XL-2S

Hookup and Installation Instructions

(Version 3.0)

FIRE BURGLARY INSTRUMENTS, INC.

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

N9513V1 4/96

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

The purpose of the manual is to give you a brief overview of the XL-2S 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

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 Troubleshooting 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-2S TO XL-2 COMPARISON

The XL-2S 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-2S NEW & MODIFIED FEATURES	*XL-2 SIMILAR FEATURES*
Unattended Download (Installer Mode 3)	Standard Download Only
On-line Download (Installer Mode 4 or # 4)	Standard Download Only
2 Entry Timers (program quest. #06)	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
Last 2 Alarms Event History - not cleared by user code (Installer Mode 2)	Alarm Memory (cleared by user code)
Smoke Power or Programmable Trigger Output (program quest. #07)	Smoke Power Only
CS Test Timer - 1 Day, 7 Day, 27 Day, 60 Day or 90 Day (program quest. #07)	CS Test Timer: 1 Day Only
CS Test Keypad Ringback Programmable as Silent or Audible (program quest. #05)	CS Test Keypad Ringback always Audible
Cancel Code (program quest. #19)	NONE; Restore Code Only
End User Chime ON/OFF Toggle (# 6)	NONE
European Ring Detect (program quest. #07)	NONE
Exit Error Warning (always enabled)	NONE
Restore Follows Bell or Loop (program quest. #05)	Restore Follows Bell Only
Bypass In Stay - Any Controlled Zone can be Bypassed in Stay Mode (program quests. #10-15)	Interior Zones Bypassed Only in Stay Mode
System Stabilization on Power Up - to Eliminate Motion Detector False Alarms	NONE
Quick Commands (Quick Arm, Quick Forced Arm & Quick Bypass) enabled separately (program quest. #05)	Quick Arm is enabled separately but Quick Forced Arm & Quick Bypass enabled together

XL-2S FEATURE CHANGES	*XL-2 SIMILAR FEATURES*
System Wide Restore Code Enable (program quest. #19)	Restore Codes selectable by each zone

XL-2S, version 3.0 TO XL-2S, version 2.0 COMPARISON

The following changes are listed for those familiar with the previous version (2.0) of this control.

XL-2S, ver 3.0 NEW FEATURES	*XL-2S, ver 2.0 SIMILAR FEATURES*
Zones Report Restores independent of AC Loss & Low Battery (program quest. #04)	Zones Report Restores along with AC Loss & Low Battery
Instant Arming available by itself (program quest. #05)	Instant Arming NOT available by itself
Fire Non-verification Trigger Type (program quest. #07)	Not available
Two-way Voice Trigger Type (program quest. #07)	Not available
Duress Trigger Type (program quest. #07)	Not available

XL-2S, ver 3.0 DELETIONS & CHANGES	*XL-2S, ver 2.0 SIMILAR FEATURES*
Auto-unbypass is always enabled	Auto-unbypass programmable
Trigger Types deleted: Line Seizure, Fire Bell & Code Reset	All Three Trigger Types available
LCD Zone Descriptors NOT defaulted	LCD Zone Descriptors are defaulted
Stay/Instant Enable moved to program quest. #05, location 2	Stay/Instant Enable found at program quest. #05, location 4
User 5 Arm Only Enable moved to program quest. #05, location 4	**User 5 Arm Only Enable found at** program quest. #05, location 2
Burglary Bell Trigger Type entry in program quest. #07, location 4 is digit 3	Burglary Bell Trigger Type entry in program quest. #07, location 4
CS Test Enable in program quest. #04, location 4 deleted; CS Test disable added to CS Test Time in program quest. #07, location 3	CS Test Enable in program quest. #04, location 4
Installer Code Default changed to "2468"	Installer Code Default = "2121"

1. INTRODUCTION

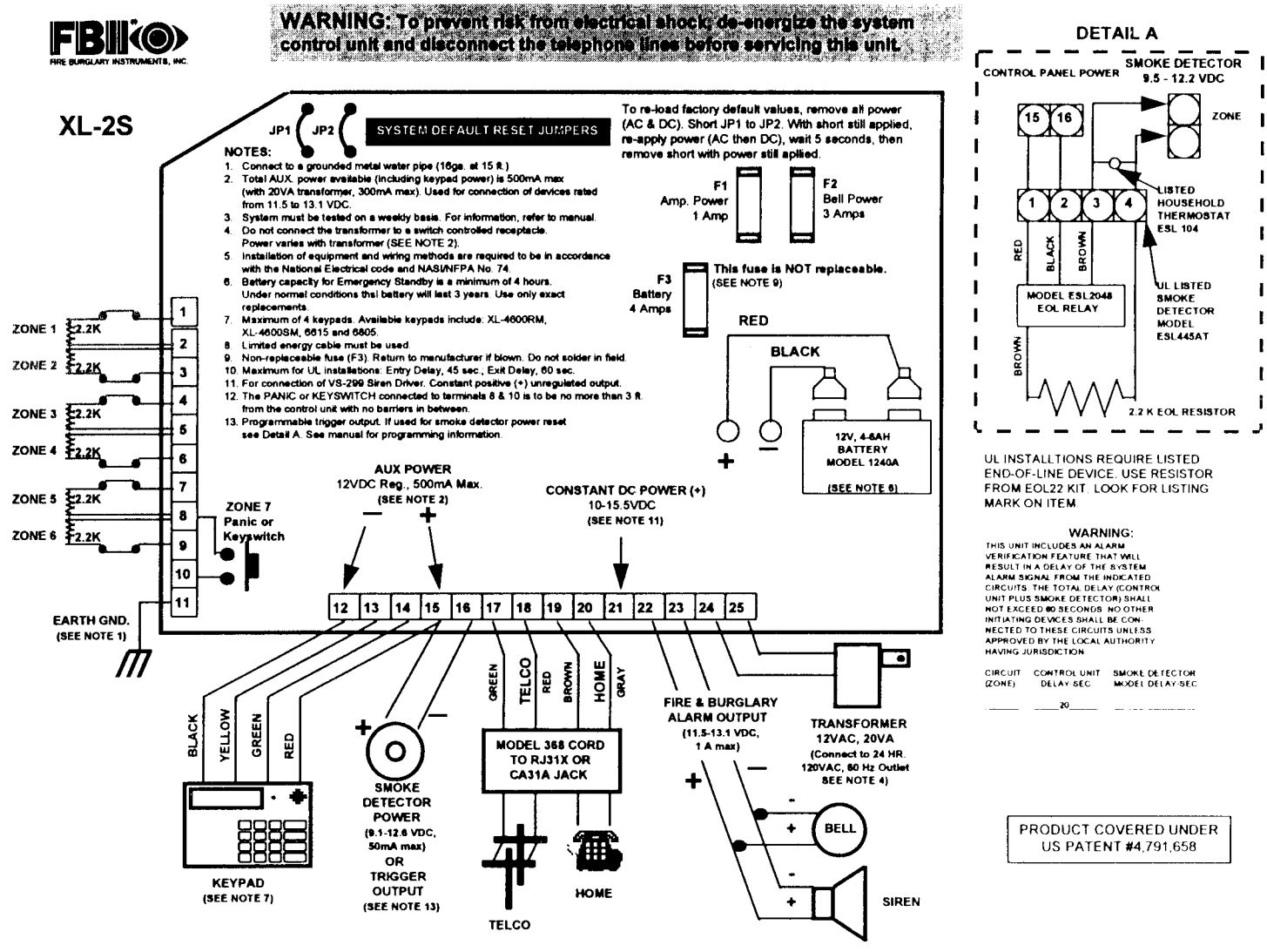
The XL-2S Security System is a state of the art microprocessor-based control/communicator. Programming can be performed through any of the compatible keypads or the system can be uploaded and downloaded remotely using the EZ-Mate PC Downloader Software. In addition, remote control actions (arming, disarming, bypassing, etc.) can be performed by the software. Programming options are stored in non-volatile reprogrammable 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-2S include:

- 7 Zones (6 fully programmable plus a wired panic zone or keyswitch zone)
- 4 types of compatible keypads (LCD & LED, four wire devices with up to four per system)
- 6 user codes with capability for ambush code and an arm only user
- 4 selectable keypad emergency conditions
- English readout keypads available with programmable 12 character zone descriptors
- Upload/Download with remote commands with answering machine bypass
- Unattended and On-line Downloading
- Default Lockout option to prevent hostile account takeovers
- Quick arming, Quick Forced Arming and Quick Bypass option
- Indications on keypad for AC loss, Low Battery and Communication Failure
- Central Station reporting for Alarms, Troubles, Restores, Bypasses, Openings, Closings, Ambush, Panic, Keypad Fire, Keypad Medical, 24HR. Test, Cancels, AC loss, and Low Battery
- Can be programmed as a Local System (No C.S. Reporting)
- 4 wire smoke detectors with Fire Verification logic plus smoke power reset
- 2 entry and 1 exit time delays
- Swinger Shutdown capability
- Exit Error Warning
- European Ring Detect
- Event Log will store 2 alarms events, all zones that alarmed will be displayed for each event.
- End user chime ON/OFF toggle capability
- 1 programmable trigger output for various functions (including armed/ready indication and glass break detector reset)
- Input Power: 12VAC 20VA; 12VDC, 4 - 7 AH
- Output Power: 11.5 - 13.1VDC, 500mA
- Bell Output Power: 10 - 15.5VDC, 1A

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 initial powerup of the system, all of the lights on the LED keypad(s) will go ON and then go OFF for approximately 2 min. 10 secs and/or the LCD keypad(s) will display STAND BY! for approximately 2 min. 10 secs. This occurs on a total powerup, system reset or after completion of system programming. If the total system power is lost then upon power restoral, the system will return to the previous arming state. The 2 min. 10 secs. interval is used to allow motion detectors (interior zones) to stabilize on power up in order to prevent false alarms. THIS OPTION CAN BE DISABLED BY PUTTING A MOMENTARY JUMPER BETWEEN TERMINAL 13 AND 12 ON POWER UP. IF DISABLED, THEN THE POWER UP RESET TIME IS APPROXIMATELY 5 SECONDS. This is a normal condition.

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]

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. 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

PANIC CIRCUIT OR KEYSWITCH :

Normally Open PANIC circuit. 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. For UL installations, the panic switch connected to these terminals is to be located no more than 3 feet from the control unit, with no intervening barriers (this is a supervision requirement only). If the keyswitch option is selected (see programming question 05, location 2), then each activation of the keyswitch will arm and disarm the system.

NOTE: E.O.L. resistor is not required on this zone and is not supervised. This zone does not report restore codes. If a supervised zone with restore reporting ability is desired, then program one of the 6 zones as a 24Hr. Alarm. If used as a keyswitch, then triggers are available for either an arming or ready status indication (see programming question 7, location 4).

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, or 6805, 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.

12 (-) & 15 (+)

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-2S includes the power available from these terminals (15 & 12) 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.

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1(+) & 2(-)	Zone 1 (Requires 2.2K EOL resistor)	[Default = DELAY]
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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. 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.

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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.

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A maximum of 4 keypads, either XL-4600RM, XL-4600SM, 6615, or 6805, 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.

12 (-) & 15 (+)

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-2S includes the power available from these terminals (15 & 12) 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.

SMOKE DETECTOR POWER OR TRIGGER 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.

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.

TRIGGER OUTPUT: These terminals can be used for a trigger output. See programming question #07, location 4 for valid trigger types. **NOTE:** Unless otherwise specified, the trigger output is normally floating and actively sinks on activation.

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 unregulated 10.0-15.5VDC power for devices requiring a constant power such as VS279. It is connected to a bell fuse (F2). **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:

The total output power available for sounding devices is 1 amp at 10.5 - 15.5 VDC for residential applications, or 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 (F2) may be blown.

24 & 25

TRANSFORMER:

Connect the 12 VAC 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.

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 *		
6805 Keypad	30mA *		
6615 Keypad	30mA *		
PIR	**		
Smoke Detector	**		
Glass Break Detector	**		
	**		
	**		
TOTAL CURRENT FOR ALL DEVICES= (500mA max.)			

NOTE: * Only applies if device is powered from control terminals 15 (+) & 12 (-).
** If using devices such as PIR's, 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.

3. PC BOARD MOUNTING

3.1. Mounting the PC Board

Before mounting the printed 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.

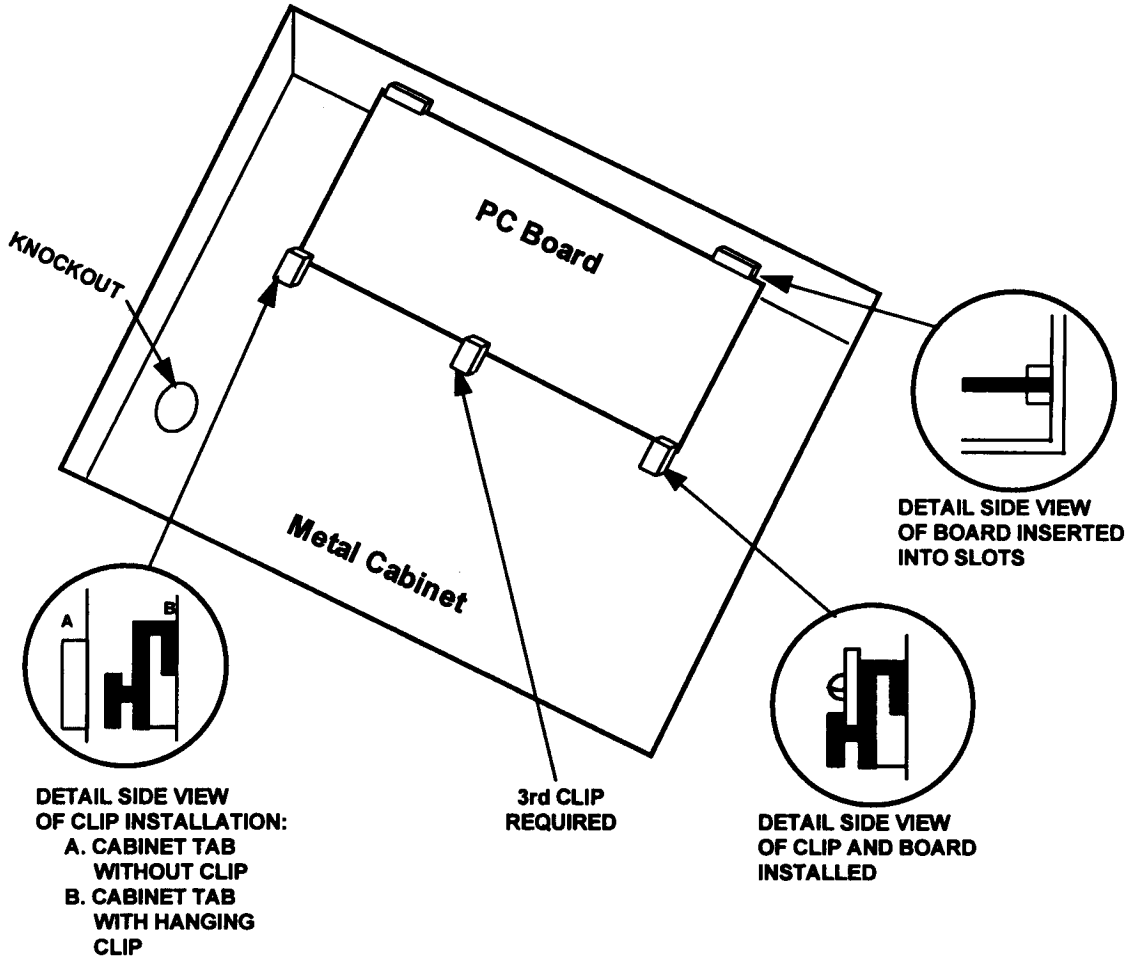
1. Hang the three mounting clips on the raised cabinet tabs. Observe proper clip orientation to avoid damage to the clip when mounting screws are tightened and to avoid problems with insertion and removal of the PC board.

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 onto the mounting clips.

4. Place the washer provided over the wire jumpers located within the middle of the PC board. Secure the PC board to the middle mounting clip of the enclosure through the washer using the screw provided.

5. Secure the remaining sides of the PC board to the enclosure using the screws provided.



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:

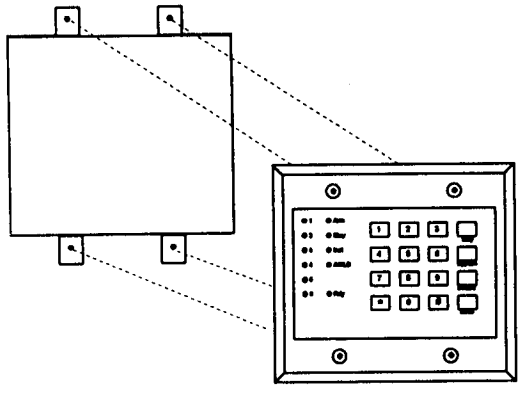
1) Open the enclosure to its fully extended position (approx. 90 degrees)

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

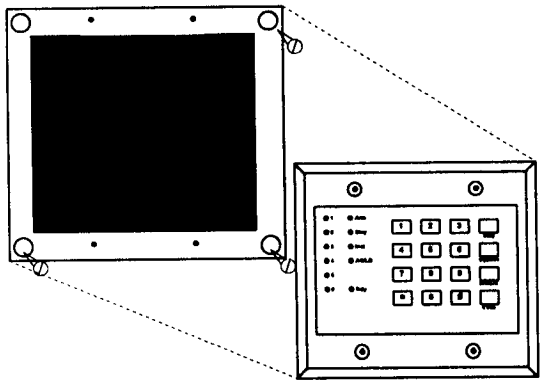


1- Create an opening and mount a standard double gang box.

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)

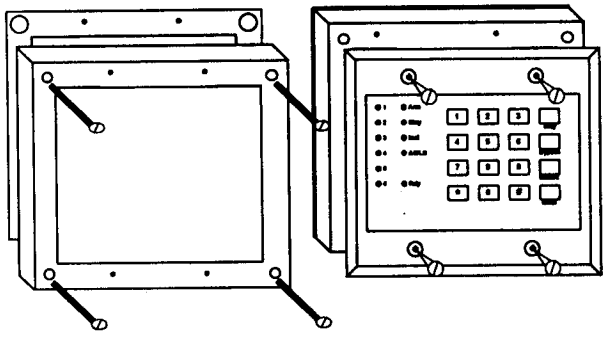


1- Create the desired opening where keypad is to be mounted, using the inside of the mounting ring as a template. **NOTE:** This opening should be made between studs.

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)

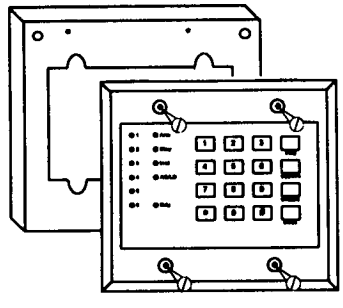


1- Depending on type of installation run the keypad wiring out of the rear, top bottom or sides of the backbox.

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.

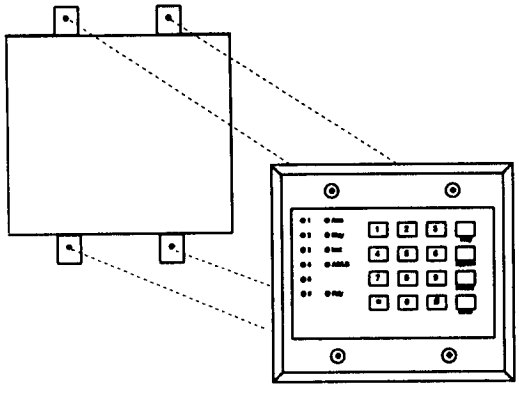
2- Insert XL4600RM into opening from front of enclosure.

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

4. KEYPAD MOUNTING

4.1. XL4600RM METAL KEYPAD

FLUSH MOUNTING USING DOUBLE GANG BOX

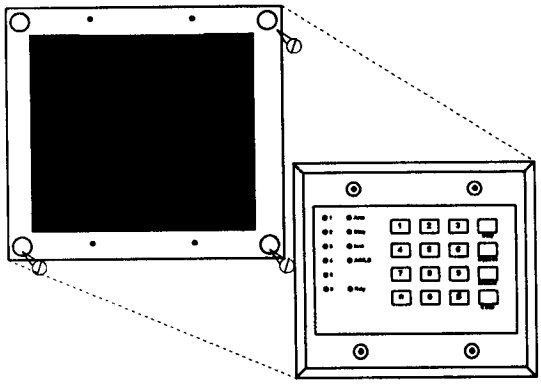


1- Create an opening and mount a standard double gang box.

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)

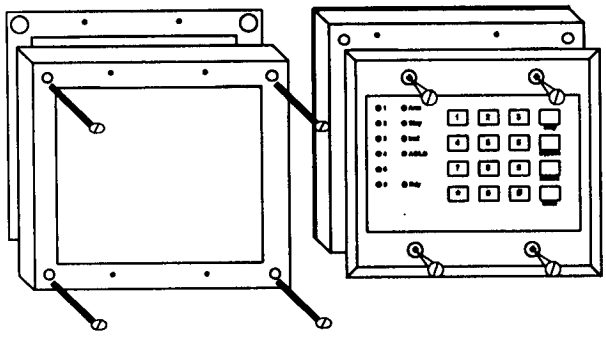


1- Create the desired opening where keypad is to be mounted, using the inside of the mounting ring as a template. **NOTE:** This opening should be made between studs.

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)

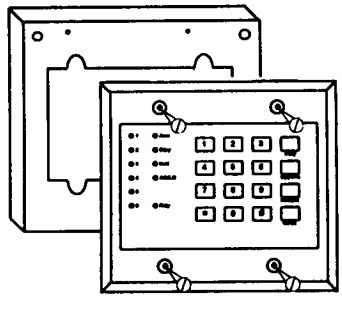


1- Depending on type of installation run the keypad wiring out of the rear, top bottom or sides of the backbox.

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. XL4600SM KEYPAD

The XL4600SM 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.

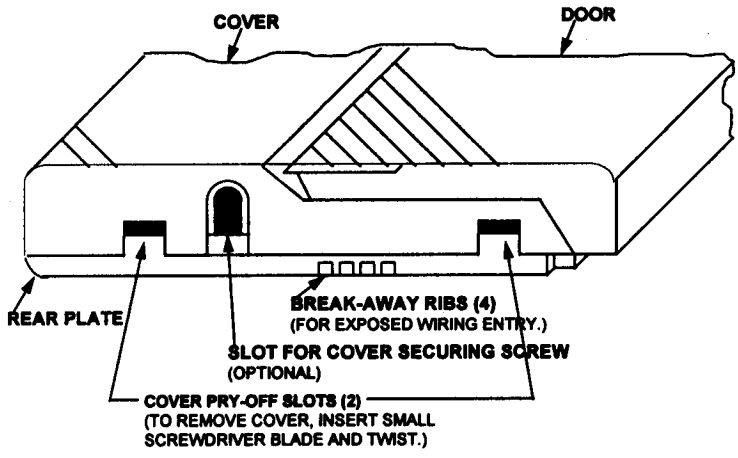


Diagram 2: BOTTOM VIEW OF KEYPAD

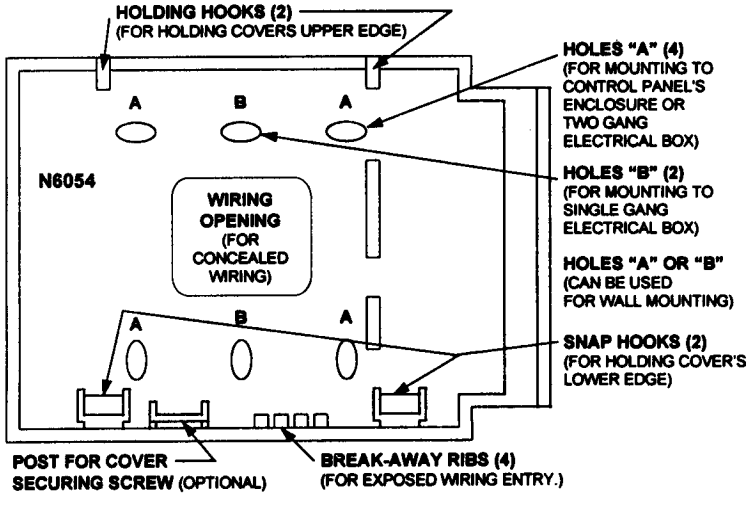


Diagram 3: REAR MOUNTING PLATE

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: The XL2B attack-proof enclosures does not contain 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.

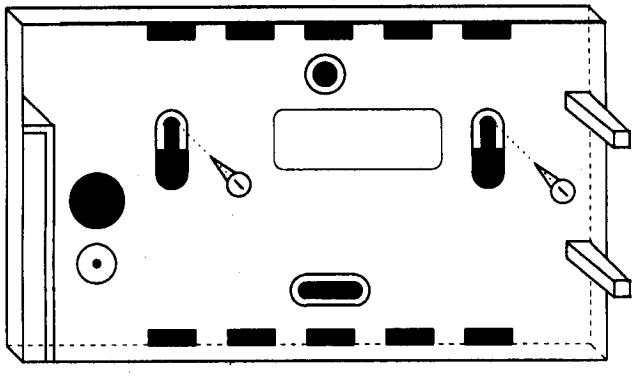
NOTE: (Optional) If desired, cover and plate can be further secured together by inserting a screw (provided) into the SLOT at the keypad's lower edge.

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 6805 and 6615 KEYPADS

Keypad mounting is identical for both the 6615 LED and 6805 LCD versions. Keypads can be surface mounted or flush mounted as described below. **NOTE:** After mounting the 6805 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.

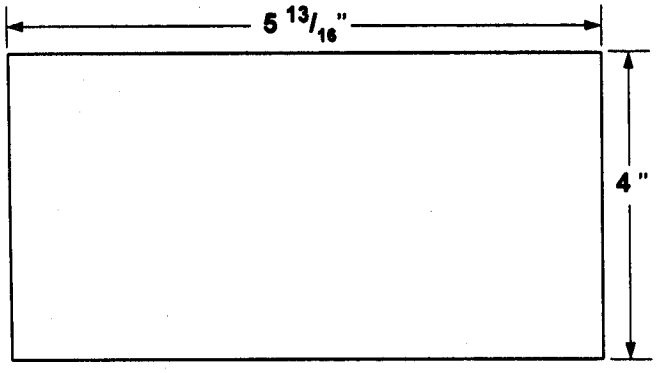
2- Create a keypad opening . Connect the keypad wiring to the control panel w/ 4-wire connector.

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.

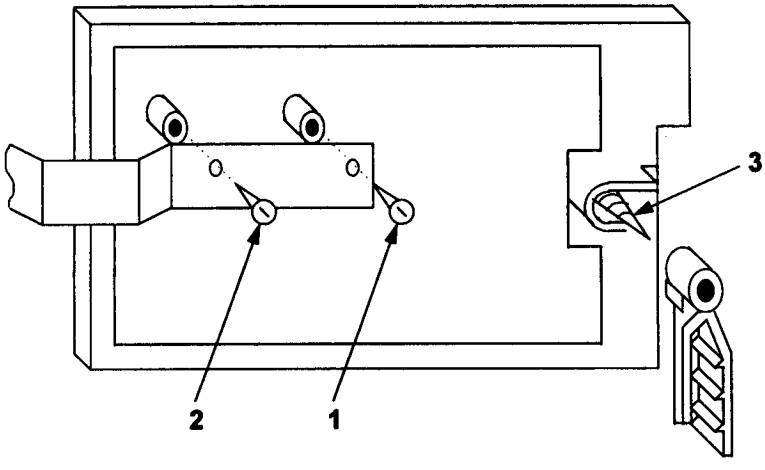
3- Turn over the keypad and remove the Phillips head screw (item 1 on diagram) in the upper left hand side of the keypad printed circuit board. **NOTE:** This screw is located immediately to the left of the keypad connector.

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.

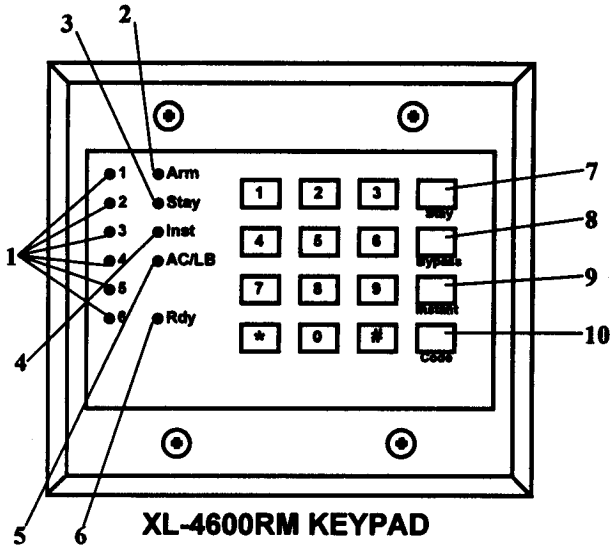
6- Run the keypad wiring to the control panel and attach the wiring to the keypad.

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.

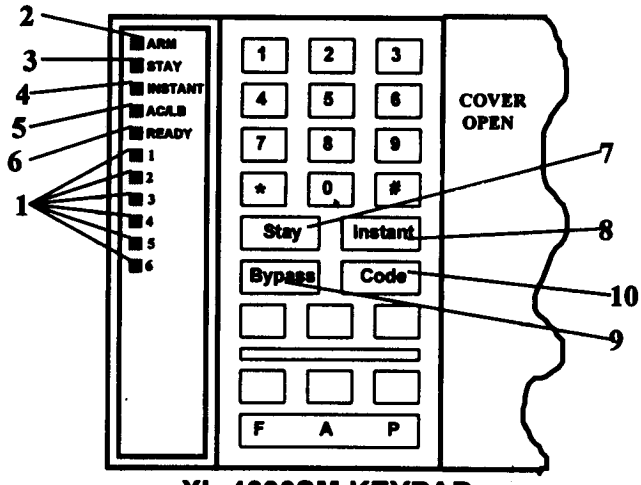
8- After inserting the side of the keypad with the metal strap, insert the other side into the opening until the entire keypad is firmly in the wall.

9- Tighten the screw inserted in step 5.

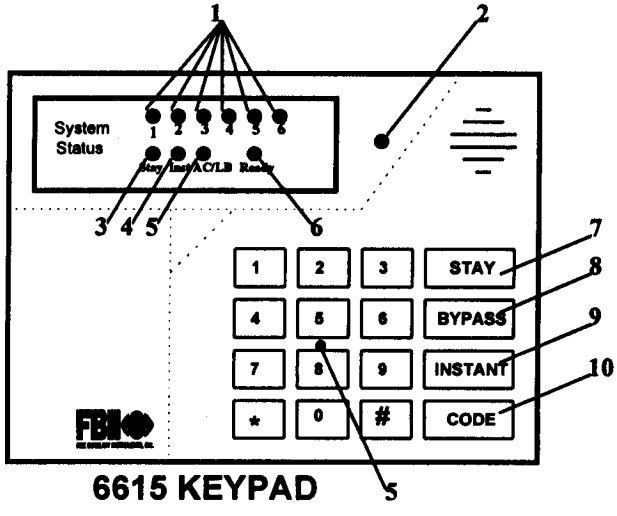
5. KEYPAD LAYOUT



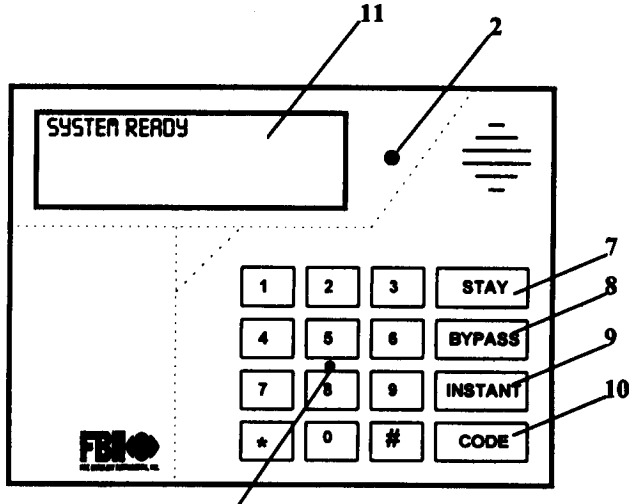
XL-4600RM KEYPAD



XL-4600SM KEYPAD



6615 KEYPAD



6805 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

2) ARM/DISARM LED

This LED indicates whether the system is currently armed (ON) or disarmed (OFF). This LED will also blink fast to show that alarms have occurred or blink slowly upon failure to communicate with the 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 05, location 2. 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 STAY/INSTANT mode, meaning that the system is currently armed, all delay zones are instant and all interior zones are bypassed. **NOTE:** See programming question 05, location 2.

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

The INSTANT button enables arming the system elimenating entry/exit delays. If enabled with the STAY button, it enables arming the system in the STAY/INSTANT mode. **NOTE:** The INSTANT modes are enabled in question #05, location 2.

10) CODE BUTTON

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

11) LCD DISPLAY

The LCD display shows the current status in a two line by twelve format.

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

Pressing the two keys (top & bottom) labeled "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 05, location 1):

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

Bell Output - Steady for PANIC, Pulsing for FIRE

NOTE: See question #05, loaction 1 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

Upon initial powerup of the system, the LCD keypad will display STAND BY! for approximately 2 min. 10 secs. and on the LED keypad all of the lights will go ON and then go OFF for approximately 2 min. 10 secs. This occurs on a total powerup, system reset or after completion of system programming. If the total system power is lost then upon power restoral, the system will return to the previous arming state. The 2 min. 10 secs. interval is used to allow motion detectors (interior zones) to stabilize on power up in order to prevent false alarms. This option can be disabled by putting a MOMENTARY jumper between terminal 13 and 12 on power up. If disabled, then the power up reset time is approximately 5 seconds.

6.2. ARMING THE SYSTEM

The system can be armed only if all burglary zones are good (not faulted). On LED based keypads this requires that the READY LED is on.

On LCD keypads the following message will appear:

TO ARM: Enter any programmed four digit user. **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 system can be armed without the backup battery being connected, however the AC/LB light will flash.

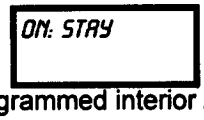
LCD Based keypads will display:

6.3. STAY ARMING

TO ARM: Press the STAY BUTTON followed by a four digit user code.

The ARMED and STAY LEDs will light on LED based keypads.

LCD based keypads will display:



The system is armed at this time with all programmed interior zones excluded.

6.4. STAY/INSTANT ARMING

TO ARM: Press the INSTANT then STAY buttons and a four digit user code.

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

LED keypads will have the ARMED, STAY and INSTANT LEDS lit. **NOTE:** This option is enabled in programming question 05, location2.

LCD keypads will display:

6.5. DISARMING

TO DISARM: Press any valid four(4) digit user code and ARMED LED will extinguish.

If an alarm condition exists or had occurred while the system was armed, the zone LED(s)(s) and the READY LED will be blinking rapidly. This ALARM MEMORY condition can be cleared by entering a valid user code or using the asterisk (*) key, if programmed.

6.6. RESET

After an alarm occurs, the system enters alarm memory mode either after bell time-out or by a user entering a valid user code silencing the bell and keypad buzzer. **Alarm memory and communications failure can be cleared by entering a valid user code.** If a fire alarm occurs, then clearing alarm memory resets the smoke detectors for approximately 8 seconds.

In addition, you can use the * key to act as a reset in addition to using a valid user code for clearing the alarm memory and communications failure. This option is programmable in question #05, location 3.

6.7. BYPASS

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

If Quick Bypass is not enabled, then press the BYPASS button followed by any valid four(4) digit user code, followed a number 1-6, which represents the respective zone to be bypassed.

EXAMPLE: BYPASS ZONE 2 (Assume user code of 1234)

BYPASS 1234 2

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

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

The bypass rules are:

- 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 are 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.

6.8. QUICK BYPASS

Quick bypassing is a programmable option (see question 05, location 3 of the programming sequence) and allows the user to bypass zones without using a user code.

Press the BYPASS button followed by a number 1-6, which represents the zone to be bypassed.

Example: To bypass zone 2

BYPASS 2

6.9. AUTO UNBYPASS

All burglary zones which are bypassed can be automatically unbypassed upon system disarm, assuming no other zone(s) had been in alarm. 24 hour zones which have been bypassed will be unbypassed only if they are normal.

This option is ALWAYS enabled.

6.10. MANUAL UNBYPASS

This function removes an existing bypass from a currently bypassed zone. **The procedure is the same as bypass.**

6.11. USER CODE PROGRAMMING

Users codes can be entered or modified directly through the keypad. The system contains up to six user codes (4 digits each) with the following applications:

USER NUMBER	APPLICATION	DEFAULT CODE
1	Master User (see note 1)	1234
2	Normal User	NULL
3	Normal User	NULL
4	Normal User	NULL
5	Arm Only (see note 2)	NULL
6	Ambush (see note 3)	NULL

NOTES: Only the master user (user number 1) can program or modify other users. Therefore, do not misplace this code. Should you misplace you must perform a user code default. Refer to the Installer Modes section.

1. **User Number 1** - programs all user codes (1-6); cannot be deleted.

2. **User Number 5** - can be programmed as an arm only user in question #05, location 2. This means that the user code can only arm but not disarm the system. Typically, this would be used for a maid service or any other person with temporary access.

3. **User Number 6** - can be programmed as an ambush code if there is an ambush CS transmission code programmed into question #16, locations 1 & 2. In this mode, entry of the user #6 code will ARM or DISARM the system and transmit the ambush code to the Central Station. Furthermore if opening/closing by user reporting is programmed, user number 6 will be reported along with the ambush code. If no CS code is defined in question #16, then user number 6 will be a normal user code.

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

where:

[CODE]	Press CODE button
[USER]	Enter Master User ID code (user #1)
[USER#]	Press Desired user to be programmed (1-6)
[USER ID]	Enter Four digit user code. Valid digits are 0-9

Example: Define user #3 with an ID of 7493. (Assume master user code is 1234).

CODE 1234 3 7493

An acknowledgment sound (steady tone) verifies a successful user code programming. A negative acknowledgment 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.

NOTE: User code programming can be ONLY performed while the system is DISARMED.

6.12. USER DELETION

User codes (2 - 6) 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
[USER]	Enter Master User ID code (user #1)
[USER #]	Press the desired user number being deleted.(2-6). **NOTE:** User #1 cannot be deleted, but it can be changed.
[*]	Press the * (asterisk) button

6.13. KEYPAD EMERGENCY CONDITIONS

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

CONDITION	KEYSTROKES	ENABLED IN	AUDIBLE OR SILENT
PANIC	# & * (at the same time)	Question #05, location 1	Question #04, location 4
FIRE	7 & 9 (at the same time)	Question #05, location 1	Always AUDIBLE
AUXILIARY	1 & 3 (at the same time)	Question #05, location 1	Question #05, location 1
AMBUSH	User code #6	Question #16, location 1 & 2	Always SILENT

For example, the 24 hr keypad panic can be initiated by pressing the # and * keys at the same time. The panic condition can be silent (no bell output) or audible based on the programming option. **NOTE:** The default value for panic is audible.

In addition to the keystrokes, the keypads contain dedicated function keys for the auxiliary conditions. These keys can be activated by pressing both keys at the same time (see section 4).

Audible panic, Fire and Audible Auxiliary can be RESET BY ENTERING ANY VALID USER CODE or using the asterisk * key.

7. QUICK COMMAND MODES

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

COMMAND	KEYSTROKES	ENABLED IN
Quick Arming	# 1	Question #05, location 3
Quick Forced Arming	# 2	Question #05, location 3
Display/Toggle Chime	# 6	Question #05, location 4
On-line Download	# 9	Questtion #05, location 4

NOTE: On-line Download is not documented in the end user manual because it will only be done when the end user is in communication with someone at the downloading computer.

7.1. QUICK ARMING (# 1)

If programmed (see programming question #05, location 3), then quick arming will be permitted. Quick arming allows arming the system without entry of a user code and will report as user #7 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.

7.2. QUICK FORCE ARMING (# 2)

If programmed (see programming question #05, location 3), then quick forced arming will be permitted. Quick force arming allows arming the system without entry of a user code and bypass any zones that are not ready. It will report user #7 to the CS if a 2 digit transmission format is defined. **NOTE:** To disarm, the user code is required.

7.3. TOGGLE CHIME (#6)

This quick command is enabled in question 05, location 4 by selecting User On-line Downloading. If any zones are programmed with a chime option (see programming questions #10 - #15), then # 6 will turn the system chime ON or OFF depending on its original state. **NOTE:** This will toggle the chime feature for the entire system. Since there are no visual indications on the keypads after toggling the chime, you must be aware of its present state. **NOTE:** The installer must first enable the chime option for any zone requiring chime.

7.4. ON-LINE DOWNLOAD (#9)

If programmed (see programming question #05, location 4), then 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 is needed. On-line connection can be made as follows:

1- User dials the CS Downloading modem telephone line from the premises telephone line that the alarm system uses. 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 #9 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).

4- User hangs up the telephone to prevent interference which may affect upload/download data. The downloader software will automatically terminate the connection after remote communications end.

8. INSTALLER MODES

There are 4 installer modes in the 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 System Log View

3 Unattended Download

4 On-line Download

8.1. INSTALLER MODE 1 (INSTALLER KEYPAD PROGRAMMING)

Enters the installer into keypad programming mode. Refer to the Keypad Programming Section of this Manual. **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. The software has another option (Default Lockout) to inhibit another installer from defaulting the panel and entering keypad programming. This prevents hostile account takeovers.

8.1.1. 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 WARMUP TIME SEQUENCE. A system default can also be done by removing power (AC & DC), shorting JP1 & JP2, reapplying 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.

8.1.2. 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 WARMUP TIME SEQUENCE.

8.2. INSTALLER MODE 2 (SYSTEM LOG VIEW)

The system retains the past 2 alarm memory conditions. LED keypads will display alarms as fast blinking zone lights along with a fast blinking ready (RDY) light. In both keypad types (LCD & LED), the display will show the events starting from the oldest event. Pressing of the "#" key will advance the log to the most recent alarm in memory. To exit from the system log view mode press the "*" key. **NOTE:** As the log is advanced, the LCD keypad will scroll through all zones that were in alarm for the event. The system log **cannot** be cleared by the keypad. It can only be cleared by the Downloader Software.

8.3. INSTALLER MODE 3 (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 #03) 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][3]**.

3- The system will now enter keypad programming, question 01. Press the "*" key first followed by the "0" key and then the "3" key. This will go to programming question 03. 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 Downloaders 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.

8.4. INSTALLER MODE 4 (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] [4] 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.

9. SYSTEM PROGRAMMING

The system can be programmed in any one of the following methods:

- Directly through keypad (XL4600RM, XL4600SM, 6805 or 6615)
- EZ-MATE PC DOWNLOADER model 7700 remotely

NOTE: The EZ-Mate downloader has not been tested for UL applications.

This manual describes system programming via the keypad. The other programming devices include documentation describing their programming procedures.

Keypad programming is accomplished by understanding and completing the PROGRAMMING SHEET located in the back of this manual.

There are 21 total programming questions numbered 00-20. Additional programming questions are available for the programmable zone descriptors when LCD based keypads are used (see programming questions #21 - #26).

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.

10. PROGRAMMING QUESTIONS

This section of the manual defines the programming questions along with the values expected 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 through the keypad as explained in the section titled Data Entry Through the Keypad.** DO NOT ATTEMPT TO ENTER DATA BEFORE COMPLETELY FILLING OUT PROGRAM SHEET.

QUESTION 01 PRIMARY TELEPHONE NUMBER

DEFAULT = 234AAAAAAAAA

Enter the telephone number (including area code and/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	Dialing Digits
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 dialtone
D	Pound (#)	Enter whenever the pound is used
E	*70C (Touchtone) *1170C (Rotary)	Enter to disable Call Waiting
F	800	Enter whenever the "800" prefix is needed

REPORTING ROUTE:

The system will report all signals to the primary receiver phone number. The panel will alternate between the primary and secondary receivers (if the second phone number is programmed) for a maximum of 8 attempts each until the signal has been acknowledged.

QUESTION 02 SECONDARY TELEPHONE NUMBER

DEFAULT = AAAAAAAAAAAA

Enter the telephone number (including area code and/or dialing prefix IF NECESSARY) of the secondary central station receiver in L1 - L12.

Enter the valid digits from the table in question 01. 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 the SPLIT REPORTING feature is programmed, then OPENING and CLOSING signals will be directed to the secondary CS number only, while all other conditions will be reported to the 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 and/or dialing prefix if necessary) for this control panel to reach the callback location. The callback number is the optional location of the EZ-Mate Downloader 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 the hang up and dial the callback number. Enter the valid digits from the table in question 01. **NOTE:** For no callback capability enter AAAAAAAAAAAA.

QUESTION 04 DIALER OPTIONS

DEFAULT = 1601

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

Question 04, L1 - Dialer Formats ***DEFAULT = 1***

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

Digit	DIALING FORMAT		CS REPORTING FORMAT
	PULSE	TOUCHTONE	
0	✔		STANDARD OR 4X2
1		✔	STANDARD OR 4X2
2	✔		EXTENDED
3		✔	EXTENDED
4	✔		PARTIAL EXTENDED
5		✔	PARTIAL EXTENDED
8	NONE		NO DIALER (LOCAL ALARM ONLY)

NOTE: See Question #04, location 3 to select specific CS Reporting Format Message Length and specific Dialing Pulse Type.

NOTE: If Local Alarm is desired, then no other options are needed to be disabled (Telephone #, CS Codes).

Question 04, L2 - CS Receiver Type ***Default = 6***

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
2	✔				✔		FBI
3	✔				✔	✔	FBI
4		✔		✔			FBI, SILENT KNIGHT, ADCOR, ADEMCO
5		✔		✔		✔	FBI, RADIONICS
6		✔			✔		FBI, FRANKLIN, SESCOA, DCI, VARITECH
7		✔			✔	✔	FBI, RADIONICS
8			✔	✔			FBI
9			✔	✔		✔	FBI
A			✔		✔		FBI
B			✔		✔	✔	FBI, RADIONICS

NOTE: UL compatible receivers: FBI CP220 (all formats), ADEMCO 685, Silent Knight 8520, 9000, RADIONICS.

Question 04, L3 - CS Format Message Length, System Swinger Shutdown & Pulse Type ***Default = 0***

Enter the digit for the desired message length from the table below in location L3. **NOTE:** The checkmark highlights which options are selected.

Digit	CS REPORTING FORMAT MESSAGE LENGTH				SYSTEM SWINGER SHUTDOWN	DIALING PULSE TYPE	
	3X1	3X2	4X1	4X2		U.S.	EUROPEAN
0	✔					✔	
1	✔						✔
2			✔			✔	
3			✔				✔
4		✔				✔	
5		✔					✔
6				✔		✔	
7				✔			✔
8	✔				✔	✔	
9	✔				✔		✔
A			✔		✔	✔	
B			✔		✔		✔
C		✔			✔	✔	
D		✔			✔		✔
E				✔	✔	✔	
F				✔	✔		✔

NOTE: Please consult your Central Station manager to determine the formats and message lengths which are accepted by the receiver. European dialing format has not been tested by UL.

SWINGER SHUTDOWN - If selected, then 3 activations of the same zone within the same arming interval will not activate the bell or the dialer. This applies only to burglary zones as well as 24Hr. Audible zones. For UL installations Swinger Shutdown must not be selected.

DIALING PULSE TYPE - Specifies how this control will perform pulse dialing (U.S. Pulse or European Pulse) when CS transmissions are enabled. **NOTE:** European Pulse has not been tested for UL installations.

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

(PULSING SOUND). If SILENT, then it will **not** annunciate the keypad sounder and turn on the bell output. It will transmit a CS code if programmed in question #20, locations 3 & 4.

Question 05 L2 - Misc Options ***Default = 2***

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

Digit	ZONE 7 INPUT			INSTANT ARMING MODE		
	PANIC		KEYSWITCH	INSTANT DISABLED	INSTANT	STAY/INSTANT
	AUDIBLE	SILENT				
0		✔		✔		
1			✔	✔		
2	✔			✔		
4		✔				✔
5			✔			✔
6	✔					✔
8		✔			✔	
9			✔		✔	
A	✔				✔	
C		✔			✔	✔
D			✔		✔	✔
E	✔				✔	✔

ZONE 7 INPUT: PANIC or KEYSWITCH - This option determines whether connections 8 & 10 on the control panel will be used as a panic input (audible or silent) or a keyswitch input. In both cases, a MOMENTARY SHORT is required to activate the condition. **NOTE:** If keyswitch is selected and the transmission code sends a user code, then user code #7 will be transmitted.

INSTANT ARMING MODE - Select the mode allowed for the instant button. The choices are Instant Arming Disabled, Instant Arming and Stay/Instant Arming. **NOTE:** Stay Arming is always enabled.

Question 05 L3 - Quick Commands & Reset Enable ***Default = 0***

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

Digit	QUICK COMMANDS			RESET ENABLE
	QUICK FORCED ARMING	QUICK ARMING	QUICK BYPASS	
0	NONE (QUICK COMMANDS DISABLED)			
1	✔			
2		✔		
3	✔	✔		
4	NONE (QUICK COMMANDS DISABLED)			✔
5	✔			✔
6		✔		✔
7	✔	✔		✔
8			✔	
9	✔		✔	
A		✔	✔	
B	✔	✔	✔	
C			✔	✔
D	✔		✔	✔
E		✔	✔	✔
F	✔	✔	✔	✔

QUICK FORCED ARM - Specifies whether Quick Forced Arming (#2) will be permitted. If the system is armed by this method it will arm the system bypassing any faulted zones. Openings/Closings will report user #8 to the CS if enabled. **NOTE:** For UL installations do not select thsi option.

QUICK ARMING - Specifies whether Quick Arming (#1) will be permitted. If the system is armed by this method it will arm the system ONLY if the system is READY. Openings/Closings will report user #8 to the CS if enabled.

QUICK BYPASS - Specifies whether bypassing a zone without a user code is permitted.

RESET ENABLE - This option will allow in addition to using a valid user code the * (asterisk) from the keypad will reset the following conditions: communications failure and alarm memory.

Question 05, L4 - Rest. Foll. Loop, User On-line, CS Test K.P. Ringback & User 5 Arm ***Default = 0***

Enter the digit from the table below in location L4. **NOTE:** The checkmark highlights which options are selected.

Digit	RESTORE AFTER BELL	RESTORE FOLLOWS LOOP	USER ON-LINE	CS TEST KEYPAD RING BACK		USER 5 ARMS ONLY
				SILENT	AUDIBLE	
0	✔				✔	
1		✔			✔	
2	✔		✔		✔	
3		✔	✔		✔	
4	✔			✔		
5		✔		✔		
6			✔	✔		
7		✔	✔	✔		
8	✔				✔	✔
9		✔			✔	✔
A	✔		✔		✔	✔
B		✔	✔		✔	✔
C	✔			✔		✔
D		✔		✔		✔
E	✔		✔	✔		✔
F		✔	✔	✔		✔

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.

USER ON-LINE & CHIME TOGGLE ENABLED - This option indicates whether the end user command (#9) for the on-line download will be enabled. This command would allow an end user to be instructed how to initiate an on-line download and possibly prevent a service call. This also controls the user chime toggle enable. If enabled, then the user will be able to toggle the system chime.

CS TEST RING BACK - Normally, after a CS Test Report has reached the Central Station, a sounder ringback can be heard from the keypad indicating a successful communication to the CS. If SILENT is selected, then **NO sounder ringback** will be heard from the keypad after a CS Test Report. If AUDIBLE is selected, then **a sounder ringback** will be heard from the keypad after a CS Test Report.

USER 5 ARMS ONLY - If selected, then user 5 will be used as an ARM only code (Maid Code); it will not disarm the system.

QUESTION 06 SYSTEM TIMEOUTS

DEFAULT = 665F

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

Question 06 L1 - Entry Delay 1 ***Default = 6***

Enter the desired entry delay time. Refer to Exit/Entry Times below for valid choices. **If zones 1-3 are delay zones, then they follow entry delay 1.** For UL applications the maximum entrance delay shall not exceed 45 seconds for household applications or 15 seconds for commercial burglary applications. **NOTE:** See programming question #07, location 1 for Entry Delay 2.

Digit	ENTRY TIMEOUTS
0	1 SECOND
1	5 SECONDS
2	10 SECONDS
3	15 SECONDS
4	20 SECONDS
5	25 SECONDS
6	30 SECONDS
7	35 SECONDS
8	40 SECONDS
9	45 SECONDS
A	50 SECONDS
B	55 SECONDS
C	1 MINUTE
D	1 MINUTE 5 SECONDS
E	1 MINUTE 10 SECONDS
F	3 MINUTES

Question 06 L2 - Exit Delay ***Default = 6***

Enter the desired exit time. **NOTE:** For UL applications the maximum exit delay shall not exceed 60 seconds.

Digit	EXIT TIMEOUTS
0	1 SECOND
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	3 MINUTES

Question 06 L3 - Burglary Bell Cutoff ***Default = 5***

Enter the desired bell cutoff time on alarm conditions for burglary and panic in 3 minute intervals. The valid range of input is 1 - F, with F indicating an infinite burg bell cutoff. Example 3 = 9 minutes. For UL installations in commercial applications the minimum bell cutoff shall be 15 minutes, or 6 minutes for household burglary applications.

Digit	BURGLARY & FIRE BELL TIMEOUTS
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

Question 06 L4 - Fire Bell Cutoff ***Default = F***

Enter the desired bell cutoff time for fire conditions in three minute intervals. The valid range of input is 1 - F, with F indicating an infinite fire bell cutoff. Example 3 = 9 minutes. For UL installations the minimum fire bell cutoff time shall be 6 minutes.

QUESTION 07 MISCELLANEOUS SYSTEM OPTIONS

DEFAULT = 2C10

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

Question 07 L1 - Entry Delay 2 ***Default = 2***

Enter the desired entry delay time Refer to Exit/Entry Times in question #06 for valid choices. **If zones 4-6 are delay zones, then they follow entry delay 2.** For UL applications the maximum entrance delay shall not exceed 45 seconds for household applications or 15 seconds for commercial burglary applications. **NOTE:** See programming question #06, location 1 for table of applicable values. IF ZONE 6 IS PROGRAMMED AS A FIRE ZONE FOR BELL SUPERVISION, THEN TO USE EXIT DELAY 2 SELECT EITHER ZONE 4 OR 5 AS A DELAY ZONE.

Question 07, L2 - Remote Communications Ring Count ***Default = C***

Enter the digit from the table below in location L2. **Select from the choices below:**

Digit	REMOTE COMMUNICATIONS RING COUNT
0	NONE (REMOTE COMM. DISABLED)
1	1 RING
2	2 RINGS
3	3 RINGS
4	4 RINGS
5	5 RINGS
6	6 RINGS
7	7 RINGS
8	8 RINGS
9	9 RINGS
A	10 RINGS
B	11 RINGS
C	12 RINGS
D	13 RINGS
E	14 RINGS
F	15 RINGS

REMOTE COMMUNICATIONS RING COUNT - is a the number of rings for the control panel to pickup for a remote communications session. This should be selected to a value that does not interfere with normal operation of the panel location.The default value is 12 rings. **NOTE:** A value of 0 means that remote programming will be disabled.

Question 07, L3 - CS Test Time Intervals and European Ring Detect ***Default = 1***

Digit	CS TEST TIME INTERVAL					EUROPEAN RING DETECT
	24 HOURS	WEEKLY	27 DAYS	60 DAYS	90 DAYS	
0	NONE (CS TEST DISABLED)					
1	✔					
2		✔				
3			✔			
4				✔		
5					✔	
8	NONE (CS TEST DISABLED)					✔
9	✔					✔
A		✔				✔
B			✔			✔
C				✔		✔
D					✔	✔

CS TEST TIME INTERVAL - If enabled, the system will transmit the test code to the Central Station at the interval selected in the absence of any other signal. Select from daily (24 hour), weekly, 27 days, 60 days or 90 days. Transmission of any signal will reset the CS Test clock. For example, if a business opened and closed 6 days a week, then a test signal will be generated at the interval selected after the last closing signal. Enter the CS Code in question #18, location 3. **NOTE:** This must be selected for UL installations.

EUROPEAN RING DETECT - Use this option if a European Telephone System is used only. This option changes the ring detection frequency used for automatic answer mode for remote (Downloading) purposes only according to the programmed ring count (see programming question #07, location 2). If selected, the ring detection frequency range is 10 - 90Hz. If not selected, the frequency range is 16 - 90Hz.

Question 07, L4 - Smoke Power or Trigger Types ***Default = 0***

The smoke power terminals (15 & 16) can be used as a trigger output. If a fire zone is used in the system, the trigger should be programmed as "0". If the fire device does not need a power reset, or no fire zone type is selected, the trigger can be programmed as follows:

Digit	TRIGGER TYPE DEFINITION	DESCRIPTION OF OPERATION
0	Smoke Power - Verification	Used in Fire Verification to reset smoke power
1	Smoke Power - NO Verification	Used to power smoke detectors with no verification
2	Two Way Voice	SEE BELOW
3	Burglary Bell ON	Follows Burglary Bell Timer
4	Ready	Follows Ready LED; used for keyswitch
5	Armed	Follows Armed LED; used for keyswitch
6	Exit Time	ON during exit time
7	Entry Time	ON during entry time
8	Fire Only Latch	ON w/Fire Bell, OFF w/code
9	Burglary Only Latch	ON w/Burglary Bell, OFF w/code
A	Strobe	ON steady w/Burglary Bell, Pulse w/Fire Bell
B	Panic Alarm	Zone 7 (Hardwired Panic): ON w/alarm, OFF w/code
C	Shock Asterisk Reset	Asterisk "*" activates for 2-6 seconds
D	Duress	Pulses for 2-6 seconds following entry of Duress code

TWO WAY VOICE - This trigger will activate when line seizure occurs if the event is any of the following: burglary, fire, duress, keypad panic, keypad fire or keypad auxiliary. It will not activate for CS test, openings/closing, trouble, bypass, cancel or restore. It will deactivate about 1 second before disconnecting the telephone line. Also, at the time of release, keypad sounders will be silenced for the remaining duration of the bell output cycle. The bell will time-out or a valid user code will terminate.

NOTE: Unless otherwise specified, the trigger output is normally floating and actively sinks on activation.

QUESTION 08 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 09 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.

10.1. ZONE PROGRAMMING

Questions 10-15 represent all the options related to programmable zones 1-6. Each question contains four(4) locations L1-L4. The first two locations (L1 & L2) define the zone type and options. The second two locations (L3 & L4) define the alarm code transmitted to the Central Station for that zone.

ZONE TYPES

Zones 1-6 can be programmed for any one of the following zone types:

	BURGLARY (CONTROLLED) ZONES						
L1L2 Digits	ZONE TYPE			ZONE OPTIONS			
	INSTANT (PERIMETER)	DELAY (EXIT/ENTRY)	INTERIOR FOLLOWER	CHIME	DAY	BYPASS IN STAY	DIALER DELAY*
10	✔			NONE (INSTANT ZONE W/O OPTIONS)			
11	✔					✔	
12	✔				✔		
13	✔				✔	✔	
14	✔			✔			
15	✔			✔		✔	
18	✔						✔
19	✔					✔	✔
1A	✔				✔		✔
1B	✔				✔	✔	✔
1C	✔			✔			✔
1D	✔			✔		✔	✔
20		✔		NONE (DELAY ZONE W/O OPTIONS)			
21		✔				✔	
24		✔		✔			
25		✔		✔		✔	
40			✔	NONE (INTERIOR ZONE W/O OPTIONS)			
41			✔			✔	
44			✔	✔			
45			✔	✔		✔	
48			✔				✔
49			✔			✔	✔
4C			✔	✔			✔
4D			✔			✔	✔

NOTE: For 24 Hour Zone types see next page.

BURGLARY (CONTROLLED) ZONES

DELAY - 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 STAY/INSTANT mode if enabled. Delay zones employ the Exit Error Warning feature described in the note below.

INTERIOR - 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 are bypassed if the system is armed in the STAY MODE. Interior zones employ the Exit Error Warning feature described in the note below.

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

EXIT ERROR WARNING - 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 time expires and entry time starts) the burglary bell and keypad 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.

BURGLARY ZONE OPTIONS

RESTORE - This option is selected for all burglary zones by enabling the restore report code (question #19, location 2) and enabling zone restores in question #04, location 4.The programmed restore code will be reported upon bell cutoff, assuming the loop is restored unless Restore Follows Loop is selected in question #05, location 4. The restore code will also be reported if the system is disarmed during an alarm. **NOTE:** Restore is not selectable by zone.

BYPASS IN STAY - This option allows zones to be bypassed when the system is armed in the STAY mode.

CHIME - If this option is selected the keypad sounder will annunciate for 1 second when this zone is violated in the disarmed mode.

DIALER DELAY - If this option is selected, then 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.

DAY FEATURE - 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.

Zones 1-6 can be programmed for any one of the following 24 hour zone types:

24 HOUR ZONES					
L1L2 Digits	ZONE TYPE			ZONE OPTIONS	
	24 HR. ALARM	FIRE	24 HR. TROUBLE	AUDIBLE	SILENT
81	✔			✔	
82			✔	✔	
84		✔		ALWAYS AUDIBLE	
89	✔				✔
8A			✔		✔

24 HR. ZONES

FIRE - FIRE zones on the system contain Fire Verification Logic. Upon detection of the first violation, smoke detector power 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, bell and reset smoke detector power. 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.

The keypad sounder can be SILENCED through entry of ANY VALID USER CODE. **NOTE:** FIRE ZONES **cannot** be bypassed.

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). 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.

24 HR. TROUBLE - This zone type is always active, independent of the system arming status. Programming options include audible (PULSING KEYPAD SOUNDER) or silent. 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.

NOTE: 24 hour trouble is not to be used for fire and burglary detection zones. 24 Hour silent alarm zones are not to be used for perimeter protection. THE SOUNDER MAY BE SILENCED THROUGH ENTRY OF ANY VALID USER CODE. **NOTE:** IF ZONE 6 IS PROGRAMMED AS A FIRE ZONE FOR BELL SUPERVISION, THEN TO USE EXIT DELAY 2 SELECT EITHER ZONE 4 OR 5 AS A DELAY ZONE.

ZONE ALARM CODES

As previously specified locations L3 and L4 of the zone questions represent the alarm code that will be reported to the central station.

NOTE: Zones will transmit to the Central Station unless these digits are defined as AA for any individual zone, or the local dialer option is selected for all zones in question #04, location 1.

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 location L3 for the specific zone. The value placed in L4 will not be used.

EXTENDED (3X1 Ext. or 4X1 Ext.): Enter the desired first digit of the alarm code in location L3 for the specific zone and the second digit in L4.

PARTIAL EXTENDED (3X1 Part. Ext. or 4X1 Part. Ext.): Enter the desired digit in both locations L3 **and** L4 for the specific zone. This will generate a single digit transmissions for alarms and troubles (the second digit will **not** be used) and an extended transmissions for all system conditions such as restores, bypasses, openings/closings, etc. (the second digit will be used).

3X2 or 4x2: Enter the desired first digit of the alarm code in location L3 and the second digit in L4 for the specific zone. Both digits will be used for all transmissions.

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

QUESTIONS 10 - 15 ZONES 1 - 6

There are 4 locations (L1-L4) within each of these questions which define the operation of the zones. Enter a 2 digit number in locations L1 and L2 from the zone chart for the desired type for this zone. Enter the desired alarm code in locations L3 and L4 for this zone relative to the dialer format selected.

QUESTION 10 ZONE 1 TYPE & CS CODE

DEFAULT = 2031

Question 10, L1 & L2 - Zone 1 Type — ***Default = 20***

Question 10, L3 & L4 - CS Code for Zone 1 — ***Default = 31***

Zone 1 = Delay (Entry/Exit) w/CS reporting code = 31

QUESTION 11 ZONE 2 TYPE & CS CODE

DEFAULT = 4132

Question 11, L1 & L2 - Zone 2 Type — ***Default = 41***

Question 11, L3 & L4 - CS Code for Zone 2 — ***Default = 32***

Zone 2 = Interior Follower w/CS reporting code = 32

QUESTION 12 ZONE 3 TYPE & CS CODE

DEFAULT = 1033

Question 12, L1 & L2 - Zone 3 Type — ***Default = 10***

Question 12, L3 & L4 - CS Code for Zone 3 — ***Default = 33***

Zone 3 = Instant (Perimeter) w/CS reporting code = 33

QUESTION 13 ZONE 4 TYPE & CS CODE

DEFAULT = 1034

Question 13, L1 & L2 - Zone 4 Type — ***Default = 10***

Question 13, L3 & L4 - CS Code for Zone 4 — ***Default = 34***

Zone 4 = Instant (Perimeter) w/CS reporting code = 34

QUESTION 14 ZONE 5 TYPE & CS CODE

DEFAULT = 1035

Question 14, L1 & L2 - Zone 5 Type — ***Default = 10***

Question 14, L3 & L4 - CS Code for Zone 5 — ***Default = 35***

Zone 2 = Instant (Perimeter) w/CS reporting code = 35

QUESTION 15 ZONE 6 TYPE & CS CODE

DEFAULT = 1036

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

Question 15, L1 & L2 - Zone 6 Type — ***Default = 10***

Question 15, L3 & L4 - CS Code for Zone 6 — ***Default = 36***

Zone 6 = Instant (Perimeter) w/CS reporting code = 36

NOTE: If zones 1 - 3 are programmed as DELAY zones, they follow ENTRY DELAY 1. If zones 4 - 6 are programmed as DELAY zones, they follow ENTRY DELAY 2.

QUESTION 16 CS CODES for AMBUSH and AC LOSS

DEFAULT = AAAA

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

Question 16, L1 & L2 - Ambush Code — ***Default = AA***

If an ambush code is defined, then user number 6 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 abortable.

Question 16, L3 & L4 - AC Loss Code — ***Default = AA***

The same rules apply here regarding dialer format . If transmission is not desired, then program AA in locations L1 & L2. **NOTE:** AC LOSS is reported 15 minutes after detection.

QUESTION 17 CS CODES for PANIC and LOW BATTERY

DEFAULT = 22AA

There are 4 locations L1-L4 in this question.

Question 17, 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 abortable.

Question 17, 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.

QUESTION 18 CS CODES for OPEN/CLOSE and CS TEST

DEFAULT = AAAA

There are 4 locations L1-L4 in this question.

Question 18, L1 - Opening Code — ***Default = A***

Question 18, L2 - Closing Code — ***Default = A***

L1 is the single digit OPENING CODE. L2 is the single digit CLOSING CODE. 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.

Question 18, L3 & L4 - CS Test Code — ***Default = AA***

L3 - L4 is the CS Test CODE. If CS Test code is selected then ANY valid transmission will reset the CS Test timer. **NOTE:** Any digit entered will be transmitted unless CS Test is disabled; to disable see question #07, location 2.

QUESTION 19 CS CODES for BYPASS, RESTORE, TROUBLE and CANCEL

DEFAULT = AAF8

There are four(4) locations L1 - L4 in this question.

Question 19, L1 - Bypass Code — ***Default = A***

L1 is the single digit system BYPASS CODE that will be 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 19, L2 - Restore Code — ***Default = A***

L2 is the single digit system RESTORE CODE reported to the central station. Restores will be reported for all burglary or 24 hour zones by enabling this code (digits 0-9, B-F) and enabling zone restores in question #04, location 3. 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 zones code. **NOTE:** Restore is not selectable by zone.

Question 19, L3 - Trouble Code — ***Default = F***

L3 is the single digit system TROUBLE CODE reported to the central station. This code will be reported on DAY TROUBLE and any FIRE TROUBLE. If a two digit format has been programmed then this code will be followed by the second digit of the respective zones code.

Question 19, L4 - Cancel Code ***Default = 8***

L4 is the single digit system CANCEL CODE reported to the central station. This code will be sent if after a 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 restoral, then the restore code will be transmitted when the loop status has returned to normal. An entry of A in this field indicates that cancel codes are not transmitted. In formats requiring 2 digits, the user number functions as the second digit.

QUESTION 20 CS CODES for KEYPAD FIRE and KEYPAD AUXILIARY

DEFAULT = AAAA

There are 4 locations L1-L4 in this question.

Question 20, L1 & L2 - Keypad Fire Code ***Default = AA***

L1 - L2 is the alarm code that will be transmitted upon activation of the keypad fire condition (pressing the 7 & 9 keys on the keypad). This code can vary from any of the zones which are programmed as fire.

Question 20, L3 & L4 - Keypad Auxiliary Code ***Default = AA***

L3 - L4 is the code transmitted to the CS for keypad aux. condition (1 & 3 from the keypad).

NOTE: These keypad emergency conditions are optional and can be enabled within question #05 of the programming sequence. If either or both of these transmissions are not desired, program their respective locations AA.

QUESTION 00 INSTALLER CODE

DEFAULT = 2468

There are 4 locations L1 - L4 in this question. Enter any 4 digit (0-9 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.

11. 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 LED based keypads (XL4600RM, XL4600SM or 6615) and on the LCD keypad (6805) during programming operations. **NOTE:** Actual keypad programming should be performed after completion of the programming sheet.

11.1. HOW TO ENTER PROGRAMMING MODEVIA EITHER LED OR LCD KEYPADS

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

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

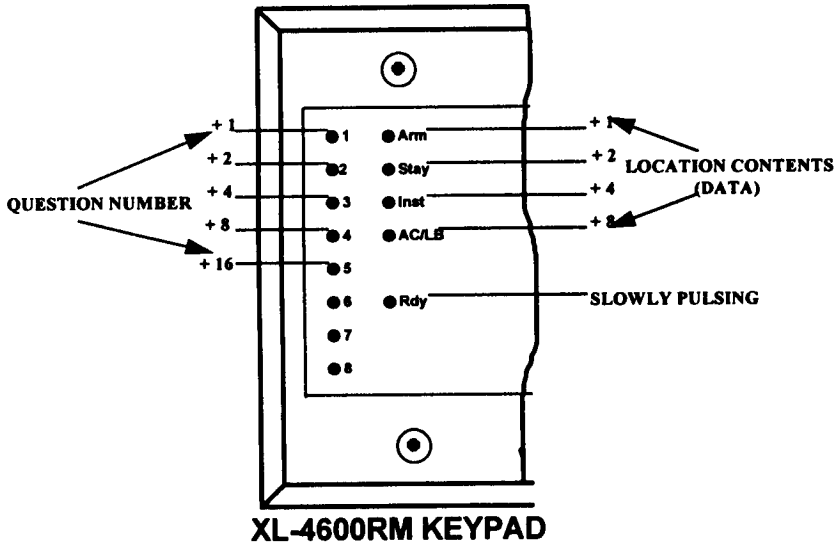
where:

[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.

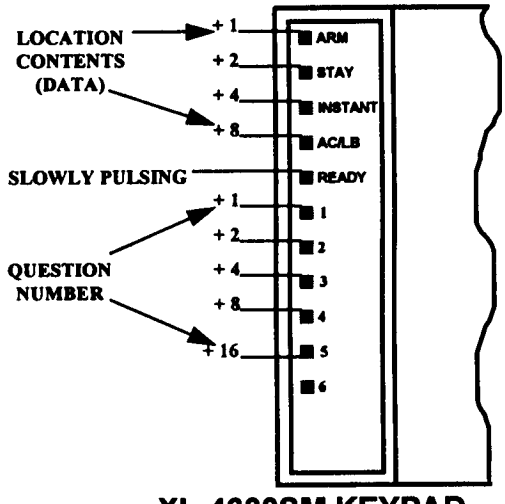
11.2. WHAT YOU SEE ON THE LED KEYPAD

PROGRAM MODE = READY LED:

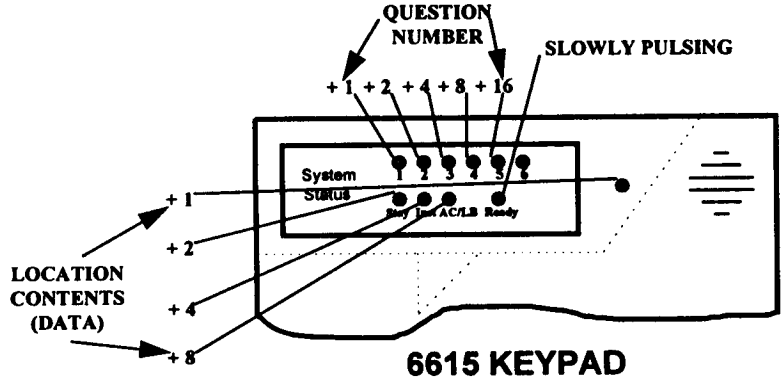
Upon entering the installer keypad programming mode the READY LED will slowly pulse, and will continue to pulse until leaving this mode. The remaining LEDS display the question number and location contents as indicated below:



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 LEDS: There are 21 (00-20) total questions, with multiple data entry locations.

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

LOCATION CONTENTS = SYSTEM STATUS LEDS

The remaining status LEDS (ARM,STAY,INSTANT,AC/LB) 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:

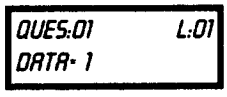
Arm ON, Stay,Instant,and AC/LB OFF	= **1**
Arm ON, Stay ON, Instant and AC/LB OFF	= **3**

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	Stay & AC/LB = ON
B	11	Arm,Stay, & AC/LB = ON
C	12	Instant, & AC/LB = ON
D	13	Arm,Instant, & AC/LB = ON
E	14	Stay,Instant, & AC/LB = ON
F	15	Arm,Stay,Instant, & AC/LB = ON

11.3. WHAT YOU SEE ON THE LCD KEYPAD

Upon entering the installer keypad programming following display will appear:



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.

11.4. 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 zone LEDS and the other status LEDS will display the contents of the FIRST location in that question.

MOVEMENT WITHIN QUESTIONS

The zone LEDS display the question number and the other status 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 status 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].

11.5. ZONE DESCRIPTOR PROGRAMMING

The LCD based keypads have the capability to display 12 character zone descriptors which can be programmed directly through the keypad. These descriptors are entered as programming questions 21 - 26.

NOTE: These questions can only be accessed by an LCD keypad, or the EZ-Mate Programming Devices.

The zone descriptor questions are as follows:

QUESTION 21 ZONE 1 DESCRIPTOR DEFAULT = ZONE 1

QUESTION 22 ZONE 2 DESCRIPTOR DEFAULT = ZONE 2

QUESTION 23 ZONE 3 DESCRIPTOR DEFAULT = ZONE 3

QUESTION 24 ZONE 4 DESCRIPTOR DEFAULT = ZONE 4

QUESTION 25 ZONE 5 DESCRIPTOR DEFAULT = ZONE 5

QUESTION 26 ZONE 6 DESCRIPTOR DEFAULT = ZONE 6

Example: To program the descriptor for zone 3 enter * 2 3, to access question 23.

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

NOTE: The Zone Descriptors are not defaulted when a system default is performed.

12. SYSTEM DEFAULTS

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

To reload the factory default values, remove all power from the system (AC & DC). Next short JP1 to JP2, with short still intact reapply power (AC then DC), wait 5 seconds then remove short with the power still applied. The installer can also do a System Default or User Code Default through Installer Mode 1 (refer to the Installer Modes section of this manual). The Zone Descriptors will NOT return to their default values.

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 Dialer Options	1601
05 Keypad Conditions	1200
06 System Timeouts	665F
07 Miscellaneous System Options	2C10
08 Account Number 1	1234
09 Account Number 2	AAAA
10 Zone 1 Type & CS Code	2031
11 Zone 2 Type & CS Code	4132
12 Zone 3 Type & CS Code	1033
13 Zone 4 Type & CS Code	1034
14 Zone 5 Type & CS Code	1035
15 Zone 6 Type & CS Code	1036
16 CS Codes for Ambush/AC Loss	AAAA
17 CS Codes for Panic/Low Battery	22AA
18 CS Codes for Open/Cose & CS Test	AAAA
19 CS Codes for Bypass, Restore, Trouble & Cancel	AAF8
20 CS Codes for Keypad Fire & Auxiliary	AAAA
21 Zone 1 Descriptor	Zone 1
22 Zone 2 Descriptor	Zone 2
23 Zone 3 Descriptor	Zone 3
24 Zone 4 Descriptor	Zone 4
25 Zone 5 Descriptor	Zone 5
26 Zone 6 Descriptor	Zone 6

USER NUMBER	DEFAULT CODE	APPLICATION
1	1234	Master User
2	NULL	Normal User
3	NULL	Normal User
4	NULL	Normal User
5	NULL	Arm Only
6	NULL	Ambush

13. SUMMARY OF KEYPAD FUNCTIONS

13.1. USER FUNCTIONS

ARMING/DISARMING:	**[Enter any valid four digit user code]**
STAY ARMING:	**[STAY] [Enter any valid four digit user code]**
STAY/INSTANT ARMING:	**[STAY] [INSTANT] [Enter any valid four digit user code]**
BYPASS:	**[BYPASS] [Enter any valid four digit user code] [Zone #]**
QUICK BYPASS:	**[BYPASS] [Zone #]**
USER CODE PROGRAMMING:	**[CODE] [Enter master user code] [user #] [Enter 4 digit user code]**
USER CODE DELETION:	**[CODE] [Enter master user code] [user #] [*]**
QUICK ARMING:	**[#] [1]**
QUICK FORCE ARMING:	**[#] [2]**
TOGGLE CHIME:	**[#] [6]**
ON-LINE DOWNLOADING:	**[#] [9]**
PANIC:	**[*] & [#] at the same time**
FIRE:	**[7] & [9] at the same time**
AUXILIARY:	**[1] & [3] at the same time**
AMBUSH:	**[Enter user code 6]**

13.2. INSTALLER MODES

KEYPAD PROGRAMMING:	**[CODE] [*] [Enter installer code] [1]**
SYSTEM LOG VIEW:	**[CODE] [*] [Enter installer code] [2]**
UNATTENDED DOWNLOAD:	**[CODE] [*] [Enter installer code] [3]**
ON-LINE DOWNLOAD:	**[CODE] [*] [Enter installer code] [4]**
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**

NOTE: All these functions can be performed from all keypad types (XL4600RM, XL4600SM, 6615 or 6805).

14. 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 occurrs. 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.

In transmitting data to the CS receiver, the first event that occurrs is that the system's digital communicator will seize the home phone lines. Then, it will 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 question #04, locations 1, 2 & 3 (either in Pulse or DTMF). Assuming the CS receiver verifies the data transmission as valid (after 2 succesful 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 occurr. 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 (8 times for each CS telephone number programmed) until a "Kissoff" is received. If after dialing 8 times for each CS Telephone number programmed a "Kissoff" is not received, the system will display "Communication Failure" at the keypad. This message is cleared after the next successful transmission or by the user at the keypad.

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

14.1. STANDARD (3X1 or 4X1)

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

where:

AAAA = Three or Four digit Account Number (PROG. QUESTS. #08 & 09)

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 indentifying 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 prograammable digit; it is generated automatically by the dialer when the parity option is selected in programming question #04, location 2. The obvious advantage of using parity is speed. The transmission time between dialer and receiver is shorter because fewer digits are transmitted with it as opposed to without it.

14.2. 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. #08 & 09)

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 roud)
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

14.3. 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. #08 & 09)

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

14.4. 3X2 or 4X2

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

where:

AAAA = Three or Four digit Account Number (PROG. QUESTS. #08 & 09)

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

15. APPENDIX B - TROUBLESHOOTING

SYMPTOM	POSSIBLE CAUSE	REMEDY
1. **LED or LCD:** Keypad display not lit.	1a. A.C. & D.C. power out.	1a. Check transformer connection & battery connection; check A.C. input volt. & batt. volt. (w/transformer disconnected); check auxiliary fuse.
	1b. Keypad not powered.	1b. Check term. 15(+) & 12(-) for 12VDC.
2. **LED KP:** "AC/LB" light OFF **LCD KP:** "A.C. LOSS"	2a. A.C. power out	2a. Check transformer connection; check A.C. input volt.
	2b. Faulty keypad	2b. Replace keypad.
3. **LED KP:** "AC/LB" light slowly blinking **LCD KP:** "LOW BAT"	3a. D.C. power out; no battery connected	3a. Check battery connection; check batt. volt. (w/transformer disconnected); check battery fuse.
	3b. Low battery voltage	3b. Same as 3a. except volt. > 11VDC; otherwise 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; C.S. info. missprogrammed.
	4b. Faulty panel.	4b. Replace panel.
	4c. Faulty telephone lines.	4c. Consult local telephone company.
5. **LED KP:** "ZONE" light ON & "READY" LIGHT OFF **LCD KP:** "NOT RDY: ZN # " & "SYSTEM NOT READY"	5a. Zone faulted/System not ready to be armed	5a. Check loop wiring for either an open or short & repair; bad resistor or wrong resistor value.
	5b. Faulty keypad	5b. Replace keypad
	5c. Faulty panel	5c. Check zone term. for 3.3 VDC; Bypass zone temporarily; replace panel.

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

XL-2S SYSTEM PLANNING WORKSHEET

Name: _____ Address: _____

ZONE NUMBER	AREA PROTECTED	ZONE TYPE *	DESCRIPTOR (12 CHARACTERS)	SENSORS
1				
2				
3				
4				
5				
6				
7		Panic ☐ Keyswitch ☐	Not Applicable	

* Valid Zone Types are:

Controlled Zones	**24 Hour Zones**
Instant/Perimeter	24 Hour Alarm
Delay	24 Hour Trouble
Interior	Fire

USER NUMBER	APPLICATION	USER NAME
1	Master User *	
2	Normal User	
3	Normal User	
4	Normal User	
5	Arm Only Y☐ N☐	
6	Ambush Y☐ N☐	

* Only the master user (1) can add, change or delete other user codes.

KEYPAD NUMBER	KEYPAD TYPE	LOCATION
1	XL4600RM ☐ XL4600SM ☐ 6615 ☐ 6805 ☐	
2	XL4600RM ☐ XL4600SM ☐ 6615 ☐ 6805 ☐	
3	XL4600RM ☐ XL4600SM ☐ 6615 ☐ 6805 ☐	
4	XL4600RM ☐ XL4600SM ☐ 6615 ☐ 6805 ☐	

XL-2S SYSTEM PROGRAMMING WORKSHEET

NAME: _____ ADDRESS: _____

01 PRIMARY TELEPHONE NUMBER — DEFAULT = 234AAAAAAAAA

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

02 SECONDARY TELEPHONE NUMBER — DEFAULT = AAAAAAAAAAAA

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

03 CALLBACK TELEPHONE NUMBER — DEFAULT = AAAAAAAAAAAA

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

04 DIALER OPTIONS — DEFAULT = 1601

L1	L2	L3	L4

05 KEYPAD CONDITIONS — DEFAULT = 1200

L1	L2	L3	L4

06 SYSTEM TIMEOUTS — DEFAULT = 665F

L1	L2	L3	L4

07 MISCEL. SYS. OPTIONS — DEFAULT = 2C10

L1	L2	L3	L4

08 ACCOUNT #1 — DEFAULT = 1234

L1	L2	L3	L4

09 ACCOUNT #2 — DEFAULT = AAAA

L1	L2	L3	L4

10 ZONE 1 TYPE & CS CODE — DEFAULT = 2031

L1	L2	L3	L4

11 ZONE 2 TYPE & CS CODE — DEFAULT = 4132

L1	L2	L3	L4

12 ZONE 3 TYPE & CS CODE — DEFAULT = 1033

L1	L2	L3	L4

13 ZONE 4 TYPE & CS CODE — DEFAULT = 1034

L1	L2	L3	L4

14 ZONE 5 TYPE & CS CODE — DEFAULT = 1035

L1	L2	L3	L4

15 ZONE 6 TYPE & CS CODE — DEFAULT = 1036

L1	L2	L3	L4

16 AMBUSH & AC LOSS — DEFAULT = AAAA

L1	L2	L3	L4

17 PANIC & LOW BATTERY — DEFAULT = 22AA

L1	L2	L3	L4

18 OPEN, CLOSE & CS TEST — DEFAULT = AAAA

L1	L2	L3	L4

19 BYPASS, RESTORE, TRBL & CANCEL — DEFAULT = AAF8

L1	L2	L3	L4

20 KEYPAD FIRE & AUX. — DEFAULT = AAAA

L1	L2	L3	L4

00 INSTALLER CODE — DEFAULT = 2468

L1	L2	L3	L4

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].

21 ZONE 1 DESCRIPTOR — DEFAULT = ZONE 1

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

22 ZONE 2 DESCRIPTOR — DEFAULT = ZONE 2

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

23 ZONE 3 DESCRIPTOR — DEFAULT = ZONE 3

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

24 ZONE 4 DESCRIPTOR — DEFAULT = ZONE 4

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

25 ZONE 5 DESCRIPTOR — DEFAULT = ZONE 5

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

26 ZONE 6 DESCRIPTOR — DEFAULT = ZONE 6

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

PROGRAMMED BY: _____ DATE: _____

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.