XL-2T
Security System

Installation and Setup Guide

FBI®
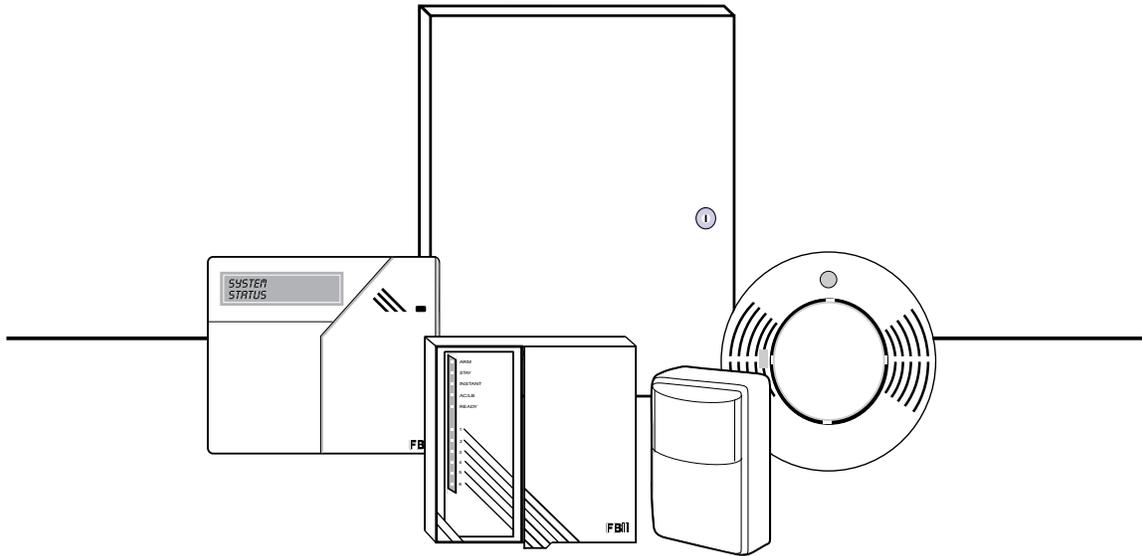
Version 2.0

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

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

FOR TECHNICAL SERVICE,
CALL TOLL-FREE
1-800 645-7492

Before you call Technical Service, PLEASE be sure you:

- Check the wiring diagram and verify your connections.
- Check all fuses.
- Ensure 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 are included at the back of this manual. These can be removed to help you record account information.

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Conventions Used in This Manual

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Before you begin using this manual, it is important that you understand the meaning of the following symbols (icons) and text note.

UL	These notes include specific information that must be followed if you are installing this system for a UL Listed application.

✓	These notes include information that you should be aware of before continuing with the installation, and which, if not observed, could result in operational difficulties.

⚠	This symbol indicates a critical note that could seriously affect the operation of the system, or could cause damage to the system. Please read each warning carefully. This symbol also alerts the user to the possibility of physical harm if instructions are not followed as written.

NOTE: These text notes are provided throughout the manual to provide information and shortcut tips for the installer.

Introduction

● ●

Features

The XL-2T is a state-of-the-art microprocessor-based control/communicator. The system features seven fully programmable zones. Programming can be performed through any of the compatible keypads, or the system can be uploaded and downloaded remotely using the EZMATE/COMPASS PC Downloader Software. Additionally, the software can be programmed to control remote actions, such as arming, disarming, bypassing, etc. Programming options are stored in an Electrically Erasable Programmable Read Only Memory (EEPROM). The EEPROM is nonvolatile, meaning that programmed instructions will not be lost in the event of a loss of power.

Features of the XL-2T include:

- 7 zones (all fully programmable, including keyswitch)
- 15 user codes (Ambush/Duress, Arm only, and Door Strike capability)
- Pager formatting capability
- Keypad programming and remote programming via PC and modem
- Upload/download and remote commands with answering machine override capability
- 3 methods of uploading/downloading: PC operator-initiated, unattended downloading, and on-line downloading
- Optional built-in 2-tone siren driver or conventional bell output
- Auto arming at a specific time of day with capability to arm in either Away, Stay, or Instant mode
- Dual-entry timers
- 78-event history log (alarms, troubles, low battery, bypasses, Central Station (CS) test, openings, and closings)
- 3 emergency keypad conditions (panic, fire, and auxiliary)
- 2 programmable trigger outputs
- Real-time clock (displays time and date via LCD keypad) with reminder when clock needs to be set

- CS Test timer by event, time, or both (1 hour, 1, 7, 27, 60, 90 days)
- Customer control of Chime mode
- Quick Arming, Quick Bypass, and Quick Force Arming
- CS reporting by zone
- False alarm prevention features: Cross Zone, Exit Error, Recent Close, Swinger Shutdown Cancel Code, and System Stabilization during powerup
- Arming by keyswitch in Away or Stay mode
- Keypad tamper/lockout with optional CS reporting
- Restore transmission options: After Loop or After Bell
- Fire zone reset through keypad
- Glassbreak reset through keypad
- Bell Test, Low Battery Test, AC loss, and Communications Failure
- Input power: 12VAC, 20VA; 12VDC, 4-7AH
- Output power: 12VDC, 500mA
- Bell output power: 12VDC, 1A
- Exit delay when armed in Instant or Stay Instant mode

Compatible Keypads

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

LED STYLE KEYPADS	LCD STYLE KEYPADS
XK-406*	XK-5LC**
XK-508**	XK-7LC**
XL-4600SM*	
F6615*	

* Non-Addressable Keypad
** Addressable Keypad

KEYPAD NOTES:

- The system supports Light Emitting Diode (LED) style keypads or Liquid Crystal Display (LCD) style keypads.

- **DO NOT USE** addressable and non-addressable keypads in a single installation.

- If only six zones must be displayed, up to four LED style keypads may be installed in the system.

- If all seven zones must be displayed, either the XK-508, XK-5LC, or XK-7LC keypad must be used.

> Failure to install and program this unit in accordance with the UL requirement is a violation of the listing mark. For more information on UL Listings, contact Underwriters Laboratories, Progress Department, 333 Pfingsten Road, Northbrook IL 60062.

The XL-2T is a Residential (Household) control panel and has been listed by Underwriters Laboratories for the following applications:

- UL 1023 Household Burglary

- UL 985 Household Fire Warning

PC Board and Keypad Mounting

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Removing the Cabinet Door and Mounting the XL-2T PC Board

To make it easier to install the control panel, the door of the metal cabinet may be removed.

1. With the cabinet laying on a flat surface, swing open the door to its full-open position.

2. Slide the door out of its retaining slots in the cabinet and store in a safe place.

> ⚠ **Before mounting printed circuit board, make sure you remove all appropriate metal knockouts from the metal cabinet.** Do not attempt to remove the knockouts after circuit board has been installed.

3. Insert top of circuit board into slots at top of cabinet. Make sure that circuit board rests between slots as indicated in Detail A in the diagram below.

4. Position base of circuit board onto the two board-retaining posts of the cabinet.

5. Position the supplied tabbed lockwasher on the left side between the PC board and retaining post as shown in Detail B.

6. Secure right side of PC board to the board-retaining post using one of two screws provided.

7. Secure the left side of the PC board to its board-retaining post using the remaining screw.

pcb_mount-008-V0
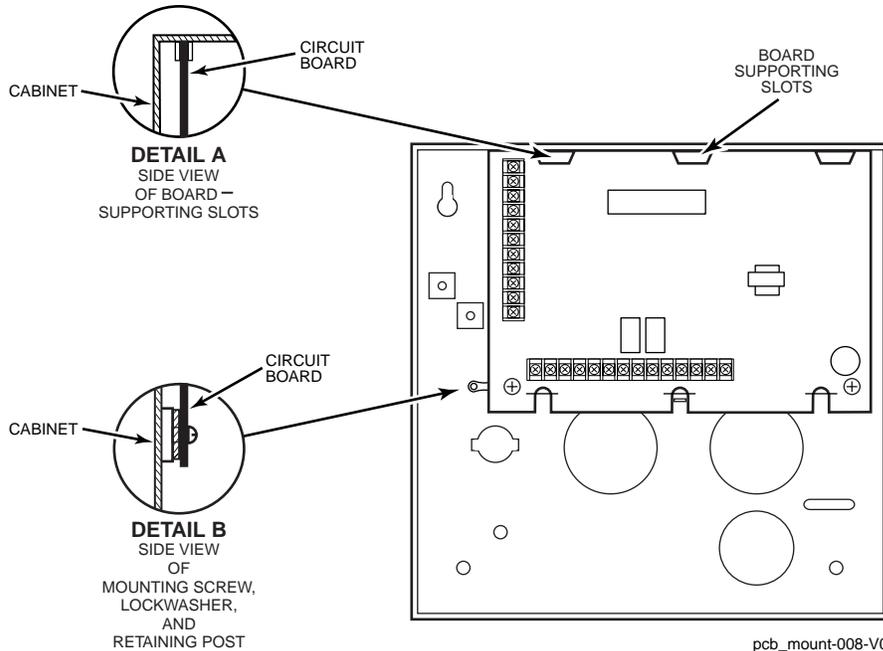
Mounting the XL-4600SM Keypad

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

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

COVER   DOOR

REAR PLATE

BREAK-AWAY RIBS (4)
(FOR EXPOSED WIRING ENTRY.)

SLOT FOR COVER SECURING SCREW
(OPTIONAL)

COVER PRY-OFF SLOTS (2)
(TO REMOVE COVER, INSERT SMALL
SCREWDRIVER BLADE AND TWIST.)
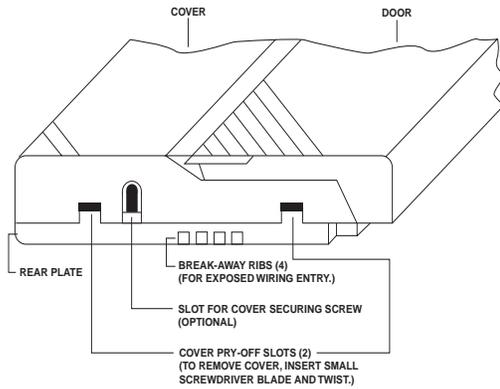
NOTE: If desired, cover and plate can be further secured together by inserting a screw (provided) into the slot at the keypad's lower edge. Refer to upper diagram for optional slot position.

HOLDING HOOKS
(FOR HOLDING COVERS UPPER EDGE)

HOLES "A" (4)
(FOR MOUNTING TO
CONTROL PANEL'S
ENCLOSURE OR
TWO GANG
ELECTRICAL BOX)

N6054

WIRING OPENING
(FOR CONCEALED
WIRING ENTRY.)

HOLES "B" (2)
(FOR MOUNTING TO
SINGLE GANG
ELECTRICAL BOX)

HOLES "A" OR "B"
(CAN BE USED FOR
WALL MOUNTING)

SNAP HOOKS (2)
(FOR HOLDING COVER'S
LOWER EDGE)

POST FOR COVER
SECURING SCREW (OPTIONAL)

BREAK-AWAY RIBS (4)
(FOR EXPOSED WIRING ENTRY.)

Before You Begin:

1. Separate 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 (refer to diagram at left), and twist to pry off the cover assembly.

2. Mount the rear plate (refer to lower diagram). 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 lower diagram) and the four screws and nuts provided.

NOTE: Certain attack-proof enclosures do not contain a keypad cutout.

B. Mounting Directly to an Electrical Junction Box:

The plate can be mounted directly to a single-gang 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:

1. Create a wiring hole in the mounting surface.

2. 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 at left) into the recesses provided for them inside the upper edge of the cover assembly. 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.

Mounting the XK-406 and F6615 Keypads

Mounting is identical for the XK-406 and F6615 (LED type) keypads. The keypads can be surface-mounted or flush-mounted as described below.

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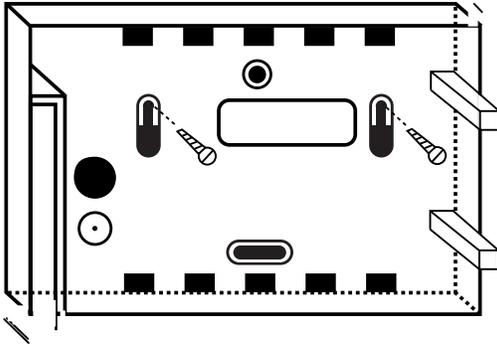
1. Select a mounting location and place the rear plate of the keypad on the wall. Mark the location of the cutout for the keypad wiring cable.

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

3. Place the keypad wiring through the cutout and secure the backplate to the wall (see diagram at left).

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 as shown in left diagram.
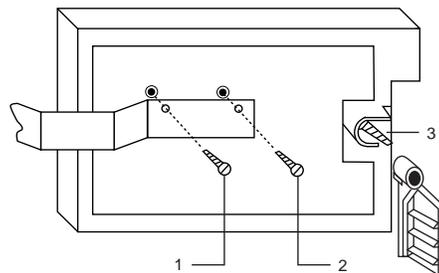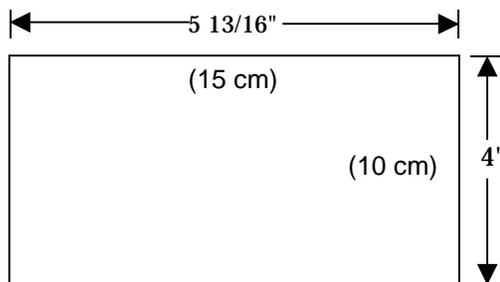
3. Turn over the keypad and remove the Phillips head screws, (items 1 and 2 in above diagram). These screws are located in the upper left hand side of the keypad printed circuit board, immediately to the left of the keypad connector.

4. Attach the black metal mounting strap to the rear of the keypad as follows (see right diagram above):

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

   b. Place the small white plastic spacer under the mounting strap. Secure the mounting strap, using the 5/8 inch Phillips head screw (supplied) and the plastic spacer, to item 1 hole above.

   c. Secure the other end of the strap (item 2 in above diagram) to the white plastic opening, using one of the Phillips head screws removed in step 3.

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.

Surface Mounting the XK-508 and XK-5LC Keypads

Mounting is identical for the XK-508 and XK-5LC LCD type keypads. The keypads are surface-mounted as described below.

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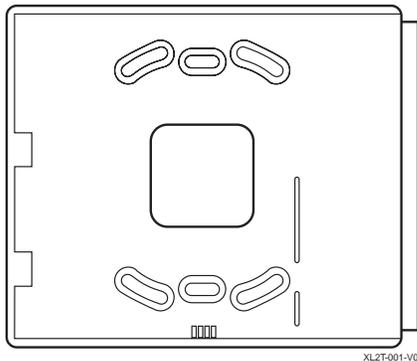
1. Separate the two halves of the keypad by placing a straight-slot screwdriver into one of the two slots at the bottom of the keypad and twisting.
2. Select the desired keypad mounting location and place the plastic rear plate of the keypad on the wall. Mark the location of the cutout for the keypad wiring.
3. Create an opening for the keypad wiring in the location previously marked. Run the keypad wiring to the control panel using the four-wire connector provided.
4. Place the keypad wiring through the cutout pro-vided and secure the keypad backplate to the wall through the holes provided (see diagram at left).
5. Connect the keypad wiring connector to the keypad and place the keypad on the mounting plate attached to the wall.
6. Snap the keypad front onto the keypad back.

The XK-7LC LCD keypad contains an adjustment screw, located behind the door of the keypad, to vary the intensity of the display (refer to item 4 in the following diagram).

Surface Mounting the XK-7LC Keypad

XL2T-002-V0
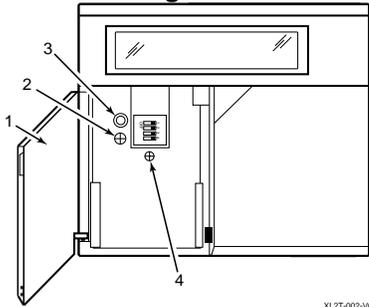
1. Select the desired mounting location (between wall studs) for the keypad.
2. Separate the two halves of the keypad by opening the door (item 1 on diagram at left) and removing the Phillips head screw (item 2). Carefully pull apart the front and rear sections of the keypad. Place the plastic rear section of the keypad on the wall and mark the location of the cutout for the keypad wiring.
3. **Create an opening for the keypad wiring in the location previously marked. Run the keypad wiring to the control panel using the four-wire connector provided.**
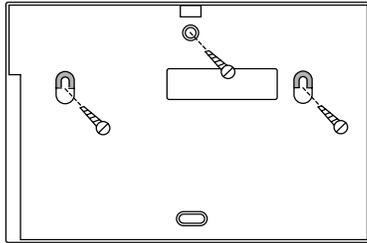
4. Place the keypad wiring through the cutout provided and secure the keypad backplate to the wall through the three holes shown (diagram at left) using screws provided.
5. Connect the keypad wiring connector plug to the mating keypad connector receptacle. Position the front section of keypad over the backplate attached to the wall.
6. Using the 5/8-inch screw provided, secure the keypad to the backplate through the upper hole (item 3 in the middle diagram) located behind the keypad door.

Recess Mounting the XK-7LC Keypad
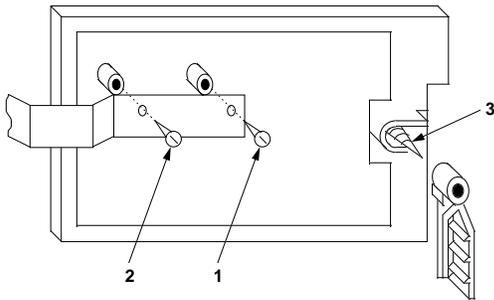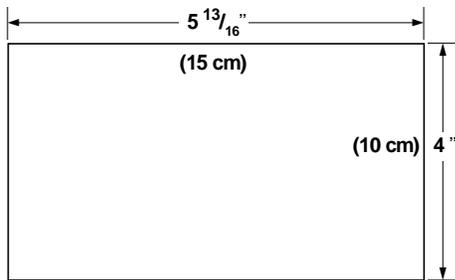
1. Select the desired location between wall studs for mounting the keypad.
   NOTE: The rear plastic mounting plate is not used for recessed installations.
2. Create an opening in the wall exactly 4 inches high by 5 13/16 inches wide, as shown in diagram at left.
3. Turn the keypad over and remove the Phillips head screw (item 1 on diagram below) in the upper left side of the keypad printed circuit board. 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):
   a. Position the pointed section of the mounting strap so it is facing the front of the keypad. This will be used to latch onto the inside of the wall.
   b. Place the white plastic spacer underneath the mounting strap. Secure the mounting strap and plastic spacer using the 5/8 inch Phillips head screw supplied with the keypad mounting hardware (item 1 in lower diagram).
   c. Secure the other end of the strap using item 2 in lower diagram to the white plastic screw receptacle. This Phillips head screw was the first screw removed in step 3 above.
5. Connect the white plastic tab into the screw receptacle immediately behind the keypad door. Place the longer Phillips head screw (provided with the keypad mounting hardware) through the opening inside the keypad door and loosely tighten the screw. Leave the tab in a downright position. Refer to item 3 in diagram at left.
6. Run the keypad wiring to the control panel and attach the wiring to the keypad.

7. Place the keypad into the wall opening, leading with the side containing the black metal strap. This metal strap with its sharp edge will act as a spring and grab the inside of the wall.

8. Complete the installation by inserting the other side into the opening until the entire keypad is firmly in the wall. Straighten out the keypad to the desired position.

9. Open the keypad door and completely tighten the screw inserted in step 5. This will cause the plastic tab previously inserted into the back to flip up and tightly grab the inside of the wall.

System Wiring and Hookup

System Wiring Diagram

XL-2T

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

WARNING:
To prevent risk from electrical shock, de-energize the system control unit and disconnect the telephone lines before servicing this unit.

SYSTEM DEFAULT RESET JUMPERS

JP1 JP2

To re-load factory default values, remove all power (AC & DC). Short JP1 to JP2. With short still applied, re-apply power (AC then DC), wait 5 seconds, then remove short with power still applied.

NOTES:
1. Connect to a grounded metal water pipe (16ga. at 15 ft.)
2. Total AUX. power available (including keypad power) is 500mA max. (180mA for fire installations). Used for connection of devices rated from 11.5 to 13.1 VDC. All circuits are power limited.
3. System must be tested on a weekly basis. For information, refer to manual.
4. Do not connect the transformer to a switch-controlled receptacle. Power varies with transformer (SEE NOTE 2).
5. Installation of equipment and wiring methods are required to be in accordance with the National Electrical code and ANSI/NFPA No. 72, Chapter 2.
6. Maximum of 4 keypads of LED type or LCD type.
7. Limited energy cable must be used.
8. Maximum for UL installations: Entry Delay, 45 sec.; Exit Delay, 60 sec.
9. For connection of VS-299 Siren Driver. Constant positive (+) unregulated output.
10. Programmable trigger outputs. If used for smoke detector power reset see Detail A. See manual for programming information. Use model XL-2GTC trigger cable.
11. 24 hr battery standby is required for fire installations. 4 hr battery standby is required for emergency / burglary.
12. System must be checked by a qualified technician once every three years.
13. Question 14, Location 1 must be set to "00" for smoke detector power.

ZONE 1 2.2K
ZONE 2 2.2K
ZONE 3 2.2K
ZONE 4 2.2K
ZONE 5 2.2K
ZONE 6 2.2K
ZONE 7

1 2 3 4 5 6 7 8 9 10 11

EARTH GND. (SEE NOTE 1)

AUX POWER 12VDC Reg., 500mA max. (SEE NOTE 2)

SMOKE DETECTOR POWER (9.1-12.6 VDC, 50mA max.)

DC POWER (+) 10-15.5VDC (SEE NOTE 9)

TRIGGER OUTPUTS (SEE NOTE 10)

12 13 14 15 16 17 18 19 20 21 22 23 24 25

P1

BAT +

F3 BATT 4 A
F2 AUX 1 A
BAT –
F1 BELL 3 A

NOTE: UL VERSIONS CONTAIN PTC's IN PLACE OF FUSES

BLACK YELLOW GREEN RED

GREEN TELCO RED BROWN HOME GRAY

VBELL T1 T2

KEYPAD (SEE NOTE 6)

MODEL 368 CORD TO RJ31X OR CA31A JACK

FIRE & BURGLARY ALARM OUTPUT (11.5-13.1 VDC, 1 A max) 650mA UL INSTALLATION

TRANSFORMER 12VAC, 20VA (Connect to 24 HR. 120VAC, 60 Hz Outlet SEE NOTE 4)

TELCO

HOME

BELL

SPEAKER

DETAIL A

CONTROL PANEL POWER

SMOKE DETECTOR 9.5 - 12.2 VDC

21 16

ZONE

1 2 3 4

RED BLACK BROWN

LISTED HOUSEHOLD THERMOSTAT ESL104

MODEL ESL2048 EOL RELAY

UL LISTED SMOKE DETECTOR MODEL ESL445AT

BROWN

2.2 K EOL RESISTOR

UL INSTALLATIONS REQUIRE LISTED END-OF-LINE DEVICE. USE RESISTOR FROM EOL22 KIT. LOOK FOR LISTING MARK ON ITEM.

WARNING:
THIS UNIT INCLUDES AN ALARM VERIFICATION FEATURE THAT WILL RESULT IN A DELAY OF THE SYSTEM ALARM SIGNAL FROM THE INDICATED CIRCUITS. THE TOTAL DELAY (CONTROL UNIT PLUS SMOKE DETECTOR) SHALL NOT EXCEED 60 SECONDS. NO OTHER INITIATING DEVICES SHALL BE CONNECTED TO THESE CIRCUITS UNLESS APPROVED BY THE LOCAL AUTHORITY HAVING JURISDICTION.

RED BLACK

12V, 4-6AH BATTERY MODEL 1240A (SEE NOTE 11)

CIRCUIT (ZONE)	CONTROL UNIT DELAY-SEC	SMOKE DETECTOR MODEL DELAY-SEC
20		

PRODUCT COVERED UNDER US PATENT #4,791,658

XL2T-SOC-V0

SYSTEM STABILIZATION MODE: Upon power-up of the system and after completion of system programming, all the lights on the LED keypads will flash momentarily and the LCD keypads will display STANDBY! momentarily. EACH KEYPAD DISPLAY WILL THEN RETURN TO NORMAL. HOWEVER, IF THE SYSTEM IS ARMED, THE ZONES WILL NOT RESPOND TO ALARM CONDITIONS FOR APPROXIMATELY TWO MINUTES. The 2-minute interval is used to allow motion detectors (interior zones) to stabilize on power-up in order to prevent false alarms. THE 2-MINUTE RESPONSE TIME CAN BE DISABLED BY SIMPLY ENTERING A VALID USER CODE that disarms the system and reduces the power-up reset time to approximately 5 SECONDS.

NOTE: If total system power is lost, then upon power restoration, the system will return to the previously armed state.

Terminal Connections

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

ZONE INFORMATION:

Normally closed (N/C) devices may be wired in series; and/or normally open (N/O) devices wired in parallel, with the 2.2K ohm EOL resistor on all zones (refer to *System Wiring Diagram* on page 3-1). However, the N/O and N/C loops may be wired without the EOL resistors, depending upon how the zone(s) are programmed.

The standard loop response time is 280mSec on all zones. The factory default function for each zone is listed in the table above; however, **any** zone can be programmed for the following types of operation: Delay, Perimeter, Interior, Fire, 24-Hr. Alarm, or 24-Hr. Trouble. Further explanation of the zone types can be found in *Section 6: System Programming*.

NOTE: Loop response time is defined as the minimum time required for a fault to trip a zone.

8 & 10 **ZONE 7:**
Defaulted to normally open PANIC circuit. This hardwired panic is a 24-hour zone that can be programmed for silent or audible operation. The panic circuit will activate with each violation; therefore, a latched device is **not** recommended. A momentary device **is** recommended. This zone, as the other six zones, is fully programmable (see Question 23, Locations 1 and 2).

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).

11 **EARTH GROUND:**
Connect this terminal to a cold water pipe using 16AWG wire for a distance not greater than 15 feet. Use a non-corrosive metal strap firmly secured to the pipe to which the wire is electrically connected and secured. If the premises pipes terminate in PVC, this terminal must be connected directly to a six-foot grounding rod.

12, 13, 14, 15 **KEYPADS (**See keypad notes on page 1-2):
A maximum of 4 keypads of the following types may be used: XK-406, XL-4600SM, F6615 (non-addressable LED display type); **or** XK-508 (addressable LED display type); **or** XK-5LC, XK-7LC (addressable LCD display type).
The connections are as follows:
12 (BLACK = negative), 13 (YELLOW = data in), 14 (GREEN = data out), and 15 (RED = positive). Each keypad draws approximately 30mA. Maximum keypad wire run distance is 500 feet using 22-gauge wire.

Do **NOT** wire addressable and non-addressable keypads in the same installation.

NOTE: In some installations, it may be necessary to use shielded wire to prevent radio frequency interference.

12(-) & 15(+)   **AUXILIARY POWER:**

The total regulated output power available at these terminals for connection of motion detectors and other external devices is 500mA at 11.5 – 13.1VDC with less than 100mVpp ripple. If the total drain on these terminals exceeds the 500mA limit, use a second power supply. Refer to the Auxiliary Device Current Draw Worksheet later in this section for determining total current draw.

21(+) & 16(-)   **SMOKE DETECTOR POWER:**

This system will accept 9.5-12VDC RANGE RATED FOUR-WIRE SMOKE DETECTORS ONLY. Approximately 50mA of current is available at these terminals for powering all detectors and an EOL relay FBII model 620. For UL installations, see wiring diagram for hookup. **NOTE:** Trigger #1 must be selected for smoke detector power reset in order for this feature to activate.

These terminals adhere to the fire verification and reset logic, which is explained in the zone types section (Questions 17 - 23) in ***Section 6: System Programming***. Manual reset of smoke detector power can be accomplished by entering a valid user code after clearing alarm memory, or by using the star (✶) key.

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 a 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 that has Call Waiting, unless the Call Waiting interrupt numbers are programmed into the panel dialing sequence.

21(+)   **CONSTANT DC POWER:**

This terminal delivers unregulated 10.0-15.5VDC power for devices requiring power within that voltage range, such as a VS279. The terminal is protected by a Power Thermal Cutoff (PTC), which acts as an in-line circuit breaker for those times when excess current is drawn. The PTC does not require replacement after operation; it will reset itself after a nominal time delay.

NOTE: Power for these devices can also be obtained by splicing the RED (+) battery lead with an in-line fuse rated at 3 Amps or a PTC (for UL versions).

22(+) & 23(-)   **BELL OUTPUT:**

The total output power available for sounding devices is 1 amp at 10.5 - 15.5VDC for residential applications, or 12.0 - 14.4VDC for commercial installations (650mA 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.

UL For UL Household Fire Warning System installations, the sounder must be mounted indoors for best audibility. Also, for UL installations, use only one sounder.

NOTE: Before connecting sounding devices, refer to their individual specification sheets to determine current draw. Otherwise, the PTC may cause continuous circuit interruption. An option exists to supervise the bell output terminals if any zone is programmed as a fire zone (see Program Questions 17–23); refer to the following information.

BELL SUPERVISION (Bell) - To meet the NFPA 72 requirement, program any zone as a Fire Zone (Program Question 22, Locations 1 and 2). The bell is then supervised for an open circuit (not a short circuit) across the bell output terminals; the keypad will indicate that a fire trouble condition has occurred and fire trouble is reported to the CS if enabled (Program Question 32, Location 3). If the bell is already ringing, the supervision will not take effect until after bell cutoff time. Refer to the following diagram:

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

22 (+)

BELL OUTPUT   MECHANICAL BELL

23 (-)
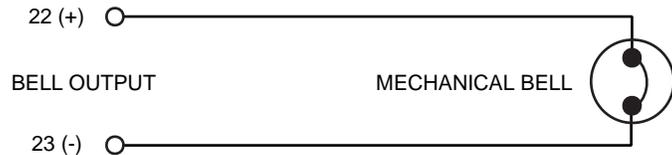
XL2T-003-V0

SIREN SUPERVISION (Self-Contained Siren/Sounder) - (Not for use in UL installations.)
To meet the NFPA 72 requirement, program any zone as a fire zone (Program Question 22, Location 1). The siren is then supervised for an open circuit (not a short circuit) across the bell output terminals; the keypad will indicate that a fire trouble condition has occurred and fire trouble is reported to the CS if enabled (Program Question 32, Location 3). If the siren is already sounding, the supervision will not take effect until after bell cutoff time.
NOTE: Use FBII models ZR-815C, ZR-815EC, or ZR-830EC. Refer to the following diagram:

22 (+)

BELL OUTPUT   SIREN/SOUNDER

23 (-)
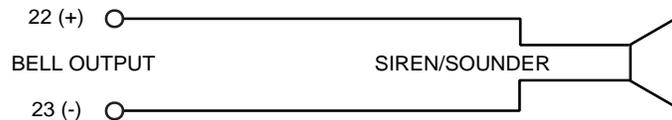
XL2T-004-V0

SOUNDER SUPERVISION (VS-299 Siren/Driver)

To supervise a sounder connected to the VS-299 Siren Driver, connect terminal 1 of the VS-299 to the positive terminal of any zone programmed as a 24-Hour Trouble zone (Program Questions 17 - 23, Locations 1 and 2). The sounder is then supervised for an open circuit across the sounder terminals (4 and 5) of the VS-299 and a code is reported to the CS if enabled (Program Questions 24 - 27, Locations 3 and 4). Also, the connection between the bell output terminals and the VS-299 Siren Driver may be supervised by programming any zone as a fire zone (Program Question 22, Locations 1 and 2) and connecting a 10K ohm, 1/4 watt resistor across the bell output terminals to prevent a continuous supervisory condition. Refer to the following diagram:

PREVENTS CONTINUOUS SUPERVISORY CONDITION

22 (+)

BELL OUPUT — 10k

23 (-)

2 | VS-299 SIREN DRIVER | 5

7 | | 4

1

24-HOUR TROUBLE ZONE

POSITIVE (+)

8 Ohm SOUNDER
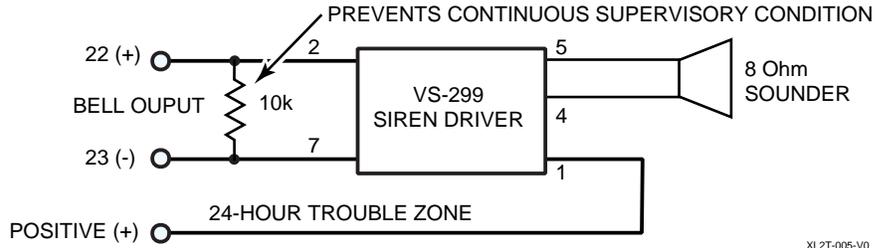
XL2T-005-V0

SOUNDER SUPERVISION (679S Siren/Driver)

To supervise a sounder connected to the 679S Siren Driver, connect a 5.6K ohm resistor between terminal 5 of the 679S and the zone programmed as a fire zone (Program Question 22, Locations 1 and 2). Replace the 2.2K ohm EOL resistor of that zone with a 5.6K ohm resistor. The sounder is then supervised for an open circuit (not a short circuit) across the sounder terminals (4 and 5) of the 679S. Also, the connection between the bell output terminals and the 679S Siren Driver will be supervised. If a supervisory occurs, the keypad will indicate that a fire trouble condition has occurred in the designated zone, and fire trouble is reported to the CS if enabled (Program Question 32, Location 3). If the siren is already sounding, the supervision will not take effect until after bell cutoff time. Refer to the following diagram:

REPLACE 2.2k EOL w/5.6k

NOTE: THE TWO 5.6k ohm RESISTORS ARE PROVIDED WITH THE 679S SIREN DRIVER.

9 (+)

ZONE 6 PROGRAMMED — 5.6k EOL — SMOKE DETECTOR

8 (-)

5.6k EOL ADDITIONAL RESISTOR

22 (+)

1 or 3 | 679S SIREN DRIVER | 5

BELL OUPUT

2 | | 4

23 (-)

8 Ohm SOUNDER
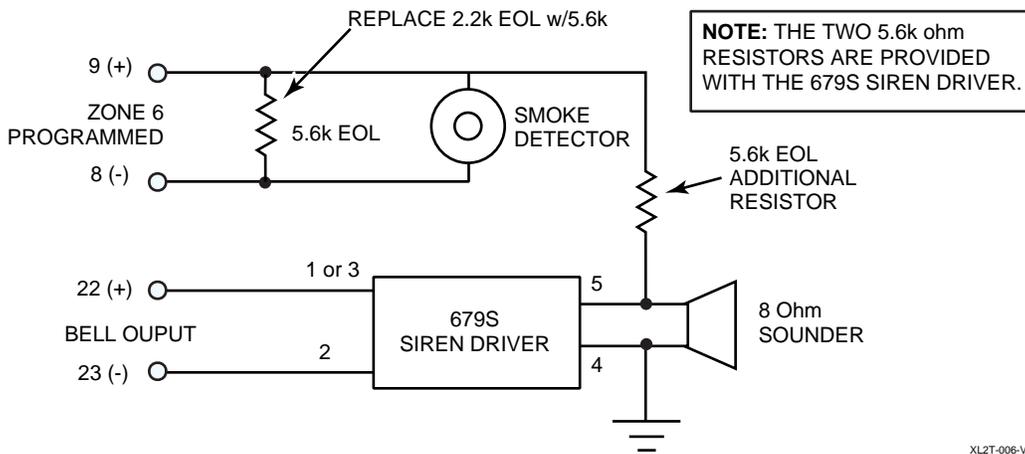
XL2T-006-V0

24 & 25   **TRANSFORMER:**

Connect the 12VAC, 40VA transformer output using 16AWG wire. Install it not further than 15 feet from the control panel. Plug the transformer into an **unswitched** 120VAC outlet.

⚠   Do not use any other transformer as 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 turn ON the keypad sounder and transmit to the Central Station (CS), if programmed. Refer to Questions 28 and 29, locations L3 and L4 to enable either transmission. The keypad sounder is enabled in Question 12, L4 and is silenced by entry of any valid user code. When AC is restored, the AC/LOW BAT LED will light immediately, and a restore code will be reported, if programmed in Question 28, L3 and L4.

BACKUP BATTERY:

The RED(+) and BLACK(-) flying leads coming out of the lower right side of the control panel must be connected to a 12VDC, 4-6AH Sealed Lead Acid battery 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 a 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 in Question 28, L3. The buzzer may be silenced by entry of any valid user code. After replacement, the backup battery is again automatically tested for adequate output every 4.5 minutes.

UL   For UL installations, use two 4AH batteries connected in parallel.

GROUND START:

Ground start capability can be added to the system through addition of the FBII Model 117 Module. Refer to the 117 Installation Instructions for hookup information. With this device, some systems can obtain dial tone in areas that do not automatically provide dial tone. At the moment telephone line seizure occurs, the Telco Tip is momentary connected to earth ground to access dial tone.

UL   The 117 Module has not been tested for use in UL installations.

TRIGGER OUTPUTS (1 & 2):

The control panel contains two programmable trigger outputs. Trigger #1 terminals are P1VBELL(+) and P1T1(-). Trigger #2 terminals are P1VBELL(+) and P1T2(-). See Programming Question 14 for valid trigger types.

TRIGGER #1 can be enabled for smoke detector power, which can also be obtained from terminals 15(+) and 16(-).
TRIGGER #2 CANNOT be selected for smoke power.

In order to connect devices to the triggers, use connector XL-2G TC (trigger cable). The trigger outputs are selectable for inverted or non-inverted operation. Connect to terminal P1 VBELL to obtain a POSITIVE reference point.

UL   For UL installations, the trigger outputs shall be connected to devices rated to operate within the range of 10.1 - 14.0VDC at 50mA.

Auxiliary Device Current Draw Worksheet

DEVICE TYPES	CURRENT DRAW FOR EACH DEVICE	NUMBER OF UNITS	TOTAL CURRENT FOR EACH DEVICE TYPE
XK-406 Keypad	60mA *		
XL-4600SM Keypad	30mA *		
F6615 Keypad	60mA *		
XK-508 Keypad	65mA *		
XK-5LC Keypad	65mA *		
XK-7LC Keypad	65mA *		
PIR	**		
Smoke Detector	**		
Glassbreak Detector	**		
TOTAL CURRENT FOR ALL DEVICES = (500mA max.)***			

*   Only applies if device is powered from control terminals 15 (+) and 12 (-).

**   If you are 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, use an additional power supply.

***   For UL installations, do not exceed 180mA.

Wiring Information for Keypads and Other Devices

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

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

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

Wiring Run Table for Devices Drawing Power From Terminals 15 (+) & 12 (-)

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

Keypad Features

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Keypad Layout

The XL-2T control panel supports the XK-5LC and XK-7LC LCD Keypads; and the following LED Keypads: XK-406, XK-508, XL-4600SM, and F6615.

Shown below and on the next page are layouts for XL-2T supported LCD and LED Keypads.

Refer to the key following these layouts for descriptions of numbered features.

LCD KEYPAD TYPES
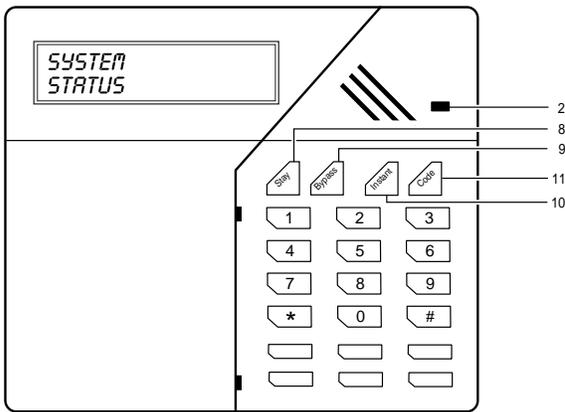
XK-5LC
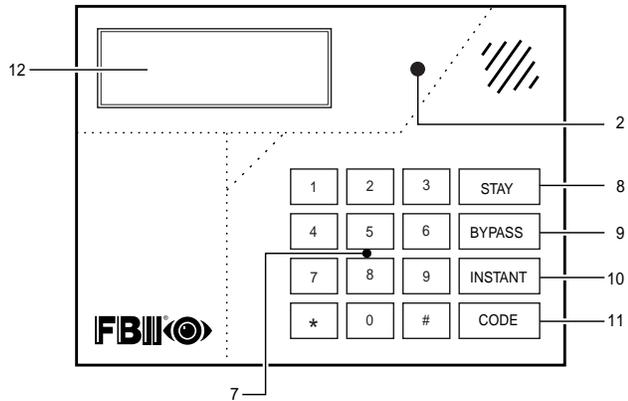
XK-7L

LED KEYPAD TYPES
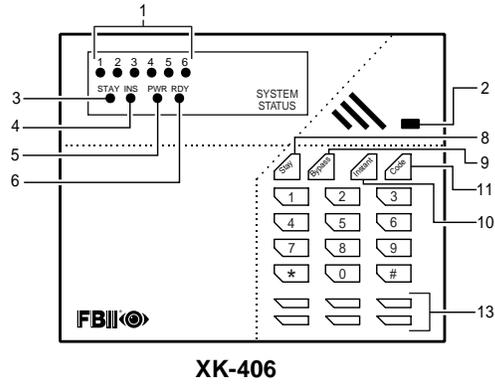
XK-406
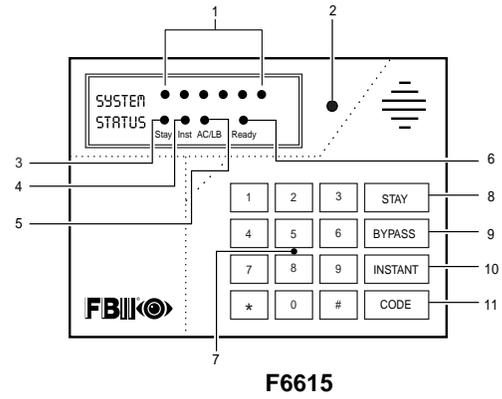
F6615
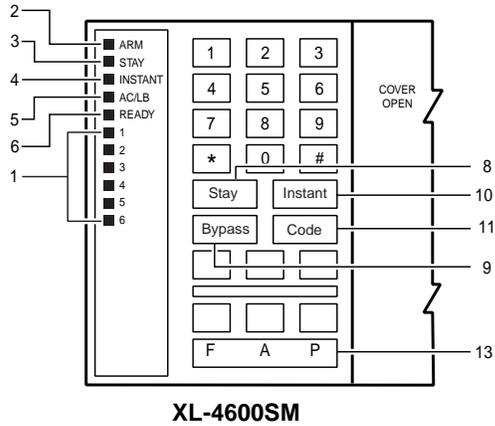
XL-4600SM
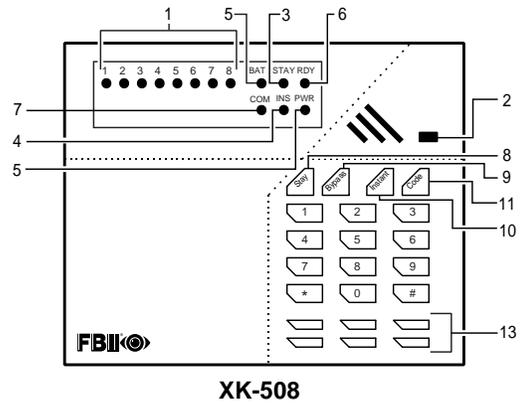
XK-508

1 - ZONE STATUS LEDs

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

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

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

BYPASSES Blink (100mS ON - 900mS OFF). Zone bypasses are displayed as a very slow blink 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.

> Upon entry, the keypad sounder will annunciate to warn the user to disarm the system. In addition, the respective zone LED(s) will be ON to indicate zones that are violated (e.g., entry door and motion detector).

2 - ARM LED

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

Fast Blink Alarm mode (alarms have occurred).
Slow Blink Unable to communicate with Central Station.

3 - STAY LED

This LED indicates that the system has been armed in the STAY, STAY/INSTANT, or AUTO STAY 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 4. In either mode, the STAY LED indicates the following:

ON Interior zones are bypassed.
OFF Interior zones are normal.

4 - INSTANT LED

This LED indicates that the system has been armed in the INSTANT or STAY/INSTANT mode, meaning that the system is currently armed, all delay zones are instant, and all interior zones are bypassed. If the STAY LED is OFF and the INSTANT LED is ON, then the system is in the INSTANT mode. If the STAY LED is ON and the INSTANT LED is ON, then the system is in the STAY/INSTANT mode.

NOTE: See Programming Question 12, Location 3.

ON Delay zones are currently instant.
OFF Delay zones are normal.

5 - AC/LB LED

This LED 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 indicates that the system is ready for arming. The READY LED 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 - COM LED

This LED indicates that communication between the panel and Central Station (CS) is being maintained.

Slow Blink   Communication failure.
OFF   Normal operation - communication active.

8 - STAY BUTTON

The STAY button arms the system, excluding zones programmed as interior zones. This provides exterior protection of the premises while allowing full access throughout the interior.

9 - BYPASS BUTTON

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

10 - INSTANT BUTTON

If pressed, the INSTANT button allows arming the system in the INSTANT mode. With the STAY button, it enables arming the system in the STAY/INSTANT mode.

NOTE: INSTANT mode is enabled in Question 12, Location 3.

11 - CODE BUTTON

The CODE button is used to allow entry into the installer programming mode and permits the master user to program other user codes.

12 - LCD DISPLAY (XK-7LC AND XK-5LC KEYPADS ONLY)

The LCD panel displays the current system status in a two-line by sixteen-character format.

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

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

Keypad Sounder - Steady for PANIC, pulsing for FIRE and AUXILIARY.

Bell Output - Steady for PANIC, pulsing for FIRE.

See the Keypad Emergency Conditions in *Section 5: System Operation* for alternate auxiliary keys.

System Mode Summary (Refer to previous page)

MODE	LEDs				
	ARM	**STAY**	**INSTANT**	**AC/LB**	**READY**
STAY ARMED	ON	ON		AC present (Steady ON)	Slow blink
AUTO STAY ARMED	ON	ON			Slow blink
STAY/INSTANT ARMED	ON	ON	ON	No AC Running on battery backup (Steady OFF)	Fast blink
AUTO STAY/INSTANT ARMED	ON	ON	ON		Fast blink
INSTANT ARMED	ON		ON		Fast blink
ARMED (all burglary zones armed)	ON			Low Battery (Slow blink)	OFF

Keypad Sounder

The sounder housed inside the keypad emits sounds according to the condition of the security system.

The keypad sounder annunciates differently to indicate the following conditions:

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

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

CHIME - A steady 1-second tone indicates the system is disarmed.

ACKNOWLEDGE - Upon successful entry of 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 you are 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 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 sound and may be silenced through entry of a valid user code.

> The keypad is **NOT** operational if none of the LEDs are lit and the keypad does not beep when keys are pressed. This is an indication that service is required. Refer to *Appendix B: Troubleshooting.*

Keypad Addressing
(XK-508 (LED type) and XK-5LC, XK-7LC (LCD types) ONLY)

Both versions of keypads (LED model XK-508 and LCD models XK-5LC and XK-7LC) contain switches to set the address of the keypad. This address will identify the keypad number to the control panel.

On **XK-508** and **XK-5LC** keypads, the address switches are located at the bottom, left inside of the front section. To access these switches, separate the front and back portions of the keypad by inserting a slot screwdriver into one of the two slots at the bottom of the keypad and twisting. Repeat for the other slot. The protective cover for the address switches is removed as part of the rear portion of the keypad. The address switches are now exposed and adjustable.

The address switches for **XK-7LC** keypads are located just behind the pull-open door.

The address switch positions for the keypads are shown below:
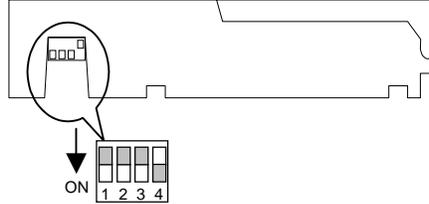
XK-508 AND XK-5LC (BOTTOM VIEW WITH BACK REMOVED)

On XK-508 and XK-5LC keypads, when the switch is pushed toward the back of the keypad (in the direction of the arrow above), the switch is in the ON position. When the switch is pushed toward the front of the keypad (in the opposite direction of the arrow), the switch is in the OFF position.
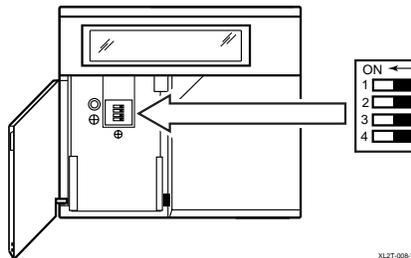
XK-7LC FRONT VIEW (WITH COVER OPEN

On the XK-7LC keypad, when the right-hand side of the address switch is pushed inward, the switch is in the ON position. When the left-hand side of the switch is pushed inward, the switch is in the OFF position.
Set the first three switches (SW1 - SW3) as follows:

KEYPAD NUMBER	SW1	SW2	SW3	SW4*
1	ON	ON	ON	*
2	OFF	ON	ON	*
3	ON	OFF	ON	*
4	OFF	OFF	ON	*
5	ON	ON	OFF	*
6	OFF	ON	OFF	*
7	ON	OFF	OFF	*
8	OFF	OFF	OFF	*

*Set switch SW4 as follows: ON for sounder **OFF**; OFF for sounder **ON**

- Keypads of the same **type** shall not be set with identical addresses. An XK-508 and an XK-5LC may be set to the same address number (because one is an LED type and the other an LCD type and both addressable).
- The control panel supports up to four keypads.

System Operation

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Power-Up/System Reset

SYSTEM STABILIZATION MODE: Upon power-up of the system and after completion of system programming, IF THE SYSTEM WAS PREVIOUSLY ARMED, all the lights on the LED keypad(s) will turn ON momentarily or, in the case of an LCD display installation, the keypad(s) will display STANDBY! momentarily. The keypad display will then return to normal. However, the zones will not respond to alarm conditions for approximately 2 minutes. This 2-minute delay can be disabled by simply entering a valid user code that disarms the system and reduces the power-up reset time to approximately 5 seconds. The 2-minute interval is used to allow motion detectors (interior zones) to stabilize in order to prevent false alarms. Upon system power-up, IF THE SYSTEM WAS PREVIOUSLY DISARMED, the power-up reset time will be approximately 5 seconds. If total system power is lost, upon power restoration the system will return to its previously armed state.

Arming the System

The system can be armed only if **ALL** burglary zones are not faulted.
On LED display keypads, this requires that the **READY** LED be **ON**.
On LCD display keypads, the following message will appear:

```
┌─────────────────────────┐
│  SYSTEM: READY          │
│                         │
└─────────────────────────┘
```

TO ARM: Enter any programmed four-digit user code.
NOTE: The factory default for user #1 is 1234.
The **ARMED** LED will light and the user may exit through an exit/entry zone for the time period programmed as the exit delay.

```
┌─────────────────────────┐
│  ON: AWAY               │
│         EXIT NOW        │
└─────────────────────────┘
```

LCD display keypads will indicate the following message:

The system can be armed without the backup battery being connected; however, the **AC/LB** or **BAT** light will flash, depending on the keypad used.

Stay Arming

TO ARM: Press the **STAY** key and then enter a four-digit user code.
This will arm the system with all programmed interior zones excluded.

On LED display keypads, the **STAY** and **ARM** LEDs will light continuously.

LCD display keypads will indicate the following message:

```
┌─────────────────────────┐
│  ON: STAY               │
│         EXIT NOW        │
└─────────────────────────┘
```

Instant Arming

TO ARM: Press the **INSTANT** key followed by a four-digit user code. The **INSTANT** and **ARM** LEDs will light continuously.

LCD display keypads will indicate the following message:

```
ON: AWAY INSTANT
```

The entire security system (interior and exterior) is armed at this time, allowing only for the entry/exit time delay that has been programmed into the system.

NOTE: The INSTANT mode can be enabled through Programming Question 12, Location 3.

Stay/Instant Arming

TO ARM: Press the **STAY** key; press the **INSTANT** key and enter a four-digit user code.

The **STAY/INSTANT** mode will arm the system with the characteristics of both the **STAY** and **INSTANT** modes. The keypads will have the **ARM**, **INSTANT,** and **STAY** LEDs turned ON continuously.

LCD display keypads will indicate the following message:

```
ON: STAY INSTANT
```

The system will be armed with the interior zones bypassed and the delay zones INSTANT after the programmed entry/exit time.

NOTE: The STAY/INSTANT mode can be enabled through Programming Question 12, L3.

System Mode Summary (Refer also to *Section 4 – Keypad Features*)

MODE	LEDs				
	ARM	STAY	INSTANT	AC/LB	READY
STAY ARMED	ON	ON		AC present (Steady ON)	Slow blink
AUTO STAY ARMED	ON	ON			Slow blink
STAY/INSTANT ARMED	ON	ON	ON	No AC Running on battery backup (Steady OFF)	Fast blink
AUTO STAY/INSTANT ARMED	ON	ON	ON		Fast blink
INSTANT ARMED	ON		ON		Fast blink
ARMED (all burglary zones armed)	ON			Low Battery (Slow blink)	OFF

Disarming

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

If an alarm condition exists or occurred while the system was armed, the respective zone LED will blink rapidly. On the LED keypads, the **READY** LED will also blink rapidly. This condition is classified as alarm memory, and can be cleared by entering a valid user code again.

Reset

Reset is accomplished through the entry of any valid user code. This can be used to reset the smoke detectors attached to the system, silence any bells or sounders, or clear the keypad display. In addition, the star key [✱] acts as a reset for clearing alarm and fire memory when the security system is not armed.

Bypass by Zone/Group

Bypassing is enabled to temporarily exclude zones or sensors that are faulty, or otherwise not ready for operation, from activating the security system.

If QUICK BYPASS is disabled (Question 08, Location 3) and ZONE BYPASS is enabled (Question 17-23, Location 3), then:

TO BYPASS BY ZONE: Press the **BYPASS** key followed by any valid 4-digit user code, followed by a single-digit number (1-7) representing the zone to be bypassed. The LED and LCD keypads are programmed for BYPASS in the same way, only the displays are different.

EXAMPLE: To bypass Zone 6 (assuming user code of 1234), press **[BYPASS] + [1234] + [6]**.

If QUICK BYPASS is disabled (Question 08, Location 3), ZONE BYPASS is enabled (Question 17-23, Location 3) and BYPASS BY GROUP is enabled (Question 09, Location 1), then:

TO BYPASS BY GROUP: Disable QUICK BYPASS and press the **BYPASS** key followed by any valid 4-digit user code, followed by the **[#]** key, which represents the group of zones to be bypassed.

NOTE: Bypassing a group will remove only the individual zones enabled for that group.

EXAMPLE: To bypass a group, press **[BYPASS] + [1234] + [#]**.

Quick Bypass by Zone/Group

Quick Bypassing is a programmable option (Question 08, Location 3) and allows the user to bypass zones without using a user code.

If QUICK BYPASS is enabled (Question 08, Location 3) and ZONE BYPASS is enabled (Question 17-23, Location 3), then:

TO BYPASS BY ZONE: Press the **BYPASS** key followed by a single-digit number (1-7) representing the zone to be bypassed.
EXAMPLE: To bypass Zone 6, press **[BYPASS] + [6]**.

If QUICK BYPASS is enabled (Question 08, Location 3), ZONE BYPASS is enabled (Question 17-23, Location 3), and BYPASS BY GROUP is enabled (Question 09, Location 1), then:

TO BYPASS BY GROUP: Press the BYPASS key followed by the [#] key, representing the group of zones to be bypassed.
EXAMPLE: To bypass a group, press **[BYPASS] + [#]**.

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

After a successful bypass, the keypad sounder will emit the acknowledge beep and the respective zone LED will BLINK SLOWLY; or, on LCD keypads, the following message will be displayed:

```
BYPASS
        ZONE 1, 2
```

In addition, note the following rules for bypass:

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

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

⚠	Zones that are bypassed are not protected when the system is armed.

Auto Unbypass
All burglary zones that are bypassed are automatically unbypassed upon system disarm. Twenty-four-hour zones that have been bypassed will be unbypassed only if they are not validated.

Manual Unbypass
MANUAL UNBYPASS removes an existing bypass from a currently bypassed zone or group. The procedure is the same as for bypass.

KEYPAD TAMPER/LOCKOUT: Upon entry of 21 keystrokes in succession without entry of a valid command, the system will initiate a keypad tamper/lockout condition. This will set off a silent alarm to the CS. Refer to Question 12, L1. Also, a code can be programmed for transmission to the Central Station (see Question 34, Locations 3 and 4).

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

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

NOTES: Only the master users (users #1 and 2) can program or modify other users:

1. **User #1** - programs all user codes (01-15); cannot be deleted.
2. **User #2** - programs all user codes (02-15), except for user #1.
3. **User #13 (Door Strike)** - is the system "door strike" code if any of the triggers are defined as door strike triggers. If any of the output triggers are defined as door strike, then entry of this user code will activate that trigger for 5 seconds. In addition, there is an option to allow all user codes to act as a door strike code. If this option is selected (Question 08, Location 3), then all users can activate the door strike through the [#]9x command (See QUICK COMMAND MODES). If a door strike (or access) trigger is not defined, then this user code can be utilized as a normal user code.

4. **User #14 (Arm Only)** - is a system-wide arm-only (maid) code if the arm-only code is selected for Question 08, Location 3. If this option is not selected, then this user code can be used as a normal user code. Defining #14 as an arm-only code means that the code can only arm the system, and would be used by a maid or temporary user of the system.
5. **User #15 (Ambush)** - is the system-wide ambush code if there is an ambush CS transmission code programmed into Question 28, Locations 1 and 2. In this mode, entry of the user #15 code will ARM or DISARM the system and transmit the ambush code to the Central Station. Furthermore, if the CS transmission format contains the user number, then user #15 will be transmitted. If no CS code is defined in Question 28, then this user #15 will be a normal user code. If ambush transmission code has been programmed and user 15 does not exist, it will not be possible to activate the ambush feature.

TO ADD OR CHANGE USERS: Enter the following on the keypad: [CODE] + [MASTER USER CODE] + [USER #] + [USER ID]

where:

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

Example: To define user #03 with an ID of 7493 (assuming master code is 1234), enter:
[CODE] + [1234] + [03] + [7493].

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

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

User Deletion

User codes (02-15) can be deleted directly through the keypad. Once deleted, their values will be null.
TO DELETE USERS: Enter the following on the keypad: [CODE] + [USER] + [USER #] + [#]
where:

[CODE].......CODE button
[USER].......Master User ID code (user #1)
[USER #]....User number being deleted (02-15)

  NOTE: User #1 cannot be deleted, but it can be changed.

[#]................# button.

Keypad Emergency Conditions

The system is capable of transmitting four keypad auxiliary conditions as follows:

CONDITION	KEYSTROKES	ENABLED IN	AUDIBLE OR SILENT
PANIC	[#] & [*] (at the same time)	Question 12, Location 3 (Question 29, Locations 1 & 2 enables option to dial CS)	Refer to table on pg. 6-16. Immediate and unabortable.
FIRE	[7] & [9] (at the same time)	Question 33, Locations 1 & 2	Always AUDIBLE
AUXILIARY	[1] & [3] (at the same time)	Question 12, Location 3 (Question 33, Locations 3 & 4 enables option to dial CS)	Refer to table on pg. 6-16. Refer to table on pg. 6-27.
AMBUSH	User code [#] [15]	Question 28, Locations 1 & 2	Always SILENT

The keypads have additional keys dedicated for emergency conditions. These keys can be activated by pressing both keys at the same time (see *Section 4: Keypad Features*).

Audible Panic, Fire, and Audible Auxiliary can be **reset** by entering any valid user code.

Quick Command Modes

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

COMMAND	KEYSTROKES	ENABLED IN
User Unattended	[#] [0]	Question 12, Location 4
Quick Arming	[#] [1]	Question 08, Location 3
Quick Forced Arming	[#] [2]	Question 08, Location 3
Set Time	[#] [3]	To require user code (Question 10, Location 4)
Display Zone Directory (LCD Keypads Only)	[#] [4]	Always Enabled
Set Auto Arm Time	[#] [5]	Question 08, Location 4
Display/Toggle Chime (LCD Keypads Only)	[#] [6]	Questions 17-23, Location 4
Display Time (LCD Keypad Only)	[#] [7]	To require user code (Question 10, Location 4)
Display Auto Arm Time (LCD Keypad Only)	[#] [8]	To require user code (Question 10, Location 4
Door Strike	[#] [9]	Question 14; All Users (Question 08, Location 3)
User On-line Download	[#] CODE	Question 12, Location 4

QUICK ARMING: [#] + [1]

If it is programmed, then Quick Arming will be permitted. Quick Arming allows arming the system without entry of a user code, and will report as user #01.

NOTE: The system must be in READY mode. A user code is required to disarm the system. Options include:

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

QUICK FORCED ARMING: [#] + [2]
If it is programmed, then Quick Forced Arming will be permitted. Quick Forced Arming allows arming the system without entry of a user code, and bypassing any bypassable zones that are not ready. It will report as user #01.

NOTE: Bypassed zones include all sensors assigned to the zone. To disarm, a user code is required.

UL | Quick Forced Arming **cannot** be used in UL applications.

SET TIME: [#] + [3]
Pressing [#] + [**3**] will set the time of the system clock. If a user code is required to set the time, then enter:
[#] + [3] + [USER] + [HOUR] + [MINUTE] + [MONTH] + [DAY] + [YEAR]

where:

[USER] .... Valid 4-digit user code
[HOUR] .... Two-digit hour of day in military time; e.g., 7 AM = 07; 3 PM = 15
[MINUTE] .... Two-digit minutes of hour; e.g., 9 min = 09; 29 min. = 29
[MONTH] ..... Two-digit month of year (01 - 12); e.g., Feb = 02; Oct = 10
[DAY] .... Two-digit day (01-31); e.g., day 1 = 01; day 29 = 29
[YEAR] .... Two-digit year (00-99); e.g., 1999 = 99; 2000 = 00

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

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

In either case, the LCD keypads will display a prompt for each entry. On LED keypads, the sounder will beep after each entry. The system will exit this mode either automatically (no keys are pressed), after the last entry (YEAR), or when the star [✶] key is pressed.

NOTE: The system time clock is used for the system TEST transmission as well as the auto arming function and system log.

DISPLAY ZONE DIRECTORY (LCD KEYPAD ONLY): [#] [4]
Pressing [#] [4] will scroll through the zone number and zone descriptors on the LCD keypad. The keypad will display the following:

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

The system will exit this mode either automatically (no keys pressed) or when the star [✶] key is pressed.

SET AUTO ARM TIME: [#] + [5]
If auto arming is programmed (enabled in Programming Question 8, Location 4), then pressing [#] + [5] will set the auto arm time of the current area. If a user code is required to set the time, then enter:
[#] + [5] + [USER] + [HOUR] + [MINUTE]
where:
[USER]   Valid 4-digit user code.
[HOUR]   Two-digit hour of day in military time; e.g., 7 AM = 07; 3 PM = 15
[MINUTE]   Two-digit minutes of hour; e.g., 9 min = 09; 29 min. = 29

The system will exit this mode either automatically (no keys pressed) after the last entry (MINUTE), or when the star [✶] key is pressed.

If a user code is **not** required to set the time, then enter:
[#] + [5] + [HOUR] + [MINUTE]

In either case, the LCD keypads will display a prompt for each entry. On LED keypads, the sounder will beep after each entry. The auto arm time represents the time of day that the area will automatically arm if it is not already armed. In addition, it can be programmed to arm in the STAY or INSTANT mode. If programmed in Question 08, Location 4, an audible warning can be generated at the keypad 2 minutes prior to arming. This signal (four short beeps every 15 seconds for 2 minutes prior to arming) will warn the occupants that the system will auto arm in two minutes. If a user code is entered within this warning period and the system is disarmed, then the auto arm time for that day will be canceled. The system will generate an audible acknowledgment (1-second keypad sounder) and the lights on the LED display will scroll to show that the auto arm time was suspended. LCD-based keypads will display an AUTO ARM FEATURE CANCELED display.

NOTE: Auto arming will arm the system (Question 8, Location 4) and Force Bypass any zone that is enabled for bypass. Therefore, it is recommended that bypasses should be reported to the CS if auto arming is programmed.

UL   Auto arming cannot be used in UL applications.

LOSS OF TIME WARNING: If auto arming has been enabled and no time is defined, a warning will appear on the keypads. This can occur if time (#3 command) has not been entered or if the system has totally lost power (AC and DC) and the time is probably incorrect. The loss-of-time warning consists of the LEDs on the keypads scrolling in sequence, or a text message on LCD keypads. This will occur every 30 seconds until the time is set (#3 command).

DISPLAY/TOGGLE CHIME: [#] + [6] (LCD Keypads Only)
If the chime option is programmed for any of the zones (Questions 17-23, Location 4), then pressing [#] + [6] will display and toggle (turn OFF/ON) the system chime. The system will exit this mode either automatically (no keys pressed) or when the star [✶] key is pressed.

DISPLAY TIME: [#] + [7] (LCD Keypads Only)
Pressing [#] [7] will display on the LCD keypads the current time of the system.
NOTE: The time is set by using [#] + [3]. The keypad will display the following:

> **CURRENT TIME:**
> **12:00AM**

The system will exit this mode either automatically (no keys pressed) or when the star [✶] key is pressed.

DISPLAY AUTO ARM TIME: [#] + [8] (LCD Keypads Only)
If auto arming is programmed, then pressing [#] + [8] will display on the LCD keypads the current auto arm time for the current area.

NOTE: Auto arming is enabled in Programming Question 08, Location 4. The auto arm time is set by using [#] + [5]. The keypad will display the following:

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

The system will exit this mode either automatically (no keys pressed) or when the star [∗] key is pressed.

DOOR STRIKE: [#] + [9]
The door strike trigger can be activated by pressing: **[#] + [9] + [USER] + [TRIGGER NUMBER]**

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

NOTES:
- The trigger number (1 or 2) is necessary only if there is more than one trigger programmed for door strike capability.
- At least one of the triggers must be defined as a door strike trigger in order to use this feature.

UL   DOOR STRIKE is not a permitted programming option for any UL installation.

USER ON-LINE DOWNLOAD: [#] + [CODE]

If this option is programmed, by pressing [#] + [CODE] buttons on the keypad, the user initiates a remote communications session with the CS downloading computer at the Central Station location. On-line downloading allows the user to call the office and discuss the action required, and allows the CS operator to complete the request while on-line with no additional telephone call needed. On-line connection is made as follows:

1. User dials the CS downloading modem telephone line from the premises telephone. Connection is made with a person at the CS downloading computer, and the account to be downloaded is verbally identified. The CS computer attempts to establish a connection with the site.

2. The user is instructed to enter [#] + [CODE] on the keypad, which causes the control panel to react as if it has received a request for a remote communications session and to 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).

Installer Modes
There are 9 installer modes in this panel.
TO ENTER INSTALLER MODE, press **[CODE] + [∗] + [INSTALLER] + [X]**
where:
[CODE] ....CODE button
[∗] ....Star (∗) button
[INSTALLER] ....4-digit installer code (default = 2468)
[X] ....Single digit indicating the installer mode, as follows:

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

INSTALLER MODE 1 (INSTALLER KEYPAD PROGRAMMING)

The installer uses this mode to enter keypad programming. Refer to *Section 7: Data Entry via Keypads*. To exit, simply press the **STAY** key and return to the prior panel status.

NOTE: An option exists in the EZMATE/COMPASS Downloader Software to **inhibit** keypad programming. If it is selected, then a negative acknowledgment (4 short beeps) will be heard after attempting to enter this mode.

INSTALLER MODE 1 (SYSTEM DEFAULT)

Any system keypad (LED and LCD types) can be used to 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-programmed values) and go through the reset sequence. The system will undergo the warm-up time sequence. A system default can also be initiated by removing power (AC and DC), shorting JP1 and JP2, re-applying power (with JP1 and JP2 still shorted), waiting 8 seconds, and then removing the short with power still applied.

A programming option known as **Default Lockout** can be selected through the EZMATE/COMPASS Downloader Software. If it is selected, a system default reset will change all programmable options except the CSID (a code used by the software to identify the panel during remote connections) and the installer code. This prevents hostile account takeovers.

INSTALLER MODE 1 (USER CODE DEFAULT)

The user codes can be reset to factory default values (User Code 1 = 1234) by **pressing the 7 and 9 keys at the same time** while in the programming mode. The user codes will default and the system will go through the reset sequence and the warm-up time sequence.

INSTALLER MODE 2 (WALK TEST w/ SOUNDER)

Once the sensors are placed in their desired locations, open or short circuit each sensor by opening a door, window, etc. The keypad will beep and annunciate with activation of each zone or sensor while in this mode.
A CS report code (if enabled in Question 30, L3 and L4) will also be generated. A 10-minute inactivity timer is enabled when starting Walk Test. After 5 minutes of inactivity, the keypad will sound. If the sounder is acknowledged, the timer is reset to 5 minutes; if acknowledgement is not made, the panel times out and exits Walk Test.
To exit, simply press the [✶] key and return to the prior panel status.

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

Identical to Walk Test Mode 2 except that the bell will also ring during the test.
To exit, simply press the [✶] key.

NOTE: Either Walk Test mode disables the panel's alarm functions. The condition is identified by a **"WALK TEST MODE"** display on the LCD keypads and flashing of the **RDY** and **ARM** LEDs on LED keypads.

INSTALLER MODE 4 (SYSTEM LOG VIEW)

The system retains history of the past 78 events (alarms, troubles, openings, closings, bypasses, etc.). Upon entry to the system log view, LCD-based keypads will show the events one at a time starting from the **oldest** event.

Depression of any key (except [✶], BYPASS, or INSTANT keys) will scroll forward through the events.

To scroll backward, press the INSTANT key.

To exit from the system log view function, press the [✶] key.

To clear the system log, press the BYPASS key. On LCD keypads, the following appears:

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

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

INSTALLER MODE 5 (WALK TEST MOTION)

This mode is used to display the following second line on the LCD keypads: "WALK TEST MOTION." Its purpose is to remind the user to walk-test the motion detectors. The display will remain on until the next time the installer mode is accessed. The display is toggled either ON or OFF every time mode 5 is accessed.

NOTE: The default value is OFF.

INSTALLER MODE 7 (SYSTEM DEFAULT)

This mode can initiate a system default in which the system reverts to factory-programmed values. The system then goes through the reset sequence and the warm-up time sequence.

INSTALLER MODE 8 (INSTALLER UNATTENDED DOWNLOAD)

UL   For UL installations, Installer Unattended Download may **NOT** be used.

The Unattended Download mode is designed to download a program without the aid of the computer operator at the CS.

This is how it works: The Unattended Download Account ID (viewable in Compass or EZ-Mate) is programmed into the control panel. The control panel then dials the telephone number of the CS downloader. After the connection is made and the Account ID is recognized, the CS downloader will then proceed to transfer the programmed information to the panel.

NOTE: These are temporary values, as they will be reprogrammed after downloading. Unattended Download re quires the following sequence:

1. The PC operator must select UNATTENDED DOWNLOAD in the Downloader Software Main Menu.
2. Enter Unattended Download mode by pressing: [CODE] + [✶] + [INSTALLER] + [8].
3. The system will now enter UNATTENDED programming (Question 01). Enter the telephone number of the Central Station downloading computer into this question (12 digits maximum, each digit followed by the [#] key; e.g., 1 [#] 2 [#] 3 [#], etc.). 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 information 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 for the EZMATE downloader or 12-digits in length for the COMPASS downloader. The downloader's account designator (not the account number) will be communicated to the receiver. For account numbers of fewer than 6 digits, you must enter leading 0's to make the number 6-digits long (EZMATE) or 12-digits long for COMPASS.
   EXAMPLE: For account number 345, enter 0 [#] 0 [#] 0 [#] 3 [#] 4 [#] 5 [#] for (EZMATE) or enter 0 [#] 0 [#] 0 [#]0 [#] 0 [#] 0 [#] 0 [#] 0 [#] 0 [#] 3 [#] 4 [#] 5 [#] for COMPASS.
5. Press the **STAY** key to exit programming mode. The control panel will now dial the telephone number entered into ✶01 field. 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 mode and preprogrammed with the account information in order for the unattended download to be functional. Press the **INST** key to exit programming mode without activating unattended mode.

INSTALLER MODE 9 (ON-LINE DOWNLOAD)

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

1. Installer completes installation and attaches a handset to telco terminals (tip and 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 is verbally identified. The downloading computer operator selects On-line Remote Operations from the device menu.
2. The installer enters the download sequence (on-line in EZ-MATE; telco in COMMUNICATIONS option in COMPASS): [CODE] + [✶] + [INSTALLER] + [9] or uses the end-user command of [#] 9, if enabled in Question 12, L4. This will cause the control panel to react as if it has received a request for a remote communications session and to 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. The downloading computer operator hangs up the telephone or removes the headset from the line to prevent interference that may affect upload/download data. The downloader software will automatically terminate the connection after remote communications end.

System Programming

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General

The system can be programmed using either of two methods:

- Directly, through the keypad.
- Remotely, through the PC downloading software.

Keypad programming can be performed after completing the PROGRAMMING WORKSHEET in Appendix D of this manual. There are 36 total programming questions numbered 00-35 plus seven descriptor Questions for Zones 1 through 7. Within each of the first 36 Questions (except 01, 02, and 03 which contain 16 locations), there are 4 Locations labeled L1 – L4 for data entry. Questions 36-42 contain 12 locations labeled L1-L12.

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.

> **FACTORY DEFAULT VALUES: To reload, remove all power from the system (AC and DC). Next, short JP1 and JP2. With short still in place, reapply power (AC, then DC) and wait 8 seconds. Then, remove short with power still applied. The installer can also do a System or User Code Default through Installer Mode 1 (refer to the "Installer Modes" list in** *Section 8: Summary of Keypad Functions***).**

NOTE: A **DEFAULT LOCKOUT** programming option exists within the EZMATE/COMPASS PC Downloader. 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.

Programming Questions

Programming questions and their values are described below. First, completely fill in the XL-2T SYSTEM PLANNING WORKSHEET in Appendix C. Next, complete the SYSTEM PROGRAMMING WORKSHEET in Appendix D. Then enter the data as explained in
Section 7: Data Entry via Keypads. **DO NOT ATTEMPT TO ENTER DATA BEFORE COMPLETELY FILLING OUT THE PROGRAMMING WORKSHEET.**

QUESTION 00
INSTALLER CODE..… **DEFAULT = 2468**

The Installer Code is a 4-digit code reserved for installation company use. This is the only code that can be used to enter the Program mode from the keypad. This code cannot be used to arm or disarm the security system.

There are 4 locations (L1-L4) in this question. Enter any 4-digit installer code desired. This code is used to ENTER the system programming mode via the keypad. Typically, each installing company uses a unique installer code in order to prevent unauthorized persons from gaining access to their panels.

NOTE: The factory default value for the installer code is 2468 in Locations L1-L4, respectively. This question is accessed only through the direct access mode by selecting Question **00**. BEFORE EXITING PROGRAMMING, VERIFY INSTALLER CODE.

> **SUGGESTION:** Each installing company should use a unique installer code in order to prevent unauthorized persons from gaining access to their panels.

QUESTION 01
PRIMARY TELEPHONE NUMBER ....**DEFAULT = 234AAAAAAAAAAAAA**

Enter the telephone number (including area code and/or dialing prefix, if necessary) of the primary Central Station receiver in Locations L1-L16. This number is known as CS#1.

Example: If the primary telephone number to be entered is 1-516-810-5604, enter on Programming Worksheet: 8105604. The 1-516 prefix/area code is programmed in Question 04 if **all** the telephone area codes are identical. If they are **not** identical, then the full individual telephone numbers would have to be programmed in Questions 01-03. Enter the valid digits from the table below.

Digit	FUNCTION	COMMENTS
0-9	0-9	
A	Signifies end of the phone number	Enter after last digit of phone number
B	Star [✶]	Enter whenever the star is used
C	3-second pause	Provides delay to wait for dial tone
D	Pound (#)	Enter whenever the pound is used
E	✶ 70C (TouchTone) ✶ 1170C (Rotary) †	Enter to disable Call Waiting †
F	800	Prefix for toll-free calls

† Do **not** enter Digits E or F on a non call-waiting line to maintain communication with CS.

NOTE: To disable DIALER 1 or DIALER 2 (Local Panel), see Question 07, Location 3.

REPORTING ROUTE:

The system will report all signals to the primary receiver phone number. If split reporting has been selected, then OPENING and CLOSING signals will be directed to the secondary phone number and all other signals will be transmitted to the primary phone number. Furthermore, the panel will alternate between the primary and secondary receivers (if the second phone number is programmed) for the number of **dialer attempts** programmed in Question 09, L4.

QUESTION 02
SECONDARY TELEPHONE NUMBER...**DEFAULT = AAAAAAAAAAAAAAAA**

Enter the telephone number (including area code if different from the other numbers) of the secondary Central Station receiver in L1-L16. An entry of the digit A will not dial the digit, and the system will examine the next digit. The secondary telephone number will be used if the panel is unable to reach the Central Station via the primary number. This is known as BACKUP REPORTING. This number is also known as CS#2.

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

QUESTION 03
CALLBACK TELEPHONE NUMBER...**DEFAULT = AAAAAAAAAAAAAAAA**

Enter the telephone number (including area code if different from the other numbers) for this control panel to reach the callback number location. The callback number is the optional location of the downloading software where the control panel will call during a remote communication (upload/download, etc.) session. During remote communication, the programming device and the control panel will first confirm the CS security code. If it is valid, communication can begin. If a callback number is defined, the control panel will hang up and dial the callback number. For no callback capability, enter AAAAAAAAAAAAAAAA.

QUESTION 04
TELEPHONE PREFIX .... **DEFAULT = AAAA**
This four-digit dialing prefix will be added before the primary and secondary telephone numbers. This is used to enter a **common** prefix and **area code** for the primary and secondary telephone numbers. Enter AAAA if there is no dialing prefix/area code commonality.
The dialing prefix/area code entered here must be identical to the other telephone numbers.

QUESTION 05
ACCOUNT NUMBER 1 .... **DEFAULT = 1234**
Enter the three- or four-digit subscriber account number for Central Station phone number 1 in Locations L1-L4. If a three-digit number is used, then enter an A in Location L4. Valid entries are 0-9 and B-F. The value A is interpreted as the null value for account numbers.

QUESTION 06
ACCOUNT NUMBER 2 .... **DEFAULT = AAAA**
Enter the three- or four-digit subscriber account number for Central Station phone number 2 in Locations L1-L4. If a three-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/split reporting.

QUESTION 07
CS DIALER 1 & SYSTEM OPTIONS .... **DEFAULT = E014**
There are 4 Locations (L1-L4) within this question that define various dialer and system options as follows:

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

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

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

NOTE: For more information on CS reporting formats, refer to Appendix A.

* These formats require a high/low hand shake frequency from the CS receiver.

Pager
With Pager reporting enabled (Question 07, L1 above and Question 08, L1), Dual Reporting, Single Reporting, and Backup Dialing are the available reporting options in Question 07, L3.
Refer to FBII Superfast (4x3x1) reporting in Appendix A for reporting format.

Dual Reporting

The following Dual Reporting options are available:

- **Enabled so that panel reports to Central Station via CS#1 and reports to Pager via CS#2.**
- **Enabled so that panel reports to Pager via CS#1 and reports to Central Station via CS#2.**

Regardless of which option is chosen, the reports sent to the Pager are openings, closings, and alarms only, and makes two attempts regardless of the number of attempts programmed in Question 9, L4. There is no acknowledgement from the pager at any time.

How It Works

Panel reports to CS via CS#1 and to Pager via CS#2. The panel report to CS will be the first attempt at communicating. If this attempt is successful, a second attempt will not be necessary and therefore the Pager format will not be transmitted.

However, if communication with CS#1 is unsuccessful, the panel accesses CS#2 format (the Pager format). After the Pager format is sent, it will attempt another transmission to CS#1. If the CS#1 second attempt is successful, panel receives a kissoff and does not make a second attempt to CS#2. If the CS#1 second attempt is unsuccessful, the panel makes a second attempt to dial CS#2 (Pager). There is no acknowledgement from the pager at any time.

> ⚠ The panel will **not** go into Comm Fail using the above setup.

Pager to CS#1 and Central Station format to CS#2. In this example, the Pager format will be the first attempt at communicating. In this case, this first attempt may or may not be successful. Either way, a second call is made to Central Station CS#2.

However, if communication with CS#2 is unsuccessful, the panel accesses CS#1 format (the Pager format) again. After the Pager format is sent, it will attempt another transmission to CS#2. It continues with these attempts at communication with CS#2 until a kissoff is received on any attempt, or within the attempt limits programmed in Question 9, Location 4.

Single Reporting

Enables the programming of one phone number to be included in Phone Number 1's location or in Phone Number 2's location.

1. Pager to CS#1 reports **ALL** programmed options for the number of attempts, limited to the number of attempts programmed in Question 09, Location 4.

    OR

2. Pager to CS#2 reports ALL programmed options for the number of attempts, limited to the number of attempts programmed in Question 09, Location 4.

Backup Reporting

Allows for the programming of two phone numbers as Phone #1 and Phone #2.

Central Station format to CS#1 and Pager to CS#2. The first attempt to communicate is in the Central Station format. If the attempt is successful, a second attempt is not made and Pager format is not sent. However, if that first attempt by CS#1 is not successful, then the panel accesses CS#2 format (Pager format). After the Pager format is sent, it will attempt another transmission to CS#1 and will repeat this sequence until a successful kissoff is received either by a successful communication with CS#1 on any attempt, or after the programmed number of attempts (Question 09, Location 4).

> ⚠ This panel will **never** go into Comm Fail using this setup.

Pager to CS#1 and Central Station format to CS#2. The Pager format in this instance will be the first attempt. After this transmission, a second attempt is made to CS#2. If, however, CS#2 is unsuccessful, then the panel sends CS#1 format (Pager format). After the pager format is sent, it will attempt another transmission to CS#2 and will continue to repeat this sequence until a successful kissoff is received either by a successful CS#2 kissoff on any attempt or after the programmed number of attempts (Question 09, Location 4).

Pager to CS#1 and Pager to CS#2. First attempt is to CS#1 pager and second attempt is to CS#2 pager. Attempts will continue to be made in this sequence for the programmed number of attempts in Question 09, Location 4.

Pager format sends all enabled events as follows:

ALARM TYPES	KEYPAD CONDITIONS	OPENINGS & CLOSINGS
• Burg Zones	1. Panic	1. Arming
• Fire Zones	2. Fire	2. Disarming
• Ambush	3. Aux	3. User cancellation

Additional option (Question 13, Location 2) limits User 4 to send codes only. This is true for the pager also.

Question 07, L2 - CS Receiver Type 1 ....**Default = 0**
Enter the digit for the desired receiver type from the table below.
NOTE: The checkmarks highlight 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	✔			✔			FBII, ADEMCO, SILENT KNIGHT
1		✔		✔			FBII, ADEMCO, RADIONICS
2			✔	✔			FBII
4	✔				✔		FBII, RADIONICS
5		✔			✔		FBII
6			✔		✔		FBII, RADIONICS
8	✔			✔		✔	FBII, RADIONICS
9		✔		✔		✔	FBII
A			✔	✔		✔	FBII
C	✔				✔	✔	FBII
D		✔			✔	✔	FBII
E			✔		✔	✔	FBII, RADIONICS

NOTE: The value placed in this digit will be ignored if transmitting in one of the DTMF formats (FBII Superfast, ADEMCO PID, ADEMCO Express).

UL
For UL installations, the acceptable receivers are FBII CP220 (all formats except ADEMCO Express, 4x1 + 4x2, and ADEMCO High Speed), ADEMCO 685 (all formats without parity and not FBII Superfast), Silent Knight 9000 (10PPS, No Parity, 1400, or 2300Hz).

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

Enter the digit for the desired message length from the table below.
NOTE: The checkmarks highlight which options are selected.

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

DIALING FORMAT - Specifies how this control panel will perform outgoing dialing over the telephone line connected to the control panel (TouchTone, U.S. Pulse, or European pulse format).

NOTE: Superfast TouchTone is a faster transmission of the TouchTone frequencies, and may not be accepted in all telephone exchanges.

UL The European dialer option has **not** been tested for UL installations.

BACKUP - CS#2 will back up CS#1.

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

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

DIALER DISABLE: This option will turn OFF the digital dialer, making the control a local panel.

UL The dialer disable selection shall **not** be selected for UL installations.

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

**Question 07, L4 - Swinger Shutdown, AC Line Frequency,
Restore After Bell, and Restore Follows Loop**..**Default 4**
Enter the digit for the desired system options from the table below.
NOTE: The checkmarks highlight which options are selected.

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

SWINGER SHUTDOWN - This feature allows individual zones to activate the dialer 1, 2, or 3 times within an arming cycle. If selected, swinger shutdown applies to controlled zones while the system is armed, as well as 24-hr. audible alarm zones. When the selected number of events within the arming cycle is reached, the bell and dialer will be activated for the last time, the swinger shutdown code will be transmitted, and the zone code will then be sent. Subsequent activations within the same arming cycle will NOT activate the bell or dialer.
NOTE: Swinger shutdown CS code is enabled in Question 35, Location 3.

UL | Swinger Shutdown **cannot** be used in UL installations.

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 restoration while the system is armed, regardless of when the bell is cutoff.

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

QUESTION 08
CS DIALER 2 & SYSTEM OPTIONS .... **DEFAULT = E000**
There are 4 locations (L1-L4) within this question that define various dialer and system options as follows:

Question 08, L1 - CS Dialer 2 Formats ....**Default = E**
Enter the digit for the desired dialer format from the table below in Location L1.

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

NOTE: For more information on CS reporting formats, refer to Appendix A..

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

Question 08, L2 - CS Receiver Type 2 ....**Default = 0**
Enter the digit for the desired receiver type from the table below.
NOTE: The checkmarks highlight 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	✔			✔			FBII, ADEMCO, SILENT KNIGHT
1		✔		✔			FBII, ADEMCO, RADIONICS
2			✔	✔			FBII
4	✔				✔		FBII, RADIONICS
5		✔			✔		FBII
6			✔		✔		FBII, RADIONICS
8	✔			✔		✔	FBII, RADIONICS
9		✔		✔		✔	FBII
A			✔	✔		✔	FBII
C	✔				✔	✔	FBII
D		✔			✔	✔	FBII
E			✔		✔	✔	FBII, RADIONICS

NOTE: The value placed in this digit will be ignored if transmission is in one of the DTMF formats (FBII Super fast, ADEMCO ID, ADEMCO Express).

UL For UL installations, the acceptable receivers are FBII CP220 (all formats except ADEMCO Express, 4x1 + 4x2, and ADEMCO High Speed), ADEMCO 685 (all formats without parity and not FBII Superfast), Silent Knight 9000 (10PPS, No Parity, 1400 or 2300Hz).

**Question 08, L3 - Quick Commands, User 14 Arms Only, and
All Users Door Strike** ....**Default = 0**
Enter the digit for the desired message length from the table below.
NOTE: The checkmarks highlight which options are selected.

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

QUICK FORCED ARM/BYPASS - Enables the Quick Forced Arm (# 2 command) and Quick Bypass
(BYPASS ZONE command).

UL   Do **not** select the Quick Forced Arm command for UL installations.

QUICK ARMING - Enables the Quick Arming command [#] + [1].

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

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

Question 08, L4 - Auto Arming Options ....**Default = 0**
This digit indicates various auto-arming options. If the system is auto armed, this digit will select whether the sys-
tem will arm in the AWAY, STAY, INSTANT, or STAY INSTANT mode. In addition, an optional audible warning
(Keypad Sounder) can be generated two minutes prior to the auto-arming time. Select a digit from the table below.

UL   Do **not** select the Auto Arm command for UL installations.

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

QUESTION 09 MISCELLANEOUS OPTIONS .... **DEFAULT = 8010**

Question 09, L1 & L2 - Group Bypass for Zones 1-7 and Quick Exit.......... L1 Default = 8, L2 Default = 0
Select the zones to be bypassed as a single group from the tables below. If Quick Bypassing is enabled, group bypassing can be performed by the following sequence: [BYPASS] + [User Code] + [#] or [BYPASS] + [#].
NOTE: The checkmark indicates the zones to be bypassed as a group.

UL   Quick Exit **cannot** be used in UL installations.

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

L1

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

L2

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

⚠ Fire zones **cannot** be bypassed. Twenty-four-hour zones **can** be bypassed; however, they **cannot** be unbypassed if a violation exists on their zone terminals.

Question 09, L3 - No CS Bypass for Stay, Auto Stay Keyswitch,
Armed Bypass Display ....**Default = 1**
Select the desired options from the table below.
NOTE: The checkmarks highlight which options are selected.

Digit	NO CS BYPASS FOR STAY	AUTO STAY KEYSWITCH	ARMING BYPASS DISPLAY	BYPASS 3 ZONES ONLY
0				
1	✔			
2		✔		
3	✔	✔		
4			✔	
5	✔		✔	
6		✔	✔	
7	✔	✔	✔	
8				✔
9	✔			✔
A		✔		✔
B	✔	✔		✔
C			✔	✔
D	✔		✔	✔
E		✔	✔	✔
F	✔	✔	✔	✔

NO CS BYPASS FOR STAY - This option specifies that bypasses will not be transmitted upon STAY arming. If this option is not selected, then bypasses will be transmitted for each interior zone that has been bypassed with the STAY arming.
NOTE: Bypasses will be transmitted only if there is a bypass code defined (see Question 32, Location 1).

AUTO-STAY KEYSWITCH - This option allows a keyswitch to utilize the AUTO-STAY feature. If it is enabled, then any keyswitch connected to the system (by selecting a zone type as keyswitch, Questions 17-23, Location 1) will AUTO-STAY arm the system based on whether exit occurs or not. If not enabled, keyswitch arming does not AUTO-STAY arm the system regardless of whether exit occurs or not.

ARMED BYPASS DISPLAY - This option determines whether bypasses will be displayed on keypads when the system is armed. To view, press the **BYPASS** button. If the option is not selected, then bypasses will not be displayed on the keypad after system arming.

BYPASS 3 ZONES ONLY - This option allows the user to bypass up to 3 zones at once.

Question 09, L4 - CS Dialer Attempts ....**Default = 0**
This option selects the number of times the communicator will attempt to dial both CS receivers. If CS#2 is not programmed, then this option determines the dialer attempts to CS#1. Select a digit from the table below.

NOTE: This is valid for all CS receiver formats.

DIGIT	NO. OF CS DIALER ATTEMPTS
0	16
1	1
2	2
3	3
4	4

DIGIT	NO. OF CS DIALER ATTEMPTS
5	5 OK for UL sites
6	6 OK for UL sites
7	7 OK for UL sites
8	8 OK for UL sites
9	9 OK for UL sites

DIGIT	NO. OF CS DIALER ATTEMPTS
A	10 OK for UL sites
B	11
C	12
D	13
E	14
F	15

QUESTION 10
BELL TIMEOUTS, CS TEST TIME, and MISCELLANEOUS .... **DEFAULT = 5F26**
There are 4 Locations (L1-L4) within this question, as follows:

Question 10, L1 - **Burglary Bell Timeout** ....**Default = 5**
Question 10, L2 - **Fire Bell Timeout** ....**Default = F**
Enter the digit for the desired bell timeouts from the table below.

Digit	BURGLARY & FIRE BELL TIMEOUTS
1	3 Minutes
2	6 Minutes
3	9 Minutes
4	12 Minutes
5	15 Minutes OK for UL sites
6	18 Minutes OK for UL sites
7	21 Minutes OK for UL sites
8	24 Minutes OK for UL sites
9	27 Minutes OK for UL sites

Digit	BURGLARY & FIRE BELL TIMEOUTS
A	30 Minutes OK for UL sites
B	33 Minutes OK for UL sites
C	36 Minutes OK for UL sites
D	39 Minutes OK for UL sites
E	42 Minutes OK for UL sites
F	INFINITE OK for UL sites

UL **BURGLARY BELL =** Digits 5 through F
FIRE BELL = Digits 2 through F

Question 10, L3 - CS Test Time Interval ....**Default = 2**
This question determines the method of CS Test transmission, as follows:
NOTE: The checkmarks highlight which options are selected.

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

TEST INTERVAL - Select 1 hour, daily (24-hour), weekly (7 days), 27-day, 60-day, or 90-day. This interval is disabled by entering AA in CS code ✱31.
TEST BY TIME - Indicates that system TEST signals (if selected) will be sent at the time specified in Question 16. The interval depends on the test interval selected.

TEST BY EVENT - This indicates that each event transmitted will restart the test timer. For example, if a **daily** (24-hour) signal is selected (Question 10, L3) and the last signal was transmitted at 2:15 AM, then a test signal will be sent the following day at 2:15 AM **if no other event was transmitted.** Each subsequent transmission will reset the test timer. In this example, if another event was transmitted at 8:00 AM, then a test signal would be sent at 8:00 AM the following day if no other event was transmitted.

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

NOTE: The CS Test Time is entered in Question 16 and it is enabled in Question 32, Locations 3 and 4.

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

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

REMOTE COMMUNICATIONS RING COUNT - Determines the number of rings required by the control panel to pick up for remote communication purposes. The number of rings should be set to a value that does not interfere with the telephone at the panel location. **Select the desired ring count from 0** - **15, where 0 means no remote access**.

NOTE: For Pulse dialing formats (Question 07, Location 3), select a ring count of 15.

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

SYSTEM BELL TEST - This option indicates whether a bell test will be initiated upon a successful system arming. If selected, then the bell will activate for one second after arming the system.

UL   The System Bell Test option is required for UL commercial installations.

QUESTION 11
ENTRY/EXIT TIMEOUTS & CROSS ZONE TIMEOUT .... **DEFAULT = 6333**
There are 4 Locations (L1-L4) within this question that define the exit/entry times as follows:
Question 11, L1 - Exit Delay/Exit Delay Restart..**Default = 6 (UL max)**
Exit Delay: Enter the digit for desired entry/exit timeout provided in ENTRY/EXIT TIMEOUTS table below.

UL   For UL installations, one-minute delay is maximum entry/exit delay time permitted.

Exit Delay Restart: Opening the entry/exit loop twice during exit timeout resets the exit timer and restarts the pulse sound. However, there may be times when the exit time is insufficient and/or the sounder must be silenced (if it's enabled, of course). During entry/exit time, pressing the STAY button will accomplish the following:

1. It will silence the sounder immediately.
2. It will double the amount of entry/exit delay remaining based on the amount of time remaining at the instant that the STAY button was pressed.

Example: Assume entry/exit delay is programmed for 50 seconds and the end user is leaving the premises. The pulse sounder turns on and user suddenly realizes he is disturbing other people after 10 seconds of exit delay has elapsed. User presses the STAY button, which instantly silences the sounder and gives the user 80 seconds more of exit delay (40 seconds remained from initial exit delay, which is doubled at the moment STAY button is pressed). However, the amount of total delay time **cannot** exceed 255 seconds, irrespective of the amount of time remaining.

PULSE SOUNDS DURING ENTRY/EXIT TIMEOUTS	
Programmed Timeout	**Sounder On/Off**
More than 10 seconds	1/2 sec on, 1/2 sec off, 1/2 sec on, 6-1/2 sec off
10 seconds or less	1/4 sec on, 1/4 sec off, 1/4 sec on, 1/4 sec off, 1/4 sec on, 1/4 sec off, 1/4 sec on, 2-3/4 sec off.

Question 11, L2 - Entry Delay #1 ....Default **= 3**
Enter the desired entry delay time. Refer to ENTRY/EXIT TIMEOUTS table below for valid choices.

UL   The maximum entry delay time is 40 seconds for UL household applications.

Question 11, L3 - Entry Delay #2 ....**Default = 3**
Enter the desired entry delay time. Refer to ENTRY/EXIT TIMEOUTS table below for valid choices.

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

NOTE: Separate entry timeouts are selected for each zone in Questions 17-23, Location 2.

Question 11, L4 - Cross Zone Timeout ....**Default = 3**
This option selects the timeout for all zones programmed with Cross Zone capability (see Questions 17 - 23, Location 3). When one of the zones enabled for cross zones is tripped, then a timer is started. If all the cross zones are tripped and the timeout has not expired, then the alarms are sent to the CS, the bell will activate and the keypad will sound and display accordingly.
NOTE: This timeout will be ignored if cross zone capability is disabled. Enter the digit for the desired Cross Zone Timeout from the table that follows.

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

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

QUESTION 12 - MISCELLANEOUS OPTIONS .... **DEFAULT = 0316**
This question contains four Locations (L1-L4) for various keypad-definable options.

Question 12, L1 - LED Extinguish, Keypad Tamper/Lockout,
System Stay Mode Dialer Delay, and Bell Instant ....**Default = 0**
Enter the digit for the desired system options from the table below.

NOTE: The checkmarks highlight which options are selected.

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

LED EXTINGUISH - If selected, this option will extinguish all status LEDs (not the button LEDs) on the XL-4600SM LED keypad only after 2 minutes without any keypad activity. The LEDs will turn back ON upon a press of any keypad button or when the panel is in alarm.

KEYPAD LOCKOUT - Upon entry of 21 keystrokes in succession without entry of a valid command, the system will initiate a keypad lockout condition. This will be a silent alarm.

A code (Keypad Tamper) can be programmed for transmission to the Central Station (see Question 34, Locations 3 and 4). In addition, the keypad will ignore keys for 2 minutes, causing a lockout. If this lockout function is disabled, the keys are not locked out for 2 minutes, but will transmit the TAMPER code if so programmed in Question 34, Locations 3 and 4.

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

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

Question 12, L2 - Siren Driver or Bell Output ....**Default = 3**
This digit defines whether the system will utilize the built-in siren driver or have a conventional bell output. If the siren driver is selected, then the sounds for fire and burglary conditions will be selected as shown.
NOTE: The checkmarks highlight which options are selected.

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

NOTE: If the built-in siren driver does not provide sufficient sound for the installation, then program this option for bell output and utilize an external siren driver.

UL   Digit 0 (12-Volt Bell Output) must be selected for all UL applications.

For Built-in Siren Driver, connect a single 8 ohm sounder only. For Bell Output, connect a siren driver (e.g., FBII model VS-299 or 679S) and an 8 ohm sounder, a self-contained siren, or a bell.

12 VOLT BELL OUTPUT: If this is selected, output will be STEADY for burglary, PULSING for fire.

NOTE: Temporal bell option (Question 12, Location 4) determines which of the fire sounds will generate the temporal pattern.

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

Select the options available from the table below.

NOTE: The checkmarks highlight which options are selected.

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

KEYPAD PANIC - The keypad panic condition can be selected for audible or silent response by pressing the [✶] and [#] keys at the same time. Central Station transmission will depend on the value entered in Question 29, Locations 1 and 2.

KEYPAD AUX - The keypad auxiliary condition can be selected for audible or silent response (keypad sounder only) by pressing the 1 and 3 keys at the same time. Central Station transmission will depend on the value entered in Question 34, Locations 3 and 4.

NOTE: The KEYPAD FIRE condition is enabled by pressing the 7 and 9 keys at the same time when Central Station transmission is ENABLED by the entry in Question 34, Locations 1 and 2. KEYPAD FIRE is always audible when enabled. It is DISABLED by entering an AA in Question 34, Locations 1 and 2.

INSTANT ARMING ENABLE - If this option is selected, then INSTANT Arming is permitted within the system and becomes operational after the exit delay time has passed.

NOTE: This option does not affect the STAY/INSTANT function.

STAY/INSTANT ARMING ENABLE - If this option is selected, then STAY/INSTANT Arming is permitted within the system and becomes operational after the exit delay time has passed. **NOTE:** This option does not affect the INSTANT function.

**Question 12, L4 - Temporal Bell, Armed While Faulted, AC/LB Sounder Audible,
and User-On-line Downloading** ....Default = 6

Select a digit from the following table.

NOTE: The checkmarks highlight which options are selected.

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

TEMPORAL BELL - A fire alarm causes the bell to sound 3 tones then pause, 3 tones then pause, etc. This function must be selected to meet NFPA 72 requirements for fire alarm applications.

ARMED WHILE FAULTED - Allows the system to arm even if the exit door or exit route (PIR coverage) is faulted. The faulted zones must be restored by the end of the exit time; if not, an alarm will occur.

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

USER ON-LINE DOWNLOADING - If this option is programmed, the user initiates a remote communications session with the CS downloading computer at the Central Station location. On-line downloading allows the user to call the office and discuss the action required, and allows the CS operator to complete the request while on-line with no additional telephone call needed. Pressing **[#] + [CODE]** enables this ON-LINE downloading option. Refer to **USER ON-LINE DOWNLOADING** in Section 5: System Operation for the procedure.

USER UNATTENDED DOWNLOADING – If this option is programmed, the user can initiate an unattended download from the CS Downloading Computer by pressing [#] + [0] at the keypad. Refer to **USER ON-LINE DOWNLOADING** in Section 5: System Operation for the procedure.

QUESTION 13
SYSTEM OPTIONS .... **DEFAULT = 3000**

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

Question 13, L1 - Dial Delay Doubled, Display Aborted, CS Test Sounder Ring Back,
Dial Tone Detection .... **Default = 3**

Enter the digit for the desired system options from the table below.

NOTE: The checkmarks highlight which options are selected.

Digit	DIAL DELAY DOUBLED	DISPLAY ABORTED	CS TEST SOUNDER RING BACK	DIAL TONE DETECTION
0	Disabled	Disabled	Disabled	Disabled
1	✔			
2		✔		
3	✔	✔		
4			✔	
5	✔		✔	
6		✔	✔	
7	✔	✔	✔	
8				✔
9	✔			✔
A		✔		✔
B	✔	✔		✔
C			✔	✔
D	✔		✔	✔
E		✔	✔	✔
F	✔	✔	✔	✔

DIAL DELAY DOUBLED - If selected, will double the dial delay programmed in zones (Questions 17–23, Location 4) from 15 seconds to 30 seconds.

DISPLAY ABORTED - Displays on a LCD keypad that the user has aborted an alarm. An abort message occurs when a user cancels an alarm during dial delay. This option will only apply to zone(s) that are enabled for Dial Delay (Question 17-23, L4).

CS TEST SOUNDER RING BACK - Determines if the keypad will beep 4 times to acknowledge a successful CS test transmission to Central Station.

DIAL TONE DETECTION - If enabled, panel waits four seconds. If no dial tone is detected, the panel hangs up and moves to the next dialer attempt. It will continue in this fashion until all dialer attempts programmed are completed. If *not* enabled, the panel waits four seconds and dials, whether or not there is a dial tone.

**Question 13, L2 - Only User 4 Sends Opening/Closing, CS Test Every Hour
When Armed**..**Default = 0**

Enter the digit for the desired system options from the table below.

NOTE: The checkmarks highlight which options are selected.

Digit	ONLY USER 4 SENDS O/C	CS TEST EVERY HOUR WHEN ARMED	SILENT EXIT
0	Disabled	Disabled	Disabled
1	✔		
2		✔	
3	✔	✔	
4			✔
5	✔		✔
6		✔	✔
7	✔	✔	✔

ONLY USER 4 SENDS O/C - If enabled, and opening and closing codes are also enabled. Only user 4 may report openings and closings.

CS TEST EVERY HOUR WHEN ARMED - Enables the panel to send a test code every hour to Central Station if the panel is armed and a test code is programmed.

Question 13, L3- Reserved (Not Used)..**DEFAULT = 0**
Question 13, L4- Reserved (Not Used)..**DEFAULT = 0**

QUESTION 14
TRIGGERS 1 & 2 ....**DEFAULT = 0102**

The control panel contains two voltage level output triggers. To select a trigger type, enter the two digits in either L1 and L2 or L3 and L4 for the desired trigger type. Triggers can be selected as Non-Inverting or Inverting (see description on next page). Consult the table below to determine the trigger types available.

Question 14, L1 & L2 - Define Trigger #1 ....**Default = 01**
Question 14, L3 & L4 - Define Trigger #2 ....**Default = 02**

NOTE: For Smoke Detector Power, enter 00 in Locations 1 and 2.

Digits		TRIGGER TYPE DEFINITION	DESCRIPTION OF OPERATION
NON-INVERT	INVERT		
00	N/A	Smoke Detector Power	
01	81	Burglary Bell	Steady follows burglary bell timeout
02	82	Fire Bell	Steady follows fire bell timeout
03	83	Duress	2-second pulse following duress code
04	84	Keypad Tamper	ON w/Keypad Tamper; OFF w/code
05	85	24-Hour Trouble	Follows 24-Hour Trouble keypad sounder
06	86	Fire Trouble	Follows Fire Trouble keypad sounder
07	87	Day Trouble	Follows Day Trouble keypad sounder
08	88	24-Hour Alarm	AUDIBLE: follows bell; SILENT: 2-second pulse
09	89	Keypad Fire	AUDIBLE: follows bell; SILENT: 2-second pulse
0A	8A	Keypad Emergency	AUDIBLE: follows bell; SILENT: 2-second pulse
0B	8B	Keypad Panic	AUDIBLE: follows bell; SILENT: 2-second pulse
0C	8C	Strobe	After an Alarm: follows arming LED until disarmed
0D	8D	AC Loss	Follows AC after 15-minute delay
0E	8E	Low Battery	Follows Low Battery
0F	8F	Arming State	Follows Arming state

Digits		TRIGGER TYPE	DESCRIPTION OF OPERATION
NON-INVERT	INVERT	DEFINITION	
10	90	Bypass	Follows any zone bypassed
11	91	Entry	Follows entry time
12	92	Exit	Follows exit time
13	93	Instant	Follows Instant Arming state
14	94	Stay	Follows Stay Arming state
15	95	Ready	Follows Ready state
16	96	Door Strike	5-second pulse on entry of door strike code
17	97	Communication Failure	Follows Communication Failure LED
19	99	Keypad Sounder	Follows keypad sounder
1A	9A	Ground Start	Follows Dialing (Trigger #1 only)
1B	9B	Glassbreak Reset	Resets Latched Glassbreak detectors
1C	9C	Exit Error	Follows Exit Error
1D	9D	Auto Test Time	Momentary pulse when CS Test is transmitted
1E	9E	Listen In	Active after receiving a CS "kissoff" signal to enable listening device
1F	9F	Line Seizure	Panel seizes the phone line upon alarm and stays on while panel is reporting to CS
20	A0	Chime	2-second pulse when a zone is faulted
21	A1	Alarm Restore	Trigger ON when burg alarm sounds; OFF when all burglary zones have sent CS restore
22	A2	Fire/Latch	Can turn on aux. devices upon fire alarm trigger ON with fire bell, OFF with CS fire restore

NOTE: If Glassbreak Reset trigger type (1B/9B) is selected, then pressing [✳] on the keypad will activate the trigger. The trigger outputs are limited to approximately 50mA each.

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

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

QUESTION 15
AUTO ARMING TIME.. **DEFAULT = 1700**
If auto arming has been enabled, then enter the hour and minute in military time (24-hour clock) as follows:

Question 15, L1 & L2 - Hour of Day (00 - 24)... **Default = 17**
Enter the hour of the day in military time: 12 AM - 12 PM = (00 - 24).

NOTE: Quick Rule: 00 = Midnight; for times after 12 noon, add 12 hours to obtain the hour.
Example: 1 AM would be entered as 01; 5 PM would be entered as 17.

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

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

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

QUESTION 16
CS TEST TIME .... **DEFAULT = 0300**
If the control panel transmits a system TEST at a specific time of day, enter the hour and minute in military time (24-hour clock) as follows:
Question 16, L1 & L2 - Hour of Day (00 - 24) .... **Default = 03**
Enter the hour of the day in military time: 12 AM - 12 PM (00 - 24).
NOTE: Quick Rule: 00 = Midnight; for times after 12 noon, add 12 hours to obtain the hour.
Example: 3 AM is entered as 03; 7 PM is entered as 19.

Question 16, L3 & L4 - Minute within Hour (00 - 59) .... **Default = 00**
Example: To transmit at 5:30 PM, enter 17 into L1 and L2, and 30 into L3 and L4.

NOTE: The CS Test interval is selected in Question 10, Location 3 and is enabled in Question 31, Locations 3 and 4.

QUESTIONS 17 – 23
ZONE PROGRAMMING
Questions 17 - 23 represent all the options related to programmable zones 1-7. There are four Locations (L1-L4, starting on next page) in each question, which define various zone options. The zones are comprised of as many individual sensors as desired.

QUESTION 17
ZONE 1 .... **DEFAULT = 2060**

Zone 1 = EOL Audible Delay Zone with Entry Timer #1, Bypass Enable, and Report Restore

QUESTION 18
ZONE 2 .... **DEFAULT = 5068**

Zone 2 = EOL Audible Interior Follower Zone with Entry Timer #1, Bypass Enable, and Report Restore

QUESTION 19
ZONE 3 .... **DEFAULT = 0068**

Zone 3 = EOL Audible Instant Zone with Entry Timer #1, Bypass Enable, and Report Restore

QUESTION 20
ZONE 4 .... **DEFAULT = 0068**

Zone 4 = EOL Audible Instant Zone with Entry Timer #1, Bypass Enable, and Report Restore

QUESTION 21
ZONE 5 .... **DEFAULT = 0068**

Zone 5 = EOL Audible Instant Zone with Entry Timer #1, Bypass Enable, and Report Restore

QUESTION 22
ZONE 6 .... **DEFAULT = 0068**

Zone 6 = EOL Audible Instant Zone with Entry Timer #1, Bypass Enable, and Report Restore

QUESTION 23
ZONE 7 .... **DEFAULT = A140**

Zone 7 = N/O Audible 24-Hour zone with Report Restore

Questions 17 - 23, L1 - Zone Type Descriptions
Location 1 defines the zone type for each zone. Enter the digit from the table below.
NOTE: The checkmarks highlight which options are selected.

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

Burglary (Controlled) Zones

DELAY (EXIT/ENTRY) - This is the industry standard exit/entry zone. When the system is armed, exit time begins. After exit time 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 is an alarm condition, at which time it will pulse. Delay zones will activate instantly, after exit time expires, when the system is armed in the INSTANT mode.

INTERIOR FOLLOWER - All interior zones have exit delay time upon system arming.
All interior zones will have entry delay time if a delay zone is violated first. If this zone is violated first, however, it will generate an immediate alarm. Interior zones will automatically be bypassed if the system is armed in the STAY mode.

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

UL   AUTO STAY functions **cannot** be programmed for UL installations.

Stay Arming Options

AUTO STAY - This zone type will automatically be bypassed if the system is armed in the AWAY mode and any delay zone has **not** been violated during exit delay time. The LCD keypad will display an AUTO STAY indication. However, this zone is not bypassed if armed in STAY mode.

MANUAL STAY - This zone type will be bypassed when the system is armed in the STAY mode. It is **not** automatically bypassed if the system is armed in the AWAY mode and any delay zone has not been violated during exit delay time.

AUTO & MANUAL STAY - This zone type will automatically be bypassed if the system is armed in the AWAY mode and any delay zone has **not** been violated during the exit delay time. The LCD keypad will display an AUTO STAY indication. Also, this zone is bypassed if armed in STAY mode.

EXIT ERROR WARNING - This option is always enabled for all delay or interior type zones. At the end of exit time, a 1-second window is started. If any delay or interior zones are violated after arming within this window (exit time expires and entry delay time begins), the burglary bell and sounder will be turned on, forcing the user to enter their code to prevent a false alarm transmission. This helps avoid the common false alarms that take place after arming the system. An exit error message is transmitted after entry time expires. If the system is disarmed prior to the end of entry time, no message will be transmitted to CS (Question 35, L1).

24-Hr. Zones

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

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

In the event the fire zone experiences an open, the system indicates fire trouble by pulsing the keypad zone LED and sounder slowly. The system trouble code (followed by the zone code) is reported to the CS.
Fire without Verification zones do not follow verification. They will trip instantaneously upon a violation.

Fire zones will also cause a TROUBLE condition if the bell or sounder is disconnected.

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

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

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

24-HR. TROUBLE - This zone type is always active, independent of the system arming status. Programming options include audible (PULSING KEYPAD SOUNDER) or silent, with or without restore codes. Upon violation, the zone LED will pulse slowly. TROUBLE condition must exist for 15 seconds before a transmission will occur. The keypad display and sounder will clear upon zone restoration.

Fire zones cannot be bypassed. 24-HOUR TROUBLE must **NOT** be used for fire/burglary protection.

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

KEYSWITCH - Keyswitch zones toggle the arming status of the system. A keyswitch automatically arms the system in the STAY mode if the keyswitch is held for three seconds or more; it arms in AWAY mode if held for 2 seconds or less.

Keyswitch zone operation has **NOT** been tested by Underwriters Laboratories.

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

L2 contains the loop EOL type and the entry delay timer to be used for the zone. Enter the digit from the table below.

NOTE: The checkmarks highlight which options are selected.

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

* Digits 3, 7, and F apply to this table **only** if digit 4 is selected in Question 17, L1 (Interior Follower). If Question 17, Location 1 is selected for any option except 4, then options 3, 7, and F above will not apply to this table.
If a zone type 4 (Questions 17 - 23, Location 1) is selected, then entering a 3, 7 or F in L2 will stop that zone from reporting a BYPASS message when STAY armed. This BYPASS message in STAY arm mode is dependent upon the selection of options in Question 09, L3 that enable ARMING BYPASS DISPLAY reporting.

LOOP TYPE - Choose between EOL supervision and N/O, N/C operation.

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

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

INTERIOR ZONE w/o STAY BYPASS - When enabled (refer to paragraphs following the "*" above and also Question 17 - 23, L3 that follows on next page), digits 3 and 7, EOL supervision and entry timer #1 become available. For digit F, EOL supervision, Fast zone reporting capability, and entry timer #2 are made available.

Question 17 - 23, L3 - Cross Zone, Bypass, & Restore
Enter the digit from the table below.

NOTE: The checkmarks highlight which options are selected.

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

CROSS ZONE - When one of the zones enabled for cross zones is tripped, then a timer is started. If the second zone of the cross zones trips and the timeout has not expired, then an alarm is sent to the CS, the bell activates, and the keypad will sound and display accordingly.

UL   CROSS ZONE programming cannot be used in UL installations.

BYPASS - If this option is selected, then the zone can be bypassed, either individually or by group (refer to Question 09, Locations 1 and 2).

⚠️   Fire zones **cannot** be bypassed. 24-Hour zones **can** be bypassed; however, they **cannot** be unbypassed if a violation exists on their zone terminals.

RESTORE - If this option is selected on a burglary zone, then the programmed restore code will be reported upon bell cutoff, assuming the loop is restored. The restore code will also be reported if the system is disarmed during an alarm. This enables fire and burglary zones to report restores. The restores will report in accordance with what is programmed in Question 7, Location 4. The code is also enabled in Question 32, Location 2.

Question 17 - 23, L4 - Audible, Silent, Day, Chime, Dialer Delay
L4 contains the following attributes. Enter the digit from the table below.

NOTE: The checkmarks highlight which options are selected.

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

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

DAY FEATURE (Controlled Zones) - If a zone with this option is violated while the system is disarmed, the keypad sounder and zone LED will pulse for as long as the violation remains. In addition, the DAY TROUBLE code will be transmitted to the Central Station. The sounder can be silenced through entry operation of any valid user code. While the system is armed, a DAY zone will act as an alarm when violated.

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

NOTE: If enabled, the user can control the system chime by using the quick command [#] 6.

DIALER DELAY (Controlled Zones) - If this option is selected, the system will allow a 15-second delay before dialing, allowing the end user to ABORT the transmission. If this option is not selected, any alarm condition will result in an immediate transmission that cannot be aborted. Dialer delay time can be doubled. Refer to Question 13, L1.

UL   For UL installations, DIALER DELAY may **not** be used.

QUESTIONS 24 - 27
ZONE CS CODES

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

QUESTION 24
CS CODES for ZONES 1 & 2... **DEFAULT = 6142**

Question 24, L1 & L2 - Zone 1 .... **Default = 61**

Question 24, L3 & L4 - Zone 2 .... **Default = 42**

QUESTION 25
CS CODES for ZONES 3 & 4... **DEFAULT = 3334**

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

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

QUESTION 26
CS CODES for ZONES 5 & 6... **DEFAULT = 3536**

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

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

QUESTION 27
CS CODES for ZONES 7 .... **DEFAULT = 27AA**

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

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

If a zone is selected as a Keyswitch zone type, and a two-digit reporting format is selected for openings/closings, the second digit reported will be the second digit of the zone CS code. TO REPORT THE USER NUMBER CORRECTLY, THE FIRST DIGIT OF THE ZONE CS CODE MUST BE "0."

Zone Alarm Codes

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

STANDARD FORMAT (3x1 or 4x1): Enter the desired single-digit alarm code in the first location for the specific zone. The value placed in the second digit will not be used.

EXTENDED (3x1 Ext. or 4x1 Ext.): Enter the desired first digit of the alarm code into the first digit of the particular zone and the second digit into the second location.

PARTIAL EXTENDED (3x1 Part. Ext. or 4x1 Part. Ext.): Enter the desired digit in both Locations for the zone. This will generate a single-digit transmission for alarms and troubles (the second digit will not be used) and extended transmissions for all system conditions such as restores, bypasses, openings/closings, etc. (the second digit will be used).

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

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

ADEMCO 4x1 EXPRESS: Enter the desired single-digit alarm code in the first location for the specific zone. The value placed in the second digit will not be used.

ADEMCO 4x2 EXPRESS: Enter the desired first digit of the alarm code into the first location the second digit into the second location.

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

NOTE: For more information on CS Reporting Formats, refer to *Appendix A.*

QUESTION 28
CS CODES for AMBUSH and AC LOSS.. **DEFAULT = AAA1**

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

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

If an ambush code is defined, then user 15 is the ambush code. The rules regarding dialer format apply here. If transmission is not desired, then program AA in locations L1 and L2.

NOTE: AMBUSH transmissions are immediate and not abortable if programmed.

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

The programming rules regarding dialer format apply here. AC LOSS will transmit a dedicated PID code of 301 if PID format is selected. If transmission is not desired, then program AA in locations L3 and L4.

NOTE: AC LOSS is reported 15 minutes after detection when programmed.

AC LOSS SOUNDER DISABLE: If the first digit (L3) of the AC Loss code is A, then to disable the keypad sounder during AC loss, enter an A into the second digit (L4). The keypad display will still indicate AC loss.

QUESTION 29
CS CODES for PANIC and LOW BATTERY .... **DEFAULT = 68AA**
There are 4 locations (L1-L4) in this question, as follows:

Question 29, L1 & L2 - Panic Code .... **Default = 68**
The programming rules regarding dialer format apply here. If transmissions are not desired, then program AA in locations L1 and L2.
NOTE: PANIC transmissions are immediate and not abortable when programmed.

Question 29, L3 & L4 - Low Battery Code .... **Default = AA**
The programming rules regarding dialer format apply here. If transmissions are not desired, then program AA in locations L3 and L4. 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.

> If transmission is in PID format, a dedicated PID code of 309 will be transmitted for low-battery conditions.

QUESTION 30
CS CODES for OPEN/CLOSE and WALK TEST .... **DEFAULT = AAAA**
There are 4 locations (L1-L4) in this question. Entry of AA into these locations means that openings and closings are not desired. If a dialer format other than standard is programmed, then the second digit transmitted will be the user number. If PID format is used, then a dedicated code of 402 will be transmitted.

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

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

Question 30, L3 & L4 - Walk Test Code .... **Default = AA**
Codes are transmitted to the Central Station when a Walk Test is performed.

> If a zone is selected as a Keyswitch zone type and a two-digit reporting format is selected, for openings/closings the second digit reported will be the second digit of the zone CS code.
> To report the user number correctly, the first digit of the zone CS code must be "0."

QUESTION 31
CS CODES for CANCEL and CS TEST .... **DEFAULT = BAAA**
This question contains 4 locations for entering CS transmission codes, as follows:

Question 31, L1 - Cancel Code .... **Default = B**
A cancel code can be transmitted to the Central Station if, after violation of a controlled zone, a user code is entered. If the zone is programmed for restore, then the restore code can be transmitted when the loop status has returned to normal, when bell timeout and loop are normal, or when a code is entered. Entry of A in this field indicates that cancel codes are not transmitted. In formats requiring two digits, the user number functions as the second digit.
NOTE: The event code for PID transmission is 406.

Question 31, L2 - Reserved - NOT USED .... **Default = A**
Question 31, L3 & L4 - CS Test Code .... **Default = AA**

In these locations, enter the desired Central Station code for transmission of the system TEST code. The frequency and type of test is defined in Question 10, Location 3. Entry of AA indicates that the system TEST is not transmitted.

NOTE: The event code for PID transmission is 602.

QUESTION 32
CS CODES for BYPASS, RESTORE (FIRE & DAY TRBL.).. **DEFAULT = AEFA**
There are 4 locations (L1-L4) in this question, as follows:
Question 32, L1 - Bypass Code...**Default = A**

This is the single-digit system BYPASS CODE reported to the Central Station if a zone is bypassed upon arming. Entry of 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 zone's code.

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

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

Question 32, L3 - Fire Trouble Code...**Default = F**

This is the single-digit system FIRE TROUBLE CODE reported to the Central Station. If a two-digit format has been programmed, then this code will be followed by the second digit of the respective zone's code. Entry of A indicates that troubles are not transmitted. If PID format is used, a dedicated event code of 373 will be transmitted.

Question 32, L4 - Day Trouble Code...**Default = A**

This is the single-digit system DAY TROUBLE CODE reported to the Central Station. If a two-digit format has been programmed, then this code will be followed by the second digit of the respective zone's code. Entry of A indicates that troubles are not transmitted. If PID format is used, a dedicated PID code of 156 will be transmitted.

If a zone is selected as a Fire Zone Type, the Fire Trouble CS Code (Question 32, Location 3) must be enabled along with the Restore CS Code (Question 32, Location 2).

QUESTION 33
CS CODES for KEYPAD FIRE and KEYPAD AUXILIARY .... **DEFAULT AAAA**
There are 4 locations (L1-L4) in this question, as follows:

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

L1 and L2 enables the KEYPAD FIRE condition code, which will be transmitted upon activation (by pressing the 7 and 9 keys on the keypad at the same time). This code can vary among any of the zones programmed as fire.

NOTE: To disable the keypad fire condition and prevent CS reporting, enter AA. The keypad fire condition is always audible.

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

L3 and L4 is the code transmitted to the CS for KEYPAD AUXILIARY condition (by pressing 1 and 3 on the keypad). To disable the keypad auxiliary CS reporting, enter AA.

NOTE: The keypad auxiliary condition can be silent or audible (keypad sounder only) based on the Question 13, Location 1.

QUESTION 34
CS CODES for DOWNLOAD and KEYPAD TAMPER.. **DEFAULT = AAAA**
This question contains 4 locations: L1 and L2 contain the download code, while L3 and L4 contain the CS keypad tamper code.

Question 34, L1 & L2 - Download Code .... **Default = AA**
This code will be reported whenever the panel has been downloaded. Enter AA to disable.

Question 34, L3 & L4 - Keypad Tamper Code .... **Default = AA**
If 21 digits are entered through the keypad without entry of a valid user code, then the panel will transmit a silent alarm to the Central Station. If a keypad tamper report code is entered, it will be transmitted to the Central Station. If a two-digit CS transmission code is selected (for example, 4x2 or Extended), then both digits will be transmitted. To disable CS transmission of keypad tamper, enter AA.

QUESTION 35
CS CODES for RECENT CLOSE, EXIT ERROR,
and SWINGER SHUTDOWN.. **DEFAULT = 456A**
This question contains 4 locations for entering CS transmission codes, as follows:

Question 35, L1 - Exit Error Code .... **Default = 4**
An exit fault condition exists if a violation of a zone occurs after system arming but before expiration of the exit time. If this code is activated, then the exit fault code is transmitted in addition to the corresponding zone alarm condition. To disable the exit error transmission code, enter A into Location 1.

NOTE: For Point ID transmissions, an event code of 457 is transmitted.

Question 35, L2 - Recent Close Code .... **Default = 5**
This code is transmitted if an alarm condition occurs within 5 minutes of system closing. Entry of A into this location will prevent transmission of this condition.

NOTE: The event code for PID transmission is 459.

Question 35, L3 - Swinger Shutdown Code .... **Default = 6**
This code is for CS transmission if swinger shutdown has occurred. Swinger shutdown is programmed in Question 7, Location 4. Entry of A into this location will prevent transmission of this condition.

Question 35, L4 - Reserved - NOT USED .... **Default = A**

Zone Descriptor Programming
The LCD keypads have the capability to display 12-character zone descriptors that can be programmed directly through the keypad. The zone descriptors appear on the first portion of the second line of LCD display. They are entered as Questions 36 - 42. (Appendix D contains the System Programming Worksheet.)

NOTE: These descriptors can be accessed only by an LCD keypad or PC downloader software.
Program zone descriptors in the following questions:

QUESTION 36
ZONE 1 DESCRIPTOR..**DEFAULT = ZONE 1**

QUESTION 37
ZONE 2 DESCRIPTOR..**DEFAULT = ZONE 2**

QUESTION 38
ZONE 3 DESCRIPTOR...**DEFAULT = ZONE 3**

QUESTION 39
ZONE 4 DESCRIPTOR...**DEFAULT = ZONE 4**

QUESTION 40
ZONE 5 DESCRIPTOR...**DEFAULT = ZONE 5**

QUESTION 41
ZONE 6 DESCRIPTOR...**DEFAULT = ZONE 6**

QUESTION 42
ZONE 7 DESCRIPTOR...**DEFAULT = ZONE 7**

Example: To program the descriptor for zone 3, enter ✶38 to access Question 38.

When programming the English zone descriptors, use the following keystrokes:

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

Data Entry via Keypads

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General

This section describes the keystrokes used to perform keypad programming. It also explains how to interpret the data displayed on LED keypads (XK-406, XK-508, XL-4600SM, F6615) and LCD keypads (XK-5LC, XK-7LC) during programming operations.

NOTE: Actual keypad programming should be performed only after completion of the programming sheet.

How to Enter Programming Mode via Either LED or LCD Keypads

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

TO ENTER INSTALLER PROGRAMMING: press [CODE] + [✶] + [INSTALLER] + [1]

where:

[CODE]	CODE button
[✶]	Star (✶) button
[INSTALLER]	4-digit installer code (default = 2468)
[1]	"1" button. This places you in Installer Mode 1.

What You See on the LED Keypads

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 follows:

XK-508

XL-4600SM
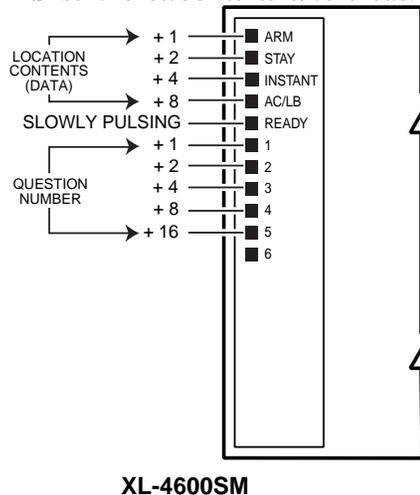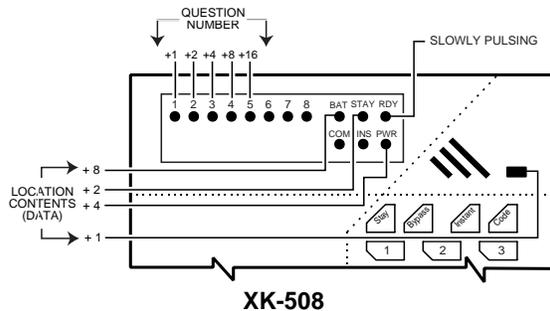
NOTE: The LED keypads **DO NOT** display the current location (position within the question). You must keep track of the location within the question or else start from the beginning and move to the desired position using the [#] button. **However,** the LCD keypads display the current location (see next page).

What You See on the LED Keypads (continued)

Refer to NOTE at bottom of previous page:

F6615
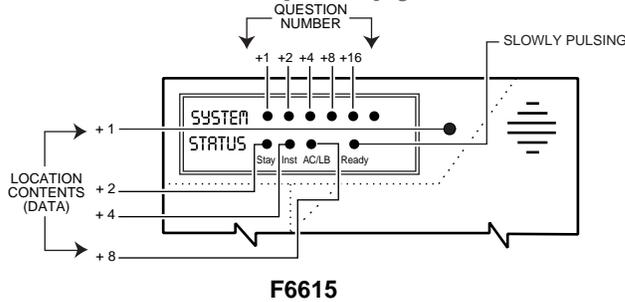
QUESTION NUMBERS = ZONE 1-6 LEDs:

There are 36 total questions, with multiple data entry locations. Zone 1 through 6 LEDs display the current question number only. The question number is the total you get when you ADD the values of all zone LEDs that are ON. Refer to the previous pages.

EXAMPLES: Zone 1 ON, Zones 2-6 OFF
QUESTION 01
Zone 1 ON, Zone 2 ON, Zones 3-6 OFF
QUESTION 03
Zone 1 OFF, Zones 2-5 ON, and Zone 6 OFF
QUESTION 30

LOCATION DATA CONTENTS = ARM, STAY, INST, AC/LB LEDs:

All questions have 4 locations except for questions 01, 02, and 03, which have 16 locations. These four LEDs display the **data** that resides in each location within the current question, not the location itself. Referring to the table that follows and the above explanation, the binary value associated with each LED must be added to calculate the total data for each location.

EXAMPLES: ARM LED ON, STAY, INST, and AC/LB LEDs OFF
DATA = 1
ARM LED ON, STAY LED ON, others OFF
DATA = 3

The following table displays binary values that you will see on these LEDs for the letters A-F, which may be entered in some locations on the program sheet.
To enter the characters A - F, press the **[CODE]** key and the number 1 for an A; **[CODE]** plus 2 for B; **[CODE]** plus 3 for C; etc.

LETTER	NUMERICAL VALUE	RESULTING LED STATUS
A	10	ARM OFF, STAY ON, INST OFF, AC/LB ON
B	11	ARM and STAY ON, Zone 11 OFF, AC/LB ON
C	12	ARM and STAY OFF, INST and AC/LB ON
D	13	ARM ON, STAY OFF, INST and AC/LB ON
E	14	ARM OFF, STAY, INST, and AC/LB ON
F	15	All four LEDs ON

What You See on the LCD Keypad

Upon entering the installer keypad programming mode, the following will be displayed on the LCD keypads:

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

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

How to Enter Data

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

MOVEMENT BETWEEN QUESTIONS

System program mode starts with Question 01 displayed. Random jumps to any question can be made by pressing the [✶] (star) button and the 2-digit question number.

Questions can be accessed randomly or sequentially.

Example: To go to Question 07, press ✶**07**.

The question number is displayed by zone 1-6 LEDs. The other LEDs display the contents of the first location in that question.

MOVEMENT WITHIN QUESTIONS

Zone 1-6 LEDs display the question number and ARM, STAY, INST, and AC/LB 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 [#] button.

ARM, STAY, INST, and AC/LB LEDs will display the data in each location as the [#] button is pressed. To revert to the data located in L1, press ✶06; if you're in this first location and want to edit the data in L4, press the [#] button three times in succession.

DATA ENTRY

To alter the value in any location, enter the desired digit from the program sheet and press the [#] button.

> The [#] button **must** be pressed after the entry of the desired digit. The system will not program the digit until the [#] button is pressed, so that if a mistake is made it can be changed.

Numeric values of 0-9 can be entered by pressing the respective keypad button.

Press the **CODE** button followed by 1-6 for values A-F, as follows:

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

Example: To enter an A, press [CODE] button followed by [1] button.

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 three seconds, then the system will return to normal daily operation.

QUESTION ACKNOWLEDGMENT

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

Five beeps will be generated if an invalid input is entered. In that case, you remain at the question number and location just prior to the input error.

SUMMARY OF SYSTEM PROGRAMMING

To Enter Programming: [CODE] + [✶] + [4-digit Installer Code]

To Skip a Question: [✶] + [2-digit Question Number]

To Move Within a Question: Press the [#] button 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: [STAY] button

Summary of Keypad Functions

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User Functions

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

Installer Modes

KEYPAD PROGRAMMING:	[CODE] [✶] [Installer code] [1]
SYSTEM DEFAULT:	[CODE] [✶] [Installer code] [1] then press [1] and [3] at the same time
USER CODE DEFAULT:	[CODE] [✶] [Installer code] [1] then press [7] and [9] at the same time
WALK TEST:	[CODE] [✶] [Installer code] [2]
WALK TEST w/ BELL	[CODE] [✶] [Installer code] [3]
SYSTEM LOG VIEW:	[CODE] [✶] [Installer code] [4]
SYSTEM DEFAULT:	[CODE] [✶] [Installer code] [7]
UNATTENDED DOWNLOAD:	[CODE] [✶] [Installer code] [8]
	OR
	[#] [0]
ON-LINE DOWNLOAD:	[CODE] [✶] [Installer code] [9]

Central Station Reporting Formats

● ●

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

In transmitting data to the CS receiver, the first event that occurs 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 (1400 Hz, 2300 Hz, or HiLo) back to the digital communicator. After receiving the "handshake" frequency, the digital communicator will transmit the data in the format programmed in Question 04, Locations 1, 2, and 3 (either in pulse or DTMF). Assuming the CS receiver verifies the data transmission as valid (after 2 successful rounds of data or 1 valid parity round), it will transmit a "kissoff" frequency back to the digital communicator. This causes the communicator to stop transmitting, unless more data is available, in which case additional data transmissions and kissoffs will occur. After the final kissoff, the CS receiver will release the phone line and process the data to its display and associated peripherals (computer and printer). If for any reason the 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 "Comm Fail" (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.

Standard (3x1 or 4x1)

The Standard Reporting Format is **AAA E or AAAA E**, where:

AAAA = Three- or four-digit account number (Program Questions 5 and 6)

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

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

Examples:

3x1 w/o PARITY
123 3 (1st round)
123 3 (2nd round)
123 3 (resulting data)

3x1 w/ PARITY
123 3 6 (single round)
123 3 (resulting data)

4x1 w/o PARITY
1234 3 (1st round)
1234 3 (2nd round)
1234 3 (resulting data)

4x1 w/ PARITY
1234 3 2 (single round)
1234 3 (resulting data)

Parity is a number derived automatically by the dialer utilizing a mathematical formula (modulo 15). Example: 123 3 adds up to 9. This number is subtracted from the next highest number that is a multiple of 15; in this example, that is 15; 15 - 9 = 6. If the CS receiver accepts an even parity digit, it considers the data transmission valid, delivers a kissoff and processes the data. The parity digit is not displayed. Its only purpose is for validation of data transmitted. It is not a programmable digit; it is generated automatically by the dialer when the parity option is selected in programming Question 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 than without it.

Extended (3x1 Ext. or 4x1 Ext.)

The Extended Reporting Format is **AAA EZ** or **AAAA EZ**, where:

AAAA = Three- or four-digit account number (Program Questions 08 and 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 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	**3x1 Ext. w/ PARITY**	
123 3 (1st round)	123 3 (2nd round)	123 3 6 (1st round)
333 1 (3rd round)	333 1 (4th round)	333 1 5 (2nd round)
123 31 (resulting data) Burglary Zone 1		123 31 (resulting data) Burglary Zone 1

4x1 Ext. w/o PARITY	**4x1 Ext. w/ PARITY**	
1234 3 (1st round)	1234 3 (2nd round)	1234 3 2 (1st round)
3333 1 (3rd round)	3333 1 (4th round)	3333 1 2 (2nd round)
1234 31 (resulting data) Burglary Zone 1		1234 31 (resulting data) Burglary Zone 1

Partial Extended (3x1 Part. Ext. or 4x1 Part. Ext.)

The Partial Extended Reporting Format is **AAA EZ** or **AAAA EZ**, where:

AAAA = Three- or four-digit account number (Program Questions 08 and 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) for the first of the 2-digit reporting code; for an extended message, enter a hexadecimal digit (B - F) for 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)	**3x1 Part. Ext. w/o PARITY (Restore)**	
123 3 (1st round)	123 E (1st round)	123 E (2nd round)
123 3 (2nd round)	EEE 1 (3rd round)	EEE 1 (4th round)
123 3 (resulting data) Burglary	123 E1 (resulting data) Burglary	

3x2 or 4x2

The 3x2 or 4x2 Reporting Format is **AAA EZ** or **AAAA EZ**, where:

AAAA = Three- or four-digit account number (Program Questions 08 and 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

4x2 w/o PARITY
1234 31 (1st round)
1234 31 (2nd round)
1234 31 (resulting data) Burglary Zone 1

4x2 w/ PARITY
1234 31 1 (1st round)
1234 31 (resulting data) Burglary Zone 1

FBII Superfast (4x3x1)

The FBII Superfast Reporting Format is **AAAA AZZ S**, where:

AAAA = Four-digit account number (Program Questions 05 and 06)

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

ZZ = Zone or user identifier; it is the second of the 2 programmable reporting code digits

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

This format is commonly known as 4x3x1. A total of 9 digits (including the parity digit) are sent in DTMF. It enables reporting of 256 (00 - FF) unique zone or user identifiers instead of the 15 possible identifiers of most other pulse formats. In addition, it transmits at a much greater speed than the conventional pulse formats, since it uses DTMF (touch-tones) instead of pulses to transmit the data, and it always sends a parity digit.

On alarms, openings, and closings, the alarm type digit will be the same as the signal type. This will indicate the type of activity or condition that has occurred. However, on bypasses, restores, and troubles, the alarm type will not be the same as the signal type. Instead, the signal type will change indicating the current condition of the zone. This is a unique feature of this format that allows more intelligent reporting of the activity occurring in the system. For instance, the following unique messages can be transmitted:

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

ADEMCO 4x1 Express

The 4x1 Express Reporting Format is **AAAA E**, where:

AAAA = Three- or four-digit account number (Program Questions 05 and 06)

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

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

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

ADEMCO 4x2 Express

The 4x2 Express Reporting Format is **AAAA EZ**, where:

AAAA = Three- or four-digit account number (Program Questions 05 and 06)

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

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

This format transmits in DTMF a total of 7 digits (including the parity digit). This format is similar to the Extended and 4x2 formats in that it can transmit a total of 225 individual reporting events. However, its advantage is speed because it transmits touch-tones instead of pulses, and it always sends a parity digit.

Example: 1234 31 1 (1st round)   1234 31 (resulting data) Burglary Zone 1

ADEMCO Point ID

The Point ID Reporting Format is **AAA 18 QXYZ GG ZZZ**, where:

AAAA = Four-digit account number (Program Questions 05 and 06)

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

    Q = Event qualifier, which gives specific event information:

            1 = New Event or Opening

            3 = New Restore or Closing

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

    GG = Group number; this panel will report 01.

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

This format is also known as ADEMCO Contact ID. A total of 16 digits (including the parity digit) are sent in DTMF. It enables reporting of 999 (001 - 999) unique zone or user identifiers instead of the 15 possible identifiers of most other pulse formats. This feature allows the full reporting capability of this system (7 zones and 15 users). In addition, it transmits at a much greater speed than the conventional pulse formats, since it uses DTMF (touch-tones) instead of pulses to transmit the data, and it always sends a parity digit. Its main advantage over all the other formats is its large number of event codes (see tables below) with the ability to pinpoint an event (alarm, trouble, bypass, restore, etc.) to a specific zone (up to 7 zones in this system) and to report openings/closings for many users (up to 15 users in this system).

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

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

FIRE ZONE TYPES		
Digit	**EVENT CODE**	**ENGLISH OUTPUT AT CS RECEIVER**
0	110	Fire Alarm
1	111	Smoke
2	112	Combustion
3	113	Water Flow
4	114	Heat
5	115	Pull Station
6	116	Duct
7	117	Flame
8	140	General Alarm
9	150	24-Hour Non-Burg
A	158	High Temperature
B	159	Low Temperature
C	200	Fire Supervisory
D	201	Low H_2O Pressure
E	202	Low CO_2
F	203	Gate Valve Sensor

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

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

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

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

DEDICATED CODES	
EVENT CODE	ENGLISH OUTPUT AT CS RECEIVER
137	Keypad Tamper
156	Day Trouble
301*	AC Loss
309*	Battery Test Fail
373	Fire Trouble
401	O/C by User
403	Auto Arm
406	Cancel on Open

DEDICATED CODES	
EVENT CODE	ENGLISH OUTPUT AT CS RECEIVER
407	Remote Arm
408	Quick Arm
409	Keyswitch Zone
457	Exit Error
459	Recent Close
575	Swinger Bypass
602*	Test - Periodic
412*	Download Code

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

Troubleshooting

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

For more complicated problems, consult our Technical Support at (1-800) 645-7492.

System Planning Worksheet

ZONE OPTIONS	ZONES			
	1	2	3	4
LOOP TYPE (Check 1 only)	☐ EOL ☐ N/O ☐ N/C	☐ EOL ☐ N/O ☐ N/C	☐ EOL ☐ N/O ☐ N/C	☐ EOL ☐ N/O ☐ N/C
ZONE TYPE (Check 1 only)	☐ Instant ☐ Delay ☐ Interior ☐ 24-Hour Alarm ☐ 24-Hour Trouble ☐ Fire ☐ Keyswitch	☐ Instant ☐ Delay ☐ Interior ☐ 24-Hour Alarm ☐ 24-Hour Trouble ☐ Fire ☐ Keyswitch	☐ Instant ☐ Delay ☐ Interior ☐ 24-Hour Alarm ☐ 24-Hour Trouble ☐ Fire ☐ Keyswitch	☐ Instant ☐ Delay ☐ Interior ☐ 24-Hour Alarm ☐ 24-Hour Trouble ☐ Fire ☐ Keyswitch
SENSOR (Check 1 only)	☐ Contacts ☐ PIR ☐ Glassbreak ☐ Smoke Detector ☐ Push Button ☐ Vibration Sensor ☐ Other _____	☐ Contacts ☐ PIR ☐ Glassbreak ☐ Smoke Detector ☐ Push Button ☐ Vibration Sensor ☐ Other _____	☐ Contacts ☐ PIR ☐ Glassbreak ☐ Smoke Detector ☐ Push Button ☐ Vibration Sensor ☐ Other _____	☐ Contacts ☐ PIR ☐ Glassbreak ☐ Smoke Detector ☐ Push Button ☐ Vibration Sensor ☐ Other _____
FAST LOOP RESPONSE	☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO
ENTRY TIMER (Check 1 only)	☐ Entry Delay # 1 ☐ Entry Delay # 2	☐ Entry Delay # 1 ☐ Entry Delay # 2	☐ Entry Delay # 1 ☐ Entry Delay # 2	☐ Entry Delay # 1 ☐ Entry Delay # 2
CROSS ZONE	☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO
DESCRIPTOR (12 CHARACTERS)	☐☐☐☐ ☐☐☐☐ ☐☐☐☐	☐☐☐☐ ☐☐☐☐ ☐☐☐☐	☐☐☐☐ ☐☐☐☐ ☐☐☐☐	☐☐☐☐ ☐☐☐☐ ☐☐☐☐

ZONE OPTIONS	ZONES		
	5	**6**	**7**
LOOP TYPE (Check 1 only)	☐ EOL ☐ N/O ☐ N/C	☐ EOL ☐ N/O ☐ N/C	☐ EOL ☐ N/O ☐ N/C
ZONE TYPE (Check 1 only)	☐ Instant ☐ Delay ☐ Interior ☐ 24-Hour Alarm ☐ 24-Hour Trouble ☐ Fire ☐ Keyswitch	☐ Instant ☐ Delay ☐ Interior ☐ 24-Hour Alarm ☐ 24-Hour Trouble ☐ Fire ☐ Keyswitch	☐ Instant ☐ Delay ☐ Interior ☐ 24-Hour Alarm ☐ 24-Hour Trouble ☐ Fire ☐ Keyswitch
SENSOR (Check 1 only)	☐ Contacts ☐ PIR ☐ Glassbreak ☐ Smoke Detector ☐ Push Button ☐ Vibration Sensor ☐ Other _____	☐ Contacts ☐ PIR ☐ Glassbreak ☐ Smoke Detector ☐ Push Button ☐ Vibration Sensor ☐ Other _____	☐ Contacts ☐ PIR ☐ Glassbreak ☐ Smoke Detector ☐ Push Button ☐ Vibration Sensor ☐ Other _____
FAST LOOP RESPONSE	☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO
ENTRY TIMER (Check 1 only)	☐ Entry Delay # 1 ☐ Entry Delay # 2	☐ Entry Delay # 1 ☐ Entry Delay # 2	☐ Entry Delay # 1 ☐ Entry Delay # 2
CROSS ZONE	☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO
DESCRIPTOR (12 CHARACTERS)	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

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

KEYPAD TYPES	KEYPAD(S) TOTAL (4 max.)	INSTALLED LOCATION
XK-5LC		
XK-7LC		
XK-406		
XK-508		
XL-4600SM		
F6615		

System Programming Worksheet

Enter the data in the empty boxes prior to programming the control. Note that the empty data boxes relate to Locations L1-L4 (in 4 location Questions) and Locations L1- L16 (in 16 location Questions). Defaults are shown in brackets [ ].

TO ENTER PROGRAMMING MODE: [CODE] [✶] [4-digit Installer Code] [1]
TO SKIP A QUESTION: [✶] [2-digit Question Number]
TO MOVE WITHIN A QUESTION: Press the [#] key until desired location
TO ENTER DATA: [single digit: 0 - 9, A - F] [#]

HEXADECIMAL ENTRIES:

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

00 INSTALLER CODE   **[2468]**

01 PRIMARY TELEPHONE NUMBER

[234AAAAAAAAAAAAA]

02 SECONDARY. TELEPHONE NUMBER

[AAAAAAAAAAAAAAAA]

03 CALLBACK TELEPHONE NUMBER

[AAAAAAAAAAAAAAAA]

04 TELEPHONE PREFIX [AAAA]	**13 SYSTEM OPTIONS** **[3000]**	
05 ACCOUNT NUMBER 1 [1234]	**14 TRIGGERS 1 & 2** **[0102]**	
06 ACCOUNT NUMBER 2 [AAAA]	**15 AUTO ARM TIME** **[1700]**	
07 DIALER 1 & SYSTEM OPTIONS [E014]	**16 CS TEST TIME** **[0300]**	
	17 ZONE 1 TYPE **[2060]**	
08 DIALER 2 & SYSTEM OPTIONS [EO00]	**18 ZONE 2 TYPE** **[5068]**	
09 MISCELLANEOUS OPTIONS [8010]	**19 ZONE 3 TYPE** **[0068]**	
	20 ZONE 4 TYPE **[0068]**	
10 BELL TIMEOUTS, CS TEST TIME [5F26]	**21 ZONE 5 TYPE** **[0068]**	
	22 ZONE 6 TYPE **[0068]**	
11 ENTRY/EXIT & CROSS TIMEOUTS [6333]	**23 ZONE 7 TYPE** **[A140]**	
12 MISCELLANEOUS OPTIONS [0316]	**24 ZONES 1 & 2 CS CODE [6142]**	

25 ZONES 3 & 4 CS CODE	[3334]			

26 ZONES 5 & 6 CS CODE	[3536]			

27 ZONE 7 CS CODE	[27AA]			

28 AMBUSH & AC LOSS	[AAA1]			

29 PANIC & LOW BAT	[68AA]			

30 OPEN/CLOSE/ WALK TEST	[AAAA]			

31 CANCEL & CS TEST	[BAAA]			

32 BYPASS, RESTORE (FIRE & DAY TROUBLE)	[AEFA]			

33 KEYPAD FIRE & AUXILIARY	[AAAA]			

34 DOWNLOAD & KEYPAD TAMPER	[AAAA]			

35 RECENT CLOSE, EXIT, & SWINGER	[456A]			

ZONE DESCRIPTORS

Note that the empty data boxes relate to Locations L1-L12 in the following 12 location Questions. Zone defaults are shown in brackets [ ]. Spaces are counted as characters.

36 ZONE 1 DESCRIPTOR .... **[ZONE 1]**

37 ZONE 2 DESCRIPTOR .... **[ZONE 2]**

38 ZONE 3 DESCRIPTOR .... **[ZONE 3]**

39 ZONE 4 DESCRIPTOR .... **[ZONE 4]**

40 ZONE 5 DESCRIPTOR .... **[ZONE 5]**

41 ZONE 6 DESCRIPTOR .... **[ZONE 6]**

42 ZONE 7 DESCRIPTOR .... **[ZONE 7]**

TO PROGRAM SYSTEM DESCRIPTORS:

Enter Installer Programming.
Go to desired question number (36-42).
Make the following keystrokes to program the characters:
       0 – Inserts a SPACE & advances the cursor
       CODE – Moves the cursor to the RIGHT 1 space
       INSTANT – Moves the cursor to the LEFT 1 space
       7 – INCREMENTS the character one at a time
       ⋆7 – SCROLLS UP until any key is pressed
       9 – DECREMENTS the character one at a time
       #9 – SCROLLS DOWN until any key is pressed

Exit Installer Programming.

Warnings and Limitations

● ●

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 detect intrusion only 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 be detected only 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 windows. 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 permanently 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, 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.

Regulatory Agency Statements

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RADIO FREQUENCY EMISSIONS

Federal Communications Commission (FCC) Part 15
This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Class B
Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
- reorient or relocate the receiving antenna.
- increase the separation between the equipment and receiver.
- connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- consult the dealer or an experienced radio/TV technician for help

Industry Canada
This Class B digital apparatus complies with Canadian ICES-003.

TELEPHONE/MODEM INTERFACE

FCC Part 68
This equipment complies with Part 68 of the FCC rules. On the front cover of this equipment is a label that contains the FCC registration number and Ringer Equivalence Number (REN). You must provide this information to the telephone company when requested.

This equipment uses the following USOC jack: RJ31X

This equipment may not be used on telephone-company-provided coin service. Connection to party lines is subject to state tariffs. This equipment is hearing aid compatible.

Industry Canada
NOTICE: This equipment meets telecommunications network protective, operational and safety requirements as prescribed in the appropriate Terminal Equipment Technical Requirements document(s). This is confirmed by marking the equipment with the Industry Canada certification number. The Department does not guarantee the equipment will operate to the user's satisfaction.
Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be coordinated by a representative designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.
Caution: Users should not attempt to make such connections themselves but should contact appropriate electric inspection authority, or electrician, as appropriate.

Ringer Equivalence Number Notice:
The **Ringer Equivalence Number** (REN) assigned to each terminal device provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Numbers of all the devices does not exceed 5.

Industrie Canada

Cet Appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

AVIS : Ce matériel est conforme aux normes de protection, d'exploitation et de sécurité des réseaux de télécommunications, comme le prescrivent les documents concernant les exigences techniques relatives au matériel terminal. Cette conformité est attestée par l'identification du matériel avec le numéro d'homologation d'Industrie Canada. Le Ministère n'assure toutefois pas que le matériel fonctionnera à la satisfaction de l'utilisateur.

Avant d'installer ce matériel, l'utilisateur doit s'assurer qu'il est permis de le raccorder aux installations de l'enterprise locale de télécommunication. Le matériel doit également être installé en suivant une méthode acceptée da raccordement. L'abonné ne doit pas oublier qu'il est possible que la conformité aux conditions énoncées ci-dessus n'empêche pas la dégradation du service dans certaines situations.

Les réparations de matériel homologué doivent être coordonnées par un représentant désigné par le fournisseur. L'entreprise de télécommunications peut demander à l'utilisateur da débrancher un appareil à la suite de réparations ou de modifications effectuées par l'utilisateur ou à cause de mauvais fonctionnement.

Pour sa propre protection, l'utilisateur doit s'assurer que tous les fils de mise à la terre de la source d'energie électrique, de lignes téléphoniques et des canalisations d'eau métalliques, s'il y en a, sont raccordés ensemble. Cette précaution est particulièrement importante dans les régions rurales.
Avertissement : L'utilisateur ne doit pas tenter de faire ces raccordements lui-même; il doit avoir racours à un service d'inspection des installations électriques, ou à un électricien, selon le cas.

AVIS : L'indice d'équivalence de la sonnerie (IES) assigné à chaque dispositif terminal indique le nombre maximal de terminaux qui peuvent être raccordés à une interface. La terminaison d'une interface téléphonique peut consister en une combinaison de quelques dispositifs, à la seule condition que la somme d'indices d'équivalence de la sonnerie de tous les dispositifs n'excède pas 5.

FEDERAL COMMUNICATIONS COMMISSION (FCC) STATEMENT

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

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

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

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful: "Interference Handbook."

This booklet is available from the U.S. Government Printing Office, Washington DC 20402.

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

C€ O560 DECLARATION OF CONFORMITY

Hereby, PITTWAY CORPORATION, declares that the XL-2T is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC and satisfies all the technical regulations applicable to the product within this directive including:
EN 50081-1:1992   EN 50130-4:1998   EN 60950:1992   TBR 21.

This apparatus has been assessed for connection to the following circuits:
Public Switched Telephone Networks (PSTN) -non DDI
Private Branch Exchange (PBX).

Warranty Information

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LIMITED WARRANTY

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

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

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

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