XL-2T

Hookup and Installation Instructions

FIRE BURGLARY INSTRUMENTS INC.

Subsidiary of Pittway Corp.
149 Eileen Way, Syosset, NY 11791

N9833 7/97

THANK YOU for your purchase of the FBII XL-2T.

The purpose of the manual is to give you a brief overview of the XL-2T control panel, and provide instructions for installing a basic system. FBII is always available to serve YOU. Our SALES and TECHNICAL SUPPORT staff are available to assist you in any way possible.

FOR SALES, REPAIRS
OR
TECHNICAL SERVICE,
CALL TOLL FREE:
(800) 645-5430
(8:00AM - 8:00PM) EST.

Before you call Technical Service, be sure you:

- Check the wiring diagram and verify your connections.
- Check all fuses.
- Assure that the transformer and backup battery voltages are supplying the proper voltage levels.
- Verify your programming information.
- Read this manual thoroughly.
- Consult the Trouble shooting Section of this Manual.
- Note the proper model number of this product, and the version level (if known) along with any documentation that came with the product.
- Have your company name and telephone number ready.

This information will allow us to service you more quickly and effectively. Please, remember to BE PATIENT while waiting on the telephone; your call will be answered as soon as possible.

FOR YOUR CONVENIENCE, a System Planning Worksheet and a Programming Worksheet is included at the back of this manual. These can be removed to help you record account information.

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XL-2T TO XL-2 COMPARISON

The XL-2T is an enhanced version of the XL-2 control panel. Some new features have been added and others have been modified. The following is a quick comparison.

XL-2T NEW & MODIFIED FEATURES	***XL-2 SIMILAR FEATURES***
7 Zones: all fully programmable including Key switch (program quests. #17-23)	7 Zones: 6 fully programmable + 1 prog. only as Panic or Key switch
Zone Loop Types (EOL, NO or NC) (program quests. #17-23)	EOL Loop Type Only
Audible or Silent by Zone (program quests. #17-23)	Audible Only
15 User Codes & Door Strike User capability	6 User Codes: NO Door Strike User Capability
Unattended Download (Installer Mode 8)	Standard Download Only
On-line Download (Installer Mode 9)	Standard Download Only
Additional Formats: FBI Superfast, Point ID (program quests. #7 & 8)	NONE
Dual CS Reporting (program quests. #7 & 8)	Single CS Reporting
Built-in Siren Driver or Conventional Bell Output (program quest. #12)	Conventional Bell Output Only
Cross Zoning to prevent False Alarms (program quests. #17-23)	NONE
2 Entry Timers (program quest. #11)	1 Entry Timer
Swinger Shutdown - Bell and Dialer Lockout (program quest. #04)	Bell Lockout
Call Waiting /PBX Dialing - 1 digit entry (program quest. #01 & #02)	Multiple digits required
78 Event History (Alarms, Troubles, Low Battery - not cleared by user code (Installer Mode 4)	Alarm Memory (cleared by user code)
2 Programmable Output Triggers Terminal P1 **(program quest. #14)**	NONE
CS Test Timer - 1 Hour, 1 Day, 7 Day, 27 Day, 60 Day or 90 Day by Time, Event or Both (program quest. #10)	CS Test Timer: 1 Day Only by Event
Recent Close Code (program quest. #35)	NONE
End User Chime ON/OFF Toggle (Quick Com. # 6)	NONE
Exit Error Warning (always enabled)	NONE
Quick Exit (program quest. #9)	NONE
Arm While Faulted (program quest. #12)	NONE
Restore Follows Bell or Loop (program quest. #07)	Restore Follows Bell Only
System Stabilization on Power Up - to Eliminate Motion Detector False Alarms	NONE
Fast Loop Response (10 msec) Option by Zone (program quests. #17-23)	NONE
AC (50/60 HZ) Based System Real Time Clock (program quest. #07)	Software Based System Timing
Bell Supervision - New NFPA 72 Requirement (program quest. #22)	NONE
Stay Mode 40 Sec. Dialer Delay w/Bell & Keypad Sounder Warning for All Zones (program quest. #12)	Stay Mode Entry Delay w/Keypad Sounder Warning for Exit/Entry Zones Only
Auto Arming in Different Modes (program quest. #08)	NONE
LED Display on Entry Zone (always enabled)	Sounder Only
Programmable Dialer Attempts: 1 - 15 (program quest. #09)	Non-programmable 8 Dialer Attempts
LED Extinguish on Keypads (program quest. #12)	NONE
Keypad Tamper/Lockout (program quest. #12)	NONE

XL-2T NEW & MODIFIED FEATURES	*XL-2 SIMILAR FEATURES*
Separate Fire Trouble & Day Trouble Codes (program quest. #32)	Same Code for both Fire Trouble & Day Trouble
Temporal Bell (program quest. #12)	NONE
AC/Low Battery Keypad Sounder Disable (program quest. #12)	NONE
Dial-Tone Detect Dialer (program quest. #13)	Dialer will not detect dial-tone
Fire Zone Type without Verification (program quests. #17-23)	NONE
Interior Follower Zone Type without Stay Arming (program quests. #17-23)	NONE
Chime Trigger (program quest. #14)	NONE
Alarm Reset Trigger (programquest. #14)	NONE

1. INTRODUCTION

The XL-2T Security System is a state of the art microprocessor-based control/communicator; it is a hardwired system. Programming can be performed through the any of the compatible keypads or the system can be uploaded and downloaded remotely using the EZ-Mate PC Downloader Software. In addition, remote control actions (arming, disarming, bypassing, etc.) can be performed by the software. Programming options are stored in non-volatile re-programmable EEPROM memory and that information which has been programmed will not be lost in the event of a complete loss of power. Other features of the XL-2T include:

- 7 Zones (all fully programmable including Key switch)
- 15 User Codes (Ambush, Arm Only & Door Strike Capability)
- Keypad Programming and Remote Programming via PC and Modem
- Upload/Download and remote commands with answering machine override capability
- 3 methods of Uploading/Downloading: PC operator initiated, Unattended Downloading & On-line Downloading
- Optional Built-in 2-Tone siren driver or Conventional Bell Output
- Auto Arming at a specific time of day with capability to arm in either Away, Stay or Instant Modes
- Dual Entry Timers
- 78 Event History Log (Alarms, Troubles, Low Battery, Bypasses, CS Test, Openings & Closings)
- 3 Emergency Keypad Conditions (Panic, Fire & Auxiliary)
- 2 Programmable Trigger Outputs
- Real Time Clock (Displays Time & Date via LCD Keypad) with reminder when clock needs to be set
- CS Test Timer by Event, Time or Both (1 Hour, 1, 7, 27, 60, 90 Days)
- Customer Control of Chime Mode
- Quick Arming, Quick Bypass and Quick Force Arming
- CS Reporting by Zone
- False alarm prevention features: Cross Zone, Exit Error, Recent Close, Swinger Shutdown Cancel Code & System Stabilization during power up
- Arming by Key switch in Away or Stay Modes
- Keypad Tamper/Lockout with optional CS Reporting
- Restore Transmission options: After Loop or After Bell
- Fire Zone Reset through keypad
- Glass Break Reset through keypad
- Bell Test, Low Battery Test, AC Loss and Communications Failure
- Fuse less design eliminates unnecessary service calls
- Input Power: 12 VAC, 20 VA; 12 VDC, 4-7 AH
- Output Power: 12 VDC, 500mA
- Bell Output Power: 12 VDC, 1A

The XL-2T security system is compatible with the following keypads only:

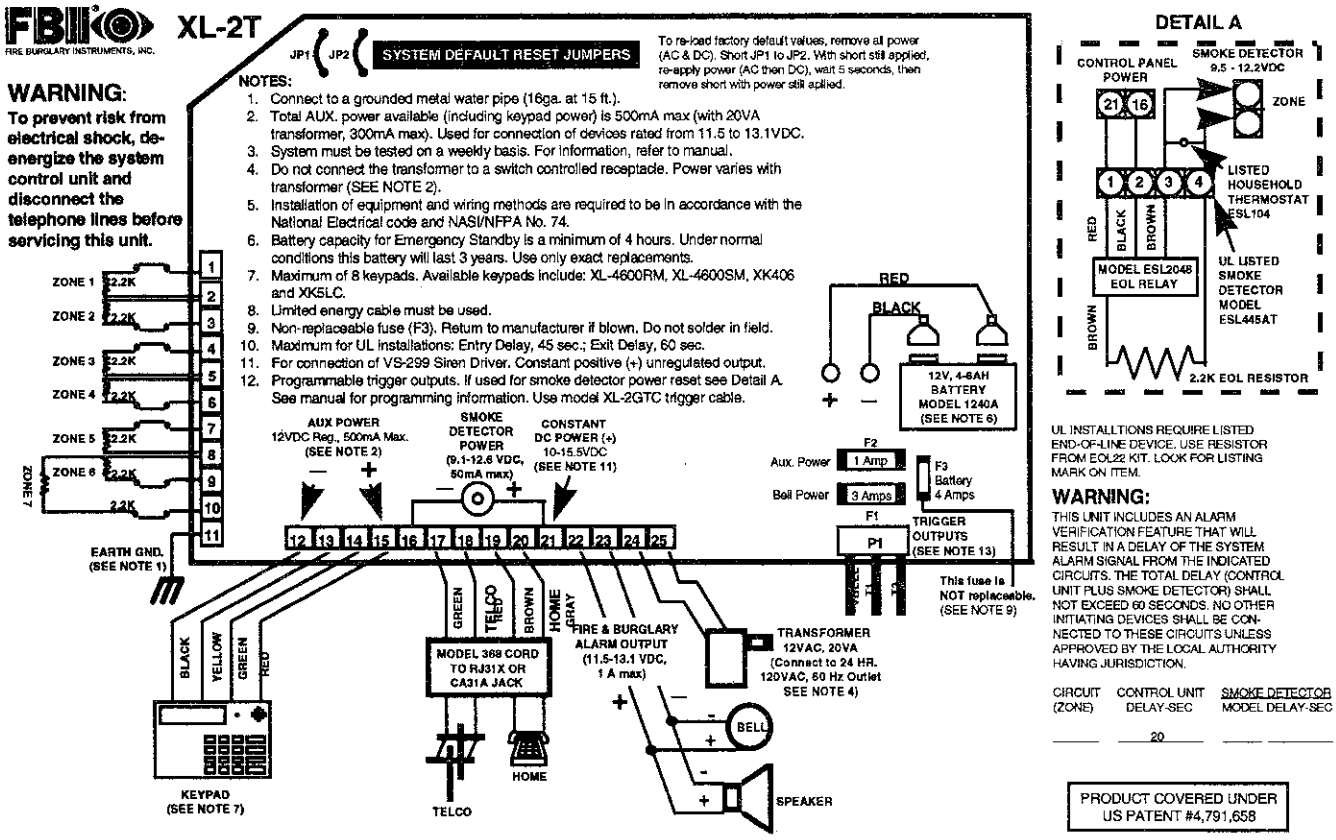
LED STYLE KEYPADS	LCD STYLE KEYPADS
XL-4600RM	7005
XL-4600SM	7005L
XK406	XK-7LC
6615	XK-5LC

NOTE: The systemsupports **either** the LED keypads listed **or** the LCD keypads listed. **Do not use both** types of keypads in a single installation.

2. SYSTEM WIRING AND HOOKUP

2.1. SYSTEM WIRING DIAGRAM

CONNECTIONS FOR HOUSEHOLD FIRE/BURGLAR ALARM SYSTEM (PER UL STANDARDS UL985 AND UL1023)



SYSTEM STABILIZATION MODE: Upon power up of the system and after completion of system programming, IF THE SYSTEM WAS PREVIOUSLY ARMED, all of the lights on the LED keypads will go ON momentarily and the LCD keypads will display STAND BY! momentarily. THE KEYPAD DISPLAY WILL RETURN TO NORMAL. HOWEVER, THE ZONES WILL NOT RESPOND TO ALARM CONDITIONS FOR APPROXIMATELY 2 MINUTES. THIS CAN BE DISABLED BY SIMPLY ENTERING A VALID USER CODE which disarms the system and reduces the power up reset time to approximately 5 SECONDS. The 2 minute interval is used to allow motion detectors (interior zones) to stabilize on power up in order to prevent false alarms.
Upon system power ups, IF THE SYSTEM WAS PREVIOUSLY DISARMED, the power up reset time will be approximately 5 SECONDS.
NOTE: If the total system power is lost, then upon power restoral, the system will return to the previous arming state.

2.2. TERMINAL CONNECTIONS

TERMINALS	DESCRIPTION	
1(+) & 2(-)	Zone 1 (Requires 2.2K EOL resistor)	[Default = DELAY]
3(+) & 2(-)	Zone 2 (Requires 2.2K EOL resistor)	[Default = INTERIOR]
4(+) & 5(-)	Zone 3 (Requires 2.2K EOL resistor)	[Default = PERIMETER]
6(+) & 5(-)	Zone 4 (Requires 2.2K EOL resistor)	[Default = PERIMETER]
7(+) & 8(-)	Zone 5 (Requires 2.2K EOL resistor)	[Default = PERIMETER]
9(+) & 8(-)	Zone 6 (Requires 2.2K EOL resistor)	[Default = PERIMETER]
10(+) & 8(-)	Zone 7 (Requires 2.2K EOL resistor)	[Default = N.O. PANIC]

ZONE INFORMATION:

Normally closed devices may be wired in series and/or normally open devices in parallel with the 2.2k ohm end of line resistor on all zones (Refer to the wiring diagram). The standard loop response time is **280** ms on all zones. Each zone can be programmed for **Fast Response (10 ms)** in programming (see questions #17-23). The factory default values for each zone is listed in the table above, however **any** zone can be programmed for the following types: Delay, Perimeter, Interior, Fire, 24 Hr. Alarm, or 24 Hr. Trouble. Further explanation of the zone types can be found in the System Programming section of this manual. **NOTE:** Loop response is defined as the minimum time required for a fault to trip a zone.

8 & 10

ZONE 7

Defaulted to Normally Open PANIC circuit (no EOL resistor required). This hardwired panic is a 24 hour zone which can be programmed for silent or audible operation. The panic circuit will activate with each violation, therefore a latched device is **not** recommended. A momentary device is recommended. This zone is fully programmable (see question #23, locations 1 & 2).

11

EARTH GROUND:

Connect this grounding lug to a cold water pipe utilizing #18AWG wire at a distance of no greater than 15 ft. Use a non-corrosive metal strap firmly secured to the pipe to which the lead is electrically connected and secured. If the premises pipes terminate in PVC, this terminal **must** be connected to a six(6) foot grounding rod.

12 13 14 15

KEYPADS:

A maximum of 4 keypads, either XL-4600RM, XL-4600SM, 6615, XK406, 7005, 7005L, XK7LC or XK5LC may be wired to these terminals. The connections are as follows; 12 (BLACK = negative), 13 (YELLOW = data in),14 (GREEN = data out) and 15 (RED = positive power). Each keypad draws approximately 30mA. Maximum keypad length is 500 feet using 22 gauge wire. **NOTE:** In some installations, it may be necessary to use shielded wire to prevent radio frequency interference.

23 (-) & 21 (+)

REGULATED POWER (11.5 - 13.1VDC):

The total regulated output power for motion detectors and other external devices is 500mA at 11.8 - 12.5V for residential applications, or 12.0 - 12.5V for commercial applications, with less than 100 mVPP ripple. The total regulated output capacity of the XL-2T includes the power available from these terminals (21 & 23) as well as the power used by the keypads and smoke detectors. Therefore, to determine the total power available from these terminals subtract the power consumed by the keypads and smoke detectors. See Auxiliary Device Current Draw Worksheet.

TRIGGER #1 OUTPUT:

15 (+) 16 (-)

SMOKE DETECTOR POWER: This system will accept 9.5 - 12VDC four(4) wire smoke detectors only. Approximately 50mA of current is available at these terminals for powering all detectors and an E.O.L. relay FBII model 620. For UL installations see wiring diagram for hookup. **NOTE:** Trigger #1 must be selected for smoke detector power (see program question #14, locations 1 & 2) if you want reset by keypad.

These terminals adhere to the fire verification and reset logic which is explained in the zone types section of this manual. Manual reset of smoke detector power can be accomplished by entering a valid user code after clearing alarm memory or using the asterisk (*) key.

P1: VBELL (+) T1 (-)

TRIGGER #1 OUTPUT: P1-VBELL(+) & P1-T1(-) or terminals 15 & 16 can be used for a trigger #1output. See programming question #14, locations 1 & 2 for valid trigger types. **NOTE:** In order to connect devices to the triggers, use connector XL-2GTC (trigger cable). Unless otherwise specified, the trigger output is normally floating and actively sinks current on activation (switched negative).

17 18 19 20

TELEPHONE LINE:

Connect the model 368 cord as follows; 17(GREEN = Telco Tip), 18(RED = Telco Ring), 19(BROWN= Home Tip), 20(GRAY= Home Ring). Insert the plug into an USOCRJ31X jack (or a CA31A jack for Canadian installations).

The FCC registration number is AE398E-69554 AL-E, and the ringer equivalence is 0.0B. The system should not be connected to party lines, or coin operated phones.

If this control panel will be used for uploading, downloading or remote command applications, the telephone line connected to the control panel *must not* be shared with a fax machine or modem. Furthermore, this device should not be connected to a phone line which has call waiting, unless the call waiting interrupt numbers are programmed into the panel dialing sequence.

21(+)

CONSTANT DC POWER:

This terminal delivers constant regulated 10.0-15.5VDC power for devices requiring a constant power such as VS279. It is connected to a bell fuse (F3). **NOTE:** Constant power for these devices can also be obtained by splicing the RED (+) battery lead with an in-line fuse of 3 Amps.

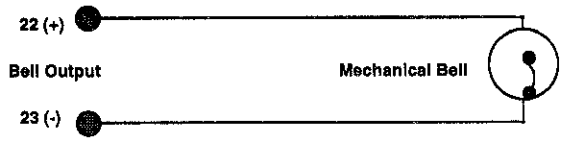
22(+) & 23(-)

BELL OUTPUT:

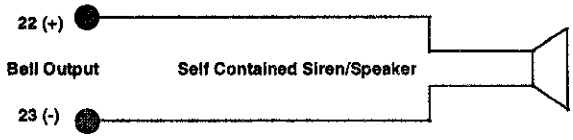
NFPA 72 REQUIREMENT: All the interconnecting pathways (cable, wire, etc.) between the alarm system initiating device (control panel) and the signaling device (bell, speaker, siren, etc.) shall be monitored for an occurrence of an open circuit, which prevents the normal operation of the system. An occurrence of an open circuit shall be indicated by a distinctive trouble signal.

The total output power available for sounding devices is 1 amp at 10.5 - 15.5 VDC for residential applications, or 1 amp at 12.0 - 14.4 VDC for commercial installations (750 mA for UL installations). These terminals will deliver CONSTANT output on BURGLARY, AUDIBLE PANIC and BELL TEST. On a FIRE condition, a PULSED output will be generated. There are separate bell cutoff times programmable for Burglary and Fire conditions within the programming sequence. For UL Household Fire Warning System installations, the speaker is required to be mounted indoors for best audibility. Also, for UL installations, use only one speaker. **NOTE:** Before connecting sounding devices please consult their specifications for proper current draw. Otherwise, the bell fuse (F3) may be blown. An option exists to supervise the bell output terminals if zone 6 is programmed as a fire zone (see program questions #17-23); refer to the following notes:

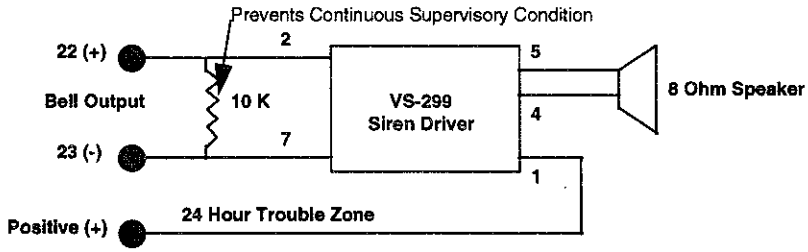
BELL SUPERVISION (Mechanical Bell) - To meet the NFPA 72 requirement **program zone 6 as a Fire Zone (program question #22, locations 1 & 2).** The bell is then supervised for an open circuit (not a short circuit) across the bell output terminals; the keypad will indicate that a Fire Trouble condition has occured and Fire Trouble is reported to the CS if enabled (program question #32, location 3). If the bell is already ringing, the supervision will not take effect until after bell cutoff time. See the diagram on the next page:



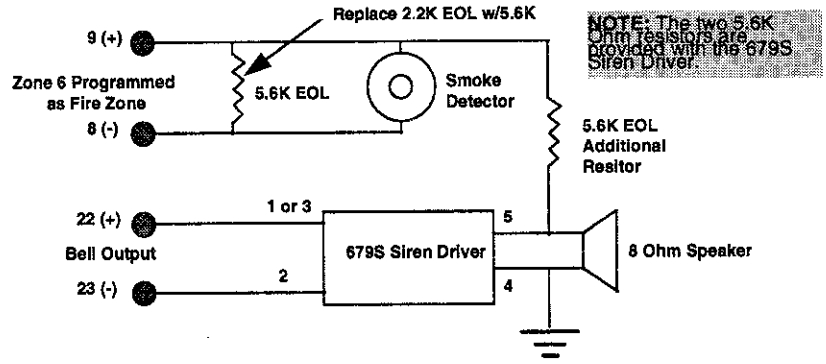
SIREN SUPERVISION (Self Contained Siren/Speaker) - To meet the NFPA 72 requirement **program zone 6 as a Fire Zone (program question #22, location 1).** The siren is then supervised for an open circuit (not a short circuit) across the bell output terminals; the keypad will indicate that a Fire Trouble condition has occured and Fire Trouble is reported to the CS if enabled (program question #32, location 3). If the siren is already sounding, the supervision will not take effect until after bell cutoff time. **NOTE:** Use FBII models ZR-815C, ZR-815EC or ZR-830EC. See the diagram below:



SPEAKER SUPERVISION (VS-299 Siren/Driver) - To supervise a speaker connected to the VS-299 Siren Driver **connect terminal 1 of the VS-299 to the positive terminal of any zone programmed as a 24 Hour Trouble zone (program questions #17 - 23, locations 1 & 2).** The speaker is then supervised for an open circuit across the speaker terminals (4 & 5) of the VS-299 and a code is reported to the CS if enabled (program question #24-27, locations 3 & 4). Also, the connection between the bell output terminals and the VS-299 Siren Driver may be supervised by **programming zone 6 as a Fire Zone (program question #22, locations 1 & 2) and connecting a 10K Ohm, 1/4 W resistor across the bell output terminals to prevent a continuous supervisory condition. See the diagram below:**



SPEAKER SUPERVISION (679S Siren/Driver) - To supervise a speaker connected to the 679S Siren Driver **connect a 5.6K Ohm resistor between terminal 5 of the 679S and terminal 9 (+) of zone 6 programmed as a Fire zone (program question #22, locations 1 & 2).** Replace the 2.2K Ohm EOL resistor on zone 6 with a 5.6K Ohm resistor. The speaker is then supervised for an open circuit (not a short circuit) across the speaker terminals (4 & 5) of the 679S. Also, the connection between the bell output terminals and the 679S Siren Driver will be supervised. If a supervisory occurs, the keypad will indicate that a Fire Trouble condition has occured on zone 6 and Fire Trouble is reported to the CS if enabled (program question #32, location 3). If the siren is already sounding, the supervision will not take effect until after bell cutoff time. See the diagram on the next page:



24 & 25

TRANSFORMER:

Connect the 1240A (12VAC, 20VA) transformer, utilizing 18awg wire at a distance not to exceed 15 feet from the panel, to an **unswitched** 120 VAC outlet.

Do not use any other transformer since this may result in improper operation or damage to the unit.

The AC/LOW BAT LED on the keypad will remain ON while AC power is present. If an AC loss occurs the AC/LOW BAT LED will turn off immediately. If AC remains OFF for 15 minutes, the system will pulse the keypad buzzer and transmit to the central station, if programmed. THE KEYPAD BUZZER CAN BE SILENCED by entry of any valid user code. When AC restores the AC/LOW BAT LED will light immediately, and a restore code will be reported, if programmed.

BACKUP BATTERY:

The RED(+) and BLACK(-) flying leads must be connected to a 12 VDC 4-6AH GELL CELL, to serve as backup power in the event of AC loss.

A battery test occurs approximately every 4.5 minutes. Low battery condition occurs at nominal 11VDC. The keypad AC/LOW BAT LED and buzzer will PULSE SLOWLY when a low battery condition is detected. The system reports this condition to the CS if programmed. Battery restoral will occur WITHIN 4.5 minutes, at the NEXT battery test. THE BUZZER MAY BE SILENCED by entry of any valid user code.

GROUND START:

Ground start capability can be added to the system through addition of the FBII Model 117 module. Consult the 117 Installation Instructions for hookup information. With this device some systems can obtain dialtone where it is not available. At the moment telephone line seizure occurs, the Telco Tip is momentary connected to earth ground to access dial tone. **NOTE**: The 117 module has not been tested for use in UL installations.

P1: VBELL, T1 & T2

TRIGGER OUTPUTS (1 & 2):

The control panel contains two programmable trigger outputs. Trigger #1 terminals are P1-T1(-) and for Trigger #2 P1-T2(-). See programming question #14, locations 1 & 2 for valid trigger types. BY DEFAULT TRIGGER #1 IS ENABLED FOR SMOKE DETECTOR POWER, WHICH CAN ALSO BE OBTAINED FROM TERMINALS 15(+) & 16(-). TRIGGER #2 CANNOT BE SELECTED FOR SMOKE POWER. **NOTE:** In order to connect devices to the triggers use connector XL-2GTC (trigger cable). Unless otherwise specified, the trigger output is normally floating and actively sinks on activation. Connect to terminal P1 VBELL to obtain a POSITIVE reference point. For UL installations, the trigger outputs shall be connected to devices rated to operate over the range from 10.1 - 14.0 VDC at 50 mA.

2.3. AUXILIARY DEVICE CURRENT DRAW WORKSHEET

DEVICE	CURRENT DRAW FOR EACH	NUMBER OF UNITS	TOTAL CURRENT FOR EACH
XL-4600RM Keypad	30mA *		
XL-4600SM Keypad	30mA *		
XK5LC	65mA*		
XK7LC	65mA*		
7005	65mA*		
7005L	65mA*		
6615 Keypad	60mA *		
PIR	**		
Smoke Detector	**		
Glass Break Detector	**		
Other	**		
	**		
TOTAL CURRENT FOR ALL DEVICES= (500mA max.)			

NOTE: * Only applies if device is powered from control terminals 21 (+) & 23 (-).
** If using hardwired devices such as PIRs, smoke detectors, etc., refer to the specifications for that particular device's current draw. If the total current draw exceeds 500mA, then use an additional power supply.

2.4. WIRING INFORMATION FOR KEYPADS & OTHER DEVICES

KEYPADS & OTHER DEVICES

If single or multiple devices are connected to a single 4-wire or 2-wire run ("daisy chained") to the control terminals, determine the current drawn by the unit(s) connected to the single wire run, then refer to the Wiring Run Table below to determine the maximum wire length that can be safely used for each wire size.

In some cases, the total current drawn may result in a value not shown in the table. For example, if you plan to use #22 gauge wire and the total current drawn is 400 mA (a value between 300 mA and 500 mA), the maximum wire length you should use is approximately 65 ft. (a length between 50 and 80 ft.). Other maximum wire lengths for values of current not shown in the table can be calculated in a similar manner.

Maximum wire lengths for a device that is "homerun" to the control can also be determined from the table, based on the current draw of that device alone.

Wiring Run Table For Devices Drawing Power From Terminals 21 (+) & 23 (-)

WIRE SIZE	TOTAL CURRENT DRAWN BY ALL UNITS ON A SINGLE WIRE RUN			
	50 mA or less	100 mA	300 mA	500 mA
#22	500 ft. (152 m.)	250 ft. (76 m.)	80 ft. (24 m.)	50 ft. (15 m.)
#20	750 ft. (228.6 m.)	380 ft. (116 m.)	130 ft. (39.6 m.)	80 ft. (24 m.)
#18	1300 ft. (396 m.)	650 ft. (198 m.)	220 ft. (67 m.)	130 ft. (39.6 m.)
#16	2000 ft. (609.6 m.)	1000 ft. (305 m.)	330 ft. (100.5 m.)	200 ft. (70 m.)

Examples:

1. What is the maximum distance for 1 XL-4600SM keypad drawing 30 mA using # 20 gauge wire?
   Using the table above, the keypad can be placed no greater than 750 ft. away from the panel.

2. What is the maximum distance for 3 keypads (one XL4600SM & two 6615) drawing 150 mA (30mA +60 mA twice) using # 20 gauge wire connected in a single wire run?
   Using the table above, the farthest keypad can be placed no greater than 300 ft. away from the panel.

3. What is the maximum distance for 5 smoke detectors drawing 0.25 mA (5 microA each) using # 22 gauge wire connected in a single wire run?
   Using the table above, the farthest smoke detector can be placed no greater than 500 ft. away from the panel.

3. PC Board Mounting

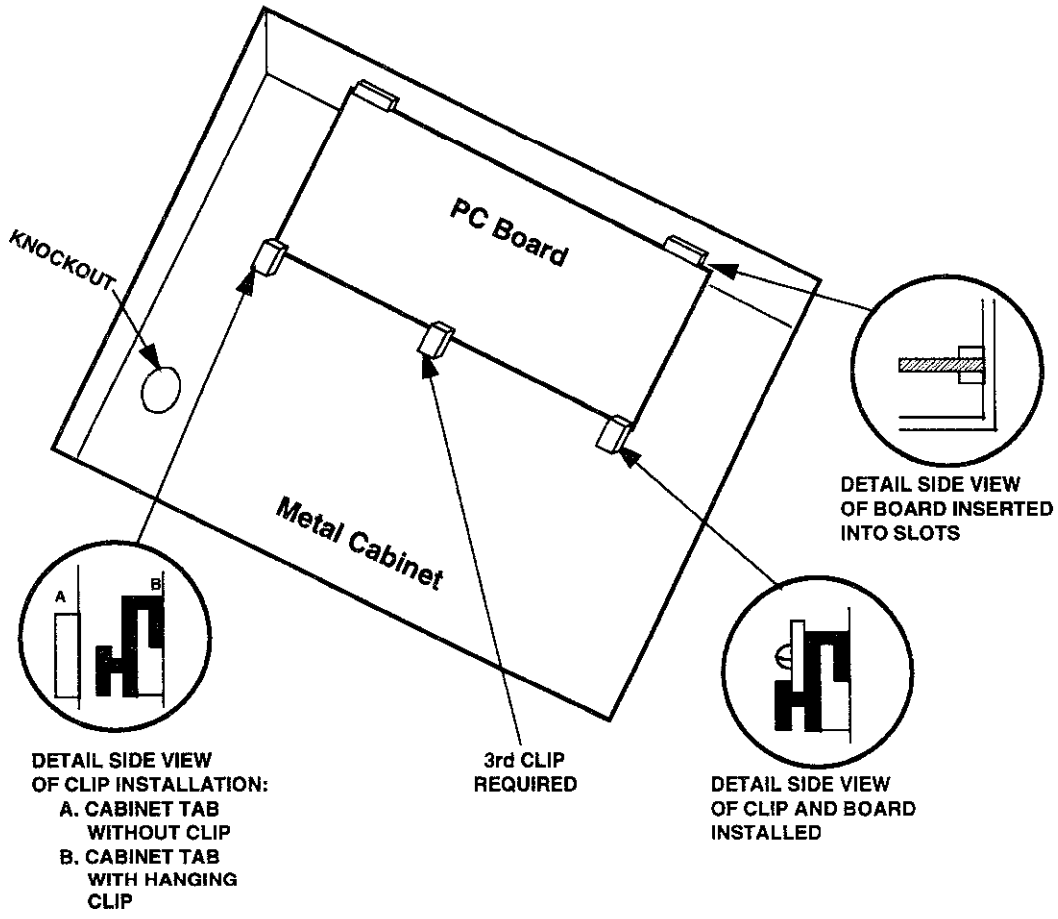
3.1. Mounting the XL-2T PC Board

Before mounting the circuit board, be certain that the appropriate metal knockouts have been removed.
DO NOT ATTEMPT TO REMOVE THE KNOCKOUTS AFTER THE CIRCUIT BOARD HAS BEEN INSTALLED.

1. Hang the three mounting clips on the raised cabinet tabs. Observe proper clip orientation to avoid damage to the clip when mounting screws are tightened and to avoid problems with insertion and removal of the PC board.

2. Insert the top of the circuit board into the slots at the top of the cabinet. Make sure that the board rests in the slots as indicated in the diagram shown below.

3. Swing the base of the board into the mounting clips. Secure the board into the cabinet with the accompanying screws.



NOTE: The front face of the enclosure can be completely removed from the enclosure to gain unrestricted access to the control panel during installation. The front of the enclosure can be removed as follows:

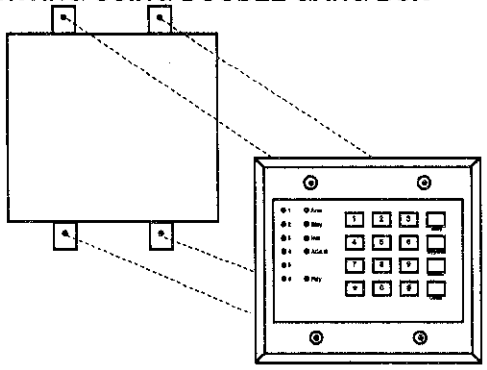
1) Open the enclosure to its fully extended position (approx. 90 degrees)

2) Lift the control panel door and remove the door from the enclosure.

4. KEYPAD MOUNTING

4.1. XL4600RM METAL KEYPAD

FLUSH MOUNTING USING DOUBLE GANG BOX

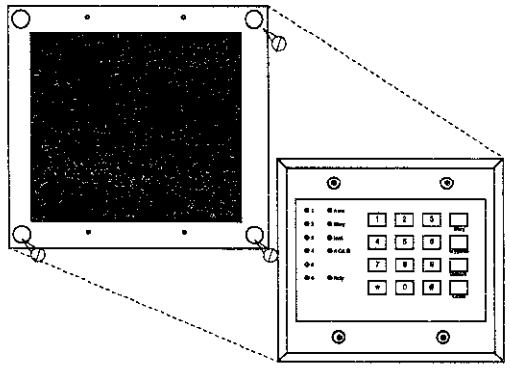


1- Create an opening and mount a standard double gang box.

2- Secure keypad to double gang box as shown in diagram below. **NOTE:** The double gang box should be mounted flush with the wall in order for the keypad screws to fit.

NOTE: For UL installations, mount the XL4600RM to an earth grounded outlet box.

FLUSH MOUNTING WITH MOUNTING RING (Using the XL4600TR)

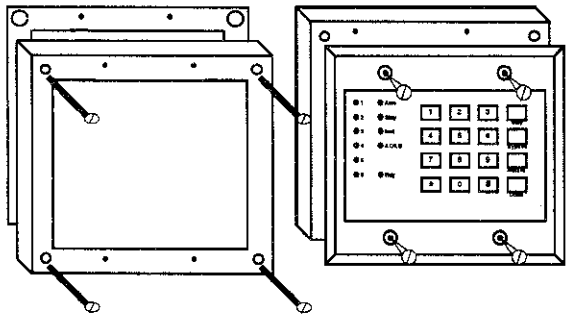


1- Create the desired opening where keypad is to be mounted, using the inside of the mounting ring as a template. **NOTE:** This opening should be made between studs.

2- Secure mounting plate to wall through the four outer holes using suitable mounting hardware (not provided).

3- Connect keypad wiring to control panel and secure the keypad to the mounting ring using the four painted screws provided.

SURFACE MOUNTING (Using optional XL4600RMBX)

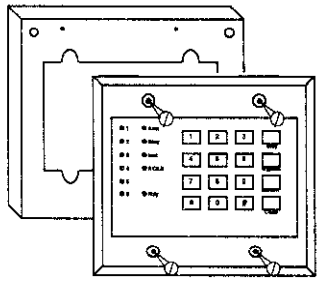


1- Depending on type of installation run the keypad wiring out of the rear, top bottom or sides of the backbox.

2- Attach backbox to wall at desired height

3- Insert XL4600RM keypad into backbox and secure with the four screws provided.

MOUNTING KEYPAD IN CONTROL PANEL ENCLOSURE



1- Remove keypad knockout from front of metal box enclosure as shown.

2- Insert XL4600RM into opening from front of enclosure.

3- Secure keypad to enclosure using the four painted metal screws and nuts provided.

4.2. XL-4600SM KEYPAD

The XL-4600SM Keypad may be surface mounted in the following ways:

A. Directly to a control panel having a keypad cutout on the front of its enclosure.
B. Directly to a single or double gang electrical junction box.
C. Directly to a wall or other surface.

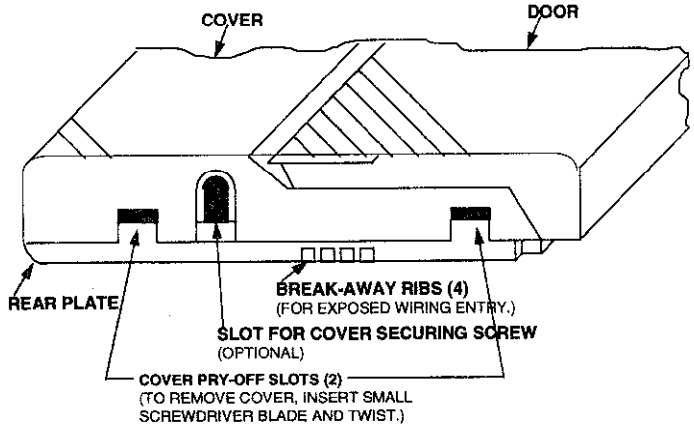


Diagram 2: BOTTOM VIEW OF KEYPAD

1. Remove the keypad cover assembly from the rear mounting plate. Insert a small screwdriver blade in the COVER PRY-OFF SLOTS at the lower edge of the keypad (see Diagram 2) and twist to pry off the cover assembly.

2. Mount the rear plate (see Diagram 3).

Note: The plate is correctly oriented when its part number, molded into the plastic, is upright.

A. MOUNTING DIRECTLY TO CONTROL PANEL ENCLOSURE:

If the control panel has a keypad cutout on the front face of its enclosure, remove the cutout and mount the plate to the enclosure's face via HOLES "A" (see diagram 3) and the four screws and nuts provided.

Note: Certain attack-proof enclosures are not provided with a keypad cutout.

B. MOUNTING DIRECTLY TO AN ELECTRICAL JUNCTION BOX:

The plate can be mounted directly to a single or double gang electrical junction box. Use the screw holes provided and HOLES "B" for a single gang box or HOLES "A" for a double gang box.

C. MOUNTING DIRECTLY TO A WALL OR OTHER SURFACE

Provide a wiring hole in the mounting surface. Position the plate's WIRING OPENING over the hole and mounting plate, using HOLES "A" and/or "B" in conjunction with appropriate mounting hardware (not provided) for the type of surface.

3. Complete the keypad wiring as required for the control with which the keypad is to be used.

4. Replace the keypad cover assembly on the rear plate. Starting at the upper edge of the plate, engage the plate's two HOLDING HOOKS (see diagram 3) into the recesses provided for them inside the upper edge of the cover assembly and snap the lower edge of the cover assembly and snap the lower edge of the cover onto the two SNAP HOOKS at the lower edge of the plate.

Note: (Optional) If desired, cover and plate can be further secured together by inserting a screw (provided) into the SLOT at the keypad's lower edge.

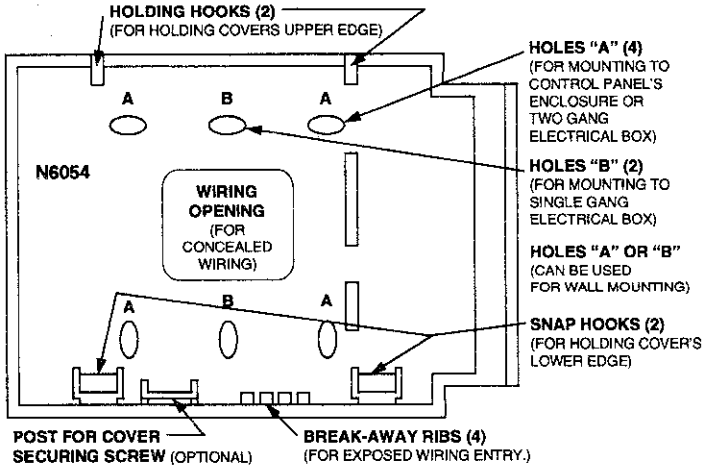


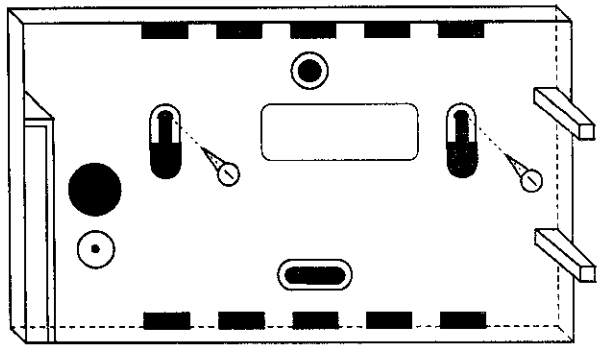
Diagram 3: REAR MOUNTING PLATE

NOTE: When surface mounting the keypad, and using screws with heads larger than the screws provided with the unit, place electrical tape over the screws to prevent them from interfering with the keypad operation. In the future the back plate of the keypad will provide additional countersinking for screws with larger heads.

4.3. MOUNTING 6615 KEYPADS

Keypad mounting is identical for both the 6615 LED and XK-406 or LCD keypads. **NOTE:** After mounting an LCD Keypad at eye level, you can adjust the display intensity level to suit the user by adjusting the intensity control located behind the keypad door.

SURFACE MOUNTING



1. Select a mounting location and place the rear plate of the keypad on the wall. Mark the location of the cutout for the keypad wiring cable.

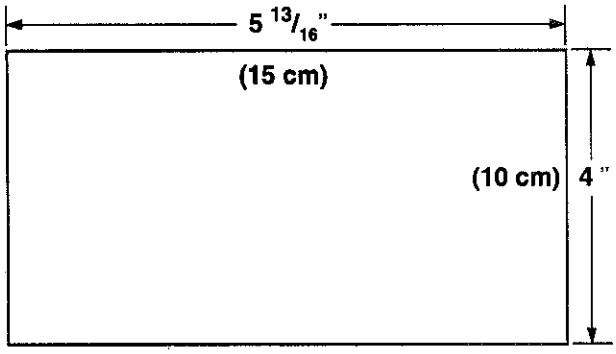
2- Create a keypad opening . Connect the keypad wiring to the control panel w/ 4-wire connector.

3- Place the keypad wiring through the cutout and secure the back plate to the wall (see diagram).

4- Connect the keypad wiring connector to the keypad and place the keypad on the mounting plate attached to the wall.

5- Secure the keypad to the rear mounting plate by attaching the 5/8 inch screw provided in the lower hole, located behind the keypad door.

RECESSED MOUNTING



1- Select a mounting location. For recessed mounting this must be between two studs. The rear mounting plate is not used for recessed installations.

2- Create an opening in the wall exactly 4 inches high by 5 13/16 inches wide.

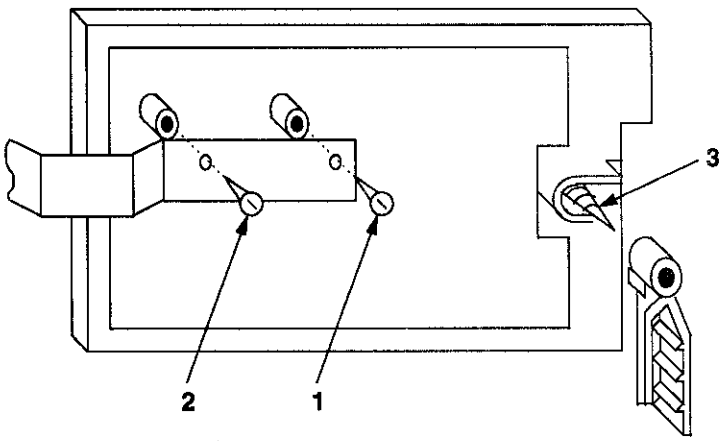
3- Turn over the keypad and remove the Phillips head screw (item 1 on diagram) in the upper left hand side of the keypad printed circuit board. Note: This screw is located immediately to the left of the keypad connector.

4- Attach the black metal mounting strap to the rear of the keypad as follows (see diagram);

- Face the pointed end of the mounting strap facing the keypad front. This will be used to latch onto the inside of the wall.

- Place the small white plastic spacer underneath the mounting strap. Secure the mounting strap using the 5/8 inch Phillips head screw (supplied) and the plastic spacer to location 1.

- Secure the other end of the strap (location 2 on diagram) to the white plastic opening using the Phillips head screw removed in step 2.



5- Connect the white plastic tab into the round opening immediately behind the keypad door. Place the longer Phillips head screw (included) through the opening inside the keypad door and begin to tighten the screw. Tighten the screw and leave the tab in a down position.

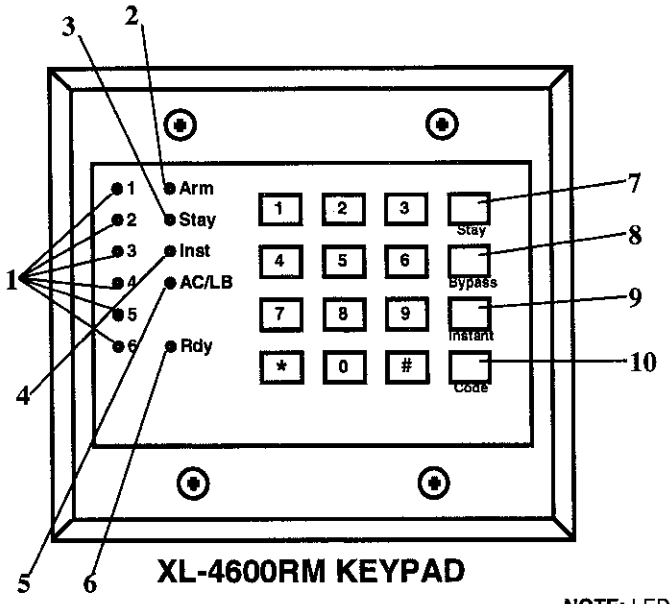
6- Run the keypad wiring to the control panel and attach the wiring to the keypad.

7- Place the keypad into the wall opening with the side containing the black metal strap first until it grabs the inside of the wall.

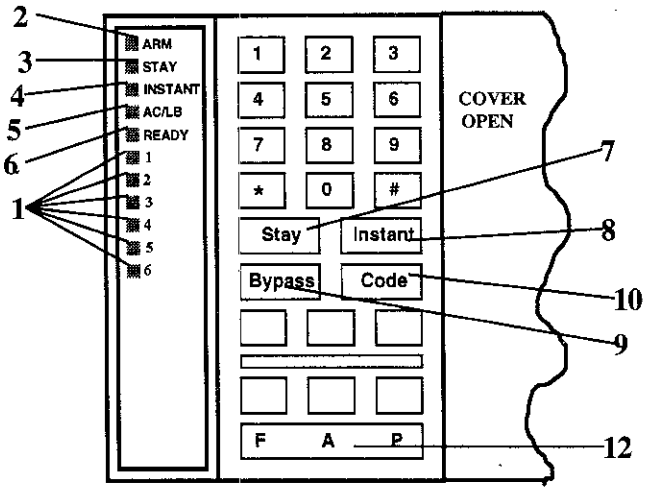
8- After inserting the side of the keypad with the metal strap, insert the other side into the opening until the entire keypad is firmly in the wall.

9- Tighten the screw inserted in step 5.

5. KEYPAD LAYOUT

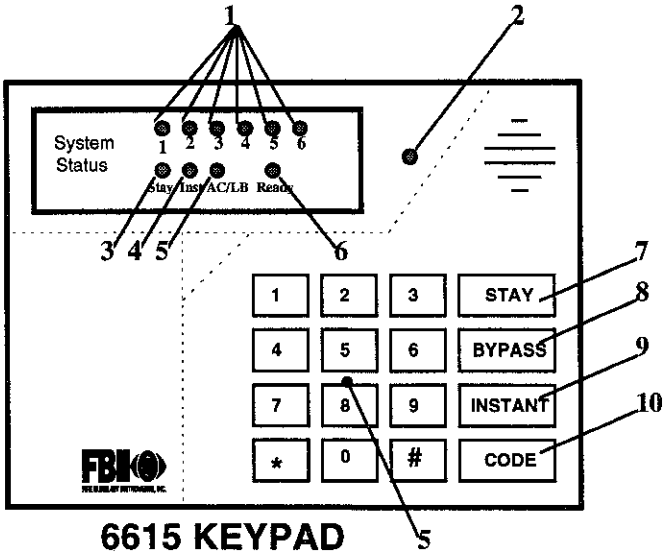


XL-4600RM KEYPAD



XL-4600SM KEYPAD

NOTE: LED keypads cannot display the status of zone 7. LCD can display full system status.



6615 KEYPAD

1) ZONE STATUS LEDS

These LEDS display the current zone status including alarms, bypasses, troubles and faults. Each condition will cause these LEDS to operate differently as follows:

ALARMS Fast Blink (approx. 150 ms. ON - 150 ms. OFF).

TROUBLES Slow Pulse (approx. 600 ms. ON - 600 ms. OFF).

BYPASSES Wink (100 ms. ON - 900 ms. OFF). Zone bypasses are displayed as a very slow wink of the zone LED light.

FAULTED ZONES Solid ON. Faulted zones are the lowest priority indication. Faulted burglary zones are displayed with the LED solidly ON while the system is disarmed.

NORMAL OFF

NOTE: Upon Entry to disarm the system the keypad sounder will annunciate to warn the user to disarm it. In additon, the respective zone LED(s) will be ON to indicate zones which are violated (ex: entry door and motion detector).

2) ARM/DISARM LED

This LED indicates whether the system is currently armed (ON) or disarmed (OFF).

Fast Blink	Alarm Mode
Slow Wink	Fail to Communicate with Central Station

3) STAY LED

This LED displays whether the system has been armed in the STAY mode or the STAY/INSTANT mode. If the INSTANT LED is ON and the STAY LED is ON, then the system is in the STAY/INSTANT mode. If the INSTANT LED is OFF and the STAY LED is ON, then the system is in the STAY mode only. STAY/INSTANT is enabled in programming question #12, location 3. In either mode the STAY LED indicates the following:

ON	Interior zones are bypassed
OFF	Interior zones are normal

4) INSTANT LED

This LED displays whether the system has been armed in the INSTANT or STAY/INSTANT mode, meaning that the system is currently armed, all delay zones are instant and all interior zones are bypassed. If the STAY LED is OFF and the INSTANT LED is ON, then the system is in the INSTANT mode. If the STAY LED is ON and the INSTANT LED is ON, then the system is in the STAY/INSTANT mode. **NOTE:** See programming question #12, location 3.

ON	Delay zones are currently instant
OFF	Delay zones are normal

5) AC/LOW BATTERY LED

This indicator light displays the current power status of the panel as follows:

ON	AC is present
OFF	No AC, running on battery backup
Slow Blink	Low battery condition detected

6) READY LED

This LED displays whether the system is ready for arming. The READY light is common to all BURGLARY ZONES with the following indications:

ON	System ready to be armed
OFF	System not ready to be armed
Slow Blink	Indicates Installer programming mode
Fast Blink	Alarm Memory Mode

7) STAY BUTTON

The STAY button enables arming the system, excluding zones programmed as interior zones. This will provide exterior protection of the location while allowing full access throughout the interior.

8) BYPASS BUTTON

The BYPASS button is used to temporarily exclude protection to a specific zone.

9) INSTANT BUTTON

If enabled, the INSTANT button enables arming the system in the INSTANT mode and with the STAY button it enables arming the system in the STAY/INSTANT mode. **NOTE:** INSTANT mode is enabled in question #12, location 3.

10) CODE BUTTON

The CODE button is used to enter the installer programming mode and entry of user codes.

11) LCD DISPLAY (7005, 7005L, XK7LC, XK5LC KEYPADS ONLY)

The LCD display shows the current status in a tw- line by sixteen character format.

12) KEYPAD AUXILIARY KEYS (XL-4600SM KEYPADS ONLY)

Pressing the two keys (top & bottom) labeled "F," "A," or "P" at the same time initiates a CS transmission, if programmed, of PANIC, AUXILIARY or FIRE, annunciates the keypad sounder and turns on the bell output. If not programmed to transmit, these keys can only result in a local warning as follows (see question 07, location 3):

Keypad Souder - Steady for PANIC, Pulsing for FIRE and AUXILIARY

Bell Output - Steady for PANIC, Pulsing for FIRE

NOTE: See the Keypad Emergency Conditions section for alternate auxiliary keys.

5.1. KEYPAD SOUNDER

The keypad sounder annunciates differently to indicate the following conditions:

CHIRP - Keypad sounds a short chirp to confirm each keystroke.

STEADY - The keypad will make a steady sound during entry time, and/or during burglary alarm.

CHIME - steady 1 second tone (SYSTEM DISARMED ONLY).

ACKNOWLEDGE - Upon successful entry of a certain commands the system will sound for approximately half a second.

PULSING - A pulsing sound (approximately half a second ON then OFF) indicates a trouble condition such as AC loss, Low Battery, or Fire Zone.

NEGATIVE ACKNOWLEDGMENT - Upon entry of an illegal command the keypad will sound four short beeps. For example, if attempting to define a new user and the master user is not entered, four short beeps will be made indicating that the command was unsuccessful.

SOUNDER RINGBACK - Several short beeps to indicate successful communication to the Central Station. This occurs for all signals, excluding ambush and silent zones.

FAST PULSING SOUNDER- Sound generated during entry time period AFTER an alarm condition has occurred and the system reached bell cutoff. A pulsing sounder will follow the bell output on Fire conditions. Trouble conditions also generate a pulsing sounder and may be silenced through entry of a valid user code.

NOTE: The keypad is non-operational if none of the LED's are lit and the keypad does not beep when keys are pressed. This is an indication that service is required. Consult the troubleshhoting section of this manual.

6. SYSTEM OPERATIONS

6.1. POWER UP/SYSTEM RESET

SYSTEM STABILIZATION MODE: Upon power up of the system and after completion of system programming, IF THE SYSTEM WAS PREVIOUSLY ARMED, all of the lights on the LED keypads will go ON momentarily and the LCD keypads will display STAND BY! momentarily. THE KEYPAD DISPLAY WILL RETURN TO NORMAL. HOWEVER, THE ZONES WILL NOT RESPOND TO ALARM CONDITIONS FOR APPROXIMATELY 2 MINUTES. THIS CAN BE DISABLED BY SIMPLY ENTERING A VALID USER CODE which disarms the system and reduces the power up reset time to approximately 5 SECONDS. The 2 minute interval is used to allow motion detectors (interior zones) to stabilize on power up in order to prevent false alarms.
Upon system power ups, IF THE SYSTEM WAS PREVIOUSLY DISARMED, the power up reset time will be approximately 5 SECONDS.
NOTE: If the total system power is lost, then upon power restoral, the system will return to the previous arming state.

6.2. ARMING THE SYSTEM

The system can be armed only if all burglary zones are good (not faulted) and the READY LED is on. LCD keypads will contain the SYSTEM READY indication.

TO ARM: Enter any programmed **4-digit user code. NOTE:** The factory default for user # 1 is **1234.**
The ARMED LED will light and the user may exit through an exit/entry zone for the time period programmed as the exit delay. The LCD keypad displays "ON: AWAY" on the first line for the duration of the exit delay displaying . The system can be armed without the backup battery being connected, however the AC/LB light will flash.
LCD keypads will display:

```
ON: AWAY . . . . . .
. . . EXIT NOW . . .
```

6.3. STAY ARMING

TO ARM: Press the **STAY key** followed by a **4-digit user code.**
This will arm the system with all programmed interior zones and related points excluded.

KEYPAD RESPONSES:
LED KEYPADS — STAY = ON; ARM = ON; RDY = Slow Pulse
LCD KEYPADS

```
ON: STAY . . . . . .
. . . EXIT NOW . . .
```

6.4. INSTANT ARMING

TO ARM: press the **INSTANT key** and a **4-digit user code.**
The INSTANT mode will arm the system with all programmed exit/entry zones as instant.

KEYPAD RESPONSES:
LED KEYPADS — INSTANT = ON; ARM = ON; RDY = Fast Blink
LCD KEYPADS

```
ON: AWAY INSTANT
```

NOTE: The INSTANT mode can be enabled through programming question #12, location 3.

6.5. STAY/INSTANT ARMING

TO ARM: Press the **STAY key**, Press the **INSTANT key** and enter a valid **4-digit user code.**

The STAY/INSTANT mode will arm the system with the characteristics of both the STAY and INSTANT modes. The system will be armed with the interior zones bypassed and the delay zones instant.

KEYPAD RESPONSES:

LED KEYPADS — ARM = ON; INSTANT = ON; STAY = ON; RDY = Fast Pulse

LCD KEYPADS

```
ON: STAY INSTANT
```

NOTE: The STAY/INSTANT mode can be enabled through programming question #12, location 3.

6.6. DISARMING

TO DISARM: Enter any valid **4-digit user code** and the ARMED LED will extinguish.

If an alarm condition exists or had occurred while the system was armed, the respective zone(s) LED(s) will blink rapidly. On the XL-4600SM keypads the ARMED LED will blink rapidly, on the other keypads the READY LED will be blinking rapidly. This condition is classified as ALARM MEMORY and can be cleared through entry of a valid user code.

6.7. RESET

Reset is accomplished through the entry of any **valid user code.** This can be used to reset the smoke detectors attached to the system, silence any bells, or clear the keypad display or sounder.

In addition, the asterisk key "*" acts as a reset for clearing alarm memory.

6.8. BYPASS by ZONE/GROUP

Bypassing is performed to temporarily exclude zones or points which are faulty, or not ready, from activating the system.

If QUICK BYPASS is disabled (question #08, location 3) and ZONE BYPASS is enabled (question #17-23, location 3), then

TO BYPASS by ZONE: Press the **BYPASS key** followed by any valid **4-digit user code**, followed by a **single digit number (1-7)**, representing the respective zone to be bypassed.

EXAMPLE: BYPASS ZONE 6 (Assume user code of 1234)

BYPASS 1234 6

If QUICK BYPASS is disabled (question #08, location 3), ZONE BYPASS is enabled (question #17-23, location 3) and BYPASS BY GROUP is enabled (question #09, location 1), then

TO BYPASS by GROUP: Press the **BYPASS key** followed by any valid **4-digit user code**, followed by the # key, representing the respective group of zones to be bypassed.

NOTE: Bypassing a GROUP will **only** remove the individual zones enabled for group bypassing.

EXAMPLE: BYPASS GROUP

BYPASS 1234 #

Subsequent bypasses can be made by pressing the BYPASS button followed by another zone number within a 10 second period. After this 10 second period it will be necessary to enter the entire command including the user code.

6.9. QUICK BYPASS by ZONE/GROUP

Quick Bypassing is a programmable option (question #08, location 3) and allows the user to bypass zones and points without using a user code.

If QUICK BYPASS is enabled (question #08, location 3) and ZONE BYPASS is enabled (question #17-23, location 3), then

TO BYPASS by ZONE: Press the **BYPASS key** followed by a **single digit number (1-7)**, representing the respective zone to be bypassed.

EXAMPLE: BYPASS ZONE 6
BYPASS 6

If QUICK BYPASS is enabled (question #08, location 3), ZONE BYPASS is enabled (question #17-23, location 3) and BYPASS BY GROUP is enabled (question #09, location 1), then

TO BYPASS by GROUP: Press the **BYPASS key** followed by the # key, representing the respective group of zones to be bypassed.

EXAMPLE: BYPASS #

NOTE: Bypassing a GROUP will **only** remove the individual zones enabled for group bypassing.

After a successful bypass the keypad sounder will emit the acknowledge beep, and the respective zone LED will BLINK SLOWLY.

In addition the following rules for bypass exist;

- FIRE zones cannot be bypassed
- 24 hour zones can be bypassed, however they CANNOT be unbypassed if they are violated.
- Zones can only be bypassed while the system is disarmed, at which time visual indication will be displayed.

Bypass signals will be transmitted to the Central Station UPON ARMING if a bypass code has been programmed.

NOTE: Zones which are bypassed are not protected when the system is armed.

6.10. AUTO UNBYPASS

All burglary zones which are bypassed are automatically unbypassed upon system disarm. 24-hour zones which have been bypassed will be unbypassed only if they are normal.

6.11. MANUAL UNBYPASS

UNBYPASS removes an existing bypass from a currently bypassed zone or group. **The procedure is the same as bypass.**

KEYPAD TAMPER/LOCKOUT: Upon entry of 21 keystrokes in succession without entry of a valid command, the system will initiate a keypad tamper/Lockout condition. This will be a silent condition, and if an alarm occurs, there will be no indication on the keypad. In addition, a code can be programmed for transmission to the Central Station (see question #34, locations 3 & 4).

6.12. USER CODE PROGRAMMING

Users codes can be entered or modified directly through the keypad.

The system contains up to fifteen user codes (4 digits each) with the following applications:

USER NUMBER	APPLICATION	DEFAULT CODE
01	Master User (see note 1)	1234
02	Master User (see note 2)	NULL
03 - 12	Normal Users	NULL
13	Door Strike (see note 3)	NULL
14	Arm Only (see note 4)	NULL
15	Ambush (see nbte 5)	NULL

NOTES: Only the master users (user number 1 & 2) can program or modify other users.

1. **User number 1** - programs all user codes (01-15); cannot be deleted.

2. **User number 2** - programs all user codes (02-15), except for user #1.

3. **User number 13 (Door Strike) -** will be the system "door strike" code if any of the triggers is defined as a door strike trigger. If any of the output triggers are defined as door strike then entry of this user code will activate that trigger for a period of 5 seconds. In addition there is an option to allow **all** user codes to act as a door strike code. If this option is selected (question #08, location 3) then all users can activate the door strike through the #9x command (See QUICK COMMAND MODES). If a door strike (or access) trigger is not defined, then this user code can be utilized as a normal user code.

4. **User number 14 (Arm Only) -** is a system wide arm only (maid) code if the ARM only code is selected for question #08, location 3. If this option is not selected, then this user code can be used as a normal user code. Defining number 14 as an ARM only code means that the code can only arm the system and would be used for a user such as a maid or temporary user of the system. This is obtained through question #08, location 3.

5. **User number 15 (Ambush) -** will be the system wide ambush code if there is an ambush CS transmission code programmed into question number #28, locations 1 & 2. If no CS code is defined in question #28, then this user **number 15** will be a normal user code. In this mode, an entry of the user number 15 code will ARM or DISARM the system and transmit the ambush code to the Central Station. Furthermore if the CS transmission format contains the user number then user number 15 will be transmitted. If ambush transmission code has been programmed and user 15 does not exist it will not be possible to activate the ambush feature.

TO ADD OR CHANGE USERS: **[CODE] [USER] [USER #] [USER ID]**

where:

[CODE]	Press Code button on keypad.
[USER]	Enter Master User ID code (user #1 or #2).
[USER #]	Press Desired user to be programmed (01-15).
[USER ID]	Enter Four digit user code. Valid digits are 0-9.

Example: Define user number 03 with an ID of 7493. (Assume master user code is 1234).

CODE 1234 03 7493

An acknowledge sound (steady tone) verifies a successful user code programming. A negative acknowledge sound (4 short tones) indicates unsuccessful programming. If additional user programming is necessary, repeat the procedure listed above. If a dialing format is programmed which transmits opening/closing by user ID, each user will report the respective user number.

WARNING: User Code Programming can be only performed while the system is disarmed.

6.13. USER DELETION

User codes (2-15) can be deleted directly through the keypad. Once deleted their values will be null.

TO DELETE USERS: **[CODE] [USER] [USER #] [*]**

where:

[CODE]	Press Code button on keypad.
[USER]	Enter Master User ID code (user #1).
[USER #]	Press the desired user number being deleted (2-15);
	NOTE: User #1 cannot be deleted, but it can be changed.
[*]	Press the * (asterisk) button

6.14. KEYPAD EMERGENCY CONDITIONS

The system has the ability to transmit four separate keypad auxiliary conditions as follows:

CONDITION	KEYSTROKES	ENABLED IN	AUDIBLE OR SILENT
PANIC	# & * (at the same time)	Question #12, location 3	Question #08, location 1
FIRE	7 & 9 (at the same time)	Question #33, locations 1 & 2	Always AUDIBLE
AUXILIARY	1 & 3 (at the same time)	Question #12, location 3	Question #08, location 1
AMBUSH	User code #15	Question #28, locations 1 & 2	Always SILENT

In addition, the XL-4600SM keypad has additional keys dedicated for emergency conditions. These can be activated by pressing both keys at the same time (see the Keypad Layout section).

Audible Panic, Fire and Audible Auxiliary can be RESET BY ENTERING ANY VALID USER CODE.

6.15. QUICK COMMAND MODES

The end user can perform the following commands (if programmed):

COMMAND	KEYSTROKES	ENABLED IN
Quick Arming	# 1	Question #08, location 3
Quick Forced Arming	# 2	Question #08, location 3
Set Time	# 3	To require user code (Question #10, loc. 4)
Display Zone Directory (LCD Keypad Only)	# 4	Always Enabled
Set Auto Arm Time	# 5	Question #08, loc. 4
Display/Toggle Chime	# 6	Questions #17-23, loc. 4
Display Time (LCD Keypad Only)	# 7	To require user code (Question #10, loc. 4)
Display Auto Arm Time (LCD Keypad Only)	# 8	To require user code (Question #10, loc. 4)
Door Strike	# 9	Question #14; All Users (quest. #08, loc. 3)
User On-line Download	# CODE	Question #12, location 3

QUICK ARMING: # 1

If programmed, then quick arming will be permitted. Quick Arming allows arming the system without entry of a user code and will report as user #16 to the CS if a 2 digit transmission format is defined. **NOTE:** The system must be in ready mode. A user code is required to disarm the system. Options include:

[STAY] # 1	Quick Arm the System in the STAY mode
[INSTANT] # 1	Quick Arm the System in the INSTANT mode
[STAY] [INSTANT] # 1	Quick Arm the System in the STAY/INSTANT mode

QUICK FORCED ARM: # 2

If programmed, then quick forced arming will be permitted. Quick Forced Arming allows arming the system without entry of a user code and bypass any bypassable zones that are not ready. It will report user #16 to the CS if a 2 digit transmission format is defined. **NOTE:** Bypassed zones will include all of the individual points assigned to the zone. To disarm a user code is required. Quick Forced Arming is not suitable for UL applications.

SET TIME: # 3

Pressing # 3 will set the time of the system clock. If a user code is required to set the time, then enter:

 # 3 [USER] [HOUR] [MINUTE] [MONTH] [DAY] [YEAR]

where:

[USER]	Enter an valid 4 digit user code
[HOUR]	Enter hour of day in military time (00-24; ex: 3PM =15)
[MINUTE]	Enter minute(s) of hour (00-59)
[MONTH]	Enter month of year (01-12)
[YEAR]	Enter year (00-99)

If a user code is **not** required to set the time, then enter:

 # 3 [HOUR] [MINUTE] [MONTH] [DAY] [YEAR]

In either case, the LCD keypads will display a prompt for each entry. On LED keypads the sounder will beep after each entry. The system will exit this mode either automatically (no keys are pressed), after the last entry (YEAR) or by simply pressing the asterisk (*) key. **NOTE:** The system time clock is used for the system test transmission as well as the auto arming function.

DISPLAY ZONE DIRECTORY (LCD KEYPAD ONLY): # 4

Pressing # 4 will scroll through the zone descriptors on the LCD keypad. The keypad will display the following:

```
DIRECTORY        ZN   #
ZONE # DESCRIPTOR
```

The system will exit this mode either automatically (no keys are pressed) or by simply pressing the asterisk (*) key.

SET AUTO ARM TIME: # 5

If auto arming is programmed, then pressing # 5 will set the auto arm time of the current area. If a user code is required to set the time, then enter:

 # 5 [USER] [HOUR] [MINUTE]

where:

[USER]	Enter an valid 4 digit user code
[HOUR]	Enter hour of day in military time (00-24; ex: 3PM =15)
[MINUTE]	Enter minute(s) of hour (00-59)

If a user code is **not** required to set the time, then enter:

 # 5 [HOUR] [MINUTE]

In either case, the LCD keypads will display a prompt for each entry. On LED keypads the sounder will beep after each entry. The auto arm time represents the time of day that the area will automatically arm if it is not already armed. In addition, it can be programmed to arm in the STAY or INSTANT modes and an audible warning can be generated at the keypad 2 minutes prior to arming if programmed in question #08, location 4. This signal will warn the occupants that the system will auto-arm in two minutes. If a user code is entered within this warning period and the system is disarmed, then the auto-arm time for that day will be canceled. The system will generate an audible acknowledgment (four beeps) and the lights on the LED display will scroll to show that the auto arm time was suspended. LCD based keypads will display an AUTO ARM CANCELED display.

The system will exit this mode either automatically (no keys are pressed), after the last entry (MINUTE) or by simply pressing the asterisk (*) key. NOTE: Auto arming will arm the system and bypass any zones which are not ready. Therefore, it is recommended that bypasses should be reported to the CS if auto arming is programmed. Auto arming is not suitable for UL applications.

LOSS OF TIME WARNING: If auto-arming has been enabled and if no time is defined a warning will appear on the keypads. This can occur if time (#3 command) has never been entered or if the system has totally lost power (AC & DC) and the time is probably incorrect. The loss of time warning consists of the LEDs on the LED keypads scrolling in sequence or a text message on LCD keypads. This will occur every 30 seconds until the time is set (#3 command).

DISPLAY/TOGGLE CHIME: # 6

If the chime option is programmed for any of the zones (questions #17-23, location 4), then pressing # 6 will display and toggle (turn OFF/ON) the system chime. The system will exit this mode either automatically (no keys are pressed) or by simply pressing the asterisk (*) key.

DISPLAY TIME: # 7 (LCD Keypads Only)

Pressing # 7 will display on the LCD keypads the current time of the system. **NOTE:** The time is set by using # 3. The keypad will display the following:

```
CURRENT TIME:
     12:00AM
```

The system will exit this mode either automatically (no keys are pressed) or by simply pressing the asterisk (*) key.

DISPLAY AUTO ARM TIME: # 8 (LCD Keypads Only)

If auto arming is programmed, then pressing # 8 will display on the LCD keypads the current auto arm time for the current area. **NOTE:** Auto arming is enable in programming question #08, location 4 and the auto arm time is set by using # 5. The keypad will display the following:

```
AUTO ARM TIME:
     12:00AM
```

The system will exit this mode either automatically (no keys are pressed) or by simply pressing the asterisk (*) key.

DOOR STRIKE: # 9

The door strike trigger can be activated as follows:

 # 9 [USER] [TRIGGER NUMBER]

If all users have been authorized for door strike (see question # 08, location 3) then any valid user code can activate a door strike trigger. If the "all users" option has not been selected then only user number 13 is the only user code authorized to activate the door strike.

NOTES:(1) The trigger number (1 - 4) is only necessary if there is more than one trigger programmed for door strike capability.

(2) At least one of the triggers must be defined as a door strike trigger in order to use this feature.

(3) DOOR STRIKE is not suitable programming options for any UL installation.

USER ON-LINE DOWNLOAD: # CODE

If programmed, then by pressing # CODE button(s) the user can initiate a remote communications session with the CS Downloading computer at the control panel location. Typically a remote communications session is initiated by the CS. On-line Downloading allows the user to call the office, discuss the action required and allow the CS operator to complete the request while on-line, no additional telephone call needed. On-line connection can be made as follows:

1 - User dials the CS Downloading modem telephone line from the premise telephone. Connection would be made with a person at the CS Downloading computer and the account to be downloaded would be verbally identified. The CS computer will be placed into a mode where it is attempting to establish a connection with the site.

2 - Next the user will be instructed to enter # CODE on the keypad which will cause the control panel to behave as if it received a request for a remote communications session and will look for the standard panel to CS protocol.

3 - Once the standard connection is made, the remote communications session can take place (upload, download, remote commands).

6.16.INSTALLER MODES

There are 9 installer modes in this panel.

TO ENTER INSTALLER MODES: **[CODE] [*] [INSTALLER] [X]**

where:

[CODE]	Press the CODE button
[*]	Press the asterisk (*) button
[INSTALLER]	Enter the 4 digit installer code (**default = 2468**)
[X]	Press the single digit indicating the installer mode as follows:

1 INSTALLER KEYPAD PROGRAMMING
Press 1 & 3 (at the same time) SYSTEM DEFAULT
Press 7 & 9 (at the same time) USER CODE DEFAULT
2 WALK TEST WITH SOUNDER
3 WALK TEST WITH SOUNDER AND BELL
4 SYSTEM LOG VIEW
5 WALK TEST MOTION
6 Not Used - RESERVED
7 SYSTEM DEFAULT
8 UNATTENDED DOWNLOAD
9 ON-LINE DOWNLOADING

INSTALLER MODE 1 (INSTALLER KEYPAD PROGRAMMING)

Enters the installer into keypad programming mode. Refer to the Keypad Programming Section of this Manual. To exit, simply press the STAY key and return to the prior panel status. **NOTE:** There exists an option in the EZ-Mate Downloader Software to inhibit keypad programming. If selected, then a negative acknowledgment (4 short beeps) will be heard after attempting to enter this mode.

INSTALLER MODE 1 (SYSTEM DEFAULT)

Any of the system keypads (LED & LCD) can initiate a system default of the system by **pressing the "1" and "3" keys at the same time**, while in the programming mode. The system will then default (revert to factory program values) and go through the reset sequence and THE SYSTEM WILL UNDERGO THE WARM-UP TIME SEQUENCE. A system default can also be done by removing power (AC & DC), shorting JP1 & JP2, re-applying power (with JP1 & JP2 still intact) waiting 8 seconds, and then removing short with power still applied. **NOTE:** A programming option can be selected through the EZ-Mate Downloader Software known as **Default Lockout**. If selected, then a system default reset will change all of the programmable options with the exception of the CSID (a code used by the software to identify the panel during remote connections) and the installer code. This prevents hostile account takeovers.

INSTALLER MODE 1 (USER CODE DEFAULT)

The user codes can be reset to factory default values (User Code 1 = 1234) by pressing the **"7" and "9" keys at the same time**, while in the programming mode. The user codes will default and the system will go through the reset sequence and THE SYSTEM WILL UNDERGO THE WARM-UP TIME SEQUENCE.

INSTALLER MODE 2 (WALK TEST w/SOUNDER)

Once the points are placed in their desired locations open or short circuit each point. The keypad will beep and annunciate with activation of each zone or point while in this mode. **To exit, simply press the * key and return to the prior panel status.**

INSTALLER MODE 3 (WALK TEST w/SOUNDER & BELL)

Similar to walk test except that the bell will annunciate during the walk test. **To exit, simply press the * key**

NOTE: Either walk test mode sables the panel's alarm functions. The condition is identified by "WALK TEST MODE" on the LCD keypads and flashing of the "RDY" and "ARM" LEDs on the LED type keypads.

INSTALLER MODE 4 (SYSTEM LOG VIEW)

The system retains history of **all the past 78 events** (Alarms, Troubles, Openings, Closings, Bypasses, etc.). Upon entry to the system log view, LED based keypads will display alarms as fast blinking lights and zone troubles as Slow Pulsing lights. On LCD based keypads the display will show the events one at a time starting from oldest event. **Depression of any key (except * or BYPASS key) will scroll forwards through the events. To scroll backwards, press the INSTANT key. To exit from the system log view function press the * key. To clear the system log press the BYPASS key.** On LCD keypads the following appears:

```
LOG01 ALRM ZN 01
JUN 28, 10:11AM
```

OTHER DISPLAYS

Event	Display
Disarm User #1-15:	Open Us xx
PC Disarm:	Open Us 01
Key Disarm:	Open Us [2nd cs digit]
Arm User #1-15:	Clos Us xx
Auto Arm:	Clos Us 01
PC Arm:	Clos Us 01
Key Arm:	Clos Us [2nd cs digit]
Alarm Zone #1-7:	Alrm Zn 0x
Trouble Zone #1-7:	Trbl Zn 0x
Bypass Zone #1-7:	Byp Zn 0x
Key Panic:	Alrm Zn 32
Key Fire:	Alrm Zn 33
Key Auxiliary:	Alrm Zn 34
Duress:	Alrm Zn 35
AC Loss:	Trbl Zn 32
Low Battery:	Trbl Zn 33
Comm. Fail:	Trbl Zn 35

INSTALLER MODE 7 (SYSTEM DEFAULT)

This mode can initiate a system default of the system. The system will then default (revert to factory program values) and go through the reset sequence and THE SYSTEM WILL UNDERGO THE WARM-UP TIME SEQUENCE.

INSTALLER MODE 8 (INSTALLER UNATTENDED DOWNLOAD)

The unattended download function is intended to allow installation of the control panel and then have the control panel dial the telephone number of CS Downloading Computer to be downloaded without the need to have the operator present. Basically the CS Downloading computer telephone number will be programmed into the callback number (question #01) and an identification number (same as the account # in the Downloader Software) will be programmed into the Secondary Telephone (question #02). **NOTE:** These are temporary values since they will be reprogrammed after downloading. Unattended download requires the following sequence:

1- The PC operator must select UNATTENDED DOWNLOAD in the Downloader Software Main Menu.

2- Enter unattended download mode: **[CODE] [*] [INSTALLER] [8].**

3- The system will now enter keypad programming, question 01. Enter the telephone number of the Central Station Downloading computer (each digit followed by the "#" key, ex: 1 # 2 # 3 # etc.) into this question (12 digits max). This phone number should be the same as the CS Callback number (question #03 from keypad programming if the panel is programmed for callback).

4- Proceed to question 02 through the sequence "* 02". Next enter the desired account number (each digit followed by the "#" key). This will be used by the CS downloading computer to determine the proper account information to download to this subscriber. The account number must be 6 digits in length and it is the Downloader's Account designator not the account number that will be communicated to the receiver. For ID's less than 6 digits long you must enter leading 0's to make the number 6 digits long. Example: for ID 345 enter 0 # 0 # 0 # 3 # 4 # 5 #.

5- Press the "STAY" key to exit programming mode. The control panel will now dial the telephone number entered into the callback number. The downloading computer must be placed into the Unattended Communications option from the main menu. Upon connection with the computer the customer account number programmed in step 3 will be obtained and the system will perform the desired download operation. **NOTE:** The CS Downloading computer must be waiting in the unattended communications option and preprogrammed with the account information in order for the unattended download to be functional. Press the "INST" key to exit programming mode without activating unattended mode.

INSTALLER MODE 9 (ON-LINE DOWNLOAD)

In this mode, the installer can initiate a remote communications session with the CS Downloading computer at the control panel location. Typically, a remote communications session is initiated by the CS. On-line Downloading allows the installer to call the office (from the same telephone line as the panel), discuss the action required and allow the CS operator to complete the request while on-line, no additional telephone call is needed. On-line connection can be made as follows:

1- Installer completes installation and attaches a handset to telco terminals (tip & ring) or uses the standard home telephone to dial the CS Downloading modem telephone line. Connection is made with a person at the CS Downloading computer and the account to be downloaded would be verbally identified. The downloading computer operator will select the On-line Remote Operations from the device menu

2- The installer should enter the on-line download sequence: [CODE] [*] [INSTALLER] [9] or use the end-user command of # 9, if enabled. This will cause the control panel to behave as if it received a request for a remote communications session and will look for the standard panel to CS protocol.

3- Once the standard connection is made, the necessary remote communications sessions can take place (upload, download, remote commands).

4- Hang up the telephone or remove headset from the line to prevent interference which may affect upload/download data. The downloader software will automatically terminate the connection after remote communications end.

7. SYSTEM PROGRAMMING

The systems can be programmed using either of two methods:

- Directly through keypad.
- Remotely through the PC DOWNLOADING Software.

Keypad programming can be performed by completing the PROGRAMMING WORKSHEET located at the back of this manual. There are 36 total programming questions numbered 00-35. Within each question there are several locations labeled L1, L2, etc. for data entry.

The system is shipped from the factory with SPECIFIC DEFAULT VALUES which were selected for a typical installation. If the default values are suitable for your installation then programming can be simplified. The default values are listed with each programming question and in the SYSTEM DEFAULT section of this manual.

FACTORY DEFAULT VALUES: To reload, remove all power from the system (AC & DC). Next, short JP1 & JP2, with short still intact reapply power (AC then DC), wait 8 seconds. Then, remove short with power still applied. The installer can also do a System or User Code Default through Installer Mode 1 (refer to the Installer Modes section of this manual).

NOTE: A programming option exists within the EZ- Mate PC Downloader devices known as **DEFAULT LOCKOUT**. If this option is selected then a system default will not overwrite the CSID or installer code portion of the program. This will prevent an installer other than the original installer from taking over an account without cooperation.

8. PROGRAMMING QUESTIONS

This section of the manual defines the programming questions and the values for each question. **BEFORE USING THE PROGRAMMING SHEET, FILL THE SYSTEM PLANNING WORKSHEETS AT THE END OF THIS MANUAL. Then, complete the Programming sheet and then enter the data as explained in the section titled Data Entry Through the Keypad. DO NOT ATTEMPT TO ENTER DATA BEFORE COMPLETELY FILLING OUT THE PROGRAM SHEET.**

QUESTION 01 PRIMARY TELEPHONE NUMBER

DEFAULT = 234AAAAAAAAA

Enter the telephone number (including area code or dialing prefix IF NECESSARY) of the primary central station receiver in L1 - L12. Enter the valid digits from the table below:

Digit	FUNCTION	COMMENTS
0-9	0-9	
A	Signifies end of the phone number	Enter after last digit of phone number
B	Asterisk (*)	Enter whenever the asterisk is used
C	3 Second pause	Provides delay to wait for dial tone
D	Pound (#)	Enter whenever the pound is used
E	*70C (Touch-tone) *1170C (Rotary)	Enter to disable Call Waiting
F	*70CC (Touch-tone) **1170CC (Rotary)	Enter to disable Call Waiting

NOTE: To DISABLE DIALER 1 or DIALER 2 (Local Panel) see Question #07, location 3.

REPORTING ROUTE:

The system will report all signals to the primary receiver phone number. If split reporting has been selected then OPENING and CLOSING signals will be directed to the secondary phone number while all other signals will be transmitted to the primary phone number. Furthermore, the panel will alternate between the primary and secondary receivers (if the second phone number is programmed) for a **maximum of 8 attempts to each phone number** in the event the signal has not been acknowledged.

QUESTION 02 SECONDARY TELEPHONE NUMBER

DEFAULT = AAAAAAAAAAAA

Enter the telephone number (including area code or dialing prefix IF NECESSARY) of the secondary central station receiver in L1 - L12. An entry of the digit A will not dial the digit and system will examine the next digit. The secondary telephone number will be used if the panel is unable to reach the Central Station via the primary number. This is known as backup reporting.

If SPLIT REPORTING is programmed, then OPENING and CLOSING signals will be directed to the secondary CS number only, while all other conditions will be reported to primary number. If neither split or backup reporting is necessary then this question may be left as factory defaulted and all conditions will be routed to the Primary Telephone number only.

QUESTION 03 CALLBACK TELEPHONE NUMBER

DEFAULT = AAAAAAAAAAAA

Enter the telephone number (including area code or dialing prefix if necessary) for this control panel to reach the callback number location . The callback number is the optional location of the Downloading Software where the control panel will call during a remote communications (upload/download etc.) session. During remote communications the programming device and the control panel will first confirm the CS security code. If valid, communications can begin. If a callback number is defined, the control panel will hang up and dial the callback number. For no callback capability enter AAAAAAAAAAAA.

QUESTION 04 TELEPHONE PREFIX

DEFAULT = AAAA

This four digit dialing prefix will be added before the primary and secondary telephone numbers. This could be used to if there are some common prefix numbers to be used on the telephone system. Enter AAAA if there is no dialing prefix. **NOTE**: The valid dialing digits are identical to the other telephone numbers.

QUESTION 05 ACCOUNT NUMBER 1

DEFAULT = 1234

Enter the three (3) or four (4) digit subscriber account number for Central Station phone number 1 in locations L1-L4. If a three(3) digit number is used then enter an A in location L4. Valid entries are 0-9, and B-F. The value A is interpreted as the null value for account numbers.

QUESTION 06 ACCOUNT NUMBER 2

DEFAULT = AAAA

Enter the three(3) or four(4) digit subscriber account number for Central Station phone number 2 in locations L1-L4. If a three(3) digit number is used then enter an A in location L4. Valid entries are 0-9, and B-F. The value A is interpreted as the null value for account numbers. If the second phone number is not used this question can be left as factory defaulted.

THIS ACCOUNT NUMBER **MUST** BE ENTERED IF YOU HAVE PROGRAMMED A SECOND RECEIVER PHONE NUMBER FOR BACKUP OR SPLIT REPORTING.

QUESTION 07 CS DIALER 1 & SYSTEM OPTIONS

DEFAULT = 0510

There are 4 locations (L1-L4) within this question which define various dialer and system options as follows:

Question 07, L1 - CS Dialer 1 Formats ***Default = 0***

Enter the digit for the desired dialer format from the table below.

Digit	CS REPORTING FORMAT	FORMAT TRANSMISSION TYPE
0	3X1 Standard	PULSE
1	4x1 Standard	PULSE
2	3x1 Extended	PULSE
3	4x1 Extended	PULSE
4	3x1 Partial Extended	PULSE
5	4x1 Partial Extended	PULSE
6	3x2	PULSE
7	4x2	PULSE
8	FBI Superfast	DTMF
9	ADEMCO 4x1 Express *	DTMF
A	ADEMCO 4x2 Express *	DTMF
E	ADEMCO Point ID *	DTMF

NOTE: * These formats require a high/low handshake frequency from the CS receiver.

NOTE: For more information on CS Reporting Formats refer to Appendix A at the back of this manual.

Question 07, L2 - CS Receiver Type 1 ***Default = 5***

Enter the digit for the desired receiver type from the table below in location L2. **NOTE:** The checkmark highlights which options are selected.

Digit	FORMAT PULSE SPEED			HANDSHAKE FREQUENCY		PARITY	TYPICAL CS RECEIVER
	10 PPS	20 PPS	40 PPS	1400 HZ	2300 HZ		
0	✔			✔			FBI, ADEMCO, SILENT KNIGHT
1		✔		✔			FBI, ADEMCO, RADIONICS
2			✔	✔			FBI
4	✔				✔		FBI, RADIONICS
5		✔			✔		FBI
6			✔		✔		FBI, RADIONICS
8	✔			✔		✔	FBI, RADIONICS
9		✔		✔		✔	FBI
A			✔	✔		✔	FBI
C	✔				✔	✔	FBI
D		✔			✔	✔	FBI
E			✔		✔	✔	FBI, RADIONICS

NOTE: The value placed in this digit will be ignored if transmitting in one of the DTMF formats (FBI Superfast, ADEMCO PID, ADEMCO Express). For UL installations the acceptable receivers are FBI CP220 (all formats except ADEMCO Express, 4x1 + 4x2, and ADEMCO High Speed), ADEMCO 685 (all formats without parity and not FBI Superfast), Silent Knight 9000 (10PPS, No Parity, 1400 or 2300Hz).

Question 07, L3 - Dialer Disable, Dialing Format and CS Reporting Type ***Default = 1***

Enter the digit for the desired message length from the table below. **NOTE:** The checkmark highlights which options are selected.

Digit	DIALING FORMAT				CS REPORTING TYPE			
	U.S. PULSE	EUROPEAN PULSE	TOUCH-TONE	SUPERFAST TOUCH-TONE	BACKUP	DUAL	SPLIT	DIALER DISABLED
0	✔				✔			
1			✔					
2		✔			✔			
3				✔	✔			
4	✔					✔		
5			✔			✔		
6		✔				✔		
8	✔						✔	
9			✔				✔	
A		✔					✔	
B				✔			✔	
C	✔							✔
D			✔					✔
E		✔						✔
F				✔				✔

DIALING FORMAT - Specifies how this control panel will perform outgoing dialing over the telephone line connected to the control panel (touch-tone, US Pulse, or European pulse format). **NOTE:** 1) Superfast Touch-tone is a faster transmission of the touch tone frequencies and may not be accepted in all telephone exchanges. 2) The European dialer option has not been tested for UL installations.

BACKUP - CS#2 will backup CS#1.

DUAL - Both CS#1 and CS#2 will be dialed.

SPLIT REPORTING - If split reporting is enabled then alarms, restores and troubles will be reported to CS#1, and openings/closings will be transmitted to CS#2. If selected then this will be used for both areas.

DIALER DISABLE: This option will turn OFF the digital dialer making the control a local panel. The dialer disable selection **shall not** be selected for UL installations.

NOTE: If Local Alarm is desired, then no other options are needed to be disabled (Telephone #, CS Codes). Remote operations with the PC Downloader software can still be made if the telephone line is connected.

Question 07, L4 - Swinger Shutdown, AC Line Frequency, Restore After Bell and Restore Follows Loop ***Default = 0***

Enter the digit for the desired system options from the table below. **NOTE:** The checkmark highlights which options are selected.

Digit	SWINGER SHUTDOWN			AC LINE FREQUENCY		RESTORE	RESTORE
	1 EVENT	2 EVENTS	3 EVENTS	50 HZ	60 HZ	AFTER BELL	FOLLOWS LOOP
0	NONE (SWINGER SHUTDOWN DISABLED)				✔	✔	
1	NONE (SWINGER SHUTDOWN DISABLED)				✔		✔
2				✔		✔	
3				✔			✔
4	✔				✔	✔	
5	✔				✔		✔
6	✔			✔		✔	
7	✔			✔			✔
8		✔			✔	✔	
9		✔			✔		✔
A		✔		✔		✔	
B		✔		✔			✔
C			✔		✔	✔	
D			✔		✔		✔
E			✔	✔		✔	
F			✔	✔			✔

SWINGER SHUTDOWN - This feature allows individual zones to activate the dialer 1, 2 or 3 times within an arming cycle. If selected, swinger shutdown applies to controlled zones while the system is armed as well as 24hr. audible alarm zones. When the selected number of events within the arming cycle is reached, the bell and dialer will be activated for the last time, the swinger shutdown code will be transmitted followed by the zone code. Subsequent activations within the same arming cycle will NOT activate the bell or dialer. **NOTE:** Swinger shutdown CS code is enabled in question #36, location 3.

RESTORE AFTER BELL - Restores will be transmitted after the loop has returned to normal after bell cutoff, or upon system disarming regardless of the loop status.

RESTORE FOLLOWS LOOP - This option will transmit restores immediately upon zone restoral while the system is Armed, or upon system disarm regardless of the loop status.

AC LINE FREQUENCY - This selects which AC input frequency (60 HZ or 50 HZ) is present for the AC based system Clock.

QUESTION 08 CS DIALER 2 & SYSTEM OPTIONS

DEFAULT = 1400

This question contains 4 locations (L1 - L4) for various keypad conditions and miscellaneous parameters as follows:

Question 08, L1 - CS Dialer 2 Formats ***Default = 0***

Enter the digit for the desired dialer format from the table below.

Digit	CS REPORTING FORMAT	FORMAT TRANSMISSION TYPE
0	3X1 Standard	PULSE
1	4x1 Standard	PULSE
2	3x1 Extended	PULSE
3	4x1 Extended	PULSE
4	3x1 Partial Extended	PULSE
5	4x1 Partial Extended	PULSE
6	3x2	PULSE
7	4x2	PULSE
8	FBI Superfast	DTMF
9	ADEMCO 4x1 Express *	DTMF
A	ADEMCO 4x2 Express *	DTMF
E	ADEMCO Point ID *	DTMF

NOTE: * These formats require a high/low handshake frequency from the CS receiver.

NOTE: For more information on CS Reporting Formats refer to Appendix A at the back of this manual.

Question 08, L2 - CS Receiver Type 2 ***Default = 5***

Enter the digit for the desired receiver type from the table below in location L2. **NOTE:** The checkmark highlights which options are selected.

Digit	FORMAT PULSE SPEED			HANDSHAKE FREQUENCY		PARITY	TYPICAL CS RECEIVER
	10 PPS	20 PPS	40 PPS	1400 HZ	2300 HZ		
0	✔			✔			FBI, ADEMCO, SILENT KNIGHT
1		✔		✔			FBI, ADEMCO, RADIONICS
2			✔	✔			FBI
4	✔				✔		FBI, RADIONICS
5		✔			✔		FBI
6			✔		✔		FBI, RADIONICS
8	✔			✔		✔	FBI, RADIONICS
9		✔		✔		✔	FBI
A			✔	✔		✔	FBI
C	✔				✔	✔	FBI
D		✔			✔	✔	FBI
E			✔		✔	✔	FBI, RADIONICS

NOTE: The value placed in this digit will be ignored if transmitting in one of the DTMF formats (FBI Superfast, ADEMCO PID, ADEMCO Express). For UL installations the acceptable receivers are FBI CP220 (all formats except ADEMCO Express, 4x1 + 4x2, and ADEMCO High Speed), ADEMCO 685 (all formats without parity and not FBI Superfast), Silent Knight 9000 (10PPS, No Parity, 1400 or 2300Hz).

Question 08, L3 - Quick Commands, User 14 Arms Only and All Users Door Strike ***Default = 0***

Select the desired options from the table below. **NOTE:** The checkmark highlights which options are selected.

Digit	QUICK FORCED ARMING/BYPASS	QUICK ARMING	USER 14 ARMS ONLY	ALL USERS DOOR STRIKE
0	NONE (DISABLED)			
1	✔			
2		✔		
3	✔	✔		
4	NONE (DISABLED)		✔	
5	✔		✔	
6		✔	✔	
7	✔	✔	✔	
8	NONE (DISABLED)			✔
9	✔			✔
A		✔		✔
B	✔	✔		✔
C	NONE (DISABLED)		✔	✔
D	✔		✔	✔
E		✔	✔	✔
F	✔	✔	✔	✔

QUICK FORCED ARM/BYPASS - Enables the quick forced arm [# 2 command] and quick bypass [BYPASS ZONE command]. **NOTE:** The quick forced arm command **shall not** be selected for UL installations.

QUICK ARMING - Enables the quick arming command [#1].

ARM ONLY USER - If this option is selected then user **number 14** will be dedicated as an arm only (maid) code. This means that this user code is capable of arming the system only. The user code cannot be used to disarm the system, If this option is not selected then user **number 14** will act as a normal user code.

ALL USERS DOOR STRIKE - If this option is selected then all of the user codes can be used to activate any triggers defined as a door strike trigger. If this option is selected then any user can activate a door strike trigger through the following command , # 9 [USER] [Trigger number]. If this option is not selected, then user number 13 will be the dedicated system door strike code, if any of the triggers are defined for door strike. In this mode, entry of user code 13 will activate all triggers defined as door strike. In addition, user 13 cannot be used as an ordinary user code, unless there are no door strike triggers defined.

Question 08, L4 - Auto Arming Options ***Default = 0***

This digit indicates various auto-arming options. If the system is auto armed, this digit will select whether the system will arm in the AWAY, STAY, INSTANT or STAY INSTANT modes. In addition, an optional audible warning (Keypad Sounder) can be generated two minutes prior to the auto-arming time. Select a digit from the table below. **NOTE:** The checkmark highlights which options are selected.

Digit	AUTO ARMING MODES				AUDIBLE
	AWAY	INSTANT	STAY	INSTANT/STAY	WARNING
0	NONE (AUTO ARMING DISABLED)				
1	✔				
3	✔				✔
5		✔			
7		✔			✔
9			✔		
B			✔		✔
D				✔	
F				✔	✔

NOTE: Do NOT select Auto Arm for UL installations.

QUESTION 09 MISCELLANEOUS OPTIONS

DEFAULT = 0010

Question 09, L1 & L2 - Group Bypass for Zones 1-7 & Quick Exit ***Default = 0***

Select the zones to be bypassed as a single group from the tables below. Group bypassing can be performed by the following sequence: [BYPASS] [User Code] [#] or [BYPASS] [#] if quick bypassing is enabled. **NOTE:** The checkmark indicates the zones to be bypassed as a group.

QUICK EXIT -If enabled, allows someone to leave a protected exit area while the system is armed without causing an alarm by first pressing the "STAY" key. Pressing the "STAY" key starts a new exit delay during which the exit door may be opened and closed.

L1

Digit	ZONE GROUP			QUICK EXIT
	ZONE 5	ZONE 6	ZONE 7	
0	NONE			
1	✔			
2		✔		
3	✔	✔		
4			✔	
5	✔		✔	
6		✔	✔	
7	✔	✔	✔	
8				✔
9	✔			✔
A		✔		✔
B	✔	✔		✔
C			✔	✔
D	✔		✔	✔
E		✔	✔	✔
F	✔	✔	✔	✔

L2

Digit	ZONE GROUP			
	ZONE 1	ZONE 2	ZONE 3	ZONE 4
0	NONE			
1	✔			
2		✔		
3	✔	✔		
4			✔	
5	✔		✔	
6		✔	✔	
7	✔	✔	✔	
8				✔
9	✔			✔
A		✔		✔
B	✔	✔		✔
C			✔	✔
D	✔		✔	✔
E		✔	✔	✔
F	✔	✔	✔	✔

WARNING: Fire Zones CANNOT BE BYPASSED. 24 Hour zones CAN BE BYPASSED, however, they CANNOT BE UNBYPASSED if a violation exists on their zone terminals.

Question 09, L3 - No CS Bypass for Stay, Auto Stay Key switch, Armed Bypass Display ***Default = 1***

Select the desired options from the table below. **NOTE:** The checkmark highlights which options are selected.

Digit	NO CS BYPASS FOR STAY	AUTO STAY KEY SWITCH	ARMED BYPASS DISPLAY
0			
1	✔		
2		✔	
3	✔	✔	
4			✔
5	✔		✔
6		✔	✔
7	✔	✔	✔

NO CS BYPASS ON STAY - This option specifies that bypasses will not be transmitted upon Stay arming. If this option is not selected then bypasses will be transmitted for each interior zone that has been bypassed with the STAY arming. **Note:** Bypasses will only be transmitted if there is a bypass code defined (see question #33, location 1).

AUTO-STAY KEY SWITCH - This option allows a key switch to utilize the auto-stay FEATURE. If enabled then any key switch connected to the system (by selecting a zone type as key switch, questions #17-24, location 1) will auto-stay arm the system if the key is held for a 3 second interval based on whether exit occurs or not. If not enabled, keyswitch arming does not auto-stay arm the system regardless of whether exit occurs or not.

ARMED BYPASS DISPLAY - This option indicates that bypasses will be displayed on keypads when the system is armed. To view press the [BYPASS] button. If the option is not selected then bypasses will not be displayed on the keypad after system arming.

Question 09, L4 - CS Dialer Attempts ***Default = 0***

This option selects the number of times the communicator will attempt to dial both CS receivers. If CS#2 is not programmed, then this option determines the dialer attempts to CS#1. **NOTE:** This is valid for all CS receiver formats. Select a digit from the table below.

Digit	# OF CS DIALER ATTEMPTS
0	16
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
A	10
B	11
C	12
D	13
E	14
F	15

QUESTION 10 BELL TIME-OUTS, CS TEST TIME & MISCELLANEOUS

DEFAULT = 5F26

There are 4 locations (L1-L4) within this question as follows:

Question 10, L1 - Burglary Bell Time-out ***Default = 5***

Question 10, L2 - Fire Bell Time-out ***Default = F***

Enter the digit for the desired Bell Time-outs from the table below.

Digit	BURGLARY & FIRE BELL TIME-OUTS
1	3 MINUTES
2	6 MINUTES
3	9 MINUTES
4	12 MINUTES
5	15 MINUTES
6	18 MINUTES
7	21 MINUTES
8	24 MINUTES
9	27 MINUTES
A	30 MINUTES
B	33 MINUTES
C	36 MINUTES
D	39 MINUTES
E	42 MINUTES
F	INFINITE

BURGLARY BELL TIME-OUTS - For UL installations in commercial applications the minimum bell cutoff shall be 5 indicating 15 minutes, or 4 minutes for household burglary applications.

FIRE BELL TIME-OUTS - For UL installations the minimum fire bell cutoff time shall be 4 minutes.

Question 10, L3 - CS Test Time Interval ***Default = 2***

This question indicates the method of CS Test transmission as follows. **NOTE:** The checkmark highlights which options are selected.

Digit	TEST BY EVENT	TEST BY TIME	CS TEST TIME INTERVAL					
			1 HOUR	24 HOUR	WEEKLY	27 DAYS	60 DAYS	90 DAYS
0	✔			✔				
1	✔				✔			
2	✔							
3	✔						✔	
4	✔							✔
5		✔		✔				
6		✔			✔			
7		✔				✔		
8		✔					✔	
9		✔						✔
A	✔	✔			✔			
B	✔	✔				✔		
C	✔	✔					✔	
D	✔	✔						✔
E		✔	✔					
F	✔		✔					

TEST INTERVAL - Select 1 hour, daily (24 hour), weekly (7 days), 27 day, 60 day or 90 day. Disabled by entering AA in CS code Q31.

TEST BY TIME - Indicates that system test signals (if selected) will be sent at the time specified in question 12. The interval depends on the test interval selected.

TEST BY EVENT - This indicates that each event transmitted will restart the test timer. For example, if a daily signal is selected and the last signal was transmitted at 2:15AM then a test signal will be sent the following day at 2:15 AM if no other events were transmitted. Each subsequent transmission will reset the test timer.

TEST BY TIME/EVENT - Test signal will be transmitted at specific time (defined in question #16) after the programmed number of days unless day counter is reset by an event. Each event transmitted restarts the timer. Example: If 60 day test by event/time is selected then a test signal will be sent after 60 days of inactivity at the time programmed in question #16.

NOTE: The CS Test Time is entered in question #16 and it is enabled in question #32, locations 3 & 4.

Question 10, L4 - Ring Count, User Code Required to Set Times & Bell Test ***Default = 6***

Digit	REMOTE COMMUNICATIONS RING COUNT	USER CODE REQUIRED TO SET TIMES		SYSTEM BELL TEST
		NO	YES	
0	0		✔	
1	5		✔	
2	10		✔	
3	15		✔	
4	0	✔		
5	5	✔		
6	10	✔		
7	15	✔		
8	0		✔	✔
9	5		✔	✔
A	10		✔	✔
B	15		✔	✔
C	0	✔		✔
D	5	✔		✔
E	10	✔		✔
F	15	✔		✔

REMOTE COMMUNICATIONS RING COUNT - Determines the number of rings required by the control panel to pickup for remote communication purposes. The number of rings should be set to a value which does not interfere with the telephone at the panel location. **To disable remote communications select a ring count of 0. Select the desired ring count from 0 - 15, where 0 means no remote access.**
NOTE: For PULSE dialing formats (question #07, location 3) select a Ring Count of 15.

USER CODE REQUIRED FOR TIME ENTRY - This option (YES) indicates whether time set commands (set time and auto arm time) require an entry of a valid user code. If this option is not selected (NO), then no user code is required. This option also affects the auto arm set and view functions.

SYSTEM BELL TEST - This option indicates whether a bell test will be initiated upon a successful system arming. If selected, then the bell will activate for one second after arming the system. **NOTE:** This option is required for UL commercial installations.

QUESTION 11 ENTRY/EXIT TIME-OUTS & CROSS ZONE TIME-OUT

DEFAULT = 6333

There are 4 locations (L1-L4) within this question which define the exit/entry times as follows:

Question 11, L1 - Exit Delay ***Default = 6***

Enter the desired exit times in 10 second increments. Refer to Exit/Entry Times below for valid choices. For UL applications the maximum exit delay shall not exceed 60 seconds.

Question 11, L2 - Entry Delay #1 ***Default = 3***

Enter the desired entry delay time. Refer to Exit/Entry Times below for valid choices. For UL applications the maximum entrance delay shall not exceed 45 seconds for household applications or 15 seconds for commercial burglary applications.

Question 11, L3 - Entry Delay #2 ***Default = 3***

Enter the desired entry delay time. Refer to Exit/Entry Times below for valid choices. For UL applications the maximum entrance delay shall not exceed 45 seconds for household applications or 15 seconds for commercial burglary applications. Enter the digit for the desired Exit/Entry Time-outs from the table below.

Digit	ENTRY/EXIT TIME-OUTS
0	4 MINUTES, 30 SECONDS
1	10 SECONDS
2	20 SECONDS
3	30 SECONDS
4	40 SECONDS
5	50 SECONDS
6	1 MINUTE
7	1 MINUTE, 10 SECONDS
8	1 MINUTE, 20 SECONDS
9	1 MINUTE, 30 SECONDS
A	1 MINUTE, 40 SECONDS
B	1 MINUTE, 50 SECONDS
C	2 MINUTES
D	2 MINUTES, 10 SECONDS
E	2 MINUTES, 20 SECONDS
F	2 MINUTES, 30 SECONDS

NOTE: Entry timers are selected for each zone in questions #17-23, location

Question 11, L4 - Cross Zone Time-out ***Default = 3***

This option selects the time-out for all zones programmed with Cross Zone capability (see questions #17 - 24, loc. 3). When one of the zones enabled for cross zones is tripped, then a timer is started. If all the cross zones are tripped and the time-out has not expired, then the alarms are sent to the CS, the bell will activate and the keypad will sound and display accordingly. **NOTE:** This time-out will be ignored if cross zone capability is disabled. Enter the digit for the desired Cross Zone Time-out from the table below.

Digit	CROSS ZONE TIME-OUT
0	15 SECONDS
1	30 SECONDS
2	45 SECONDS
3	1 MINUTE
4	1 MINUTE, 15 SECONDS
5	1 MINUTE, 30 SECONDS
6	1 MINUTE, 45 SECONDS
7	2 MINUTES
8	2 MINUTES, 15 SECONDS
9	2 MINUTES, 30 SECONDS
A	2 MINUTES, 45 SECONDS
B	3 MINUTES
C	3 MINUTES, 15 SECONDS
D	3 MINUTES, 30 SECONDS
E	3 MINUTES, 45 SECONDS
F	4 MINUTES

CROSS ZONE - When one of the zones enabled for cross zones is tripped, then a timer is started. If all the cross zones have tripped and the time-out has not expired, then the alarms are sent to the CS, the bell will activate and the keypad will sound and display accordingly.

QUESTION 12 MISCELLANEOUS OPTIONS

DEFAULT = 0303

This question contains four locations (L1-L4) for various keypad definable options.

Question 12, L1 - LED Extinguish, Keypad Tamper/Lockout, ***Default = 0***

System Stay Mode Dialer Delay & Bell Instant

Enter the digit for the desired system options from the table below in location L1. **NOTE:** The checkmark highlights which options are selected.

Digit	LED EXTINGUISH	KEYPAD LOCKOUT	STAY MODE DIALER DELAY	STAY MODE BELL INSTANT
0				✔
1	✔			✔
2		✔		✔
3	✔	✔		✔
4			✔	✔
5	✔		✔	✔
6		✔	✔	✔
7	✔	✔	✔	✔
8				
9	✔			
A		✔		
B	✔	✔		
C			✔	
D	✔		✔	
E		✔	✔	
F	✔	✔	✔	

LED EXTINGUISH - If selected, this option will extinguish all status LEDs (not the button LEDs) on the XL-4600SM keypad ONLY after 60 seconds. The LEDs will re-light upon a press of any button or when the panel is in alarm or entry time.

KEYPAD LOCKOUT - Upon entry of 21 keystrokes in succession without entry of a valid command, the system will initiate a keypad lockout condition. This will be a silent alarm. A code (Keypad Tamper) can be programmed for transmission to the Central Station (see question #35, locations 3 & 4). In addition, the keypad will ignore keys for 1 minute causing a lockout.

STAY MODE DIALER DELAY - If selected this will give the system an additional delay is as follows: When the system is armed in the STAY mode, any control zone alarm (delay, interior, perimeter) will cause the **dialer to be delayed by 40 seconds**. A delay zone will first follow the entry delay and then the 40 second delay. Also, during the 40 second dialer delay the keypad sounder will be activated and the bell depending on whether it is selected (see STAY MODE BELL INSTANT). When the system is not armed in the STAY mode, the 40 second delay is disabled. If not selected, the 40 second delay during the STAY mode will be disabled.

STAY MODE BELL INSTANT - This is selected in connection with the STAY MODE DIALER DELAY option. If selected, the bell will sound instantly during the 40 second delay. If not , the bell will also follow a 40 second delay.

Question 12, L2 - Siren Driver or Bell Output ***Default =3***

This digit defines whether the system will utilize the built in siren driver or have a conventional bell output. If the siren driver is selected then the sounds for fire and burglary conditions will be selected as shown below. **NOTE:** The checkmark highlights which options are selected.

Digit	12 VOLT BELL OUTPUT	AUDIO LEVEL VOLTAGE OUTPUTS/BUILT- IN SIREN DRIVER					
		STEADY BURGLARY	STEADY FIRE	EUROPEAN SWEEP BURGLARY	EUROPEAN SWEEP FIRE	SWEEP BURGLARY	SWEEP FIRE
0	✔						
1		✔	✔				
3			✔	✔			
5		✔			✔		
7				✔	✔		
B			✔			✔	
D		✔					✔
E				✔			✔
F						✔	✔

NOTE: If the built-in siren driver does not provide sufficient sound for the installation, then program this option for bell output and utilize an external siren driver. Select "0" Bell Output for all UL Listed commercial applications. For Built-in Siren Driver connect only an 8 ohm speaker. For Bell Output connect a siren driver (ex: FBII model VS-299 or 679S) and an 8 ohm speaker, a self contained siren or a bell.

12 VOLT BELL OUTPUT: If selected, for burglary it will be STEADY and for fire it will be PULSING.

Question 12, L3 - Keypad Conditions, Stay & Stay/Instant Arming Enable ***Default = 1***

Select the options available from the table below. **NOTE:** The checkmark highlights which options are selected.

Digit	KEYPAD PANIC		KEYPAD AUXILIARY		INSTANT ARMING	STAY/INSTANT ARMING
	AUDIBLE	SILENT	AUDIBLE	SILENT		
0		✔		✔		
1	✔			✔		
2		✔	✔			
3	✔		✔			
4		✔		✔	✔	
5	✔			✔	✔	
6		✔	✔		✔	
7	✔		✔		✔	
8		✔		✔		✔
9	✔			✔		✔
A		✔	✔			✔
B	✔		✔			✔
C		✔		✔	✔	✔
D	✔			✔	✔	✔
E		✔	✔		✔	✔
F	✔		✔		✔	✔

KEYPAD PANIC - The keypad panic condition (depression of the * and # keys, at that same time) can be selected for audible or silent response. Central station transmission will depend on the value entered in question #30, locations 1 and 2.

KEYPAD AUX - The keypad auxiliary condition (depression of the 1 and 3 keys, at that the same time) can be selected for audible or silent response (**keypad sounder only**). Central station transmission will depend on the value entered in question #34, locations 3 and 4.

NOTE: The **KEYPAD FIRE** condition (7 & 9 from the keypad, at the same time) is ENABLED when Central Station transmission is ENABLED by the entry in question #34, locations 1 and 2. It is DISABLED by entering an "AA" IN QUESTION #34, locations 1 & 2.

INSTANT ARMING ENABLE - If this option is selected, then Instant arming is permitted within the system. **NOTE:** This option does not affect the STAY- INSTANT function.

STAY/INSTANT ARMING ENABLE - If this option is selected, then Stay/Instant Arming is permitted within the system. NOTE: This option does not affect the INSTANT function.

Question 12, L4 - Temporal Bell, Armed While Faulted, AC/LB Sounder Enable and User On-line Downloading ***Default = 4***

Select a digit from the following table. **NOTE:** The checkmark highlights which options are selected.

Digit	TEMPORAL BELL	ARMED WHILE FAULTED	AC/LB SOUNDER AUDIBLE	USER ON-LINE DOWNLOADING
0				
1	✔			
2		✔		
3	✔	✔		
4				
5	✔		✔	
6		✔	✔	
7	✔	✔	✔	
8				✔
9	✔			✔
A		✔		✔
B	✔	✔		✔
C			✔	✔
D	✔		✔	✔
E		✔	✔	✔
F	✔	✔	✔	✔

TEMPORAL BELL - A fire alarm causes the bell to sound 3 tones then pause, 3 tones then pause, etc.

ARMED WHILE FAULTED - Allows the system to arm even if the exit door or exit route (PIR) is faulted. The faulted zones must be restored by the end of the exit time or an alarm will occur.

AC/LB SOUNDER AUDIBLE - The keypad beeps when an AC loss or low battery condition occurs.

USER ON-LINE DOWNLOAD - This option indicates whether the end user command for an on-line download will be enabled (Command # CODE). This command would allow an end user to be instructed how to initiate an on-line download and possibly prevent a service call.

QUESTION 13 SYSTEM OPTIONS

DEFAULT = 0B0C

This question contains four locations (L1-L4) for various keypad definable options.

Question 13, L1 - Dial-tone Wait (Detect) ***Default = 0***

Enter the digit for the desired system options from the table below in location L1. **NOTE:** The checkmark highlights which options are selected.

Digit	DIAL-TONE WAIT
0	NONE
8	✔

DIAL TONE WAIT - System will dial after dial tone is detected. If tone is not detected after 7 seconds, system hangs up for 7 seconds then tries to detect dial tone again when this feature is enabled. If not enabled and dial tone is not detected after 7 seconds, system dials anyway. In either case, if a busy signal is detected, system hangs up for 7 seconds then tries again.

Question 13, L2- Reserved (Not Used)

Question 13, L3- Reserved (Not Used)

Question 13, L4- Reserved (Not Used)

QUESTION 14 TRIGGERS 1 & 2

DEFAULT = 0102

The control panel contains 4 voltage level output triggers.To select a trigger type enter the 2 digits in either L1 L2 or L3 L4 desired trigger type for each output trigger. Certain of the triggers can be selected as Non-Inverting or Inverting (see description below). Consult the table below to determine the trigger types available.

Question 14, L1 & L2 - Define Trigger #1 ***Default = 01***

Question 14, L3 & L4 - Define Trigger #2 ***Default = 02***

NOTE: If the trigger is unused then enter 00.

Digits		TRIGGER TYPE DEFINITION	DESCRIPTION OF OPERATION
NON-INVERT	INVERT		
00	N/A	Smoke Detector Power	
01	81	Burglary Bell	Steady follows burglary bell time-out
02	82	Fire Bell	Steady follows fire bell time-out
03	83	Duress	2 second pulse following duress code
04	84	Keypad Tamper	ON w/Keypad Tamper; OFF w/code
05	85	24 Hour Trouble	Follows 24 Hour Trouble keypad sounder
06	86	Fire Trouble	Follows Fire Trouble keypad sounder
07	87	Day Trouble	Follows Day Trouble keypad sounder
08	88	24 Hour Alarm	AUDIBLE: follows bell; SILENT: 2 second pulse
09	89	Keypad Fire	AUDIBLE: follows bell; SILENT: 2 second pulse
0A	8A	Keypad Emergency	AUDIBLE: follows bell; SILENT: 2 second pulse
0B	8B	Keypad Panic	AUDIBLE: follows bell; SILENT: 2 second pulse
0C	8C	Strobe	After an Alarm: follows arming LED until disarm
0D	8D	AC Loss	Follows AC after 15 minute delay
0E	8E	Low Battery	Follows Low Battery
0F	8F	Arming State	Follows Arming state
10	90	Bypass	Follows any zone bypassed
11	91	Entry	Follows entry time
12	92	Exit	Follows exit time
13	93	Instant	Follows Instant Arming state
14	94	Stay	Follows Stay Arming state
15	95	Ready	Follows Ready state
16	96	Door Strike	5 second pulse on entry of door strike code
17	97	Communication Failure	Follows Communication Failure LED
19	99	Keypad Sounder	Follows keypad sounder
1A	9A	Ground Start	Follows Dialing (Trigger #1 only)
1B	9B	Glass Break Reset	Resets Latched Glass Break detectors
1C	9C	Exit Error	Follows Exit Error
1D	9D	Auto Test Time	Momentary pulse when CS Test is transmitted
1E	9E	Listen In	Active after receiving a CS "kiss off" signal to enable listen device
1F	9F	Line Seizure	Panel seizes the phone line upon alarm and stays on while panel is reporting to cs
20	A0	Chime	2-second pulse when a zone is faulted
21	A1	Alarm Restore	trigger on when burg alarm sounds, off when all burg zones have sent cs restore
22	A2	Fire/Latch	Can turn on aux. devices upon fire alarm trigger on with fire bell, off with cs fire restore

NOTE: If Ground Start trigger is desired, then this must be programmed as trigger #1. If Glass Break Reset trigger (type 0C) is selected, then depression of * (ASTERISK) from the keypad will activate the trigger. **The trigger outputs are limited to approximately 50 mA each.**

NON-INVERT TRIGGER - The trigger output (positive to negative) is normally floating and actively sinks (becomes a negative) on activation.

INVERT TRIGGER - The trigger output (positive to negative) is normally sinking (negative with respect to positive) and actively floats on activation.

QUESTION 15 AUTO ARMING TIME

DEFAULT = 1700

If auto arming has been enabled, then enter the hour and minute in military time (24 hour Clock) as follows:

Question 15, L1 & L2 - Hour of Day (00 - 23) ***Default = 17***

Enter the hour of the day in military time: 12 A.M. - 12 P.M. (00 - 12). **NOTE:** Quick Rule: 00 = Midnight and for times after 12 noon add 12 hours to obtain the hour.

Question 15, L3 & L4 - Minute within Hour (00 - 59) ***Default = 00***

Example: To auto arm at 5:30 PM enter a 17 into L1 & L2 and 30 into L3 & L4.

NOTE: The auto arming time can also be programmed through the quick command (# 5).

QUESTION 16 CS TEST TIME

DEFAULT = 0300

If the control panel transmits a system test at a specific time of day enter the hour and minute in military time (24 hour Clock) as follows:

Question 16, L1 & L2 - Hour of Day (00 - 23) ***Default = 03***

Enter the hour of the day in military time: 12 A.M. - 12 P.M. (00 - 12). **NOTE:** Quick Rule: 00 = Midnight and for times after 12 noon add 12 hours to obtain the hour.

Question 16, L3 & L4 - Minute within Hour (00 - 59) ***Default = 00***

Example: To transmit at 5:30 PM enter a 17 into L1 & L2 and 30 into L3 & L4.

NOTE: The CS Test Interval is selected in question #10, location 3 and it is enabled in question #31, locations 3 & 4.

QUESTIONS 17 - 23 ZONE PROGRAMMING

Questions 17 - 23 represent all the options related to programmable zones 1-7. There are 4 locations (L1 - L4) in each question, which define various zone options. The zones are comprised of as many individual sensors as desired.

QUESTION 17 ZONE 1

DEFAULT = 2060

Zone 1 =EOL Audible Delay Zone w/Entry Timer #1, Bypass Enable & Report Restore

QUESTION 18 ZONE 2

DEFAULT = 4060

Zone 2 =EOL Audible Interior Follower Zone w/Entry Timer #1, Bypass Enable & Report Restore

QUESTION 19 ZONE 3

DEFAULT = 0060

Zone 3 =EOL Audible Instant Zone w/Entry Timer #1, Bypass Enable & Report Restore

QUESTION 20 ZONE 4

DEFAULT = 0060

Zone 4 =EOL Audible Instant Zone w/Entry Timer #1, Bypass Enable & Report Restore

QUESTION 21 ZONE 5

DEFAULT = 0060

Zone 5 =EOL Audible Instant Zone w/Entry Timer #1, Bypass Enable & Report Restore

QUESTION 22 ZONE 6

DEFAULT = 0060

Zone 6 =EOL Audible Instant Zone w/Entry Timer #1, Bypass Enable & Report Restore

QUESTION 23 ZONE 7

DEFAULT = A140

Zone 7 =N.O. Open Audible 24 Hour zone w/Report Restore

Questions 17 - 23, L1 - Zone Type Descriptions

Location 1 defines the zone type for each zone. Enter the digit from the table below. **NOTE:** The checkmark highlights which options are selected.

Digit	ZONE TYPE	STAY ARMING OPTIONS	
		AUTO STAY	MANUAL STAY
0	Instant	NONE	
2	Delay (Exit/Entry)	NONE	
3	Delay (Exit/Entry	✔	
4	Interior Follower		✔
5	Interior Follower	✔	✔
6	Delay (Exit/Entry)		✔
7	Delay (Exit/Entry)	✔	✔
8	Key switch	NONE	
9	24 Hr. Trouble	NONE	
A	24 Hr. Alarm	NONE	
E	Fire w/o verification	NONE	
F	Fire w/ verification	NONE	

BURGLARY (CONTROLLED) ZONES

DELAY (EXIT/ENTRY) - This is the industry standard exit/entry zone. When the system is armed exit time begins. After exit expires, any subsequent violation of this zone will begin entry time. If the system is not disarmed within the programmed entry time an alarm will occur. The keypad sounder will annunciate steadily during entry time, unless there had been an alarm condition, at which time it will pulse. Delay zones will activate instantly when the system is armed using the INSTANT mode.

INTERIOR FOLLOWER - All interior zones have exit delay time upon system arming. Furthermore, all interior zones will have entry delay time if a delay zone is violated first. If this zone is violated first however, it will generate an immediate alarm. INTERIOR ZONES WILL AUTOMATICALLY BE BYPASSED IF THE SYSTEM IS ARMED IN THE STAY MODE.

INSTANT - This zone type (sometimes known as PERIMETER) will generate an alarm when violated while the system is armed.

STAY ARMING OPTIONS

AUTO STAY - This zone type will automatically be bypassed if the system is armed in the AWAY mode and a TYPE 2 OR Type 6 EE ZONE has not been violated during exit delay time. The LCD keypad will display an AUTO STAY indication. HOWEVER, THIS ZONE IS NOT BYPASSED IF ARMED IN STAY MODE.

MANUAL STAY - This zone type will be bypassed when the system is armed in the STAY mode. IT IS NOT AUTOMATICALLY BYPASSED IF THE SYSTEM IS ARMED IN THE AWAY MODE AND A TYPE 2 OR 6 EE ZONE HAS NOT BEEN VIOLATED DURING EXIT DELAY TIME.

AUTO & MANUAL STAY - This zone type will automatically be bypassed if the system is armed in the AWAY mode and a TYPE 2 or Type 6 EE zone has not been violated after during the exit delay time. The LCD keypad would display an AUTO STAY indication. ALSO, THIS ZONE IS BYPASSED IF ARMED IN STAY MODE.

EXIT ERROR WARNING - This option is always enabled for all delay or interior type zones. At the end of exit time a 1 second window is started. If any delay or interior zones are violated after arming within this window (exit times expires and entry time starts) the burglary bell and sounder will be turned on forcing the user to enter their code preventing a false alarm transmission. This helps avoid the common false alarms that take place after arming the system.

24 HR. ZONES

FIRE - FIRE w/ verification zones contain Fire Verification Logic. Upon detection of the first violation, smoke detector power on conventional 4 wire smoke detectors connected to ZONE modules will be reset for a period of 8 seconds. After this time period, power is restored. For a period of 5 seconds the fire zone will not be scanned allowing the smoke detectors to settle. Future violations within a two minute period will result in a PULSING BELL OUTPUT, RAPID PULSING ZONE LED,and IMMEDIATE transmission to the CS. Fire signals cannot be aborted.

Entry of any valid user code will silence the sounder and bell. Entry of a valid user code for a second time will reset smoke detector power and clear alarm memory. If the system detects that the fire zone is still violated within 2 minutes of power reset, the zone LED will pulse slowly to indicate a fire trouble. Thereafter, smoke detector power will be reset every 4 minutes automatically in an attempt to clear the fire zone.

In the event the fire zone experiences an open, the system indicates fire trouble by pulsing the keypad zone LED and sounder slowly. The system trouble code (followed by the zone code) will be reported to the CS.

Fire w/o verification do not follow verification. They will trip instantaneously upon a violation.

NOTE: Fire zones will also cause a trouble condition if the bell or speaker is disconnected.

Any valid user number silences the keypad. When a zone is selected for fire, it will go into a trouble condition whenever the bell or speaker is disconnected.

NOTE: Fire Zones cannot be bypassed. 24 HOUR TROUBLE must NOT be used for fire/burglary protection.

24 HR. ALARM - This zone type is always active, independent of the system arming status. Programming options include audible (STEADY BELL) or silent (NO BELL or keypad indications), with or without restore codes. Upon violation the zone LEDS will pulse rapidly (audible zones only) and an immediate CS transmission will occur which cannot be aborted.

24 Hour Alarm zones can be bypassed, however they cannot be unbypassed if a violation exists on the zone terminals. **NOTE:** 24 Hour zones should not be used for perimeter protection.

24 HR. TROUBLE - This zone type is always active, independent of the system arming status. Programming options include audible (PULSING KEYPAD SOUNDER) or silent, with or without restore codes. Upon violation the zone LED will pulse slowly. TROUBLE CONDITION MUST EXIST FOR 15 SECONDS BEFORE A TRANSMISSION WILL OCCUR. The keypad display and sounder will clear upon zone restoral.

24 Hour Trouble zones can be bypassed, however they cannot be unbypassed if a violation exists on the zone terminals. Any valid user code silences the keypad.

KEY SWITCH - Key switch zones will toggle the arming status of the system. Key switches can automatically arm the system in the STAY mode if the key switch is held for three seconds or more; arms in AWAY mode if held for 2 seconds or less. **NOTE:** Key switch Zone operation has NOT been investigated by Underwriters Laboratories.

Question 17 - 23, L2 - Loop Type, Fast Zone & Entry Timer

L2 contains the loop EOL type and the entry delay timer to be used for the zone. Enter the digit from the table below. **NOTE:** The checkmark highlights which options are selected.

Digit	EOL	N/O	N/C	FAST ZONE	ENTRY TIMER #1	ENTRY TIMER #2	INTERIOR EOL ZONE TYPE W/O BYPASS*
0	✔				✔		
1		✔			✔		
2			✔		✔		
3*							✔
4	✔			✔	✔		
5		✔		✔	✔		
6			✔	✔	✔		
7*				✔			✔
8	✔					✔	
9		✔				✔	
A			✔			✔	
C	✔			✔		✔	
D		✔		✔		✔	
E			✔	✔		✔	

* Digits "3" and "7" apply to this table only if digit "4" is selected in question 17 location 1. If question 17 location 1 is selected for any option except "4," then options "3," "7," and the interior zone type w/o bypass does not apply to this table.

LOOP TYPE - Choose between EOL supervision, or N/O, N/C operation. **NOTE:** EOL requires resistor, but both N/O and N/C do not.

FAST ZONE - If enabled, then the zone response will be **10 msec** (connect Alarm on Open type devices only). If not selected, it will be 280 msec.

ENTRY TIMER - Selects whether entry delay times 1 or 2 should be used for this zone. The EE delay times are defined within question #11 of the programming sequence. Entry delay time 1 should be selected for most zones. If the zone option delay or interior has been selected, then either entry 1 or entry 2 can be selected. Entry timer applies only to entry/exit zone type zones.

Question 17 - 23, L3 - Cross Zone, Bypass & Restore

Enter the digit from the table below. **NOTE:** The checkmark highlights which options are selected.

Digit	CROSS ZONE	BYPASS	RESTORE
1	✔		
2		✔	
3	✔	✔	
4			✔
5	✔		✔
6		✔	✔
7	✔	✔	✔

CROSS ZONE - When one of the zones enabled for cross zones is tripped, then a timer is started. If all the cross zones have tripped and the time-out has not expired, then the alarms are sent to the CS, the bell will activate and the keypad will sound and display accordingly.

BYPASS - If selected, then the zone will be bypassable, either individually or by group (refer to question #09, locations 1 & 2).

WARNING: Fire Zones CANNOT BE BYPASSED. 24 Hour zones CAN BE BYPASSED, however, they CANNOT BE UNBYPASSED if a violation exists on their zone terminals.

RESTORE - If this option is selected on a burglary zone, then the programmed restore code will be reported upon bell cutoff, assuming the loop is restored. The restore code will also be reported if the system is disarmed during an alarm.

Question 17 - 23, L4 - Audible, Silent, Day, Chime, Dialer Delay

L4 contains the following attributes. Enter the digit from the table below. **NOTE:** The checkmark highlights which options are selected.

Digit	AUDIBLE	SILENT	DAY	CHIME	DIALER DELAY
0	✔				
1	✔		✔		
2	✔			✔	
3	✔		✔	✔	
4		✔			
5		✔	✔		
6		✔		✔	
7		✔	✔	✔	
8	✔				✔
9	✔		✔		✔
A	✔			✔	✔
B	✔		✔	✔	✔
C		✔			✔
D		✔	✔		✔
E		✔		✔	✔

SILENT/AUDIBLE (Controlled & 24 Hour Zones) - Indicates whether Controlled or 24 Hour Alarm Zones are Silent or Audible (both keypad sounder and bell output) or whether 24 Hour Trouble Zones are Silent or Audible (keypad sounder only).

DAY FEATURE (Controlled Zones) - If a zone with this option is violated while the system is DISARMED, the keypad sounder and zone LED will pulse for as long as the violation remains. In addition, the SYSTEM TROUBLE CODE will be transmitted to the central station. THE SOUNDER CAN BE SILENCED through entry operation of any valid user code. While the system is armed, a DAY zone will act as an alarm when violated.

CHIME (Controlled Zones) - If this option is selected the keypad sounder will annunciate for 1 second when this zone is violated in the disarmed mode. **NOTE:** If enabled, the user can control the system chime by using the quick command #6.

DIALER DELAY (Controlled Zones) - If this option is selected the system will allow a 15 second delay before dialing, allowing the end user to ABORT the transmission. If this option is not selected, any alarm condition will result in an immediate transmission that cannot be aborted. **NOTE:** For UL installations dialer delay may not be used.

QUESTIONS 24 - 27 ZONE CS CODES

Questions 24 - 27 define the programming codes to be transmitted to the central station for each zone and contain 4 locations as follows:

QUESTION 24 CS Codes for Zones 1 & 2 — DEFAULT = 3132

Question 24, L1 & L2 - Zone 1 — ***Default = 31***

Question 24, L3 & L4 - Zone 2 — ***Default = 32***

QUESTION 25 CS Codes for Zones 3 & 4 — DEFAULT = 3334

Question 25, L1 & L2 - Zone 3 — ***Default = 33***

Question 25, L3 & L4 - Zone 4 — ***Default = 34***

QUESTION 26 CS Codes for Zones 5 & 6 — DEFAULT = 3536

Question 26, L1 & L2 - Zone 5 — ***Default = 35***

Question 26, L3 & L4 - Zone 6 — ***Default = 36***

QUESTION 27 CS Codes for Zones 7 & 8 — DEFAULT = 3738

Question 27, L1 & L2 - Zone 7 — ***Default = 37***

Question 27, L3 & L4 - Reserved (Not Used)

NOTE: If a zone is selected as a Key switch Zone Type and a two digit reporting format is selected, for openeings/closings the second digit reported will be the second digit of the zone CS code. TO REPORT THE USER NUMBER CORRECTLY, THE FIRST DIGIT OF THE ZONE CS CODE MUST BE "0".

ZONE ALARM CODES

Zones will transmit to the Central Station **unless these digits are defined as AA for any individual zone**. Based on the dialer format selected enter the alarm code as follows:

STANDARD FORMAT (3X1 or 4X1): Enter the desired single digit alarm code in the first location for the specific zone. The value placed in the second digit will **not** be used.

EXTENDED (3X1 Ext. or 4X1 Ext.): Enter the desired first digit of the alarm code into the first digit of the particular zone and the second digit into the second location.

PARTIAL EXTENDED (3X1 Part. Ext. or 4X1 Part. Ext.): Enter the desired digit in both locations for the zone. This will generate a single digit transmissions for alarms and troubles (the second digit will **not** be used) and extended transmissions for all system conditions such as restores, bypasses, openings/closings, etc. (the second will be used).

3X2 or 4x2: Enter the desired first digit of the alarm code into the first location the second digit into the second location.

FBI SUPERFAST: Enter the two digits zone type into the two locations to be transmitted as the zone code.

ADEMCO 4X1 EXPRESS: Enter the desired single digit alarm code in the first location for the specific zone. The value placed in the second digit will **not** be used.

ADEMCO 4X2 EXPRESS: Enter the desired first digit of the alarm code into the first location the second digit into the second location.

ADEMCO POINT ID (PID) Format: The digit entered in the first location will select the PID Event code to be transmitted; refer to Appendix A for the PID Event Codes to be selected.

NOTE: For more information on CS Reporting Formats refer to Appendix A at the back of this manual.

QUESTION 28 CS CODES for AMBUSH and AC LOSS

DEFAULT = AAA1

There are 4 locations L1- L4 in this question as follows:

Question 28, L1 & L2 - Ambush Code ***Default = AA***

If an ambush code is defined, then user number 15 is the ambush code. The same rules apply here regarding dialer format. If transmission is not desired, then program AA in locations L1 & L2. **NOTE:** AMBUSH transmissions are immediate and not abort able.

Question 28, L3 & L4 - AC Loss Code ***Default = A1***

The same rules apply here regarding dialer format . AC LOSS will be transmit a dedicated PID code of 301 if PID format is selected. If transmission is not desired, then program AA in locations L1 & L2. **NOTE:** AC LOSS is reported 15 minutes after detection.

AC LOSS SOUNDER DISABLE: If the first digit (L1) of the AC Loss code is an A, then to disable the keypad sounder during AC loss enter an A into the second digit (L4). The keypad display will still indicate AC loss.

QUESTION 29 CS CODES for PANIC and LOW BATTERY

DEFAULT = 22AA

There are 4 locations L1-L4 in this question as follows:

Question 29, L1 & L2 - Panic Code ***Default = 22***

The same rules for programming regarding dialer format apply here. If transmissions are not desired, then program AA in locations 1 & 2. **NOTE:** PANIC transmissions are immediate and not abort able.

Question 29, L3 & L4 - Low Battery Code ***Default = AA***

The same rules for programming regarding dialer format apply here. If transmissions are not desired, then program AA in locations 1 & 2. LOW BATTERY transmissions will be reported 4 minutes after detection. LOW BATTERY RESTORE CODE will be reported WITHIN 4 minutes after detection of GOOD BATTERY condition. **NOTE:** If transmitting in PID format, THEN a dedicated PID code of 309 will be transmitted for low battery conditions.

QUESTION 30 CS CODES for OPEN/CLOSE

DEFAULT = AAAA

There are 4 locations L1-L4 in this question. Entry of AA into these two locations means that openings and closings are not desired. If a dialer format other than standard is programmed, then the second digit transmitted will be the user number. If PID format is used, then dedicated code of 402 will be transmitted.

Question 30, L1 - Opening Code ***Default = A***

Question 30, L2 - Closing Code ***Default = A***

Question 30, L3 - Reserved - NOT USED ***Default = A***

Question 30, L4 - Reserved - NOT USED ***Default = A***

NOTE: If a zone is selected as a Key switch Zone Type and a two digit reporting format is selected, for openeings/closings the second digit reported will be the second digit of the zone CS code. TO REPORT THE USER NUMBER CORRECTLY, THE FIRST DIGIT OF THE ZONE CS CODE MUST BE "0".

QUESTION 31 CS CODES for CANCEL and CS TEST

DEFAULT = AAAA

This question contains 4 CS transmission codes as follows:

Question 31, L1 - Cancel Code ***Default = A***

A cancel code can be transmitted to the Central Station if after violation of a controlled zone, a user code is entered. If the zone is still violated entry of a user code will transmit the cancel code. If the zone is programmed for restore then the restore code can be transmitted when the loop status has returned to normal. Entry of A in this field indicates that cancel codes are not transmitted. In formats requiring two digits, the user number functions as the second digit. **NOTE:** The event code for PID transmission will be 406.

Question 31, L2 - Reserved - NOT USED

Question 31, L3 & L4 - CS Test Code ***Default = AA***

These locations indicate the desired Central Station code for transmission of the system test code. The frequency and type of test is defined in question #13, location 4. Entry of AA indicates that system test is not transmitted. **NOTE:** The event code for PID transmission will be 602.

QUESTION 32 CS CODES for BYPASS, RESTORE, DAY TROUBLE and FIRE TROUBLE

DEFAULT = AEFA

There are four(4) locations L1 - L4 in this question as follows:

Question 32, L1 - Bypass Code ***Default = A***

This is the single digit system *BYPASS CODE* reported to the central station if a zone is bypassed, UPON ARMING. Entry of an A means that bypasses are not transmitted. If a two digit dialing format has been selected then the Bypass code will be followed by the programmed second digit of the zones code.

Question 32, L2 - Restore Code ***Default = E***

This is the single digit system *RESTORE CODE* reported to the central station. Restores will be reported for burglary or 24 hour zones which have been programmed with the restore option. Entry of an A means that restores are not transmitted. If a two digit dialer format has been programmed then the restore code will be followed by the programmed second digit of the zone code.

Question 32, L3- Day Trouble Code ***Default = F***

This is the single digit system *DAY TROUBLE CODE* reported to the central station. If a two digit format has been programmed then this code will be followed by the second digit of the respective zones code. Entry of A indicates that troubles are not transmitted. If PID format is used then select from then a dedicated PID code of 156 will be transmitted.

Question 32, L4 - Fire Trouble Code ***Default = A***

This is the single digit system *FIRE TROUBLE CODE* reported to the central station. If a two digit format has been programmed then this code will be followed by the second digit of the respective zones code. Entry of A indicates that troubles are not transmitted. If PID format is used a dedicated event code of 373 will be transmitted.

NOTE: If a zone is selected as a Fire Zone Type, the Fire Trouble CS Code (question #33, location 4) must be enabled along with the Restore CS Code (question #33, location 2).

QUESTION 33 CS CODES for KEYPAD FIRE and KEYPAD AUXILIARY

DEFAULT AAAA

There are 4 locations L1-L4 in this question as follows:

Question 33, L1 & L2 - Keypad Fire CS Code ***Default = AA***

L1 - L2 ENABLES the KEYPAD FIRE condition and is the code that will be transmitted upon activation (pressing the 7 & 9 keys on the keypad at the same time). This code can vary from any of the zones which are programmed as fire. **NOTE:** To DISABLE the keypad fire condition and prevent CS reporting enter AA. The keypad fire condition is always AUDIBLE.

Question 33, L3 & L4 - Keypad Auxiliary CS Code ***Default = AA***

L3 - L4 is the code transmitted to the CS for keypad aux. condition (1 & 3 from the keypad) . To disable the keypad auxiliary CS reporting enter AA. **NOTE:** The keypad auxiliary condition can be silent or audible (keypad sounder only) based on the question 13, location 1.

QUESTION 34 CS CODES for DOWNLOAD & KEYPAD TAMPER

DEFAULT = AAAA

This question contains 4 location, L1 L2 contains the keypad tamper transmission code while L3 and L4 contains the CS TEST code.

Question 34, L1 & L2 - Download Code ***Default = AA***

This code will be reported whenever the panel has been downloaded. Enter AA to disable.

Question 34, L3 & L4 - Keypad Tamper Code ***Default = AA***

If 21 digits are entered through the keypad without entry of a valid user code or system command, then the keypad sounder will activate until a valid user code is entered. If a keypad tamper code is entered then it will be transmitted to the Central Station. If a two digit CS transmission code is selected (example 4x2 or extended) then both digits will be transmitted. To disable CS transmission of keypad tamper enter AA.

QUESTION 35 CS CODES for RECENT CLOSE, EXIT ERROR & SWINGER SHUTDOWN

DEFAULT = AAAA

This question contains 4 CS transmission codes as follows:

Question 35, L1 - Exit Error Code ***Default = A***

An exit fault condition would exist if a violation of a zone occurred after system arming but before expiration of the exit time. If this code is activated then the exit fault code would be transmitted in addition to the corresponding zone alarm condition. To disable the exit error transmission code enter A into location 1. **NOTE:** For point ID transmissions an event code of 457 will be transmitted.

Question 35, L2 - Recent Close Code ***Default =A***

This code would be transmitted if an alarm condition occurred within 5 minutes of system closing. Entry of A into this location will prevent transmission of this condition. **NOTE:** The event code for PID transmission will be 459.

Question 35, L3 - Swinger Shutdown Code ***Default = A***

CS transmission if swinger shutdown has occurred. Swinger shutdown is programmed in L4 of question #09. Entry of A into this location will prevent transmission of this condition.

Question 35, L4 - Reserved - NOT USED

QUESTION 00 INSTALLER CODE

DEFAULT = 2468

There are 4 locations L1 - L4 in this question. Enter any 4 digit installer code desired. This code is used to ENTER the system programming mode via the keypad. Typically each installing company would use a unique installer code in order to prevent unauthorized people from gaining access to their panels. **NOTE:** The factory default value for the installer code is 2468 in locations L1-L4 respectively. **This question is can be accessed only through the direct access mode, select question 00.** BEFORE EXITING PROGRAMMING, VERIFY INSTALLER CODE.

SUGGESTION: Typically each installing company would use a unique installer code in order to prevent unauthorized people from gaining access to their panels.

9. DATA ENTRY VIA LED & LCD BASED KEYPADS

This section describes the physical keystrokes necessary to perform keypad programming and how to interpret the data displayed on the LCD based keypads (6805,) and on the LED keypad (6615) during programming operations. **NOTE:** Actual keypad programming should be performed after completion of the programming sheet.

9.1. HOW TO ENTER PROGRAMMING MODE VIA EITHER LED OR LCD KEYPADS

The SYSTEM programming mode can be entered WHILE DISARMED ONLY as follows:

TO ENTER INSTALLER PROGRAMMING: **[CODE] [*] [INSTALLER] [1]**

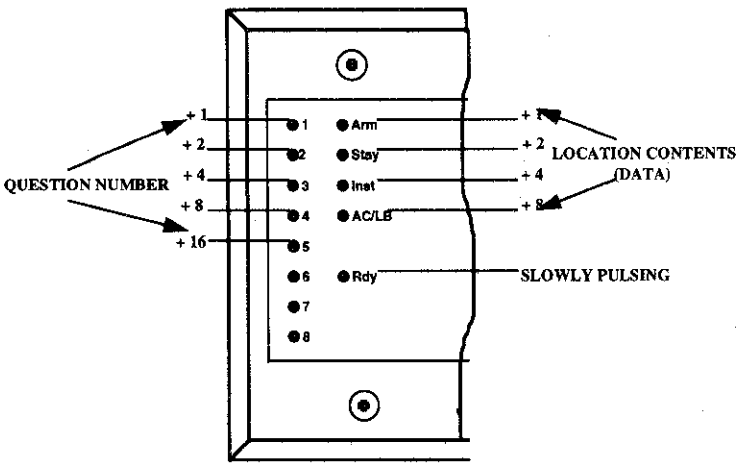
where:

[CODE]	Press the **CODE button**
[*]	Press the **asterisk (*) button**
[INSTALLER]	Enter the 4 DIGIT INSTALLER CODE (**default = 2468**)
[1]	Press **"1"** button. This indicates Installer Mode 1.

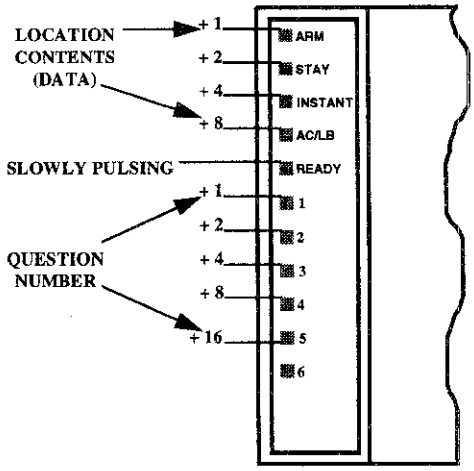
9.2. WHAT YOU SEE ON THE LED KEYPAD

PROGRAM MODE = READY LED:

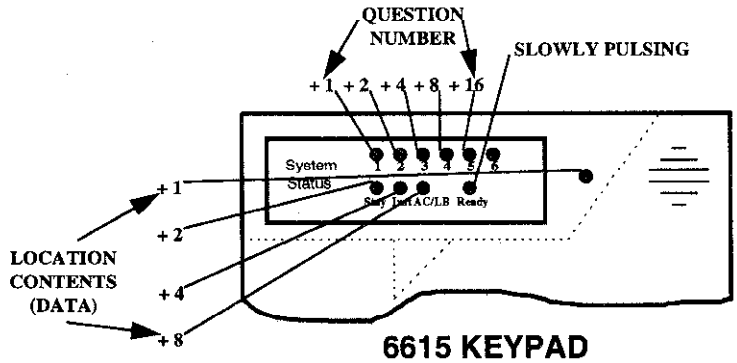
Upon entering the installer keypad programming mode the READY LED will slowly pulse, and will continue to pulse until leaving this mode. The remaining LEDS display the question number and location contents as indicated below:



XL-4600RM KEYPAD



XL-4600SM KEYPAD



6615 KEYPAD

NOTE: The LED keypads DO NOT display the current location (position within the question). They display only the current location contents (data values). You must keep track of the location within the question or else start from the beginning and move to the desired position using the # button. However, the LCD keypads display the current location (see next page).

QUESTION NUMBERS = ZONE 1-6 LEDS: There are 36 total questions, with multiple data entry locations.

Zone 1 through 6 LEDS display the current QUESTION NUMBER (not the specific location within each question) as follows:

In the diagram shown on the following page, the **question number** is the total you get when you ADD the values of all LEDS that are ON.

EXAMPLES:

Zone 1 ON, Zones 2-6 OFF	**= QUESTION 01**
Zone 1 ON, Zone 2 ON, Zones 3-6 OFF	**= QUESTION 03**
Zone 2 ON, Zone 3 ON, Zone 4 ON, Zones 1, 5 and 6 OFF	**= QUESTION 14**

LOCATION CONTENTS = ZONE 9-12 LEDS: All questions have 4 locations except for 2 & 3, which have 12 locations.

Zone 9 through 12 LEDS display the DATA that resides in EACH location within the **current** question. As per the diagram which follows and explanation above, the value located next to each LED must be ADDED to calculate the total data, for each location.

EXAMPLES:

Zone 9 ON, Zones 10-12 OFF	**= 1**
Zone 9 ON, Zone 10 ON, Zones 11 & 12 OFF	**= 3**

The following chart displays binary values that you will see on these LEDS for the letters A-F which may be entered in some locations of the program sheet.

A	10	Zone 9 OFF, Zone 10 ON, Zone 11 OFF & Zone 12 ON
B	11	Zone 9 ON, Zone 10 ON, Zone 11 OFF & Zone 12 ON
C	12	Zones 9 & 10 OFF, Zones 11 & 12 ON
D	13	Zone 9 ON, Zone 10 OFF, Zones 11 & 12 ON
E	14	Zone 9 OFF, Zones 10-12 ON
F	15	Zones 9-12 ON

9.3. WHAT YOU SEE ON THE LCD KEYPAD

Upon entering the installer keypad programming following display will appear:

```
QUES:  01              L:  01
DATA=  1
```

The display shows the current question number (QUES), the location within the question (L:) and the current value within that location (DATA =). This corresponds to the programming worksheet.

9.4. HOW TO ENTER DATA

This section of the manual describes the physical keystrokes to enter the data written on the program sheet.

MOVEMENT BETWEEN QUESTIONS

System program mode starts with question 1 displayed. RANDOM JUMPS TO ANY QUESTION CAN BE MADE BY PRESSING THE * (ASTERISK) BUTTON AND THE 2 DIGIT QUESTION NUMBER.

Questions can be accessed randomly or sequentially.

Example: Jump to question 07= Press *** 0 7**

The proper question number will be displayed by the zones 1-6 LEDS and the other zone 9-12 LEDS will display the contents of the FIRST location in that question.

MOVEMENT WITHIN QUESTIONS

The zones 1-6 LEDS display the question number and the other zones 9-12 LEDS display the contents (data) within each location. MOVEMENT FROM LOCATION L1 TO THE NEXT LOCATION WITHIN ANY QUESTION CAN BE PERFORMED BY PRESSING THE # (POUND) BUTTON.

The other zones 9-12 LEDS will display the contents of each location as this button is pressed.

DATA ENTRY

To alter the value in any location , enter the desired DIGIT from the program sheet,and **press the # button**.

NOTE: THE # BUTTON MUST BE PRESSED AFTER THE ENTRY OF the DESIRED DIGIT. THE SYSTEM WILL NOT PROGRAM THE DIGIT UNTIL THE POUND (#) BUTTON IS PRESSED, THEREFORE IF A MISTAKE IS MADE IT CAN BE CHANGED.

Numeric entries 0-9 can be performed by pressing the respective keypad button. Entries of A-F require 2 keystrokes as follows:

Press the **CODE** button followed by 1-6 for values A-F.

VALUE	KEYSTROKES	VALUE	KEYSTROKES
A	CODE 1	D	CODE 4
B	CODE 2	E	CODE 5
C	CODE 3	F	CODE 6

Example: Enter an A = Press CODE followed by 1.

EXIT SYSTEM PROGRAM MODE

After all programming has been completed, PRESS THE **STAY** BUTTON TO EXIT THE SYSTEM PROGRAM MODE. All the LEDS will turn ON for approximately 10 seconds, before the system returns to normal daily operation.

QUESTION ACKNOWLEDGMENT

The keypad will beep between keystrokes. In addition, a beep will be generated confirming advancement between questions numbers.

Four beeps will be generated if an invalid input is entered. Upon entry of invalid input you are positioned at the same question number and location as prior to the input error.

SUMMARY OF SYSTEM PROGRAMMING

TO ENTER PROGRAMMING:
[CODE] [*] [4 digit Installer Code] [1]

TO SKIP TO A QUESTION:
[*] [2 digit Question Number]

TO MOVE WITHIN A QUESTION:
Press the [#] until the desired location is reached.

TO ENTER DATA:
[single digit: 0 - 9, A - F] [#]

HEXADECIMAL ENTRIES:

A = [CODE] [1]	D = [CODE] [4]
B = [CODE] [2]	E = [CODE] [5]
C = [CODE] [3]	F = [CODE] [6]

TO EXIT PROGRAMMING:
Press the [STAY] key.

10. ZONE DESCRIPTOR PROGRAMMING

The LCD keypads have the capability to display 12 character zone descriptors which can be programmed directly through the keypad. The zone descriptors will appear on the first portion of the second line of LCD display. They are entered as questions #36-42.

NOTE:
These descriptors can only be accessed by an LCD keypad or PC Downloader Software.

The zone descriptors are programmed as follows:

QUESTION 36 ZONE 1 DESCRIPTOR	DEFAULT = ZONE 1
QUESTION 37 ZONE 2 DESCRIPTOR	DEFAULT = ZONE 2
QUESTION 38 ZONE 3 DESCRIPTOR	DEFAULT = ZONE 3
QUESTION 39 ZONE 4 DESCRIPTOR	DEFAULT = ZONE 4
QUESTION 40 ZONE 5 DESCRIPTOR	DEFAULT = ZONE 5
QUESTION 41 ZONE 6 DESCRIPTOR	DEFAULT = ZONE 6
QUESTION 42 ZONE 7 DESCRIPTOR	DEFAULT = ZONE 7

Example: To program the descriptor for zone 3, enter * 38 to access question #38.
When programming the English zone descriptors the following techniques are used to program the characters:

KEYSTROKE	ACTION
[0]	Inserts a SPACE and advances the cursor.
[CODE]	Moves the cursor to the LEFT one space.
[INSTANT]	Moves the cursor to the RIGHT one space.
[7]	INCREMENTS the character one at a time at the cursor.
[*] [7]	Scrolls forward (UP) through the character set. NOTE: Pressing any key will stop the scroll.
[9]	DECREMENTS the character one at a time at the cursor.
[#] [9]	Scrolls backward (DOWN) through the character set. NOTE: Pressing any key will stop the scroll

NOTE: The characters available through the LCD based keypads are as follows:

!"#$%&'()*+-./0123456789;=@ABCDEFGHIJKLMNOPQRSTUVWXYZ

11. SYSTEM DEFAULTS

The control panel is preprogrammed from the factory with default values. These values have been selected to meet the requirements of a common installation and may suit your needs.

FACTORY DEFAULT VALUES: To reload, remove all power from the system (AC & DC). Next, short JP1 & JP2; with short still intact reapply power (AC then DC), wait 8 seconds. Then, remove short with power still applied. The installer can also do a System or User Code Default through Installer Mode 1 (refer to the Installer Modes section of this manual).

NOTE: A programming option exists within the EZ- Mate PC Downloader devices known as **DEFAULT LOCKOUT**. If this option is selected, then a system default will not overwrite the CSID or installer code portion of the program. This will prevent an installer other than the original installer from taking over an account without cooperation.

QUESTION	DEFAULT VALUE
00 Installer Code	2468
01 Primary Telephone Number	234AAAAAAAAA
02 Secondary Telephone Number	AAAAAAAAAAAA
03 Callback Number	AAAA
04 PBX Prefix	AAAA
05 Account Number 1	1234
06 Account Number 2	AAAA
07 CS Dialer 1 & System Options	0510
08 CS Dialer 2 & System Options	1400
09 Miscellaneous Options	0010
10 Bell Time-outs, CS Test Time & Misc.	5F26
11 Entry/Exit & Cross Zone Time-outs	0333
12 Miscellaneous Options	0303
13 System Options	0000
14 Triggers 1 & 2	0102
15 Auto Arm Time	1700
16 CS Test Time	0300
17 Zone 1 Type	2060
18 Zone 2 Type	4060
19 Zone 3 Type	0060
20 Zone 4 Type	0060
21 Zone 5 Type	0060
22 Zone 6 Type	0060
23 Zone 7 Type	0060
24 CS Codes for Zones 1 & 2	3132
25 CS Codes for Zones 3 & 4	3334
26 CS Codes for Zones 5 & 6	3536
27 CS Code for Zones 7	3738
28 CS Codes for Ambush and AC Loss	AAA1
29 CS Codes for Panic and Low Battery	22AA
30 CS Codes for Open/Close	AAAA
31 CS Codes for Cancel and CS Test	AAAA
32 CS Codes for Bypass, Restore, Day Trouble & Fire Trouble	AEFA
33 CS Codes for K.P. Fire & K.P. Auxiliary	AAAA
34 CS Codes for Download & K.P. Tamper	AAAA
35 CS Codes for Recent Close, Exit Error & Swinger Shutdown	AAAA

USER NUMBER	DEFAULT CODE	APPLICATION
01	1234	Master User
02	NULL	Master User
03	NULL	Normal User
04	NULL	Normal User
05	NULL	Normal User
06	NULL	Normal User
07	NULL	Normal User
08	NULL	Normal User
09	NULL	Normal User
10	NULL	Normal User
11	NULL	Normal User
12	NULL	Normal User
13	NULL	Normal User
14	NULL	Normal User
15	NULL	Normal User

QUESTION	DEFAULT VALUE
36 ZONE 1 DESCRIPTOR	ZONE 1 (LCD Keypads ONLY)
37 ZONE 2 DESCRIPTOR	ZONE 2 (LCD Keypads ONLY)
38 ZONE 3 DESCRIPTOR	ZONE 3 (LCD Keypads ONLY)
39 ZONE 4 DESCRIPTOR	ZONE 4 (LCD Keypads ONLY)
40 ZONE 5 DESCRIPTOR	ZONE 5 (LCD Keypads ONLY)
41 ZONE 6 DESCRIPTOR	ZONE 6 (LCD Keypads ONLY)
42 ZONE 7 DESCRIPTOR	ZONE 7 (LCD Keypads ONLY)

12. SUMMARY OF KEYPAD FUNCTIONS

12.1. USER FUNCTIONS

ARMING/DISARMING:	**[4-digit user code]**
STAY ARMING:	**[STAY] [4-digit user code]**
INSTANT ARMING:	**[INSTANT] [4-digit user code]**
STAY/INSTANT ARMING:	**[STAY] [INSTANT] [4-digit user code]**
BYPASS:	**[BYPASS] [4-digit user code] [Zone number]**
QUICK BYPASS:	**[BYPASS] [Zone number]**
GROUP BYPASS:	**[BYPASS] [4-digit user code] [#]**
QUICK GROUP BYPASS:	**[BYPASS] [#]**
USER CODE PROGRAMMING:	**[CODE] [Master user code] [user #] [4-digit user code]**
USER CODE DELETION:	**[CODE] [Master user code] [user #] [*]**
QUICK ARM:	**[#] [1]**
QUICK FORCED ARM:	**[#] [2]**
SET TIME:	**[#] [3] [4-digit user code] [Hour] [Minute] [Day] [Year]**
DISPLAY ZONE DIR.:	**[#] [4]** (LCD Keypads Only)
SET AUTO ARM TIME:	**[#] [5] [4-digit user code] [Hour] [Minute]**
DISPLAY/TOGGLE CHIME:	**[#] [6]**
DISPLAY TIME:	**[#] [7]** (LCD Keypads Only)
DISPLAY AUTO ARM TIME:	**[#] [8]** (LCD Keypads Only)
DOOR STRIKE:	**[#] [9] [4-digit user code] [Trigger number]**
USER ON-LINE DOWNLOAD:	**[#] [CODE]**
PANIC:	**[#] & [*] at the same time**
FIRE:	**[7] & [9] at the same time**
AUXILIARY:	**[1] & [3] at the same time**
AMBUSH:	**[Enter user code 15]**

12.2.INSTALLER MODES

INSTALLER PROG.:	**[CODE] [*] [Enter installer code] [1]**
SYSTEM DEFAULT:	**[CODE] [*] [Enter installer code] [1] then Press [1] [3] (at the same time)**
USER CODE DEFAULT:	**[CODE] [*] [Enter installer code] [1] then Press [7] [9] (at the same time)**
WALK TEST:	**[CODE] [*] [Enter installer code] [2]**
WALK TEST W/BELL:	**[CODE] [*] [Enter installer code] [3]**
SYSTEM LOG VIEW:	**[CODE] [*] [Enter installer code] [4]**
SYSTEM DEFAULT:	**[CODE] [*] [Enter installer code] [7]**
UNATTENDED DOWNLOAD:	**[CODE] [*] [Enter installer code] [8]**
ON-LINE DOWNLOAD:	**[CODE] [*] [Enter installer code] [9]**

NOTE: All these functions can be performed from all keypad types if they are enabled.

13. APPENDIX A - CENTRAL STATION REPORTING FORMATS

This security system is designed to transmit data to a Central Station Receiver when an Alarm, System Trouble, or an Opening/Closing occurs. Due to the many different types of CS receivers in the market, this system can transmit data in various formats. Each installing company determines which format best suits its needs based on many factors. Of these, the CS receiver type is a major factor.

The system's digital communicator will seize the telephone lines, then, dial the CS#1 telephone number (programming question #01). When the CS receiver picks up the ringing phone line, it will transmit a "Handshake" frequency (either 1400Hz, 2300Hz or HiLo) back to the digital communcator. After receiving the "Handshake" frequency, the digital communicator will transmit the data in the format programmed in questions #7 & 8, location 1 (either in Pulse or DTMF). Assuming the CS receiver verifies the data transmission as valid (after 2 successful rounds of data or 1 valid parity round), it will transmit a "Kissoff" frequency back to the digital communicator. This causes the communicator to stop transmitting, unless more data is available, in which case additional data transmissions and "Kissoffs" will occur. After the final "Kissoff", the CS receiver will release the phone line and process the data to its display and associated peripherals (computer and printer). If for any reason the the digital communicator, does not receive the "Kissoff", it will proceed to dial the CS#2 telephone number or dial again the CS#1 telephone number (if CS#2 is not used). It will continue to dial (the number of times programmed for each CS telephone number programmed) until a "Kissoff" is received. If after the number of dialer attempts a "Kissoff" is not received, the system will display "Communication Failure" at the keypad. This message is cleared after the next successful transmission.

The following is a general description of the various formats transmitted by this system.

13.1. STANDARD (3X1 or 4X1)

The Standard Reporting Format: **AAA E or AAAA E**

where:

AAAA = Three or Four digit Account Number (PROG. QUESTS. #05 & 06)

E = Single digit Event code; it is the first of the 2 programmable reporting code digits

Standard format is transmitted in Pulse and involves a 3 or 4 digit account number followed by a single digit event code. It can be transmitted with parity (1 round of data) or without parity (2 rounds of data). A disadvantage of this format is that it can only transmit a total of 15 event codes (0 - 9, B - F) without identifying zones or users. Examples:

3X1 W/O PARITY	**3X1 W/PARITY**
123 3 (Ist round)	123 3 **6** (single round)
123 3 (2nd round)	123 3 (resulting data)
123 3 (resulting data)	

4X1 W/O PARITY	**4X1 W/PARITY**
1234 3 (1st round)	1234 3 **2** (single round)
1234 3 (2nd round)	1234 3 (resulting data)
1234 3 (resulting data)	

NOTE: Parity is a number derived automatically by the dialer utilizing a mathematical formula (modulo 15). Ex: 123 3 adds up to 9. This is subtracted from the next highest multiple of 15; in this case, 15 - 9 = 6. If the CS receiver accepts a valid parity digit, it considers the data transmission valid, delivers a "Kissoff" and processes the data. The parity digit is not displayed. Its only purpose is for validation of data transmitted. It is not a programmable digit; it is generated automatically by the dialer when the parity option is selected in programming question #19, location 2. The obvious advantage of using parity is speed. The transmission time between dialer and receiver is shorter because fewer digits are transmitted.

13.2. EXTENDED (3X1 EXT. or 4X1 EXT.)

The Extended Reporting Format: **AAA EZ or AAAA EZ**

where:

AAAA = Three or Four digit Account Number (PROG. QUESTS. #05 & 06)
E = Single digit Event code; it is the first of the 2 programmable reporting code digits
Z = Zone or User identifier; it is the second of the 2 programmable reporting code digits

Extended format is transmitted in Pulse and involves a 3 or 4 digit account number followed by a double digit reporting code. The only purpose for using the Extended format (sometimes known as Universal or Expanded format) is to be able to transmit more than 15 codes to the CS receiver. It does this by extending the event code from the previous round of data resulting in a 2 digit reporting code. It can be transmitted with parity (2 rounds of data) or without parity (4 rounds of data). There are 15 possible event codes, each of which can have 15 different zone or user identifiers. As a result, a total of 225 individual events can be reported. Examples:

3X1 Ext. W/O PARITY
123 3 (1st round) 123 3 (2nd round)
333 1 (3rd round) 333 1 (4th round)
123 31 (resulting data) Burglary Zone 1

3X1 Ext. W/PARITY
123 3 **6** (1st round)
333 1 **5** (2nd round)
123 31 (resulting data) Burglary Zone 1

4X1 Ext. W/O PARITY
1234 3 (1st round) 1234 3 (2nd round)
3333 1 (3rd round) 3333 1 (4th round)
1234 31 (resulting data) Burglary Zone 1

4X1 Ext. W/PARITY
1234 3 **2** (1st round)
3333 1 **2** (2nd round)
1234 31 (resulting data) Burglary Zone 1

13.3. PARTIAL EXTENDED (3X1 PART. EXT. or 4X1 PART. EXT.)

The Partial Extended Reporting Format: **AAA EZ or AAAA EZ**

where:

AAAA = Three or Four digit Account Number (PROG. QUESTS. #05 & 06)
E = Single digit Event code; it is the first of the 2 programmable reporting code digits
Z = Zone or User identifier; it is the second of the 2 programmable reporting code digits

The Partial Extended format is a combination of both the Standard and Extended formats. It transmits in Pulse a standard message for alarm conditions and an extended message for restores and other system conditions. To report a standard message, enter a numerical digit (0 - 9) in the first of the 2 digit reporting code; for an extended message, enter a hexadecimal digit (B - F) in the first of the 2 digit reporting code. The extended messages are used whenever a zone or user identification is needed (Bypasses, Restores, Openings/Closings, etc.). It can also transmit with and without parity. Examples:

3X1 Stand. W/O PARITY (Alarm)
123 3 (1st round)
123 3 (2nd round)
123 3 (resulting data) Burglary

3X1 Part. Ext. W/O PARITY (Restore)
123 E (1st round) 123 E (2nd round)
EEE 1 (3rd round) EEE 1 (4th round)
123 E1 (resulting data) Burglary

13.4. 3X2 or 4X2

The 3X2 or 4X2 Reporting Format: **AAA EZ or AAAA EZ**

where:

AAAA = Three or Four digit Account Number (PROG. QUESTS. #05 & 06)
E = Single digit Event code; it is the first of the 2 programmable reporting code digits
Z = Zone or User identifier; it is the second of the 2 programmable reporting code digits

This format is also in Pulse and is an alternative to the Extended format; it also transmits a 2 digit reporting code. Its specific meaning is a 3 or 4 digit account number followed by a 2 digit alarm code. It can be transmitted with parity (1 round of data) or without parity (2 rounds of data). There are 15 possible event codes, each of which can have 15 different zone identifiers. As a result, a total of 225 individual events can be reported. It is different from the extended format in the way it transmits. This is illustrated in the examples below:

3X2 W/O PARITY
123 31 (1st round)
123 31 (2nd round)
123 31 (resulting data) Burglary Zone 1

3X2 W/PARITY
123 31 **5** (1st round)
123 31 (resulting data) Burglary Zone 1

4X2 W/O PARITY
1234 31 (1st round)
1234 31 (2nd round)
1234 31 (resulting data) Burglary Zone 1

4X2 W/PARITY
1234 31 1 (1st round)
1234 31 (resulting data) Burglary Zone 1

13.5. FBI SUPERFAST (4X3X1)

The FBI Superfast Reporting Format: **AAAA AZZ S**

where:

AAAA = Four digit Account Number (PROG. QUESTS. #05 & 06)

A =Alarm Type; it is the first of the 2 programmable reporting code digits

ZZ =Zone or User Identifier; it is the second of the 2 programmable reporting code digits

S =Signal Type; it is the first of the 2 programmable reporting code digits

This format is commonly known as 4X3X1. A total of 9 digits (including the parity digit) are sent in DTMF. It enables reporting of 256 (00 - FF) unique zone or user identifiers instead of the 15 possible identifiers of most other pulse formats. In addition, it transmits at a much greater speed than the conventional pulse formats, since it uses DTMF (touch tones) instead of pulses to transmit the data and it always sends a parity digit.

On Alarms, Openings and Closings the Alarm Type digit will be the same as the Signal Type. This will indicate the type of activity or condition that has occurred. However, on Bypasses, Restores and Troubles the Alarm Type will **not** be the same as the Signal Type. Instead, the Signal Type will change indicating the current condition of the zone. **NOTE:** This is a unique feature of this format which allows more intelligent reporting of the activity occurring in the system. For instance, the following unique messages can be transmitted:

1234 1 01 1	Fire Zone 001
1234 1 01 E	Restore Fire Zone 001
1234 1 01 F	Trouble Fire Zone 001

13.6. ADEMCO 4X1 EXPRESS

The 4X1 Express Reporting Format: **AAAA E**

where:

AAAA =Three or Four digit Account Number (PROG. QUESTS. #05 & 06)

E = Single digit Event code; it is the first of the 2 programmable reporting code digits

This format transmits in DTMF a total of 6 digits (including the parity digit). It is similar to the Standard format in that it can only transmit a total of 15 reporting codes. However, its advantage is speed because it transmits touch tones instead of pulses and it always sends a parity digit. Examples:

123 3 **6** (1st round)
123 3 (resulting data) Burglary

13.7. ADEMCO 4X2 EXPRESS

The 4X2 Express Reporting Format: **AAAA EZ**

where:

AAAA =Three or Four digit Account Number (PROG. QUESTS. #05 & 06)

E = Single digit Event code; it is the first of the 2 programmable reporting code digits

Z = Zone or User identifier; it is the second of the 2 programmable reporting code digits

This format transmits in DTMF a total of 7 digits (including the parity digit). This format is similar to the Extended or 4X2 formats in that it can transmit a total of 225 individual reporting events. However, its advantage is speed because it transmits touch tones instead of pulses and it always sends a parity digit. Examples:

1234 31 **1** (1st round)
1234 31 (resulting data) Burglary Zone 1

13.8. ADEMCO POINT ID

The Point ID Reporting Format: AAAA 18 QXYZ GG ZZZ

where:

AAAA = Four digit Account Number (PROG. QUESTS. #05 & 06)

18 = Uniquely identifies this format to the receiver and to an automation system, but is not displayed or printed.

Q = Event qualifier, which gives specific event information

1 = New Event or Opening

3 = New Restore or Closing

XYZ = Event Code; The event code is a 3-digit code (3 decimal digits). For zone alarms and some conditions this can be specified; other conditions are dedicated, see the tables below.

GG = Group number; this panel will report 01.

ZZZ = Zone, sensor or user identifier (3 decimal digits). For user initiated actions such as openings/closings, this will be the actual user number (01 - 15).

This format is also known as ADEMCO contact ID. A total of 16 digits (including the parity digit) are sent in DTMF. It enables reporting of 999 (001 - 999) unique zone or user identifiers instead of the 15 possible identifiers of most other pulse formats. This feature allows the full reporting capability of this system (8 zones and 15 users). In addition, it transmits at a much greater speed than the conventional pulse formats, since it uses DTMF (touch tones) instead of pulses to transmit the data and it always sends a parity digit. Its main advantage over all the other formats is its large number of event codes (see tables below) with the ability to pinpoint an event (alarm, trouble, bypass, restore, etc.) to a specific zone (up to 8 zones in this system) and to report openings/closings for many users (up to 15 users in this system).

For some reporting codes, the first of the two programmable digits determines the PID Event code to be transmitted. While, other reporting codes transmit a dedicated PID Event code regardless of the digit programmed in the first location. In both cases if transmissions are not desired, then program AA in locations 1 & 2. Refer to the following tables to select the PID Event codes to be transmitted.

BURGLARY ZONE TYPES		
Digit	EVENT CODE	ENGLISH OUTPUT AT CS RECEIVER
0	122	Silent Panic
1	123	Audible Panic
2	130	Burglary
3	131	Perimeter
4	132	Interior
5	133	24 Hour Alarm
6	134	Entry/Exit
7	135	Day/Night
8	136	Outdoor
9	137	Tamper
A	140	General Alarm
B	144	Sensor Tamper
C	155	Foil Break
D	156	Day Trouble

FIRE ZONE TYPES		
Digit	EVENT CODE	ENGLISH OUTPUT AT CS RECEIVER
0	110	Fire Alarm
1	111	Smoke
2	112	Combustion
3	113	Water Flow
4	114	Heat
5	115	Pull Station
6	116	Duct
7	117	Flame
8	140	General Alarm
9	150	24 Hour Non-Burg
A	158	High Temperature
B	159	Low Temperature
C	200	Fire Supervisory
D	201	Low H2O Pressure
E	202	Low CO2
F	203	Gate Valve Sensor

24 HOUR ALARM TYPES		
Digit	EVENT CODE	ENGLISH OUTPUT AT CS RECEIVER
0	100	Medical
1	101	Pendant Transmitter
2	120	Panic Alarm
3	122	Silent Panic
4	123	Audible Panic
5	130	Burglary
6	133	24 Hour Alarm
7	135	Day/Night
8	137	Tamper
9	140	General Alarm
A	150	24 Hour Non-Burg
B	151	Gas Detected
C	152	Refrigeration
D	153	Loss of Heat
E	154	Water Leakage
F	155	Foil Break

24 HOUR TROUBLE TYPES		
Digit	EVENT CODE	ENGLISH OUTPUT AT CS RECEIVER
0	100	Medical
1	122	Silent Panic
2	123	Audible Panic
3	137	Tamper
4	150	24 Hour Non-Burg
5	153	Loss of Heat
6	155	Foil Break k
7	156	Day Trouble
8	158	High Temperature
9	159	Low Temperature
A	300	System Trouble
B	301	AC Loss
C	302	Low System Battery
D	310	Ground Fault
E	373	Fire Trouble
F	380	Sensor Trouble

KEYPAD ZONES (Fire*, Panic*, Aux.*, Ambush)		
Digit	EVENT CODE	ENGLISH OUTPUT AT CS RECEIVER
0	100	Medical
1	101	Pendant Transmitter
2	110	Fire Alarm
3	111	Smoke
4	112	Combustion
5	117	Flame
6	120	Panic Alarm
7	121	Duress (Ambush)
8	122	Silent Panic
9	123	Audible Panic
A	130	Burglary
B	133	24 Hour Alarm
C	140	General Alarm
D	150	24 Hour Non-Burg
E	115	Fire Pull Station

***NOTE:** These keypad conditions have no Zone/User code associated with them; they will report 000 for these digits.

BYPASS TYPES		
Digit	EVENT CODE	ENGLISH OUTPUT AT CS RECEIVER
0	570	Zone Bypassed
1	571	Fire Zone Bypassed
2	572	24 HR. Zone Bypassed
3	573	Burg. Zone Bypassed
4	574	Group Bypass

DEDICATED CODES	
EVENT CODE	ENGLISH OUTPUT AT CS RECEIVER
137	Keypad Tamper
156	Day Trouble
301*	AC Loss
309*	Battery Test Fail
373	Fire Trouble
401	O/C by User
403	Auto Arm
406	Cancel on Open
407	Remote Arm
408	Quick Arm
409	Key switch Zone
457	Exit Error
459	Recent Close
575	Swinger Bypass
602*	Test - Periodic
412*	Download Code

***NOTE:** These codes have no Zone/User code associated with them; they will report 000 for these digits.

14. APPENDIX B - TROUBLE SHOOTING

SYMPTOM	POSSIBLE CAUSE	REMEDY
1. **LED or LCD:** Keypad display not lit.	1A. AC & DC power out.	1A. Check transformer & battery connection; check AC input & batt. volt. (w/transformer disconn.)
	1B. Keypad not powered.	!B. Check term. 15(+) & 12(-) for 12 VDC.
2. **LED KP:** "AC/LB" light OFF **LCD KP:** "AC LOSS"	2A. AC power out	2A. Check transformer connection; check AC input voltage
	2B. Faulty keypad	2B. Replace keypad.
3. **LED KP:** "AC/LB" light slowly blinking **LCD KP:** "LOW BAT"	3A. DC power out	3A. Check battery connection; check battery voltage (w/transformer disconnected).
	3B. Low battery voltage	3B. Same as 3A except volt. > 11 VDC; let battery charge; replace battery.
4. **LED KP:** "ARM' light slowly blinking **LCD KP:** "COMM FAILURE"	4A. Failure to communicate w/Central Station	4A. Telephone lines cut or disconnected; CS information misprogrammed.
	4B. Faulty panel/dialer	4B. Replace panel.
	4C. Faulty telephone lines	4C. Consult local telephone company.
5. **LED KP:** "ZONE" light ON & "READY" light OFF **LCD KP:** "NOT READY: ZN #" & "SYSTEM NOT READY"	5A. Zone faulted; system not ready	5A. Check loop wiring for open/short & repair; bad EOL resistor or wrong resistor value.
	5B. Faulty keypad	5B. Replace keypad.
	5C. Faulty panel	5C. Check zone terminal voltage for 3.3 VDC; bypass zone temporarily; replace panel.
6. **Siren/Speaker does not sound**	6A. Faulty Siren/Speaker	6A. Connect 12 VDC to siren/speaker; if no is produced, replace siren/speaker.
	6B. Faulty Wiring	6B. Check continuity of wiring for open circuit and replace wiring if necessary.
	6C. Faulty Panel/Bell Output	6C. Check terminals 22 (+) & 23 (-) for 12 VDC when panel's in alarm (if programmed for bell output). If no volt. is measured, replace panel.

For more complicated problems consult our **Technical Service at (800) 645-5430.**

ZONE OPTIONS	ZONES						
	1	2	3	4	5	6	7
LOOP TYPE (Check ✓ 1 only)	☐EOL	☐EOL	☐EOL	☐EOL	☐EOL	☐EOL	☐EOL
	☐NO	☐NO	☐NO	☐NO	☐NO	☐NO	☐NO
	☐NC	☐NC	☐NC	☐NC	☐NC	☐NC	☐NC
ZONE TYPE (Check ✓ 1 only)	☐Instant	☐Instant	☐Instant	☐Instant	☐Instant	☐Instant	☐Instant
	☐Delay	☐Delay	☐Delay	☐Delay	☐Delay	☐Delay	☐Delay
	☐Interior	☐Interior	☐Interior	☐Interior	☐Interior	☐Interior	☐Interior
	☐24 Hour Alarm	☐24 Hour Alarm	☐24 Hour Alarm	☐24 Hour Alarm	☐24 Hour Alarm	☐24 Hour Alarm	☐24 Hour Alarm
	☐24 Hour Trouble	☐24 Hour Trouble	☐24 Hour Trouble	☐24 Hour Trouble	☐24 Hour Trouble	☐24 Hour Trouble	☐24 Hour Trouble
	☐Fire	☐Fire	☐Fire	☐Fire	☐Fire	☐Fire	☐Fire
	☐Keyswitch	☐Keyswitch	☐Keyswitch	☐Keyswitch	☐Keyswitch	☐Keyswitch	☐Keyswitch
SENSOR (✓ 1 only)	☐Contacts	☐Contacts	☐Contacts	☐Contacts	☐Contacts	☐Contacts	☐Contacts
	☐PIR	☐PIR	☐PIR	☐PIR	☐PIR	☐PIR	☐PIR
	☐Glass Break	☐Glass Break	☐Glass Break	☐Glass Break	☐Glass Break	☐Glass Break	☐Glass Break
	☐Smoke Det.	☐Smoke Det.	☐Smoke Det.	☐Smoke Det.	☐Smoke Det.	☐Smoke Det.	☐Smoke Det.
	☐Push Button	☐Push Button	☐Push Button	☐Push Button	☐Push Button	☐Push Button	☐Push Button
	☐Vibration Sen.	☐Vibration Sen.	☐Vibration Sen.	☐Vibration Sen.	☐Vibration Sen.	☐Vibration Sen.	☐Vibration Sen.
	☐Other_____	☐Other_____	☐Other_____	☐Other_____	☐Other_____	☐Other_____	☐Other_____
FAST LOOP RESPONSE	☐YES	☐YES	☐YES	☐YES	☐YES	☐YES	☐YES
	☐NO	☐NO	☐NO	☐NO	☐NO	☐NO	☐NO
ENTRY TIMER (✓ 1 only)	☐ENTRY DELAY #1	☐ENTRY DELAY #1	☐ENTRY DELAY #1	☐ENTRY DELAY #1	☐ENTRY DELAY #1	☐ENTRY DELAY #1	☐ENTRY DELAY #1
	☐ENTRY DELAY #2	☐ENTRY DELAY #2	☐ENTRY DELAY #2	☐ENTRY DELAY #2	☐ENTRY DELAY #2	☐ENTRY DELAY #2	☐ENTRY DELAY #2
CROSS ZONE	☐YES	☐YES	☐YES	☐YES	☐YES	☐YES	☐YES
	☐NO	☐NO	☐NO	☐NO	☐NO	☐NO	☐NO
DESCRIPTOR (12 CHARACTERS)							

XL-2T SYSTEM PLANNING WORKSHEET - 2 OF 2

USER NUMBER	SPECIAL USER APPLICATION	USER ASSIGNED TO (PERSON'S NAME)
01	Master User	
02	Master User	
03	Normal	
04	Normal	
05	Normal	
06	Normal	
07	Normal	
08	Normal	
09	Normal	
10	Normal	
11	Normal	
12	Normal	
13	Normal	
14	Arm Only: ☐ Yes ☐ No	
15	Ambush/Duress: ☐ Yes ☐ No	

KEYPAD TYPES	KEYPAD(S) TOTAL (4 max.)	INSTALLED LOCATION
7015		
7005		
7005L		
XK-108		

15. SYSTEM PROGRAMMING WORKSHEET

01 PRIMARY TELEPHONE NUMBER — DEFAULT = 234AAAAAAAAA

L1		L2		L3		L4		L5		L6		L7		L8		L9		L10		L11		L12	

02 SECONDARY TELEPHONE NUMBER — DEFAULT = AAAAAAAAAAA

L1		L2		L3		L4		L5		L6		L7		L8		L9		L10		L11		L12	

03 CALLBACK TELEPHONE NUMBER — DEFAULT = AAAAAAAAAAA

04 TELEPHONE PREFIX — DEFAULT = AAAA

L1		L2		L3		L4	

05 ACCOUNT NUMBER 1 — DEFAULT = 1234

L1		L2		L3		L4	

06 ACCOUNT NUMBER 2 — DEFAULT = AAAA

L1		L2		L3		L4	

07 DIALER1 & SYSTEM OPTIONS — DEFAULT = 0510

L1		L2		L3		L4	

08 DIALER 2 & SYSTEM OPTIONS — DEFAULT = 1400

L1		L2		L3		L4	

09 MISCELLANEOUS OPTIONS — DEFAULT = 0010

L1		L2		L3		L4	

10 BELL TIMEOUTS, CS TEST TIME — DEFAULT = 5F26

L1		L2		L3		L4	

11 ENTRY/EXIT & CROSS TIMEOUTS — DEFAULT = 6333

L1		L2		L3		L4	

12 MISCELLANEOUS OPTIONS — DEFAULT = 0303

L1		L2		L3		L4	

13 SYSTEM OPTIONS — DEFAULT = 0102

L1		L2		L3		L4	

14 TRIGGERS 1 & 2 — DEFAULT = 0B0C

L1		L2		L3		L4	

15 AUTO ARM TIME — DEFAULT = 1700

L1		L2		L3		L4	

16 CS TEST TIME — DEFAULT = 0300

L1		L2		L3		L4	

17 ZONE 1 TYPE — DEFAULT = 2060

L1		L2		L3		L4	

18 ZONE 2 TYPE — DEFAULT = 4060

L1		L2		L3		L4	

19 ZONE 3 TYPE — DEFAULT = 0060

L1		L2		L3		L4	

20 ZONE 4 TYPE — DEFAULT = 0060

L1		L2		L3		L4	

21 ZONE 5 TYPE — DEFAULT = 0060

L1		L2		L3		L4	

22 ZONE 6 TYPE — DEFAULT = 0060

L1		L2		L3		L4	

23 ZONE 7 TYPE — DEFAULT = 0060

L1		L2		L3		L4	

24 ZONES 1 & 2 CS CODES — DEFAULT = 3132

L1		L2		L3		L4	

25 ZONES 3 & 4 CS CODES — DEFAULT = 3334

L1		L2		L3		L4	

26 ZONES 5 & 6 CS CODES — DEFAULT = 3536

L1		L2		L3		L4	

27 ZONES 7 CS CODE — DEFAULT = 3738

L1		L2		L3		L4	

28 AMBUSH & AC LOSS — DEFAULT = AAA1

L1		L2		L3		L4	

29 PANIC & LOW BATTERY — DEFAULT = 22AA

L1		L2		L3		L4	

30 OPEN/CLOSE — DEFAULT = AAAA

L1		L2		L3		L4	

31 CANCEL & CS TEST — DEFAULT = AAAA

L1		L2		L3		L4	

32 BYPASS, RESTORE, DAY & FIRE TRBL. — DEFAULT = AEFA

L1		L2		L3		L4	

33 KEYPAD FIRE & AUXILIARY — DEFAULT = AAAA

L1		L2		L3		L4	

34 DOWNLOAD & KEYPAD TAMPER — DEFAULT = AAAA

L1		L2		L3		L4		L5		L6		L7		L8		L9		L10		L11		L12	

TO ENTER PROGRAMMING: CODE] [*] [4 digit Installer Code] [1]

TO SKIP TO A QUESTION: [*] [2 digit Question Number]

TO MOVE WITHIN A QUESTION: Press the [#] until desired location

TO ENTER DATA: [single digit: 0 - 9, A - F] [#]

HEXADECIMAL ENTRIES:

A = [CODE] [1] *D = [CODE] [4]*
B = [CODE] [2] *E = [CODE] [5]*
C = [CODE] [3] *F = [CODE] [6]*

XL-2T SYSTEM PROGRAMMING WORKSHEET - 2 OF 2

ZONE DESCRIPTORS

36 ZONE 1 DESCRIPTOR — DEFAULT = ZONE 1

L1		L2		L3		L4		L5		L6		L7		L8		L9		L10		L11		L12	

37 ZONE 2 DESCRIPTOR — DEFAULT = ZONE 2

L1		L2		L3		L4		L5		L6		L7		L8		L9		L10		L11		L12	

38 ZONE 3 DESCRIPTOR — DEFAULT = ZONE 3

L1		L2		L3		L4		L5		L6		L7		L8		L9		L10		L11		L12	

39 ZONE 4 DESCRIPTOR — DEFAULT = ZONE 4

L1		L2		L3		L4		L5		L6		L7		L8		L9		L10		L11		L12	

40 ZONE 5 DESCRIPTOR — DEFAULT = ZONE 5

L1		L2		L3		L4		L5		L6		L7		L8		L9		L10		L11		L12	

41 ZONE 6 DESCRIPTOR — DEFAULT = ZONE 6

L1		L2		L3		L4		L5		L6		L7		L8		L9		L10		L11		L12	

42 ZONE 7 DESCRIPTOR — DEFAULT = ZONE 7

L1		L2		L3		L4		L5		L6		L7		L8		L9		L10		L11		L12	

TO PROGRAM SYSTEM DESCRIPTORS:

Enter Installer Programming.
Go to desired question number (37-44).
Follow the following keystrokes to program the characters:
0 = Inserts a SPACE & advances the cursor
CODE = Moves the cursor to the LEFT 1 space
INSTANT = Moves the cursor to the RIGHT 1 space
7 = INCREMENTS the character one at a time
* 7 = SCROLLS UP until any key is pressed
9 = DECREMENTS the character one at a time
# 9 = SCROLLS DOWN until any key is pressed.
Exit Installer Programming.

PROGRAMMED BY: _____ **DATE:** _____

FIRE BURGLARY INSTRUMENTS, INC.

WARNING LIMITATIONS OF THIS ALARM SYSTEM

While this system is an advanced design security system, it does not offer guaranteed protection against burglary, fire or other emergency. Any alarm system, whether commercial or residential, is subject to compromise or failure to warn for a variety of reasons. For example:

- Intruders may gain access through unprotected openings or have the technical sophistication to bypass an alarm sensor or disconnect an alarm warning device.
- Intrusion detectors (e.g., passive infrared detectors), smoke detectors, and many other sensing devices will not work without power. Battery operated devices will not work without batteries, with dead batteries or if the batteries are not put in properly. Devices powered solely by AC will not work if their AC power supply is cut off for any reason, however briefly.
- Signals sent by wireless transmitters may be blocked or reflected by metal before they reach the alarm receiver. Even if the signal path has been recently checked during a weekly test, blockage can occur if a metal object is moved into the path.
- A user may not be able to reach a panic or emergency button quickly enough.
- While smoke detectors have played a key role in reducing residential fire deaths in the United States, they may not activate or provide early warning for a variety of reasons in as many as 35% of all fires, according to data published by the Federal Emergency Management Agency. Some of the reasons smoke detectors used in conjunction with this System may not work are as follows: Smoke detectors may have been improperly installed and positioned. Smoke detectors may not sense fires that start where smoke cannot reach the detectors, such as in chimneys, in walls, or roofs, or on the other side of closed doors. Smoke detectors may not sense a fire on another level of a residence or building. A second floor detector, for example, may not sense a first floor or basement fire. Moreover, smoke detectors have sensing limitations. No smoke detector can sense every kind of fire every time. In general, detectors may not always warn about fires caused by carelessness and safety hazards like smoking in bed, violent explosions, escaping gas, improper storage of flammable materials, overloaded electrical circuits, children playing with matches, or arson. Depending on the nature of the fire and/or the location of the smoke detectors, the detector, even if it operates as anticipated, may not provide sufficient warning to allow all occupants to escape in time to prevent injury or death.
- Passive Infrared Motion Detectors can only detect intrusion within the designed ranges as diagrammed in their installation manual. Passive Infrared Detectors do not provide volumetric area protection. They do create multiple beams of protection, and intrusion can only be detected in unobstructed areas covered by the beams. They cannot detect motion or intrusion that takes place behind walls, ceilings, floors, closed doors, glass partitions, glass doors, or window. Mechanical tampering, masking, painting, or spraying of any material on the mirrors, windows or any part of the optical system can reduce their detection ability. Passive Infrared Detectors sense changes in temperature; however, as the ambient temperature of the protected area approaches the temperature range of 90 to 150F, the detection performance can decrease.
- Alarm warning devices such as sirens, bells or horns may not alert people or wake up sleepers who are located on the other side of closed or partly open doors. If warning devices sound on a different level of the residence from the bedrooms, then they are less likely to waken or alert people inside the bedrooms. Even persons who are awake may not hear the warning if the alarm is muffled by noise from a stereo, radio, air conditioner or other appliances, or by passing traffic. Finally, alarm warning devices, however loud, may not warn hearing-impaired people or waken deep sleepers.
- Telephone lines needed to transmit alarm signals from a premises to a central monitoring station may be out of service or temporarily out of service. Telephone lines are also subject to compromise by sophisticated intruders.
- Even if the system responds to the emergency as intended, however, occupants may have insufficient time to protect themselves from the emergency situation. In the case of a monitored alarm system, authorities may not respond appropriately.
- This equipment, like other electrical devices, is subject to component failure. Even though this equipment is designed to last as long as 10 years, the electronic components could fail at any time.

The most common cause of an alarm system not functioning when an intrusion or fire occurs is inadequate maintenance. This alarm system should be tested weekly to make sure all sensors are working properly.

Installing an alarm system may make one eligible for lower insurance rates, but an alarm system is not a substitute for insurance. Homeowners, property owners and renters should continue to act prudently in protecting themselves and continue to insure their lives and property.

We continue to develop new and improved protection devices. Users of alarm systems owe it to themselves and their loved ones to learn about these developments.

"FEDERAL COMMUNICATIONS COMMISSION (FCC) STATEMENT"

This equipment has been tested to FCC requirements and has been found acceptable for use. The FCC requires the following statement for your information.

This equipment generates and uses radio frequency energy and if not installed and used properly, that is in strict accordance with the manufacturer's instructions may cause interference to radio and television reception. It has been tested and found to comply with the limits of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- If using an indoor antenna, have a quality outdoor antenna installed.
- Reorient the receiving antenna until interference is reduced or eliminated.
- Move the radio or television receiver away from the control/communicator.
- Move the antenna leads away from any wire runs to the control/communicator.
- Plug the control/communicator into a different outlet so that it and the radio or television receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions.

The user may find the following booklet prepared by the Federal Communications Commission helpful:

"Interference Handbook"

This booklet is available from the U.S. Government Printing Office, Washington, DC 20402. Stock No. 004-000-00450-7.

The user shall not make any changes or modifications to the equipment unless authorized by the installation Instructions or User's Manual. Unauthorized changes or modifications could void the user's authority to operate the equipment.

IN THE EVENT OF TELEPHONE OPERATIONAL PROBLEMS

In the event of telephone operational problems, disconnect the communicator by removing the plug from the RJ31x jack. Do not disconnect the phone connection inside the communicator. Doing so will result in the loss of the phone works correctly after the communicator has been disconnected from the phone lines, the communicator has a problem and should be returned for repair.

If upon disconnecting the communicator, there is still a problem on your line, notify the telephone company that they have a problem and request prompt repair service. The user may not under any circumstances (in or out of warranty) attempt any service or repairs on the system. It must be returned to the factory or an authorized service agency for all repairs.

FBII LIMITED WARRANTY

Fire Burglary Instruments Inc., a Subsidiary of Pittway Corporation, and Pittway Corporation its divisions, subsidiaries, and affiliates ("Seller"), 149 Eileen Way, Syosset, New York 11791, warrants its products to be in conformance with its own plans and specifications and to be free from defects in materials and workmanship under normal use and service for five years from the date stamp control on the product, or for products not having a date stamp, for twelve months from the date of original purchase unless the installation instructions or catalog sets forth a shorter period, in which case the shorter period shall apply. Seller's obligation shall be limited to repairing or replacing, at its option, free of charge for materials or labor, any part which is proved not in compliance with Seller's specifications or proves defective in materials or workmanship under normal use and service. Seller shall have no obligation under this Limited Warranty or otherwise if the product is altered or improperly repaired or serviced by anyone other than Seller. For warranty service, return transportation prepaid, to Factory Service, 149 Eileen Way, Syosset , New York 11791.

THERE ARE NO WARRANTIES, EXPRESSED OR IMPLIED, OF MERCHANT ABILITY, OR FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE, WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. IN NO CASE SHALL SELLER BE LIABLE TO ANYONE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES FOR BREACH OF THIS OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, OR UPON ANY OTHER BASIS OF LIABILITY WHATSOEVER, EVEN THE LOSS OR DAMAGE IS CAUSED BY ITS OWN NEGLIGENCE OR FAULT.

Seller does not represent that the products it sells may not be compromised or circumvented; that the products will prevent any personal injury or property loss by burglary, robbery, fire or otherwise; or that the products will in all cases provide adequate warning or protection. Customer understands that a properly installed and maintained alarm system may only reduce the risk of a burglary, robbery, or fire without warning, but it is not insurance or a guarantee that such will not occur or that there will be no personal injury or property loss as a result. CONSEQUENTLY,SELLER SHALL HAVE NO LIABILITY FOR ANY PERSONAL INJURY, PROPERTY DAMAGE OR OTHER LOSS BASED ON A CLAIM THE PRODUCT FAILED TO GIVE ANY WARNING. HOWEVER, IF SELLER IS HELD LIABLE, WHETHER DIRECTLY OR INDIRECTLY, FOR ANY LOSS OR DAMAGE ARISING UNDER THIS LIMITED WARRANTY OR OTHERWISE, REGARD LESS OF CAUSE OR ORIGIN, SELLER'S MAXIMUM LIABILITY SHALL NOT IN ANY CASE EXCEED THE PURCHASE PRICE OF THE PRODUCT, WHICH SHALL BE THE COMPLETE AND EXCLUSIVE REMEDY AGAINST SELLER.

This warranty replaces any previous warranties and is the only warranty made by Seller on this product. No increase or alteration, written or verbal, of the obligations of this Limited Warranty is authorized.