

FCC COMPLIANCE

Part 68 Notification

The Z900 Control and Z900ST Control Station complies with Part 68 of the Federal Communications Commission (FCC) rules. All connections to the telephone network must be made through standard telephone company plugs and jacks, RJ31-X or equivalent, in such a manner as to allow for easy and immediate disconnection of the equipment. If the connecting cord is unplugged from the jack there shall be no interference to the telephone equipment still connected to the telephone network.

The FCC registration number and Ringer Equivalence Number (REN) can be found printed on the wiring connection label located inside the control box enclosure. If requested, provide this information to your telephone company. The REN is useful to determine the quantity of devices that may be connected to your telephone line and still have all of those devices ring when your number is called. In most, but not all areas, the sum of the RENs of all devices should not exceed five (5.0).

In the unlikely event that the equipment should ever fail to operate properly, it should be disconnected from the telephone jack to determine if the problem is with the telephone network or with the equipment. If a problem is found with the equipment, leave disconnected until it is repaired or replaced.

In the unlikely event that the equipment should ever cause harm to the telephone network, the Telephone Company may discontinue your service temporarily. If possible, they will notify you in advance. However, if advance notice isn't practical, the Telephone Company may temporarily discontinue service. In the case of temporary discontinuance, the telephone company shall promptly notify the telephone subscriber who will be given the opportunity to correct the situation. The customer also has the right to bring a complaint to the FCC if he feels the disconnection is not warranted.

Your telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the proper operation of your equipment. If they do, you will be given advance notice so as to give you and opportunity to maintain uninterrupted service.

You should notify the Telephone Company if this equipment is removed from the premises and the telephone jack is no longer needed.

The FCC prohibits this equipment to be connected to party lines or to be used in conjunction with coin operated telephone service.

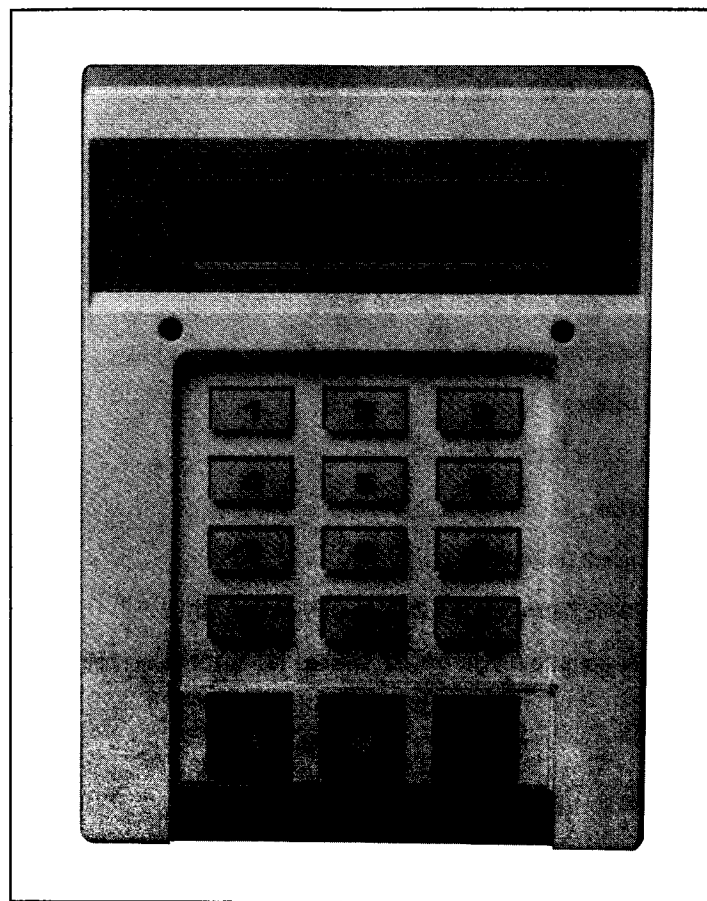
Part 15 Notification

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 type tested and found to comply with the limits for a Class B computing device in accordance with the specifications of Subpart J, 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:

1. Reorient the TV or radio antenna.
2. Relocate or move the alarm control away from the receiver.
3. Plug the transformer for the alarm control into a different outlet so that the receiver and the alarm are on different branch circuits.
4. If necessary, the user should consult the alarm dealer or an experienced radio/television technician for additional suggestions.

The user may find the following booklet prepared by the Federal Communications Commission helpful: "How To Identify and Resolve Radio-TV Interference Problems." This booklet is available from the U.S. Government Printing Office, Washington, DC 20402 stock #004-000-00345-4.

Z900ST LCD Control Station Installation Manual



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Specifications

The Z900ST LCD Control Station features an extremely high level of user friendliness. The LCD provides a constant display of the system status and prompts the operator during the various steps of operation. Many of the benefits to the Installer and User include:

- ❑ 16 character Liquid Crystal Display (LCD)
- ❑ Programmable 12 character zone names
- ❑ Displays function numbers and values during control panel programming
- ❑ LCD Display and Keypad Backlighting with optional timeout
- ❑ Optional audible sounder for Alarms, Entry Prealarm and Control Station entries
- ❑ Three (3) Control Station activated panics: Auxiliary A, B, & C
- ❑ Hinged cover to protect Panic Keys.
- ❑ Operates like a Z900R.
- ❑ EEPROM: Retains all programmed memory (including zone names)
- ❑ 2 LEDs, Red Armed and Green System Ready Indicators
- ❑ Four wire plug-in connector
- ❑ U.L. Listing pending
- ❑ Dimensions: 3.5" x 4.5"x 0.75"
- ❑ Color: Off White
- ❑ Maximum Current Drain: 60mA
- ❑ Number of Z900ST allowable to a Z900 security control: (4)
- ❑ Operating Temperature Range: 0 to 50 Celsius. (32 to 122 Fahrenheit).

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Mounting And Wiring

1. Disconnect all power from the control before installing or servicing.
2. Select a mounting location that is secure and maintains a constant temperature between 32° to 122° F (0° to +50° C) The LCD Control Station should not be exposed to freezing conditions, moisture or direct sunlight. It may be mounted to any flat surface or to a 1 gang electrical box using countersunk screws. NOTE: MOUNTING TO THE FACE OF THE CONTROL PANEL IS NOT RECOMMENDED. ENTRY WARNING OR OTHER ANNUNCIATION MAY LEAD INTRUDERS TO THE CONTROL PANEL CREATING A SECURITY RISK.
3. An ideal mounting height is between 48 to 52 inches from the floor to the top of the LCD screen. This provides an excellent viewing height. The top of the unit should not be mounted higher than 60 inches.
4. The minimum size wire recommended is 22 awg. stranded, four conductor twisted.
5. After completing the wire run to the desired mounting location, clean the surface upon which the unit is to be mounted. Level and mount the backplate with the enclosed countersunk screws. Pull the wire through the large hole in the backplate. Solder or crimp the four conductors to the enclosed wiring harness. Insulate the connections thoroughly and push excess wire into the wall. Connect the harness plug to the four prong connector on the back of the circuit board.
6. Hold the control station at a 30° angle (bottom edge out) and engage the top edge with the back plate. With the top edge engaged press the bottom edge against the backplate using slight pressure until the locking tabs are seated. DO NOT FORCE.

Control Station Removal

To remove the control station insert a small screwdriver into one of the two holes at the bottom of the unit, while applying a light pulling action away from the mounting surface. After the first lock is disengaged, repeat for the second. Slide the unit upward so that the interlocking hinges detach and free the control station.



Figure 1 Mounting

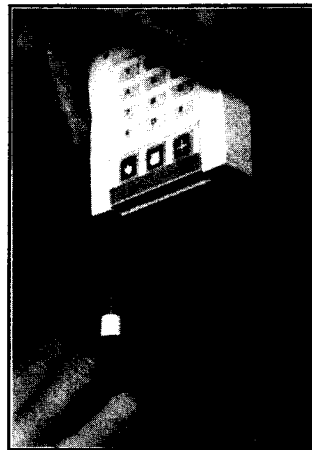


Figure 2 Removal

Operation

Operating the Z900ST is very similar to the standard LED Control Station (Z900R) with the added benefit of the full alphanumeric LCD English display. The LCD provides constant system status and prompts the operator during the various steps of operation.

The Press And Hold Feature

The Z900ST utilizes a press and hold feature to produce various displays and functionality. Throughout this manual, whenever the text mentions to "Press and Hold" a key, this indicates that the key should be pressed and held for 3 seconds or until the control station acknowledges with 3 beeps.

The * Prompt

The * prompt and corresponding * key serves as an important diagnostic or "HELP" tool. It is one of the most important functions that the operator should learn. A single momentary depression of this key silences the built-in sounder and clears improper key entries. **Pressing and holding the * key for 3 seconds** commands the control station to display additional system information.

What To Do When * Is Displayed

Whenever the control detects a trouble or abnormal condition, (i.e.: an **Open Zone**, **System Trouble**, etc.) the * will appear on the right side of the screen. This is a prompt for the operator to **press and hold the * key**. Upon doing so the LCD will display additional information about the condition and/or will prompt the operator for additional key entries. This information delivery process allows the Z900ST to be very user friendly while providing extremely powerful operation.

Displaying Zone Status

Whenever one or more intrusion zones are violated, the LCD will display **_ Zone(s) Open *** and normal system arming will be disabled .

1 Zone Open *

The full zone status showing the number and description of each open zone can be displayed by **pressing and holding the * key**. The violated zone(s) will be indicated by their **respective numbers**. Non-violated zones are shown as a blank space with an underline. Bypassed zone(s) are shown by a flashing zone number.

_ _ 3 _ _ *

Additional momentary presses of the * key will advance the display through the description(s) and will eventually return to the **_ Zone(s) Open *** display.

Z3-Garage Door *

Arming

Once the control station displays **System Ready** you may arm the control by entering one of the user codes. (The factory set Master User Code for the Z900 is 1245)

System Ready

During the exit time delay countdown the Armed LED will flash, the Ready LED will be out, and the control station will display **Exit Now**.

Exit Now

Once the exit time has expired, the Armed LED will become solid and the LCD will display **System Armed**. The sounder may beep once per second during the exit time depending upon how the control panel is programmed.

System Armed

Disarming

To disarm the control, simply enter one of the user codes. This will cause the Armed LED to extinguish and the LCD to display normal disarmed prompts.

Responding To Alarm Conditions

Violation of a protective burglary zone while the control is armed will cause the control to enter the alarm state and the LCD to display **Alarm**. During the alarm cutoff time and until reset, the control station sounder will announce the alarm (if so programmed).

Alarm *

Entering the user code will silence the alarm sounder and disarm the control. The LCD will display **Alarm- -Disarmed *** as a reminder to the operator that an alarm has occurred.

Alarm- -Disarmed *

While the alarm is sounding and immediately after disarming, the operator may view the zone number that caused the alarm by pressing and holding the * key. Additional presses of the * key will advance the display through the zone description(s), followed by the description(s) of the alarm type(s).

Displaying Alarm Memory

It is possible to recall the last alarm that occurred by pressing and holding the 3 key. Additional presses of the * key will advance the display through the zone description(s), followed by the description(s) of the alarm type(s).

Bypassing Zones

To bypass from the control station **press the # key followed by the number of the zone that you desire to bypass**. For example: Pressing # then 4 will bypass zone 4. This may be done during the zone status display or the display of **_ Zone(s) Open ***. The zone bypass may be cancelled by repeating the entry again or by pressing # then 9. The # then 9 can be used to cancel multiple bypassed zones. As shown below, when one or more zones are bypassed the right side of the display will contain **Bp *** to remind the operator of the bypass.

System Ready Bp*

When the control is armed with a bypassed zone, the LCD will display **Partial Armed**. Thirty (30) seconds after exit time has expired the display will change to **System Armed**.

System Trouble

When a trouble condition exists the LCD will alternately display **System Trouble *** with the present system display. To identify the cause of a system trouble, the operator may either press and hold the * key to obtain further instructions from the display, or press and hold the 2 key to access the trouble status screen directly.

System Trouble *

Upon pressing and holding the * key the operator will see:

Trouble, Hold 2 *

After **pressing and holding the 2 key** the LCD will identify the trouble condition(s). Conditions such as AC Failure, Low Battery or Blown Fuse, Supervisory Trouble, Communication Failure, Memory Error, Missing Control Station, and Keypad Parity. Additional momentary presses of the * key will advance the display through the trouble display. Although it is possible to arm the control while a trouble condition exists, it is recommended to diagnose and correct any trouble condition as soon as possible.

Viewing The Chime, Interior, And Delay Status

To identify if the chime mode is on, if the interior protection is off, or if the delay mode is off you may **press and hold the 2 key**. Since this key is also used to identify trouble conditions, troubles (if any) will be displayed first, followed by the chime, interior, or delay.

Quick Reference Guide

Most keys serve additional functions used to enable special features or perform diagnostics. The following are descriptions of the features and the keys which control them:

- * **Reset/ Help:** A single press of the * key silences the built-in sounder, resets the display, and clears key entry errors. In response to the * prompt or to display additional system information such as zone status, press the * key and hold. Each additional press will advance the display forward through the information provided.
 - 2 **Trouble/Chime/Interior/Delay Status:** Pressing and holding the 2 key will display any trouble conditions. It will also identify if the chime mode is on, the interior protection is off, and if the delay is off.
 - 3 **Alarm Memory:** To identify the zone(s) and type of alarm that was last triggered, press and hold the 3 key.
 - 4 **Interior ON/OFF:** All Interior defined zones may be bypassed (turned off) by pressing and holding the 4 key. To identify if the interior is off, press and hold key 2.
 - 6 **Chime Mode :** Pressing and holding the 6 key will turn on the chime mode feature. The chime mode causes the control station to annunciate with two beeps whenever a perimeter defined burglary zone is violated. To turn off the chime mode simply repeat the process. To identify if the chime mode is on, press and hold key 2.
 - 7 **Switched Power Interrupt:** Pressing and holding the 7 key will turn off the switched power output of the control for five seconds in order to reset smoke detectors and other non-burglary latching devices. This function is also used to reset the trouble condition existing after a low battery/blown fuse indication.
 - 8 **Test Mode:** To activate the test mode press and hold the 8 key. This feature allows a complete walk test providing an audible tone for each zone that is violated during the walk test. To exit this mode press the * key.
- To obtain a visual display showing each tested zone, press and hold the * key to display zone status, then press and hold the 8 key to activate the test mode. As each zone is tested, the zone number will display and remain on until the test mode is exited.
- 9 **Program:** Used to enter the programming mode. Press and hold key 9, then enter the Installer Program Code or Master User Code as necessary.
 - 0 **Access:** Press and hold key 0, then enter an assigned user code to provide an output for access (door release, etc.). Consult the control installation manual for specifics.
 - # **Bypassing:** Zones may be bypassed (shunted) by pressing the # key followed by the number of the zone (1 thru 6) to be bypassed. Pressing # then 9 will remove all bypasses.
 - A This key is used to activate the Auxiliary A alarm. This key may also be used immediately after entering program mode to access the LCD options.
 - B This key is used to activate the Auxiliary B alarm. During LCD option programming this key is used to scroll through the options (Zone Names, Contrast Adjust, and Set Config).
 - C This key is used to activate the Auxiliary C alarm. During LCD option programming this key is used to select the option displayed.

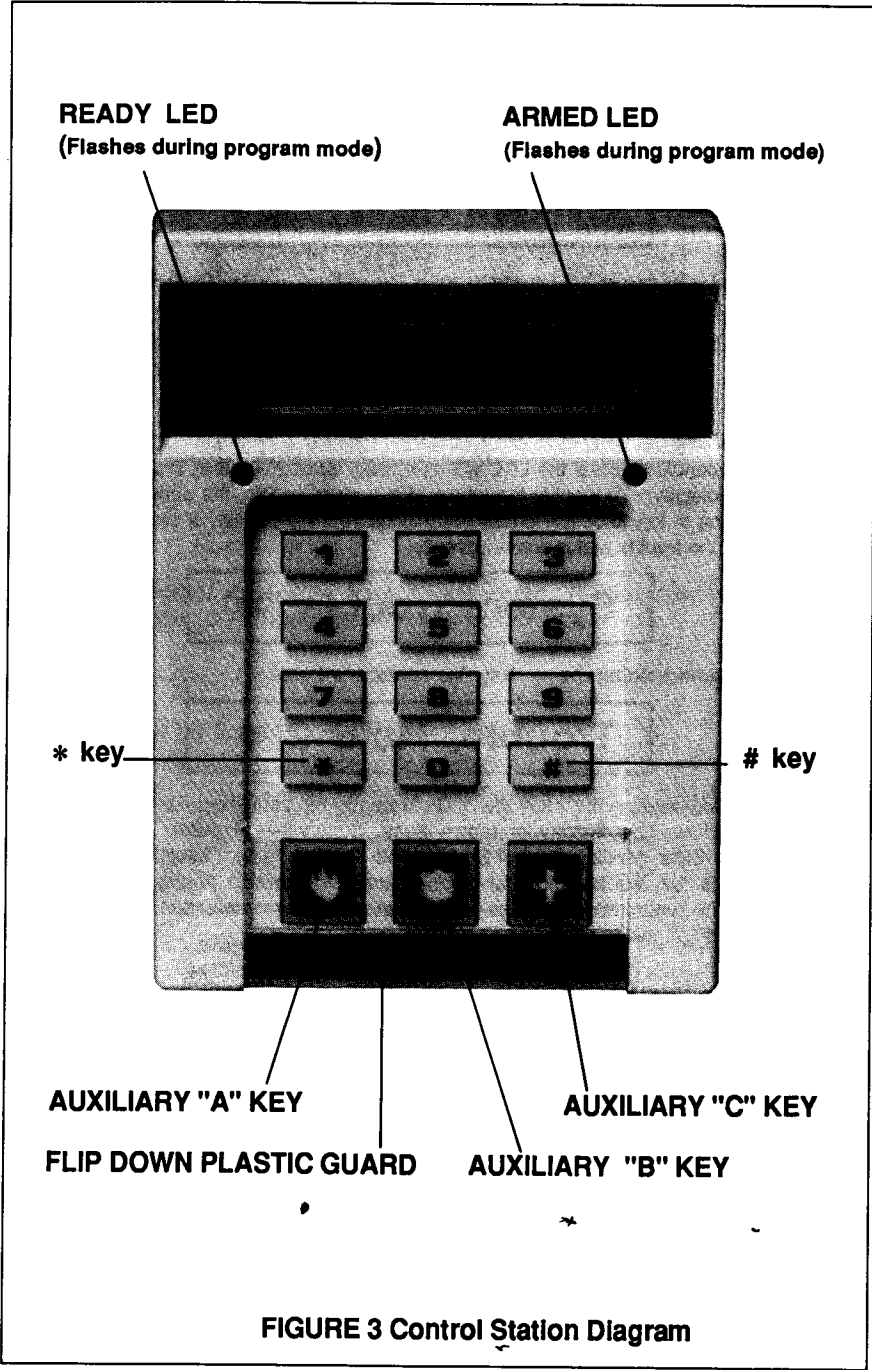


FIGURE 3 Control Station Diagram

Programming

Programming from the Z900ST is very easy and informative, thanks to the LCD alphanumeric screen. Programming is divided into three levels, (1) LCD Options, (2) Control Panel User Level, (3) Control Panel Installer Level. **NOTE: The following instructions are intended to supplement the information in the control panel installation manual.**

Entering The Programming Mode

To enter the Programming Mode press and hold key 9, then enter the Installer Program Code or the Master User Code, depending upon which level of programming is required. For LCD options either the Installer Code or the Master User Code may be used. After entry into the program mode the Ready and Armed LEDs will flash rapidly and the LCD will display **Program Mode**. Programming mode may be exited at any time by pressing the * key twice.

LCD Option Level Programming

The LCD options are **Zone Names**, **Contrast Adjust**, and **Set Config**. The auxiliary panic keys are used in the LCD option level programming. LCD option level can only be reached by pressing the left (Aux. A) panic key immediately after entering the program mode. The first option is **Zone Names**. You may scroll to the other options by pressing the middle (Aux. B) panic key. Press the right (Aux. C) panic key when the desired option is displayed.

Zone Names. . . . Pressing the Aux. C key when the prompt displays **Zone Names**, allows the zone names to be programmed. An example of the programming sequence is:

1. Press **9** and hold. Three (3) beeps should be heard.
 2. Enter the Installer Program Code. (factory 96321) **9 6 3 2 1**
or Master User Code (factory 1245)
- The Ready and Armed LED's will flash and the LCD will display **Program Mode**. If the code has been changed from the factory setting, substitute the new code.
3. For LCD options press the Aux. A key. **A** The LCD will display: **Zone Names**
 4. To select zone names press the Aux. C key. **C** The LCD will display: **Z1-**
 5. To program the description for this zone press the Aux. C key again. **C** The LCD will display a blinking cursor in the first character position.
 6. Characters are assigned to each number key just as they are shown on most touchtone telephones. For example, the 2 key represents A, B, C. Refer to figure 4. Select the first character by pressing the corresponding key. It may be necessary to press the key a second or third time since each key is assigned to more than one character.
 7. When the first character is correct press the # key. This will store the character and advance the cursor to the next position. To edit a character or correct a mistake, press # until the cursor moves to the desired character. Each name is 12 characters in length, including spacing and punctuation.
 8. When the first zone name is complete, press the middle (Aux. B) panic key. **B**
This will store the name and advance to the next zone.
 9. To exit the program mode, press the * key twice. Pressing the * key a single time will return to the beginning of the programming mode. The LCD will display **Program Mode**.

Key	Character Produced
1	1 2 3 4 5 6 7 8 9 0
2	ABC
3	DEF
4	GHI
5	JKL
6	MNO
7	PQRS
8	TUV
9	WXYZ
0	{SPACE} ' , . "/- ([)]#!_ & + ;<=>

FIGURE 4 Characters Produced In Zone Name Programming

Symptom	Possible Cause And Correction
LCD & LEDs appear dark, no power	Check control panel fuses, AC and DC power circuits, and wire splices.
"System Trouble" displayed	Press and hold key 2. The LCD will identify the trouble condition.
"* " prompt displayed	Indication that additional system information is available by pressing and holding the * key
"No Control Data" displayed	Check connection to control terminal 9 (white wire). Check for low voltage at control.
Constant sounder or no response to keys	Check connection of green wire to control terminal 8.
The Ready LED is not on	Check zone status by pressing and holding the * key.
Unable to enter the programming mode	The installer code or master user code has been changed. Refer to the Z900 Install manual for alternate method of entering program mode.
System is Ready but the control won't arm	The user code has been changed or is invalid.

FIGURE 5 Troubleshooting Guide

Changing The Contrast Adjust. . . After entering the programming mode and selecting LCD options using the Aux. A key, press the Aux. B key to advance to **Contrast Adjust**. Next, Press the Aux. C key to select **Contrast Adjust**. The LCD will display **B=Lower C=Higher**. By pressing the Aux. B or Aux. C key, the darkness contrast of the LCD may be adjusted to suit the mounting conditions. To exit the program mode, press the * key twice.

Setting The Configuration . . . The Z900ST contains a configuration setting which controls the operation of the backlighting and built-in piezo sounder. The backlighting may be configured to be on constantly (the default setting), or time out automatically (turn off) after 30 seconds of no activity. In the time out mode the backlighting will re-activate upon any key press, or upon any activity from the control such as entry delay warning, alarm activation, etc.

The configuration also allows the sounder to be audible (the default setting) or silent. In the silent configuration the sounder is totally disabled both for key presses as well as for entry delay warning, alarms, trouble conditions, etc. The setting for silent (disabled) sounder is not recommended unless a separate sounding device is installed for entry warning and annunciation. For UL listed systems the sounder must be left enabled.

1. After entering the programming mode and selecting LCD options using the Aux. A key, press the Aux. B key twice to advance to **Set Config**.
2. Press the Aux. C key to select **Set Config**. The LCD will display: **Config = _**
3. Enter the desired configuration value (the valid range is 0 thru 3).
Note: To select a value of 0 an 8 must be entered.
 - 0 = Constant backlighting and audible sounder.
 - 1 = Disables the built-in piezo sounder.
 - 2 = Selects automatic timeout of the backlight after 30 seconds of no activity.
 - 3 = Disables the piezo sounder AND selects automatic timeout of the backlight.
9. To exit the program mode, press the * key twice. Pressing the * key a single time will return to the beginning of the programming mode. The LCD will display **Program Mode**.

NOTE: Do not set the config to any value other than 0,1,2, or 3. Failure to observe this rule may result in undesirable operation.

NOTE: Selecting a value of 1 or 3 will disable the keypad piezo. The keypad piezo shall not be disabled on U.L. listed systems.

NOTE: The LCD options are unique to each Z900ST Control Station and must be programmed individually. For multiple Z900ST's on a single installation the programming may be copied and transferred to each unit by use of the MPI-230 Chip Duplicator. IMPORTANT: Remove power from the control before connecting the MPI-230. Refer to the MPI-230 Specifications & Instructions for a detailed procedure.

User Level Programming

User Level Programming allows anything that is defined as user level to be changed or altered within the control. User level is prohibited from affecting anything in the installer sections of the control. Sensitive areas such as digital communicator functions, zone definitions, and default operational features can not be affected by user level programming. Below is an example of changing or adding user code 2.

1. Press **9** and hold. Three (3) beeps should be heard.
2. Enter the Master User Code (factory 1245) **1 2 4 5**
The Ready and Armed LED's will flash and the LCD will display **Program Mode**. If the code has been changed from the factory setting, substitute the new code.
3. To change or add user code 2, enter **0 0 2** and press the # key. **#**
(A single digit 2 in place of 002 is also acceptable.)
The LCD will display: **F002 = ?- - -** If the code is blank a question mark will be displayed, otherwise the first digit of the existing code will be displayed.
4. Enter your desired four (4) digit code. Four digits must be entered to complete the code. After the last digit is entered the programming mode will be exited automatically.

Some features in User Level Programming do not require any value to be entered into the location. Simply going to the location will cause the function to be executed. An example of this type of function is location 009 which clears memory in the Z900 control.

1. Press **9** and hold. Three (3) beeps should be heard.
2. Enter the Master User Code (factory 1245) **1 2 4 5**
The Ready and Armed LED's will flash and the LCD will display **Program Mode**. If the code has been changed from the factory setting, substitute the new code.
3. Enter **0 0 9** and press the # key. **#**
4. The display will prompt **F009 = 000** and then exit programming mode automatically. Alarm memory should now be clear.

Some functions in User Level Programming require entry of the * key in order to exit the programming mode.

NOTE: If the Master User Code is unknown or lost, it is possible to reload the factory set Master User Code without defaulting the entire control panel program. Refer to function 250 in the Z900 Installation Manual.

Installer Level Programming

Installer Level Programming is similar to User Level with a few exceptions. The Installer Program Code must be used instead of the Master User Code. This is to insure that the system's operating functions and programs cannot be lost or changed accidentally by the user. Below is an example of changing function 047 in installer programming.

1. Press **9** and hold. Three (3) beeps should be heard.
2. Enter the Installer Program Code (factory 96321) **9 6 3 2 1**
The Ready and Armed LED's will flash and the LCD will display **Program Mode**. If the code has been changed from the factory setting, substitute the new code.
3. To change function 047 enter **0 4 7** and press the # key. **#**
(It is also acceptable to enter 47 in place of 047)

The LCD will display: **F047 = 000** (assuming the value is still set at the factory default setting)
4. Enter a new value. Example, enter **0 0 1** and press the * key. *****
5. The LCD will now display: **F047 = 001**
6. To advance to the next function location in numerical order, press the # key. The LCD will advance one location for each entry of this key. To jump backwards or forwards to another location, you may enter the desired location number and press the # key. The # key acts as a search or find command.
7. To exit the program mode, press the * key twice.

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