for all zones is [0] Normally Closed. If a value greater than 2 is entered, the system will program the value as "0".
- Zone 8 is a Normally Closed Zone and cannot be changed.
- Trouble status for Zones 1 through 7 will only be active if these zones are programmed as End-of-Line Resistor Zones.

WARNING: Changing the zone configuration may create false alarms due to different interpretations of alarm, trouble and normal conditions. If is strongly recommended that the zone configuration be changed and then completely tested with the system disconnected from the central station.

[058] - [400] For Future Use

[401] - [408] Individual Bypass Report Codes

Individual bypass report codes should only be programmed if the following two options are OFF:

- Common Bypass Report, Mode 22 Address [002] Light 4
- Calculate Bypass Report, Mode 22 Address [008] Light 1

If either of these options are "on", do not program individual bypass report codes. If these options are "off", program 2-digit bypass reporting codes at Addresses [401] through [408].

Note that trouble zones have the same bypass feature as their alarm zones; trouble zones cannot be individually bypassed.

PROGRAMMING MODE 25

Test Mode and Tamper Restore

To activate Mode 25, enter [✻][25][Installer's Code].

Mode 25 is designed to allow the Installer to thoroughly test the system. Mode 25 is also used to restore tamper zones. When a tamper zone goes into alarm, the system will not recognise the zone as being restored until Mode 25 is activated, even if the tamper zone has been mechanically restored. Note that the Mode 25 Test Mode may only be used while the system is completely disarmed.

To test the system, enter Mode 25 and then perform a walk test to activate all detection devices on the system. All eight alarm zones and their trouble zones may be tested. Note that zones programmed as "No Alarm" or "Probation" will not be tested. Once Mode 25 is entered, the test period will be active for 15 minutes.

Tested zones may be reported to the central station and the local printer. If the reporting option is selected, zones will be reported when they go into alarm and when they are restored. Each zone will report only one alarm and one restoral during the test, regardless of how many times the zone is activated during the test.

To use the Mode 25 Test Mode:

- With the system in the "Arm/Disarm" mode, enter [*][25] on the keypad.
- The "Ready" light will FLASH; enter the Installer's Code.
- The "Ready" light will be OFF and the "Program" light will FLASH.
- **To restore the Tamper Zones,** press [#]. The Tamper Zones will be restored and the system will return to the "Arm/Disarm" mode.
- **To test the system,** select an Audible Indication Option:

    0 No audible indication when a zone is tested

    1 Siren will sound when a zone is tested

    2 Keypad Sounder will sound when a zone is tested

    3 Siren and Keypad Sounder will sound when a zone is tested

Enter a number from 0 to 3. If an option from 1 through 3 is selected, it will be displayed on the keypad zone lights.

- Select a Reporting Option:

    0 Start and Stop Test Report Only. A Test Start Code, Test Stop Code and the number of zones not tested will be reported to the monitoring station.

    1 Detailed Test Report. A Test Start Code, Test Stop Code and the alarm and restoral codes for the zones tested will be reported to the monitoring station during the system test.

- When a Reporting Option is selected, the Zone Lights will come ON to indicate which zones may be tested. The system will transmit the Test Start Code to the monitoring station.
- After a zone is completely tested - that is, put into alarm and then restored - its Zone Light will be shut OFF. During the test, the Zone Lights will display the zones that have not yet been tested. To display the status of the trouble zones, press [*]; the Zone Lights will come ON to indicate which trouble zones have been tested and which trouble zones have not yet been tested. The status of the trouble zones will be displayed for 1 second, then the keypad will return to the alarm zone display.
- Once activated, the Mode 25 Test Mode will be active for approximately 15 minutes, or until all zones are tested, or until the test is stopped by pressing the [#] key. When the test is completed, a Stop Test Code and the number of zones not tested will be reported to the monitoring station.

PROGRAMMING MODES 26, 27, 29 and 30

Mode 26 Erase Event Buffer

To erase the system's event buffer, activate Mode 26:

- With the system in the "Arm/Disarm" mode, enter [*][26].
- The "Ready" light will FLASH; enter the Installer's Code.
- The "Ready" light will be shut OFF and the "Program" light will FLASH.
- Press [1] to erase the event buffer, or press any other key to return to the "Arm/Disarm" mode.
- After [1] is pressed, the "Memory" light will FLASH. When the event buffer is cleared, the keypad will sound a series of beeps and the system will return to the "Arm/Disarm" mode.

Mode 27 Print Installer's Programming

Mode 27 may be used to print all programming in Modes 20 through 23.

- With the system in the "Arm/Disarm" mode, enter [*][27].
- The "Ready" light will FLASH; enter the Installer's Code.
- The "Ready" and "Program" lights will come ON and the "Memory" light will FLASH.
- Enter a number from 20 through 23 to select which Programming Mode to print.
- When the Programming Mode to be printed is entered, the system will begin to print all programming in that mode. When printed is completed, the system will return to the "Arm/Disarm" mode.

NOTE: If an alarm occurs during printing, the system will cancel the Programming Mode printout if the alarm is programmed to be sent to the local printer.

Mode 29 Installer Messages

Preprogrammed messages can be "sent" to the monitoring station to indicate that the Installer is on the premises or that service is in progress. The messages are actually programmed at the monitoring station, and the control panel simply sends 2-digit codes to indicate which message should be displayed or printed. Up to 16 messages may be used

- With the system in the "Arm/Disarm" mode, enter [*][29].
- The "Ready" light will FLASH; enter the Installer's Code.
- The "Ready" light will be shut OFF, the "Program" light will come ON, and the "Memory" light will FLASH.
- Enter a number from 01 to 16 to select the message to printed at the monitoring station. After a 2-digit number is entered, the system will return to the "Arm/Disarm" mode.

Mode 30 Restore Factory Default Programming

- With the system in the "Arm/Disarm" mode, enter [*][30].
- The "Ready" light will FLASH; enter the Installer's Code.

Refer to Restoring The Factory Program for instructions on how to restore the system's programming to the factory default settings.

DVAC HUB CARD AND F1/F2 OPTIONS

System and Hub Options

NOTE: If this is a new network, please configure the network in a star configuration instead of the usual cascade arrangement as there may be up to 240 drops on the network.

Data Line Type: Schedule 3A with DVACS at 150 baud

Data String Type: 1 START + 8 DATA + 1 EVEN PARITY + 1 STOP BIT

Network Configuration: Master/Slave

Options	***Enabled***
Lock out (L.K.)	Yes
Long Transmission (L.T.) delay at 4 seconds	Yes
Poll and Cut (P.C.)	Yes
Count and Cut (C.C.) set at 16	Yes
F1/F2 Subset Options	
EIA (L, N and X)	Yes
10 mA (T1)	Yes
Originate Mode (B)	Yes
Normal Loop Marking (E)	Yes
Continuous Carrier (K)	Yes
Battery Charging (Q)	No
Carrier Light (V)	No

Full Duplex on master F1/F2 (D)

Half Duplex on slave F1/F2 (C)

Notes:

- RS-232 cables not necessary; cord supplied by Sur-Gard
- 12V power pack not necessary; 12VDC provided by Sur-Gard terminal equipment

APPENDIX A

Decimal-Hex-Binary Conversion Chart

DEC	HEX	BINARY	DEC	HEX	BINARY	DEC	HEX	BINARY	DEC	HEX	BINARY
000	00	0000 0000	064	40	0100 0000	128	80	1000 0000	192	C0	1100 0000
001	01	0000 0001	065	41	0100 0001	129	81	1000 0001	193	C1	1100 0001
002	02	0000 0010	066	42	0100 0010	130	82	1000 0010	194	C2	1100 0010
003	03	0000 0011	067	43	0100 0011	131	83	1000 0011	195	C3	1100 0011
004	04	0000 0100	068	44	0100 0100	132	84	1000 0100	196	C4	1100 0100
005	05	0000 0101	069	45	0100 0101	133	85	1000 0101	197	C5	1100 0101
006	06	0000 0110	070	46	0100 0110	134	86	1000 0110	198	C6	1100 0110
007	07	0000 0111	071	47	0100 0111	135	87	1000 0111	199	C7	1100 0111
008	08	0000 1000	072	48	0100 1000	136	88	1000 1000	200	C8	1100 1000
009	09	0000 1001	073	49	0100 1001	137	89	1000 1001	201	C9	1100 1001
010	0A	0000 1010	074	4A	0100 1010	138	8A	1000 1010	202	CA	1100 1010
011	0B	0000 1011	075	4B	0100 1011	139	8B	1000 1011	203	CB	1100 1011
012	0C	0000 1100	076	4C	0100 1100	140	8C	1000 1100	204	CC	1100 1100
013	0D	0000 1101	077	4D	0100 1101	141	8D	1000 1101	205	CD	1100 1101
014	0E	0000 1110	078	4E	0100 1110	142	8E	1000 1110	206	CE	1100 1110
015	0F	0000 1111	079	4F	0100 1111	143	8F	1000 1111	207	CF	1100 1111
016	10	0001 0000	080	50	0100 0000	144	90	1001 0000	208	D0	1101 0000
017	11	0001 0001	081	51	0101 0001	145	91	1001 0001	209	D1	1101 0001
018	12	0001 0010	082	52	0101 0010	146	92	1001 0010	210	D2	1101 0010
019	13	0001 0011	083	53	0101 0011	147	93	1001 0011	211	D3	1101 0011
020	14	0001 0100	084	54	0101 0100	148	94	1001 0100	212	D4	1101 0100
021	15	0001 0101	085	55	0101 0101	149	95	1001 0101	213	D5	1101 0101
022	16	0001 0110	086	56	0101 0110	150	96	1001 0110	214	D6	1101 0110
023	17	0001 0111	087	57	0101 0111	151	97	1001 0111	215	D7	1101 0111
024	18	0001 1000	088	58	0101 1000	152	98	1001 1000	216	D8	1101 1000
025	19	0001 1001	089	59	0101 1001	153	99	1001 1001	217	D9	1101 1001
026	1A	0001 1010	090	5A	0101 1010	154	9A	1001 1010	218	DA	1101 1010
027	1B	0001 1011	091	5B	0101 1011	155	9B	1001 1011	219	DB	1101 1011
028	1C	0001 1100	092	5C	0101 1100	156	9C	1001 1100	220	DC	1101 1100
029	1D	0001 1101	093	5D	0101 1101	157	9D	1001 1101	221	DD	1101 1101
030	1E	0001 1110	094	5E	0101 1110	158	9E	1001 1110	222	DE	1101 1110
031	1F	0001 1111	095	5F	0101 1111	159	9F	1001 1111	223	DF	1101 1111
032	20	0010 0000	096	60	0110 0000	160	A0	1010 0000	224	E0	1110 0000
033	21	0010 0001	097	61	0110 0001	161	A1	1010 0001	225	E1	1110 0001
034	22	0010 0010	098	62	0110 0010	162	A2	1010 0010	226	E2	1110 0010
035	23	0010 0011	099	63	0110 0011	163	A3	1010 0011	227	E3	1110 0011
036	24	0010 0100	100	64	0110 0100	164	A4	1010 0100	228	E4	1110 0100
037	25	0010 0101	101	65	0110 0101	165	A5	1010 0101	229	E5	1110 0101
038	26	0010 0110	102	66	0110 0110	166	A6	1010 0110	230	E6	1110 0110
039	27	0010 0111	103	67	0110 0111	167	A7	1010 0111	231	E7	1110 0111
040	28	0010 1000	104	68	0110 1000	168	A8	1010 1000	232	E8	1110 1000
041	29	0010 1001	105	69	0110 1001	169	A9	1010 1001	233	E9	1110 1001
042	2A	0010 1010	106	6A	0110 1010	170	AA	1010 1010	234	EA	1110 1010
043	2B	0010 1011	107	6B	0110 1011	171	AB	1010 1011	235	EB	1110 1011
044	2C	0010 1100	108	6C	0110 1100	172	AC	1010 1100	236	EC	1110 1100
045	2D	0010 1101	109	6D	0110 1101	173	AD	1010 1101	237	ED	1110 1101
046	2E	0010 1110	110	6E	0110 1110	174	AE	1010 1110	238	EE	1110 1110
047	2F	0010 1111	111	6F	0110 1111	175	AF	1010 1111	239	EF	1110 1111
048	30	0011 0000	112	70	0111 0000	176	B0	1011 0000	240	F0	1111 0000
049	31	0011 0001	113	71	0111 0001	177	B1	1011 0001	241	F1	1111 0001
050	32	0011 0010	114	72	0111 0010	178	B2	1011 0010	242	F2	1111 0010
051	33	0011 0011	115	73	0111 0011	179	B3	1011 0011	243	F3	1111 0011
052	34	0011 0100	116	74	0111 0100	180	B4	1011 0100	244	F4	1111 0100
053	35	0011 0101	117	75	0111 0101	181	B5	1011 0101	245	F5	1111 0101
054	36	0011 0110	118	76	0111 0110	182	B6	1011 0110	246	F6	1111 0110
055	37	0011 0111	119	77	0111 0111	183	B7	1011 0111	247	F7	1111 0111
056	38	0011 1000	120	78	0111 1000	184	B8	1011 1000	248	F8	1111 1000
057	39	0011 1001	121	79	0111 1001	185	B9	1011 1001	249	F9	1111 1001
058	3A	0011 1010	122	7A	0111 1010	186	BA	1011 1010	250	FA	1111 1010
059	3B	0011 1011	123	7B	0111 1011	187	BB	1011 1011	251	FB	1111 1011
060	3C	0011 1100	124	7C	0111 1100	188	BC	1011 1100	252	FC	1111 1100
061	3D	0011 1101	125	7D	0111 1101	189	BD	1011 1101	253	FD	1111 1101
062	3E	0011 1110	126	7E	0111 1110	190	BE	1011 1110	254	FE	1111 1110
063	3F	0011 1111	127	7F	0111 1111	191	BF	1011 1111	255	FF	1111 1111

APPENDIX B
Quick Reference Guide

General Operation

Command	Function
[✻][0]	Quick Exit
[✻][1]	Reactivate Home-Away Zone
[✻][7]	Cancel Alarm
[✻][8]	At-Home Arming

Mode	Function
01	Bypassing
02	Trouble Display
03	Change Access Codes 0 Master Code 1 Arm/Disarm and Bypass Code 2 Arm Only Code 3 Arm/Disarm Only Code
04	Reset Zones
05	Commands for Utility Outputs 1 to 3
06	Utility Functions 01 Set the Time (HH:MM) 02 Set the Date (DD:MM) 03 Setting the Day of Week 04 Quick-Arm Select 06 Activate Bell for 2 Seconds 07 Activate Programmable Output for 3 Seconds 08 Activate Buzzer for 3 Seconds 10 Auto-Arm Time Schedule 1 12 Auto-Arm Time Schedule 2 14 Auto-Arm Time Schedule 3 16 Day Assignment Schedule 1 17 Day Assignment Schedule 2 18 Day Assignment Schedule 3 20 Auto-Arm Schedule 1 ON/OFF 22 Auto-Arm Schedule 2 ON/OFF 24 Auto-Arm Schedule 3 ON/OFF
07	Chiming
08	Zone and Fire Alarm Memory Display
09	Trouble Memory Display
10	Keypad Alarm Memory Display
11	Send User Message
12	Display Who Armed/Disarmed Group A
13	Display Who Armed/Disarmed Group B
14	Display Who Armed/Disarmed Group C
15	Display Who Armed/Disarmed Group D
16	Print Event Buffer
17	Scan Access Codes
20-23	Installation Data
25	Test Mode / Tamper Restore
26	Erase Event Buffer
27	Print Installer Programming
29	Installer Messages
30	Installer Default Programming
99	Language Selection

Programmable Output Types

01	Kiss-off Signal
02	Fail to Communicate (Line Cut)
03	Courtesy Light
04	Follow Bell / Siren
05	Follow Group A Armed / Disarmed Status
06	Follow Group B Armed / Disarmed Status
07	Follow Group C Armed / Disarmed Status
08	Follow Group D Armed / Disarmed Status
09	Follow Group A Ready Status
10	Follow Group B Ready Status
11	Follow Group C Ready Status
12	Follow Group D Ready Status
13	Utility Output (Mode 04 or 05) No Code
14	Utility Output (Mode 04 or 05) Any Code
15	Utility Output (Mode 04 or 05) Keypad Control
16	Utility Output (Mode 04 or 05), Group A Code
17	Utility Output (Mode 04 or 05), Group B Code
18	Utility Output (Mode 04 or 05), Group C Code
19	Utility Output (Mode 04 or 05), Group D Code
20	Follow Chime
21	Follow Buzzer
22	Serial Printer Output
24	Strobe Output
25	30-Minute Strobe Output
26	Bell/Siren Output for Group A
27	Bell /Siren Output for Group B
28	Bell /Siren Output for Group C
29	Bell /Siren Output for Group D
30	Follow Auto-Arm Buzzer
31	Follow Away Status
32	Follow Trouble Status
33	Follow Low Battery Status
34	Follow Fire (Latched) Status
35	Follow AC Status

Mode 20 Addresses 101 to 116 Zone Definitions

0	24-hour Silent
1	24-hour Audible
2	24-hour Pulsed Bell
3	Day Loop
4	Day Loop and Buzzer
5	Delay 1
6	Delay / Instant
7	Instant
8	Buzzer Only
9	No Alarm
A	Delay 2
B	Probation
C	10-second Buzzer with Report
D	Tamper Zone
E	Home/Away

Programming System Options
Mode 22 Addresses [001] through [008]

Address	*Option*	*Function*
[001]	1	Open / Close Report Select
	2	Close Confirmation
	3	Force Arming Select
	4	*Reserved*
	5	Quick-Arm Select
	6	Alarm Memory Indication
	7	Siren Driver Enabled
	8	Bell Squawk Enabled
[002]	1	Access Code Required for Bypassing
	2	Immediate Bypass Report
	3	Bypass Report on Exit
	4	Common Bypass Report
	5	Bypassed Zones Display on Exit
	6	Quick Exit
	7	No arming on AC failure and low battery
	8	*Reserved*
[003]	1	Master Code not Changeable
	2	Only Master Code able to send User Message
	3	Immediate Restore
	4	Memory Security Switch
	5	Keyswitch Arming/Disarming
	6	Maintained Keyswitch Arming/ Disarming
	7	*Reserved*
	8	*Reserved*
[004]	1	Programmable Output 3 Normally High
	2	Installer Lockout
	3	Keypad Lockout
	4	*Reserved*
	5	*Reserved*
	6	*Reserved*
	7	*Reserved*
	8	Immediate AC Failure Report

Address	*Option*	*Function*
[005]	1	*Reserved*
	2	*Reserved*
	3	*Reserved*
	4	*Reserved*
	5	*Reserved*
	6	Master User Code Allowed to Assign Groups
	7	*Reserved*
	8	Force Arming on Delay and Delay/ Instant
[006]	1	*Reserved*
	2	*Reserved*
	3	*Reserved*
	4	Arming by Central Station
	5	Disarming by Central Station
	6	Forced Auto-Arm and/or Arming by Central Station
	7	*Reserved*
	8	*Reserved*
[007]	1	*Reserved*
	2	Auto Clear Bypass on Entry
	3	All Closed Report
	4	Opening Report on Alarm
	5	*Reserved*
	6	Auto-Arm Squawk
	7	Open/Close Report by Group
	8	*Reserved*
[008]	1	Calculate Bypass Report
	2	*Reserved*
	3	*Reserved*
	4	*Reserved*
	5	*Reserved*
	6	*Reserved*
	7	*Reserved*
	8	*Reserved*

APPENDIX C

4/2-style Format with Sur-Gard Schedule 3A DVACS Compatible

Updated for Version 4 Decoding

A section of the more than 2000 zones available on the MLR1 Receiver has been reserved for 4/2 Digital Dialer Format-style printer and computer output such. The following table shows the zones reserved for 4/2-type output:

Zone	*Printer Message*	*Computer Zone*	*Byte*
01-08	---- Alm/Rst Zn#01-08	01-08	50
09	---- Alm/Rst Zn#09	09	51
10-17	Fire! Alm/Rst Zn#10-17	10-17	0C
18-1F	Fire! Alm/Rst Zn#18-1F	18-1F	0D
20-27	Panic Alm/Rst Zn#20-27	20-27	0E
28-2F	Panic Alm/Rst Zn#28-2F	28-2F	0F
30-37	Inst. Alm/Rst Zn#30-37	30-37	10
38-3F	Inst. Alm/Rst Zn#38-3F	38-3F	11
40-47	Mtion Alm/Rst Zn#40-47	40-47	12
48-4F	Mtion Alm/Rst Zn#48-4F	48-4F	13
50-57	24Hrs Alm/Rst Zn#50-57	50-57	14
58-5F	24Hrs Alm/Rst Zn#58-5F	58-5F	15
60-67	Tampr Alm/Rst Zn#60-67	60-67	16
68-6F	Tampr Alm/Rst Zn#68-6F	68-6F	17
70-77	Delay Alm/Rst Zn#70-77	70-77	18
78-7F	Delay Alm/Rst Zn#78-7F	78-7F	19
80-87	Optn1 Alm/Rst Zn#80-87	80-87	1A
88-8F	Optn1 Alm/Rst Zn#88-8F	88-8F	1B
90-97	Optn2 Alm/Rst Zn#90-97	90-97	1C
98-9F	Optn2 Alm/Rst Zn#98-9F	98-9F	1D
A0-A7	Optn3 Alm/Rst Zn#A0-A7	A0-A7	1E
A8-AF	Optn3 Alm/Rst Zn#A8-AF	A8-AF	1F
B0-B7	Fire: Alm/Rst Zn#B0-B7	B0-B7	2E
B8-BF	Fire: Alm/Rst Zn#B8-BF	B8-BF	2F
C0-C7	Hpres Trb/Rst Zn#C0-C7	C0-C7	34
C8-CF	Lpres Trb/Rst Zn#C8-CF	C8-CF	35
D0-D7	Valve Trb/Rst Zn#D0-D7	D0-D7	36
D8-DF	Valve Trb/Rst Zn#D8-DF	D8-DF	37
E0-E7	XXXXX Trb/Rst Zn#E0-E7	E0-E7	6C
E8-EF	XXXXX Trb/Rst Zn#E8-EF	E8-EF	6B
F0-FF	***Do Not Use***		

XXXXX represents variable messages; refer to MLR1 Library.

The following are outputs for bypasses and clearing bypasses

Zone	*Printer Message*	*Computer Zone*	*Byte*
01-08	---- Byp/Unb Zn#01-08	01-08	D0
09	---- Byp/Unb Zn#09	09	D1
10-17	Fire! Byp/Unb Zn#10-17	10-17	8C
18-1F	Fire! Byp/Unb Zn#18-1F	18-1F	8D
20-27	Panic Byp/Unb Zn#20-27	20-27	8E
28-2F	Panic Byp/Unb Zn#28-2F	28-2F	8F
30-37	Inst. Byp/Unb Zn#30-37	30-37	90
38-3F	Inst. Byp/Unb Zn#38-3F	38-3F	91
40-47	Mtion Byp/Unb Zn#40-47	40-47	92
48-4F	Mtion Byp/Unb Zn#48-4F	48-4F	93
50-57	24Hrs Byp/Unb Zn#50-57	50-57	94
58-5F	24Hrs Byp/Unb Zn#58-5F	58-5F	95
60-67	Tampr Byp/Unb Zn#60-67	60-67	96
68-6F	Tampr Byp/Unb Zn#68-6F	68-6F	97
70-77	Delay Byp/Unb Zn#70-77	70-77	98
78-7F	Delay Byp/Unb Zn#78-7F	78-7F	99
80-87	Optn1 Byp/Unb Zn#80-87	80-87	9A
88-8F	Optn1 Byp/Unb Zn#88-8F	88-8F	9B
90-97	Optn2 Byp/Unb Zn#90-97	90-97	9C
98-9F	Optn2 Byp/Unb Zn#98-9F	98-9F	9D
A0-A7	Optn3 Byp/Unb Zn#A0-A7	A0-A7	9E
A8-AF	Optn3 Byp/Unb Zn#A8-AF	A8-AF	9F
B0-B7	Fire: Byp/Unb Zn#B0-B7	B0-B7	9E
B8-BF	Fire: Byp/Unb Zn#B8-BF	B8-BF	9F
C0-C7	Hpres Byp/Unb Zn#C0-C7	C0-C7	94
C8-CF	Lpres Byp/Unb Zn#C8-CF	C8-CF	95
D0-D7	Valve Byp/Unb Zn#D0-D7	D0-D7	96
D8-DF	Other Byp/Unb Zn#D8-DF	D8-DF•	97
E0-E7	Zn#E0-E7 Bypass/Unbyp.	E0-E7	9C
E8-EF	Zn#E8-EF Bypass/Unbyp.••	E8-EF	9B
F0-FF	***Do Not Use***		

Notes:

- Zone D8 is the default setting for Common Bypass.

•• Individual messages per zone are standard. Refer to DVACS Line Card Alarm Decoding Version 4 for further information.

The printer messages for zones 10 through AF can be changed to "_____" followed by "Alm/Rst" or "Byp/Unb" and "Zn#".

MODE 20 PROGRAMMING WORKSHEETS

[000] - [019] For Future Use **Page 18**

[020] Panel Identification Code **Page 18**

Default

0 0 ____

[021] All Call Select **Page 18**

Default

4 ____

[022] All Call Answer **Page 18**

Default

1 ____

[023] - [100] For Future Use **Page 18**

[101] - [115] Zone Definitions **Page 19**

Address	Default		
[101]	5	____	Zone 1
[102]	6	____	Zone 2
[103]	6	____	Zone 3
[104]	6	____	Zone 4
[105]	6	____	Zone 5
[106]	7	____	Zone 6
[107]	7	____	Zone 7
[108]	7	____	Zone 8
[109]	C	____	Trouble Zone 1
[110]	C	____	Trouble Zone 2
[111]	C	____	Trouble Zone 3
[112]	C	____	Trouble Zone 4
[113]	C	____	Trouble Zone 5
[114]	C	____	Trouble Zone 6
[115]	C	____	Trouble Zone 7

Zone Definitions

0	24-hour Silent
1	24-hour Audible
2	24-hour Pulsed Bell (Fire or Latching)
3	Day Loop (Silent Day/Audible Night)
4	Day Loop and Buzzer
5	Delay 1
6	Delay / Instant
7	Instant
8	Buzzer Only
9	No Alarm
A	Delay 2
B	Probation
C	10-second Buzzer with Report
D	24-Hour Tamper Zone
E	Delay/Instant (Home and Away)

[116] - [228] For Future Use **Page 20**

[229] - [269] Trouble Definitions **Page 21**

Address	Default		
[229]	C		Auxiliary Zone Alarm
[230]	8		Printer Failure
[231]	C		Fire Trouble
[232]	C		AC Failure
[233]	C		Auxiliary Power Fuse
[234]	C		Siren Cut
[235]	C		Low Battery
[236]	2		Fire Alarm
[237]	8		DVAC Line Fault
[238]			***Reserved***
[239]	C		EEPROM Failure
[240]	C		Fail to Arm Schedule 1
[241]	C		Fail to Arm Schedule 2
[242]	C		Fail to Arm Schedule 3
[243]			***Reserved***
[244]	C		Ground Fault
[243] - [265]			***Reserved***
[266]	9		Fire Key Alarm
[267]	9		Panic Key Alarm
[268]	9		Medical Key Alarm
[269]	1		Invalid Code

Trouble Definitions

0	24-hour Silent
1	24-hour Audible
2	24-hour Pulsed Bell
3	Day Loop
4	Day Loop and Buzzer
7	Instant
8	Buzzer Only
9	No Alarm
B	Probation
C	10-second Buzzer with Report
D	Tamper Zone

[270] - [300] For Future Use **Page 21**

[301] - [315] Alarm /Restoral Codes for Zones 1 to 8 and Trouble Zones 1 to 7 **Page 21**

Address	Default		
[301]	0 1		Zone 1
[302]	0 2		Zone 2
[303]	0 3		Zone 3
[304]	0 4		Zone 4
[305]	0 5		Zone 5
[306]	0 6		Zone 6
[307]	0 7		Zone 7
[308]	0 8		Zone 8
[309]	0 9		Trouble Zone 1
[310]	1 0		Trouble Zone 2
[311]	1 1		Trouble Zone 3
[312]	1 2		Trouble Zone 4
[313]	1 3		Trouble Zone 5
[314]	1 4		Trouble Zone 6
[315]	1 5		Trouble Zone 7

[316] - [428] For Future Use **Page 21**

[429] - [444] Trouble Alarm/Restoral Reporting Codes **Page 21**

Address	Default		
[429]	C 8		Auxiliary Zone Alarm
[430]	0 0		Printer Failure
[431]	D 8		Fire Trouble
[432]	D 9		AC Failure
[433]	D C		Auxiliary Power Fuse
[434]	D A		Siren Cut
[435]	D B		Low Battery
[436]	B 0		Fire Alarm
[437]	0 0		DVAC Line Fault
[438]	0 0		***Reserved***
[439]	9 3		EEPROM Failure
[440]	D D		Fail to Arm on Schedule 1
[441]	D E		Fail to Arm on Schedule 2
[442]	D F		Fail to Arm on Schedule 3
[443]	0 0		***Reserved***
[444]	9 2		Ground Fault

[445] - [465] For Future Use **Page 22**

[466] - [469] Keypad Alarm Reporting Codes **Page 22**

Address	Default		
[466]	E 8		Fire Key Alarm
[467]	E 9		Panic Key Alarm
[468]	E A		Medical Key Alarm
[469]	E D		Invalid Code

[470] - [715] For Future Use **Page 22**

[716] User Messages Function Byte **Page 22**

Default	
1 E	

[717] User Number for Messages Function Byte **Page 22**

Default	
1 0	

[718] - [723] For Future Use **Page 22**

[724] Installer Messages Function Byte **Page 23**

Default	
1 F	

[725] - [731] For Future Use **Page 23**

[732] Alarm On Exit Code **Page 23**

Default

E 1 _ _

[733] For Future Use **Page 23**

[734] Test Mode Function Byte **Page 23**

Default

6 C _ _

[735] Number of Zones Not Tested Function Byte **Page 23**

Default

0 0 _ _

[736] - [743] For Future Use **Page 23**

[744] Cancel Alarm Code **Page 23**

Default

E 2 _ _

[745] - [800] For Future Use **Page 23**

[801] - [804] No Restoral Report **Page 23**

Address		***Default***		
[801]	Light 1	OFF	____	Zone 1
	Light 2	OFF	____	Zone 2
	Light 3	OFF	____	Zone 3
	Light 4	OFF	____	Zone 4
	Light 5	OFF	____	Zone 5
	Light 6	OFF	____	Zone 6
	Light 7	OFF	____	Zone 7
	Light 8	OFF	____	Zone 8

Address		***Default***		
[802]	Light 1	OFF	____	Trouble Zone 1
	Light 2	OFF	____	Trouble Zone 2
	Light 3	OFF	____	Trouble Zone 3
	Light 4	OFF	____	Trouble Zone 4
	Light 5	OFF	____	Trouble Zone 5
	Light 6	OFF	____	Trouble Zone 6
	Light 7	OFF	____	Trouble Zone 7
	Light 8	OFF	____	*Not Used*

Address		*Default*		
[803]	Light 1	OFF	____	Auxiliary Alarm
	Light 2	OFF	____	Printer Failure
	Light 3	OFF	____	Fire Trouble
	Light 4	OFF	____	Auxiliary Power Fuse
	Light 5	OFF	____	Ground Fault
	Light 6	OFF	____	Siren Cut
	Light 7	OFF	____	For Future Use
	Light 8	OFF	____	Fire Alarm

Address		*Default*		
[804]	Light 1	OFF	____	For Future Use
	Light 2	OFF	____	DVAC Line Failure
	Light 3	OFF	____	AC Failure
	Light 4	OFF	____	Low Battery
	Light 5	OFF	____	For Future Use
	Light 6	OFF	____	For Future Use
	Light 7	OFF	____	For Future Use
	Light 8	OFF	____	For Future Use

MODE 21 PROGRAMMING WORKSHEETS

[001] Group A Zone Assignment **Page 25**

Address		Default		
[001]	Light 1	ON	____	Zone 1
	Light 2	ON	____	Zone 2
	Light 3	ON	____	Zone 3
	Light 4	ON	____	Zone 4
	Light 5	ON	____	Zone 5
	Light 6	ON	____	Zone 6
	Light 7	ON	____	Zone 7
	Light 8	ON	____	Zone 8

[002] For Future Use **Page 25**

[003] Group B Zone Assignment **Page 25**

Address		Default		
[003]	Light 1	OFF	____	Zone 1
	Light 2	OFF	____	Zone 2
	Light 3	OFF	____	Zone 3
	Light 4	OFF	____	Zone 4
	Light 5	OFF	____	Zone 5
	Light 6	OFF	____	Zone 6
	Light 7	OFF	____	Zone 7
	Light 8	OFF	____	Zone 8

[004] For Future Use **Page 25**

[005] Group C Zone Assignment **Page 25**

Address		Default		
[005]	Light 1	OFF	____	Zone 1
	Light 2	OFF	____	Zone 2
	Light 3	OFF	____	Zone 3
	Light 4	OFF	____	Zone 4
	Light 5	OFF	____	Zone 5
	Light 6	OFF	____	Zone 6
	Light 7	OFF	____	Zone 7
	Light 8	OFF	____	Zone 8

[006] For Future Use **Page 25**

[007] Group D Zone Assignment **Page 25**

Address		Default		
[007]	Light 1	OFF	____	Zone 1
	Light 2	OFF	____	Zone 2
	Light 3	OFF	____	Zone 3
	Light 4	OFF	____	Zone 4
	Light 5	OFF	____	Zone 5
	Light 6	OFF	____	Zone 6
	Light 7	OFF	____	Zone 7
	Light 8	OFF	____	Zone 8

[008] For Future Use **Page 25**

[009] - [010] Group A Access Code Assignment **Page 25**

Address		Default		
[009]	Light 1	ON	____	Code 1
	Light 2	ON	____	Code 2
	Light 3	ON	____	Code 3
	Light 4	ON	____	Code 4
	Light 5	ON	____	Code 5
	Light 6	ON	____	Code 6
	Light 7	ON	____	Code 7
	Light 8	ON	____	Code 8
Address		**Default**		
[010]	Light 1	ON	____	Code 9
	Light 2	ON	____	Code 10
	Light 3	ON	____	Code 11
	Light 4	ON	____	Code 12
	Light 5	ON	____	Code 13
	Light 6	ON	____	Code 14
	Light 7	ON	____	Code 15
	Light 8	ON	____	Code 16

[011] - [016] For Future Use **Page 25**

[017] Group A Special Access Code Assignment **Page 25**

Address		Default			
[017]	Light 1	OFF	____	Code 65	Schedule 1 Auto-Arming
	Light 2	OFF	____	Code 66	Schedule 2 Auto-Arming
	Light 3	OFF	____	Code 67	Schedule 3 Auto-Arming
	Light 4	OFF	____	Code 68	Quick-Arming
	Light 5	OFF	____	Code 69	Keyswitch Arming
	Light 6	OFF	____	Code 70	Arming by Central Station
	Light 7	OFF	____	Code 71	***Reserved***
	Light 8	OFF	____	Code 72	***Reserved***

[018] - [024] For Future Use **Page 25**

[025] - [026] Group B Access Code Assignment **Page 26**

Address		Default		
[025]	Light 1	OFF	____	Code 1
	Light 2	OFF	____	Code 2
	Light 3	OFF	____	Code 3
	Light 4	OFF	____	Code 4
	Light 5	OFF	____	Code 5
	Light 6	OFF	____	Code 6
	Light 7	OFF	____	Code 7
	Light 8	OFF	____	Code 8

Address		Default		
[026]	Light 1	OFF	____	Code 9
	Light 2	OFF	____	Code 10
	Light 3	OFF	____	Code 11
	Light 4	OFF	____	Code 12
	Light 5	OFF	____	Code 13
	Light 6	OFF	____	Code 14
	Light 7	OFF	____	Code 15
	Light 8	OFF	____	Code 16

[027] - [032] For Future Use **Page 26**

[033] Group B Special Access Code Assignment **Page 26**

Address		Default			
[033]	Light 1	OFF	____	Code 65	Schedule 1 Auto-Arming
	Light 2	OFF	____	Code 66	Schedule 2 Auto-Arming
	Light 3	OFF	____	Code 67	Schedule 3 Auto-Arming
	Light 4	OFF	____	Code 68	Quick-Arming
	Light 5	OFF	____	Code 69	Keyswitch Arming
	Light 6	OFF	____	Code 70	Arming by Central Station
	Light 7	OFF	____	Code 71	***Reserved***
	Light 8	OFF	____	Code 72	***Reserved***

[034] - [040] For Future Use **Page 26**

[041] - [042] Group C Access Code Assignment **Page 26**

Address		Default		
[041]	Light 1	OFF	____	Code 1
	Light 2	OFF	____	Code 2
	Light 3	OFF	____	Code 3
	Light 4	OFF	____	Code 4
	Light 5	OFF	____	Code 5
	Light 6	OFF	____	Code 6
	Light 7	OFF	____	Code 7
	Light 8	OFF	____	Code 8

Address		Default		
[042]	Light 1	OFF	____	Code 9
	Light 2	OFF	____	Code 10
	Light 3	OFF	____	Code 11
	Light 4	OFF	____	Code 12
	Light 5	OFF	____	Code 13
	Light 6	OFF	____	Code 14
	Light 7	OFF	____	Code 15
	Light 8	OFF	____	Code 16

[043] - [048] For Future Use ***Page 26***

[049] Group C Special Access Code Assignment ***Page 26***

Address		Default			
[049]	Light 1	OFF	____	Code 65	Schedule 1 Auto-Arming
	Light 2	OFF	____	Code 66	Schedule 2 Auto-Arming
	Light 3	OFF	____	Code 67	Schedule 3 Auto-Arming
	Light 4	OFF	____	Code 68	Quick-Arming
	Light 5	OFF	____	Code 69	Keyswitch Arming
	Light 6	OFF	____	Code 70	Arming by Central Station
	Light 7	OFF	____	Code 71	***Reserved***
	Light 8	OFF	____	Code 72	***Reserved***

[050] - [056] For Future Use ***Page 26***

[057] - [058] Group D Access Code Assignment ***Page 26***

Address		Default		
[057]	Light 1	OFF	____	Code 1
	Light 2	OFF	____	Code 2
	Light 3	OFF	____	Code 3
	Light 4	OFF	____	Code 4
	Light 5	OFF	____	Code 5
	Light 6	OFF	____	Code 6
	Light 7	OFF	____	Code 7
	Light 8	OFF	____	Code 8

Address		Default		
[058]	Light 1	OFF	____	Code 9
	Light 2	OFF	____	Code 10
	Light 3	OFF	____	Code 11
	Light 4	OFF	____	Code 12
	Light 5	OFF	____	Code 13
	Light 6	OFF	____	Code 14
	Light 7	OFF	____	Code 15
	Light 8	OFF	____	Code 16

[059] - [064] For Future Use ***Page 26***

[065] Group D Special Access Code Assignment **Page 26**

Address		Default			
[065]	Light 1	OFF	____	Code 65	Schedule 1 Auto-Arming
	Light 2	OFF	____	Code 66	Schedule 2 Auto-Arming
	Light 3	OFF	____	Code 67	Schedule 3 Auto-Arming
	Light 4	OFF	____	Code 68	Quick-Arming
	Light 5	OFF	____	Code 69	Keyswitch Arming
	Light 6	OFF	____	Code 70	Arming by Central Station
	Light 7	OFF	____	Code 71	***Reserved***
	Light 8	OFF	____	Code 72	***Reserved***

[066] - [079] For Future Use **Page 26**

[080] Bypass Inhibit **Page 26**

Address		Default		
[080]	Light 1	OFF	____	Zone 1
	Light 2	OFF	____	Zone 2
	Light 3	OFF	____	Zone 3
	Light 4	OFF	____	Zone 4
	Light 5	OFF	____	Zone 5
	Light 6	OFF	____	Zone 6
	Light 7	OFF	____	Zone 7
	Light 8	OFF	____	Zone 8

[081] For Future Use **Page 26**

[082] - [083] Zone Transmission Delay Select **Page 26**

Address		Default		
[082]	Light 1	OFF	____	Zone 1
	Light 2	OFF	____	Zone 2
	Light 3	OFF	____	Zone 3
	Light 4	OFF	____	Zone 4
	Light 5	OFF	____	Zone 5
	Light 6	OFF	____	Zone 6
	Light 7	OFF	____	Zone 7
	Light 8	OFF	____	Zone 8

Address		Default		
[083]	Light 1	OFF	____	Trouble Zone 1
	Light 2	OFF	____	Trouble Zone 2
	Light 3	OFF	____	Trouble Zone 3
	Light 4	OFF	____	Trouble Zone 4
	Light 5	OFF	____	Trouble Zone 5
	Light 6	OFF	____	Trouble Zone 6
	Light 7	OFF	____	Trouble Zone 7
	Light 8	OFF	____	*Not Used*

MODE 22 PROGRAMMING WORKSHEETS

[001] - [008] System Options **Page 27**

Address		Default			
[001]	Light 1	OFF	____	Option 1	Open / Close Report Select
	Light 2	OFF	____	Option 2	Close Confirmation Option
	Light 3	OFF	____	Option 3	Force Arming Select
	Light 4	OFF	____	Option 4	***Reserved***
	Light 5	OFF	____	Option 5	Quick-Arm Select
	Light 6	ON	____	Option 6	Alarm Memory Indication
	Light 7	ON	____	Option 7	Siren Driver Enabled
	Light 8	OFF	____	Option 8	Bell Squawk Enabled

Address		Default			
[002]	Light 1	ON	____	Option 9	Access Code Required for Bypassing
	Light 2	OFF	____	Option 10	Immediate Bypass Report
	Light 3	OFF	____	Option 11	Bypass Report on Exit
	Light 4	OFF	____	Option 12	Common Bypass Report
	Light 5	ON	____	Option 13	Bypassed Zones Display on Exit
	Light 6	OFF	____	Option 14	Quick Exit
	Light 7	OFF	____	Option 15	No arming on AC failure and low battery
	Light 8	OFF	____	Option 16	***Reserved***

Address		Default			
[003]	Light 1	OFF	____	Option 17	Master Code not Changeable
	Light 2	ON	____	Option 18	Only Master Code able to send User Message
	Light 3	OFF	____	Option 19	Immediate Restore
	Light 4	OFF	____	Option 20	Memory Security Switch
	Light 5	OFF	____	Option 21	Keyswitch Arming/Disarming
	Light 6	OFF	____	Option 22	Maintained Keyswitch Arming/Disarming
	Light 7	OFF	____	Option 23	***Reserved***
	Light 8	OFF	____	Option 24	***Reserved***

Address		Default			
[004]	Light 1	ON	____	Option 25	Programmable Output 3 Normally High
	Light 2	OFF	____	Option 26	Installer Lockout
	Light 3	OFF	____	Option 27	Keypad Lockout
	Light 4	OFF	____	Option 28	***Reserved***
	Light 5	OFF	____	Option 29	***Reserved***
	Light 6	OFF	____	Option 30	***Reserved***
	Light 7	OFF	____	Option 31	***Reserved***
	Light 8	OFF	____	Option 32	Immediate AC Failure Report

Address		Default			
[005]	Light 1	OFF	____	Option 33	***Reserved***
	Light 2	OFF	____	Option 34	***Reserved***
	Light 3	OFF	____	Option 35	***Reserved***
	Light 4	OFF	____	Option 36	***Reserved***
	Light 5	OFF	____	Option 37	***Reserved***
	Light 6	OFF	____	Option 38	Master User(s) Allowed to Assign Groups
	Light 7	OFF	____	Option 39	***Reserved***
	Light 8	OFF	____	Option 40	Forced Arming on Delay/Instant Zones
Address		***Default***			
[006]	Light 1	OFF	____	Option 41	***Reserved***
	Light 2	OFF	____	Option 42	***Reserved***
	Light 3	OFF	____	Option 43	***Reserved***
	Light 4	OFF	____	Option 44	Arming by Central Station
	Light 5	OFF	____	Option 45	Disarming by Central Station
	Light 6	OFF	____	Option 46	Forced Auto-Arming and/or Arming by Central Station
	Light 7	OFF	____	Option 47	***Reserved***
	Light 8	OFF	____	Option 48	***Reserved***
Address		***Default***			
[007]	Light 1	OFF	____	Option 49	***Reserved***
	Light 2	ON	____	Option 50	Auto Clear Bypasses on Entry
	Light 3	OFF	____	Option 51	All Closed Report
	Light 4	OFF	____	Option 52	Opening Report on Alarm
	Light 5	OFF	____	Option 53	***Reserved***
	Light 6	OFF	____	Option 54	Auto-Arm Squawk
	Light 7	OFF	____	Option 55	Open/Close Report by Group
	Light 8	OFF	____	Option 56	***Reserved***
Address		***Default***			
[008]	Light 1	OFF	____	Option 57	Calculate Bypass Report
	Light 2	OFF	____	Option 58	***Reserved***
	Light 3	OFF	____	Option 59	***Reserved***
	Light 4	OFF	____	Option 60	***Reserved***
	Light 5	OFF	____	Option 61	***Reserved***
	Light 6	OFF	____	Option 62	***Reserved***
	Light 7	OFF	____	Option 63	***Reserved***
	Light 8	OFF	____	Option 64	***Reserved***

[009] - [020] For Future Use ***Page 30***

[021] - [023] Entrance and Exit Delays ***Page 30***

Address	Default		
[021]	30	___	Entrance Delay 1 (seconds)
[022]	45	___	Entrance Delay 2 (seconds)
[023]	60	___	Exit Delay (seconds)

[024] - [029] System Times **Page 30**

Address	Default		
[024]	0 6		Siren / Bell Duration (minutes)
[025]	0 0		Fire Zone Activation Delay (seconds)
[026]	3 0		Fire Zone Restore Delay (seconds)
[027]	1 5		Zone Alarm Delay (seconds)
[028]	2 5		Fire Zone Transmission Delay (seconds)
[029]	1 8		Auto-Arm Delay (× 10 seconds)

[030] -[032]For Future Use **Page 30**

[033] Printer Setup **Page 31**

Default		
0 4		Default: 2400 baud

[034] For Future Use **Page 31**

[035] - [037] Programmable Output Types **Page 31**

Address	Default		
[035]	9 9		Programmable Output 1
[036]	9 9		Programmable Output 2
[037]	1 3		Programmable Output 3

Output Types

01	Kiss-Off Signal	18	Utility Output (Group C Code)
02	Fail to Communicate	19	Utility Output (Group D Code)
03	Courtesy Light	20	Follow Chime
04	Follow Bell/Siren	21	Follow Buzzer
05	Follow Group A Arm/Disarm Status	22	Serial Printer Output (only for Programmable Output 1)
06	Follow Group B Arm/Disarm Status	24	Strobe Output
07	Follow Group C Arm/Disarm Status	25	30-minute Strobe Output
08	Follow Group D Arm/Disarm Status	26	Bell/Siren Output for Group A
09	Follow Group A Ready Status	27	Bell/Siren Output for Group B
10	Follow Group B Ready Status	28	Bell/Siren Output for Group C
11	Follow Group C Ready Status	29	Bell/Siren Output for Group D
12	Follow Group D Ready Status	30	Follow Auto-Arm Buzzer
13	Utility Output (No Code)	31	Follow Away Status
14	Utility Output (Any valid Code)	32	Follow Trouble
15	Utility Output (Keys [4] & [5])	33	Follow Low Battery
16	Utility Output (Group A Code)	34	Follow Fire Zone
17	Utility Output (Group B Code)	35	Follow AC Status

[038] - [062] For Future Use **Page 31**

[063] Language Selection for Printer **Page 31**

Default

0 1

01 1st Language (English)

02 2nd Language (French)

[064] For Future Use **Page 31**

[065] Maximum Alarm Reports Per Zone Per Armed Period **Page 31**

Default

0 F

MODE 23 PROGRAMMING WORKSHEETS

[001] Installer's Code **Page 32**

Default

8 0 0 0 _ _ _ _

[002] - [050] For Future Use **Page 32**

[051] - [057] Zone Configuration For Zones 1 through 7 **Page 32**

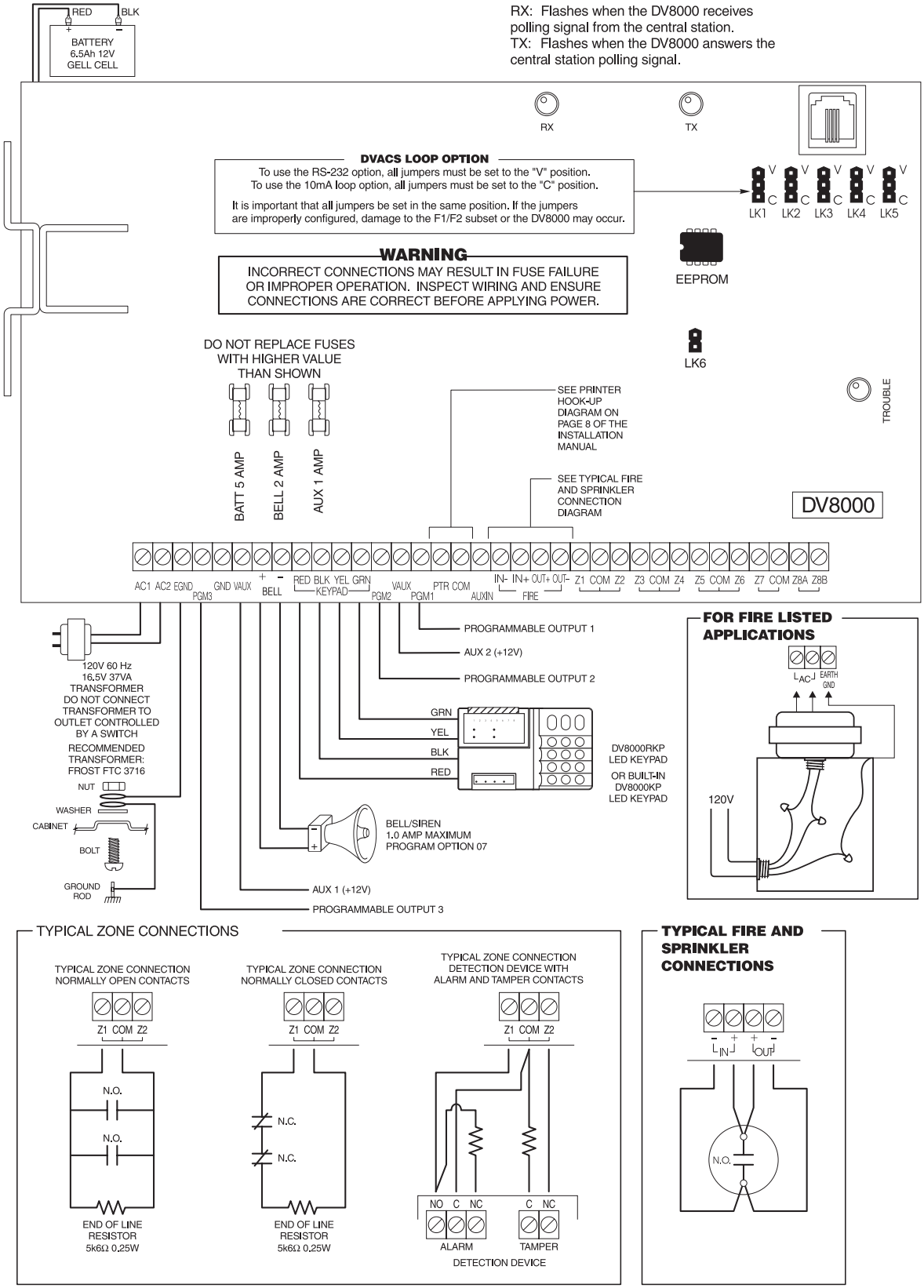
Address	Default		
[051]	0	_	Zone 1
[052]	0	_	Zone 2
[053]	0	_	Zone 3
[054]	0	_	Zone 4
[055]	0	_	Zone 5
[056]	0	_	Zone 6
[057]	0	_	Zone 7

[058] - [400] For Future Use **Page 32**

[401] - [408] Individual Bypass Reporting Codes **Page 32**

Address	Default		
[401]	8 0	_ _	Zone 1
[402]	8 1	_ _	Zone 2
[403]	8 2	_ _	Zone 3
[404]	8 3	_ _	Zone 4
[405]	8 4	_ _	Zone 5
[406]	8 5	_ _	Zone 6
[407]	8 6	_ _	Zone 7
[408]	8 7	_ _	Zone 8

HOOK-UP DIAGRAM



This equipment should be installed in accordance with the National Fire Protection Association Standard 74 (National Fire Protection Association, Battery March Park, Quincy MA 02269).

Use Philips 6-32 3/8" self-tapping screws (Sur-Gard part number HWPT638R) to secure cabinet door.

For Fire listed applications the transformer should be mounted inside the cabinet.

Detection devices that require power from the Control Panel should operate over the range of 10.0 to 14.0 VDC.

The DSC BRAVO models are recommended motion detectors.

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

Maximum Humidity: 85% relative humidity

Client Information

Customer _____

Address _____

_____

Phone: _____ Installation Date: _____

Contacts

Name: _____ Phone: _____

Name: _____ Phone: _____

Name: _____ Phone: _____

Control: _____ Version: _____ Account: _____

Receiver Number: _____ Installer's Code: _____

Keypad

[F]ire	ON	OFF	Quick-Arm	ON	OFF
[A]uxiliary	ON	OFF	Auto-Arm	ON	OFF
[P]anic	ON	OFF	Auto-Disarm	ON	OFF

Installer Lockout

Installer Lockout ON OFF

Alarm Zones

Zone	Type	Label	Protected Area
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
5	_____	_____	_____
6	_____	_____	_____
7	_____	_____	_____
8	_____	_____	_____

Trouble Zones

Zone	Type	Label	Protected Area
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
5	_____	_____	_____
6	_____	_____	_____
7	_____	_____	_____
8	_____	_____	_____

Access Codes

Code	Type	Assigned To:
1	_____	_____
2	_____	_____
3	_____	_____
4	_____	_____
5	_____	_____
6	_____	_____
7	_____	_____
8	_____	_____
9	_____	_____
10	_____	_____
11	_____	_____
12	_____	_____
13	_____	_____
14	_____	_____
15	_____	_____
16	_____	_____

NOTES

LIMITED WARRANTY

Sur-Gard Ltd. warrants that for a period of twelve months from the date of purchase, the product shall be free from defects in materials and workmanship under normal use and that in fulfilment of any breach of such warranty, Sur-Gard Ltd. will, at its option, repair or replace the defective equipment upon return of the equipment to its repair depot. This warranty applies only to defects in parts and workmanship and not to damage incurred in shipping or handling, or damage due to causes beyond the control of Sur-Gard Ltd., such as lightning, excessive voltage, mechanical shock, water damage, or damage arising out of abuse, alteration or improper application of the equipment.

The foregoing warranty shall apply only to the original buyer, and is and shall be in lieu of any and all other warranties, whether expressed or implied and of all other obligations or liabilities on the part of Sur-Gard Ltd. Sur-Gard Ltd. neither assumes nor authorizes any other person purporting to act on its behalf to modify or to change this warranty, nor to assume for it any other warranty or liability concerning this product.

WARNING

Sur-Gard Security Systems Ltd. recommends that the entire system be completely tested on regular basis. However, despite frequent testing, and due to, but not limited to, criminal tampering or electrical disruption, it is possible for this product to fail to perform as expected.

**DVACS is a registered trade mark of Electro Arts Limited and covers a wide variety of products. Full DVACS compatability applies only when the Sur-Gard equipment is connected to the RS-232 port of a DVACS F1F2-List 3 (or a DVACS F1F2-List 1) subset which is connected to a DVACS HUB-324 (or DVACS HUB-308) card.*

401 Magnetic Drive, Units 24-28
Downsview, Ontario Canada M3J 3H9
Tel: (416) 665-4494
Fax: (416) 665-4222
Toll Free: 1-800-418-7618
www.sur-gard.com

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