Penta

XL SERIES

INSTALLATION MANUAL

Electronics Line

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Introduction

This manual is designed to help you with the installation process for the Penta XL series of control panels. We strongly urge you to read this manual, in its entirety, before beginning the installation process so that you can best understand all that these security systems have to offer your customers. This manual is not intended for end user use. End users are encouraged to read the user manual provided with the system. If you have any questions concerning any of the procedures described in this manual please contact Electronics Line 3000 at (+972-3) 918-1333.

Catalog Number: ZI0291C (7/05) – Version 3.00

1.1: Specifications

Power Input	Secondary:	15VAC, 22-30VA transformer
	Battery backup:	12VDC/3.2Ah
Power Output	Auxiliary power:	13.5 - 14.0V (AC operated) 12.0V Nominal (Battery operated)
	Bell/siren output:	13.5 - 14.0V (AC operated) 12.0V Nominal (Battery operated)
Zones	4 (Penta XL) or 8 (Penta Plus XL) Security zones supervised by 2.2K ¼W end of line resistors 1 tamper/ ON/OFF keyswitch zone	
Communications	Accounts: 1 Tel. Numbers: 4 (Primary, Duplicate, Backup, RP Callback)	
RP Event Log	Up to 60 events max. (viewable using the RP software only)	
Keypads	Up to 3, individually addressed. 3 user initiated distress keys Current draw: 100mA max. for each keypad, 200mA max. if three keypads are installed	
User Codes	6 (1 master code, 3 standard user codes, 1 duress code and 1 installer code) Number of digits per user code: 4	
Operating Temperature	0° to 50°C	

1.2: Zones

The Penta XL series of control panels includes security zones plus one tamper zone which can be defined for use with an ON/OFF keyswitch. The security zones are fully programmable and supervised by end of line resistors. The Penta XL series offers a number of zone response types, including a dedicated fire zone, to suit a wide range of installations.

You can program each burglary zone to activate the siren/bell when tripped or to generate a silent alarm in which only a message is sent to the central station. The following is a summary of the functional characteristics of each zone response type:

Perimeter Zone
Perimeter zones instantly generate an alarm when opened.

Suggested Use: Magnetic contacts or detectors protecting the doors and windows which are never used to enter the premises.

Perimeter Zone With Delay
This zone type starts the entry delay when opened, allowing the user time to disarm the system.

Suggested Use: Magnetic contacts or detectors protecting the doors commonly used to enter or leave the premises.

Conditional Zone
If a perimeter zone with delay is opened first, conditional zones do not generate an alarm when opened during the entry delay. If a conditional zone is opened first, an alarm is generated instantly.

Suggested Use: Detectors protecting the area in which a keypad has been installed or the area crossed in order to reach the keypad.

Interior Zone
Interior zones are automatically bypassed when the system is armed using the 'Stay' command ✳, **9**.

Suggested Use: Detectors protecting the interior areas in which the user requires unrestricted movement when 'Stay' arming. For example bedrooms, bathrooms and interior offices.

24hr Zone
24hr zones always generate an alarm when opened whether the system is armed or disarmed.

Suggested Use: Panic buttons, glassbreak detectors and areas which require 24 hour protection.

Fast Loop Perimeter Zone
This zone is a perimeter zone with a 50ms loop response time (compared to 150ms for all other zone types).

Suggested Use: Shock sensors used to detect attempts to breach the exterior of a protected area.

Fire Zone
You can define Zone 1 as a dedicated fire zone. This zone is active 24 hours a day, regardless of whether the system is armed or disarmed. The control panel verifies any alarm received from this zone in the event of a fire. When the zone is tripped, the panel opens a one-minute time window. During this time, the zone must be tripped again to generate a fire alarm. If this one-minute period expires without a further detection, the control panel disregards the first detection. The Fire zone generates an audible alarm with a pulsing bell pattern.

Suggested Use: Four-wire smoke detectors used to alert in the event of a fire.

1.3: Telephone Communication

The Penta XL series of control panels allow for up to three telephone numbers (Primary, Duplicate and Backup) to be programmed into the system. These telephone numbers are dedicated for use in central station communications or with the 'Follow-me' feature. An additional number is available for use in conjunction with the RP callback feature. Up to 16 digits can be programmed for each telephone number. The Penta XL series offers a number of communication options and supports either pulse or DTMF dialing.

Central Station Communication

The control panel's on-board dialer uses the following protocols for central station communication:

- Contact ID
- 10 BPS 4/2 no parity

Follow-me

The 'Follow-me' feature informs the user that events have occurred within their system. When an event occurs, the control panel dials the user's telephone number and sounds two tones. After hearing the two tones, pressing # on the telephone sounds additional tones to indicate exactly which type of alarm has occurred. The style of tones indicates the type of alarm generated.

1 tone	= *Alarm from zone 1*	**5 tones**	= *Alarm from zone 5*[*]
2 tones	= *Alarm from zone 2*	**6 tones**	= *Alarm from zone 6*[*]
3 tones	= *Alarm from zone 3*	**7 tones**	= *Alarm from zone 7*[*]
4 tones	= *Alarm from zone 4*	**8 tones**	= *Alarm from zone 8*[*]

1 long tone = *F key alarm or alarm from Fire zone*

2 long tones = *E or P key alarms, zone or keypad tamper*

After the alarm tones have sounded, pressing # on the telephone either causes the control panel to hang up or sound another set of alarm tones if additional alarms have occurred.

Note: Electronics Line 3000 recommends using a telephone unit with Continuous DTMF mode. If only Burst mode is available it may be necessary to press more than once. If using the Follow-me feature, program the relevant event codes with any value greater than 00.

Voice Message (3601)

The 3601 is an add-on module that enables you to record a short message. In the event of an alarm, the control panel dials the user's telephone number and this message is played back. Pressing 3, 6, 9 or # on the telephone acknowledges that the message has been received.

1.4: Remote Programming

The remote programming software (RP) enables programming and operation from a PC. The software provides a comprehensive interface to the Penta XL series of control panels, facilitating and cutting down the time taken in programming the system. RP access is gained using a four digit code programmed at address 81. Without this code all remote programming and operation is restricted.

Answering Machine Override

Answering machine override enables the control panel to distinguish between regular incoming calls and a communication attempt by the RP software. An RP call is identified by the control panel as a sequence of two calls within a 30-second time window.

1. The control panel does not answer the first incoming call.
2. The control panel opens a 30-second time window from the moment the telephone stops ringing.
3. The control panel answers after 1 ring and RP communication is established.

This method enables the panel to share the same telephone line with answering machines and fax machines.

RP Callback

RP call back is a toll-saver feature that makes remote programming more cost-effective. When the remote programmer contacts the control panel, the panel hangs up and calls the telephone number programmed at address 80.

[*] These zones are only relevant to Penta Plus XL.

RP Event Log

The Penta XL series of control panels includes an event log that can be viewed using the RP software. The log records up to 60 time/date stamped events and uses the FIFO (First In, First Out) method whereby the oldest events are automatically erased by new events when the event log is full.

For the event log to function correctly, it is important to set the control panel's real-time clock on installing the system.

To set the real-time clock:

1. Connect to the control panel using the RP software.
2. From the Communications menu, choose Monitor; the Monitor window opens.
3. Set the current date and time in the fields provided.
4. Click Download Time/Date.

Note: After the control panel has been powered down, the real-time clock must be set again as described in the above procedure.

After connecting to the control panel using the RP software, you can upload, view, print and clear the event log.

To upload the log:

- From the Communications menu, choose Log, Upload; the log is uploaded and the View Log window opens.

To view the log:

- From the Communications menu, choose Log, View; the View log window opens displaying the last uploaded log.

To print the log:

1. From the Communications menu, choose Log, View ; the View log window opens.
2. Click Print.

   Click Preview to view the printed version of the log on the screen before printing.

To clear the log:

- From the Communications menu, choose Log, Clear.

Chapter Two: Installation

2.1: Parts and Options

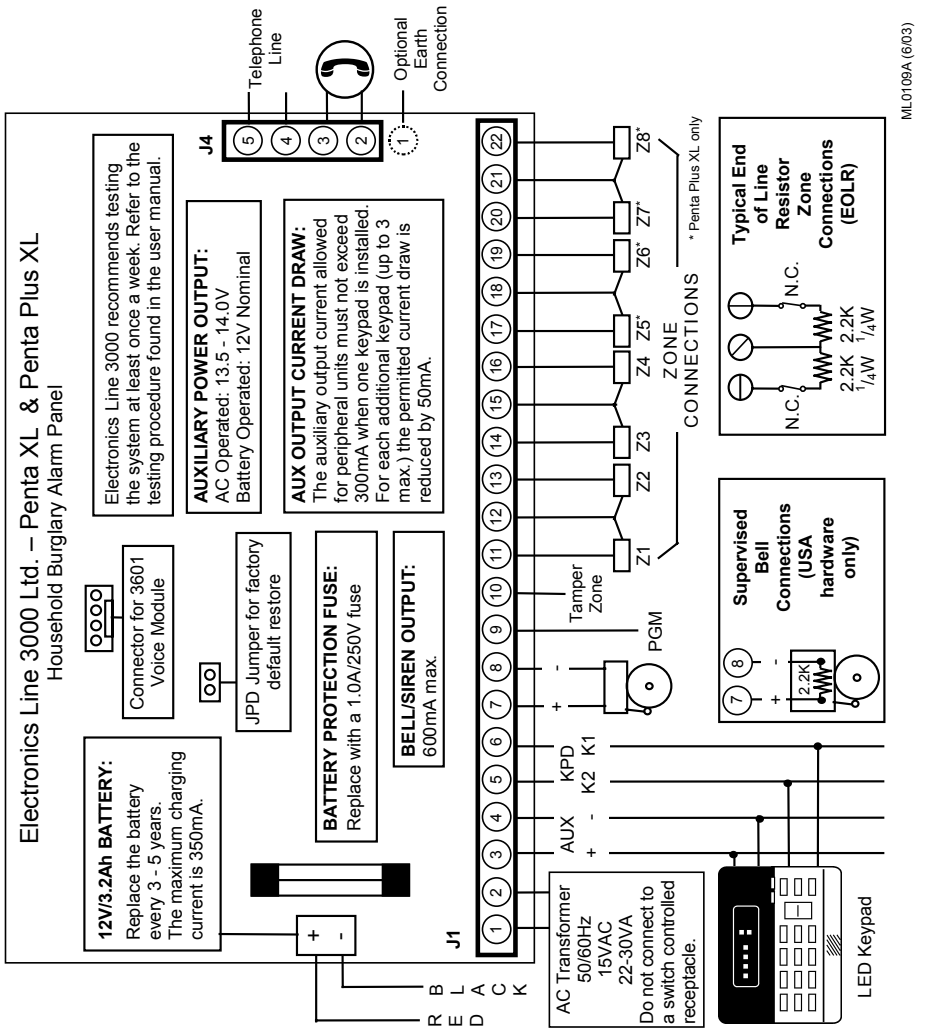
Standard Parts

Penta XL or Penta Plus XL household burglary alarm control panel	1
3104 or 3104 Plus LED keypad	1
2.2KΩ ¼W resistors	5 or 9
6 x ¼ screws	4
Mounting studs	4
PCB support	1
Installation manual	1
User manual	1

Optional Parts

3104 LED keypad (Penta XL)
3104 Plus LED keypad (Penta Plus XL)
3601 voice message module
Remote Programmer up/downloading software
3911 remote programming device
230 - 15VAC transformer
Cabinet tamper protection switch

2.2: Wiring Diagram



2.3: Terminal Connections

15-16.5VAC Input

(J1) Terminals 1 & 2: Connect a 15VAC transformer rated at 22-30VA, using 18 AWG wire.

Auxiliary Power Output

(J1) Terminals 3(+), 4(-): The auxiliary power output connections supply power to keypads and peripheral units such as detectors and other powered sensors.

Keypad Data Bus Connections

(J1) Terminals 5 & 6: Connect up to three LED keypads to terminals 5 (K2), and 6 (K1). Make sure that the wires are connected to the corresponding terminals on the keypad – *see 2.4: Mounting the Keypad.*

Bell Power Output

(J1) Terminals 7(+), 8(-): Connect these terminals to supply power to the bell. The bell power output supplies AUX power, rated at 600mA max.

Bell Supervision (USA hardware only)

The bell connections must be terminated by a 2.2K ¼W resistor as shown in Figure 2.1.

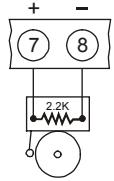


Figure 2.1: Bell Supervision Connections

PGM Programmable Output

(J1) Terminal 9: The PGM output switches to ground when activated, enabling the connection of additional system status indicators. Connect the PGM output as shown in the Figure 2.2.

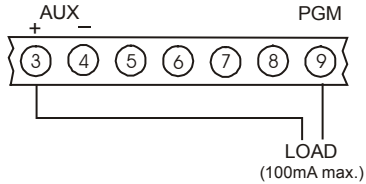


Figure 2.2: PGM Output Connections

Tamper Zone/Keyswitch Connections

(J1) Terminal 10: Connect a tamper switch or ON/OFF keyswitch to terminals 10(+) and 12(-).

Note: If neither the tamper zone nor keyswitch are used, short terminal 10 to 12 and define this zone as Tamper Zone at Address 01.

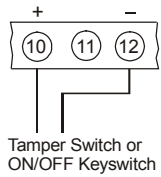


Figure 2.3: Tamper Zone/ Keyswitch Connections

Zone Connections

(J1) Terminals 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21 & 22:

ZONE 1: Terminals 11(+) & 12(-)
ZONE 2: Terminals 13(+) & 12(-)
ZONE 3: Terminals 14(+) & 15(-)
ZONE 4: Terminals 16(+) & 15(-)
ZONE 5: Terminals 17(+) & 18(-)
ZONE 6: Terminals 19(+) & 18(-)
ZONE 7: Terminals 20(+) & 21(-)
ZONE 8: Terminals 22(+) & 21(-)

Fire Zone Connections

When Zone 1 is defined as Fire, connect four-wire smoke detectors as shown below in Figure 2.4.

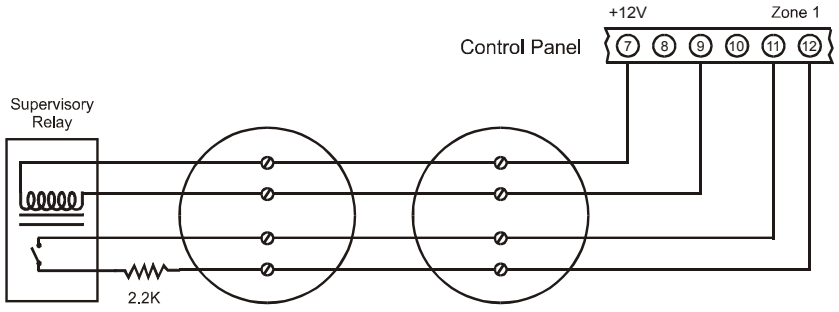


Figure 2.4: Four-wire Smoke Detector Connections (Zone 1)

Telephone Line

(J4) Terminals 1, 2, 3, 4 & 5: Connect the telephone line using standard Telco wires (minimum 26 AWG) as follows:

1 - Optional Earth, 2 - Home Tip, 3 - Home Ring, 4 - Telco Tip and 5 - Telco Ring

2.4: Mounting the Keypad

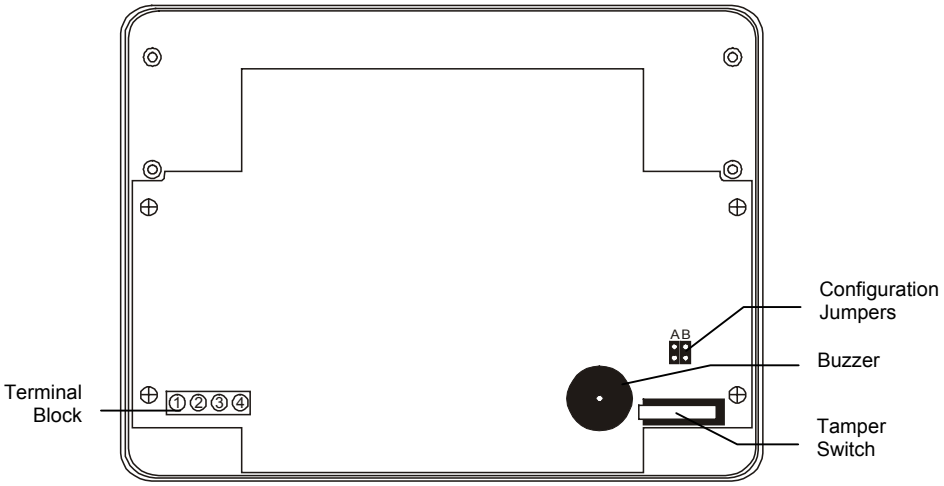


Figure 2.5: 3104 Plus LED Keypad (cover removed)

You can connect up to 3 individually addressed LED keypads to the control panel.

To mount the keypad:

1. Separate the front and back cover of the keypad by pressing the locking tabs, situated at the bottom of the keypad, with a small flathead screwdriver.
2. Pull the keypad wires through the opening in the back cover nearest the terminal block and mount the back cover to the wall.
3. Define the keypad address by configuring jumpers A & B according to the following diagram.

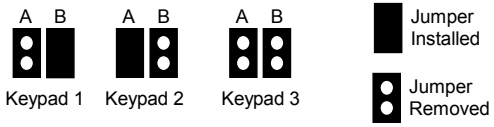


Figure 2.6: Keypad Jumper Configuration

4. Connect the keypad to the control panel according to the following diagram.

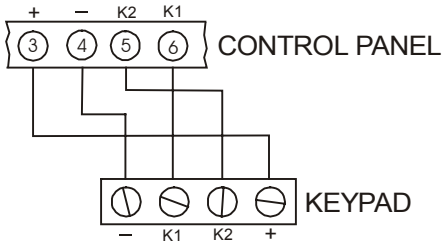


Figure 2.7: Keypad Connections

5. Reassemble the front and back cover of the keypad.

2.5: Turning on the System

Once all of the systems components are properly connected to their destination terminals, you are ready to turn the system on. To avoid the risk of electrical shock or damage to the control panel, make sure that both the AC supply and the battery are connected properly before plugging in the system. If you experience any difficulties in applying power to the unit, please contact Electronics Line 3000's Technical Support Department. The panel is supplied with a default program that includes typical programming data which means that minimum programming is required for typical installations.

To turn on the system:

1. Install the JPD jumper located on the control panel board.
2. Reapply power and wait for 10 seconds; the keypad beeps to indicate the end of the 10 second period.
3. Disconnect both the AC and battery power supply.
4. Remove the JPD jumper.
5. Reapply power and wait for 10 seconds; the keypad beeps to indicate that the default program has been restored.

The default settings can be reset at any time by disconnnecting the power supply and repeating the above procedure. ***Note: Resetting the default settings automatically clears all of the event logs (Emergency/Trouble, Zone Alarm and RP event logs).***

3.1: General

Using any one of the three LED keypads that can be installed with the system, you can perform all operation and programming functions. This section offers a complete explanation of the keypad functions and of the LED display, incorporating a summary of command codes used in system operation.

3.2: Keypad Layout

The following diagram shows the keypad layout for the 3104 Plus keypad for use with the Penta Plus XL control panel. The layout of the 3104 keypad, supported by Penta XL control panels, is identical except for the number of zone indicators on the LED display.

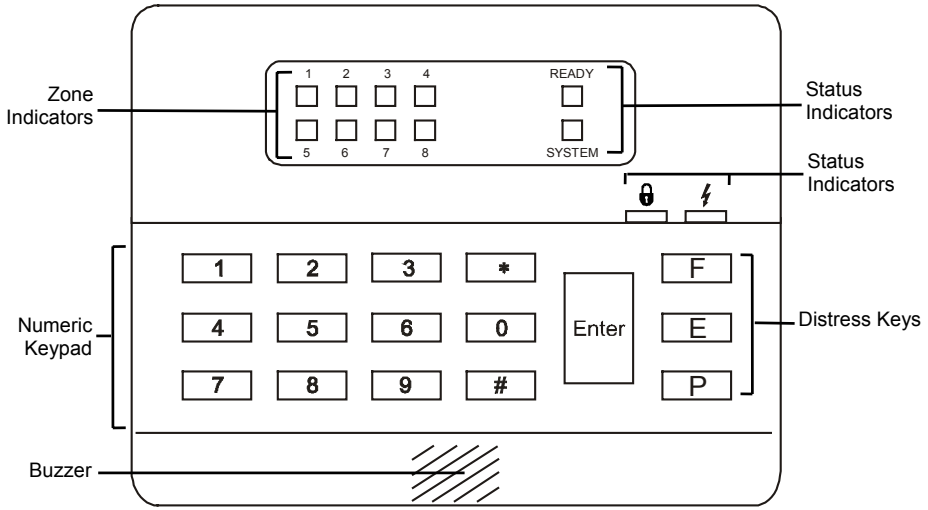


Figure 3.1: 3104 Plus Keypad Layout

The numeric keypad enables you to operate and program the system. Additionally, three distress keys enable the user to send one of three individual distress signals to the central station - see 3.5: Distress Keys for further information.

LED Display

Zone Indicators: The zone indicator LEDs display zone status. The corresponding LED lights up if a zone is open. If a zone is bypassed the corresponding LED flashes. If an alarm occurs when the system is armed, the corresponding LED flashes until the system is disarmed.

READY: The Ready LED lights up to indicate that there are no open zones or tamper conditions and the system is ready to be armed. The Ready LED is turned off to indicate that the system is not ready to be armed.

SYSTEM: The System LED flashes to indicate that new events have been recorded in the Emergency/Trouble or Zone Alarm event logs and when displaying additional system information such as programming mode or bypass mode.

ARMED: The Armed LED lights to indicate the system is armed or in programming mode and flashes during the exit delay.

POWER: The Power LED lights up when both AC & battery power are OK, flashes when the battery is low & AC power is OK, and goes out in the event of AC failure.

3.3: Command Codes

To execute a command, press the '✻' button followed by the corresponding command number. In certain cases, you are required to enter a valid user code.

The following is a summary of the command codes used in system operation.

✻0	*Quick Arm*	**✻5 + (User Code 1)**	*Program User Codes*
✻1 + (User Code)	*Bypass Mode*	**✻6**	*Zone Chime*
✻2	*Emergency/ Trouble Event Log*	**✻7 + (Installer Code)**	*Programming Mode*
✻3	*Zone Alarm Event Log*	**✻8 + (User Code)**	*Forced Arming*
✻41	*Bell/LED Test*	**✻9 + (User Code)**	*Stay Arming*
✻42 + (User Code 1)	*Walk Test*	**ENTER 1 + (User Code 1)**	*Stop Communications**

* Available only if enabled in programming (Address 02).

3.4: Arming/Disarming

The following section explains the various arming and disarming methods.

Arming

When all zones are secured, you can arm the system normally. Arming the system sends a message to the central station identifying which user performed the operation.

To arm the system:

1. Check that all zones are closed; the Ready LED lights up to indicate that the system is ready to be armed.
2. Enter a valid user code; the keypad beeps until the end of the exit delay.

Forced Arming

Forced arming enables you to arm the system with open zones. Electronics Line 3000 recommends waiting until all of the zones are secured and the system can be armed normally.

Note: If zones are still not secured after the exit delay has ended, an alarm will be generated.

To force arm the system:

1. Press ✻, **8**.
2. Enter a valid user code; the keypad beeps until the end of the exit delay.

Quick Arming
This feature enables you to arm the system without a valid user code. Quick arming the system transmits an "Armed by User 1" message to the central station.

To "Quick" arm the system:

1. Check that all zones are closed; the Ready LED lights up to indicate that the system is ready to be armed.
2. Press ∗, **0**; the keypad beeps until the end of the exit delay.

Stay Arming
This feature only arms perimeter zones – i.e. Perimeter, Perimeter with Delay and Fast Loop Perimeter zones. This allows the user to stay within the protected area while the system is armed.

To "Stay" arm the system:

1. Check that all perimeter zones are closed.
2. Press ∗, **9**.
3. Enter a valid user code; the keypad beeps until the end of the exit delay.

Immediate Arming
Immediate arming allows system arming without an entry/exit delay. Pressing ∗ during the exit delay or when the system is armed cancels both the exit and entry delay times.

Disarming
You can disarm the system by entering a valid user code during the entry delay. If an error is made when entering the code, press '#' and enter the code again. When the code is accepted, the Armed LED and the pulsed delay tone are turned off. If the correct code is not entered by the end of the delay time, an alarm will be generated.

Keyswitch Arming/Disarming
The system can be armed and disarmed using an ON/OFF keyswitch. The keyswitch has two operation modes.

- Latching – closing the keyswitch arms the system, opening disarms the system.
- Momentary – opening and closing the keyswitch either arms or disarms the system.

3.5: Distress Keys

In the case of an emergency, 3 types of alarms can be generated by pressing and holding down the desired distress key for more than 2 seconds. These alarms will send the relevant distress codes to the central station. The distress keys are as follows:

F	**FIRE:** Sounds the fire bell, sends the 'Fire' event code to the central station (address 25) and registers in the Emergency/Trouble and RP event logs.
E	**EMERGENCY:** Sends the 'Emergency' event code to the central station (address 26), sounds the siren (if programmed at address 01) and registers in the Emergency/Trouble and RP event logs.
P	**POLICE:** Sends the 'Police' event code to the central station (address 24), sounds the siren (if programmed at address 01) and registers in the Emergency/Trouble and RP event logs.

3.6: User Codes

The control panel supports four user codes, a duress code and an installer code. Each of these codes are four digits long. Of the four user codes, only User Code 1 (default 1111) has authorization to modify other user codes and the duress code. The installer's code (default 1234) is the only user code which grants access to the programming parameters and is programmable at address 83.

To program user codes 1-4:

1. Press ∗, **5**.
2. Enter User Code 1; the Armed and System LEDs flash and the zone LEDs indicate the programming status of each user code as follows:

   Off: *Not Programmed*
   On: *Programmed*
   Flashing: *Currently Being Programmed*

3. Enter the number of the code to be changed (1-4); the requested zone LED flashes.
4. Enter the new user code; the LED stops flashing.
5. Enter the next code to be changed or press **#** to exit.

   Note: If the new code is identical to an existing user code, an error tone will be sounded and the new code will not be accepted.

To erase a user code:

1. Press ∗, **5**.
2. Enter User Code 1.
3. Enter the number of the code to be erased (1-4); the requested zone LED flashes.
4. Enter ∗, ∗, ∗, ∗; the LED stops flashing and the code is erased.
5. Enter the next code to be erased or press **#** to exit.

   Note: Do not erase User Code 1! Erasing this code denies the user the ability to program user codes. If User Code 1 is accidentally erased, reset the default program as described in 2.5: Turning on the System. Alternatively, you can re-program User Code 1 using the RP software.

Duress Code

In the event that the user is forced to disarm the system and/or cancel the bell, entering the duress code will send a silent alarm to the central station (the event code is programmed at Address 47).

To program the duress code:

1. Press ∗, **5**.
2. Enter User Code 1.
3. Press **5**; the Ready LED flashes.
4. Enter a new duress code or ∗, ∗, ∗, ∗ to erase the existing code.
5. Press **#** to exit.

3.7: Zone Bypassing/Unbypassing

A bypassed zone is ignored by the system and will not generate an alarm when tripped.

To bypass a zone:

1. Press ✻, **1**.
2. Enter a valid user code; the System LED flashes and the LEDs of any currently bypassed zones light up.
3. Enter the number of the zone to be bypassed; the corresponding zone LED is lit.
4. Press **#** to exit bypass mode; the bypassed zones flash.

To unbypass a zone:

1. Press ✻, 1.
2. Enter a valid user code; the System LED flashes and the LEDs of any currently bypassed zones light up.
3. Enter the number of the zone to be unbypassed; the corresponding zone LED turns off.
4. Press # to exit bypass mode.

Note: Disarming the system automatically unbypasses all bypassed zones.

3.8: Event Logs

Two event logs can be viewed locally using the LED keypad. Both logs record events that the system has undergone since the last arming. If any events have been recorded in either event log, the System LED flashes until the relevant event log has been viewed. In the event that a trouble condition still exists, the System LED continues to flash until the condition has been remedied.

Note: In addition to the event logs that can be viewed from the LED keypad, a detailed event log may be uploaded using the RP software. For further information, see 1.4: Remote Programming.

Emergency/Trouble Event Log

Zone tamper, keypad tamper, keypad trouble or any of the three distress key alarms are registered in the Emergency/Trouble event log.

To view the Emergency/Trouble event log:

1. Press ✻, **2**; the various trouble conditions are indicated by the zone LEDs. The following is a summary of the trouble condition that each LED indicates when lit:

   1 - *Tamper or Keypad Trouble* **2** - *Alarm from P key*

   3 - *Alarm from F key* **4** - *Alarm from E key*

2. Press # to exit the event log.

   Note: The event logs can only be viewed when the system is disarmed.

Zone Alarm Event Log

The Zone Alarm event log displays the zones from which an alarm was generated since the system was last armed.

To view the Zone Alarm event log:

1. Press ✻, **3**; an alarm from a specific zone is indicated by the corresponding zone LED.
2. Press **#** to exit the event log.

Both logs are automatically reset when the system is next armed (at the end of the exit delay).

3.9: Additional Operations

Bell Cancel

To cancel the bell:

- Enter a valid user code or turn the keyswitch as if disarming the system.

Bell/LED Test

To perform a bell/LED test:

- Press ✻, **4**, **1**; the siren is sounded and all LEDs on the keypad are lit for a period of two seconds.

Walk Test

Walk test mode enables you to test peripheral detection devices, such as PIR detectors and magnetic door contacts. In this mode, when a zone is opened or closed, the keypad chimes.

To perform a walk test:

1. Press ✻, **4**, **2**.
2. Enter User Code 1; the Ready, System, Power and Armed LEDs flash to indicate that the system is in Walk Test mode. To end Walk Test mode, press **#**. *This mode is automatically terminated after 4 minutes.*

   Note: The Tamper Zone always generates an alarm if opened, even if the system is in Walk Test mode.

Stop Communications

To cancel the transmission of all unsent messages:

1. Press **ENTER**, **1**.
2. Enter User Code 1; all pending messages are cleared and all communications stop immediately.

   Note: The Stop Communications function is available only if enabled in programming (Address 02).

Zone Chime On/Off

The keypad can be set to chime when Perimeter With Delay or Perimeter zones are opened or closed. This feature only functions when the system is disarmed.

To toggle the zone chime On or Off:

- Press ✻, **6** while the system is disarmed.

The keypad will sound a continuous tone to indicate “Zone Chime ON” or two short beeps to indicate “Zone Chime OFF”.

Keypad Backlight On/Off

To toggle the backlight of any keypad On or Off:

- Press and hold down **#** for more than 2 seconds.

4.1: General

The Penta XL series of control panels may be programmed using either the LED keypad or from a PC using the Remote Programmer (RP) software. If using the Remote Programmer, refer to the instructions provided with the software.

4.2: Guide to Programming

The control panel has 84 parameter addresses allowing precise custom configuration of the system to the needs of each installation. The options for each address are listed in section 4.3: Programming Parameters. All of the programming parameters are stored in the panel's non-volatile EEPROM memory which stores the data in the event that power is disconnected. Before programming directly after installing the system, restore the default parameters as explained in 2.5: Turning on the System.

To program the system:

1. Make certain that the system is disarmed.
2. Press ∗, **7**.
3. Enter the Installer Code (the default installer code is **1234**); the Armed LED lights up and the System LED flashes.
4. Enter the two-digit parameter number to be programmed; the Ready LED lights up and the Armed LED turns off.
5. Enter a new value or press **#** to cancel; if the value has been successfully changed, the keypad sounds an acknowledge tone to confirm and the Ready LED turns off.
6. Press **#** to exit programming mode.

Note: The default Installer Code should be changed immediately after installing the system.

Hexadecimal Data

Some of the programming parameters require a hexadecimal value to be entered. To enter hexadecimal data, use the following combination of digits for hexadecimal numbers greater than 9.

∗, **0** = *A* ∗, **1** = *B* ∗, **2** = *C* ∗, **3** = *D* ∗, **4** = *E* ∗, **5** = *F*

Keypad Tones

The keypad sounds a series of tones to aid programming. These tones offer the installer status indication during programming. The following is a summary of the keypad programming tones.

Short Beep:	*Confirmation of each keystroke*
Long Beep:	*Acknowledgment of a successful entry*
Low Beeps:	*Error, illegal entry*
Continuous Beeps:	*Entry/Exit delay*

4.3: Programming Parameters

The following section lists the programming parameters which are used to configure the system. For a listing of the default parameters please contact your local dealer.

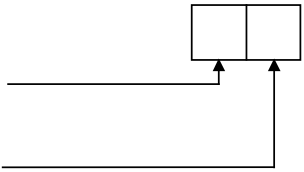
Address 00: Communication Attempts

The control panel's attempts to communicate with the central station are organized in rounds. A communication round is a set of dialing attempts. If the panel does not succeed in sending the event message to the primary number within this number of attempts, the backup number is dialed the same number of times. A new round will begin 30 minutes after the last dialing attempt. The number of communication rounds is defined in the first digit of this address. The number of dialing attempts in each round is defined in the second digit.

Note: To Disable Communications, enter 00 at this address.

First Digit: **Communication Rounds**
Enter a value between 1 – F
(F = 15 communication rounds)

Second Digit: **Dialing Attempts**
Enter a value between 1 – F



Address 01: Miscellaneous

This address offers a number of options for the system's setup. Enter 5 digits at this address according to the following:

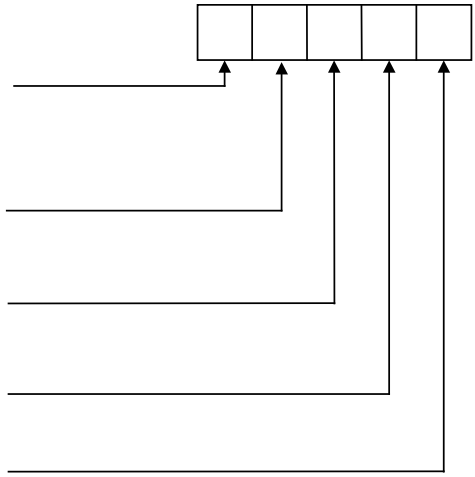
First Digit: *Keypads*
0 - No Keypads
1 - One Keypad
2 - Two Keypads
3 - Three Keypads

Second Digit: *Keyswitch Function*
0 - Latching
1 - Momentary

Third Digit: *Tamper Zone Definition*
0 - Arm/Disarm Keyswitch
1 - Tamper Zone

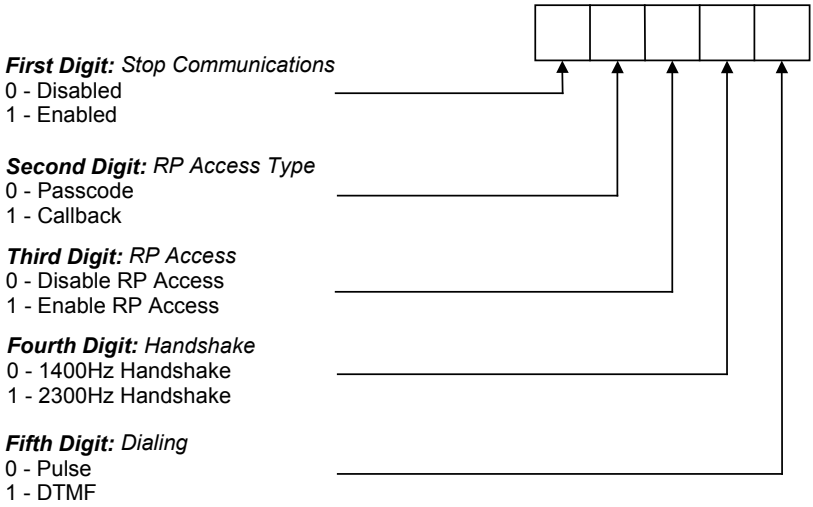
Fourth Digit: *E Key Alarm*
0 - Audible
1 - Silent

Fifth Digit: *P Key Alarm*
0 - Audible
1 - Silent



Address 02: Communication Options

This address consists of the various options used in communication and/or remote programming. Enter five digits according to the following.



Zone Definitions

You can define one of seven response types for each zone. Each zone type can be programmed as silent or audible, except for Fire which is always audible. A silent zone will not activate a siren or bell when the zone is tripped.

00 - Perimeter zone with delay (Silent)
10 - Perimeter zone with delay (Audible)

01 - Perimeter zone (Silent)
11 - Perimeter zone (Audible)

02 - Conditional zone (Silent)
12 - Conditional zone(Audible)

03 - Interior zone (Silent)
13 - Interior zone (Audible)

04 - 24hr zone (Silent)
14 - 24hr zone (Audible)

05 - Fast Loop Perimeter Zone (Silent)
15 - Fast Loop Perimeter Zone (Audible)

16 - Fire zone (Audible – *can only be assigned to Zone 1*)

Address 03: Zone 1 Definition

Address 04: Zone 2 Definition

Address 05: Zone 3 Definition

Address 06: Zone 4 Definition

Address 07: Zone 5 Definition*

Address 08: Zone 6 Definition*

Address 09: Zone 7 Definition*

Address 10: Zone 8 Definition*

Address 11: Entry Delay Time

The entry delay timer determines the amount of time the user has to disarm the system before an alarm is activated. The entry delay is only initiated if the premises are entered through a zone defined as 'perimeter with delay'. Enter a hexadecimal value between 1 and 255 seconds at this address using the hexadecimal conversion chart in Appendix A.

Address 12: Exit Delay Time

The amount of time the user has to leave the premises after arming is determined by the exit delay timer. An open zone will not activate an alarm during this period. Enter a hexadecimal value between 1 and 255 seconds at this address using the hexadecimal conversion chart in Appendix A.

Address 13: Bell Cut-Off Time

The bell cut-off is the period of time that the bell or siren will be activated after an alarm has occurred. Enter a value between 1 and 5 minutes at this address.

Address 14: PGM Options

The PGM (Programmable Output) can be used for indication of certain status or trouble conditions. When the PGM output is activated terminal 9 switches to ground. Choose the PGM output setting from the following table.

Value	Name	Activated By	Deactivated By
00	PGM Disabled	----------	
01	Arm/Disarm	System Armed	System Disarmed
02	Entry/Exit	Entry/Exit Tone Follower	Entry/Exit Tone Follower
04	Communication	System in Communication	End of Communication
08	AC Loss	AC Loss	AC Restore
10	Bell Follower	Bell Follower	Bell Follower
20	Duress	Duress Code	(deactivated after 2 seconds)
40	Alarm	System in alarm	Arm/Disarm/ Bell Cancel/ View log†
80	Arm/Disarm Tone	Momentary Activation (Arm – 1 Tone; Disarm – 2 Tones)	

Note: If using Zone 1 as a dedicated fire zone, the PGM output is used to reset smoke detector power and cannot be used in any of the modes listed above.

* This address is only relevant to Penta Plus XL.

† To deactivate the PGM output, the relevant log must be viewed. This does not apply to the RP event log.

Event Codes

All events can be programmed to transmit a two digit event code message to the central station. These codes are usually assigned by the central station - consult the central station operator/owner for a listing of the different event codes. To disable an event code program the code as 00.

Address 15: Alarm from Zone 1‡
Address 16: Alarm from Zone 2‡
Address 17: Alarm from Zone 3‡
Address 18: Alarm from Zone 4‡
Address 19: Alarm from Zone 5*‡
Address 20: Alarm from Zone 6*‡
Address 21: Alarm from Zone 7*‡
Address 22: Alarm from Zone 8*‡
Address 23: Alarm from Tamper Zone‡
Address 24: [P] Key Alarm‡
Address 25: [F] Key Alarm‡
Address 26: [E] Key Alarm‡
Address 27: Zone 1 Restore
Address 28: Zone 2 Restore
Address 29: Zone 3 Restore
Address 30: Zone 4 Restore
Address 31: Zone 5 Restore*
Address 32: Zone 6 Restore*
Address 33: Zone 7 Restore*
Address 34: Zone 8 Restore*
Address 35: Tamper Zone Restore
Address 36: [P] Key Alarm restore
Address 37: [F] Key Alarm restore
Address 38: [E] Key Alarm restore
Address 39: System Armed (User Code 1)
Address 40: System Armed (User Code 2)
Address 41: System Armed (User Code 3)
Address 42: System Armed (User Code 4)
Address 43: System Disarmed (User Code 1)

‡ When using the Follow-me feature, program these addresses with a value greater than 00.
* This address is relevant only to Penta Plus XL.

Address 44: System Disarmed (User Code 2)
Address 45: System Disarmed (User Code 3)
Address 46: System Disarmed (User Code 4)
Address 47: System Disarmed (Duress Code)
Address 48: Low Battery
Address 49: AC Loss
Address 50: Bell Trouble[**]
Address 51: Keypad Trouble
Address 52: Low Battery Restore
Address 53: AC Loss Restore
Address 54: Bell Trouble Restore[**]
Address 55: Keypad Trouble Restore
Address 56: Bell Cancel
Address 57: Periodic Test
Address 58: Bypass Zone 1
Address 59: Bypass Zone 2
Address 60: Bypass Zone 3
Address 61: Bypass Zone 4
Address 62: Bypass Zone 5[*]
Address 63: Bypass Zone 6[*]
Address 64: Bypass Zone 7[*]
Address 65: Bypass Zone 8[*]
Address 66: Unbypass Zone 1
Address 67: Unbypass Zone 2
Address 68: Unbypass Zone 3
Address 69: Unbypass Zone 4
Address 70: Unbypass Zone 5[*]
Address 71: Unbypass Zone 6[*]
Address 72: Unbypass Zone 7[*]
Address 73: Unbypass Zone 8[*]

[*] This address is relevant only to Penta Plus XL.
[**] USA hardware versions only.

Communication Protocols

You can program an individual communication protocol for each of the three telephone numbers used for central station communications.

00 - 10 BPS 4/2 no parity

01 - Follow Me

02 - Contact ID

03 - Voice Follow Me (3601)

Note: If a 3601 Voice Message Module is connected to the control panel, do not program the communication protocol as "01 – Follow Me" .

Address 74: Primary Communication Protocol

Address 75: Duplicate Communication Protocol

Address 76: Backup Communication Protocol

Telephone numbers

Address 77: Primary Telephone Number

The Primary 1 telephone number is the first number that is dialed when an event occurs. You can enter a maximum of 16 digits at this address. To add a two-second pause, enter B (∗, 1). To switch from pulse to DTMF dialing enter E (∗, 4). To add a "∗", enter (∗, ∗). To add a "#", enter (∗, #). These additional digits are included in the 16 digit total. Press ENTER after you program the last digit of the telephone number.

Address 78: Duplicate Telephone Number

The Duplicate telephone number enables the control panel to report events to more than one central station. The Duplicate telephone number is programmed in the same way as the Primary telephone number (address 77).

Address 79: Backup Telephone Number

If the panel fails to communicate with either the Primary or Duplicate numbers within a communication round, the Backup telephone number is dialed. The Backup telephone number is programmed in the same way as the Primary telephone number (address 77).

Address 80: RP Callback Telephone Number

Remote programming communication can be established using two methods, passcode and callback (see address 02, second digit). If RP callback is selected the panel receives a call from the remote programmer, hangs up and calls back using the telephone number programmed at this address. The RP callback telephone number is programmed in the same way as the Primary telephone number (address 77).

Note: To disable a telephone number, enter the appropriate address and press ENTER. It is not possible to program a backup number unless a primary number has been programmed.

Address 81: RP Access Code

This 4-digit code grants access to the remote programmer.

Note: Do not enter Hex digits at this address.

Address 82: Account Number

When an event code is sent, the central station receives an account number to identify the customer. Enter a 4-digit account number at this address.

Address 83: Installer Code

The installer code is a 4-digit code which grants access to programming mode. The default for this code (1234) should be changed immediately after installing the system.

Note: Do not enter Hex digits at this address.

Address 84: Periodic Test Interval

The periodic test is an event message the control panel sends to notify the central station that its reporting capability is fully functional – *see address 57*. You can program the system to send a periodic test message according to a chosen time interval. Enter a value between 01-99 hours or 00 for a periodic test interval of 30 minutes. To disable the periodic test, enter 00 at address 57.

Note: Do not enter Hex digits at this address.

4.4: Periodic Test Timer Reset

After power is applied to the control panel, the panel waits for the periodic test interval to expire before sending the first transmission of the periodic test message. For example, if the periodic test interval (address 84) is programmed as 8 hours, the first test will be sent 8 hours after power up.

If the periodic test interval is programmed as 24 hours, the first periodic test will be sent 12 hours after powering up the system (enabling these tests to be sent during the night).

Periodic test timer reset is an option that enables you to reset the periodic test timer without the need to power up the system. When the periodic test timer is reset, the first test message is sent immediately to the central station.

To reset the periodic test timer:

1. Press ✻, **7** to enter programming mode.
2. Enter the Installer Code; the Armed LED lights up and the System LED flashes.
3. Enter **99**; the periodic test timer is reset and the periodic test code is sent to the central station.
4. Press **#** to exit programming mode.

Appendix A: Hexadecimal Conversion Chart

The following is a decimal to hexadecimal conversion chart to be used as an aid in programming:

Dec	Hex	Dec	Hex	Dec	Hex	Dec	Hex	Dec	Hex	Dec	Hex	Dec	Hex	Dec	Hex
00	00	32	20	64	40	96	60	128	80	160	A0	192	C0	224	E0
01	01	33	21	65	41	97	61	129	81	161	A1	193	C1	225	E1
02	02	34	22	66	42	98	62	130	82	162	A2	194	C2	226	E2
03	03	35	23	67	43	99	63	131	83	163	A3	195	C3	227	E3
04	04	36	24	68	44	100	64	132	84	164	A4	196	C4	228	E4
05	05	37	25	69	45	101	65	133	85	165	A5	197	C5	229	E5
06	06	38	26	70	46	102	66	134	86	166	A6	198	C6	230	E6
07	07	39	27	71	47	103	67	135	87	167	A7	199	C7	231	E7
08	08	40	28	72	48	104	68	136	88	168	A8	200	C8	232	E8
09	09	41	29	73	49	105	69	137	89	169	A9	201	C9	233	E9
10	0A	42	2A	74	4A	106	6A	138	8A	170	AA	202	CA	234	EA
11	0B	43	2B	75	4B	107	6B	139	8B	171	AB	203	CB	235	EB
12	0C	44	2C	76	4C	108	6C	140	8C	172	AC	204	CC	236	EC
13	0D	45	2D	77	4D	109	6D	141	8D	173	AD	205	CD	237	ED
14	0E	46	2E	78	4E	110	6E	142	8E	174	AE	206	CE	238	EE
15	0F	47	2F	79	4F	111	6F	143	8F	175	AF	207	CF	239	EF
16	10	48	30	80	50	112	70	144	90	176	B0	208	D0	240	F0
17	11	49	31	81	51	113	71	145	91	177	B1	209	D1	241	F1
18	12	50	32	82	52	114	72	146	92	178	B2	210	D2	242	F2
19	13	51	33	83	53	115	73	147	93	179	B3	211	D3	243	F3
20	14	52	34	84	54	116	74	148	94	180	B4	212	D4	244	F4
21	15	53	35	85	55	117	75	149	95	181	B5	213	D5	245	F5
22	16	54	36	86	56	118	76	150	96	182	B6	214	D6	246	F6
23	17	55	37	87	57	119	77	151	97	183	B7	215	D7	247	F7
24	18	56	38	88	58	120	78	152	98	184	B8	216	D8	248	F8
25	19	57	39	89	59	121	79	153	99	185	B9	217	D9	249	F9
26	1A	58	3A	90	5A	122	7A	154	9A	186	BA	218	DA	250	FA
27	1B	59	3B	91	5B	123	7B	155	9B	187	BB	219	DB	251	FB
28	1C	60	3C	92	5C	124	7C	156	9C	188	BC	220	DC	252	FC
29	1D	61	3D	93	5D	125	7D	157	9D	189	BD	221	DD	253	FD
30	1E	62	3E	94	5E	126	7E	158	9E	190	BE	222	DE	254	FE
31	1F	63	3F	95	5F	127	7F	159	9F	191	BF	223	DF	255	FF

Appendix B: Glossary of Terms

24hr Zone — A zone which is always active regardless of whether the system is armed or disarmed. Opening a 24hr zone always generates an alarm.

A

AC Loss — The disruption of AC power. In the event of AC loss, the panel waits five minutes before sending an event message.

Answering Machine Override — The method used in RP communication allowing the control panel to share a telephone line with answering machines, fax machines etc.

Armed — The state during which the control panel is fully activated. In most cases, when the system is armed, opening a zone generates an alarm.

Audible Alarm — An alarm that sounds the bell/siren.

Auxiliary Power Output — The Auxiliary Power Output supplies power to all peripheral units (keypads, detectors etc.)

B

Backup Telephone Number — The telephone number dialed if the panel fails to communicate with either the Primary or Duplicate telephone numbers.

Beep — A tone sounded by the keypad. Four different kinds of beep are sounded for keystroke confirmation, successful entry acknowledgement, illegal entry and exit/entry delay.

Bell Cut-Off — The programmable amount of time the bell is sounded when an audible zone generates an alarm.

Bell/LED Test — An operation that checks if the bell/siren and keypad LEDs are functional. The bell test sounds the bell and lights all the LEDs on the keypad for a period of two seconds.

Bypassed Zone — A zone which is ignored by the system. No alarm is generated from a bypassed zone even when the system is armed.

C

Callback — A toll saver feature which cuts the cost of remote programming. When a call is received from the remote programmer the panel hangs up and calls the RP Callback telephone number.

Central Station — The monitoring service the panel alerts when an alarm is generated.

Chime — *see Zone Chime*

Conditional Zone — A conditional zone does not generate an alarm if opened during the entry delay.

D

Default Settings — The factory programmed parameters designed to facilitate programming.

Delay — The exit/entry delay times are programmed to allow the user time to arm or disarm the system without generating an alarm.

Disarmed — When the system is disarmed, only 24hr zones, the Fire zone and distress keys are capable of generating an alarm.

Distress Keys — The three distress keys (F, E and P) generate different types of alarm when pressed and held down for two seconds.

Duplicate Telephone Number — The telephone number that is dialed after the Primary telephone number in order to send a duplicate report.

Duress Code — Entering the duress code generates a silent alarm to indicate that the user is being forced to disarm the system or cancel the bell.

E

Entry Delay — *See Delay*

Event Code — The two-digit code transmitted to the central station to indicate that an event has occurred.

Event Log — A viewable record of events that have occurred within the system.

Exit Delay — *See Delay*

F

Fire Zone — A dedicated zone type for verified fire applications. Tripping this zone generates an audible alarm with a distinctive bell pattern.

Follow-Me — A method of monitoring the system without connecting to a central station based monitoring service. In the event of an alarm, the panel dials the follow-me number and sounds a number of tones via the telephone.

Forced Arming — Arming before the system is ready. If zones are still open when the exit delay has expired an alarm will be generated.

I

Immediate Arming — Arming the system without an exit/entry delay.

Installer Code — The code which grants access to programming mode.

Interior Zone — A zone that is not armed during Stay arming

K

Keypad Trouble — Condition brought about by improper definition of keypads or if a keypad has been disconnected.

Keyswitch — Peripheral device connected to the tamper zone for arming and disarming the system by the turn of a key.

L

Latching — One of the two keyswitch function modes. A latching keyswitch toggles the system to arm or disarm by one turn of the key (On or Off=Arm/Disarm).

Log — *See Event Log*

Low Battery — Condition brought about if the voltage supplied to the backup battery deteriorates to approximately 10.5V or less.

M

Magnetic Contacts — Peripheral device mounted on doors incorporating a magnet that closes a circuit. Opening the door breaks the circuit and opens the zone to generate an alarm.

Master Code — The only user code with the ability to program other user codes.

Momentary — One of the two keyswitch function modes. A momentary keyswitch toggles the system to arm or disarm by turning the key on and off. (On & Off=Arm or Disarm).

P

Perimeter Zone — Perimeter zones are armed during both regular and Stay arming and can be defined with or without an exit delay.

Periodic Test — The periodic test event code is sent to the central station every 24 hours to indicate that the system is functional.

PGM Output — Programmable output for connecting additional system status indicators.

Primary Telephone Number	The first telephone number dialed when an event occurs.
	Q
Quick Arming	Arming the system without the need for a valid user code.
	R
Ready	The state in which all zones are closed and the system is ready to be armed.
Remote Programmer	The software used for programming the system using a PC from a remote location or on-site.
Restore	The restoral of a trouble condition to its normal state. For example, if AC power is reconnected, an AC Loss Restore event code is sent to the central station.
RP	Abbreviation of Remote Programmer
RP Access Code	The code that grants access to the remote programmer. The RP Access Code prevents the system being sabotaged using unauthorized remote programming.
RP Event Log	A detailed record of events that have occurred within the system that can be uploaded using the RP software.
	S
Silent Alarm	An alarm that does not activate the bell/siren when generated.
Stay Arming	Arming the perimeter of the system while allowing free movement in the interior zones.
Stop Communications	An operation that clears all communication buffers and stops all communications immediately.
	T
Tamper Zone	The ninth zone which can be connected to a tamper switch protecting the control panel by generating an alarm when the metal housing is opened. Alternately, the tamper zone can be defined for use with an On/Off keyswitch.
Tone	*See Beep*
	U
Unbypass	The restoral of a bypassed zone to its original state.
User Code	A code that grants access to certain operational capabilities such as arming and disarming the system.
	V
Voice Message	A short message played by the 3601 module to announce an alarm over the telephone line.
	W
Walk Test	A mode that enables detection devices to be tested without generating an alarm.
	Z
Zone	The physical and logical connection of detection devices to the control panel.
Zone Chime	The tone sounded by a keypad on opening a perimeter zone when the system is disarmed.